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AMERICAN PEDIATRIC SOCIETY.

Annual Meeting, held in Cincinnati, June 1, 2, and 3, 1898.

The first session was opened at 2.00 p.m., with a paper on "Congenital Sacro-cocygeal Tumor in an Infant 34 Days Old. Operation. Recovery," by Francis Huber, M.D., New York. The tumor and photographs of the patient were presented.

At the meeting of the Association in Boston, 1892, the writer presented a much larger tumor of a similar character removed from a child a few weeks old. That child recovered, as did the case reported at this meeting. The only treatment for these patients is an operation, and the most important point is to remember that many of these tumors are connected with the spinal cord. Therefore the work of enucleating such a mass is necessarily slow. In this case it was necessary to remove all of the coccyx and part of the sacrum. The rectum was exposed for a distance of about an inch.

The paper was discussed by Dr. Jacobi, who believed that the tumor was a teratoma. The tumor contained cartilage, fluids, intestinal mucous glands, and respiratory organs, in fact, with the skin, all such tissues as come from the different
germinative layers. The ectoderm, mesoderm, and entoderm were all represented. As there is one point where all those meet early in life, he thought that an abnormal connection between the three might be considered the original cause of the tumor. These cases are usually attributed to the implantation of another fetus, and he thought this case might have been one of arrested development at an early period when the three germinative layers are closely packed together.

The second paper presented was on "The Enanthem of German Measles," by F. Forchheimer, Cincinnati. The writer described as characteristic an enanthem which he first studied in one of his own children attacked by German measles, but which he has since been led to believe must be present in all cases. The enanthem is a macular, distinctly rose-red eruption upon the velum of the palate, the uvula, extending to but not onto the hard palate. The spots are not arranged irregularly, not crescentically, are the size of large pin heads, and are very little elevated above the level of the mucous membrane. The writer studied the eruption in twenty-two cases. In no case has he seen the enanthem when there was not present a suggestion of the enanthem. The enanthem is very short lived. It fades away within the first twenty-four hours, and then appear certain results of involution, not present in the majority of the cases.

It is the same eruption that is found upon the skin, characterized by the size of efflorescence, its arrangement, the absence of great infiltration and, above all, by its color, a pure pinky rose-red, almost exactly the same as the roseola of typhoid fever. During the process of involution there are sometimes left pigmented deposits, usually of a yellowish or yellowish brown color, either in the form of spots or streaks.

The claim that this enanthem is distinctive can be defended by comparison with the enanthem of those two diseases with which rubella is confounded. A glance at these will suffice to establish this proposition. In scarlatina the enanthem appears from twelve to twenty-four hours before the eruption. It appears on the pillars of the fauces in the form of the characteristic puncta, then rapidly spreads over the mouth in the form of a scarlet-red coalescing eruption, which finally ends in desquamation, producing the strawberry tongue, and lasting well into the second week of the disease.
In measles the enanthem begins upon the soft palate from thirty-six to forty-eight hours before the exanthem, in the form of purplish or bluish papules, arranged crescentically, and extends over the cheeks, accompanied by the blue tongue. It is at its maximum with the beginning of the eruption, and may take as long as three to four days to disappear.

It will be seen, therefore, that in all respects does the enanthem of rubella differ from that of scarlatina and of measles, and when seen can be utilized with certainty for differential diagnostic purposes.

In conclusion the author stated that these studies were made in one epidemic only, and their verification must rest with the study of other epidemics, before they can be accepted as belonging to all cases of rubella, under all circumstances.

Dr. Crozer-Griffith opened the discussion, saying that the essayist had mentioned two facts which help to explain something of the convictions of writers who have referred to the occurrence of this enanthem, one being the multiform character of the eruption, which characteristic may be applied to the throat as well as to the skin. He thought that no one of the eruptive diseases had a more multiform rash than rubella. The other point was the fleeting character of the eruption. Sometimes patients will be found with a persistent rash seemingly well developed at one time, but in very many cases it acts like a wave over the body. In that case it may probably be in the throat only a short time, which may account for the fact that it is frequently overlooked. He did not know whether he would go as far as the essayist and say a diagnosis may be made by the eruption in the throat, because he had seen an eruption on the skin which he could not tell from that of measles, but he thought he was quite right in describing the average case with a pale and fleeting rash on the palate in one case and a much more distinct red eruption of the throat in the other case.

Dr. Buckingham, in studying a large number of cases of measles, stated that he drew a line with pen and ink around the individual spots, proving conclusively that the same spot is not always the same size, and thus making a distinct division between the two.

Dr. Adams said his experience coincided with that of the essayist so far as the spots were concerned, and particularly with reference to the rapidity with which they disappeared.
He thought that the character of the eruption on the throat was to a great extent an index. If the eruption on the throat was severe, the eruption on the skin would be severe.

Dr. Rotch observed that diagnostic points are always brought out in discussions on rötheln and measles, and that those who attribute diagnostic value to some symptoms of rötheln should at least allow that measles is very varying, and that it may be possible the same symptoms are found also in measles, but if the sign referred to by the essayist was proven, in coming epidemics it would be a point of value.

Dr. Jacobi considered the paper a valuable addition to our means of diagnosis. Two such additions had come in the last year: First, the diagnostic enanthem referred to by the essayist, and second, the enanthem described by Koplik in measles. In the Berlin Children's Clinic every case of measles was examined for these signs and the report published in one of the last numbers of the Deutsches Medicinische Wochenschrift. Of twenty-six cases for measles, it was found constantly in twenty-five cases, 96 per cent. He thought that if Koplik's enanthem was confirmed for measles, and another enanthem was recognized as characteristic of rubella, the mucous membrane would be a surer guide for the purpose of diagnosis than the external integument.

Dr. Fruitnight had found the signs described by the essayist in more than 70 per cent. of the cases, and was inclined to think it a diagnostic test. In some cases the patients had gone through attacks of measles several weeks before the attacks of rubella, and the appearance in the mouth was entirely different from that during the attack of rubella. In an epidemic of measles in one section of New York, the symptoms were found in 90 per cent. of the cases. The symptoms on the part of the mucous membrane are much more aggravated in rubeola than in rubella. In rubella there is often a total absence of these symptoms, and the rapidity with which the rubella eruption disappears is another diagnostic point.

In closing the discussion, Dr. Forchheimer said he had not referred to Koplik's enanthem because he had not verified it himself. He thought the two conditions so absolutely characteristic and distinct that he was always prepared when he saw the condition in German measles or genuine measles to be willing to make a diagnosis before the eruption appears in genuine
measles. In regard to the objection of Dr. Buckingham, he described the average spot as the size of a large pin-head; he had seen them smaller, but never larger. Above all, the color of the enanthem was different from that of measles, and altogether different from that of scarlatina. In the enanthem of German measles the spots did not increase in size. When they came out they came out in their largest circumference, and then there took place a process of involution, which sometimes in very pale mouths led to pigmentation, just as pigmentation may take place in the skin.

The next paper was by Frank S. Churchill, M.D., Chicago, on "The Urine of Healthy Infants and Children." Examination in detail of the results given in a table presented by the essayist shows several interesting points.

**Amount.**—The daily amount of urine passed by my cases is much less than that recorded by most authors whom he had been able to consult, except Herz, whose analyses upon sixty cases, thirty girls and thirty boys, between six and fourteen years of age, corresponded approximately with the author's experience. A comparison of his results, with those quoted by Rotch and Holt, however, showed a marked discrepancy, for which he was unable to account. He would suspect that he had not been successful in getting the whole amount of urine in his cases, had he not taken especial care in this direction. Moreover, the specific gravity confirmed the amount.

**Specific Gravity.**—He found a higher average than is given by the authors already quoted, a condition we should naturally expect in the urine of children passing but a small amount. Had he failed to collect the total amount, he should expect a lower specific gravity than is recorded, inasmuch as even those cases which have been thrown out had a fair admixture of night and day urine. Reliable as are the observers quoted, should we not expect to find a comparatively high specific gravity in the urine of children of this age, at a period of great physical activity with consequently greater elimination of urea? The specific gravity of the one young infant which he had been able to record, is low, coinciding with the well known observation at this period; it ranged from 1.001 to
1,005 from the twelfth day to four weeks. It is, however, generally higher during the first two days of life, before the establishment of the breast-milk. It drops after this, and continues low throughout the first year, owing to the fluid character of the infant's food. During the second year, solid food being added to the diet, the specific gravity rises, and in four cases, aged respectively twelve, thirteen, eighteen, and twenty months, he found it ranging from 1,026 to 1,030, the urine being a mixture of the day and night eliminations.

Urea.—The estimation of this constituent is perhaps the most important of all the urinary solids, being, as it is, an index of general metabolic activity. As we should expect from their greater activity, and as Purdy and Foster state, we find the urea excretion in children relatively higher than that in adults. The low percentage noted during early infancy is, of course, due to the quiescent state of the child. Martin and Ruge, however, report wide variations in single specimens during the first ten days of life, ranging from 0.6 per cent. to 1.9 per cent. Shiff also gives wide variations, placing averages at from .28 per cent. to 1.7 per cent., during the first fourteen days. Why there should be such a wide range in the excretion of this substance at a time of such quiescence is difficult to see. Possibly greater metabolic activity after nursing may account for it. He had no statistics upon the relative amount of urea in urine passed just before, just after and some time after feeding. The few observations he made at this age showed, without exception, very low percentages, from 1/20 per cent. to 0.4 per cent. lower than those cited. After the first year it rises, and from three to twelve years 133 specimens show a higher general average than that usually given. He thought Verordt's percentage, based on only seven cases, was too low. He records it as 1.1 per cent. to 2 per cent., four being below 2 per cent., one 2 per cent., and two 2.6 per cent., and one not given. This represents the adult average, whereas, so great is the physical activity of the growing child, so active is his metabolism, that a large amount of urea is formed, and while it may be argued that most of his nitrogenous food goes to the building up of the rapidly growing body, and thus the amount of urea formed in the urine would naturally be less, it would seem more rational to expect a greater elimination of this substance. Not only were his average percentages higher than
the average given for adults, but individual cases showed a remarkably high percentage of elimination of urea: Eight children having over 3 per cent., the highest being 3.7 per cent. The amount of urea per kilogram of body weight, while slightly higher than the ratio given for adults, is lower than that given by other observers, as we should expect from the smaller amount of urine.

Chlorides.—The chlorides were found quite constant at about 11 per cent. up to seven years, after which they were about 9 per cent.

Phosphates.—The phosphates were found to be from 8 per cent. to 11 per cent. from three to five years; 5 per cent. to 7 per cent. from six to twelve years, the adult range being about 8 per cent. It has been suggested that the smaller amount of phosphates found in the urine of children is due to the fact of the phosphoric acid being retained in the body for the growth of bone. One specimen from year-old boy showed 16 per cent., and as he was somewhat slow about teething, though otherwise perfectly healthy, the question suggested itself as to whether substances which normally go to build up the teeth were being eliminated as phosphates, and, if so, why? Digestion was absolutely normal. No conclusions, however, can be drawn from one solitary instance; the observation is merely of speculative interest.

Sulphates.—The percentage of sulphates was 1 to 1.2 per cent., slightly higher than in adults, 0.8 per cent. being their average. Purdy states that the sulphates run parallel with the urea.

Albumin and Sugar.—Neither albumin nor sugar were detected in any specimen. So much has been said about a physiological albuminuria that he had expected to find albumin in one or more specimens. It must be remembered, however, that his cases were examined but two or three times, and some only once, and that therefore a transient temporary albuminuria might have come and gone between examinations. No deductions can be made on this point.

Sediment.—Examinations of the sediment showed nothing of especial interest in any case.

Reaction.—The reaction was acid in all cases, though, of course, varying in intensity in different specimens.

Color.—The color in most cases was pale, in the rest
normal. Looked at as a whole, the records show three factors of chief importance: the small amount of urine, the high percentage of urea, and a natural result of these two, a high specific gravity. In other words, these children are passing a comparatively concentrated urine. They are all healthy, robust children, eating, sleeping, and digesting well, and of average weight. Do these records of their urine represent the urine of average American children, or of average children living under American customs and regime? Does the difference in nationality account for the difference in results as obtained by the investigations cited, and by those of the author. Their cases were all German children and the author's cases were American, though mostly of foreign parentage and living in an asylum. Or, is it merely a coincidence, happening among this small number of children, that they all pass a urine small in amount, concentrated in character? The number of cases is too small to draw conclusions as to the effect of race, national habits and customs of life.

An interesting feature in the table presented was a diminution in the excretion of urea per kilogram body weight at the seventh year to 0.296. During the other years, from three to twelve, the amount of urea per kilogram varied from 0.468 to 0.655.

**DISCUSSION.**

Dr. Christopher was especially interested in the last column in the table presented by the essayist in which he gave the urea per kilogram. He had been in the habit of estimating the amount per kilogram to be 0.5 gram, or $\frac{1}{2000}$ part of the weight of the individual. He called especial attention to the apparently abnormal figure of 0.296 at seven years of age, which was about one-half the quantity at every other age.

Dr. Tyson said that a good deal of the matter of the paper was new to him as far as the discussion of details of the different proportion of the constituents of the urine was concerned, but that there were two points with which he had had some experience. The first was the albuminuria of children. He had not found it at as early an age as any of the ages recorded by the essayist, but commonly at twelve to fourteen years and lasting until twenty-one or twenty-two years of age, when the condition disappeared. The second point was the
quantity in adults. He thought it more often below 1,500 cc. than above it, and from his own observations would report 1,200 to 1,500 cc.

The next paper on the program was "Acute Nephritis of Malarial Origin in Childhood," by Dr. Charles G. Kerley, of New York.

"Albinuria Accompanying Lithemic Attacks," by B. K. Rachford, M.D., Cincinnati, was then presented to the Society. The writer believes that the albuminuria in these cases can only be due to the irritation of the delicate kidney structures of the child, which results from the attempt at elimination from the blood of the poisonous and irritating products which are the causes of the lithemic attacks. He has not infrequently found a small quantity of albumin in infants and children suffering from attacks of acute lithemia. The author considers these cases analogous to the transient albuminurias which occur as a result of lithemic paroxysms in later life. Auto-intoxication is responsible for lithemic albuminuria, whether it occurs at the beginning or at the end of life, and that its prevalence in middle and later life is due to the arteriosclerosis which this same auto-intoxication has developed, and that its prevalence early in life is due to the fact that the kidney at this time is more delicate of structure and more non-resistant than it is later. The comparative infrequency of lithemic albuminuria in late childhood and early adult life is due on the one hand to the better developed and more resisting structure of the kidney, and on the other to the fact that the arterial changes found in old lithemias have not yet had time to develop.

DISCUSSION.

Dr. Caillé had seen a limited number of cases such as the essayist had described, and thought them of great interest. Malaria, however, had to be eliminated before a diagnosis of lithemia could be made. In one of his own cases he found that after the plasmodium was killed the attacks disappeared.

Dr. Rachford said there was no examination made for the plasmodium in his case, as there was nothing to indicate.
malaria. It belonged to a type of cases so distinct there could be no question of malaria.

"Remarks on the Classification of the Anemias of Infancy, with a Report of a Severe Case," by John Lovett Morse, A.M., M.D., Boston. The writer considered the following modification of Monti's classification of the anemias fairly satisfactory:

**Secondary—**
- Mild Anemia.
- Mild Anemia with Leucocytosis.
- Severe Anemia.
- Severe Anemia with Leucocytosis.

**Primary—**
- Pernicious.
- Leukemia.

The essayist regarded the case he reported as an example of severe secondary anemia with leucocytosis. The cause of the anemia was undoubtedly to be sought in the general malnutrition resulting from improper food. The case presented a splenic enlargement, but that this was not an essential feature of the case was shown by the fact that it became smaller as the case progressed, probably finally disappearing entirely.

Dr. Jacobi, after a brief review of the report, thought if it were not for the poikilocytosis in the case he would have called it a case of Hadgkins' disease, but the poikilocytosis characterized it as a pernicious anemia.

Dr. Freeman said he had a case a year ago in which the appearance of the child was much like that of the essayist. There was considerable emaciation, enlargement of the liver and spleen, and considerable anemia with leucocytosis. The diagnosis was not made until autopsy, when an abscess of the left kidney was found. It had produced a waxy liver and a waxy spleen. Tuberculosis was also present.

Dr. Morse, in closing the discussion, thought that in the light of our knowledge of the different forms of white corpuscles shown by differential staining, it was too late to speak relatively of the proportions of white and red in making the diagnosis of leucocytosis and leukemia. The number of red blood corpuscles depends on one factor, and the number of
white blood corpuscles on another. The points corresponding to pernicious anemia were the large number of white blood corpuscles and the reduced amount of hemoglobin. The presence of irregular poikilocytosis in the blood of children was not of as much diagnostic value as in adults.

At the second session, Thursday morning, June 2, a motion was made and unanimously carried that the following letter be sent to Dr. John A. Larrabee, of Louisville:

The American Pediatric Society learn with regret of the serious illness of Dr. John A. Larrabee, and desires to express its sympathy for him and the hope that the life of so prominent a worker in diseases of children may be long spared.

The next paper was "Short Reports on Some Unusual Cases," by T. M. Rotch, M.D., Boston.

(a) Two cases of melanosis lenticularis progressive.
(b) Two cases of intussusception.
(c) A case of cerebro-spinal meningitis.

(c) The history of the patient, a little girl three and a half years old, previous to entering the hospital was such that the diagnosis of no especial disease could be made. A lumbar puncture was made and the diplococcus intracellularis was found and the diagnosis of chronic cerebro-spinal meningitis made. The subsequent course of the case confirmed the diagnosis. The case was reported to show the value of lumbar puncture in cases in which the diagnosis was obscure. At the time the lumbar puncture was made the child seemed to be failing fast, but soon began to improve after a number of remissions of the symptoms which are so characteristic of the chronic form of cerebro-spinal meningitis in children.

(b) In the first case of intussusception, while preparations were being made for laparotomy, he tried hydrostatic pressure by means of a fountain syringe with the usual nozzle, at a height of about four feet, and almost instantly the tumor disappeared, and from that time there were no more symptoms of
intussusception. This case was reported as showing how, under very rare circumstances, a pronounced intussusception can be reduced with very slight pressure, provided, of course, as was probable in this case, the axis of the invaginated portion was in a direct line and no adhesions had taken place. In the second case, hydrostatic pressure at a height of five feet, by means of a fountain syringe, was tried, and the tumor immediately disappeared. Twelve hours later a mass could be felt in the same location as before but not so large. Hydrostatic pressure again caused the disappearance of the tumor, but the same condition returned a few hours later, and the child was looking so badly he was transferred to the surgical ward, where he was operated upon. An intussusception of the ileum into the cecum was found, which had apparently existed for a long time, as the layers of intestine were firmly adherent. There was also a smaller intussusception, apparently recent, which was easily reduced. The larger one resisted all attempts at reduction and was accordingly resected and an artificial anus made. The child died four hours later. This case was reported as illustrating the possibility of an old and a fresh intussusception occurring in combination, and in order that we should avoid giving a too favorable prognosis when a recent intussusception had been reduced.

(a) The two cases of melanosis lenticularis progressiva were sisters, aged six and seven. The lesions appeared in the older sister when three months of age, and in the younger at five months of age. The disease is exceedingly rare, and was first described by Kaposi in 1870, since which time only about seventy-five cases have been recorded up to 1897. The pre-dominance of the lesions is in the exposed parts of the body, and the lesions consist of freckle-like spots of pigment, followed by atrophic degeneration of the skin and telangiectases. These are the primary lesions, and may be followed later by more serious lesions of the skin. The lesions may be single or many; may be confined to the skin or develop in the viscera, and usually lead to fatal results in a few or many years. Both of these cases had had plastic operations, skin grafting, and curetting performed without effect. Various other forms of treatment were tried, the result showing that nothing was of any permanent benefit, and, in fact, there is no known curative treatment for the disease. According to Hyde, most of
the patients succumb to marasmus in from ten to twenty years.

**DISCUSSION.**

Dr. Huber was especially interested in the cases of intussusception, having seen two cases since October, both with tumors and both reduced with the fountain syringe. The first case was seventeen weeks old, and he saw the child about twelve hours after the initial symptoms. No tumor could be found. A high rectal enema allowed a good deal of water to enter, showing the seat of the trouble was high up. The water escaped, but the symptoms did not improve. A laparotomy was done and an intussusception three inches in length found at the ileo-cecal valve. The patient recovered from the immediate effects of the operation, but died six weeks later of some secondary cause. The second case, a child of five months, was seen about fifteen hours after the initial symptoms. He referred particularly to the slight amount of blood sufficient to warrant a diagnosis of this condition. No tumor could be located, yet on laparotomy it was found that the intussusception started at the ileo-cecal valve and extended along the ascending and transverse colon into the descending colon. The high rectal enema had also been tried in this case without result.

Dr. Fruitnight said that last Fall he saw a child about three years old in whom a diagnosis of intussusception had been made by the several physicians present. Operation revealed indications of intussusception, but it had become reduced. In another case, with tenesmus and bloody discharge, the child was relieved by hydrostatic pressure.

Dr. Winters spoke of a case seen in consultation with Dr. Eastman, in which a diagnosis of intussusception was made, and they prepared for operation. Distention was first tried with complete relief. In another case hydrostatic pressure was tried about 10 o'clock in the morning and relief was immediate. In the evening there were symptoms of a return, and the child went into collapse and died. He therefore thought there was some doubt as to the permanency of the result.

Dr. Conner said that some cases were reducible without difficulty, some reducible with difficulty, and some were absolutely irreducible. He heartily endorsed what had been said
about the propriety of the methods adopted. He thought special care should be observed in the use of injections or more harm would be done than good. An operation had frequently to be made after harm had been done in this way and the individual was worse off than if nothing had been done.

Dr. Jacobi, in speaking of the height of the water, said a medical gentleman in New York insisted upon having the water run through a tube exactly fourteen feet long. The gentleman calculated the hydrostatic pressure, as though the baby had an iron pipe in its stomach. Dr. Jacobi thought the injection should be made from the height of a foot or a foot and a half, which, with gentle massage, would accomplish the purpose. The intestine was not in a normal condition, there was often peritonitis, and some times perforation of the gut.

In closing the discussion, Dr. Rotch assured the Society that he did not advocate the hydrostatic method of reducing intussusception, and expected everybody to take exception to it. He thought it should be used with the greatest care, and in some cases death would undoubtedly be caused by rupture. If the intussusception could not be reduced by slight pressure, increased pressure should not be used, because adhesions have then occurred. A small intussusception might be reduced in that way, but he would not advocate it at all as a treatment. His case had simply been one in which the axis of the two pieces of intestine was the same.

Dr. G. N. Acker, of Washington, D.C., then reported a case of (a) "Tubercular Pyelitis, and one of (b) Death From Pulmonary Hemorrhage in an Infant Aged Two Years."

"Sarcoma of the Kidney in an Infant Aged Nine Months," by Frank S. Churchill, M.D., Chicago, was the next paper read.

The child had been apparently well up to the third month of life, when it was noticed that the abdomen on the left side was beginning to swell. This continued, and was especially rapid in the last few weeks. A diagnosis of sarcoma of the left kidney was made. The prognosis was unfavorable, but at the earnest solicitation of the parents an operation was done. The tumor after removal weighed over three pounds. The chief interest of these malignant tumors of the kidney in children,
of course, centers in their etiology. The view generally accepted at present is that of Cohnheim, that they are of congenital origin, and due to misplaced embryonic tissue. He supposes that in the development of the kidney, embryonic cells from the surrounding structures are incorporated in its capsule, and subsequently give rise to a new growth.

**DISCUSSION.**

Dr. Jennings had had a case in which a tentative diagnosis of sarcoma of the kidney was made, in which it had been impossible to find evidence by the presence of leucocytes of splenic enlargement, and it was impossible to find the knots of the spleen. The case had proved, however, to be one of splenic enlargement.

Dr. Jacobi considered the case of interest for several reasons. Those tumors, or rhabdomyomata, containing striated muscular fibres, were very rare. The first case was published twenty years ago. Between that time and 1884, when he presented a paper on the subject before the Copenhagen Congress, five or six such rhabdomyomata had been observed. At that time he had collected some forty cases. That was the first time a differential diagnosis between sarcoma and carcinoma of the kidney had been made. One diagnostic point of importance was that in sarcoma the urine in 80 per cent. of the cases did not contain any blood or any kidney elements. There was no nephritis. There is blood in a large percentage of cases of carcinoma. Another point of interest in this case was that the child died so early. They usually live two, three, or four years. In 1884 the doctor collected cases that had lived nine, eleven and thirteen years. The abdominal glands are generally not affected, which was the reason the cases could live so long.

The address by the President, L. Emmett Holt, M.D., of New York, was on "**The Scope and Limitations of Hospitals for Infants.**" The claim of pediatrics to be recognized as a special department of medicine must rest upon the fact that it is devoted to the problems connected with disease in the first years of life. The pediatrist of the future will not be he who is especially interested in whooping cough, scarlet fever, diphtheria, measles, and other diseases which simply occur more
frequently in early life than later, but he who devotes himself to diseases and conditions peculiar to the first three years of life. Hospitals are needed in this department; first, as places of research. The question of the saving of infant life is fast becoming a vital one in social economics. In New York 34 per cent. of the entire number of deaths occur in children under two years, and only 12 per cent. in children from two to fifteen years. In hospitals only can any great headway be made in the solution of many of the problems connected with infantile disease. As places for research, hospitals must be well equipped with pathological, bacteriological, and, if possible, chemical laboratories, in order to work out in the fullest and best way the problems constantly arising in the treatment of acute illness. Second, hospitals are needed for the teaching of physicians and students. The selfishness of those hospital physicians in America in being content to enjoy for themselves the peculiar privileges and opportunities which their positions carry with them, with no thought for their obligations to advance the science of medicine, is unworthy of our profession. Third, hospitals are needed for the training of nurses. It is as impossible for nurses as for physicians to learn how to take care of sick infants in the wards of a general hospital. Fourth, hospitals are needed for the care of such cases as can be better treated in institutions than at home.

One of the chief discouragements is the very high mortality in infants' hospitals as compared with the mortality of ordinary hospitals. It is difficult to determine what a reasonable mortality in hospitals for infants should be on account of the many different conditions which affect different institutions. In 1,217 cases, under one year old, admitted to the Babies' Hospital in seven years, there are 548 deaths, a mortality of 45 per cent. The reasons for this mortality are seen chiefly in the class of patients admitted to an infant hospital. In the deaths referred to nearly one-third were due to marasmus and nearly 10 per cent. to tuberculosis, and many others to diseases almost certainly fatal. Few young infants are brought to a hospital until conditions have grown very serious at home. Many of these are infants whose parents are dead or in hospitals, and who have been cared for as long as possible by friends or relatives. The mortality of infants under one year is high in all cities, even outside of hospitals. Another discouraging factor to many
hospital managers is the expense required. This consists largely in the care and nursing, since the cost of food and supplies plays but a minor part. It is hard to make hospital managers appreciate the fact that the value of work consists not in its amount but in its quality.

In infants' hospitals conditions which affect the nutrition of the patients are of the highest importance in affecting the results obtained and are in fact paramount to every other consideration. The outcome of every acute illness in private practice among infants is determined chiefly by two factors, one of which is the patient's previous nutrition. By far the greater number of those who die, perish because they were previously feeble or delicate. The second factor is how well the patient's nutrition can be maintained during the acute attack. This relates not merely to food and feeding but to all conditions affecting the nutrition,—air, bathing, clothing, and general care. Another striking thing seen in hospitals is the frequency with which one acute attack is followed by a second and this by a third perhaps, until the child is finally worn out. One sometimes sees these things in private practice but they are seldom seen unless hospital conditions are approached both as to the surroundings and the previous condition of the patients. The first condition of success of hospitals for infants is a solution of the problem of nutrition. The things to be considered as affecting nutrition are mainly four: air space, ventilation and airing, nursing and care, feeding.

Air space.—In most hospitals for instance the allowance the allowance is 600 or 700 cubic feet for each bed. The essayist then gave the allowance at a number of different hospitals, varying from less than 400 cubic feet to 2,500 cubic feet. With less than 1,000 cubic feet to each bed the results will always be unsatisfactory in children under one year. For those who are beyond this age a little less may suffice.

The question of ventilation is a different one. No matter how good the ventilation of the ward, infants must be taken from it once or twice a day to an apartment where an entire change of atmosphere is secured. Separate rooms for airing, protected balconies or sun gardens must form a part of the equipment of every hospital if good results are to be obtained.

Nursing and Care.—This is no less important than the conditions already mentioned. Infants need four times as
much care as any other class of hospital patients. Even in the care of infants who are not actually ill, not more than three can be cared for by one single nurse. For those who are seriously ill, one nurse to every two children is the minimum. Infants must be taken from their beds, held, given opportunities for change of position and in most cases for a certain amount of exercise.

Feeding.—To obtain the best results a hospital for infants must have command of every method of feeding; not only the most approved methods of artificial feeding, such as can be furnished by a milk laboratory in the hospital, but with wet nurses for certain special cases.

The diseases and conditions during the first year which are especially suited to hospital treatment are cases of acute pneumonia, empyema, acute forms of gastro-intestinal disease, otitis and its complications, ophthalmia, acute surgical cases, and most cases of eczema over six months old. In all of these acute diseases it is unwise to retain the infant in the hospital after the acute stage of the disease is past, unless the hospital is in the country, and even here in a few weeks the baneful effects of hospitalism are frequently apparent. One of the first and most striking limitations which one encounters in hospitals is in the management of cases of chronic nutritive disorders. Complete restoration to health and vigor of such children in a hospital, although not impossible, is never to be expected.

During the second and third years the results in the treatment of all diseases is very much more satisfactory. With reference to contagious diseases during infancy, great dangers and very bad results are usually seen from grouping many together, where the tendency is so great to the development of bronchial pneumonia. Many of the bad results attributed to antitoxin are simply the effects of hospitalism and were seen years before antitoxin was known.

One of the most striking of the peculiar phases of disease seen in infant hospitals is hospital marasmus. While this occurs most frequently in children already suffering from malnutrition or in those who have previously suffered from acute diseases, it is seen in others who were perfectly well on admission. Some cases show no evident signs of indigestion and may continue to have good, well digested movements from the bowels. This condition is rarely seen except in infants under
six months old and occurs most frequently in those under three months old. It demonstrates beyond any question how injurious to infant life is the atmosphere of a hospital.

Another peculiar condition consists in frequently recurring attacks of disease after a single acute one until finally a chronic condition is reached. This is especially true of the lungs and intestines. Another discouraging thing is the frequency with which children admitted for simple malnutrition or some slight ailment develop in a hospital some serious form of acute disease. Infants should not be sent to hospitals for minor ailments and kept there a long time. The effect of combining sick and well infants in the same ward is most pernicious upon the latter. Hospitals for infants are necessary but they must be conducted with a very definite knowledge of what can be done in them and what should not be attempted.

Dr. W. S. Christopher, of Chicago, then read a paper on "The Fatigue Period in Child Life." With the paper was presented a copy of a fatigue chart intended to represent graphically the readiness with which children at different ages fatigue. The chart, devised by Dr. Krohn, was based upon the measurements and tests of 32,800 children, between the ages of six and seventeen, examined by the following tests: A grip test with the hand dynamometer; a test for voluntary motor ability; muscular sense test; a visual comparison test; meter rule test; and an auditory memory test. The essayist had been struck with the frequency of dilatation of the heart between the ages of seven and ten years. The chart indicates that at about this period of life there is a definite tendency to fatigue. Dilatation of the heart is most common, probably, at the age of puberty, when the fatigue curve is high. The essayist was unable to offer any reason for the existence of the fatigue period. Its causes seem extremely obscure.

DISCUSSION.

Dr. Jacobi thought there were more changes taking place in that time than the changes to the heart. The subject was first studied by a sculptor who measured very carefully, and from his statements it appeared evident that the bones were liable to grow considerably out of proportion to the growth at
any other year. He thought that the low urea figures might also have something to do with the fatigue period.

Dr. Forchheimer said it had been worked out that cerebral inhibition began to manifest itself between six and eight years of age, as compared with the lack of inhibition during the years before, and thought possibly that might have something to do with the working out of the tests. He was interested in the tests given by the doctor, but was a little afraid of the physiological psychologist and more afraid of the psychological physicist.

In answer to the question by Dr. Rotch, as to what his rule for dilatation was at that age, Dr. Christopher said he called the heart dilated when the heart dullness can be made out first with great distinctness, second, above the border of the third rib and with the apex beat at the mammary line or at the left of the mammary line and associated with clinking sounds on the part of the heart itself, there being, of course, absence of lesions of the valves themselves. Dr. Rotch thought seven years a little early, but believed that during that period of childhood there was a physiological hypertrophy with relative dullness along the middle third of the sternum. According to his examinations the appearance of dilatation Dr. Christopher spoke of was exceedingly rare. He thought perhaps the rapid growth of the heart and its corresponding weakness at that period might account for the fatigue at that age. In closing, Dr. Christopher said he did not quite agree with Dr. Forchheimer that physiological psychology was to be distrusted altogether.

Dr. C. G. Kerley, of New York, then presented "A Report of Seven Cases of Laryngeal Diphtheria Treated With Antitoxin—One Death," and a report on "Three Cases of Amaurotic Idiocy," was read by A. Jacob, M.D., of New York.

"Irrigation by Submersion in the Treatment of Empyema," by Samuel S. Adams, A.M., M.D., Washington, D.C. The essayist gave an interesting account of the discovery of this method by Zeman. His reasons for preferring this method are:

1. It is simpler, cleaner, easier, and in the ten to fifteen
minutes that the patient is sitting in the bath he will be washed out 200 to 300 times—not three to four times.

2. Much economy is caused in dressings, as by removing the thickened matter from the pleural surfaces there will be less irritation and the production of much less pus.

3. The baths improve the general condition of the patient causing better metabolism. In irrigation fresh water is constantly used; but as the pus and other products are heavier than water they fall to the bottom of the tub, while the upper portion of the water remains unpolluted.

The essayist reported the following case in which this method of treatment was employed.

Mary M., aged eight years, Italian, was admitted to his service at the Children's Hospital, November 4, 1897. The following meager history is all that could be learned from her mother and a woman who accompanied her, owing to their inability to understand and speak English.

Father and mother living and in good health; family history does not show any transmissible taint. Five months ago is said to have had pneumonia of the right lung, and has never recovered her health since the attack. Appetite is fair; patient constipated; cough has been almost incessant; occasional fever at night, and sweats. An abscess on the anterior aspect of the chest at the third interspace, to the right of the sternum, has appeared within the past five days.

Patient was placed on the table at the clinic and the following notes taken: Emaciation marked; features pinched; slight icteric hue of skin; cutaneous veins distended; pulse weak and thready. An abscess about four inches in diameter is situated just to the right of the sternum between the second and fourth ribs. Its covering is very thin, and its walls relax with each inspiration and become tense with expiration. Respirations are accelerated, but there is no dyspnea. Flatness over entire chest anteriorly and posteriorly. Vesicular breathing absent. Bronchial breathing and voice anteriorly and posteriorly, but feeble and distant. Vocal fremitus almost absent. Bulging of intercostal spaces on right side. The diagnosis was clear. A free incision was made into the abscess, when more than a pint of greenish pus escaped, and continued to do so with eachexpiration. A dressing was applied, and she was transferred to the Surgical Service for operation.
November 8, Dr. J. F. Thompson resected about two inches of the seventh rib in the right axillary line. A large quantity of pus escaped. The pleural cavity was thoroughly irrigated through the upper and lower openings, a drainage-tube having been inserted into the latter. Her condition improved slowly, and the physical signs of the normal chest were returning, but the profuse discharge continued in spite of thorough daily irrigation.

November 20 it was determined to place her in a bath of boiled water at 100° F. for fifteen minutes, after the method of Zeman. The cleansing was complete. With every inspiration the water would run into the two openings and, with expiration, would return laden with pus, which would sink to the bottom. Her entire body was kept under the water until the expiration gave out clear fluid, the time varying from ten to twenty minutes. At first a daily bath was given, and then one every other day until she recovered and was discharged, the former January 1, and the latter February 21, 1898. She preferred the baths to irrigation with the syringe. Sixteen baths were given, extending over three weeks. At the time of her discharge she was a rosy, robust girl, with a normal chest and normal chest sounds.

Having witnessed the thoroughness of this method of irrigation and the comfort of the child while reposing in the warm bath, he recommended it in cases of empyema in which an opening of sufficient size to enable free ingress and egress of the water is made. It is a matter of choice which antiseptic, if any, is to be used, but care should be exercised in employing those which are easily absorbed. Boiled water or a saturated solution of boric acid will be sufficient in most cases; the latter, however, would add greatly to the expense. The bath is prepared in the same manner as it is in the Brand method, and the water should be kept at a uniform temperature, 100° F., by adding warm water from time to time. There is no chilling, so the patient may remain in the bath several minutes after the water is returned perfectly clear.

"Two Cases of Insolation in Infants," by Irving M. Snow, M.D., Buffalo, was the last paper read.
The Causes and Treatment of Habitual Constipation in Infancy.—Dr. Thomas S. Southworth read a paper with this title. He said that from being regarded as a disease per se, amenable only to drugs, constipation had come to be looked upon as due to various functional disturbances of the organism. Much had been written from a theoretical standpoint regarding the peculiar anatomical conditions found in the sigmoid flexure, but his own observations on this point had led him to the opinion that their bearing upon the occurrence of constipation had been greatly exaggerated. Among the prominent causes of infantile constipation are deficient muscular power, disturbed peristalis, and altered consistency of the fecal masses. To these must be added the absence of voluntary effort in the infant. The speaker said that constipation in most fairly nourished infants yielded readily to a simple treatment which was largely dietetic. The fecal masses themselves should be inspected, dissolved and broken up by the physician, and in some cases even subjected to chemical analysis. We should have more extensive analyses of the healthy, normal stools in the different periods of infancy so as to establish the variations within the limits of health. It had been shown that the milk of the nursing mother could be materially modified. The percentage of fat and the total quantity of the breast milk are the chief factors to be considered in connection with the subject of constipation. Too high a proteid percentage apparently produces looseness of the bowel and colic. The quantity of the mammary secretion could be increased by giving the mother more fluid food, such as cow’s milk, cocoa, thin gruels made from cornmeal and well cooked flour. The extracts of malt increase the quantity of fat. Regurgitation by the infant of small quantities of milk after nursing usually indicates that the fat percentage has been increased too far. If the constipation be coincident with stationary weight, supplementary feed-
ings are indicated. The stools would be found made up of small, firm scybala which, when broken up, are found to contain no curds, and seem to be well digested. A constipated child may show a fair gain in weight. Good results sometimes follow the addition of cream to the dietary given before each nursing, when the stools are dry and hard. Regulation of the mother's bowels should be undertaken, and occasionally assists in remedying infantile constipation. The commonest errors in diet leading to constipation are the giving of insufficient fat or proteid, or an excess of proteid. This insufficiency may depend upon excessive or insufficient dilution with water. Many children who thrive to all appearances on commercial condensed milk are constipated in spite of the large quantity of cane sugar present, because, as usually diluted, the fat and proteids are very low and the unabsorbed residue very small. The deficiency in the proteids results in a poor development of the muscles of the abdominal wall and of the intestine. To increase the amount of condensed milk is to increase proportionately the amount of cane sugar, which is not always advisable. The alternative is to change the food or to add a teaspoonful of cream for each teaspoonful of condensed milk. The same difficulty might arise where plain milk was given much diluted with water, and might be remedied by increasing the quantity of milk by adding cream or by the use of "top milk." The addition of both fats and proteids proves the most serviceable in the larger number of cases. One part of condensed milk represents only 2½ parts of ordinary milk. An error met with very commonly in artificial feeding is that of giving plain milk too little diluted. If dyspepsia does not ensue, there are usually colic and constipation, the stools being hard, and when broken up, showing undigested casein. The proper dilution of the milk and the addition of cream will usually remedy the constipation. The use of well cooked oatmeal gruel or jelly may sometimes be of service as a diluent for the milk. Certain non-alcoholic preparations of malt may occasionally be beneficial. The juice of half an orange may sometimes be given, twice a day, in the intervals of feeding, although it sometimes gives rise to troublesome urticaria.

Two special types of constipation remain to be considered. The first of these is the rhachitic, in which the diet must be regulated and the starchy elements reduced; the second, or
that form of chronic intestinal indigestion characterized by large, light colored stools of the consistency of putty. The influence of habit in securing regularity of evacuation from the bowel has long been recognized, but is often not sufficiently appreciated. It has been found that if very young infants are placed over a warm chamber at regular intervals after feeding they will very quickly be induced to have regular evacuations. It is important that children old enough to sit at stool should be provided with a support for the feet, otherwise the abdominal muscles cannot be properly brought into play. Abdominal massage would be found peculiarly useful in training the bowel to act at definite periods. The child should be laid on the back and the warmed hand introduced from below upwards underneath some light covering. The tips of the fingers should then be carried from the ileo-cecal region in small circles up to the transverse colon, then across and down along the descending colon to the region of the cecum, and then the process should be repeated beginning at the same point as before. If the fingers are warm and the pressure is very light the child is not apt to cry. Five or ten minutes of such massage once or twice a day would usually be sufficient. No lubricant should be used, as it is desirable that the tissues underneath should be moved. At the conclusion of the seance, the child should be placed upon the chamber. When there is crying with defecation, and sometimes in its absence, anal fissures should be sought for.

Dr. Southworth said that in his experience it was exceedingly rare to find a child who is artificially fed whose constipation cannot be remedied by an intelligent modification of the diet. At the beginning of the treatment the intestinal tract should be gently but thoroughly evacuated. For this purpose he preferred calomel in divided doses. It might be necessary at first to make daily use of mild laxatives during a gradual increase of certain elements in the previous diet, or the addition of new substances; but the laxatives should be reduced as soon as possible. Tablets of rhubarb and soda, of each 1½ grains, made up with oil of peppermint, may be dissolved and given two or three times a day, especially in the cases dependent upon disturbed peristalsis. In some cases the fluid extract of cascara sagrada, in doses of one to four minims daily, would answer well. The fluid preparations of malt were also effici-
ent laxatives, either alone or combined with cascara. Cod liver oil is a peculiarly serviceable remedy in those cases dependent upon poor nutrition, in which the addition of fat is indicated. In rather older children, where a more decided action is necessary, more active drugs might be required. For comparatively short periods enemata may be employed with advantage, but they are extremely liable to abuse. When used occasionally they may be large, but when used daily, the smallest quantity that would secure an evacuation should be employed. Experience seems to show that cold injections excite more energetic contractions of the bowel than warm ones. Saline solution is less irritating than plain water. One teaspoonful of glycerine to a tablespoonful of water would be found an excellent means of securing a proper evacuation. Gluten or glycerine suppositories are useful, but medicated suppositories, when necessary, should be made of cocoa-butter, and the proportion of ingredients controlled by the physician's prescription; they should not be made up with glycerine.

Dr. A. Jacobi said that the paper was a good digest of what was known regarding the relation of infant feeding to infant digestion. The author's conclusions, as far as modifications to the diet were concerned, were also rational, and, he believed, agreed with what most practitioners had found to be true. According to his own experience, a high proteid percentage did not give rise to diarrhea unless it had before excited constipation. Constipation of almost any kind, and particularly this variety, shows a large amount of cheese in hard, bullet-like stools. The truth of this statement could be easily determined by experience. A diet of proteids could, therefore, only relieve constipation by giving rise to diarrhea.

Regarding the action of cod liver oil, he would say that if cod liver oil acted in infants only as a food, it could be replaced by other fats, such as cream. We knew, however, that its effect was different and more beneficial than that of any other fat. He believed that chemistry would eventually show that cod liver oil contains substances comparable to what are now termed "internal secretions"—in other words, it was not simply a nutrient, but a specific remedy in a great many cases. He saw no reason why the intestine should not be washed just as regularly as the external integument. An enema need not
be retained for any length of time; it should be given only to secure an evacuation of the bowel. He saw no reason why enemata should not be given for weeks or months or years; he certainly preferred them for securing an evacuation to the use of medicine given by the mouth. The addition of glycerine and soap and other substances to enemata made them irritating, which was an entirely different matter.

Regarding the anatomical peculiarities found in the intestine of the infant, Dr. Jacobi said that this important subject had been dismissed very summarily in the paper in a few words. The title of the paper included "the causes" of infantile constipation. If he had to classify the causes of such constipation, he would state that it is caused either by the condition of the intestine or the condition of the abdominal wall or that of the contents of the bowel. He was not one of those who believed that the bowels had little to do with the development of constipation. He had long ago called attention to the existence of a congenital constipation—a topic which did not yet appear in all the text-books. In the intestine of the fetus and of the infant there would be found an anatomical condition which gave rise to constipation of greater or less duration. This usually lasted only a year or two, but might last a number of years, or even a lifetime. The colon of the fetus and of the newly-born infant is about three times as long as the body of the infant; the colon of the adult is about twice as long as the body of the adult. On the other hand, the ascending colon and the transverse colon of the infant are very short; thus the excess of that colon must be covered by the length of the descending colon. Any one could convince himself of this by opening the abdominal cavity and determining by actual inspection that this was the condition present. Instead of one sigmoid flexure, as in the adult, there is a very long one, and sometimes two or three sigmoid flexures, one covering the other. Sometimes this flexure would be so greatly developed as to be found in the right side. More than forty years ago a French surgeon had insisted upon performing the operation for artificial anus in the young infant on the right side instead of the left, because of this condition. The length of the colon is the cause of the dessication of the feces. In the newly-born infant the colon is also quite narrow. These conditions give rise to a discontinuation of the downward
progress of the feces, and hence the dryness and the constipation. He had described a case in which he had felt compelled to make an artificial anus in a newly-born infant. There was no passage of meconium, and the child was vomiting. The operation was done and the child died of peritonitis. The autopsy showed that the diagnosis was erroneous. There were three sigmoid flexures, one covering the other, and the feces of the upper part compressing the inner part.

The treatment of these cases of congenital constipation on general principles would prove disappointing; one must not expect a cure until the normal development of the colon had been completed. This form of constipation requires the daily use of enemata. It would save much medication and trouble, and probably much ill health to the baby. The anatomical development of the colon often did not reach its full development until the sixth or seventh year, and consequently this form of constipation often remains until that age.

When a baby, nursed at the breast with breast-milk, of normal appearance and quantity, is constipated from the very beginning, there must be a congenital condition giving rise to the constipation. Daily enemata constitute the appropriate treatment of this condition. Rhachitic babies are usually quite rotund in appearance, though somewhat more pale and flabby than usual. When two or three months old these children usually begin to suffer from constipation—indeed constipation is often the first sign of rhachitis. The differential diagnosis between rhachitic constipation and anatomical or congenital constipation is, therefore, easily made.

The intestine may be influenced at a very early period in such a way as to give rise to subsequent constipation. Sometimes the intestine would be found a little constricted—indeed, certain portions might be said to be normally narrowed. Such conditions might, of course, very easily give rise to constipation. Another factor was ill-development of the muscular coat in portions of the intestine. This is the kind of constipation that may be helped by injections or massage. But there is another local impediment of great importance, not in the very young infant, but in late infancy and early childhood—i.e., peritonitis. When diarrhea lasts long in young infants it would never be confined to the mucous or submucous tissue, but it would penetrate to the serous membrane and cause peri-
tonitis. Such localised peritonitis will, in time, lead to habitual constipation.

Dr. Floyd M. Crandall said that constipation was a subject in which it was comparatively easy to talk wisely, but very difficult to act wisely. Generalizations were easily made, but in the individual case it would be found very difficult to determine the cause or causes at work. There were two general reasons for failure in the treatment of constipation. The first one was that chronic constipation is a persistent condition and hence could not be cured by spasmodic and irregular treatment. The treatment must be carefully planned and systematically carried out. The second cause of failure was the complexity of the etiology of constipation. There were comparatively few cases which were not the result of a number of causes, and hence, little aid could be expected from the use of one remedy or one measure. Undoubtedly the addition of fat to the food often relieves constipation, but there were many other things which usually require attention. He recalled a case of long-standing constipation, in which a complete cure had been effected by the use of cold water between meals, but an attempt to follow out this treatment in any large number of cases, he said, would only result in disappointment and failure. The increase of the fat in the food would often lead to disturbance of the stomach. The successful treatment of constipation, therefore, consists in the use of a number of remedies and measures, and carrying them out according to a recognized plan.

Dr. Leroy M. Yale said that he felt very much like the last speaker regarding the treatment of the particular case. He did not feel that high proteids generally caused diarrhea, unless they had first set up intestinal catarrh; on the contrary, a high proteid percentage was more apt to lead to constipation. In a general way it might be said that sugar is laxative, but this statement would really apply only to the coarse forms of sweets. Molasses, undoubtedly, is laxative, but refined sugar is not very commonly so. The sugar often causes fermentation, over-distention of the intestine, and constipation. As a rule, the physician could not show a distinct connection between the tendency of the child to become constipated and
the constipation of the mother, but it was often due to the fact that it was difficult to get the children to take certain articles of diet. Different members of the same family would show remarkable differences in the effect of the same articles of diet. He agreed with Dr. Jacobi about the enema; he had lost his fear of it. It was true that the enema was often used needlessly, and that the mere insertion of the nozzle of the syringe would give a sufficient hint to secure the desired result. A matter of some importance is the proper position for defecation. The child is often put on a seat much too wide for it, and the flabby nates are crowded together and the evacuation interfered with. He knew of one case in which a child would not have a movement on the commode, but would get up and run to some other part of the room and there promptly have a natural stool. Another cause of constipation in children was the hurrying away to school in the morning, without taking time to go the closet.

Dr. Southworth, in closing the discussion, said that he had desired to emphasize the importance of training the bowel of the infant from birth, to regularity, the adaptation of the food to the individual child, and the giving of as little medicine for constipation as possible. He had made the statement that he thought the question of anatomical or congenital constipation had been over-estimated because he had found many practitioners who seemed to think that this was the chief cause of constipation in infancy. Personally, he believed that constipation resulted from this congenital condition only in a comparatively small percentage of cases. It was only by the study of the individual case, and the use of different measures, that success would be achieved in the treatment of constipation.

Clinical Results With Anti-Streptococcus Serum.—Dr. Louis Fischer read a paper with this title. He said he had first seen the serum used clinically by Baginsky in 1896, in doses varying from 10 to 70 cc. of Marmorek's serum in cases of scarlet fever. His own experience with this treatment comprised nineteen cases of scarlet fever and erysipelas, mostly the former, and one of puerperal septicemia. The only case which recovered was one in which there was good reason to
believe recovery would have ensued without the use of the serum. Severe cardiac depression was noted in seven of the cases. It responded easily to the usual cardiac stimulants, such as nitro-glycerine, but, in some instances, lasted for several days. No ill effects were noted which seemed to have been directly due to the serum. After detailing the clinical histories of these cases, Dr. Fischer concludes that the general use of the Marmorek's serum should be prohibited until its exact therapeutic value shall have been determined.

Dr. Henry Dwight Chapin said that he had never seen any indication for the use of this remedy in scarlet fever, and as the disease was of such a very variable type, a very large number of good results from any remedy would have to be obtained to be at all convincing. In the cases in which he had seen the serum used at the Willard Parker Hospital, most of them had died, although apparently the fatal termination had no direct connection with the serum. A number of abscesses followed the use of the serum. After trying it in eight or ten cases at the hospital, this treatment was abandoned. One objection to it was the large quantity of serum that had to be injected into a child—10 cc. Some years ago, following the lead of a German author, he had studied the effect of injecting large quantities of serum in children suffering from marasmus. He used for this purpose plain sterilized horse-serum. All of the cases did badly. He was then reminded of the fact that the transfusion of blood had been abandoned because of the bad effect on the kidneys. He had consequently begun to experiment on guinea-pigs and on a large sheep by injecting into them large quantities of horse-serum. In all of these animals the kidneys showed cloudy swelling, but in the few instances in which he had used a control animal this swelling was not observed. From these experiments he felt that serum could not be injected frequently and in large quantity without some danger.

Dr. W. H. Park said that in diphtheria antitoxin the bacilli could be grown just as well in the antitoxin serum; on the other hand, the streptococcus serum was almost entirely a bactericidal serum. A very virulent streptococcus makes no more toxin than one which is not virulent; the ability to grow
alone is what makes it virulent. Unfortunately the serum is yet weak, but it is surely a protective serum. The streptococcus serum at times deteriorates very markedly. The experiments at the health department laboratory show that the serum produced there did protect rabbits from septicemia when given in sufficiently large doses. If, however, a rabbit became so septicemic that the streptococcus could be obtained from the blood, the result of the injection of the serum would be negative. It was important to remember that the streptococcus serum cannot be of any value except in streptococcus inflammations. For this reason such serum could not be considered to be of any benefit in scarlet fever, except when complications seem to indicate infection with the streptococcus. He recalled a number of cases of scarlet fever of a mild type, which had been treated at the Willard Parker Hospital with the serum, and had apparently run the usual course of this disease. In diphtheria only the secondary inflammations were due to the streptococcus, and as many other germs were also ordinarily active, it did not seem that this opened a field for the use of the streptococcus serum. In cases of peritonitis, the difficulty was to make the bacteriological diagnosis, and hence, without a culture showing the streptococcus, there did not seem to be any prospect of good resulting from the use of the serum. In four recent cases of septicemia occurring in the service of Dr. W. G. Le Boutillier, at the J. Hood Wright Memorial Hospital, the serum had been used and the cultures had shown the presence of the streptococci. One of them was a case of compound fracture of the bones of the forearm in which amputation was necessitated by septicemia; another was a case of peritonitis following rupture of the vermiform appendix; a third was a case of peritonitis following hematocele. The opinion of those at the hospital was that the cases had been favorably modified by the serum. In another case, one of erysipelas, in which the streptococci were found, a favorable result had been secured. The experience at the laboratory made it certain that a great variety of streptococci were affected by the streptococcus serum.

Dr. S. H. Dessau said that the streptococcus serum had been recommended quite enthusiastically in acute ulcerative endocarditis by one observer, who had not obtained favorable results with the serum in other conditions.
Dr. Edwin Rosenthal, of Philadelphia, said that the serum was not given in scarlet fever or diphtheria, or erysipelas for these diseases, per se, but to combat the results of infection with the streptococcus. In the majority of cases in which he had taken cultures in scarlet fever he had found streptococci and staphylococci. He would use the serum only in scarlet fever, puerperal fever, and erysipelas. He had employed the serum personally in two cases of scarlet fever, using a dose of 50 cc. in one, and of 20 cc. in the other. Both recovered. He did not favor the use of the serum in pneumonia.

Dr. J. J. Concannon said that he had not had any personal experience with the anti-streptococcic serum, and had not felt disposed to use it because he could not accept the theory upon which this treatment was founded. When the system was invaded with streptococci there was a double problem, due to the co-existence of a toxemia and a septicemia.

Dr. William H. Thomson said that his use of the serum in infection after typhoid fever had yielded negative results. He had had one interesting experience with it, however, in a case of chronic ulcerative endocarditis. After much careful clinical observation of the patient it was finally decided that this diagnosis was correct, and in time an examination of the blood by Dr. James Ewing showed the presence of numerous streptococci. The patient's condition gradually grew worse, the rigors becoming more severe and more frequent. At such times albumin and blood corpuscles would be found in the urine. In view of the practically hopeless prognosis, founded on the usual methods of treatment, it was thought proper to give the antistreptococcus serum a trial. The serum used was obtained through Dr. Park, of the Health Department, and was freshly prepared. The injections were made by Dr. Robert C. Kemp. At first, the injection of 10 cc. morning and evening did not seem to have any effect. On the second day, 15 cc. were given in the morning, and 10 cc. in the evening, with like result. The urine was then noticed to be diminishing in quantity. The next day, 20 cc. were given in the morning, in the afternoon there was retention of urine, and the latter was bloody. Ten cubic centimeters were given that evening. The next morning about 10 A.M. the dose was repeated. There
was then suppression of urine. The man had passed only 11 ounces of urine in twenty-four hours. After the use of injection of saline solution, per rectum, forty-two ounces of urine were voided, and the urine was not so bloody. The rigors continued, and the temperature reached 105° F. and over. Altogether the man received nine injections of the antistreptococcus serum, amounting to 145 cc., in the course of seventy-two hours. The urine again diminished in quantity, the patient became comatose, and death finally supervened. The occurrence of bloody urine within thirty-six hours after the beginning of the injections was interesting on account of its possible relation to the serum treatment. Experiments were accordingly made at the physiological laboratory of the College of Physicians and Surgeons on eighteen dogs and twelve rabbits. It was accidentally discovered in this way that etherization had a specific effect on the kidney, amounting to total suppression if pushed beyond a certain point. Chloroform had no such action. It was also noted that when 20 cc. of streptococcus serum was injected there was a fall in the blood pressure in the kidney, and that when 40 cc. were used, it caused hematuria and hemoglobinuria, preceded by albuminuria and followed by suppression. One dog having been inoculated with the streptococcus and then treated with the antistreptococcus serum, the dog recovered, and the kidneys regained their normal function. When the streptococcus serum was given in divided doses, there were would be albuminuria, but not the serious results above noted.
Arsenic, although recommended by some authorities in the treatment of scrofulous children, can not be said to be largely used for that disease. The usual remedies for scrofula in children are the iodides. However, Dr. Rousseau is dissatisfied with the efficiency of these drugs, and claims that arsenic has far more powerful curative effects. In the *Gazette Hebdomadaire* of April 24, Dr. Rousseau has a paper which he communicated to the Academie de Medicine, on the effect of iodide of arsenic in lymphatic and strumous children. We quote a portion of the paper in question: "Such children are not to be considered as affected with tuberculous disease of the bones, nor of the ganglions; but simply as children having a strumous condition, with a tendency to develop such affections as recurrent impetigo, chronic eczema, stomatitis, ophthalmia, chronic bronchitis, with bronchorrhea, chronic enteritis with large abdomen, etc. These children may perhaps be considered as subjects for the development of tuberculosis, but it would be difficult to prove that they are really consumptive. However, the resistance of the lesions to local treatment by means of external applications shows plainly that it is the constitutional conditions that must be treated. If the local affections are treated by means of external applications, they relapse with obstinate persistence at the same place or at some parts more or less remote." Dr. Rousseau employs the iodide of arsenic in water—from one to twenty drops of a 1 per cent. solution may be given daily, according to the age.
of the child, always beginning with the minimum dose and increasing it progressively to the limit of tolerance. Large doses may cause diarrhea, loss of appetite, sleeplessness, nervousness, and other troubles in susceptible children; the remedy should then be omitted for a few days and again resumed in the same way as before. Dr. Rousseau states that the results have been sometimes marvelous, and in nearly every instance satisfactory. Many physicians will join issue with Dr. Rousseau when he contends that scrofula is in no way identical with tuberculosis, but that arsenic may have a beneficial effect on the disease should seem quite probable.

Adenoid Growths in Children

These growths are responsible for more of the complaints of childhood than many people are aware of. If a child suffers from an obstinate catarrh, in nine cases out of ten on examination the cause will be found to be adenoid growths of the vault of the pharynx, and, in fact, the majority of throat, nose, and ear diseases have a like origin. This has been well exemplified in the report of Dr. F. Willcocks, who was sent down recently by the city of London to inquire into the health of the children at the Hanwell Schools. He found that no less than thirty out of the eighty-two examined were suffering from adenoids. Dr. Greville Macdonald, writing on the same subject in the Medical Magazine for May, makes the following interesting remarks: "Every observer must have been struck by the curious fact that the actual amount of obstruction to nasal breathing in a child produces very varying amount of symptoms in different cases. It is not by any means rare to find a boy, and a boy oftener than a girl, I think, the picture of robust health, with perfect hearing, a fully developed thorax, no excessive tendency to cold-taking, even a good runner and football player, and yet with his mouth habitually open, and his sleep broken only by his school fellows' shoes and other
missiles, gentle hints that he should modify his furious snoring. Such a boy is, I confess, more liable to ordinary cold-taking than he should be, and may at such times suffer from more or less deafness. Still I maintain that even these are not infrequently absent even with a remarkable quantity of adenoids. On the other hand, we know the other picture: the stooping, thin, and anemic child, undersized, with contracted thorax, and deaf, always in a state of general catarrh, whether of nose, ears, or stomach, taking cold with every change of atmosphere, peevish and capricious in temper, tossing about in sleep, with voracious appetite, but easily fatigued. Such a patient may have either a small or a large amount of adenoids, the amount of buccal respiration may be conspicuous or insignificant; the snoring may be habitual or only noticed when fresh cold is contracted. And yet in the latter case, irrespective of the actual quantity of growth, operation is absolutely imperative, while in the former case the only good reason for interference would be for the sake of improving the articulation; indeed, if this is not very faulty, we should not be erring if we advised the postponing of an operation until symptoms should arise, or if the boy is sixteen or seventeen years of age, waiting to see if nature would not take the case out of our hands by inducing spontaneous atrophy of the growths in the course of the next two or three years." We agree with Dr. Macdonald that in the first case operation is not absolutely imperative, but at the same time it appears that he has overlooked a rather important point, that even though a person be robust and healthy and has adenoids, that in the event of his contracting certain diseases, his chances of recovery are considerably prejudiced by the presence of these growths. Patients, too, with adenoid growths are more liable to contract diphtheria. Taking all these facts into consideration as well as the comparative simplicity of the operation, the wisest course in every case of adenoid growths would seem to have them removed as quickly as possible.
There has been a discussion recently in France as to the color of newly born Negro children. It is probable that scarcely one out of a million white laymen would, if asked this question, be able to answer it correctly. The large majority of the medical profession, too, are ignorant on the point. Not that it is a matter of great moment, but in these days when one's knowledge is expected to be absolutely accurate, it is satisfactory to have even the most minute details made clear. On the authority of Dr. Farabery, whose statement will doubtless be supported by many medical practitioners who have had experience in Negro obstetrical practice. "The Negro baby at the time of its birth is exactly the same color as its white brother, and it shows signs of color only after an interval usually of several days but often extending to many weeks." Some little time ago, says an English journal, there was an exhibition in the Champ de Mars of a Soudanese village, the colony of which numbered several hundred persons as black as ever were born. An eminent French physician saw there an opportunity to settle this vexed question, and he thus expresses his deductions: "The Negro baby comes into the world a tender pink color; the second day it is lilac; ten days afterward it is the color of tanned leather, and at fifteen days it is chocolate. The coloring matter in the case of the Negro lies between the layers of the epidermis. This pigment is semi-fluid, or in the form of fine granulations; in the Indian it is red, and in the Mongolian yellow. It is influenced not only by sun and by climate, but by certain maladies, and the Negro changes in tint just as the white person does.
PRACTICAL NOTES

A Case of Cerebral Hemorrhage in a Child was observed by Thompson. A boy, thirteen years of age, complained of headache and vomiting one morning, while convalescing from an attack of rheumatism. One hour subsequently he suddenly became unconscious, and died one and a half hours later; no convulsions, strabismus, jactitations, etc., having appeared. At the autopsy the meninges were found congested and the cerebral substance of the right temporo-parietal lobe undermined by blood.—Edinburgh Medical Journal.

Abnormalities.—A number of abnormalities were presented by a child eleven months old, observed by Freyberger, the specimen being exhibited by the author. There were present: 1. Two venae cavae descendentes, each paired with a vena azygos. 2. Congenital stenosis of the ostium of the pulmonary artery. 3. Absence of the pars membranacea septi ventriculorum. 4. Origin of the aorta from both ventricles. 5. Potency of the foramen ovale and of the ductus arteriosus Botalli. Death was due to meningitis. No symptoms of a fetal endocarditis were present, drum-stick fingers were absent. The anomaly must therefore be considered as a retarded development during the second month of embryonal life, which is supported by the concomitant anomaly of the great veins of the thorax.

Prolapse of Rectum.—For the retention and cure of simple recurring prolapse of the rectum Dr. Rehn (Frankfort), finds that the repeated momentary cauterization of the anal mucous membrane, at intervals of about five days, with lunar caustic, gives excellent results. After this cauterization has been repeated five to eight times, a cure is generally obtained. The cauterization should be carried out superficially to obtain a momentary effect, which at once results in an energetic contraction of the sphincter.—Dieaerztll Praxis.
Ozena.—The cure of a case of ozena by one injection only of diphtheria antitoxin (Roux, 10 cc.m.) in a child five years old, is claimed by W. Ablow.—Wratsch.

Sarcoma of the Kidney in a child nine months old was diagnosed by Cotton after extirpation of the tumor one and a half years later. Other tumors formed in the abdomen of the child, which died six months subsequently, the autopsy disclosing sarcomatous retroperitoneal lymphatic glands.

Anemia.—A grave anemia in the course of malaria was developed in a child ten months old, observed by Billings. The numerous red cells containing nuclei, did not render the prognosis unfavorable, as they pointed to a regeneration which was going on. The child made a good recovery under treatment with quinine and arsenic. A typical megaloblast was also found in the blood, which, according to Ehrlich, is only present in pernicious forms of anemia; there is, however, in recent times a majority of those who deny the pathognomonic importance of the megaloblasts.
ABSTRACTS

THE INFLUENCE OF TYPHOID FEVER ON THE OCCURRENCE OF PSYCHOPATHIC DETERIORATION IN CHILDHOOD

J. Moses, (Centralbl. f. Kinderheilk., 1898, iii., 56) after a number of typhoid fever epidemics, followed the history of his patients after recovery and their return to school, in regard to their psychic capabilities. He observed in a series of cases changes in the mental condition long after their convalescence. We will probably find the factors, to which these disturbances may be referred, to be the long duration of the fever, the exhaustion produced by a strict diet and insufficient absorption of food, the peculiar action of the poisonous matter taken up by the blood, the destruction of nerve elements, etc.

Thus, some children presented an irritability. A boy 9 years old, who formerly read a great deal or busied himself for a long time with any form of manual labor, had lost all desire for these employments, and continually changed from his books to play. In a girl, 8 years of age, an irritable, whining disposition made its appearance, which was not present before her illness. Two other children, who previous to their sickness had been pleasant, became markedly moody. In all these cases no bodily deterioration occurred, and the intellectual faculties seemed to have been well preserved. One of these children had a neuropathic taint, the others not. There did not seem to be any connection between the gravity or duration of the disease which preceded this change and the psychic weakness. One of these children had suffered from occasional delirium at the height of the disease, another had been unconscious for two weeks, but in none of the others could a marked involvement of the nervous system be spoken of.

Cases of this kind should of course be cared for from a school-hygienic point of view. The preservation of the intelligence must not lead us to burden the scholar with an excess of studies. An even progress of the intelligence cannot be vouched for in the presence of this irritable weakness, a lagging of the intellectual faculties will surely be soon noticed.

Where deterioration of the intellectual faculties appears at once, the matter is clearer to the layman. A distinct retardation in the evolution of the association of ideas, as was observed in one case, is even recognized by the instructor. Deficient concentration of the mind was observed in another case. One child, who had previously had a good memory, suffered from great forgetfulness. This symptom was combined with changes in the area of emotional excitement, denoted by a cross and moody disposition. A girl suffered at home and in school from a dreamy condition during which period difficulty of recollection and inattention
were noted. In these cases also no relation to the duration or the severity of the typhoid fever or any involvement of the nervous system could be demonstrated. The prognosis, if an early recognition of these symptoms takes place and if congenital and other tainted conditions are absent, is not unfavorable, and a retrogradation of the process of degeneration is possible. In other cases there is little hope of improvement, but rather an advance of the psychopathic conditions is noted. The children should at any rate be carefully controlled during instruction, and regard had for their weaknesses, and certain measures for their mental hygiene should be employed. A co-operation between the physician and the teacher must exist.

There are also cases in which the children, after an attack of typhoid fever, happily, recover quickly. In a seven-year-old boy and a fourteen-year-old girl, a marked improvement of the mental faculties made themselves felt after a relatively rapid return of strength, together with a marked increase in bodily weight and height, which was expressed in the boy by increased attention and more rapid comprehension, in the girl by a more rapid course of the ideas of association and by a vivid temperament, which was in marked contrast to her previous bashfulness and restraint. These changes, which were permanent, were probably due to the increase in general well-being and bodily nutrition, caused by an increased ingestion of food.

A CASE OF TETANUS IN CHILDHOOD.

G. Riehner (Corresp. f. Schweizer Aerzte, 1897, xxvii. 684). This case came under the author's observation on August 19. The patient was a female, eight years of age. The family history was good.

The girl began to change her actions on August 4 without any discoverable cause, the previously lively girl began to lay around at times, but in the intervals she showed great bodily and mental activity. She made no complaints and there was no history of an injury, or of being exposed to cold, etc. The appetite remained good, and the temperature normal.

On August 7 she became unable to turn her head and could not open her mouth, but the motion of the limbs remained free, however. Sleep was sound.

On August 9 there appeared an increasing stiffness of the extremities, at the same time continued trismus and stiffness of the neck. On this evening, about eight o'clock, the first paroxysm occurred; frequent jactitation during sleep, loud piercing shrieks, five to six paroxysms during the night, toxic contractions of the face, the arms and legs, accompanied by firm closure of the hands, with perfect consciousness, each attack lasting about one to two minutes; after this, sleep for a time. There was no foaming at the mouth. The patient slept quietly from three to four o'clock in the morning.

attempt was made at an extraction of the tooth, which was rendered very difficult by the presence of trismus. The flexor muscles of the head, the facial, and other cervical muscles, are stiff to the touch.

Condition on August 19: The patient is rather small, lean, but has no hectic appearance, the teeth are rhachitic, the thorax is moderately chicken-breasted, otherwise there are no diseased changes to be found in the bony system, no scrofulous swelling of the glands of the neck, the pupils are even and moderately dilated, reacting somewhat slowly to light, the eye-balls have a normal range, no disturbances of the eye muscles, no nystagmus, the field of vision is not contracted. Vision, hearing, taste, and smell are normal. Sensitiveness of the skin is also present, there is no hyper or anesthetic area in the skin, no rhachialgia. Inspection of the throat is very difficult on account of a nearly complete lock-jaw. There certainly is no angina nor tonsillar hypertrophy present; swallowing is unimpaired, there is no complaint of globus, no struma, no otitis, the organs of the chest and abdomen are normal, neither is there an enlarged spleen, the ovarian region is not tender on pressure, as far as palpation can be carried out, the nearly board-like abdominal muscles. The trunk is in a peculiar condition of stiffness; an attempt to set the girl up in bed gives her a very unpleasant sensation, and is therefore not insisted on. The facial expression of tetanus is present. Percussion of the trunk of the facial nerve or the stroking of some of its branches gives an unpleasant sensation to the patient, does not, however, cause contractions, nor does pressure on the great nerves and vessels of the extremities. The patellar and abdominal reflexes are lost, the mouth can only be opened ½ cm., speech is somewhat indistinct, spasm of neck accompanied by slight opisthotonos, marked stiffness of the arms and legs. The elbow joints are in a state of rectangular flexion, when passive, somewhat firm when flexion is attempted, there is less resistance than when more power is exerted to induce flexion, which can, however, be accomplished. The joints of the hands are more easily movable, both spontaneously and passively, so also are the fingers, with which the patient picks up with ease small articles to play with. The lower extremities lie in extreme, seemingly forced flexion on the bed, with the feet in an extreme equinus position, which does not change on removing the coverlet, and is difficult to abolish even temporarily. Flexion of the knee-joints gives pain, can, however, be passively carried out to about 60 degrees. The masseters and muscles of the trunk are as firm as a board to the touch; those of the extremities somewhat less so. The patient otherwise does not give the impression of a very sick child; respiration is quiet; there is no fever present; pulse 70 and regular; intestinal function somewhat slow. The urine is bright, clear, contains no albumin, no sugar.

Under the administration of chloral and warm baths she made a good recovery, and was discharged as cured on October 16.

TRAUMATISM AND ACUTE OSTEOMYELITIS.

K. GERONNE (Centralbl. f. Kinderheilk., 1897, ii., 302). A boy, while playing foot-ball, was struck on the left foot by the ball, and fell, striking
his left hand. The foot began to swell, and on the following day became painful, as did also the hand. Eight days later the physician in attendance diagnosed osteomyelitis, which showed itself plainly in the parts affected and in a general blood-poisoning. A number of operative measures were resorted to, nevertheless one bone after another became infected, and death resulted two months after the accident.

This case is interesting as affording a striking example of the connection between osteomyelitis and traumatism.

This osteo-myelitis, which may manifest itself weeks or even months after the traumatism, does not depend upon the severity of the injury. That this is the fact, we learn from experiments on animals, which have been injected with staphylococcus cultures, some injury being at the same time inflicted upon the bone. In these cases the contusion resulting from a slight blow is frequently sufficient to cause osteomyelitis. Gussenbauer has demonstrated microscopically that destruction of bony tissue may follow very trifling injuries to the bone.

How, then, is the osteomyelitis occasioned? There are several ways. Excitors of pus, which, by chance are present in the blood, may escape from the latter by way of torn vessels and crushed portions of bone; cocci taking advantage of a favorable point for colonizing, caused by the purulent inflammation of the soft tissues, may pass into the circulation; the patient may have had a previous attacks of osteo-myelitis; and the bacteria being still present encapsulated in the bone, are stirred into action by a new traumatism. It may be that slight abrasions are present, for example on the foot, and these may become the point of entrance for schizomycetes. This latter condition may possibly be one of great importance, and thus account for the frequency with which children are attacked by osteomyelitis, they being more exposed than adults to these germs, and to slight traumatisms.

**ERYSIPELAS AS A SEQUAL TO OSTEOMYELITIS STREPTOMYCOTICA FEMORIS.**

O. Lanz (Correspondenzblatt f. Schweizer Aerzte 1897, xxvii., 395) opened an old osteomyelitic focus in the femur of a child 10½ years old which had never gone on to perforation. As a sequel to the operation, a typical case of erysipelas followed, which extended gradually over the whole limb. L. was able to raise pure cultures of streptococci from cultures obtained from the abscess of the bone. Six days after the erysipelas had disappeared, a deep streptococci abscess made its appearance on the foot. This brief clinical history is of great interest from its bearing on the question whether the streptococcus erysipelatis is a specific microbe. As the excitors of the erysipelas first made their appearance in a bone abscess, occasioned the disease through infection of the lymph pores of the skin at the time of operation, and finally concentrated themselves into an abscess. The case presents a chain of evidence of their non-specific nature.
Although occurring, as it did, in a natural way, it possesses for us the value of an experiment.

CONTRIBUTION TO THE TREATMENT OF THE LATER FORMS OF HEREDITARY SYPHILIS.

V. N. Alexejew (Monatshefte f. pract. Dermatol., 1897, xxiv., 8) presented to the Pediatric Society of Moscow, a child 12 years of age, which had been admitted on July 10, 1896, to the Children’s hospital, complaining of pain, which was by chance discovered to proceed from a tumor in the region of the liver. The father of the child was suffering from tuberculosis, the mother, although denying syphilis, was disfigured by a suspicious flatness of the nasal bone. The patient had previously been healthy, was well-nourished and well-developed, but his mucous membranes were very pale. No trace of syphilis was found, with the exception of a slight swelling of the cervical lymphatics. The liver was markedly enlarged, hard, and could be felt in the mamillary line 6 cm. below the edge of the ribs. The surface of the right lobe of the liver was hobnailed, and on the left lobe were two movable round tumors. Three tumors could be felt below the lower border of the left lobe, and these, as well as the liver, were movable. The liver was sensitive to pressure; the spleen somewhat enlarged; all other organs normal. The absence of cachexia, together with the whole course of the disease, proved that the condition was not due to malignant neoplasms; the only explanation could be found in syphilis. On July 15 the patient began taking potassium iodide in doses of 0.9 gr. daily, and from July 26 to August 30 he was ordered 1.5 gr. daily. Tenderness gradually diminished, the size and consistency of the liver improved, the nodules on the right lobe disappeared, and the tumors on the surface of the left lobe markedly diminished. Two months from the beginning of treatment the tumors had entirely disappeared, and the boy was dismissed as cured.

ON SCROFULOSIS.

Ritter (Allg. Med. Central Ztg., 1897, lxvi. 654). Does scrofulosis tissue contain tubercle bacilli at the outset? This question Ritter attempts to answer by a series of experiments. The result is given by him before the Berliner Medicinische Gesellschaft (1897, vi. 23).

In the first place, the bodies of nineteen scrofulous children, who had died from intercurrent diseases, were dissected; about a dozen sections were taken from each enlarged lymphatic gland and stained for tubercle bacilli, and portions of the bronchial, mesenteric and cervical glands were injected into the abdominal cavity of guinea pigs. Only in one single case, that of a child who died from whooping cough, were bacilli found, and of these only six in fifty sections. There was also present a caseous pneumonia with a moderate accumulation of tubercle bacilli. Further experimentation was made upon living scrofulous children. In 129 cases
of eczema, neither staining nor culture showed the presence of the tubercle bacillus in the contents of the vesicles.

Animal experimentation, which was undertaken in thirty-four cases, also resulted negatively. Forty curetted and fifteen extirpated cervical glands were next examined; in only two cases in which there already existed very great changes in the bones, could tubercle bacilli be demonstrated. The same result followed experiments in animal inoculation. Finally in twenty-three children suffering from multiple suppurative processes of connective tissue, examination of the pus gave a negative result.

From this we may probably conclude that scrofulosis and tuberculosis are not identical, and that the tubercle bacilli are not to be regarded as the instigators of the former. We should ascribe to these bacilli only a secondary role in these cases, and this even if they be found in every case of advanced scrofulosis. The hypothesis of the formation of spores by the tubercle bacilli in scrofulosis is not tenable. We are no more justified in designating as tuberculosis those cases in which single tubercle bacilli are found, than we are in declaring a nurse to be suffering from diphtheria, because we find that there are a few diphtheria bacilli in her oral cavity. That one disease by the changes wrought may easily open an entrance for the excitors of another disease is shown, for example, by the invasion of the streptococci in cases of diphtheria; and it is certain that tuberculosis may be developed on the soil of a scrofulosis, that a slow intermingling may occur, and that there exists a great affinity between the two diseases.
JOHN ALBERT LARRABEE, M.D.
OBITUARY.

JOHN ALBERT LARRABEE, M.D.

JOHN ALBERT LARRABEE, M.D., was born at Gorham, Maine, May 17, 1840. His family was of French Huguenot extraction, and settled in Maine early in the history of our country. He graduated from both the literary and medical departments of Bowdoin College, Brunswick, Maine.

In 1862 he was appointed medical cadet in the regular army after passing a very rigid examination at Washington, and was ordered to report for duty at Louisville, Ky. He remained in Louisville until 1864, when he was granted a furlough that he might return to college to receive his degree of Doctor of Medicine. He graduated with first honors, his thesis being upon the use of bromine in the treatment of hospital gangrene. He returned to Washington for duty, and was assigned to Fortress Monroe until he was ordered to take charge of the transport steamer Atlantic for the exchange of prisoners at Andersonville prison. He was again assigned to duty at Louisville, where he was married in 1865 to Miss Harriet Winslow Bulkley.

He joined the Kentucky State Medical Society in 1868,
and was elected its Secretary in 1872, which office he held until 1874, when he resigned to accept the office of Treasurer of the Society.

On April 5, 1877, he introduced a resolution before the Kentucky State Medical Society to have quinine admitted to this country free of duty. He was heartily seconded in his efforts by the Kentucky State Medical Society. The American Medical Association also took up the question, and by their united efforts they were enabled to have the motion passed by Congress.

In the Fall of 1874 the Hospital College of Medicine, Medical Department of the Central University of Kentucky, was opened with Doctor Larrabee as Professor of Materia Medica and Therapeutics and Clinical Lecturer on Diseases of Children. He was, therefore, one of the first in this country to deliver a course of lectures on this important specialty. He filled these Chairs until 1890, when he assumed the Chair of the Principles and Practice of Medicine and Clinical Lecturer on Diseases of Children. In 1892 he was given the Chair of Obstetrics and Diseases of Children, and was elected President of the Faculty, which position he held until his death, Sunday, June 12, 1898.

Early in his life he showed the broad minded charity which characterized his whole career. Through his unselfish work the Flower Mission undertook to send the sick children of the poor to the country. He identified himself with this movement, and at much personal sacrifice of time and money aided in alleviating the sufferings of these unfortunate little ones. Out of this work he gradually developed the Children's Fresh Air Steamboat Excursions, which were permanently organized in 1881, and which he personally conducted every Summer. These excursions have become the leading Summer charity of the city, and no one, who has noticed the affection and love that these children showered upon him, can fail to realize what a loss to the city his death will prove.

He took a very active interest in the Home of the Innocents when it was established in 1879, and was elected medical director and attending physician.

He was responsible for the foundation of the Childrens' Free Hospital. It had long been his desire to establish a hospital for sick children, and owing to conditions arising at
the time of the cyclone in Louisville he was able to realize his idea in the establishment of the Childrens' Free Hospital. He took a very active interest in its affairs at all times, though he did not care to be directly connected with its management.

He was one of the charter members and an Ex-President of the Louisville Medico-Chirurgical Society; he was one of its most active and energetic members, and his papers and discussions added materially to the scientific value of its meetings.

He rarely failed to attend a meeting of the Kentucky State Medical Society, and was a delegate from this Society to the Ninth International Medical Congress which convened in Washington in 1887, and also a delegate to the International Medical Congress which met in Berlin in the Fall of 1890. He was twice President of the Pediatric Section of the American Medical Association, and it has often been stated that he was instrumental in establishing this very important Section. He was President of the Section on Pediatrics at the Semi-Centennial Meeting of the American Medical Association held recently in Philadelphia.

As a physician, Dr. Larrabee had few peers; gifted with remarkably keen powers of observation, with a mind on the alert for every symptom, his knowledge of diseased conditions seemed almost intuitive. That he was naturally fitted for his life's work is attested by his large practice and by the frequency with which he was called in consultation. His success in the treatment of diseases of children was wonderful, but was in part explained by the love which he bore to children and which was felt for him by all children. Full of life and vigor, he entered the sick room with such a sunny disposition that it robbed sickness of many of its terrors. Many a sick child has learned to watch for him and for the roses which he brought to gladden the sick chamber.

As a teacher he was peculiarly gifted. His enormous clinical experience for many years, aided by his trained powers of observation, enabled him to diagnose most conditions with accuracy. Who that has heard him can forget the smooth flow of language, the vivid imagination, the vivacity and eloquence that could hold us spell-bound? He always taught that diseases were conditioned by the constitutional tendencies of each patient, and impressed upon all his firm faith in thera-
peutics. His faith in drugs was well founded, for he was exceptionally successful in his treatment.

His genial nature rendered him very attractive to his students. He was always glad to advise with them in their cases, and took a deep personal interest in the welfare of his classes.

The medical societies and conventions will miss his scientific papers and his apt and pointed discussions. He was never a laggard, but always took a prominent part in all society work. His graceful flow of language and the intensity of his convictions enabled him at all times to gain the attention of his audience. But it was at social gatherings that his wit sparkled and scintillated as it clashed with others, and no supper was complete unless he had told a story or read a poem.

In these days when a commercial spirit begins to dominate our profession, his example should be an inspiration. He listened to the cry of the poor and suffering, even when sick himself, and never refused his aid and help.

Philip F. Barbour.
ORIGINAL ARTICLES

INTUBATION OF THE LARYNX.*

Report of Fifty Cases.

By Frank W. Wright, M.D.,
Health Officer,
New Haven, Conn.

The perfection of intubation of the larynx by the late Dr. Joseph O’Dwyer after years of patient labor and unceasing care, marks a bright epoch in the treatment of laryngeal stenosis that can never be eclipsed by any future invention. He states in an article entitled, "The Evolution of Intubation," which was read before the American Pediatric Association at the Montreal meeting in 1896, and published in the June number of the Archives of Pediatrics for the same year, that, "complete failure with tracheotomy in the New York Foundling Hospital extending over a period of several years was the real incentive to the work."

Too much honor cannot be given to the man who has done so much to diminish the suffering of infancy and childhood, who labored so many years on lines entirely original as far as he knew, and who, when he learned that another had attempted to relieve obstruction of the larynx by a tube, refused to look up the literature of the subject for fear he might be discouraged by the failure of his predecessor. His great work in conjunction with the more recent diphtheritic antitoxin serum treatment has now robbed diphtheritic laryngitis of its terrors and so revolutionized the results of treatment that instead of a mortality of at least 90 per cent., we now, under favorable conditions, expect as high a percentage of recoveries. Indeed, intubation is now done to the almost entire exclusion of tracheotomy. This latter operation is not now performed in any of the public institutions or in private practice except when an

* Read before the Connecticut Medical Society, May 26, 1898.
intubationist is not at hand or except when intubation has
failed to give relief on account of the membrane having ex-
tended beyond the reach of the tube.

The advantages of intubation over tracheotomy are that
the former is more quickly done, there is no cutting and is con-
sequently more readily consented to, does not require trained
assistants or trained nurses, can be done without special prepara-
tion, and there is no wound offering a point for fresh infec-
tion, which requires careful attention long after the original
trouble has disappeared. As I have said, a trained nurse is
not necessary. Any intelligent person who is used to the sick,
who will minutely follow instructions, and can put herself in
touch with the little ones will do, but, when it is practicable, a
trained nurse is to be preferred.

It must be borne in mind that, notwithstanding intubation
has given very gratifying results, it is a serious surgical opera-
tion and should be practiced only after due consideration and
the certainty that dyspnea is so great as to threaten life. On
the other hand, it should not be delayed until the little patient
is exhausted. The better the physical condition, the more
favorable the prognosis.

The technique of the operation is as follows: The tube is
selected according to the age and size of the patient, and a
piece of braided silk is passed through the eye in its head.
This should be long enough to extend several inches beyond
the mouth after the tube is in the larynx. The object of this
is to withdraw the tube should it be necessary either from its
being plugged by membrane or having failed to have entered
the larynx. Two assistants are necessary, a physician and a
nurse, if practicable, yet any intelligent person will do who
will follow instructions and not get excited. The patient is
then wrapped in a sheet, carefully pinned so that the arms can
not be raised. If this is neglected the child is almost sure to
get its hands free, catch the string and undo the work. The
patient is then placed in an upright position on the lap of the
nurse, the head resting upon her left shoulder, her limbs hold-
ing those of the little one. She then with her hands holds the
arms and body as still as possible. The assistant, standing
behind and to the left of the nurse, places a hand upon each
side of the child's head, holds its immovable and in a line with
the body. The operator, sitting so as to directly face the
patient, inserts the mouth-gag and gently opens the mouth as wide as possible. As the gag is self-retaining, it is not necessary for the assistant to touch it if carefully adjusted. When the child has no teeth it is not necessary to use the gag. The left index finger is then passed along the tongue and beyond the epiglottis until the arytenoid cartilages are felt, it not being necessary and often impossible if there is much swelling to give attention to the anatomical relation of the opening of the larynx to the other parts. Having located the chink of the glottis, raise the finger slightly so as to not obstruct respiration entirely; pass the tube along the inner surface of the finger, being careful to keep the handle of the introducer in the median line of the body. As the end of the tube approaches the glottis, again place the finger upon the cartilages so as to act as a guide to the tube, which is passed downwards and forwards by raising the handle of the introducer. When the tube has entered the larynx for about two-thirds of its length, release it from the obturator, and by placing the finger upon its head, push it down to its proper position, at the same time withdrawing the instrument. Before taking the finger from the mouth pass it down behind the larynx, and if the tube is in place the posterior wall of the larynx will be felt between the finger and tube; but if it is not in place, it will be found in the upper part of the esophagus and can be removed by the string and the operation repeated. It is seldom necessary for a person of experience to make more than one trial if the patient has remained in the correct position and the handle of the introducer kept in the median line. As soon as the instruments and finger are removed, the patient should give an expulsive cough, the more violent the better, as it more quickly and completely removes from the larynx any membrane or mucous that may be there. If the cough is not forcible enough to clear the tube, a little whiskey and water given to the child will excite a spasm of the larynx that will expel any membrane that would be likely to interfere with respiration. After a wait of sufficient duration to satisfy one's self that there is no obstruction to respiration, the string may be removed by again using the gag and placing the left index finger upon the head of the tube and with the other hand draw upon one end of the string. One must be careful to press firmly upon the tube while pulling upon the string lest the tube be drawn from the
larynx. The writer has grave reason to regret the neglect of this precaution in one instance.

The prognosis now depends upon the amount of septic infection and the possibilities of such complications as broncho-pneumonia, occlusion of the lumen of the tube by exfoliating membrane and exhaustion from inability or refusal on the part of the patient to take sufficient nourishment and stimulant. If there is but little septic infection, or if it is within forty-eight hours of the inception of the disease, the administration of 3,000 units of the diphtheritic antitoxin serum renders the prognosis favorable. If the patient has had the antitoxin twenty-four hours or so before the intubation is done, the chances of recovery are very much increased. So much importance do I place upon this that I estimate the length of time it is necessary for the tube to remain in the larynx from the time the serum is used rather than from the date of the operation. Many cases are met that from neglect or from ignorance have been allowed to progress without the proper treatment until the amount of septic infection has rendered the prognosis very grave. Since by antitoxin treatment the course of the disease is materially shortened and the time the tube is retained in the larynx is correspondingly shortened, the danger of broncho-pneumonia being a complication is very much lessened. In over fifty intubations I have seen it only five times.

About thirty-six to forty hours after antitoxin has been administered the membrane begins to loosen, and as the child coughs or even by the act of expiration this may be forced into the tube and partially or completely, slowly or suddenly, so interfere with respiration as to render the necessity for the immediate removal of the tube proportionate to the amount of stenosis. It is not infrequent to be obliged to remove the tube temporarily for the purpose of cleaning. In two of my cases, that were apparently doing well, the membrane was driven into the tube by violent paroxysms of coughing so completely plugging the tube that death ensued from suffocation in a few minutes. Such accidents are rare, but are occasionally unavoidable.

The greatest difficulty one encounters in the after treatment of these cases is in feeding the patients. After the antitoxin has been given, no medicine is required except, possibly, strychnine, in some few cases; but milk and whiskey in
large quantities are imperatively indicated. There is always more or less difficulty in swallowing, as the epiglottis can not be closed tightly over the head of the tube, yet it is surprising how readily some children learn to drink while intubated. The difficulty, as a rule, is in proportion to the amount of swelling of and about the epiglottis. I have had very poor success in feeding children in the manner usually recommended; that is, by placing the children in such a position that the head is lower than the body so that by gravity the liquid is kept from the tube. If the patient is old enough to feed himself, I find that by placing him in an upright position, allowing him to take the cup in his own hands, and without assistance or urging from others, he be given a chance to drink, he will usually do so. He will drink a few swallows, then he will cough, and then he will drink again. If any attempts are made to help him or to urge him, he soon refuses to take more. Semi-solids, such as custards, ice cream, soft eggs, etc., are usually taken with ease, provided the same care is exercised as when liquid nourishment is being given. In very young children and in others, when the quantities of milk and whiskey taken are not satisfactory, rectal alimentation can usually be successfully practiced for the short time required. My rule for small children is to give every three or four hours after the bowels have been washed out an enema of an ounce and a half of pre-digested milk and a half ounce of whiskey. This is usually retained, but if it is not, I add a few drops of tincture of opium. This not only controls the bowels but quiets restlessness and cough and reduces the number of respirations. In several instances when I could not nourish and stimulate either per orem or per rectum, I have successfully carried the patient for the few days necessary by using at intervals whiskey hypodermatically, and strychnine by the mouth depending entirely upon the stimulants.

The following case illustrates this treatment:

H. G—., aged five years, had been sick several days with diphtheria, when, it becoming laryngeal, I was asked to see him. His condition being bad and the stenosis great, he was immediately intubated. Two thousand antitoxin units of anti-diptheritic serum had been used several hours before the operation and 2,000 more were used at the time. He took his nourishment poorly, and rectal feeding was practiced for
nearly two days when the bowels refused to retain the enemata. He was then given, as often as his pulse indicated its need, a hypodermic of \( \frac{1}{2} \) dram of whiskey, and every four hours \( \frac{1}{60} \) of a grain of sulphate of strychnine. This was continued for about thirty-six hours, and then the tube was removed. After its removal the child took his milk and whiskey by the mouth without difficulty, and ultimately made a good recovery.

After intubation the temperature may go up several degrees, especially if antitoxin is administered about the same time. For this I use cool sponge baths and sometimes phenacetine. In favorable cases the temperature gradually drops, but when this remains at 103 degrees or more, or when it has dropped to nearly normal and then goes up, the prognosis is bad.

To extubate, is at any time, to a great extent, experimental. Many intubationists prefer to defer this until all probabilities of its being necessary to replace the tube are past rather than to risk the possibilities of re-intubation. I can not agree with this practice, as I believe the larynx should be freed from the tube as early as possible with safety to the patient. In both of the cases mentioned above, in which the children died from sudden occlusion of the tubes, I had considered the advisability of removing the tubes, but as they were doing nicely I decided to wait. I now believe had I extubated when I hesitated both lives would have been saved, even had it been necessary to replace the tubes at once, the loosened membrane would have been removed and clean tubes would have been used. In removing the tube I am influenced by the following conditions: When the temperature has dropped to 99° or less, the child is bright, taking an interest in persons and playthings, where there has been a membrane upon the parts that can be seen and this has disappeared and when the child has been unable to take a satisfactory amount of nourishment.

Extubation is somewhat more difficult than intubation. In the latter case the operator has control of the tube while in the former he has to get control of it. There have been many devices for removing the tube but the one most commonly used is that of O'Dwyer. This is a sort of curved forceps with the bill the shape of the opening in the tube and somewhat roughened on the outer surfaces. It is kept closed by a spring and opened by the pressure of the thumb upon the upper part.
A set screw upon the under side regulates the degree to which it can be opened. Care should always be taken to have this adjusted to the proper size necessary for the removal of the tube. If this is not attended to, great damage may be done to the upper portion of the larynx. The only other extractor with which I am familiar is that of Dr. Dillon Brown. This consists of a small hook attached to a ring to be placed upon the end of the left index finger. The purpose is to remove the tube by hooking into a hoop soldered upon its head. This, of course, requires a specially constructed tube. The only objection to this is that the ring interferes with the sense of touch.

The position and management of the child is the same in both intubation and extubation. Assuming it is the O'Dwyer extractor that is to be used, after having the patient in position and the gag in place, pass the left index finger down until it rests upon the posterior portion of the head of the tube, being careful not to have the finger far enough forward to obstruct respiration as this will only make the child struggle and increase the difficulty in placing the extractor into the opening of the tube. Now, pass the extractor along the palmar surface of the finger, keeping the handle in the median line of the body until it touches the tube in front of the finger, when, by gentle manipulation, it will be felt to drop into the opening. Then press firmly upon the thumb-piece and withdraw. When the child is in the correct position this is usually very easily done, but when not kept in the proper position or when there is any deviation of the handle of the extractor from the median line, it is very difficult.

One should not leave the patient for at least a half hour, as the dyspnea may return and re-intubation be necessary. It is well to give an opiate to allay the cough. I always recommend when practicable that this be given an hour or so before extubation so as to have the patient well under its influence, thus avoiding excitement on his part as well as allaying irritability of the larynx.

In commenting upon the O'Dwyer extractor, which so many have tried to improve upon, and which is yet almost universally used, I can say that after extubating the larynx over 150 times, the only fault I can find with it, is the difficulty one has in keeping it clean.

Occasionally it happens that after the primary lesion, for
which the intubation was originally done, has disappeared, it is impossible to remove the tube without the stenosis returning, necessitating re-intubation. This condition may last weeks or months, and is termed "retained tube." For a full description of the cause and management of these cases I refer to an article read before the American Pediatric Association in May, 1897, by O'Dwyer. This article was published in July, 1897, number of the Archives of Pediatrics. The writer has had one case of retained tube, following an intubation done to relieve laryngeal stenosis after measles. In this case the tube was worn for thirty-eight days, and was only cured by using a special form of tube. This case has been reported in full in Pediatrics of May 15, 1898. A peculiarity of these cases of retained tubes is that nearly all occur in children in which the 3/4-size tube is used.

From July, 1896, to April 1, 1898, the writer did, in private practice, fifty intubations. A synopsis of the accompanying table shows that there were thirty-one recoveries and nineteen deaths, making 62 per cent. recoveries. The average length of time that the tube was in the larynx of those that recovered, exclusive of case XLIII, where the tube was retained for thirty-eight days, but which was not diphtheritic, was 2.48 days. In only one case did death occur later than twenty-four hours after the intubation and this was one of those mentioned whose death was due to membrane obstructing the lumen of the tube. This leads me to believe that, ordinarily, if the patient can be carried safely over the first two and one-half days, we may give a favorable prognosis.

Of these fifty cases, twenty-four were males, twenty-six females. Divided into classes, A, representing those having the best of care; B, good; C, fair; and D, poor, there were in class A, nine cases and three deaths; in class B, seventeen cases and two deaths; in class C, ten cases and three deaths; in class D, fourteen cases and eleven deaths. The approximate duration of the disease at the time of operation was in nine instances within one day, only one of which proved fatal; in twelve, within two days, two of which proved fatal; and in nine within three days, six of which did not recover; and in twenty, four or more days, only seven of this class recovering. The conditions of these when I intubated were: In twenty-eight, bad, in seventeen, fair; and in five, good. The oldest
<table>
<thead>
<tr>
<th>Case No.</th>
<th>Sex</th>
<th>Male</th>
<th>Female</th>
<th>Class</th>
<th>Age</th>
<th>Duration of Disease</th>
<th>Antitoxine Used</th>
<th>C'implicat'ns</th>
<th>Causes of Death</th>
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<tbody>
<tr>
<td>I.</td>
<td></td>
<td>A</td>
<td></td>
<td>28 mos. B</td>
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<td></td>
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<td>IV.</td>
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<td></td>
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<td>4 dys.</td>
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<td>24 h</td>
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<td>V.</td>
<td></td>
<td>C</td>
<td></td>
<td>7 yrs. B</td>
<td>4 dys.</td>
<td>1,500</td>
<td>4 h</td>
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<td></td>
<td>D</td>
<td></td>
<td>30 mos. B</td>
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<td>8 h</td>
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<td>VII.</td>
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<td>A</td>
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<td></td>
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<td>3,000</td>
<td>8 h</td>
<td>Recovery</td>
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<td>X.</td>
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<td>D</td>
<td></td>
<td>5 yrs. F</td>
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<td>8 h</td>
<td></td>
<td>Death</td>
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<tr>
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<td>Recovery</td>
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<td>B</td>
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<td>2½ d</td>
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<td>3,000</td>
<td>18 h</td>
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<td>20 h</td>
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<td>D</td>
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<td>3,000</td>
<td>24 h</td>
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<td>B</td>
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<td>A</td>
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<td>O</td>
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<td></td>
<td>C</td>
<td></td>
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<td>O</td>
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<td>D</td>
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<td>O</td>
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<td>XXXV.</td>
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<td>A</td>
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<td>XLIV.</td>
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<td>24 mos. F</td>
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<td>XLV.</td>
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**Class-A, care the best; B, good; C, fair; D, poor.**

**Condition.—G, good; F, fair; B, bad.**

**Duration.—One day means one day or less; four days means four or more days.**

**Time of Use of Antitoxin.—O, means at time of; 1, before; - , after operation.**

**Time Tube Was in Larynx.—Approximate.**

**Case XLII.—Retained tube.**

**PEDIATRICS. 61**
was seven years and the youngest ten months of age; the most frequent age being between twenty and thirty months, there being twenty within these limits who, with only four exceptions, recovered. All but five had antitoxin, two of which were non-diphtheritic. The number that had antitoxin at least twelve hours before being operated upon was twelve, of whom nine recovered; at the time of operation or within twelve hours preceding it, twenty-eight, nineteen of whom recovered; three to eight hours after, five, three of these proving fatal. The complications were marked septic infection in fifteen cases, nephritis in two, and broncho-pneumonia in five. Death was caused in eleven instances by sepsis; in two by broncho-pneumonia; in two by sudden plugging of the tube by loosened membrane, and in four from exhaustion.

The writer's conclusions are that it matters but little, what may be the sex, age or condition of the patient at the time the intubation is done, but to have the prognosis good, it is absolutely imperative that a large dose of antitoxin must be given within forty-eight hours of the inception of the disease, and that at least ordinarily intelligent nursing be bestowed upon the little patient.
OSTEOTOMY FOR GENU VARUM.

CLINICAL LECTURE DELIVERED AT THE KENTUCKY SCHOOL OF MEDICINE HOSPITAL.

By James M. Holloway, A.M., M.D.,

Professor of Surgery and of Clinical Surgery in the Kentucky School of Medicine; Surgeon to the Kentucky School of Medicine Hospital and the Louisville City Hospital, etc., Louisville, Kentucky.

GENTLEMEN: This little patient is aged six years, and, as you see, has an aggravated condition of genu varum; the interspace between the legs when the feet are brought together is very great. You can plainly see a rachitic bending of the tibiae and also of the femora. When the legs are crossed, that is the inner surface of one leg at the knee is brought in contact with the inner surface of the other, as I show you, I can pass my fist between the thighs, showing that there is a broad interspace because of the curving of these bones.

I have had a drawing made (original size) of the legs, and also a photograph of the child, by reference to these you will see that, comparing them with the child who is before you, the illustrations are not exaggerated.

Bow-legs or genu varum is the condition opposite to knock-knee or genu valgum; they are both usually the result of rachitis, but particularly is this true of bow-legs, and the weight of the child together with the muscular action after it begins to walk produces the curving of the bones.

Sometimes a curving of the tibia is the result of ostitis deformans, where for instance you have the fibula in a state of ostitis, the fibula will outgrow the tibia and owing to the flexibility of the bones in early childhood you will find that the tibia will bend, and when it begins to bend then the muscular action tends to increase the bending; but there is one thing sure, there is a disproportion between the animal and
earthy matter in the case before us, there is an excess of animal matter with beginning softening of the bones, resulting in an exaggerated deformity.

Now, this bending of the tibia may be lateral and show itself along the anterior and inner aspect most plainly; while it may begin that way, later you have an antero-posterior curvature which is very suggestive and characteristic of rickets. Not only may there be a lateral curve where the bow will be this way, but also an antero-posterior curve where there will be a bow forwards, which seriously complicates the case.

In early childhood these bow-legs may be corrected by mechanical appliances, but after four years of age this method is not advisable, and you will rarely find a child that will submit to mechanical and instrumental treatment necessary to correct the deformity. It is advisable in such cases not to operate before the fourth year, because the bones are so soft that you are liable to have a recurrence of the trouble.

Now this little girl is six years old, and has used a mechanical appliance without beneficial result. Like all children with double bow-legs, you will notice that she walks with a waddling gait; the toes are turned inward in walking, and her center of gravity has to be determined at each step, and she applies herself in this way. She uses all the muscles of the body in walking, which is very striking; and in your travels around the city you will notice little children running about the streets with this peculiar gait. This peculiarity of the gait is extremely striking in the case before you.

We have had the legs of this child shaved above and below the knees, we have had them thoroughly scrubbed, we have had applied a green soap poultice, we have softened the epithelium in order that the final bathing with hot water and then alcohol and ether will rid the surface of all partially detached epithelial cells; in that way we hope to make the field of operation thoroughly aseptic. It is very desirable to do this, because it becomes necessary for us in both of these limbs to cause a compound fracture of the tibia at least, and perhaps also of the fibula; it may be a simple fracture of the fibula and a compound fracture of the tibia; or perhaps do an osteotomy; to cut down through the thickness of these tibia to such extent that we will be enabled by a reasonable amount of force to break the tibia and perhaps the fibula also.
I have selected the tibia in this case for three reasons: To do the operation upon the tibia first instead of doing it just above the condyles of the femur, although the femur is curved as well as the tibia and fibula—I say I have decided upon this plan for three reasons:

First, the child is a girl, and if we succeed in straightening the legs below the knee—I say below the knee with emphasis—it is not probable that this girl will dress so as to expose the curvature of the femur. If the patient were a boy wearing pants, of course the curvature of the femur should also be corrected. That is one point.

Second, in the event I should fail to completely correct the deformity by fracturing and straightening the tibia, I could then do a subsequent operation of a similar character upon the femur.

Third, the patient being a girl only six years old, in her development and growth the pelvis will expand for purposes which are well known, and the deformity will amount to very little. You know the normal condition of a woman is to be slightly knock-kneed because of the breadth of her pelvis. In this case we will have an expansion of the pelvis up to and after puberty, so that the deformity of the femur will probably not be noticed. This is a point which is well taken, not laid down in books as a rule, but should be, and should be considered in deciding the operation best suited to a case of this kind. My first intention was to make an osteotomy above the knee, afterwards if necessary to straighten the tibia, but after consultation with Doctor Laws, and after consulting all the authorities, I decided that the best plan was to reverse the order of things in this case, because we know by straightening the tibia her condition will be such that she can get her legs together at the knees, it will enable her to walk with the proper center of gravity, and she will be sufficiently shapely for all practical purposes.

The child has been put profoundly under the influence of the anesthetic, and you can see the extent of the deformity, notice the wide space between the knees as I hold the feet together.

In performing an osteotomy, most authorities advise putting a pillow under the leg; for this purpose I perfer a sandbag, which offers less resistance than a board or a brick,
FIG. II.
and more than a pillow. In performing this operation I will use a small osteotomy chisel and a small mallet to partially cut through the bone.

I first make a short incision in the direction of the long axis of the tibia at about its middle line, about the width or a little greater than the body of the osteotomy chisel. I make it down to the bone. Having done this, I next pass the osteotome with its widest surface in the direction of the long axis of the bone; as soon as I get it fastened to the bone I will turn it half around, which will displace the periosteum, and then I am ready for the mallet. I have now turned the chisel, and will endeavor to make a cut partially through the bone so it can be easily broken. When I strike the chisel two or three times with the mallet, you notice that I work it laterally so as not to allow it to become fixed. I must not withdraw the chisel, because in so doing I would lose my groove. I have now cut partially through the thickness of the bone, and with one hand each side of the cut we have made, I break the bone. As I do so you can plainly hear it snap.

The leg is now wound with gauze, covering the wound we have made, and we will at once adopt the same procedure upon the other leg. We are having some little hemorrhage which is principally from the medulla of the bone. Both legs have now been broken. The next step will be to envelope both limbs in absorbent cotton, then an assistant will hold the leg in the proper position while I apply a plaster bandage. After the leg has been reduced to the proper position, and the cotton has been carefully applied, you will notice that I begin above the knee with the plaster bandage and roll downwards. I do this because the lower end of the bandage is much more difficult to arrange and more care is required, and after having applied it above first, the lower end is more easily adjusted. A plaster bandage for this purpose should be at least three inches in width; a narrower one does not work well. I want to so apply these bandages that in two or three weeks, or perhaps sooner, the child may get up and walk, which it will be able to do without harm resulting. The bandages having been applied the legs are held in position until the plaster is thoroughly dried. They are straighter than the bandages indicate.

Now the question may arise in your minds, will these wounds heal without inflammation or sepsis? This is an
important point. It is very rare that you get sepsis after such
an operation as this.

We find there is considerable hemorrhage from the medulla
of the bone in the left leg, but this may be of advantage in
the healing process. Since we have straightened the legs
below the knees, you will see there is considerable bending of
the femur, much more than was apparent before.

Unless the patient shows some rise in temperature, these
bandages will be left intact until healing is complete; if the
temperature rises, we will make an opening through the plaster
down to the skin to see if there is any sepsis or any excessive
hyperemia. If we find that the limb is simply in a hyper-
emic state, we will redress the wound through the opening in
the bandage. If, on the other hand, we find there is sepsis,
we will then deal with it as we would any other septic case, by
thorough drainage and the use of antiseptic applications. As
before stated, it is rare that sepsis occurs, although in this case
we have had quite an extensive hemorrhage from the medulla
of the bone on the left side.

We will keep the child quiet until the dressings have
become thoroughly dry, then she can sit up and play about the
bed, but we will not allow her to get up until the end of ten
days. If we find the dressings still intact at that time we will
leave them. After ten to seventeen days we will allow her to
get up and walk; or perhaps it would be well to defer this a
little longer. Usually we can not promise union of a fracture
under three weeks. In any event at the end of three weeks
we will remove the plaster bandages, and if we find that the
fracture is not perfectly united, we can put on a lighter band-
age, so arranged that the patient can get up.

The ambulant plan of treating fractures of the bones of
the leg is now practiced by a considerable number of surgeons.
They so arrange the plaster bandage as to enable the patient
to be thoroughly protected against bending of the leg or dis-
turbing the fragments, having the the fixed in extreme flexion
so the person can walk on the heel. The ambulant plan is
perfectly consistent with fractures, even where they are com-
 pound.

In the case before you I hold in reserve the privilege of a
second operation upon the femur if the operation we have per-
formed does not straighten the limb satisfactorily for easy and
free locomotion of the child. I do not mean satisfactory as regards appearance of the femur, because, as I said before, this child will wear petticoats when grown and will show only that portion of the legs slightly above the high shoe line.

Case 2. The next case is one of typical tuberculous disease of the knee joint in a child aged three years. This disease may attack any joint of the body, and may involve a part or all of the structures of the joint. In this case there is a clear history of tuberculosis; even the grandparents were tuberculous; the children of both marriages, by two wives, were tuberculous. This child had a weight and pulley attached to the leg in its inflamed condition. I think such a plan of treatment is contraindicated, and the best plan would have been to apply a plaster dressing. While extension by means of the weight and pulley involves the necessity of the recumbent posture, and can be advantageously employed in cases where there is only slight congestion, such means are only within the province of the rich who can furnish outdoor exercise in conveyances; poor people can not afford them. Therefore, I recommend to you when you are called upon to treat one of these cases, to prevent flexion of the leg upon the thigh and the pain of muscular spasm which is inevitable unless prevented by suitable apparatus, that you make use of some appliance which will prevent that. An immovable dressing of plaster or saddle skirting leather will answer the purpose.

This boy has been having a discharge from the knee joint through an external opening, the result of an abscess. He has been living in the country; his general health is improved recently; he has been able to get about on a crutch with the leg flexed. The question is, what shall we do with the case? First, we must explore the joint to ascertain the condition of the cartilages, ends of the bones, epiphysis, and ligaments, and be governed accordingly in the subsequent treatment of the case.

As we proceed with the operation I will announce what the conditions are:

Please observe the external characteristics, to which I have before called your attention. I find the measurement of the affected thigh shows it to be an inch longer than the other. This you will find a feature of nearly every case of chronic
knee joint disease in a child. There is an overgrowth of bone at the junction of the epiphysis and diaphysis which gives you the lengthening. It is not necessary to take the measurements in this case, really, as the lengthening is so apparent. You will remember a photograph I showed you a few days ago of a boy before and after operating. Observe the difference in the length of the two legs. This, however, is not a matter of serious concern. While this boy was not under the influence of chloroform, the flexion of the leg was much greater than is now apparent under the relaxation of the anesthetic.

It may be that we shall only have to do an atypical operation here; we certainly hope that will be the case. Whatever we do we shall afterwards fix the leg in an immovable dressing, and as soon as he is able, with an elevated shoe on the other foot, he will be allowed to go about. A feature that is not made sufficiently prominent in any of our text-books is that muscular atrophy is sure to follow in cases of this kind, from the fact that the leg is kept out of use for such a great length of time. When the leg becomes flexed we have, first, muscular rigidity, then muscular contraction, and, if you do not arrest these tendencies, you are sure to have degeneration and atrophy of the muscles. This boy has atrophy of the leg already. The disease has existed for a sufficient length of time to bring about some degree of fatty degeneration that follows atrophy of the muscles.

I want you to understand that I have formed an opinion about this case, but want to impress upon you the fact that all operations upon bone are necessarily exploratory; you may have an opinion before you go into this joint, but you are perfectly justified in changing that opinion after you have exposed the parts. I take the external and internal condyles between the thumb and forefinger and endeavor if possible to avoid cutting the saphena veins. This incision goes through the skin and subcutaneous tissue, through the ligamentum patellæ just above where it attaches itself to the anterior surface of the tibia, which gives us ample room to lift up the patella with the flap. When you have progressed thus far with the operation, you should remove the patella; it is of no value, whether you do a typical or an atypical operation. It is a bad plan, on account of the limited blood supply, to try to leave the patella, and a second operation would be required for its removal. It
is in your way all the time afterwards, but this is especially true in complete excision of the joint; it serves no further purpose, and consequently ought to be got rid of. You generally find in these cases that its under or articular surface is eroded, as are also the cartilages and other structures of the joint. As the wound is held open, the patella having been removed, you can see how the tissues are infiltrated. Here is a large mass of infiltration. I am cutting the bone with the knife as easily as I could cut a piece of cheese. Now, I am dissecting away this mass of infiltrated tissue, going through a portion of the muscle on the inner side and the tendon of the quadriceps extensor. I will hug the bone at this step so as to expose it, and try to avoid the vessels of the popliteal space. With my thumb, I find that the crucial ligaments are partially intact, but I will sever them. The next step, after cleansing the field of the operation, is to make room to saw off the lower end of the femur, which we will do as nicely as possible from before backwards, downwards and a little obliquely. Always draw the saw towards you at first in order to make a clean cut. I am carefully dissecting to avoid the vessels, hugging the posterior border of the tibia, freeing it as I go along, and we will now saw off the upper end of the tibia so as to make it fit the sawed end of the femur if possible. I now have the end of the tibia exposed, and we will saw it off, avoiding the popliteal vessels. We find that the bone cuts very easily, which is always the case where you have an hyperemia of the tissues from sepsis or from specific trouble, whether it be syphilis or tuberculosis of the bone; in such conditions the bones are always softened. The soft tissues encroach upon the hard tissues, and the hard tissues have to give away. That is the universal rule. We will now trim off the edges of the soft parts, which have been dissected, up to complete the operation, then loosen the Esmarch bandage so as to allow the circulation to be re-established, arresting hemorrhage with forceps if there be any. We will then apply full strength iodoform to the surface of the wound. I prefer this to anything else, as iodoform is antagonistic to the tubercle bacillus; it also has a tendency to prevent putrefactive changes in the retained blood, which putrefactive changes result in the generation of ptomaines and toxines that often produce dangerous blood poisoning. We will not use enough iodoform to incur the danger of iodoform
poisoning; we will dust it down into the interstices where the gauze will not go.

We now have a perfect adjustment of the two cut ends of the bone. We find here a fistulous track leading down to the abscess, which we will curette; it will leave a good avenue for drainage. That track would, doubtless, give us a great deal of trouble if not properly treated. A drainage tube, together with a small piece of gauze put down by the side of it, will give us perfect drainage.

The question has been asked, how long can the Esmarch bandage be left on without damage? There is some difference of opinion upon this point. Recently, in the treatment of an aneurism of the popliteal artery, I employed an Esmarch bandage, which was left on for one and a half hours. After its removal the circulation was fully restored, and the aneurism had ceased to pulsate. Of course, when a vessel is ligated for the relief of an aneurism, collateral circulation establishes itself. It has yet to be decided how long an Esmarch bandage may be left on continuously, and still have a restoration of the function of the blood vessels. I would always have it in view, because upon the proper nutrition of the part largely depends the result of an operation of this kind, the circulation may become seriously embarrassed, and it would be calamitous if some portion of the foot failed to recover its circulation, and gangrene of the toes or foot supervene.
On this question opinions somewhat differ, so that a paper containing the conclusions arrived at by the best authorities, together with copious statistics bearing on the matter, written, too, by a man who is himself thoroughly conversant with his subject, should be a valuable addition to the literature of pediatrics. Such a paper has recently been published in the American Journal of Psychology, by Professor Burk of Clark University. In the limited space at our disposal it will be of course impossible to do more than briefly allude to a few of the most important facts given. Professor Burk begins by stating that growth in height certainly matures before growth in weight, and then goes on to say: The average length of a new-born male infant has been generally taken as 19.68 inches, and about one-fifth inch less for females. During the first year the child grows at the most rapid rate of its entire life. The average increase is probably between seven and eight inches. The rate of growth decreases rapidly from month to month of the first year, and in general it may be said that the rate decreases with age. The rate of growth for the first six years is practically the same for both sexes. Between six and seven years of age the average American child measures about forty-four or forty-five inches. It is a question whether height or weight is the better index of fundamental growth conditions. Donaldson decides in favor of weight, for the reason that while the body increases in stature from birth to thirty years only 3.37 fold; in volume, the increase is 20.66 fold. This view, however, is not held by most anthropometrists, who are rather in favor of using height as an index. The average weight of a
male at birth may be put at 7.3 lbs., and of a female at 7.1 lbs. The development by weight seems on the whole to follow the law of development in height. The weight at birth is almost trebled during the first year. Perhaps the most instructive portion of the paper is that referring to seasonal growths. Malling-Hansen says the weight of a nine to fifteen year old boy has three periods of growth during the year—a maximal, a middle, and a minimal. The maximal period begins in August and finishes in the middle of December, lasting, therefore, four and a half months. The middle period extends from the middle of December to end of April, four and a half months. The minimal period extends from the end of April to the end of July; therefore three months. During the maximal period, the rate of increase in weight is three times as great as in the middle period. Almost the whole weight gained in the middle period is lost during the minimal period. Lastly, Malling-Hansen also finds that children increase in weight and decrease in height by day, and increase in height and decrease in weight by night.

The Effect of Different Foods Upon Height and Weight

Viewed from a medical standpoint, increase of weight is no true criterion of an infant's healthy condition. A young child may be rickety and in various other ways in an unsatisfactory state of health and yet continue to put on flesh. As Dr. C. Voit, of Bavaria, points out: Increase of weight may be due simply to greater absorption of water by the body, or by mere addition of fat. Nevertheless the researches and conclusions of eminent scientific men as to the effects of different foods upon height and weight possess much value and interest. Quoting again from Professor Burk's article in the American Journal of Psychology, Malling-Hansen contends, and also appears to prove by accurate experiments, that different kinds of food have no direct material influence upon
growth, and ascribes all direct causes of acceleration to internal forces. Again, the effects of foods upon infants has been investigated by Russow in Oldenburg Hospital. Some infants were nourished exclusively at the breast and others were given a mixed diet. At fifteen days the average of the first class was 3,564 grammes, and the last class 3,525 grammes. At the end of the year the infants nourished exclusively at the breast weighed on the average 9,930 grammes and those on a mixed diet 8,480 grammes, showing a difference of weight of 1,450 grammes. The breast-nourished infants increased 150.7 per cent. of their weight at fifteen days, and those of the mixed diet 140.7 per cent. Cramerer shows that in the middle of the year breast-fed children were heavier, but concludes that whatever the nourishment during the first year, nevertheless all children at the end of the year reach about the same weight. Cramerer gives about fifty individual cases tabulating weights by weeks, and there is no evidence of the effects of differences of food judging from the compared results at the end of the year. If anything, results favor artificial food." However, as we have said above, this evidence is of no value as proving that artificial food is better for an infant than mother's milk.

In Great Britain, as in this country, a vigorous crusade is being waged against the scourge of tuberculosis. It is true that in the methods considered now, the rational treatment of that disease—suitable climate and diet—we here are far in front of England; still there are signs that physicians are fast awakening to a sense of the valuable results of the out-of-door treatment, and they are preparing to establish sanitariums on American models in many parts of the Kingdom. Holt says that tuberculosis is more frequent in infancy than at any period of later childhood, and, further, remarks that if fresh air and a proper climate are necessary for the cure of this disease
in adults, they are tenfold more necessary in the case of children. Sir Samuel Wilks contributes a valuable paper to the June number of the *Practitioner* on tuberculosis in general, and also touches on that disease affecting infants. He points out and proves by figures that there is some special proclivity toward phthisis in the male infant. The male death rate from phthisis is more than twice as high as the female rate; in the second year it is also higher, but only to the extent of about 3½ per cent., while in the third, fourth, and fifth years of life the female rate is slightly higher. The conclusion, perhaps, to be drawn from these figures is that the male child is more susceptible to the tubercular virus, or else that his system resents its intrusion more intensely than that of the female. As to the influence of heredity, Sir Samuel Wilks says: "The exact nature or this influence must still be regarded as open to argument. There are at least three modes in which tubercle may be regarded as hereditary: (1) The direct infection of a child with the disease in an active state before birth; (2) The congenital inflammation of the organism, or of its spores which may remain for a period latent in the system; (3) By the transmission of organs or of a bodily constitution peculiarly open to the attack by the bacillus—in other words, of an undue vulnerability of the system. We may, thus at least fairly conclude that congenital tuberculosis is at least a rare disease, and that it cannot account for more than a very small proportion of the cases of alleged hereditary transmission of the disease. . . . There is much more to be said in favor of the view that parents may transmit to their offspring a peculiarly vulnerable constitution. It is, therefore, probable that heredity has much less to do with consumption than is popularly supposed, and that it ranks very far behind many other predisposing causes." These are also to a large extent the opinions of Jacobi, and other eminent authorities in regard to transmission of tuberculosis.
We believe that pure air and judicious, wholesome diet, is as necessary in the treatment of phthisis with the very young as with adults. Plenty of fresh air and great attention paid to food should be the motto for phthisical patients of all ages. Dr. Jacobi, while agreeing that the invigorating and curative properties of the out-of-door treatment can hardly be overestimated, nevertheless contends that medicine should not be altogether thrown aside. He states that he has obtained very favorable results from arsenic as an internal remedy, and says that a child a few years old may take two drops of Fowler's solution daily, or a fiftieth or a fortieth of a grain of arsenious acid for weeks or months in succession. Dr. Allan Macfayden, in an article in the June number of the Practitioner, says in reference to the question of contracting the disease by means of cows' milk, that "the proportion of tuberculous persons contracting the disease through food is probably larger among children than among their seniors. Children are more susceptible to intestinal tuberculosis than adults, and for children milk is the main source of danger. The risk of acquiring tuberculous disease will further depend, in great measure, on the extent to which such food is consumed by the community; one animal differs from another in the degree to which it habitually furnishes tuberculous food. Cows contribute generally more than oxen to the percentage, and milk thus becomes one of the most important vehicles for the transmission of the bacilli. The largest part of the tuberculosis communicated to man by his food is probably by means of milk containing the tuberculous matter. If we consider that children are most liable to intestinal tuberculosis, and are the great milk consumers of the community, it will be seen from the preventive point of view it is milk supervision that is of the greatest moment to the public health." Many experts do not believe that consumption is propagated on a large scale...
through the agency of milk procured from tuberculous cows. Whether it is so or not is as yet a moot point, the fact remains that tuberculous cows are numerous. Jacobi says that two cows at least out of every hundred are tuberculous, and that many infants are tuberculous, and if there is the slightest risk of infection in this way, the cause should be removed as far as is possible. Dr. McVail, medical officer of health for the County of Sterling, Scotland, commenting on the condition of cow-sheds in that country, remarks: "By closing every opening and by raising the temperature by means only of the animal heat of the cows themselves, you may turn a barn into a laboratory for the production both of milk and tubercle." To this may be added that there is no more absolutely preventible disease than tuberculosis in a cowshed. Here in New York City we may congratulate ourselves with good reason that so far as the milk control is concerned every precaution is taken to ensure a pure supply, but we must also remember that in many American cities, and probably in almost all British ones, the movement to attain the same object is in its infancy.
SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.
April 12, 1898.
Fred. A. Packard, M.D., President, in the Chair.

Tuberculosis in Children.—Dr. W. P. Northrup, of New York, addressed the Society on this subject.

DISCUSSION.

Dr. A. C. Abbott.—I have been both instructed and entertained by Dr. Northrup's paper, and I wish to thank him very much for the pleasure I have experienced in listening to him.

The evidence that Dr. Northrup has presented for the air passages, being the most frequent channel of infection, is very strong. I confess that I am somewhat surprised to learn that it is so much more frequent in children than infection by the alimentary tract, which I had hitherto thought more frequent than by the lungs. All who have had much experience in the post mortem room are aware of the very great frequency with which evidences of pulmonary tuberculosis are encountered in individuals who have died of other diseases. The lungs must be regarded as a very frequent portal of infection in this malady. I have always regarded the alimentary tract as a more frequent portal of infection than the lungs in tuberculosis in infants.

An infant infected by way of the alimentary tract becomes infected through its food, and the food of that infant is principally milk; but I am not prepared to believe that milk is as frequent a carrier of tubercle bacilli as is sometimes claimed. I am forced into this attitude in part from my own investigations and in part from the investigations of others, and so far as I can gather the question is still an open one and it cannot, as yet, be positively settled.
Dr. James Tyson.—I listened with such wrapt attention to Dr. Northrup’s address that it never occurred to me to note any points which required discussion. I am totally unqualified to discuss the matter of the relative frequency of tubercular inoculation by the intestine and the respiratory tract in children, but it always seemed to me that the proposition which Dr. Northrup has apparently proven was that which was natural. Of course we cannot fail to admit that the alimentary tract is more vulnerable in children than in adults, since their digestion is so much more delicate. In the case of adults, however, my experience agrees with his. Years ago, when I made and saw more autopsies than I do at the present day, it was always a surprising fact to me that the cases of intestinal infection, even with the previous presence of pulmonary tuberculosis, were so rare in the autopsy room, supposing, of course, as I believe is the case, that the infection in these cases takes place largely from swallowed sputum. Further, the cases of primary infection of the alimentary canal were almost nil. I presume a certain number of the cases of tubercular peritonitis unassociated with tuberculosis elsewhere, have been infected or produced in this way.

Dr. A. D. Blackader.—The subject which Dr. Northrup has taken for his address this evening is one of much interest to all physicians. His remarks will increase the interest of it to those who have specially to deal with disease as met with in children. Some of the facts we have lately noted in Montreal appear to corroborate Dr. Northrup’s statement that the chief path of entrance of this bacillus is through the respiratory passages. An investigation recently undertaken in the Pathological Laboratory of McGill University has failed to reveal the evidences of the contamination of the milk of tuberculous cows by tubercle bacilli to anything like the extent which we had previously been led to expect might occur. Children brought up in our foundling hospitals have shown a comparative freedom from tuberculosis. To what may this be ascribed? Possibly to the immunity which the period of infancy appears to confer. Possibly also to the fact that they are less exposed to infection through the respiratory tract. For some years past I have been a convert to Dr. Northrup’s views, and have believed that in a large majority of cases the bronchial glands played an
important part in tubercular infection, but I was not prepared for such a preponderating majority as Dr. Northrup has met with in his series of cases.

Dr. J. H. Musser.—I have been very much interested in the very valuable paper of Dr. Northrup, and must confess I have a somewhat different impression in regard to tuberculosis than I had before hearing it. Clinically I have seen few cases of pulmonary tuberculosis in children, and have had no opportunity of seeing autopsies except in adults, so that I can not fully substantiate that which had clearly been my impression, that pulmonary tuberculosis in children is a rare expression of the tuberculous disease. Of course, notwithstanding the fact that the bronchial nodes are the frequent source of entrance of the infection, pulmonary tuberculosis may be, nevertheless, rare. In my experience in children tuberculosis of the mesenteric glands and of the intestinal tract is more common than tuberculosis elsewhere. Other forms as pulmonary and especially meningeal tuberculosis, were usually secondary to tuberculosis of the abdominal tract. In a series of some fifteen or eighteen cases of meningitis that I reported some time ago there were in the large majority evidences of primary tuberculous disease of the intestines or of the peritoneum. This does not, however, exclude the fact that there may have been primary infection of the bronchial nodes, the infection spreading from thence to the more evident site, the gastro-intestinal tract. Therefore it cannot remain as a positive statement.

I was very much interested in one or two features of the exposition, and particularly the pictures which showed the growth outwards of the lymph glands and infection of the lungs in the middle of the lobes. As we know, so frequently the first signs are not always at the extreme apex, but at the upper limit of the lower lobe, and this picture so beautifully illustrated the mode of infection from these lymph nodes to these situations. I never had an opportunity of seeing it so beautifully displayed. What interested me particularly in connection with the diagnosis of phthisis was that the earliest signs were found opposite the lobe edges, particularly in the left lung anteriorly.

It is curious to hear Dr. Northrup's experience, which is quite at variance with some observers, certainly at variance
with the large group of feeding experiments which have shown the entrance of infection by the intestinal tract, and at variance with the statement of Coats and Woodhead. It has struck me that there may have been some limited mode of infection in the group of cases that Dr. Northrup has seen. Is there no other way infection could have taken place than by the respiratory tract? Certainly we must feel that there are cases that are infected by the intestinal tract and peritoneum. It would be interesting if Dr. Northrup could tell us the probable source of infection in these cases. If I understand correctly, all of these cases were from one institution. This and other features makes the paper a valuable contribution for the Pediatric Society and one that has given us both profit and pleasure to listen to.

Dr. M. P. Ravenel.—It is with a great deal of diffidence I speak of Dr. Northrup's conclusions. Practically, I have had almost no experience in post mortem examinations. As Dr. Musser has pointed out, these cases seem to be all from one institution, and Dr. Northrup's experience has been so much at variance with that of observers in other parts of the world that it seemed in these cases there must have been some particular factor acting.

Take, for instance, Dr. Sims Woodhead's findings: Out of 127 children he found tuberculosis of the mesenteric glands in 100, with ulcerations of the intestine in forty-three. Again, in a recent article by Prof. Pflüge, concerning infection by dust, he calls attention to the fact that in a large number of inhalation experiments results were absolutely negative, though with identically the same material with which these inhalation experiments were made, tuberculosis was easily produced by ingestion or inoculation in animals. Again, in many cases we find feeding experiments with milk will produce tuberculosis.

This discussion was opened by the first speakers in a way that would seem to imply that it was only by means of milk that the intestinal tract could become involved, but as Dr. Flick has well pointed out, in many children acquiring tuberculosis, they do so at the age when the child is beginning to crawl about on the floor, and may convey to the mouth particles of matter containing tubercle bacilli. Bolitz called attention to the fact that of 2,576 children, 16 per cent. of which
died of tuberculosis, not a single one showed the disease before the age of four weeks, from three to five months there were 8.6 per cent., between six and twelve 18 per cent.; the greatest number, excepting for a period of five years, namely, from five to ten years of age, was between two and three years, when it reached 33 per cent.

As Dr. Flick has pointed out, also, in this connection, there are houses in which tuberculosis remained for generation after generation. The children have gotten it in crawling on the floors, from the dust held in cracks and crannies. The question of tuberculosis by milk is one I believe in most thoroughly, though absolute proof is lacking, but it is not the only means, the dust of pulverized sputum from the floors is a most important factor also.

Dr. J. P. Crozer Griffith.—About thirteen years ago I made an autopsy on a child of two or three years, perfectly healthy previously, and dying after a short illness of pneumonia. The diagnosis was croupous pneumonia, and the autopsy showed croupous pneumonia, but I remember my astonishment in finding large cheesy bronchial nodes which contained tubercle bacilli and a large tubercular necrotic spot in lung. This happened to be the first instance that I had seen of the thing. That child had tuberculosis of I know not how long standing. It did not die of tuberculosis. There was in the body no signs of tuberculosis except this.

My attention has been directed to that condition ever since and, although I am unable to give actual statistics, my impressions certainly bear out the statements made by the reader that the infection in the great majority of cases is by the bronchial lymphatic glands. Although seeing a good many autopsies, I cannot recall a case in which tuberculosis was certainly primary in the intestine.

It has been proved not only that tuberculosis often starts in the bronchial lymph nodes, but that the disease may lie dormant there, perhaps for years, ready to advance rapidly to the lungs under favorable conditions.

Dr. Alfred Stengel.—In regard to the question of conveyance of tuberculosis to children or to adults through the gastro-intestinal tract, I should not like to have my precon-
received opinions in this matter disposed of too rudely. If it is true that infection through the intestinal tract is as frequently the cause as some would have us believe, the subject is one of enormous importance in questions of public health, and to dispose of the notion might do incalculable harm. In taking the evidence that Dr. Northrup has brought before us at its face value it may be well to question ourselves regarding the interpretation that may be placed upon it. One thought occurred to me, namely, that it does not absolutely follow that tuberculous lymphatic glands of the post-bronchial region are necessarily due to respiratory infection. I don't know how often it may be otherwise, but am inclined to think it may be more frequent than we are disposed to believe at the present time. For example, infection through the gastro-intestinal tract may possibly give rise to primary post-bronchial tuberculosis, for the bacilli may be taken up by the portals of entrance, through the lacteals and be carried to the lymphatic circulation and enter the lung. As these children are not strongly susceptible to tuberculosis, the bacilli do not generate tuberculosis, but are carried away in the lymph stream to the roots of the lung. That it is possible for infection to occur in the gastro-intestinal tract, Dr. Northrup admits, when he states there are some six cases in the experience of himself and associates. How much oftener it occurs without any peritoneal lesion would be difficult to establish. A second thought is suggested by the fact that the post-bronchial glands drain a large area including the pleura and the neighboring membranes. The experiment of inoculation through the mouth, referred to in the paper, proves what the investigations of a number of investigators, particularly French pathologists, have shown, viz., that infection through the mouth causing lymphatic tuberculosis is much commoner than we thought. In a considerable series of cases of lymphatic tuberculosis of the neck it has been found that there has been in all probability primary infection through the tonsils and in several cases other lesions of the mouth. The resulting lymphatic tuberculosis of the neck may secondarily infect the pleura or superficial portions of the lung by continuity. These two ideas occur to me: First, the one regarding the possibility of invasion, as Weigert pointed out long ago, with respect to disseminated, acute, or miliary tuberculosis, from the abdominal organs and through the thoracic duct.
and its tributaries without involving the lung; and second, that infection may occur through the mouth and pharynx. A third point of interest is this, that we may be misled in regard to the age of a tuberculous lesion. Pathologists find this true of genito-urinary tuberculosis in particular. The same thing may be true of these bronchial lesions; a very small lesion of the lung or a very small lesion of the mucous membrane might easily be overlooked or may heal, while the resulting lesion, a post-bronchial tuberculosis, might remain and some day be the primary focus of secondary infection.

Dr. Edwin Rosenthal.—I regret not hearing the whole of the paper, as the question is one that interests me very much. I am of the opinion that the inoculation of the system starts from some of the lymphatic glands. Some years ago I was physician to a little home to which were brought foundlings and other infants. I performed post-mortem upon those that died, and remember three instances in which there were tubercles of the peritoneum, but the lungs were entirely free. The lymphatic glands in the neck and elsewhere were enlarged, and showed evidence of degeneration.

Dr. Seabrook.—Some years ago I was connected with an Indian School, and among these children there were a number of Apaches. In several of the autopsies that were made in children under ten years of age we found extensive tuberculosis of the mesentery and peritoneum and very few, if any, traces in the thoracic cavity.

Dr. Northrup.—We do not stir up a pure culture for the babies to breathe. We have 2,100 children at present under the care of the institution, 1,200 of which are out in the city and environs boarding; they are not creeping on our floors, they are creeping on somebody else's floors. They are not taking our milk, they are taking corner grocery milk, or whatever kind of milk they can get; 1,200 children represent 1,000 caretakers, though it is a large family, they are subjected to all the environments you could wish to make the experiment a fair one. We have about 1,000 souls in the block. Of these, two-thirds are nurslings, one woman nursing two children. The milk of the others is pretty carefully watched. Some of
the other children are over three years old, and they have stood the outside environment and have come back alive. The hospital is for the sick from the house and from outside. These are the babies we have been making our autopsies on.

I would like to ask Dr. Abbott a question. Is it not very difficult to find culture material, in the Laboratory, on which tubercle bacilli will grow?

Dr. Abbott.—That is my experience. I have always found considerable difficulty in getting a pure culture of the tubercle bacillus from the tissues of a dead animal.

Dr. Northrup.—That is what I understand. It is a very difficult thing to cultivate them in artificial surroundings. Tubercle bacilli require not only a good culture medium but uniform temperature. They are surface-growers, and will not grow in fluids under the surface and without air. Again, we have had no cases of congenital tuberculosis. There have been cases reported where in the blood stream of a child taken from the mother by Caesarean section there were tubercle bacilli. There has been a good deal of manipulation in these children through squeezing and pulling. I have not been told that any of these showed tuberculous lesions in the child, and it may be that the child may acquire the disease from the tuberculous placenta and the womb. I had a child fifty-one days old which died of tuberculosis, the mother having had huge cavities in both lungs, and dying soon after the birth of the child. But when a child’s food is prepared never so carelessly, it is not a favorable brood culture for the tubercle bacilli. Dr. Abbott and Dr. Trudeau have been able to succeed in making tubercle bacilli grow in a flask, but if a cow drops into her milk six tubercle bacilli, they remain six bacilli. I take it that a child may take care of a certain number of bacilli. That is one of the reasons I think the milk that has tubercle bacilli in it is not necessarily fatal. I do not want to convince you that milk should not be well taken care of. I purposely withheld my facts and figures for a long time because I did not wish to stem a tide which had set in the right direction. Everybody should favor cleaner milk, better milk, milk which contains fewer bacteria. While I was working at this question of the portal of infection, I called the attention of some of my friends.
to the above facts, and at the very next autopsy they said: "Where are your bronchial glands," and "I did not find them around the root of the lung." I gave the specimen a little washing, and began at the top to cut down sereatum, and the knife soon came on a chalky mass, 1½ inches by ¾ inch in size, flattened against the trachea. The demonstration that this was the earliest lesion was accepted as satisfactory. My successors have rather favored the other theory, but they have found that the oldest process is pretty apt to be the bronchial lymph nodes. I do not know anything about the tonsils in children. The children I have examined have been, as a rule, under two years or three. I have looked at a great many of them and they have normal tonsils so far as noted.
ABSTRACTS

PUBLIC HEALTH AND FORENSIC MEDICINE.

CIRCULAR OF INFORMATION CONCERNING THE TESTING OF DIPHTHERIA-ANTITOXIN OF THE NEW YORK STATE BOARD OF HEALTH.

(Medical Review of Reviews, New York, 1898, iv, 390). The occasional placing on the market for sale of preparations of diphtheria antitoxin which are far below the strength claimed for them, has caused the Health Department, for the protection of the people, to undertake the testing of samples of the various serums placed for sale in New York State by the different manufacturers.

The method of testing adopted is the one formerly advocated by Behring and Ehrlich, and has been chosen because it is the one in most general use in the United States, and also because, with proper precautions, it gives sufficiently satisfactory and uniform results.

The new method recently suggested by Ehrlich was not adopted because it is still on trial, and has not as yet been generally employed in this country.

According to the old Behring-Ehrlich standard, an antitoxin unit is ten times the amount of antitoxin, which, when mixed together with ten times the minimum fatal dose of toxin for a 250-gram pig, and injected subcutaneously, will neutralize the poisonous effect of the toxin, that is, the test animal will remain apparently unaffected.

The large experience in testing antitoxin has shown that the most certain method of estimating the neutralization is by the health of the animals as shown by noting their loss or gain in weight. The minimal surely fatal dose for a 250-gram pig is now considered to be the amount which kills most pigs of 250-gram weight on the fifth or sixth day.

The method of obtaining the diphtheria poison, and of determining the strength in antitoxin of the specimen of serum to be tested, is as follows:

A 2 per cent. peptone nutrient-bouillon, distinctly alkaline to litmus, is inoculated with diphtheria bacilli and placed in the incubator at 37° C. for seven days. Upon its removal it is tested for its purity, and then ½ per cent. carbolic acid is added to it. The toxic bouillon is filtered, or allowed to clear by standing, and then stored in glass vials in a cold and dark place. (It is important that the vials be completely filled with filtered bouillon-culture.) From time to time a vial is opened, and the toxicity of its contents tested. If the fluid is found to have deteriorated over 10 per cent. it is discarded*, and a new test toxin obtained. The quantity of this fluid, which kills the majority of guinea-pigs, weighing about 250 grams upon the fifth or sixth day, is considered the minimal surely fatal dose. Ten times this quantity is the test amount to be mixed with the antitoxin.

* This is to obviate possible protoxoids.
The quantity of antitoxic serum, which, when mixed with the test dose of toxic bouillon, and injected subcutaneously into a guinea-pig (not varying in weight over 15 grams from 250), neutralizes the "toxin" to such an extent that on the seventh day the pig is not only alive, but within 20 grams of its original weight is considered to contain 1-10 of an antitoxic unit (Behring-Ehrlich original standard).

In an actual case therefore, if 1-10 of a c.c. of serum protected the pig, the serum would contain 1 antitoxic unit per c.c.; if 1-100 c.c. protected, 10 units per c.c., etc.

The following shows the actual steps as they are carried out in testing a sample of antitoxic serum, which, by the duration of the minimizing treatment of the horses or by the producer of the sample, is estimated to be somewhere near 250 units in strength with a toxin, 1-100 c.c. of which kills a 250 gram pig in five or six days, and which has not deteriorated since the removal from the incubator more than 10 per cent. The serum is tested for 150, 200, 250, and 300 units. Both the serum and the toxin should be diluted to such a quantity as to insure accurate measurement.

_Dilution of the Serum._—This is accomplished in the following manner: 1 c.c. of serum is pipetted out and diluted to 30 c.c. with sterile water; 1 c.c. of this solution is diluted to 100 c.c. and mixed thoroughly; 1 c.c. of this second solution contains 1-3000 of a c.c. of the serum.

_Dilution of the Toxin._—Take 1 c.c. of toxin and dilute to 10 c.c.; 1 c.c. of this solution contains 1-10 c.c. of the toxin pipetted out. Take 1 c.c. of toxin and dilute to 100 c.c.; 1 c.c. of this solution contains 1-100 c.c. of the toxin pipetted out.

The following table shows completely the details of the test:

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<td>1.240 1 c.c. of</td>
<td>1-3000 dil. 1-3000 c.c. serum.</td>
<td>1 c.c. of 1-10. dil. 1 c.c. toxin.</td>
<td>2 c.c.</td>
<td>Died in three days.</td>
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<td>2.240 1.2 c.c. of</td>
<td>1-3000 dil. 1-2500 c.c. serum.</td>
<td>1 c.c. of 1-10 dil. 1 c.c. toxin.</td>
<td>2.20 c.c.</td>
<td>Died in seven days.</td>
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<td>3.250 1.5 c.c. of</td>
<td>1-3000 dil. 1.200 c.c. serum.</td>
<td>1 c.c. of 1-10 dil. 1 c.c. toxin.</td>
<td>2.5 c.c.</td>
<td>Lived, showed no appreciable induration and did not lose over 20 grams in weight.</td>
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<td>4.260 2 c.c. of</td>
<td>1-3000 dil. 1-1500 c.c. serum.</td>
<td>1 c.c. of 1-10 dil. 1 c.c. toxin.</td>
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<td>Lived and did not lose in weight.</td>
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<td>5.235 1st control</td>
<td>94 c.c. of 1-100 dil. 1.0094 c.c.</td>
<td>1-100 toxin. 1-100 toxin. 0.01 c.c. toxin.</td>
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<td>Died on fifth day.</td>
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<td>6.250 2d control on 1 c.c. of 1-100 dil.</td>
<td>1-100 toxin. 0.01 c.c. toxin.</td>
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The controls dying on the fifth and sixth days prove that the toxin used was of the estimated poisonous strength. Since the pig receiving 1-2500 c.c. of serum died and the pig receiving 1-2000 c.c. lived, the serum contained between 200 and 250 antitoxin units (Behring-Ehrlich old standard). If a still more accurate test is desired, one would proceed in the manner illustrated above to test for 210, 220, 230, and 240 units.

PHARYNGEAL COUGH IN CHILDREN.

Millon (Journ de Méd. de Paris, 1896, viii. 535). Pharyngeal cough is frequently met with in children, but its cause is often allowed to go unrecognized. The cough is severe, comes on in paroxysms, occasionally has a rough sound, and is followed by expectoration of mucus. Very active play or the crying of the child may bring it on frequently during the day; at night the intervals are longer, but its most violent paroxysms are at bedtime, at midnight and on awakening. The mucus thrown out is thick, tenacious, and filiform. Treatment of this form of cough, which occasionally resembles whooping cough, is mainly local. On examination we find the pharyngeal mucous membrane, red and swollen and presenting all the signs of a chronic pharyngitis, which may be either of the hypertrophic or the atrophic form. The presence of a pharyngeal catarrh during an attack of whooping cough must not be overlooked, as the latter will be of long duration unless local applications to the pharynx are made. In uncomplicated cases of whooping cough the daily painting of the throat with a 5 per cent. solution of resorcin is very effectual. Pharyngeal cough usually affects children between the ages of six and ten years. As a therapeutic measure, local applications to the throat of a \( \frac{5}{100} \) per cent. solution of resorcin or iodine-glycerine (tr. iodi., glycerin aeq. p. aeq.), in children under two years of age: Tinct. iod. 1, glycerin 2-4), twice to three times a week, in conjunction with gargles, are to be recommended. A few paintings are usually sufficient to remove the pharyngeal cough.

THE TREATMENT OF WHOOPING COUGH BY RESORCIN.

Roskam (Annales de la Société Med. Chirurg. de Liége, 1897, xxxvi, 71). Since 1890 Roskam has treated 290 cases according to the method recommended by Moncorvo and modified by himself. His method has been to make immediate application to the glottis by means of a very fine sponge of a 2 to 3 per cent. solution of resorcin, but without the previous use, as recommended by Moncorvo, of a 10 per cent. solution of cocaine, which latter frequently induces violent spasm. As a rule the treatment was begun during the first two weeks of the disease, although a number of the children had already reached the convulsive stage. Not a single child died, although severe symptoms of adynamia were present in three of the
children; two cases recovered in fourteen days seventy cases were cured before the end of twenty-five days, counting from the beginning of treatment, eighteen recovered within a month. As a rule children under one year of age recovered more rapidly, generally within eight days. In children under one year of age a 2 per cent. solution was used; in those between one and two years of age, a 2 per cent. solution was used during the first few days and later a 3 per cent. solution; in still older children, the 3 per cent. solution was at once employed. The application was made every four hours and, where possible, once or twice during the night. After two to three days, and occasionally still earlier, a marked improvement of the digestion occurred, the children took their food with relish, and after four to five days the cough had lost its characteristic sound, the paroxysms became shorter and less severe, vomiting ceased, and the general condition improved notably. After ten to twelve days the treatment was discontinued, and when necessary was resumed after five to six days.

THE TREATMENT OF WHOOPING COUGH.

A. Werthheimer (Der Kinderarzt, 1897, viii., 193). Of the innumerable remedies which have been recommended for this disease only a few are rightly or wrongly looked upon with favor. Amongst these may be mentioned the narcotics, the bromides, bromoform, quinine, and antipyrine.

Of the narcotics, morphine, the great representative of this class of drugs, has some prominent advocates as well as equally prominent opponents. Werthheimer is numbered among the latter. It has never been claimed that this drug exerted the slightest influence on the course of the disease, and even aside from its deleterious secondary action, it is a remedy which should not be used for the amelioration of symptoms, even for the reason that if given in effectual doses it has a tendency, by weakening the expansive powers of the bronchi, to cause the accumulation of secretion with its accompanying dangers.

Belladonna, recommended by Trosseau as a remedy for pertussis has for a long time been looked upon with favor, but gradually faith in this drug has greatly diminished; though still highly prized by some physicians it is little used by the profession in general, and then as a rule only in conjunction with quinine, antipyrine, or the bromides.

In the following combination it is occasionally beneficial to older children when other drugs fail:

R  Ammon. bromat ........................................ 0.18—0.20
    Extr. belladonna ...................................... 0.005

M  One powder to be given two or three times daily—later, only one late at night.

The action of bromoform is somewhat that of a narcotic, and it possesses some of the same objectionable features. Werthheimer has several times seen it produce in children under one year of age an apathetic
drowsy condition with marked loss of appetite, which symptoms, however, rapidly disappeared after the drug was discontinued. Moreover, he never could discover that bromoform exerted any material influence on the course of the disease. Adding to this the knowledge derived from Unger's experiments on animals, that bromoform, like chloroform and iodoform, may lead to extensive fatty degeneration, and the fact that during recent years the reports of cases of bromoform poisoning have markedly accumulated, we seem justified in using this drug with even more care than ever before.

The bromides, which are to be looked upon more as adjuvants, are preferably prescribed to enhance the sedative action of other remedies. They are particularly indicated in those cases of whooping cough where cerebral irritation makes itself known by the occurrence of periods of excitement.

We have then to consider only two more remedies—quinine and antipyrine—which are deserving of more extended attention.

The value of quinine in whooping cough is supported by such numerous and reliable observations that its value can no longer be doubted; but its administration in suitable doses to children under one year of age is not feasible on account of the digestive disturbances occasioned by it.

The remedy which Werthheimber has used nearly without exception during late years is antipyrine, which, according to his experience, offers at the same time the least drawbacks, with the most favorable influence on the disease if properly employed.

As to the grave symptoms which are said to be so frequently produced by antipyrin they may be left nearly if not entirely out of consideration by those familiar with the action of the drug.

The physician who administers to a child daily doses of 2 to 4 grams of antipyrin in a routine manner for a longer or shorter period of time, will undoubtedly meet with the unpleasant experience of some day finding his patient cyanotic or in a condition of collapse. While we know that antipyrin, if carefully administered, is one of the safest remedies in uncomplicated whooping cough, we must be guided in its use by the condition of the child during the paroxysms, by its general well-being, its alertness, its undiminished appetite; and this test may be applied to infants as well as to older children.

The doses in which Werthheimber usually orders antipyrin are: For the first year of life, 0.03-0.05 grams two to three times a day, according to the frequency of the paroxysms; for children, one to two years of age, 0.10-0.15, as above; for older children, in the beginning, a daily dose (in two to three portions) of as many decigrams as the child numbers in years, increasing the dose by one-half in a few days and, if required, gradually bringing it up to twice the amount first administered.

A daily dose of 1.50 is never exceeded by Werthheimber. It is advisable to give one to two small doses during the day, and a somewhat larger dose at night,—if possible shortly after a preceding cough paroxysm, and is most conveniently administered in the form of powder, dissolved in water, with a few drops of Tokay wine added. As a sine qua non for the safe employment of antipyrin, a healthy condition of the kidneys is necessary; the
urine of the patient should therefore always be examined before treatment is commenced, and the examination repeated from time to time during the course of the treatment. The reason why children as a rule show a greater tolerance for antipyrin than adults is undoubtedly due in a great measure to the more frequent healthy condition of their kidneys.

Antipyrin should not, however, be looked upon as a specific any more than should quinine, the action of the drugs being similar both as sedatives and anti-spasmodics.

When whooping cough is complicated by a febrile inflammatory infection of the lungs, as, for example, broncho-pneumonia, it would seem judicious, even where the cough paroxysms continue, to abstain from administering antipyrin or most of the other remedies for whooping cough. In these cases the employment of camphor, as recently recommended by Stickler, would seem appropriate. It is well known that in the complicating subacute forms of broncho-pneumonia the dangerous symptoms (the greatly increased pulse rate, the edema, the syncope, etc.), and the instances of sudden death are due to the great dilatation of fatty degeneration of the heart. In connection with whooping cough, the changes in the heart are, however, not alone determined by the venous stasis and the interference with the circulation but also undoubtedly by the continuous recurrence of the cough paroxysms, and in these cases the camphor would, under certain conditions, fulfil more than one indication.

In all cases of uncomplicated pertussis Wertheimber recommends the use of alkaline mineral waters during the whole course of the disease, as a means of loosening the viscid mucus and thus facilitating expectoration.

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ON RUBEOLA.

Stoos (Correspond. f. Schweizer Aerzte, 1898, xxvii., 399). Stoos, according to a communication made by him to the Medicin-Pharmac Bezirkvereins Bern, has studied thirty-four cases of rubeola occurring in that city during an epidemic. The characteristics of this disease were as follows:

1. An exanthem, which resembled that of measles except that the maculae were smaller and their duration shorter.

2. An involvement of the mucous membrane of the upper air passages. This was not as uniform as in measles. The pharynx was nearly always affected.

3. An involvement of the lymphatic glands. The submaxillary glands were affected in every case, quite frequently, also, the cervical, and the glands at the nape of the neck, in single instances also the inguinal and axillary glands.

Discussion.—Dr. Rohr had met with a severe case of rubeola, when examination showed the presence of the streptococcus angina. He had observed a number of slight affections in which pain of the neck and vomiting were present.
Dr. Kürsteiner observed bronchitis as a complication of rubeola in very young children, and in one case a swelling of the glands of the neck to the size of a hen’s egg.

Dr. Regli remembered a case presenting prodromal symptoms of meningitis in which the eruption appeared on the ninth day; this was followed by anguina accompanied by the presence of streptococci and cocci conglomerati.

_THREAD-WORMS IN THE EAR._

An interesting case came to the notice of Dr. Köbel (Stuttgart). A girl, one and a quarter years of age, after a violent attack of retching, choking, and sneezing, passed a thread-worm more than a finger in length the worm making its appearance at the external auditory canal, whence it was removed by the fingers. The child had suffered for five days from an otitis media purulenta, as a sequel to an attack of pneumonia, and the drum membrane was undoubtedly already perforated and only served the worm as a means of exit. Before the parasite was passed, the child had been rolling around in its bed loudly shrieking for the space of an hour. Within eight days a cure resulted by the closure of the perforation in the drum membrane.

_THE USE OF THYREODIN IN PEDIATRICS._

Dobrowsky (Arch. f. Kinkerheilk, 1897, xxi., 54). The following preparation was used by Dobrowsky in the treatment of thirty children at the Monti Poliklinik:

\[ \text{1} \times \text{Thyreodini siccati (non depurati Merck) in pulvere.} \]
\[ \text{Sodii bicarbon. ad } \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 0.35 \]
\[ \text{Compressione fiat tabula, D.t.d. æqu. tabul No. xx.} \]

One-half to two tablets were given daily during the first week; during the following week two to four tablets daily, dissolved in soup, milk, coffee, or water.

Nine out of these thirty children were suffering from struma, eight from prurigo, one from obesity, twelve from psychic retardation of development. The result of the experiment was as follows:

A reduction in weight was caused by the thyreoidin up to about the fourth week of treatment. After this no further reduction in weight occurred, although the thyreodein was continued. When the remedy was discontinued bodily weight increased to one or two weeks. A case of struma parenchymatosa began to improve within a few days, but the growth did not entirely disappear, and after three weeks no further diminution of its size resulted from the treatment. An acceleration of the pulse was noticed during the whole treatment, but disappeared when the
remedy was discontinued. Prurigo was markedly improved by thyreoidin but never cured. All patients were subject to relapses. Idiotic and cretinoid children were not much benefitted by the thyreoid treatment. In one patient only an increase in intelligence was observed, while in two others an improvement was noticed in the carrying of the head and body. This improvement was permanent. The condition of the blood was not influenced by the treatment. The sensation of thirst, diuresis, and the excretion of phosphoric acid were increased during treatment. Indican was always present in the urine, occasionally in great quantities. Thyreoidin is a safe remedy if the heart is watched during its employment, and this is of great importance in patients having idiosyncracy for iodine. Dobrowsky calls particular attention to the relapses occurring of the remedy.

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TETANUS ANTITOXIN.

Prof. Doenitz (Deutsch. Med. Wochenschr., 1897, xxiii., 428). The first question for which an answer was sought by Doenitz, regarding the action of the antitoxin of tetanus, was how rapidly does the poison of tetanus combine with the tissues, and can it, after being incorporated into them, be removed by antitoxin. Experiments on animals yielded the following facts:

The poison of tetanus combine: with the tissues immediately upon reaching the blood, and in several cases of poisoning the lethal dose is absorbed within from four to eight minutes. This absorbed poison may be taken from the tissues by tetanus antitoxin, but the more severe the poisoning, and the longer the time which has elapsed before the antitoxin is administered, the greater will be the difficulty of the separation. Thus it was found, that after an hour had elapsed, it was necessary to employ twenty-four times the amount of serum that was effectual immediately after the poisoning. Furthermore, to determine what action the antitoxin would display after the tetanus had already manifested itself. In the animal experiments Doenitz took for granted that tetanus is frequently caused by a relatively slight form of poisoning, for the reason that the tetanus bacilli from budding spores, infecting a wound, only produce small quantities of poison at a time; quantities which only become dangerous by their gradual accumulation. For this purpose, splinters of wood containing spores of the bacilli, were introduced beneath the skin of guinea pigs and white mice. All the animals which were not treated died of tetanus. The infection, therefore was positive. Some of the animals which had received an injection of 5 ccm. of a 10 per cent. solution of tetanus antitoxin (the mice 0.5 ccm.) after symptoms of tetanus poisoning had appeared, namely those which presented grave symptoms of intoxication, died, while those with slighter symptoms of poisoning (extension and stiffness of one extremity) all recovered.
A BIVALVE PLASTIC SPLINT FOR POTT'S DISEASE.*

By Henry Ling Taylor, M.D.,
New York.

The advantages that may fairly be claimed for the fixed plaster jacket in the treatment of Pott's Disease are its:

1. — Small expense,
2. — Ease of application, and
3. — Immunity from meddlesome interference.

Its disadvantages are its:

1. — Uncleanliness,
2. — Liability to produce excoriations,
3. — Lack of adjustability and of precision.

Where intelligent home cooperation can be secured, as usually in private practice, a properly applied and adjustable steel leverage supporting apparatus is preferred by the writer in common with most American orthopedists. In dispensary practice, on the other hand, especially where the numbers are

*Read at the meeting of the American Orthopedic Association, Boston, May 18, 1898.
large and the facilities limited, properly applied plaster splints may serve an excellent purpose.

In regard to the mechanical action of plaster splints, the writer finds himself in accord with Bradford and Lovett, who make the following statements in their standard work (Orthopedic Surgery, pp. 60, 61, 71): "The undoubted beneficial effect of plaster jackets is due, not to the separation of the affected vertebra, but to a fixative support in an improved position. In short the plaster jackets afford an excellent antero-posterior support," and again "Unfortunately, however, the plaster jacket does not of itself, by its hold on the thorax, maintain a continued extension, but the jacket and thorax so adapt themselves to each other that active suspension ceases. The jacket, however, does act as an antero-posterior support until it becomes loose and inefficient."

It is a serious mistake to suppose that a clear conception of its mechanical action, and sufficient technical training are not needed in order to properly apply a jacket. The fact that these are so widely disregarded may, however, account for many disappointments in practice, and the curious fact that in spite of an enormous accumulated experience, we have no adequate tabulation of final results of treatment. This may also help to explain the small progress made in technique since the introduction of the method.

If the plaster jacket acts like a steel splint, simply as a leverage mechanism, similar principles should be regarded in its application. The posterior half, at least, should be rigid and force must be steadily applied from behind forward to the affected region of the spine, and in front from before backward at the upper and lower regions of the trunk.

In order to apply this pressure most efficiently and comfortably, thick strips of felt about an inch wide are fitted to the back either side of the spinous processes, before the plaster is applied, distributing the pressure as is done by the pad plates of the steel apparatus, or by the padding of a horse's saddle, without impinging upon the spinous processes, which are poorly adapted to bear pressure.

If, for the sake of cleanliness, the jacket is made removable by being split in front, it soon loses its rigidity and consequently its power of support; and this is not to be recommended while disease is active. If, however, the jacket is cut down in
FIG. II.
each axillary line, so that it is divided into an anterior and posterior half, each half will retain its shape and rigidity, and may be firmly joined by webbing and buckles; at least four sets are needed on each side; or one side may be joined by a leather hinge. When the jacket is cut down, a strip of felt should be laid across the upper and lower end of the anterior piece to increase the leverage, and one-half inch or more should be removed from each lateral edge to allow for shrinkage and straightening of the body. The fact that the two valves can readily be approximates after this excision shows that, as ordinarily applied, the leverage is insufficient. Instead of using bandages and suspension, the bivalve splint may be made as follows: A paper pattern of the posterior valve is made from the patient’s back, allowing one inch extra around the edge to be folded back. From this pattern eight or ten thicknesses of crinoline are cut of the same size and shape. The patient being supported face downward on a rest under the pelvis and another under the upper part of the sternum, the crinoline sheets are dipped into plaster cream in a large flat pan, applied to the back, the felt pads being in position; the edges are folded back for greater rigidity, and the whole carefully molded to the patient and allowed to set, after which the patient is turned on his back, and the anterior valve made in a similar manner.

The jacket should be made firm and rigid, especially at the edges, and should reach in front from the pubes to the top of the sternum. Such an apparatus is shown in the cuts (Figs. 1 and 2); it is rigid, removable and adjustable, and brings the pressure to bear on definite areas selected with regard to its mechanical action. The splint may be removed to cleanse the back or to note its efficiency, taking the impressions* made by the felt pads either side the spinous processes as a guide. If more leverage is needed, the felting may be reinforced, or the depth of the casing reduced by paring the lateral edges. In other words, the jacket has ceased to be mainly a casing, and has become a mecanism under the surgeon’s control, and capable of being manipulated to produce definite mechanical results.

Whatever the mechanism employed, it should never be forgotten that what is mainly intended by its action, is to promote

*They are plainly shown in cut 2, taken from a photograph.
FIG. III.
the general and local hygiene of the patient; that it is inherently and necessarily imperfect, and that periods of recumbency and other hygienic measures are to be prescribed as indicated. The patient requires general and special management progressively modified to suit his needs; his treatment must be both surgical and medical. If the disease is in the lower lumbar region, he should be kept recumbent on a special frame, with or without an apparatus. If in the cervical or upper dorsal, the leverage should be increased by adding a head-support. This may be furnished by a chin-cup resting on a steel bar or bars incorporated in the anterior half of the splint (Fig. 3). If necessary an occipital or occipito-frontal rest may be supported from the posterior valve.

In conclusion it may be remarked that the terms "jacket" and "head spring" seem infelicitous and of evil influence. As old Percival Pott puts it: "Many instances are producible in which our conduct is in great measure regulated by the language which we use." A "jacket" is a covering, but the thing we use in the treatment of Pott's Disease is, or should be, a splint, a tool, a mechanism, and only incidentally a covering.

A "spring" connotes elasticity, vibration, which are the qualities that should be relentlessly eliminated from a head support, and which make the jury-mast such an imperfect contrivance.

If we would think of the plaster cylindroid as a brace or splint, and the chin rest as a support, and so designate them, our mechanical ideas would be clearer and our methods more workmanlike and efficient.

71 West Fifty-fifth Street.

Dr. Philip Barbour has been elected to the chair of professor of diseases of children at the Hospital College of Medicine, to succeed the late Dr. J. A. Larrabee. Dr. Barbour has been professor of chemistry at the college for some time. He will now have charge of both branches.
In spite of the fact that in almost every grocery store and at every druggists "worm remedies" are conspicuously advertised, the physician is frequently consulted concerning the treatment of "pin worms," or as they are sometimes called, "seat worms."

The oxyuris vermicularis is an exceedingly troublesome parasite, and although generally supposed to be quite harmless, is nevertheless capable of creating considerable damage to health, and, in the writer's experience, at least, has more than once been more or less the direct cause of death.

In Dr. Keating's Cyclopedia of the Diseases of Children, he states that "there are no really dangerous conditions produced by the oxyuris." This may be, generally speaking, a correct statement, so far as practice in our cities and towns is concerned, but in rural districts and among ignorant and careless people a very serious condition results when rational treatment has been neglected.

While stationed among the Chippewa Indians, at White Earth Reservation, Minnesota, I found it in more than one instance quite impossible to save the lives of little children suffering from debility and convulsions resulting from the presence of enormous numbers of these parasites in the intestinal canal.

Dungleson states that the origin of these worms is extremely singular, and more favorable than any other fact to the hypothesis of spontaneous generation, in the lowest tribes of animated nature. They are certainly not identical with any worms out of the body.

They are most commonly met with in children of the poorer classes, who are improperly fed, but we find that all children, and even adults, are liable to contain such parasites. The children of tourists in Europe, and not infrequently the tourists themselves, suffer from these annoying parasites.

The children of Reservation Indians, who have departed from the old-time normal life which we are pleased to regard as savage, these suffer very much from such parasites.
Indian cabins are built conveniently near the lakes and other natural water supplies. The old-time use of natural water courses was well enough when camping grounds were often changed, but when the Indians remained year after year near the same lakes and ponds the water supply easily became contaminated. At such places it is customary for them to obtain the necessary water supply by wading out perhaps a few feet from shore, a little over their moccasins, and dipping up with a pail what is required. This is done at infrequent and usually long intervals.

The borders of these lakes are overgrown with reeds and bushes, around which the water is shallow, stale, and filled with decaying animal and vegetable matter. After carrying to the cabin, the pail is left usually uncovered in the most convenient place, not always the best ventilated.

Besides this inferior water supply, the wholesome venison and Indian maize has given place to salt pork, poor meat, and doughy bread, making a combination of food not conducive to health.

Anemia, scrofula, tuberculosis, and many other diseases which are new to our Aborigines are fast decimating the once powerful tribes. It is not to be wondered at that intestinal derangements and parasitic disorders are observable among the children of the "modern Indian."

I have seen them profoundly sick with pin worms. The oxyuris vermicularis is in its maturity about one-sixth of an inch in length, and is of a bright, white color, and exceedingly hardy. The eggs are deposited in the mucus and on the mucous membrane of the rectum.

The development of these parasites is most rapid, and although large quantities may be expelled and a cure supposed to have resulted, a few remaining worms will rapidly renew the place of those which have been removed. The symptoms of this condition are well known. There is troublesome irritation of the anus, with itching and burning, and even pain extending to the genitals.

These symptoms are especially observable at night when the patient is warm in bed, and reflexly these symptoms may give rise to every kind of irritation of the intestinal tube and to sympathetic disturbance of almost every function. Commonly we find restlessness, peevishness, in some cases amount-
ing to violent ill-temper. There is also in most cases itching of the nose, involuntary twitchings, grinding of the teeth during sleep and even in the waking hours. Chorea and convulsions are not infrequently induced by this condition, and even epileptiform seizures have been attributed to this cause. The itching and burning are often the exciting cause leading to the habit of masturbation, more especially in little girls. The pruritus is the latter followed by decidedly leucorrhea, and in older girls and those approaching puberty, various forms of hysteria are observable.

Marked anemia is very apt to be present. Anorexia and morbid and ravenous appetite is frequently observable. Either diarrhea or constipation, as an intestinal derangement, arising therefrom, is to be expected. In those who are suffering from the presence of worms the breath is foul and the stools are apt to be fetid and mixed with large quantities of mucus. The worms not only pass out in the stools but creep out and can be found in the folds of the skin near the anus. In little girls they pass into the vagina and sometimes set up serious inflammation. The mucous membrane of the rectum is usually more or less congested.

In the treatment of this disease we must carefully wash out the bowel either with pure tepid water or with some antiseptic like boroglyceride in a 10 or 20 per cent. solution.

Once or twice a week an aperient should be administered, a half hour before breakfast, and after the bowels have moved a suppository of boroglyceride and gelatine should be inserted.

These suppositories can be used by day as well as by night, the patient wearing a protecting napkin. The treatment must be continued for several weeks. Where a reasonable relief is not obtained by aperients, injections, and suppositories solutions of the sulphate of quinine: Grs. 2.4.6. to water \( \frac{3}{4} \) may be given in teaspoonful doses every four or six hours p.r.n.

The control of this aggravating trouble is often followed by very decided improvement in the general health and spirits of the patients.
THE AMERICAN PEDIATRIC SOCIETY'S COLLECTIVE INVESTIGATION ON INFANTILE SCURVY IN NORTH AMERICA.*

THE subject of infantile scurvy has so recently come into prominence, and still presents so many mooted questions, especially regarding its etiology, that it was the decision of the American Pediatric Society a year ago to undertake a collective investigation of the matter, based upon the cases occurring in America. This seemed particularly needed, as no other such study upon a large number of cases has yet been made in any country.

The committee, which is now making its report, was accordingly appointed. It has been diligently at work during nearly a year, and has used every means in its power to reach reports of cases of the disease. A list, as accurate as possible, was prepared of all the medical journals of North America, and a notice of the proposed investigation was sent to each, inviting correspondence on the part of all readers. Letters were sent to the secretaries of the county societies in a large number of the States of the Union requesting that notice be given at the meetings. Letters were also addressed to the professors of diseases of children in all the regular medical colleges of the United States. The "Index Medicus" was searched for the names of those who had published reports of cases, and letters were addressed to all of them, as indeed to all physicians of whom even the rumor had come of probable cases under their charge. Circulars were printed containing questions to be answered, and were sent to all the members of the American Pediatric Society, to all physicians applying for them, and finally wherever there seemed any chance of getting a response.

The questions contained in the circular requested information on the following points: Whether the case was seen in hospital or private practice; the race, sex, and age; the hygienic surroundings, family history, and previous illnesses; full details of feeding from birth, and the influence which the food appeared to have had upon the development of the disease;

*Reported at the Tenth Annual Meeting, Cincinnati, June 2, 1898.
the symptoms in detail, with special reference to pain and its location, apparent paralysis or inability to move, swellings, fractures, hemorrhages, the condition of the gums, the presence of fever, the condition of the urine and bowels, the presence of anemia or malnutrition and of rickets or any other complicating diseases, and the character of the first symptom to develop; the treatment in detail, with duration of illness, and the time before decided improvement was discovered; the direct cause of death in fatal cases, and the post mortem findings; and finally, whether the case had been published previously.

The committee has been surprised and pleased at the large number of replies received. There are other cases of which it has knowledge of which no reports could be obtained, and undoubtedly, many more whose existence was not discovered. But in all the committee has collected 379 cases seen by 138 observers. Some of the cases are very incompletely reported, but in the majority of instances the answers are, for the most part, satisfactory. No cases needed to be excluded as instances of mistaken diagnosis, although a very few were somewhat doubtful.

The topics covered by the questions can best be taken up, for the most part, sereatim, stating merely what the reports state, without vouching for the correctness of opinions.

**Race.**—The race to which the subjects of the disease belong is stated in 372 cases. It is not given with definiteness sufficiently often to allow of an analysis further than to say that there were 367 white, 4 black, and 1 Chinese.

**Sex.**—Sex shows out of 372 cases, 189 male, i. e., 51 per cent.; and 183 female, i. e., 49 per cent.; a difference not decided enough to indicate that sex is an etiologic factor. In the remaining cases the sex is not mentioned.

**Age.**—Age is a very important matter. Although strictly speaking, the age of the cases of infantile scurvy should be limited to those under two years, the committee has ventured to include a few in children, slightly or decidedly older than this, since the etiology and symptoms are not different in any respect. Question IV. on the circular reads: "Age When Seen
with Scurvy," while XIV. reads: "Duration of Illness Before Treatment Was Commenced." By combining the answers to these two questions, the age at which the illness developed could be determined in most instances. Reliable information was given in 359 cases; in the remaining number the age was unknown or was not stated. The accompanying tabular arrangement shows the number of cases developing at different ages:

<table>
<thead>
<tr>
<th>Age When Scurvy Developed</th>
<th>No. of Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 weeks</td>
<td>1</td>
<td>.27</td>
</tr>
<tr>
<td>1½ months</td>
<td>1</td>
<td>.27</td>
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<tr>
<td>2</td>
<td>3</td>
<td>.83</td>
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<td>3.62</td>
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<tr>
<td>7</td>
<td>33</td>
<td>9.19</td>
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<td>8</td>
<td>41</td>
<td>11.42</td>
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<td>9</td>
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<td>13.09</td>
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<tr>
<td>13</td>
<td>25</td>
<td>7.00</td>
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<tr>
<td>14</td>
<td>22</td>
<td>6.12</td>
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<tr>
<td>15</td>
<td>17</td>
<td>4.73</td>
</tr>
</tbody>
</table>

It will be seen that the disease is most apt to develop between the ages of seven months and fourteen months, inclusive. The youngest case was that reported by Dr. A. Matheson, of Neillsville, Wis. This was a child of four weeks who had already been ill five days when first seen. The child was fed at the breast. Its hygienic surroundings were poor. The disease exhibited perfectly typical symptoms, and ended fatally.

The oldest child, reported by Dr. J. H. Fruitnight, was one of nine years, and was also a typical case, rapidly recovering under dietetic treatment. The cause appeared to be improper diet.

Social Position.—Of 379 cases it is interesting to note that 83 per cent. occurred in private practice, and only 17 per
cent. in hospital practice. Although no absolute class distinctions can be based on these figures, yet they point very positively to the greater tendency of the disease to occur among the rich or the well-to-do. This tendency is still further illustrated by the statements of the writers regarding the hygienic surroundings of the cases. In 303 cases these are described as good, and often the statement is volunteered that they were of the very best. In 5 they were doubtful, and in only 40 are they described as bad. The figures of the report would therefore seem to indicate that the influence of bad hygienic conditions upon the etiology of the disease is extremely limited.

Previous Health.—Out of 285 cases suitable for study, it is distinctly stated in 167 that the previous health had been good. In 118 the child had suffered from various diseased conditions, which may be enumerated as follows:

Bronchitis, 5; chickenpox, 1; constipation, 1; convulsions, 3; cretinism, 1; diarrheal conditions, 45; eczema, 1; furunculosis, 1; indigestion, 22; influenza, 6; malaria, 1; measles, 7; pneumonia, 5; rheumatism, 1; scurvy (previous attack), 1; scrofulous diathesis, 1; typhoid fever, 1; whooping-cough, 2.

It is evident that the occurrence of most of these diseases can only be considered as accidental. There is a striking preponderance of instances of digestive disturbance. This probably is an indication that the faulty diet which occasioned the scurvy produced the indigestion also. It is no proof that the digestive disease itself bore any etiological relation to the constitutional affection. This is clearly the view of the correspondents, for, in answer to the question of the circular, a belief in any other cause than diet is expressed in only twenty-four instances.

Rickets, anemia, and malnutrition are not mentioned in the foregoing list. They will be referred to later.

Attention may be called to the instance of a second attack of scurvy reported by Dr. L. E. Holt. The child was eighteen months of age at the time of the second attack, the previous one having developed four months before. The first attack followed the use of Mellin’s food and sterilized milk. Recovery followed in a week upon a diet of sterilized milk and beef juice, no fruit juice being given. The second attack followed the use of Reed and Carnrick’s soluble food. The pati-
ent in this attack was in a wretched condition and died in eight days.

The case of scurvy developing in a cretin, reported by Dr. A. Caillé, is also interesting. The child was a typical cretin of fourteen months. Scurvy followed the use of condensed milk. Recovery was very prompt under the administration of sterilized milk, fruit juice and cereals.

**Family History.**—This, too, appears to exert little or no influence. In 129 cases the family history is stated to have been good, and in 97 it is negative. In 74 the following diseases are mentioned in the family: Alcoholism, 2; anemia, 2; asthma, 1; carcinoma, 1; caries of the spine, 1; diarrhea, 1; eczema, 1; gout, 2; neurotic tendency, 6; paresis, 1; pneumonia, 1; rheumatism, 16; sciatica, 1; scurvy, 1; syphilis, 7; tuberculosis, 2; uricacidemia, 1.

**Diet.**—The most important etiologic factor, according to general opinion, is a dietetic one. Consequently, the committee has paid particular attention to this point. When correspondents did not make the matter quite clear in their answers, personal letters were addressed to them, asking for further information. A large number of such letters have been written, and replies received in most instances. Full details were asked regarding diet from birth onward, and the question of food used at the time the scurvy developed, or so shortly before that it might seem to be associated with it, was particularly emphasized. The question was also asked, whether in the opinion of each correspondent there was reason to believe that the disease depended on the nature of the food used. An affirmative answer was received in 275 cases; negative, and the disease attributed to other causes, in twenty-four. The committee is not in a position to judge of the correctness of this view, nor can it claim that the disease did arise in any instance as the result of the diet employed. It would merely make the following statements of the food employed at or shortly before the symptoms of scurvy were observed according to the reporters' replies.

Any accurate percentage analysis of the report is impossible, both because the correspondents have not always stated the exact nature of the food, and because in very many instances
more than one form of food was given. Perhaps the following
summary of some of the main divisions may be of value,
remembering, however, that cases are repeatedly counted
twice: e.g., one case may be counted in the condensed milk
class and again in the sterilized milk division.

Food Used at the Time or Shortly Before Scurvy
Developed.—The number of cases in which the character of
the food is specified is 356.

Food given as follows:
Breast milk.—Alone, 10; with raw milk and amylaceae, 1;
with sterilized milk and amylaceae, 1; total, 12.

Raw Milk.—Alone, 4; with breast milk and amylaceae, 1;
total, 5.
Milk (nothing said about heating).—Alone, 8; peptonized,
4; with amylaceae, 4; total, 16.

Sterilized Milk.—Alone, 68; with proprietary foods, 21;
with amylaceae, 8; peptonized, 10; total, 107.

Pasteurized Milk.—Alone, 16; with proprietary foods, 2;
with amylaceae, 1 peptonized, 1; total, 20.

Peptonized Milk.—Nothing further stated, 3; sterilized, 8;
pasteurized, 1; with proprietary foods, 1; with amylaceae, 1;
total, 14.

Amylaceous Food (not proprietary).—Alone, 6; with
breast milk, 3; with milk, 5; with sterilized milk, 8; with Pas-
teurized milk, 1; with peptonized milk, 1; total, 24 (nine of
these were oatmeal).

Table Food.—Nothing else mentioned, 11; with condensed
milk, 1; total, 12.

Mellin's Food.—Nothing further stated, 42; with con-
densed milk, 22; with sterilized milk, 16; with Pasteurized
milk, 2; with other proprietary food, 1; total, 83.

Malted Milk.—Nothing further stated, 44; with cream, 1,
with amylaceae, 1; with other proprietary foods, 2; total, 48.

Condensed Milk.—Alone, 32; with milk, 1; with cream, 1;
with other proprietary foods, 3; with table food, 1; total, 38.

Reed & Carnrick's Soluble Food.—13.

Imperial Granum.—6.

Liebig's Food.—Alone, 1; with condensed milk, 1;
total, 2.
Lactated Food.—Alone, 3; with condensed milk, 1; total, 4.
Nestle's Food.—Alone, 1; with sterilized peptonized milk, 1; total, 2.

Among other articles of diet mentioned by correspondents, each in one instance, are: Gardner's food, Robinson's barley, Ridge's food, Brush's food, animal broth, Bartlett's pepsinated food, lactopraeparata with malted milk.

There are a number of instances in which the writers mention "proprietary foods" without further designation. In all 214 cases (60 per cent.) were fed on proprietary foods.

The effect of dietetic treatment has such an important bearing upon the etiologic influence of diet that the whole matter will be discussed more fully under Treatment.

Symptoms.—The symptoms in infantile scurvy are so typical and well known that they would appear to need little further study. Nevertheless, the attention which has been directed to them by the questions of the circular has not been without fruit.

First Symptom to Develop and Order and Time of Other Symptoms.—In response to this question the answers have not been altogether satisfactory. Undoubtedly in a large number such early symptoms as anemia and malnutrition were overlooked or were not included by the readers as symptoms of the disease. Then, in a large number, perhaps the majority of cases, answers have not made it quite clear whether the correspondence intended that a certain number of symptoms developed in the order in which the names were written, or whether they all were noticed at one time. Presuming that the first is the writers' intention, we make the following statement of the first symptom seen, basing this on 327 cases. The order of symptoms is too complicated and too uncertain to warrant a statistical arrangement.

First Symptoms Seen.—Pain and tenderness, 145; affection of gums, 42; interference with motion, 36; anemia, 27; cutaneous hemorrhages, 22; swellings, 16; restlessness, 6; anorexia, 5; debility, 5; diarrhea, 5; constipation, 2; hemorrhage from nose, 1; hemorrhage from mouth, 1; hemorrhage from rectum, 1; hematuria, 3; "hematoma of tongue," 1;
irritability, 3; vomiting, 1; fever, 1; opisthotonos, 1; sweating, 1.

Pain on Motion or Handling.—Pain is clearly a very prominent symptom of the disease. Generally it is evident only when the child is moved, or tries to move itself. Sometimes it is so intense that the approach of anyone to the bedside is sufficient to cause the child to scream out through fear of being touched. Pain is reported present in 314 instances. In most of the remaining no answer was made, and it is probable that the symptom could not have been a prominent one. The locality of the pain in the cases in which there were accurate details was as follows: Legs, 120; legs and arms, 25; legs and one arm, 11; legs and body, 4; one leg, 13; one leg and one arm, 1; one arm, 1; back, 1; back and legs, 1; back and leg, 1; back and thighs, 1; thighs, 1; hips and thigh, 1; one thigh, 2; one hip, 2; knees, 1; knees and ankles, 2; knees, ankles, and shoulders, 1; knees, ankles, and wrists, 2; knees and arms, 1; one knee, 1; one ankle, 1; ankles, 1; ankles and feet, 1; ankles and elbows, 1; elbow, 1.

Pain when at Rest.—In ninety-one cases pain seems to have been present even when the child was still; while in 134 it is definitely stated as absent under this condition.

Interference with Motion.—The symptom variously described as paralysis, pseudo-paralysis, and disability or unwillingness to move is reported frequently. It probably depends in every instance upon pain, since there is no evidence that actual paralysis occurs in the disease. In 319 cases interference with motion of this nature existed.

Rigidity is described as present in ninety-six cases and absent in 106. It is due to pain in most instances, but perhaps in others may have been occasioned or increased by the presence of swelling.

The parts of the body in which motion has been interfered with in any way in the cases reported, and the locality mentioned in detail, may be enumerated as follows:

Legs, 159; legs and arms, 55; legs and one arm, 14; legs and one hand, 2; one arm, 3; legs and thighs, 1; thighs, 3; one leg and one arm, 1; one leg, 27; one thigh, 2; hips, 1; one hip, 2; one hip and thigh, 1; one hip and knee, 3; hip, leg, and shoulder, 1; hip, elbow, and shoulder, 1; one knee, 4; one ankle, 2; ankles, knees, hand, and wrist, 1.
Position of the Limbs.—To a question regarding the position of the limbs, about which Barlowe speaks so definitely, there have been replies in 205 cases. In seventeen of these the position was normal. In the rest we find the position of the limbs as follows:

Flexed, 152; extended, 23; flexed and abducted, 1; flexed and adducted, 1; flexed and everted, 1; abducted, 1; everted, 3; everted and extended, 2; toes extended, 1; feet extended, 3.

Weakness of the Back.—The occurrence of weakness of the back, a symptom which Barlowe says is marked, is mentioned as present in ninety-seven of the cases reported to the committee and as absent in 108. In the remaining nothing is said of it.

Depression of the Sternum.—This condition is likewise emphasized by Barlowe as being sometimes striking and characteristic. It is mentioned in thirty-four cases, but said to have been absent in 170 others. It is not certain in the cases of the report how frequently the condition had developed acutely as a result of scurvy and how often it had already been produced by a previously existing rachitis.

Swellings.—The effort has been made by, analyzing the cases collected to determine the position of local swellings, whether these were situated in the joints or the shafts of the limbs, in the soft tissues or in the bones, and whether any redness was present. The answers are not clear in every instance, and are frequently somewhat contradictory, partly, perhaps, from failure of the observer to understand the question, and partly from lack of careful discrimination between subperiosteal and other effusions, and between effusion into a joint and that about it. The great irregularity also of the distribution of the swelling renders an accurate tabular arrangement too complicated. Remembering that in many cases more than one part of the body was involved and that the figures given do not mean that only the portion mentioned is affected in these cases, the following division may be made:

Joints (or probably oftener about joints) involved in 165 cases. Location given in 101, viz.: Knees, 73; ankles, 28; wrists, 12; hands, 1; elbow, 3; shoulder, 5; hip, 6.

Shafts of limbs involved in 197 cases. Location given in 123, viz.: Thighs, 59; legs (below knee), 16; "legs" (not fur-
other stated), 11; forearm, 5; upper arm, 4; "arm," 5; ribs, 1; scapula, 1; ilium, 1.

The gross results of the answers regarding the tissues in which the swelling occurred gave:
Swelling in soft tissues, 97.
Swelling, subperiosteal, 114.
Swelling in both situations, 16.

In sixty-nine cases the swollen parts were reddened also. It is stated that there was no redness in 121. A more general swelling, to be classified rather as edema, is described in sixty-eight cases and stated to have been absent in ninety-eight.

In regard to the swelling or protrusion of one or both eyes, which has been described by writers, the symptom is said to have been absent in 110 cases and present in forty-nine. In nine of these swelling only is mentioned, in eighteen protrusion only, and in twenty-two both are referred to.

Gums.—The condition of the gums and mouth is one of extreme interest. In sixteen cases it is distinctly stated that the gums were entirely unaffected, while in 313 they were diseased. The degree of involvement varies from slight swelling to great sponginess and even ulceration. The degree and form of the affection in the cases suitable for study may be seen in the following table: Swelling, absent, 14; present, 293; sponginess, absent, 27; present, 249; discoloration, absent, 23; present, 259; bleeding, absent, 64; present, 188; ulceration, absent, 101; present, 91. The relation of the affection of the gums to the presence of teeth is of much interest. In nearly all the cases of scurvy in this report, teeth were present, but what influence this has is not quite clear, since experience teaches that, curiously, it is usually the gums of the upper jaw which are most affected, although the lower teeth naturally are the first cut. Statistics on the portion of the gums involved were not furnished sufficiently to allow of conclusions; but regarding the teeth it is to be noted that of 359 cases suitable for comparison, teeth had already appeared in 314 instances, i.e., 87.5 per cent.; while in only 45 cases, i.e., 12.5 per cent. were there no teeth. In studying more carefully these 45 cases of scurvy without teeth, we may make the following analysis:
No teeth, gums normal, 21 cases; no teeth, gums affected, 24 cases. The conditions present in the latter group were as fol-
Swelling, 19 cases; sponginess, 14 cases; bleeding, 5 cases; discoloration, 17 cases; ulceration 4 cases. This is a proof that affection of the gums may occur equally well when there are no teeth as when teeth have developed. The fact that in the great majority of cases of infantile scurvy the presence of teeth and the affection of the gums is associated, depends merely on the fact that the disease generally develops at an age when teeth naturally have been cut.

**Cutaneous Hemorrhages.**—These have occurred with frequency in the cases reported. Accurate data are given in 353 cases. Of these, cutaneous hemorrhage is reported present in 182 and absent in 171. There is much doubt about the accuracy of the writers in their classification of the hemorrhages according to size, and to the proper use by them of the descriptive names employed, inasmuch as the question on this point did not specify clearly. In 99 instances the presence of "ecchymoses" is mentioned. In 83 "purpuric eruption" is reported, and in 37 "petechiae." In 13 the nature of the lesion is not specified.

**Hemorrhages From Mucous Membranes.**—Data are available in 361 cases. Of these were no hemorrhages from any mucous membrane in 196, while in 164 they occurred. In 93 cases there was hemorrhage from the mouth. This includes the cases where bleeding from the gums is described by writers. In 33 cases there was bleeding from the nose, in 2 from the stomach, and in 37 from the bowels. Cases of hematuria are not included here, and will be referred to later.

**Fractures.**—Fractures in infantile scurvy are usually separations of the epiphyses merely. Even this would seem to be rare, for fractures of any kind is mentioned in only 9 of our cases. In 342 it is distinctly stated to have been absent, and in the remaining the question is not answered.

**Fever.**—Probably in the majority of the cases of the disease upon which this report is based no temperature record has been made. In 93 cases it is stated that there was no fever; in 182 it was present, and in the remaining no answer is given. In the cases where present it is described as slight in 116
instances, moderate in 23, high in 8, and irregular in 6. Clearly, fever is not a prominent symptom of the disease, and probably often, when present, depends on accidental causes.

**Bowel Movements.**—The following conditions are mentioned: Bowels regular, 74; bowels irregular, 15; constipation, 126; diarrhea, 65; bloody diarrhea, 12.

**Urine.**—Judging from the number of instances in which no answers have been returned, no examination of the urine has been made in most of the cases. It is reported as examined for albumin in 163 cases; in 33 of these albuminuria is reported, and in 130 it was absent. Tube casts were present in 13 instances, absent in 13, and no observation reported in the others. Properly speaking, the occurrence of hematuria should be discussed under the title of hemorrhage. It is mentioned as present in 22 cases only. Of other abnormal conditions of the urine the following may be mentioned: Urine very acid, 1; urine scanty, 9; urine suppressed, 1; urine increased in quantity, 3; glycosuria, 1; hemoglobinuria, 1; pus (from cystitis), 1; phosphates increased, 1; chlorids increased, 1.

**Anemia; Malnutrition.**—These conditions, already referred to as often the earliest symptoms of infantile scurvy, may have been the first evidences of the disease in many of the cases on which the report is based. In other cases they must be regarded as complicating affections only. Answers are not full enough to allow of satisfactory conclusions on this point.

Anemia is said to have been present in 254 cases, as follows: Anemia present (without specifying degree), 47; anemia slight, 66; anemia moderate, 32; anemia marked, 109.

Blood examinations were made in 15 cases and the conditions noted as follows: The percentage of hemoglobin was much reduced in all the cases, 8 in number, in which an examination was made, some being as low as 35 per cent. Of the 7 cases in which the red blood corpuscles were counted, all showed a reduction except 2. In these 2 the number was normal or nearly so, but the hemoglobin was 50 and 35 per cent., respectively. Leucocytosis was present in 5 cases, poikilocytosis in 2. In only one instance was there a differential count of the leucocytes made. Of 217 cases in which the
question is answered, emaciation is recorded in 167 and is said to have been absent in 50. Malnutrition was observed in 178 cases out of 216, in which replies were made as follows: Malnutrition present (without specifying degree), 108; slight, 20; moderate, 7; marked, 43.

Rickets.—Infantile scurvy has so often been described as "scurvy rickets" and "acute rickets," that the investigation of the actual relationship of the two diseases was one of the matters to which the committee directed especial attention. The question upon the circular reads as follows: "(a) Any symptoms of rickets present? (b) Slight or well marked? (c) What relation in time of development did they bear to the scurvy?" Satisfactory answers were received in 340 cases; in 152 of these (45 per cent.), there were symptoms of rickets present, slight in 72, marked in 64, and the degree not mentioned in 16. In the remaining cases (55 per cent.), rickets is definitely stated to have been absent. With regard to the relation in time of development, it is stated in 50 cases that the rickets was first present; in 14 that it developed with the scurvy, and in 2 after it. There does not seem to be evidence as far as this investigation teaches that the association of rickets and scurvy is at all intimate. Very possibly the same defect in diet which produced the one produced the other also, but the rapid recovery under treatment which the scurvy underwent did not apply to the rickets. This seems to indicate only accidental association of the two diseases; certainly not any casual relation between them.

Other Complicating Conditions.—A variety of affections are mentioned complicating scurvy in a number of cases, as follows: Bronchitis, 5; cretinism, 1; enlargement of inguinal glands, 1; "cerebral symptoms," 1; convulsions, 1; pneumonia, 2; boils, 1; irritability, 1; vomiting, 4; eczema, 2; enuresis, 1; sweating of the head, 1; tympanites, 1; caput meduseæ, 1; diaphoresis, 1; pertussis, 2; insomnia, 1; anorexia, 2; post-nasal discharge, 1; measles, 1; restlessness, 1; phimosis, 1; indigestion, 2; laryngismus stridulus, 1; cystitis, 1.

Diagnosis.—The study of diagnosis has been only incidental, based upon the mistakes made before the disease was
recognized in certain cases. The only disease for which infantile scurvy was repeatedly taken appears to have been rheumatism. In several instances the affection of the legs was supposed to be due to sarcoma. The apparent paralytic condition has also been the cause of error in some instances.

Duration of Illness and Prognosis.—The disease is essentially chronic, its course terminating only on the institution of proper treatment. This seems to be proved by the answers contained in the circulars. To the question concerning the duration of the disease before the case came under observation, replies were received in 306 cases.

Intensely interesting in this connection are also the replies to the next two questions: First, duration of illness after treatment was commenced, and second, duration of treatment before marked improvement was noticed. To the first question replies concerning 308 cases were received. Of course those fatal during the attack of scurvy are not included here nor those which passed from observation.

Still more striking are the answers to the second question, as to the time when marked improvement was first noticed. There are 311 cases suitable for study in this category, excluding fatal cases and those passing from observation as before. The replies are often astonishing. Nothing is more striking than the speed with which these reports show a grave constitutional disease disappearing under proper treatment. There is certainly no disease for which a more specific treatment can be said to exist. The replies to the last two questions may be conveniently stated in the following tables:

DURATION OF THE DISEASE BEFORE TREATMENT WAS COMMENCED.

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DURATION OF TREATMENT BEFORE MARKED IMPROVEMENT WAS NOTICED.

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Reported as prompt recovery, 13; at once, 15; immediate, 1.

DURATION OF TREATMENT BEFORE RECOVERY WAS COMPLETE.

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Reported as immediate, 4; almost immediate, 9.

TREATMENT.—Not so much could be learned of the value of treatment as could be desired on account of the fact that in nearly all cases we have a combination of diet and of medicinal measures, including the use of fruit juices, and it is impossible to determine absolutely which was the active curative agent.

Taking the cases in which treatment was effectual and which are suitable for study, the results may be stated as follows:

I. Cases recovering under treatment with drugs only (no change in diet)................................................................. 0

II. Cases recovering under the use of fruit juice alone (no change in diet).............................................................. 3
III. Cases recovering under the use of beef juice alone (no other change in diet). ........................................... 2
IV. Cases recovering under the use of beef juice and fruit juice combined, with or without drugs (no change in diet) .... 6
V. Cases recovering under the combined effect of change of diet, often including beef juice, and employment of fruit juice, with or without drugs .................................................. 257
VI. Cases recovering under change of diet, often including beef juice, and use of drugs (no fruit juice) .................. 20
VII. Cases recovering under change of diet alone, often including beef juice (no fruit juice) .......................... 38

These last two may be properly considered together, since there is no evidence that any treatment with drugs has an appreciable effect upon the disease. So many of the reported cases were treated with drugs alone without result before the correct diagnosis was made and other treatment instituted, that this belief is amply justified. Combining, therefore, divisions VI. and VII., and comparing the statements of the writers regarding the diet employed during treatment and that employed when the scurvy developed, we may make the following table based upon fifty-eight cases:

Again the committee would state that no claim is made that the recovery was the result of the change, but that it quotes merely the statements of the correspondents to the effect that recovery took place after the change was made.

VI. and VII.—Recovery Following Change in Diet Alone, with or without Drugs. (No Fruit Juice Employed).

Mellin's food to milk and beef juice ........................................ 2
  " " to raw milk and beef juice ........................................ 1
  " " to modified milk .................................................. 4
  " " to modified milk and beef juice ................................. 2
  " " to diet and beef juice ......................................... 1
  " " and sterilized milk and to beef juice broths ............... 1
  " " and sterilized milk to sterilized milk and beef juice ... 2
  " " and condensed milk to modified milk ....................... 1
  " " and condensed milk to raw milk .............................. 2
  " " and sarcophage to fresh milk and beef juice ............. 1

Condensed milk to fresh milk and beef juice ......................... 1
  " " to sterilized milk and diet .................................. 1
  " " to lactated food and raw milk ................................ 1
  " " to sterilized milk ............................................ 1

Malted milk to milk and diet ........................................... 1
  " " to raw milk and beef juice .................................. 1
  " " and amylaceae to modified Pasteurized milk and beef juice 1
Sterilized milk to diet and beef juice................................. 1
" " to fresh milk and beef juice................................. 2
" " to raw milk.................................................. 4
" " to diet....................................................... 6
" " to raw milk and beef juice................................. 1
" " to sterilized milk and beef juice.......................... 1
" " peptonized to raw milk and beef juice................. 1
" " to Pasteurized milk and diet.............................. 1
" " to sterilized milk and broths............................... 1

Pasteurized milk to raw milk........................................ 2
" " to fresh milk and beef juice................................. 1
" " to sterilized milk and broths............................... 1

Raw milk to amylaceae............................................. 1
Breast-milk to peptonized milk broths......................... 1
" " to sterilized milk............................................. 1
Lactated food to raw milk and beef juice....................... 1
Reed & Carnrick’s soluble food to modified milk............... 1
" " to baked potato.............................................. 1
" " to beef juice................................................ 1

Imperial granum to raw milk and beef juice..................... 1
Patented food to diet............................................... 1
Ridge’s food to diet............................................... 1
Diet (poor) to diet (better)......................................... 2
Bartlett’s pepsinated food to fresh milk......................... 1

It must be noted with regard to this table and those following that the term “modified” milk is used very loosely by the reporters. Occasionally it is specified to be laboratory milk, but much oftener this is not the case, and we are unable to know whether the modification was done at home or not, and whether the milk was heated or not. Presumably it was Pasteurized in many instances. Where the term “fresh” milk is employed in the table, we have been unable to learn by additional correspondence whether “raw” milk is meant or whether only a change from proprietary food to cow’s milk is intended. The term “diet” as employed in the tables either expresses the fact that a large and varied number of different forms of diet were tried, too complicated to be detailed, or else quotes merely the statement of the writers that a change of diet was made, the original food probably being abandoned entirely unless otherwise stated.

The following table shows the food employed in divisions I., II., III. and IV., in which the diet was the same (except sometimes for the addition of beef juice), while the scurvy was developing and while it was recovering:
Recovery Following with No Change of Diet During Treatment.

I. Treatment with drugs only ........................................... 0
II. Treatment with fruit juice only ..................................... 3
   Mellin's food (milk sterilized) .................................... 1
   Sterilized milk ....................................................... 2
III. Treatment with beef juice only .................................... 2
    Sterilized milk ..................................................... 1
    Raw milk ............................................................ 1
IV. Treatment with combined beef juice and fruit juice only ...... 6
    Sterilized milk ..................................................... 2
    Sterilized milk and broths ......................................... 2
    " " " amylaceae ..................................................... 1
    Table food .......................................................... 1

Division V. contains by far the largest number of cases, 257 in all. The changes in diet employed are much too complicated to be stated fully in the table. Moreover, they are of little value, since the treatment was such a composite one, viz.: change of diet combined with the use of fruit juice in every case, and often of beef juice and of drugs as well. A few of the more striking classes of cases may be selected as follows:

V.—Recovery Following Change of Diet Combined with Fruit Juice, with or without Drugs.

Condensed milk to milk, variously treated .......................... 23
Imperial granum to milk, variously treated ....................... 7
Lacto preparata to raw milk ........................................... 2
Lactated food to milk .................................................. 1
Reed & Carnrick's Soluble Food to milk, variously treated .... 3
Malted milk to milk, variously treated .............................. 38
Mellin's food to milk, variously treated ............................ 21
Mellin's food and condensed milk to milk, variously treated ... 19
Sterilized milk to fresh (probably always raw) milk ........... 34
Sterilized milk to Pasteurized milk ................................ 4
Pasteurized milk to "fresh" or "raw" milk ........................... 9
Pasteurized milk to sterilized milk ................................ 1
Raw milk to sterilized milk ........................................... 1
Breast-milk to cow's milk variously treated .................... 6

The conclusions to be drawn from this combined study of etiology and of treatment seem justifiable only to the following extent: (1) That the development of the disease follows in each case the prolonged employment of some diet unsuitable to the individual child, and that often a change of diet which at first thought would seem to be unsuitable may be followed
by prompt recovery. (2) That in spite of this fact regarding individual cases, the combined report of collected cases makes it probable that in these there were certain forms of diet which were particularly prone to be followed by the development of scurvy. First in point of numbers here are to be mentioned the various proprietary foods. (3) In fine, that in general the cases reported seem to indicate that the farther the food is removed in character from the natural food of a child the more likely its use is to be followed by the development of scurvy.

Fatal Cases.—Twenty-nine of the 379 patients are reported to have died. In 2 of these, death seems to have been remote from the attack of scurvy. Of the remaining 27 the causes as enumerated by the reporters are as follows: Exhaustion, 6; cerebral hemorrhage, 3; diarrhea, 2; bronchitis, 2; vomiting (?) 1; convulsions, 1; pneumonia, 4; malnutrition, 1; pulmonary hemorrhage, 1; ulcer of stomach, 1; syncope and nephritis, 1; doubtful, 4. It is difficult to determine in how many of these the scurvy itself could be held responsible for the death; probably in few, if any.

Autopsies.—There have been handed in to the committee the reports of six autopsies in all, some of them only partial. The salient points of each may be enumerated as follows:

Case of Dr. Caille. Child of nine months; ill about three months. Autopsy showed hemorrhagic spots on the pericardium and surface of the liver; subperiosteal hemorrhage of the long bones. Case of Dr. L. E. Holt. Child of twelve months; ill for two months. Autopsy showed separation of the lower epiphysis from the shaft of the left femur; extensive subperiosteal hemorrhage of the left femur; subpleural hemorrhages; bronchopneumonia. Case of Dr. L. E. Holt. Child of thirteen months; ill about two months. Autopsy showed subperiosteal hemorrhage and separation of the lower epiphysis of the left femur; hemorrhages into the muscles of the left thigh; swelling about the opposite knee and both ankles; knee-joints normal; minute subpleural hemorrhages; well-marked exudative nephritis; minute hemorrhages on the surface of liver. Case of Dr. W. P. Northrup. (The first autopsy in the United States.) Child of eighteen months; ill about one month. Autopsy showed subperiosteal hemorr-
hage of both tibiae and both femora; detachment of the lower epiphysis of the left femur and maceration of lower end of shaft; broncho-pneumonia of left lung; no rachitic or syphilitic changes on microscopical examination. Case of Dr. L. Starr. Child thirteen months; ill for three months. Autopsy showed "right leg from knee to ankle stuffed with a puffy mass replacing normal tissue. Separation of both bones one inch above ankle." Case of Dr. C. W. Townsend. Child of ten months; ill three to four weeks. Autopsy showed bloody serum in pleural cavity; perforating ulcer of the stomach; tubercular (?) process in peritoneum.

In conclusion, the committee would thank publicly their correspondents who have sent their reports of cases and who are enumerated below. They are also much indebted to Dr. Wm Schleif, of Philadelphia, for valuable aid in analyzing the circulars received and tabulating the result.

[Signed],

J. P. Crozer Griffith, M.D., Phila.,
Charles G. Jennings, M.D., Detroit,
John Lovett, Morse, M.D., Boston,

Committee.

MINORITY REPORT.

1. From a study of this report and from due consideration of other known facts, scurvy appears to be a chronic ptomain poisoning due to absorption of toxins.

2. It follows the prolonged use of improper food, and abnormal intestinal fermentation is a predisposing factor.

3. Sterilizing, Pasteurizing, or cooking of milk food is not, per se, responsible for the scurvy condition.

4. A change of food and the administration of fruit juice and treatment of any underlying cause is the rational therapeutic procedure in scurvy.

[Signed] Augustus Caille, M.D.

(Medical News, 1898, lxxiii., 5).
Dr. Frederick Roberts on May 16 delivered an oration before the Medical Society of London and took as his subject, "The Moscow Congress—a Holiday." In the course of his remarks on Moscow, or rather in drawing some points of comparison between the medical institutions of London and other large civilized towns and those of Moscow, he mentioned how overcome with surprise he was to find institutions of that kind not only equal to similar ones in London, but in very many respects superior. He then referred to the wonderful "Maison des Enfants," or Foundling Hospital in Moscow. This establishment is far and away the largest devoted to that purpose in the world, and was founded by the notorious Empress Catherine II. for the care of illegitimate children. Dr. Roberts proceeds to say, "whatever the motives might have been which prompted this idea, it cannot be said that its outcome has tended to promote morality or that the great care and devotion shown to children born to shame and poverty is the highest form of development of rational philanthropy. The mortality, however, is very high, for which one really cannot help feeling thankful. The number of annual admissions into the Moscow institution now exceeds 17,000, and the history of its progress clearly demonstrates that its establishment has vastly encouraged illegitimate child-bearing. In regard to the rate of mortality, we imagine that the "Maison des Enfants" in Moscow will hardly surpass our New York Foundling's Asylum on Randall's Island, and, only gives empha-
sis to the point we have so often urged, that it is simply murderous to put infants together in large numbers. However, the remedy is hard to seek, and perhaps, as Dr. Roberts remarks, it is best after all that these unfortunate infants should die quickly.

In the weather we are now experiencing the complaints incidental to the torrid season of the year may be expected. Of these diarrhea is both the most frequent and the most deadly. The mortality among infants and children from this disorder is, as is well known, enormous. In England and Wales in 1894 the deaths of children under five years of age from diarrhea amounted to 9,005; of this number 7,360 were infants under one year. The principal cause of diarrhea in very young children is indigestion, arising from improper food or inability to assimilate the maternal milk. The exact capacity of a child's stomach is not yet known, but according to German estimations it is said at one month to contain two ounces, at three months three ounces, at five months four ounces, hence it may be seen how easy it is to overfeed a young child. As to whether "teething" actually causes diarrhea or not is at present an undecided point. But of all the forms of diarrhea, the largest class and the one most complex and fatal is that entitled summer diarrhea, and which, in all countries of the world, during the hot months, numbers its victims by the thousands. In regard to this complaint, Dr. Langford Symes, writing to the Dublin Journal of Medical Sciences, says: "It has long been thought that the unsanitary conditions of towns, the filth and atmospheric 'changes' caused this summer diarrhea amongst children. But we have now gone further than this, and Dr. J. B. Russell has found that in Glasgow the death rate of children under five years of age from diarrhea is now exactly what it was thirty years ago, while the death rate at the age of five years and upwards is
less by more than a half.” Consequently the improved water supply has not influenced infantile diarrhea, though it has lessened by half those occurring over five years of age, and thus demonstrating that the fault lies almost wholly with the food given to infants. Following this train of reasoning further, conclusive proof is afforded that the disease is conveyed chiefly by the agency of cow’s milk, as in the vast majority of instances infants when not fed at the breast are nourished with this form of diet. Again, over 90 per cent. of very young children dying from diarrhea are hand-fed, direct evidence of the prevalence of impure milk. According to Dr. Langford Symes all these diarrheas could be prevented by attention to the following methods, and preventative treatment intelligently carried out would save thousands of lives in our large cities: (a.) The scientific regulation of artificial feeding involving such considerations as: The size of the child’s stomach; its age and weight; the quantity to be given at each feeding; the number of meals in twenty-four hours; the selection and composition of the best substitute for human milk; the method of preparation; the temperature of the food; the manner of administration; the preservation of the food; the cleanliness of all apparatus. (b). The purification of the ground, consisting of sanitary improvements in overcrowding, ventilation, cleanliness of ash-pits, sinks, sewers, disposal of refuse, drains, cleanliness of houses, premises and yards. (c). The purification of milk. So far as the purification of milk is concerned New York, and it may be said that American cities generally compare very favorably with most of the European large towns, in fact, it is doubtful whether the interests of the infants in this respect are so well looked after in any part of the world as they are here by the New York Board of Health. As regards purification of the ground, overcrowding, ventilation, and various other hygienic measures, it must be confessed that the majority of the British large centers of population are in advance of New York, and with a few exceptions of all American towns.
That electricity will play a great part, much greater than it does at present, in the locomotion of the future is so self-evident a fact that it may appear superfluous to draw attention to it. For the past year or two there has been a craze for motor carriages propelled by various forms of motive power. This craze has reached its height in France, where motor carriages, busses, and carriages of every description abound and where numerous long distance races have been held to determine the relative merits of different kinds of horseless vehicles. England also has taken up the idea, and electric busses and cabs career through the crowded streets of London to the alarm of man and horse alike. By the enthusiasts for this means of locomotion it is confidently expected that the reign of the horse is doomed, and without going so far as this there can be no doubt but that his sphere of usefulness will be greatly restricted and that electricity will, to a very large extent, take his place. It has, however, been reserved for an American to apply electricity to the needs of the rising generation. It is stated in a New York daily journal that Mr. Edison has invented an electrically propelled baby-carriage, and that Brooklyn is the scene of this novel invasion. If successful, this new form of locomotion will mean the passing of the nurse maid, her services as a propeller of the old-fashioned hand power carriage will be no longer required except in the early stages of child life. We may expect now that when a boy or girl reaches say the age of three years that he or she will be deemed competent to take an airing in the park or on the sidewalk in a perambulator whose motive power is in a small battery and motor in the vehicle stored. True, a new terror will be added to the dangers of pedestrian travel in towns, and no doubt at first the casualties will be numerous, but this is a matter of little consequence so long as our young are happy and amused.
SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting May 9, 1898.

F. A. Packard, President, in the Chair.

Dr. Given presented a patient for Dr. Alfred Stengel, presenting cretin characteristics.

Dr. F. A. Packard presented a cretin which he had shown at the December meeting of the Pediatric Society in order to exhibit the beneficial effects of five months treatment with thyroids.

Dr. L. M. Allen read a paper upon "Diphtheria of the Penis Following Circumcision, with Later Involvement of Upper Respiratory Passages."

Joseph T., aged two years. When first seen there was glandular enlargement at the left angle of the jaw, and yellowish discharge from the prepuce, which was inflamed. The adenitis and balano-posthitis had existed for several weeks. The child was admitted to the Children's Hospital the day after it was first seen. It was feverish, the prepuce less inflamed; tonsils much enlarged but free from membrane.

Between time of admission and of operation the child was more or less feverish, the temperature rising to $103^\circ$ F. the day before operation.

Five days later Dr. J. Ashhurst, Jr., operated on the boy. Nothing of importance was noticed either in the condition of the throat or of the circumcision wound, during the three days following that child remained in the hospital. The day after leaving the hospital the temperature was $102^\circ$, and the wound was considerably inflamed; next day the wound and glans penis showed patches of membrane. Membrane increased on
the glans but none appeared elsewhere until a week after leaving the hospital when, while the membrane was disappearing from the penis, a patch was noticed on the inside of the lower lip. There was none on the tonsils. Next day the membrane spread to the inside of the cheeks. There was a spot on the tongue.

The following morning the membrane had spread rapidly, both tonsils being involved. A report from cultures made the preceding day stated that the one from the mouth was positive that from the penis was doubtful. Signs of pneumonia had developed, and in spite of heart stimulants, antitoxin, and local treatment, the patient died nineteen days after the operation.

DISCUSSION.

Dr. Jopson.—I remember the case very well, as I saw it first in the dispensary. The child was suffering from acute balano-posthitis, and had a long prepuce which could not be retracted. At the same time there was this involvement of the cervical glands and some inflammation of the tonsils. I therefore advised the mother to postpone any radical operation, such as circumcision; gave her a sedative application for syringing and local use, and advised her to return in a few days; but as the surroundings at home were not very favorable and they were anxious to have something done at once for the condition, the child was later admitted to the hospital. There was at that time an inflammation of the throat, no membrane visible, but apparently subacute or chronic inflammation of the tonsils and an enlargement of the glands which I looked on as secondary to the tonsillar disease. The condition was suspicious, and with the history of preceding fever I cannot help feeling that the inoculation of the circumcision wound was secondary to an infection of the throat.

Dr. J. Dutton Steele.—I think Dr. Allen's suggestion is an interesting one. I mean whether or not the Klebs-Löffler bacilli could have been quiescent in the throat before operation. It is a well known fact that these bacteria can exist in the throat in a pathogenic form without symptoms. It might have happened that the child was resistant to them before the operation, then the circumcision wound became a place of less
resistance, and the bacilli was carried from the throat to the penis by the child's hands. The ensuing attack of diphtheria rendered the throat and mouth susceptible, and the disease broke out there in time.

Dr. Cleeman.—Last Fall there was a child taken to the Children's Hospital who had a lacerated wound of the eyelid. The parents asked me to take charge of the child. In a short time membrane formed on the wound and the throat became similarly affected. The child died in a few days of diphtheria. The only point of interest is the local trouble in the wound, at the same time the condition showed itself in the throat. I do not know whether the eyelid was the first to show infection, though I noticed it first there, but I think it is likely since the wound had occurred first that probably that was the mode of entrance of poison into the system. I did not make any cultures of the membrane.

Dr. J. P. Crozer Griffith.—It seems to me we are going a roundabout way to account for the infection. Of course it is perfectly possible that the germs might have lain dormant in the child's throat reaching this locality before it entered the hospital. We can hardly assume that the system was already suffering from a diphtheritic infection all through the signs of general illness, and yet that there was no local manifestation, and that finally the disease broke out from inside, so to speak, on the penis, and only after a very long time finally developed membrane in the throat. It is much more likely that the diphtheria of the penis was the primary seat of infection. If I remember rightly there was diphtheria in the hospital at the time. I know there was shortly afterwards.

Dr. F. A. Packard.—There was diphtheria.

Dr. Griffith.—The most logical conclusion is that the child simply received a wound in the hospital, and since this was largely an uncovered wound, there developed a localized diphtheria, and then after a prolonged persistence of the lesion there, there was a rapid general infection with membrane on the oral and lastly the pharyngeal mucous membrane. If this is true it makes the case of exceeding interest.
ties usually state that diphtheria of wounds is comparatively uncommon and only seen in the most virulent cases of pharyngeal diphtheria, and nearly always as a secondary matter. I cannot now recall any case similar to this, where there was a primary appearance of the diphtheria elsewhere in the body, and then later an infection of the pharynx. Doubtless, however, there are numbers reported.

Another statement in one of the text-books on diseases of children, is that probably most of the reported cases of diphtheria of wounds or of mucous membranes other than the throat and nose have been instances of pseudo-diphtheria. In the case reported to-night we have every reason to believe that we are not dealing with an instance of pseudo-diphtheria. Certainly the cultures from the mouth were not pseudo-diphtheria and although those from the penis were doubtful it is altogether unlikely that there was a streptococcus infection of the penis and Klebs-Löffler infection of the mouth at the same time. This case was not even a buccal diphtheria primarily. Buccal diphtheria occurs as a rule only in the most malignant pharyngeal cases. This case was a labial diphtheria. After the infection of penis came the infection of the lip. The day I saw the patient the membrane had already spread to the pharynx. There was a hard, dense, swoolen lip, with a gray-white, intimately adherent membrane upon it, resembling not in the slightest degree any ulceration of the mouth, except the diphtheritic. Then, by the next day, Dr. Allen tells me the whole lining of the cheeks as involved as well.

Dr. Price.—Bearing upon the question of external diphtheria, I have cognizance of a case in one of my own patients who went to New York to spend the winter and while there she underwent some treatment for retroversion and developed a typical diphtheria of the vagina. The gynaecologist who was treating her, called in a well known physician and they together found that the diagnosis of diphtheria was undoubted, the Klebs-Löffler bacilli were found and the case ran a course of eight or ten days and got well without any infection of the respiratory passages at all. The physician in charge admitted that he had within twenty-four hours of examining her come in contact with the mouth of a child who had laryngeal diphtheria. It was probably owing to carelessness on his part that it was transmitted.
Dr. L. M. Allen.—The question of the existence of the bacilli in the throat without any clinical symptoms is interesting. Probably those who have tried to make use of Board of Health culture tubes have learned the efficiency of this method. I remember one case in which I made cultures of diphtheria and at the request of the Board of Health sent other cultures from people in the same house. The report was returned that they contained the diphtheria bacilli, much to my disgust. The bacilli continued to be there for three or four weeks with no clinical signs whatever. One member of this family was a child two or three years old. In regard to the case I have reported, you can't say how it received infection. The child was in a day nursery and very apt to get it there. Of course, the only way you could possibly have settled that question would be by having culture of child's throat before it was admitted to the hospital. It would be a good idea to take cultures from all throats before they are admitted to a hospital. In a case like this a few days delay would have made no difference.

Dr. F. A. Packard.—Dr. Allen's case reminds me somewhat of a case I saw at the Children's Hospital three or four years ago. The child also was circumcised, but a membrane appeared simultaneously on the wound and in the throat. They were infected within twenty-four hours of each other, so far as we could tell. The child had been previously well and everything had gone smoothly until forty-eight hours after the operation, when there was lighting up of diphtheria on both the pharyngeal and faucial mucous membrane as well as in the wound.

Dr. J. P. Crozer Griffith reported two cases of Appendicitis in children, four years old; both going on to suppuration and demanding operative interference, and both recovering. The first case illustrated the difficulty in diagnosis, since the child primarily suffered from an attack of indigestion and the symptoms of appendicitis followed immediately and for some time were quite obscure.

The second case followed an attack of dysentery and illustrated the great rapidity with which abscess formation and septic involvement may develop.
Dr. G. M. Boyd.—The report of the first case is of more interest to me than is the case across the street. The first was my own son. The little fellow had never been a vigorous boy, but since the operation has been in much better health. He was born when sterilization of milk was popular, and was given for two years or more nothing else. Whether that had anything to do with his intestinal difficulties of these two years I do not know. At all events for some time prior to this attack of appendicitis he had not been in good health. He had from time to time attacks of intestinal indigestion which gave us much anxiety. Vomiting was an early symptom of the attack. The diagnosis of appendicitis may have been made somewhat obscure because of the fact that his sister and he had been eating jelly or fruit at the same time, and it was supposed that they both had an attack of indigestion.

Dr. T. S. K. Morton.—I think with Dr. Griffith and others that it is comparatively rare to find appendicitis in such young children. I have seen in hospitals and elsewhere many cases of appendicitis, and this was the youngest child that had come to operation. I have observed one or two others who were supposed to have appendicitis but recovered without operation. In this little girl the theory of appendicitis following dysentery was correct. The preliminary illness was followed by this sudden outburst due to septic perforation of the appendix. The condition here was convincing as showing how quickly tissues melt in the presence of abscess. Here was an abscess about the size of a hen’s egg with the appendix entirely sloughed off. The criss-cross or muscle splitting incision of McBurney was used. The pus cavity was isolated and drained a large quantity of slightly turbid fluid was already present in the abdomen, and the intestines were injected, apparently, to the verge of peritonitis. After a copious irrigation with salt solution gauze was carried into the wound and no sutures were placed. I have not seen hernias follow drainage after the McBurney incision has been employed, the probability being that the split muscles subsequently approximate and unite as they were before. A somewhat similar case in a child five years old came under my care last Fall. It had been in the hands of a very competent practitioner, and presented a history decidedly similar to this. There had been a typical
history of dysenteric, bloody stools. After weeks there was sudden accession of symptoms pointing especially to the right iliac fossa. We opened the abdomen and found an abscess in which the appendix terminated.

Dr. L. J. Hammond.—In regard to the difficulties in the diagnosis of appendicitis in such young children, I would like to refer to a little girl I operated on some weeks ago, who was between four and five years old. I found at the operation such extensive adhesions, many of them organized, that I believe she must have had previous and probably repeated attacks which had not been diagnosed. Indeed, appendicitis had not been diagnosed until three days before I operated. The case was seen in the Samaritan Hospital. I found a large amount of pus, a gangrenous appendix, and firmly organized adhesions, and everything showed that the child must have had former attacks that had not been recognized. I have also been fortunate enough to dissect out the entire pus sac from a boy twelve years of age, appendix and all.

Dr. F. A. Packard.—The only case of appendicitis I have seen under seven was four years of age. The history showed remarkable similarity to that of Dr. Morton's case, beginning with a fall, which, I imagine, had nothing to do with the boy's illness, followed the next day by several bloody stools, so bloody that the child's nurse recognized that they contained blood. I saw the child four days after that for the first time. Then a well-formed abscess, clearly walled off by firm, semi-organized lymph, was present.

Dr. H. B. Carpenter presented a case of Cretinism. He said: "I presented this child at one of the early meetings of this Society, and bring her before you again this evening to show the result of eighteen months' treatment. She is now five years of age. When first seen she looked about a year old. She was stupid; the tongue large, thick, and protruding; the lips thick; the hair thin, dry, and scanty; the skin mottled and cold; the temperature subnormal—95° to 96°—and there was eczema of the face. She had nine teeth, which were somewhat decayed; the fontanelle was open, and the thyroid gland could not be palpated. She was 25 3/4 inches in height. There was a
marked increase of the subcutaneous tissues of the body; 
the circumference of the feet at the instep was 6½ inches; that of the hand 5 inches. She could not walk, 
and could only say "Ma!" and expressed no desire 
for nourishment. The improvement was marked within 
a few weeks after taking Thyroid Gland. She is now 33 inches 
in height—a gain of 7¼ inches; the feet measure 5 inches; 
the hands 4¼ inches. Her tongue, skin, and temperature are 
normal; she has a full set of good teeth, and a good head of 
hair. After two weeks treatment she began to point for what 
she desired. She now sings, talks, and walks, and is even 
intelligent enough to run errands. She has become very cleanly 
in her habits, and looks bright. One would not think her a 
Cretin. This child shows, as does Dr. Packard's case, a curva-
ture of the spine. After taking the Thyroid for five months, 
she grew 2½ inches; the following month—doubling the dose 
—she grew 2 inches, and her legs, in consequence, became so 
bowed that I was obliged to stop the treatment for two weeks. 
I then resumed it, giving a smaller dose. She has been taking 
from ¼ to ½ grain of Glycerine Extract of Thyroid Gland 
three times a day for eighteen months, with the exception of 
two weeks. At that time I put her upon the Compound Syrup 
of Hypophosphites, which she has continued taking along with 
the Thyroid Extract. She is still growing, although very 
slowly (about ¼ inch a month), and her legs are less bowed to-
day than ever."

Dr. J. Steele read a paper upon Pleuritis in the New-
born, with report of a case.
ABSTRACTS

DIET FOR TUBERCULOSIS.

Reynold W. Wilcox (Medical News, May 7, 1898) says that you can sow all the wheat and corn and rye you like in the alkali desert of Arizona, and they will not grow because there is not the proper soil there for them. In the same way, you can sow all the tubercle bacilli you like in the lungs, and they will not grow unless there is proper soil for for them. If infection has occurred, you can discourage its progress by rendering the soil unfit for the growth of the bacilli.

If I were asked, in patients of this particular class, what was the most important thing to be done, I would say, "feed them." It is more important than climate, but it presents more difficulties than perhaps any other phase of the treatment.

Of all the systems that have been advanced for feeding tuberculous patients, any system which departs markedly from the proper proportion of proteids, carbohydrates, and fats is not a wise one.

The true diet of a patient suffering from pulmonary tuberculosis should consist of meats, starches, and fats, with an excess of the last, and a certain amount of phosphates.

Separate the meals into those containing the bulk of the starchy food and meals containing the bulk of the proteids.

Give three and one-half hours at least in which to digest meals.

Early in the morning, give a glass of warm milk, in which put a tablespoonful of strong coffee, made according to the French method.

Breakfast—Give eggs in any form except fried. Also bread and marmalade, if the patient likes it. Thoroughly cured unsalted Finnan haddie. Toasted bread, good rolls, not hot. Bread and butter, milk and coffee may be used for variety. Or a little cocoa from which the fat has been removed. A little beef extract. An egg-nog, kumyss, or matzoon.

One o'clock dinner should be the meal of the day; any kind of meat except salted or fried. Potatoes, fresh vegetables, fruits and puddings also allowed. Coffee, tea, or perhaps a bottle of light beer.

Late in the afternoon—A little meat extract with toasted bread.


If the patient is awake at eleven, a cup of milk, hot soup, or gruel may act as an hypnotic.

As alcohol adds to the hectic, it should not be taken after the one o'clock dinner, and then only in small amounts and diluted. The only
alcohol I allow in the afternoon is light beer or possibly stout at the bed time.

A great many patients awaken in the morning bathed in a cold and clammy perspiration. This will be greatly reduced if you will awaken him about four o'clock in the morning and give him a glass of warm milk with a little alcohol in it.

When a lean meat diet is desired for a patient, the following is the best method of administering, after the receipt has been carried out:

**RECEIPT FOR POWDERING MEAT.**

Remove all gristle, tendon, and most of the fat from six pounds of meat. Chop finely and dry in an oven at a temperature of 150° F., until it is absolutely dry. After this, raise the temperature a little to between 165° and 180°. After this meat is perfectly dry, grind it up in a mortar and sift. This will produce about one pound of beef powder.

Now pass the stomach tube and wash out the stomach. Begin with three-fourths of a pound of beef powder and add with three times as much milk. Leave this in the stomach. Give this meal twice a day at first, then increase the amount until the patient takes from one to one and one-half pounds of beef powder and four or five pints of milk a day. If there is trouble in digesting this, start without the milk and add a little diluted hydrochloric acid to the meat. Watch that the patient does not overfeed! Consider the digestive powers of the individual! I reserve this method only for one class of patients, i.e., those who suffer from tuberculous laryngitis, where every act of swallowing and of coughing is painful. Apply a little cocaine to the larynx and the patient will experience no inconvenience in having the tube passed.

In 70 per cent. of all patients suffering from digestive disturbance, the trouble is due to faulty digestion of the starches. This means that the difficulty is connected with the mouth and the small intestine, and not with the stomach.

How are the starchy foods and sugars digested? If you take a seed that has been dried many years, and put it in water it begins to sprout, but it does not do this until the diastase begins to act and digest the starches therein contained, producing maltose. I have been in the habit of giving my starchy foods, for it is upon these that we must depend to improve nutrition, with as little liquid as possible, and increasing the digestibility by malt extracts, which really contain diastase, and also are nutritive.

All liquid malt extracts are utterly useless for the transformation of starch into dextrin and maltose, because they contain alcohol, which inhibits the effect on the starch, and because they contain acids, generated in the process of fermentation, which also inhibit the action of the diastase. The semi-solid extracts of malt convert starch into sugar. This conversion commences to take place in the mouth. For the first thirty or forty minutes after food has been taken into the stomach, this process goes on. It later stops, but recommences in the duodenum and continues until all the starches are converted into dextrin, and finally into maltose. That
this conversion continues in the stomach has been proven conclusively by Kellogg.

The great disadvantage of most of the active preparations of malt is their viscosity which renders them, after a little time, objects of disgust. It is now possible to obtain a preparation of malt (maltzyme) which Tucker assures us contains from 4 to 5 per cent. diastatic converting power. With such a preparation as this, I can assure my patients that the starches will be digested. The starches are for nourishment, for the generation of heat, and for the formation of fat. Further than this, recent investigations tend to show that the sugars are important in the generation of force. That is to say: Under a constant diet more than a proportionately larger amount of energy is developed if sugar be added to the dietary.

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LAPAROTOMY FOR INVAGINATION IN A CHILD EIGHT MONTHS OLD.

P. Poppert (Munch. Med. Wochenschr., 1897, xliv., 408). Invagination occurs generally during early infantile life, and is undoubtedly the most frequently occurring form of intestinal obstruction. According to Treves, more than 50 per cent. of all cases reported died. Only seventeen children lived over this time. These figures are convincing proof that invagination has an inclination to run a rapid and grave course in children under one year of age.

The mortality is therefore great. Spontaneous cure, by the throwing off of the invaginated portion of the intestine, is exceedingly rare. This issue of the disease, according to Leichtenstern, only occurs in 2 per cent. of cases during the first year of life; in 6 per cent. between the second and fifth year; and from this age on more frequently in about 40 per cent.

Operative treatment has seldom been attempted in children. According to Braun and Rydygier, it has only been practiced twenty-six times in children under one year of age, four of whom were saved by the operation. Poppert then describes his own case, which was successful.

A child, eight months old, was taken ill on the evening of June 14, 1895, with violent vomiting and diarrhea, having already suffered for a few days previously with a slight catarrh of the bowel. The movements were at first purely mucous, later on they were greatly stained with blood. On the following day the attending physician detected a tumor in the region of the flexuracoli dextra, and made a diagnosis of invagination. The measures taken to rectify the invagination, by high irrigation of the bowel and massage, were unsuccessful.

June 16 Poppert was called in consultation, and found the condition of the boy very poor. The pulse was small and very rapid; the vomiting as well as periodical attacks of colic which had been present from the beginning continuing; the abdomen was not greatly distended; in the umbilical region a sausage-shaped tumor, lying obliquely, and which could be traced downward from the left hypochondrium to the iliac fossa was felt. The anus was moderately distended, and a finger introduced
into the rectum could reach as far as the apex of the intussusception. A further attempt at reduction being unsuccessful, the patient was taken to Giessen, where he was operated on at once.

The invagination was readily found at the laparotomy. It extended from the middle of the transverse colon down into the rectum. The peritoneum was greatly congested, but no evidence of a purulent peritonitis was present. An attempt, by careful traction on the ileum, to disengage the intestine, did not succeed; it was only after the other end of the intussusception was pushed upwards by careful manipulation and kneading that the inverted gut began to unfold itself. Lastly, the cecum, with the vermiciform process, made its appearance. We had to deal therefore with a typical invaginatio ilieococcalis, in which the Bauhinian valves formed the apex of the invaginated gut. As there was no pressure gangrene demonstrated in the gut, the abdomen could be closed at once. Duration of operation, one-half hour. On the following morning the patient’s condition was better, appetite improved. Temperature was, however, 40.8° in the morning, 39.2° in the evening (in recto). Abdomen was not distended. The vomiting disappeared after the operation. On the other hand, there were a number of liquid stools, mixed at first with some blood.

On May 18 the temperature was 38.9° in the morning, 38.7° in the evening; from this time on, normal. The patient rapidly rallied, only the intestinal catarrh continued for some time. The boy has since had a normal history.

Naunyn is correct when he insists that every case of intussusception should be handed over to the surgeon as soon as the diagnosis is made, for the reason that a cure, unless an early spontaneous reposition is effected, can only be hoped for from the performance of a laparotomy. The first, however, very rarely occurs during the first year of life (2 per cent.), and its passage into the chronic form does not remove the danger, as, according to Treves, fifty-one cases out of fifty-nine ended in death later on. On the other hand, laparotomy may be looked upon as being devoid of danger when it is done at the earliest possible moment—when no adhesions of the invaginated intestinal loops have yet occurred, and therefore the reduction of the invagination may be easily accomplished. The adhesions may, however, be contracted very early in acute cases, so that we are able to hope for an easy reposi’tion only within twenty-four hours after its appearance; later on this occurs only exceptionally. As these conditions are only given very little attention, and laparotomy is still looked upon as a last resort, the results obtained up to the present time in very young children after operation are not very encouraging. In a previous communication by Braun, containing sixty-six cases, we find eighteen children mentioned under one year of age, of which three were cured; in a later one by Rydygier, during the last ten years, eight children, with only one cure.

In the present case, forty-eight hours had passed, nevertheless, the operation was rapidly and easily performed, and the organism which had already been seriously weakened by the vomiting and paroxysms of pain, was still able to withstand operative interference successfully. This case
again should induce us not to delay the operation too long, but to look upon the latter in the first instance as the only means which we have, in the majority of cases, to effect a cure, if early resorted to.

THE CURATIVE RESULTS OF ANTITOXIN IN DIPHTHERIA.

Monti (Arch. f. Kinderheilk, 1897, v., 24, 142) has treated 249 children with antitoxin from October, 1894, to the end of June, 1897. Of these twenty-four (— 17 per cent.) died. In the last twenty-five years, previous to the period of antitoxin, the mortality of diphtheria varied in Vienna between 29 and 40 per cent. This difference is remarkable. Monti does not care to rely on general statistics, but would rather classify cases of diphtheria according to their pathologico-anatomical and bacterial qualities and the clinical symptom complexus, which is due to the toxins of diphtheria.

Monti recognizes three different clinical diseases—pictures of diphtheria.

1. The fibrinous form, in which the products of diphtheria are only deposited on the mucous membrane, where the invasion of the bacilli only produces a deposit on the surface of the mucous membrane, without causing any serious injury to the underlying structures, and where the effect of the poison generated in the membrane acts slowly and only to a slight degree on the albuminoid bodies contained in the tissues.

2. A mixed form, also called phlegmonous or diphtheritic group, in which the fibrinous exudation is deposited on the mucous membrane as well as in their tissues; where a strong invasion of Loeffler's bacilli has taken place, and where the membrane attacked has at the time of invasion no resisting power, either from previous changes produced by disease or on account of the presence of other pathogenic bacteria, and thus furnishes a proper soil for the exudation to take place on the surface as well in the tissues of the mucous membrane. As a result, the conversion of the albuminous bodies into albumoses takes place more rapidly and to a much greater degree, so that the clinical picture will not only present the local symptoms but also the pathological degenerative processes.

3. The septico-gangrenous form, in which a fibrinous pseudo-membrane is deeply imbedded in the tissues of the mucous membrane; where the necrosis of tissue and the intermingling of the dead portions of tissue, with the diphtheritic products, proclaim the nature of the process; where masses of extremely virulent Loeffler's bacilli are at work in the mucous membrane together with numerous bacteria which lead to sepsis and putrefaction; where we meet not only with local symptoms and destructive processes but with symptoms of a rapidly developing sepsis.

Out of these 249 cases, 140 belong to the fibrinous, eighty-eight to the phlegmonous, and twenty-one to the septic form. The 140 cases of the first category, furthermore, included forty-nine slight, thirty-six medium, and fifty-five severely ill patients. Of these, eight died (—5.7 per cent.), among them three hand-fed infants, from
gastro-intestinal catarrh; one child from pneumonia. If we deduct these
cases of death, which occurred some time after their recovery from diphtheria, the mortality falls to 2.5 per cent.—certainly a very favorable figure. In fifty-five cases, some affection of the larynx, complicated with more or less severe laryngo-stenotic symptoms, was present, together with the pharyngeal diphtheria. In only thirteen cases, however, was surgical intervention required, namely, in eight cases where the children came under observation late, intubation was performed (seven cured—one died); three times, intubation followed by secondary tracheotomy (two cured—one died); and twice primary tracheotomy, where the pharynx, larynx, trachea, and bronchi were affected together (both died).

These figures sufficiently express the favorable influence of the serum in grave cases. Sequela were observed in twenty-three cases, (thirteen cases of paralysis, ten of albuminuria). The favorable influence on the symptoms themselves of an early administration of antitoxin and the employment of a sufficient quantity of the latter was especially remarkable: As a constant result, a lowering of temperature, improvement of the general condition, rapid exfoliation of the membrane, and marked shortening of the disease was observed.

The results in the second group were not quite so favorable, for here out of eighty-eight cases, twelve were slight, forty-five medium, and thirty-one severe. Of these seventeen died (= 12 per cent.) Previous to the use of antitoxin, 25 to 40 per cent. of this number, according to Monti, died, the serum exerting a favorable influence. Intubation had to be performed in ten cases (seven cured—three died); twice intubation and teacheotomy were both indicated (one cured—one died); twice a primary tracheotomy was done (both died). In thirteen cases paralysis occurred; in twelve albuminuria; in twenty-two both paralysis and albuminuria; in three glandular suppuration; and in two cases septic pneumonia developed. If these mixed forms could be subjected to treatment early enough, favorable results might be obtained after two or three days. The effects of the serum, however, are already lessened, although the chances of a cure are better than before the introduction of the serum.

The results obtained in the septic form were most unfavorable, of these, twenty-one cases (= 76 per cent.) died. A cure in these cases was, however, exceedingly rare, and 2 per cent. of cures may, nevertheless, be looked upon as a very good percentage.

We learn from these figures that the usual statistics are, as a rule, absolutely worthless in deciding the question of the value of the serum. The latter acts, so to speak, differently, according to the symptom complexus, so that in summing up the whole number of cases we are only led to wrong conclusions. If the fibrinous form is most prominent, the observer will meet with excellent results, when, however, many septic cases are found among these, the result is disheartening. As far as the fibrinous form is concerned, the serum treatment has not fallen short of our expectations. As regards the mixed and gangrenous forms, we must look to further researches for adjusting the serum treatment to the complicated changes of intoxication.
THE TREATMENT OF RACHITIC DEFORMITIES.*

By Reginald H. Sayre, M.D.,
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So much has been written in regard to rickets, and the treatment of the deformities caused by this disease, that you may wonder at my occupying your time by the presentation of this subject. But it has seemed to me that since the introduction of osteotomy, the majority of the medical profession have come to look upon rachitic deformities as something to be left to themselves until the stage of hardening has arrived, and then to be treated by a cutting operation, and have overlooked the fact that many of these cases can be prevented from reaching the stage of deformity by proper protection and by attention to diet and hygiene.

To consider the subject systematically, I would call your attention to the very slight knowledge which we possess as to its etiology, and emphasize the fact that, although it is generally accepted at the present time that rickets is a disease caused by malnutrition, bad air, and unhygienic surroundings, there is, in addition, some underlying factor which is, as yet

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undetermined, and which causes some of those exposed to these conditions to develop rickets, while many others, in precisely the same surroundings, fail to do so. It is vastly more prevalent in our large cities and among the tenement population, but a much larger number of cases than is usually supposed can be found among the well-to-do, and among those living in the country, and in a very large number of the cases which have come under my observation the children have been fed upon some one of the various baby foods which are to be found in the market.

The experiments of Cheadle are very interesting, as bearing upon the effect of diet. In the Zoological Gardens in London numerous litters of lions had successively died, with all the manifestations of rickets, having been fed upon old horses, whose flesh was very lean and dry and whose bones were too hard for the young cubs to eat. Upon changing the diet of a subsequent litter of young lions to milk, powdered bones, and cod liver oil, they became lively, the symptoms of rickets disappeared, and they grew to maturity, the only change in their mode of life having been the altered diet.

In these same gardens, young monkeys, taken from their mothers and fed on a vegetable diet, chiefly of fruits, became rachitic. Two young bears fed upon rice biscuits, occasionally with lean meat, which they rarely ate, died of extreme rickets, while still young. In all of these cases, fat, proteids, and lime salts were practically excluded from the food.

Heitzman, by feeding and injecting lactic acid into dogs, cats, rabbits, and squirrels, and at the same time restricting the administration of calcareous food, caused curvature of the bones of the extremities, with enlargement of the epiphyses, the bones becoming very flexible, inflammation of the conjunctiva, bronchi, and intestines also taking place. Drawing deductions from these experiments, he was very zealous in advocating the presence of an excess of lactic acid as a cause of rickets. But in many cases of rickets we do not have this excess of lactic acid, and this is a great objection to the acceptance of this theory of its causation. The dietetic origin of rickets seems much more probable, and that there is a failure on the part of the system either to receive or else to digest and assimilate some of the most important tissue-building substances, especially fat, phosphate of lime, and the proteids. In
FIG. 1. Knock-knees coming on at the age of 16 years, six months after onset of symptoms.
the majority of cases, the trouble appears to lie in the fact that a sufficient amount of these substances is not ingested, while in others there is a failure of proper assimilation, the cause of which is not at present precisely understood.

Passing by in this paper the changes which occur in other structures of the body, in consequence of rickets, let us consider the effect which it has upon the osseous system. The long bones of the body, which are chiefly affected in this disease, grow in their length by proliferation of cells from the epiphysial cartilages, and in their diameter from the inner surface of the periosteum. In rickets there is what may be regarded as a low grade of inflammation of the epiphysial cartilages and periosteum. The cells, instead of being arranged in a regular manner, with the ordinary segmentation and proliferation, increase to many times the normal amount, and instead of the proliferating layer of cells being a single line, almost the whole epiphysial cartilage is involved. The same increase in proliferation takes place all along the inner surface of the periosteum, and the blood vessels increase in size to a most enormous extent. The Haversian canals increase very largely in their diameters, extending from the border into the proliferating zone of cartilage. The process of ossification is much retarded, and, in many cases, absolutely arrested, and the layer of hard bone intervening between the medullary canal and the external layer of proliferating cells is gradually absorbed by encroachment on both sides, causing the bone to become more and more flexible. In the later stages of the disease, the process of ossification which has been heretofore retarded, proceeds with great rapidity, and the previously flexible bone takes on an undue hardness, the structure at times being almost ivory-like in character.

The treatment of those rachitic deformities should, therefore, be adapted to the pathological condition which happens to be present at the time when the case comes under observation. As these bone changes usually take place slowly, and, except in acute cases, are not accompanied by much pain or disability, the fact that rickets is present may escape observation until a marked degree of deformity attracts the parents' attention, but careful inspection of children who are brought for examination will often detect the presence of rickets, and the insti-
FIG. II. Knock-knees from adolescent rickets, showing Wolff's method of reducing the deformity. Dotted line shows where plaster cast has been cut.
tution of proper diet and mode of life, will prevent incipient deformities from becoming marked.

Cases like this should not be left to themselves, with the information that they will "grow out of it," but should be helped in the growing-out process by treatment directed to improving their nutrition and general vitality. Cod liver oil is certainly of very great benefit, and should be tried, except possibly in extremely hot weather. It is almost always well digested, especially when given in the form of an emulsion.

There has been a great deal of discussion both for and against the use of phosphorus. Kassowitz, from his experiments in lower animals, concluded that in small doses, long continued, it was capable of decreasing the size of the blood vessels in the bones, and, as these are abnormally large in rickets, he, in consequence, used it in the treatment of this disease, as he claimed, with great advantage. Other observers have followed in his footsteps, and claim also very beneficial results, while still others have not found as great benefit in their observation. I, personally, think that it has yielded decidedly good results in my hands, though in almost all instances the child's mode of life has been such that I have found it necessary to correct errors in diet at the same time, and therefore the improvement which I have noticed may not have been due to the phosphorus although I believe it is responsible for part of it at least. The form in which I have administered it has been the elixir of phosphorus of the National Formulary, devised by Dr. Charles Rice, head of the drug department of Bellevue Hospital, which is as follows:

| Spirit of phosphorus                        | 3⅜ fl. oz. |
| Oil of star-anise                           | 16 minimis. |
| Glycerine                                   | 9 fl. oz.  |
| Aromatic elixir—enough to make              | 16 fl. oz. |

Each fluid drachm contains $\frac{1}{50}$ grain of phosphorus.

I find that children of a year old can take $\frac{1}{100}$ grain of phosphorus three times a day with no bad results, and in children somewhat older I have given $\frac{1}{50}$ grain three times a day, with, I believe, great benefit. These doses are much larger than are usually employed, but I have seen no bad effects from them.

Small children with rickets ought to be kept in the recum-
FIG. III. Sateral Curvature caused by rickets.
bent position and receive daily massage, as the soft tissues of their bodies are as much below the normal tonicity as are their bones. In many of these cases slight antero-posterior or lateral curvatures of the spine can be detected, and in such cases I know of nothing so useful as the wire cuirass. It is far better than confinement in bed, as it permits the child to be carried out doors for fresh air and sunshine—two great aids in cases of malnutrition, whose effect seems often to be overlooked, while too much importance is attached to drugs.

Curves in bones are often found even before children have walked, and manipulation by the hand is an excellent method of reducing these in slight cases.

This sort of manipulation in the great majority of cases, however, can be practiced but a short part of the twenty-four hours and must generally be supplemented by instrumental aid to retain the improved position that has been secured by the hand.

It is unusual for children with rickets to come under the observation of the orthopedist until they have begun to walk, when they are not infrequently brought to be cured of pigeon-toe; and upon examination it is discovered that the pigeon-toe is produced by the child's instinct, which teaches it to turn its toes in in order to avoid undue strain upon the arch of its foot, which the latter is incapable of sustaining on account of the debilitated condition of its bones, ligaments, and muscles; so that if you adjust an apparatus which compels the child to turn his toes out, you will be doing it vastly more harm than good, causing a flat foot to result, and quite likely increasing the tendency to knock-knee, which the child very probably presents. You will further find, upon questioning the parents, that the child has always perspired very freely around the head, possibly to such an extent as to leave a wet place upon the pillow, and that it continues to do so, while careful examination of its body will reveal the presence of abnormally large epiphyses, with a history that the child has been slow in walking.

If the case has advanced farther, and a decided knock-knee or bow-leg is present, and I find that the bone is at all springy, I resort to the use of a plaster-of-Paris bandage, extending from the toes as high as possible on the thigh, and bend the leg as nearly straight as possible while the plaster sets. If it has not been possible to wholly correct the deformity in this
FIG. IV. Result of treatment by plaster-of-Paris jacket in case of rachitic lateral spinal curvature shown in Fig. 3.
manner, after the expiration of a day or two, I cut through the plaster shell at the point of greatest deformity, and, bending the leg toward a straight line, open a gap at the point where I have divided the plaster. Into this gap a small plug of wood is inserted, and a few turns of the plaster bandage applied to unite the upper and lower parts of the splint.

In following out this treatment it is necessary to protect bony prominences from undue pressure, and not to correct the deformity to such an extent as to cause pain to the child after the bandage has been applied, otherwise a pressure sore will be the probable result. After a week or ten days this process may be repeated until the legs have been brought to a normal position.

This method, which, I believe, was first introduced by Wolff, in Berlin, has been, in my hands, infinitely more satisfactory than the application of braces and straps. In cases of children whose bones are sufficiently hard to make it wise to allow them to walk it is not practical, as a usual thing, to apply a brace and strap to a bow-leg or knock-knee in such a manner as to exert force upon the bone sufficient to be of much benefit, and I have found this plaster dressing, which seems at first sight extremely clumsy and inconvenient, much cheaper and more effective, possessing the additional advantage for country practitioners that the services of a skilled mechanic are not required.

I recently had a case of marked knock-knee in a boy sixteen years of age, who said that his deformity had come on in six months' time. He had carried heavy loads upon his shoulder; he was fat and soft, and had very defective circulation. His deformity was extremely marked, as seen in Fig. 1. Knock-knee, coming on at this age, is extremely rare in this country, although more frequent abroad, where bakers are said to be quite often affected with it, in consequence of the strain to which their knees are subjected in kneading dough, which, in large bakeries, is done by treading on it with bare feet. As his deformity had progressed so rapidly, I concluded that his bones were sufficiently soft to make it possible to relieve his deformity without an osteotomy, and I accordingly treated him in the manner just indicated, keeping him in bed for the first six weeks or so of treatment, until the legs had become nearly straight, after which he was allowed to walk about in his plas-
ter splints. The mode of applying the wedges is shown in Fig. 2.

Another case of rachitic deformity of the lower extremities came under my observation two years ago, the neck of each femur in this instance being involved. The deformity had gradually progressed until the thighs crossed each other at the middle third, making it impossible for the patient to walk, the position resembling very much that of very advanced disease of both hip-joints. The patient also had a moderate lateral curvature of the spine. A diagnosis of coxa-vara, dependent upon rickets, was made, and the effort was made to remove the deformity by placing the patient in bed and applying traction to the thighs in a longitudinal direction, and also at right angles to the long axis of the thigh, employing as much weight as could be comfortably borne by the patient. By this means, her legs were gradually separated, and I received word from her physician some six months afterwards that both legs were parallel.

In both of these instances, there was manifest a very active
rachitic process in adolescence, which has been mentioned but briefly by a few authors, although I believe its presence is much more frequent than is usually suspected, and is answerable, in a number of cases of lateral curvature, for the very marked increase in deformity which sometimes takes place within a couple of months.

In the case of coxa-vara, I was informed by the family physician that the lateral curvature of the spine had increased decidedly, although the patient had been lying in bed during the entire time of treatment.

In some cases of lateral curvature the underlying cause of the deformity is evidently rickets, an example of which is shown in Fig. 3. In such cases, in addition to exercises, gymnastic training, and diet, the spine should be supported by a plaster-of-Paris jacket, which should be worn until the soft stage of the disease has passed, irrespective of the time this may require. The result of this mode of treatment in this case is seen in Fig. 4. If I had depended simply upon dietetic and hygienic treatment, I feel certain that the boy’s back would not have been straight, as his muscular power remained very much below normal for a long while, and he was unable to hold his trunk in a proper position, in consequence of which his softened bones would undoubtedly have accommodated themselves to the crooked position in which they were habitually held. His little sister, who had a rachitic lateral spinal curvature of less activity recovered under hygiene, diet, and gymnastics alone.

In cases of knock-knee and bow-legs, where the deformity has been corrected either by manipulation or osteotomy, it is often advisable for the child to wear a slight supporting brace, for the purpose of preventing return of the deformity, and to this end I think that instruments with joints are as useful as I have found them useless in the correction of deformity.

If the patient has passed to the latter stage of the disease, and eburnation of the bones has taken place, it is useless to waste time in endeavors to rectify the deformity by manual or instrumental means, and the bone must be broken either by an osteoclast or a chisel. Which instrument should be used depends partly upon the preference of the surgeon, upon his skill in using either the one or the other, and partly in the location of the curve. I, personally, can divide a bone closer
FIG. VI. Skiagraph of a pair of bow-legs.
to the joint with a chisel than I can with an osteoclast, and should prefer osteotomy in cases where I wish to make a section very close to a joint. But, in cases where the bone is to be divided at a distance from the joint greater than two inches, I find that the osteoclast of Dr. Grattan, of Cork, a useful appliance, and in cases where I wish to break the tibia and fibula in two places, in order to correct the deformity, I prefer to use it. As originally introduced by Dr. Grattan, it had the disadvantage of requiring a very skilled assistant to study the pressure-bar of the instrument, in order to avoid cutting soft tissues. But this is avoided in his later apparatus by making the pressure-bar automatically controlled by means of a handle which passed through the base of the apparatus. The straight edge of the pressure-bar in both of Grattan’s instruments renders it liable to cut the skin, and Dr. A. M. Phelps has modified the apparatus, curving this bar and making it less sharp, which has almost entirely removed the danger of lacerating the skin. The construction of the device can be understood more readily from Fig. 5 than from a detailed description.

In the after treatment of these cases, whether you employ osteotomy or the osteoclast, it is necessary that the splint employed should pass sufficiently far from the seat of fracture to retain absolute control of the fragments, as is true of all fractures, and in consequence it is always wise to run the splint well up upon the thorax in cases of knock-knee and high up on the thigh in cases of bow-legs, in order to hold the bones in such position as to correct the deformity. This is especially true in those cases of knock-knee in which there is a rotation of the femur or its long axis, as well as a hypertrophy of the inner condyle, so that when the neck of the femur is in its normal relation to the pelvis, the foot points outward at right angles to the body instead of straight ahead. In these cases it is not only necessary to correct the angular deviation at the knee-joint, but to rotate the lower fragment of the femur upon the upper, sometimes as much as 75° or 80°, that the foot may be brought in proper relation to the body. In cases of bow-legs in very small children it is often a good plan to fasten the plaster-of-Paris shoes to a cross-bar, by means of which the legs of the child can be kept at right angles to its body by means of suspension from a
rod at one end of the bed, and the chances of wetting the plaster thus diminished.

I would like to impress also upon surgeons the possibility of non-union in some of these extremely rachitic cases, the bone seeming incapable of reunion, probably on account of the great eburnation which is present, which has impaired nutrition to an extent sufficient to prevent the formation of new bone cells. This emphasizes the importance of treating the

FIG. VII. The bow-legs of case shown in Fig. 6 after fracture by Grattan's Osteoclast. Taken through plaster-of-Paris splint.

case in the beginning, while the bones are sufficiently soft to be bent, rather than waiting until fracture of the bone becomes necessary. Figures 7 and 8 show skiagrams illustrating the difference in operating on rachitic bones in the hard and in the soft stage. In the former the bone is broken completely through, while in the latter it is possible to bend it at a sharp angle. In many of these cases it is also necessary to sup-
FIG. VIII. Skiagraph of a femur taken through plaster of Paris splint, showing bend produced by Grattan's Osteoclaster, operation being done in stage of softening.
port the limbs by apparatus for many months after operation, while the child is being put upon dietetic and hygienic treatment for the purpose of relieving the rachitic dyscrasia, as I have seen cases, in which these measures were neglected, which had been cured of knock-knees, return in eighteen months’ time to the hospital for the relief of extremely bad bow-legs. The failure to thoroughly carry out after treatments is responsible for want of success in this, as well as in many other operative measures instituted in diseases of a chronic nature.
CHOLERA INFANTUM—ITS CAUSE AND TREATMENT.

By J. M. Doan, M.D.,
Clayton, Ind.

For the most part the diseases of the first two years of life are the acute infectious ones, and cholera infantum is an acute milk infection.

Nature's food for the young of any mammal is the milk of the mother, and any deviation from this only tends to disturb the system and extend a hearty welcome to disease.

A perfectly normal man is proof against germs. He may swallow with impunity the cholera germ, the typhoid bacillus, or any other germ, so long as the alimentary canal is intact. The gastric juice of a healthy stomach is ordinarily able to destroy all germs that enter therein, while the bile acts as a safeguard for the intestines. The idea that microbes and putrefactive processes are essential as an aid to digestion is an error which is supported by neither physiological nor bacteriological facts. The normal stomach is perfectly capable of caring for itself provided it has a favorable opportunity. Nature is not responsible for the ignorance and carelessness of man, for she has attempted to protect the body against the destructive influences of poisons that develop within the alimentary canal by means of the germicidal power of the gastric juice and bile, by means of the poison-destroying and retaining property of the liver, as well as by the eliminative activity of the kidneys.

So long as these protective agencies are in active operation the body retains its ability to resist the attacks of microbes. Provided other conditions are normal, the vital resistance of the body is sufficient to cope with the disease-producing agencies. When the protective agencies are crippled, either by unwholesome food or an excessive amount, then the gastric juice is incapable of destroying the germ. The fertile soil is broken, and disease is almost inevitable. We have attempted to show that the normal infant is protected by its gastric juice from the ravages of germ life. It is true that the gastric secretions are
scant, and its germicidal power is weak, but Nature does not intend for the infant to crowd the stomach or to fill it with food swarming with bacteria. No factor enters so largely into the causation of disease in infants as does excessive and improper feeding. The cry of the baby is often stopped by giving it the bottle, which may in itself be unclean or the milk may be infected.

It is evident from the severity of the trouble, the great wasting of the child, and its suddenness and fatality, that it is due to some dread poison or gastro-intestinal irritant. The bowel is found to swarm with bacteria, all of which are busy liberating their ptomaines, varying only in their intensity. Of these tyrotoxicon is possibly most prevalent and poisonous. By experimenting with it, results are found simulating that of acute milk infection.

Acute or chronic intestinal indigestion may be given as an etiological factor in cholera infantum, but to me the troubles are as independent as tuberculosis and la grippe. It is true that cholera infantum may follow the diarrhea, but it is only a cause, so far as it lowers the vital resistance and renders the child more susceptible. It does not begin as a mild diarrhea, but rather as a case of acute poisoning, sudden purging, vomiting, griping, and great wasting. We have a case of acute poisoning and not one of catarrhal inflammation. It is a poison either introduced with food or poison liberated by chemical reaction within the alimentary canal. Factors favoring such are heat of summer, bottle feeding, infectious milk, uncleanliness of bottle and nurses, and excessive and improper feeding.

To recognize the trouble as an acute poisoning instead of a case of catarrhal inflammation will reduce the dreadful rate of mortality. The treatment in all cases has not been satisfactory inasmuch as we have been dilatory in pushing radical measures and trusting too much to empirical treatment.

To give calomel and then regulate the bowels was on the right plan, that is, to help Nature free the alimentary canal of the poison, but it is too slow; in fact, all cathartics are too slow, allowing too much time for the poison to be absorbed.

We must act upon the idea that the toxic material exerts its influence by causing great depression of the heart and the system generally by acting on the nerve centers and by paralyzing the vaso-motor nerves of the intestines.
Taking this view, we have the following indications to meet: First, assist nature in emptying the stomach and bowels; second, neutralize or overcome the effect of the poison on the heart and nervous system; third, supply fluid to the blood to make up for the great drain of the discharges; fourth, reduce the temperature.

The first indication is so imperative that to wait for the effect of an ordinary cathartic is hazardous, but we must act promptly and thoroughly irrigate the bowels and wash out the stomach with sterilized water. This may seem barbarous, yet afterwards, even if the child does resist, its strength in the long run is saved. For the second indication nothing equals morphia and atropia in minute doses, hypodermically, to be used only when there is pain and purging. It controls the reflex symptom, stimulates the heart, and relieves the pain. It is evident that the physiological blood is greatly altered by the great strain of the discharges. This could be overcome by transfusion, but the injection of normal salt solution is certainly as successful and much more easily done. Frequent injections into the buttock in varying amounts have proven to be very useful.

How to reduce the temperature has been a question for a long time. The fever quite frequently is sufficient to destroy metabolism. Phenacetin has been given, as well as the other coal-tar products, with good results, yet they are somewhat depressing. Bathing is certainly one of the best alternates for reducing the fever, but a thorough irrigation of the bowels, by washing away the infection, often reduces the temperature in the most satisfactory manner.

With the abatement of the toxic symptoms, there arise others to be treated. For the first twenty-four hours food should be absolutely prohibited. The catarrhal inflammation so apt to follow should be treated, the bowels guarded with a few minute doses of calomel or rhubarb with some alkali, and bismuth in large doses. The diet for several days should be limited, of a bland and easily digested food.
ICE CREAM POISONING.

By Edgar H. Nichols, M.D.,
Savannah, Ga.

Of late an alarming number of cases of ice cream poisoning have occurred, and it is perhaps not amiss for us as physicians to instruct the parents as to the nature of the poison which so quickly affects the patient. It is caused by one of the newly isolated and developed crystalline poisons of the ptomaine class, which has been named by its discoverer, Vaughn, tyrotoxicon.

Vaughn isolated this substance from poisonous cheese, poisonous milk, poisonous ice cream, etc.; chemically it is very unstable. It may disappear altogether in twenty-four hours from milk rich with the poison. It induces vertigo, nausea, vomiting, chills, rigors, severe pains in the abdomen, dilatation of the pupils of the eyes, griping, and purging, a sensation of numbness or "pins and needles," especially in the limbs, and marked prostration, and even death. Symptoms differ in individuals. This poison is thought to be the cause of the summer diarrhea of infants.

Poisoning from milk is less common than from certain varieties of cheese and from cream. When ice cream is made in large quantities the cream is allowed to accumulate, and if a portion of it becomes infected with the germ it will soon convert the whole mass into highly poisonous material. In Michigan in 1883 Vaughn collected the details of 300 instances of this cream poisoning, at the same time he found in the intestines of infants suffering from milk infection similar poisons. Its effects occur almost immediately after ingestion of this poisoned cream in infants or children previously healthy, and the symptoms are like cholera morbus, only there is graver and more profound collapse. This collapse may prove fatal in a few hours if the poison be not eliminated.

This sudden effect has long been observed, but until recently has never been carefully studied; these sudden deaths by collapse required our closest attention to discover a
poison which was so subtle as to leave no trace; so unstable as to disappear in twenty-four hours from a large mass of the vehicle; so singular as to effect one person taking but a trifle of the poisoned mass while those partaking of many times the amount of the affected one may escape; so treacherous as to remain dormant in the human stomach twenty-four hours undiscovered and suddenly produce depressing effects in the nervous system like that of meat or pork poisoning.

Nature fortunately assists the patient before a physician can give his emetic, as vomiting and purging frequently precede the intense pain in the abdomen, thus getting rid of most of the poison.

This season strawberry ice cream has generally been blamed on account of a supposed chemical disturbance in the mass generating the irritant, but vanilla cream and plain cream have been equally suspected. The acid and tin are probably not factors in the distressing effects.

As ice cream is undoubtedly the most refreshing accompaniment to our summer excursions, it certainly behooves us at present to look into the conditions under which the poisons develops. Tin churns which have become rusty or worn should be replaced by agate, or, better still, porcelain churns. Boiling the milk before freezing, which, when ready for the cream, if sterilized cream be used, would reduce the danger of infection. Throw doubtful strawberries away, or, better still, do not use strawberries at all. As vanilla is expensive, few use genuine vanilla; it is the Tonka bean that the bulk of our vanilla is made from. Long continued success in business makes people careless, but now that cream poisoning is so frequent, the makers should look more carefully into the detail of their output, superintending the manufacture themselves instead of leaving the making of it to employees. Test the milk for its purity.

Always eat slowly and, if possible, do not eat on a full stomach, as 98\%° is the temperature which the human stomach requires for its perfect digestion, and ice cold cream so reduces its temperature as to stop digestion at once, and precipitates an acute attack of indigestion. The mixture of other foods, such as shell fish, crabs, shrimp, etc., endanger, by their mixture, digestive trouble.

It has been currently reported that ice cream is sold from
northern industries, being made, packed, and transported by rail to us. This, to my mind, involves great responsibility upon the vender, as he should know of its purity and condition of freshness in order to protect his patrons. It would be difficult to guarantee against inferior milk under these circumstances, not to speak of the possible changes in transit.

We must obtain reliable cow's milk, and if, with the necessary ingredients added, the mass is sterilized and frozen, the danger of tyrotoxicon, or ice cream poisoning, would be reduced to a minimum.

126 Oglethorpe Avenue.
EDITORIAL COMMENT'S

BEHRING AS A PATENT MEDICINE PROPRIETOR

To Behring the chief share in the honor of developing the principle of serum immunization has been almost universally conceded, and in consequence he has been regarded as one of the foremost champions of science in its fight against disease. Therefore the news that he has recently been granted a patent for diphtheria antitoxin will come as a shock to the medical profession of this country. First because his claim is both untenable and unjust, and secondly because his action in taking out a patent is contrary to the recognized ethics of the profession. So long ago as January, 1895, Behring—his assignees being the Höchst Farbwerke, the manufacturers of the serum in Germany—applied for a patent for diphtheria antitoxin. This was refused, and subsequent applications, made on no less than four occasions, have been refused also. These refusals were based on the grounds that several other bacteriological investigators had contributed to, and paved the way for, the final discovery. However, in June last the patent officials at Washington were so weak-minded as to waive these objections, and granted the patent, not because they were of the opinion that Behring had established his claim by right of priority or originality in research, not even for legal reasons, but simply and solely on account of the beneficial results obtained from the treatment of diphtheria by the use of antitoxic serum. In short, sent
imental considerations have been allowed to outweigh those of justice.

We will first consider the matter from a scientific standpoint, and endeavor to show that although, without doubt, to Behring is due a large share of the credit for developing serum therapy, yet this development has reached its present successful issue by progressive stages to which very many earnest workers have contributed. In 1886 Salmon and Smith immunized pigeons with sterilized culture of the hog cholera germ. In 1887 Sewall immunized pigeons against the poison of the rattlesnake. In 1887 Pasteur, Roux, and Chamberland immunized animals against malignant edema and symptomatic anthrax. In 1887 Fox and Bonhomme rendered animals immune to the proteus vulgaris, the diplococcus of pneumonia, and the bacillus of chicken cholera by treating them with sterilized cultures of these germs. On December 3, 1890, C. Frankel published his results in immunizing animals to diphtheria. He cites that either the weakened germs can be used or the filtered cultures. He shows that his animals after proper treatment resist the diphtheria poison or infection of the diphtheria germ. In 1890 Behring and Kitasato published their results, immunizing animals against diphtheria and tetanus. Later in the same year Behring and Kitasato showed that blood can be taken from the immunized animals and used to protect other animals against these diseases. In 1893 Aronson published his results on producing diphtheria antitoxin that is strong enough to adequately protect other animals when administered. From the foregoing extracts it will be seen that Behring's claim to originality in the discovery of serum immunization or to priority in the invention of diphtheria antitoxin will not stand the test of careful analysis, and is besides a manifestly barefaced attempt to ignore and profit by the work of other men. We
might, if necessary, quote the names of many more scientific workers who have assisted in bringing serum therapy to its present state of efficiency, but it would be superfluous. Suffice it to say, that Pasteur was undoubtedly the discoverer of the principle of immunization, while to Roux and Aronson belong the merit of first putting the serum to clinical uses. Roux's serum was used in one of the Paris hospitals in 1894, followed closely by the use of Aronson's serum in Berlin a month later. Again the French Academy of Sciences was so undecided as to which of the respective claimants was entitled to the credit of priority in the invention that it came to the conclusion that Roux and Behring were equally deserving, and awarded the prize jointly. Behring did not discover the principle of immunization, nor is he the sole inventor of diphtheria antitoxin. So much for the scientific aspects of the case. Now to consider it from an ethical point of view.

Since Jenner introduced vaccination for the prevention of small-pox, and thus rendered his name immortal, there has been no discovery made in the realms of science so beneficial to the human race as the principle of serum immunization, and no invention so efficacious in relieving and curing human disease as that of diphtheria antitoxin. The remedy has now undergone triumphantly the test of time, and in its preventive and curative qualities has been conclusively proven of incalculable value. Its discoverer is worthy of a prominent place in the niche of fame. Although, as we have pointed out, no one man can lay claim, with justice, to this honor for himself alone, nevertheless Behring has probably accomplished more than any other worker in the establishment of serum therapy, and it may be said that if he had not made this unfortunate departure from the recognized code of professional ethics his name
might have been handed down to posterity linked with those of Pasteur, Jenner, and Lister. By his selfish attempt, however, to reserve to himself and the company with which he is connected a monopoly of the sale of diphtheria antitoxin in this country, he has besmirched his reputation and lowered the dignity of the profession to which he belongs. That many of the pioneers of scientific research do not reap a fair share of the harvest sowed and brought to maturity by the efforts of their brains, and that they are often used as ladders by which unscrupulous men of superior business capacity ascend to position and fortune, cannot be denied. A discoverer or inventor is most assuredly entitled to an ample portion of the gain resulting from the success of the child of his intellect, and we are certain no one would begrudge Professor Behring the highest possible pecuniary rewards, but at the same time we cannot but think that by placing an invention of the nature of diphtheria antitoxin within the category of a patent medicine, and by attempting to create a monopoly of an invention which belongs by right to all mankind, he has deviated from the best traditions of scientific ethics.

It is by no means one of the most healthy signs of the times that the spirit of commercialism is invading and permeating every rank and class of society. Time was when the workers in scientific research from the highest to the lowest were comparatively exempt from this sordid failing, and were content to labor inspired by the thought that they were doing good to their fellow men and in the hope of gaining glory for themselves and country. All this is now changed, and nowhere is the change more in evidence than in Germany, the birth place and home of modern philosophy and deep thinking. We, in this country, are accustomed to be stigmatized as a people whose thoughts
seldom, if ever, rise above the almighty dollar. We are contemptuously classed by the inhabitants of Europe with the English as a nation of shopkeepers, and the Germans have been most ready to cast this reproach in our teeth. But it can be safely asserted that in the Germany of the present day, to a greater extent than in any other civilized land, are its scientific men— with a few notable exceptions—saturated with the love of lucre, and as eager in the mad rush for wealth as is any Wall Street American. With the Höchst Farbwerke we have no concern, it is a business house, and naturally is guided by the business principle of making money wherever possible. The pity is that a man of Behring's scientific attainments should have become imbued with the German trading spirit and identified himself with a manufacturing company.

Behring, by obtaining his patent, has won the first fight in the campaign, but after all he should remember that he has gained no decisive victory, and that his advance will be no unimpeded march. The ground that he must cover before he reaches and captures the last citadel will be disputed inch by inch, and in the end he may find that his forces have been routed, or that even if victory be his, that it has been bought at too dear a cost. Before leaving the subject of Behring's patent it may be as well to make a few remarks with regard to the patent laws of this country. The fact is well known that any like application would have met with prompt and final refusal in every other country in the world. Indeed no sane person would have the simplicity to even apply for legal protection for an article of the nature of antitoxin in any country but the United States, convinced beforehand that the attempt would be useless. In France and Germany so strict and exclusive are the patent laws that foods and medicines, save on processes of manufacture, cannot be patented. Does it not
therefore seem an absurdity and injustice as well as a slur on the proverbial American cuteness that foreigners are allowed to enjoy privileges here that they are unable to obtain in their own countries. Antitoxin has been manufactured for years in England and other countries without an attempt being made to create a monopoly. This is the only country where such an attempt is possible. It should be borne in mind that in these matters "they manage things better on the other side," and we might with advantage take a leaf from the book of our German and French friends, and reconstruct our patent laws in such a manner that foreigners in this country would enjoy no greater privileges than they do in their native lands. Reform in our patent laws is urgently called for.
SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, June 14.

Frederic A. Packard, M.D., in the Chair.

Dr. A. F. Witmer presented a patient exhibiting **Hemiparesis Following Epileptic Convulsions.**

**DISCUSSION.**

Dr. Packard.—I would like to ask whether it was a true hemorrhage. Whether there was not some thrombotic process going on. There must have been some organic cause for it.

Dr. Witmer.—I have not formed any opinion as to the cause for this trouble. No cause was assigned at the time. The boy is feeble in general physique; his intellectual ability is below the average. I fancy he is one of those defective types in whom we not infrequently find epilepsy, with fairly good hearts, however, and in whom we would not expect to find lesions to account for an outbreak of grand mal. The family history is not good. This boy's maternal grandfather died insane; his mother has a marked goitre; he himself has passed through a number of diseases which a boy of average resistance would not have had. So altogether I consider he is a marked type of the degenerate, and that the convulsions in this case were due to lack of inhibition, dynamic insufficiency, rather than to any other cause.

Dr. Myers showed for Dr. Alfred Stengel a case of Chronic Lead Poisoning.

Dr. Alfred Hand, Jr., presented a case of **Essential Tremor.** The patient was a colored girl, thirteen months old, with a negative family history. She had whooping cough at three months, and measles at ten months. She was fed at the breast at night, and on condensed milk during the day. She was slightly rachitic. For several months it has been noticed that the head is moved by a lateral tremor, which ceases during sleep, and also when the attention is drawn to an object held
within a foot or two of the child's face. When the object is carried away some distance, the attention being still directed to it, the tremor returns. There is no nystagmus; the heart and lungs are clear; knee jerk is normal; sensation is unimpaired.

**DISCUSSION.**

Dr. E. E. Graham.—Henoch speaks of what he calls "nodding spasm," which may be up and down or lateral motions. I have seen two or three of these cases, and it seems to me that this case may possibly be one of so-called "nodding spasm." In the history of these cases there is usually, as in this case, more or less rhachitis, and the explanation has been that it is simply a functional nervous manifestation, from the child's weakened physical condition. The cases that I have seen, some two or three, have all been in the Out-Patient Department of the Jefferson College, and my impression is they all got well.

Dr. D. J. Milton Miller.—I think it is undoubted that these cases of infantile tremor, not including the congenital, are in all cases evidences of mal-nutrition. I have seen quite a number of these children. I saw a poorly-developed and under-nourished child of eight months last winter, who had a marked tremor following measles. Such cases all recover if the nutrition is looked after. This child was fed on condensed milk and is rhachitic; that is the history of almost all of them. These are the instances where the general practitioner is better able to come to a diagnosis than a specialist, especially a neurologist, because the latter immediately thinks of a cerebral sclerosis or some trouble with the cortex. If Dr. Hand looks after the nutrition of his patient, it will probably recover without the use of arsenic.

Dr. F. A. Packard.—There is a patient at present in the Country Branch of the Children's Hospital with the diagnosis of "nodding spasm." In this case, any contagious disease that happens to gain entrance to the Hospital is promptly contracted, and it is always rather a relief to substitute a more satisfactory diagnosis than "nodding spasm," which is simply a confession of our inability to state the cause of the trouble.
In this case the nodding movements began after chicken-pox, but they are of a much coarser character than is the tremor of debility.

Dr. B. K. Chance read a paper for Dr. W. H. Price entitled *Two Cases of Simultaneous Triple Infection*.

Dr. S. M. Hamill read a paper on *Sarcoma of the Kidney of Unusual Size*.

**DISCUSSION.**

Dr. D. J. M. Miller.—Apropos of this very interesting case of Dr. Hamill's, I would like to ask Dr. Graham if the case he showed here last Fall, the case of supposed sarcoma of the kidney, was ever operated on. Many of these cases, if operated on early, as is well known, result in complete recovery.

Dr. E. E. Graham.—The case was operated on, but after the operation was thoroughly started the surgeon saw it would be impossible to remove the mass without sacrificing the life of the child at the time. Unfortunately the parents would not allow the slightest post mortem examination, and while the surgeons during the operation felt convinced that the case was one of sarcoma of the kidney, we have no sections to prove it.

Dr. Alfred Hand, Jr., read a paper on a rapid method for ridding the throat of diphtheria bacilli after disappearance of the membrane. The method consisted of the thorough application to the mucous membrane, once a day for several days, of a solution of sixty grains of nitrate of silver to the ounce of water.

**DISCUSSION.**

Dr. Robinson.—I have been using the method Dr. Hand speaks of for three years and can endorse all he says of it. It was first suggested to me by Dr. Gibb.
ABSTRACTS

A NURSING BOTTLE ORDINANCE.

This, says the Philadelphia Medical Journal, may have a new sound to some of our sanitarians, but it has certainly proved its efficiency in the hands of the Buffalo, N. Y., Health Department. Dr. Ernest Wende, the Health Commissioner of that city, is one of the best posted men on the subject of infant mortality in this country. The study of causation showed him that no prohibitory measures would be effective that did not include the nursing bottle. Accordingly, on November 16, 1890, he had the following city ordinance enacted:

"It shall be unlawful for any person or persons to use or to engage in the sale of any bottle, mechanism, or other device for the artificial feeding or nursing of infants or children under three years of age, that has connected therewith a rubber tube, hose, or similar contrivance."

The object of this ordinance, as is readily seen, was to banish the long-tubed nursing bottle from the market. Copies of this ordinance were published and sent to all druggists and dealers, with the injunction that it would be rigorously enforced. Five convictions have since been secured by the Buffalo department. With the advent of the present hot season the Commissioner sent a lady inspector to the various drug stores of the city, with instructions to purchase one of the prohibited bottles wherever one could be had. In most cases the inspector was informed that the article was not in stock, as an ordinance prohibited its sale. However, of seventy-four places visited, thirty were found sufficiently obliging to sell the long-tubed bottle. The experience of this lady inspector was varied. In some cases she would be subjected to a rigid examination by the druggist or clerk, with the evident intent of ascertaining whether it would be safe to make the sale. In other cases the bottles were handed over without reservation, while still in others the salesman stated that he did not keep them in stock, but would make one with any desired length of tube while the lady waited. Each purchase was carefully marked by the inspector, with the place of purchase, date, time, etc. Before the tour of the city was completed, however, she was recognized in a place where she was about to make a purchase, and the entire association was immediately warned.

Warrants were issued for all the delinquents, and they appeared in court. Three pleaded guilty to the charge and made statements to the
court, who allowed them to go on payment of costs; one stood trial on a general denial, was convicted and fined. The others asked for an adjournment, and combined to secure some of the best legal talent to fight the case.

On learning this, the County Medical Society held a special meeting and unanimously adopted the following:

"Whereas, The Medical Society of the County of Erie, in common with the profession of medicine, and other well informed and right-minded persons, maintain the following principles to wit:

"That the preservation of the public health is the first duty of the State;

"That the prevention of the communicable diseases is the plain and imperative duty of the sanitarian;

"That the responsibility of the State to afford protection to its citizens increases with the ignorance, carelessness, and helplessness of such citizens;

"That of all our objects of protection none is more helpless, or in more constant need of wise and discriminating care, than the newly born, who must be reared by artificial feeding;

"That the death rate among the artificially fed newly born marks the level of the sanitary enlightenment of the community; and

"Whereas, Competent medical opinion has, and does, unhesitatingly and unanimously condemn a certain type of feeding bottles, in frequent use; and

"Whereas, Inspired by such well founded conviction, ordinances forbidding the sale of this apparatus were recently enacted by the proper authorities of the city; and

"Whereas, The relations between the professions of medicine and pharmacy are, and should be, most reciprocal and harmonious, the pharmacist being a conspicuous citizen, learned in medicine, with singular opportunities to form and develop aright public opinion; therefore be it

"Resolved, That, we commend to the druggists and pharmacists of our city our health ordinances in general, and with greater particularity the ordinance forbidding the sale of a certain class of feeding bottles, as timely, wise, and in the best interests of the public health—and that we invite them to join us in supporting these ordinances with their earnest and constant efforts.

"Resolved, That we commend to all those in authority the subject of the preservation of the lives of the newly born and those of tender years, as of the highest practical importance, as deserving this incessant and sleepless vigilance.

"Resolved, That we approve, in the most hearty and unqualified terms, of the ordinance prohibiting the sale of any nursing bottle that has connected therewith a rubber tube, hose, or similar contrivance."

Thus it is seen that the medical profession of Buffalo is on the side of its health authorities. The entire proceeding is unquestionably a move in the right direction. It is an undeniable fact that under the ordinary means employed for the artificial feeding of infants, it is practically impossible to keep the long tubes in an aseptic condition. A united effort on the part of the medical profession and the health authorities would soon banish the evil that is responsible for more deaths than all the modern means of warfare. At the same time it is seen that the pharmacist, or dealer, bears an important relation. Human nature naturally rebels against anything that even has the appearance of an infringement on personal rights. The question as to the right of the State to adopt proper
measures for the preservation of the life and health of its citizens has, however, been sufficiently determined by competent authorities, and admits of no argument.

THE PATENT ON ANTITOXIN.

An editorial in The Medical Age (August, 1898), says "the announcement that Professor Behring has been granted a patent as the inventor of diphtheria antitoxin will be received by the medical profession with feelings of keen disappointment. The profession of this country has always sternly disowned any attempt on the part of its members to make scientific achievements opportunities of personal profit. Such discoveries as the medical profession have made have been fully and freely donated to the service of suffering humanity. Professor Behring's claim to be the exclusive inventor of antitoxin not only indicates a spirit of commercialism which does its possessor no credit, but it displays a disposition to assume credit for the labors of others and to make of these an occasion of personal gain which can only indicate a high degree of moral perversity.

Professor Behring claims as his invention:

1. A process "of producing diphtheria antitoxin, which consists in inoculating horses or other animals capable of being infected with diphtheria with repeated doses of diphtheria poison or living diphtheria bacilli of gradually increasing quantity and strength so as to immunize them and form in the blood a counter-poison for destroying the poison secreted by said bacilli, drawing off the blood from said animals, separating the serum from the blood corpuscles, and concentrating the former for use substantially as set forth.

2. "As a new substance, diphtheria antitoxin, consisting of the concentrated serum of the blood of animals treated with diphtheria poison and having the characteristic of immunizing test animals against infection with diphtheria, and curing them when artificially infected with diphtheria, said serum containing a counter-poison having the property of destroying the poison secreted by the diphtheria bacilli substantially as set forth."

It is almost superfluous to point out to any well-informed reader that Behring's claim to have done this is as preposterous as it is unjust. The principles upon which immunization to diphtheria was finally achieved were of gradual growth, the outcome of researches by thousands of untiring workers. The foundation of the work was undoubtedly laid by Pasteur in his method of immunizing against chicken cholera and anthrax. So long ago as 1887 Sewall immunized pigeons against the poison of rattlesnakes. He says, with genuine modesty, his work was undertaken with the hope that it might form a worthy contribution to the theory of prophylaxis, and it was a most worthy contribution. In 1887 Roux and Chamberland immunized animals against malignant edema with sterilized anthrax cultures. In 1890, the same year in which Behring and Kitasato published their results in immunizing animals against diphtheria and
tetanus, Fraenkel published his results in diphtheria after treating animals by weakened germs and filtered cultures. In the clinical uses of the serum, Aronson's name must not be forgotten. His serum was first used in the Children's Hospital at Berlin in 1894. The serum of Roux had been used in one of the hospitals of Paris a month earlier than Aronson's in Germany. Emerich and Aronson both dispute the priority of Behring, and the French Academy of Sciences awarded their prize for antitoxin jointly to Behring and Roux, a fact which very clearly denotes the difficulty of estimating priority of merit in a scientific struggle in which the numerous competitors were so equally distinguished.

The principle which lies at the foundation of the invention of diphtheria antitoxin, and that which underlies all serum therapeutics, is that the blood of immune animals can be used in the treatment of others. Behring did not discover this principle, and in its application he was undoubtedly anticipated by the Japanese workers. If to any single man must be ascribed the distinction of being the inventor and discoverer of the beneficial principle of immunization, the honor belongs to the immortal Pasteur.

The manufacture of antitoxin has been carried out for many years in England, France, Switzerland, Italy, Russia, and Japan, and in these countries no one has had the temerity to attempt to control exclusively its manufacture. In this country it is made by five Boards of Health and by several manufacturing firms. In this country alone has an attempt been made to monopolize its production, it being admitted that elsewhere the claims of any patentee are inadmissible.

If Professor Behring admits any merit in the work of his predecessors and contemporaries, his claim to be the exclusive inventor of diphtheria antitoxin is a contravention of all the ethics of a scientist's career. His claim is an offense against common morality. Had Simpson patented chloroform anesthesia, or had Lister patented antiseptic surgery, the world would have had two selfish empirics, and lost two medical heroes. If Behring, by the righteous judgment of mankind, can be adjudged sole and undisputed inventor of antitoxin, he has a place in the temple of fame for achieving the most beneficent discovery of modern times. It remains to be seen whether the temptation to be rich will overcome his ambition to be great, and whether for a tinsel crown he will barter a diadem of everlasting renown.

ON SEPSIS IN MEASLES

C. Folger (Jahrb. f. Kinderh., 1897, 36vi., 1 and 2). Death in uncomplicated cases of measles, as opposed to scarlet fever, is exceedingly rare, so that B. Henoch and Filaton, for example, never met with a death here. Other authors, as Demme, v. Jürgensen, and Tobitz met with cases of death, which were, however, referred by them, in the absence of all tangible symptoms, to the deleterious action of the poison of measles; as we know that similar cases of scarlet fever which led to sudden death were
formerly also thus explained. At the present time we are aware, it is true, that a mixed infection of streptococci is the cause of the fatal issue, and it is reasonable to suspect a similar cause in those cases of measles which run a rapidly fatal course. When two cases of this kind occurred lately these conditions were studied and this suspicion was verified in fact; although a complicating sepsis could neither be clinically nor pathologico-anatomically proven. It was nevertheless positively demonstrated by bacteriological examination.

1. A boy, eleven months of age, was taken ill with measles on April 17, 1896. Being admitted to the hospital, the following conditions were found:

The child was strong, well nourished, and slightly rachitic. The face, also the trunk and extremities, were covered with a recent, vividly red, maculo-papular exanthem, confluent in spots on the back. The conjunctiva were strongly injected and puffy; the nose secreted a little slimy fluid, the skin in its vicinity being scaly; the mucous membrane of the pharynx was only slightly reddened, free from deposit; percussion over the lungs was normal; vesicular respiration was heard all over them, conjoined with isolated mucous râles; cardiac dulness, normal; the valvular sounds clear; no disease of the abdominal organs; pulse strong; temperature, 38.5° to 39.5° C.

About ten days after admission to the hospital the eruption became somewhat paler; the condition of the lungs was unchanged; the general conditions were in accord with the high temperature (39.3°); there were no dangerous symptoms. A few hours later temperature was 40.4°. Camphor injections were therefore administered, but with negative results. The patient died within a few hours.

The autopsy disclosed a marked status lymphaticus, and a slight bronchitis, but was otherwise absolutely negative. Seven hours after death a bouillon-culture was made from venous blood, in which a pure culture of streptococci was developed after twenty-four hours. In what manner, however, did they find entrance? The tonsils and the respiratory passages are to be considered first of all. As no pathological changes could be discovered in the tonsils, either during life or on section, it seemed unlikely that the source could be here. So much the greater was the surprise, when microscopic examination of a section of the tonsil disclosed an enormous number of streptococci. The objects which first struck the eye, under a low magnifying power, were thick, blue lines, which were situated directly below the epithelium, as also in the interstitial connective tissue between the follicles and in that lying between the muscular tissue of the pharynx, and were also met with here and there in the interior of the follicle itself. These lines represented the lymphatic vessels crowded with streptococci, so that we were justified in assuming this to be the primary seat of infection, by these microbes. Bearing out the microscopic findings, no change could be noted in the epithelium on the surface of the tonsils. The crypts affected, however, (which had been opened partly by a longitudinal and partly by a transverse incision), presented more or less an absence of epithelium—sometimes to a larger and again to a smaller extent, and its replacement by,
necrotic mass, extending somewhat into the connective tissue below, which was filled with crowded masses of streptococci. This, in many places, was all that could be seen. In others, however, the streptococci passed still deeper, partly into the clefts of the interstitial connective tissue and partly into the follicles themselves; enormous numbers of these same micrococci were also found in the internal organs, the lungs, kidneys, and spleen.

2. This patient was a boy two and a half years old, who was taken ill with fever, coryza, and vomiting, on February 17, 1897. On the following day he was admitted to the hospital.

Present state, February 19: A fairly well nourished, somewhat rachitic child, large for his age. The whole body—the face and chest more so than the extremities—was covered by a bright red, small maculo-papular exanthem, the conjunctivae were greatly injected; the nose discharged copiously; the pharynx was reddened in patches; at the angle of both jaws there were small lymphatic enlargements; percussion over the lungs normal; respiration vesicular; isolated medium-sized bubbling râles; cardiac sounds clear; the abdominal organs normal. Temperature—morning, 40.3°; noon, 39.6°; evening, 40.1°; pulse, 140, strong.

February 20. The exanthem had spread evenly over the whole body; its color was deep red; the pharynx was intensely congested; the condition of the lungs was unchanged, with the exception of the presence of abundant râles. Temperature—morning, 40.4°; afternoon, 39.9° and 40.4°.

February 21. The eruption on the face was somewhat paler; that on the extremities slightly livid; a few subcrepitant râles were heard at the base of the right lung; percussion normal all over, and the respiratory murmur vesicular, here and there sharply so. During the night the patient frequently uttered a shrill cry. Temperature—39.4°—40.0°.

February 22. The lips were cracked, covered with a yellowish white deposit; the pharynx was still intensely red, free from any deposit; respiration forty to the minute, the individual respiratory acts were very deep; occasional moaning; consciousness somewhat dulled; the pulse comparatively strong—160, at times tense; subcrepitant râles were heard over the lung, but no distinct pneumatic symptoms; the eruption all over the body was of a livid color; the temperature remained above 40° all day—highest temperature recorded being 40.5°; toward noon respiration became somewhat more frequent; it remained, however, remarkably deep; the child failed by degrees. Camphor injected subcutaneously did not act, and the child died with increasing debility and cardiac failure at 7 o'clock A.M.

At the autopsy, the general enlargement of the lymphatic glands was at once noticeable. The tonsils contained few small abscesses, the contents of which may be expressed in some places as yellow plugs. The mucous membrane of the respiratory passages was injected; in some parts of the pleura small extravasations of blood were found, also a moderate bronchitis; and the smallest amount of consolidation was present in some sparse portions of the right lung, which proved to be small circumscribed pneumatic foci; a fatty degeneration of the liver was also present.

Four hours after the autopsy a bouillon-culture was made from the
blood taken from one of the median veins; a pure culture of streptococci was also here obtained.

The suppurative processes in the tonsils pointed to the source of the infection. As a matter of fact, small abscesses were also found in the uppermost layer, containing, exclusively, streptococci in large quantities. These were also found in small necrotic foci of the epithelium and in the uppermost layer of the tonsillar tissue, and were traced, extending deeply in wedge-shaped unbroken rows, into the latter. They were also met with in smaller quantities in the deeper follicles and in the interstitial connective tissue of the former, as well as in the connective tissue lying between the muscular tissue of the pharynx and the mucous glands. No micro-organisms were found in the small consolidated foci of the lungs, or in the spleen, the kidneys, and the glands.

These histories therefore prove that cases may occur in measles where the children suddenly die in the initial stage of the exanthem from a secondary affection accompanied by streptococci, as case number one shows; so rapidly sometimes, too, that the symptoms do not at all indicate how near the fatal issue may be, and even section is negative, in spite of the presence of organs filled with streptococci. In the second case death was delayed until the fifth day. Here, also, the symptoms denoting sepsis were absent; and at the autopsy only the smallest pneumonic foci were found, which were of too little importance to be taken for the cause of death. We are therefore obliged in this case (although the streptococci were not present in such quantities as in number one) to attribute the fatal ending to the secondary affection.

A CONTRIBUTION TO THE CHARACTERISTICS OF PNEUMONIA COMPLICATING MEASLES.

Ivan Houl (Wiener Klin. Rundschau, 1897, xi., 833). At the Twelfth International Congress at Moscow, Houl read a paper of which the following is an abstract:

"As regards the cause of death in measles, pneumonia is of most frequent occurrence, while tuberculosis is rare. The generally accepted opinion, which is especially supported by clinicians, that tuberculosis is a frequent sequela of measles, is totally wrong. An attempt was made to explain the origin of the tuberculous process by the fact that the organism is disposed to tuberculosis after having passed through an infectious disease. According to Birch-Hirschfeld, the latent tuberculous affections, which are already present before the contraction of measles, and which are so favored by the measles that they rapidly spread by stirring up the bacilli, are the real cause of the outbreak of tuberculosis. The correctness of this view was, however, not altogether upheld by the numerous autopsies made. Many cases were found, it is true, where a tuberculous affection, particularly of the glands, was found in the body dead from measles; it had, however, not spread to the lungs or to other organs, even in cases which ended fatally long after the measles had run their course."
The assertion, therefore, that tuberculosis frequently occurs after measles is utterly false; and we will see later on how this belief originated.

Nearly all our autopsy cases of morbilli presented a pneumonia either alone or complicated with other pathological affections (diphtheria, noma, enteritis). Pulmonary inflammations were mainly treated from a statistic, etiologic, and clinical point of view in literature. Its anatomical character, however, was studied very little. We will only mention here the publications of Kromayer. He divides all cases examined by himself in three categories:

1. Catarrhal pneumonias.
2. Interstitial pneumonias.
3. Peribronchitis.

We have succeeded in demonstrating various forms of pulmonary inflammations on the bodies of children who died from measles.

1. Pneumonia catarrhalis lobularis (bronchopneumonia), an inflammation which is frequently met with in infectious diseases, and which stands in no relation to the etiological cause of the primary affection.
2. Pneumonia lobulatis fibrinosa, which is to be considered as a chance symptom in the course of morbilla.
3. Pneumonia hemorrhagica.
4. Pneumonia abscedens.
5. Pneumonia caseosa vera, which is always associated with a great number of tubercle-bacilli.
6. Pneumonia with giant cells without tubercle bacilli.

The first five forms are of no particular interest. The last variety, however, is both macro- and microscopically different from all the others. That it has not attracted the attention of authors, may be explained by the fact that it was mistaken for caseous pneumonia; and this by the clinicians because of its protracted course; by the anatomists on account of its appearance. Anatomically we can distinguish two forms: The first form presents itself as prominent foci, which have a similarity to tuberculous nodules; the second form—for whose appearance a longer time is in all probability needed—resembles a caseous pneumonia. The tissue is, however, not so yellow, is of a dull color, and at times rather more depressed than prominent on the plane of the section. We have also met with forms that resembled an atelectasis.

Bronchiecstasy and emphysema were frequently met with, together with pulmonary inflammation and irritation of the pleura; bronchitis and enteritis were constantly present.

The histological picture lies between the purulent catarrh and the pus-producing inflammations. The main fact, however, is that Langhan's giant cells are present.

From an etiological point of view we are not able to report a uniform finding. We occasionally meet pneumo strepto- and staphylo-cocci alone or in conjunction; also the bacillus pyocyaneus, and in those cases where pneumonia complicates, bacilli have been found which resemble perfectly the bacillus of diphtheria.

We repeat with emphasis that tubercle bacilli could not be demon-
strated either by the microscope or experimentally. It is therefore absolutely impossible that we are dealing here with a tuberculous process for the reason that its main diagnostic symptom, the tubercle bacillus, is altogether absent.

In closing, we would like to direct attention to our experimental researches, namely, that we were able to produce a pulmonary inflammation experimentally by the intravenous application of the sputum of children suffering with measles and at the same time with bronchitis or pneumonia, which resembled the cheesy inflammation macroscopically, but did not contain tubercle bacilli. This is, however, only possible if the animal does not succumb to a pneumo-coccemia, in regard to which as immunization of the the animal, though partial, has been demonstrated.

The experimental inflammation furthermore did not contain any specific kinds of bacteria.

As regards the origin of this peculiar form of inflammation, we feel tempted to advance a few hypothetical opinions:

1. We may be dealing with a specific morbillous inflammation, i.e., an inflammation which is produced by the cause of the mobilli, to us unknown. The tenability of this opinion is based on facts. We have recently examined different forms of pneumonia occurring in other infectious diseases, as for example, in diphtheria, scarlet fever, typhoid fever (four cases), sepsis puerperalis (two cases), malleus (one case), and sprue (one case). We have also examined various forms of purulent pneumonias (actinomycotic and diabetic pneumonias), but in no instance did we meet with a similar condition. In two cases of whooping cough only we found the same results. When we take into consideration, however, that we are ignorant of the differential points, i.e., the specific cause for both affections, and that the eruption in morbilli, at any rate, does not always make its appearance, we may assert with all assurance that the whooping cough in these cases should be classified with the symptomatology of morbilli or complicated with them, as many pediatrists, and especially Neuretter, claim.

The result of bacterial investigation does not mitigate against the idea that we may be dealing with a specific pneumonia of measles, for we must remember that the micro-organisms found are relegated here only to the rôle of epiphytes in tissue which has already been destroyed.

2. We may be dealing with a pulmonary infection coming from the intestinal tract. In this connection I would point to the constant occurrence of enteritis in infectious diseases of children.

3. This form of pneumonia is, however, most likely caused in the following manner: The child either dies in the early stage, in which case we find at the autopsy a simple pneumonia in a child affected by measles, or else the patient survives the pneumonia infection, and the organism becomes slowly immunized against its acute primary effect. In this manner the child is protected against the pneumonic toxins, and may go on to recovery. As, however, the organism of the child is weakened by the co-existence of measles, and reabsorption of the exudation is prevented by the torpidity of the parenchyma of the lung, or by an existing emphysema,
recovery does not fully take place. The exudation and the microbes, against whose poison the organism is protected, being only in part removed, remain behind in the affected organ, and produce an irritation in the neighboring tissues, just as a foreign body would; thus giant cells are formed, and the character of a productive inflammation is taken on.

According to this supposition the protracted clinical course of this form of pneumonia and the rapid decline of the children affected would also be explained; these factors being the cause of the errors made in looking upon this form of inflammation as of a tuberculous nature. We may therefore sum up our results as follows:

(a.) Tuberculosis following measles is not the most frequent cause of death in children suffering from measles, but the latter is caused by pneumonia.

(b.) During the course of measles alone, or where they are complicated with whooping cough, various forms of pneumonia may occur. Etiologically considered these pneumonias are not of a uniform type. Various micro-organisms may be demonstrated in the pneumatic lung-foci as, for example, streptococci, staphylococci, pneumococci, pneumo-bacilli, b. diphtheriticus, and b. pyocyaneus, either occurring alone or mixed. However, it was not possible in these pulmonary complications to confirm any one of these micro-organisms as the specific excitor of measles.

(c.) The sputum of a child suffering with measles, complicated by bronchitis or pneumonia, when injected intravenously, excited a pneumonia in a rabbit, which had been immunized against pneumococci to a lesser degree, and this resembled a cheesy pneumonia macroscopically, but did not contain tubercle bacilli.

(d.) One form of pneumonia occurring after measles, which presents a prolonged course clinically, is distinguished anatomically by its purulent character and by the presence of giant cells. The formation of these giant-cells, which sometimes appear in masses, may be explained by a diminished reabsorption of the exudate as a result of the weakened parenchyma of the lung, or of an emphysema. The exudate and the microbes left behind exert an irritation on the parenchyma of the lung, like any foreign substance, and an inflammation of the character described is excited.

This form is also not an entity etiologically (b. pseudo-diphtheriticus, pyocyaneus, pneumo and staphylococci, etc.). In many cases of this description tuberculous changes were demonstrated in the lymphatic glands; in others, however, no disease of this tissue was found. As the main criterion of a tuberculous process, namely tubercle bacillus was, however, totally absent in these inflammations, we cannot classify this form with the tuberculous affection.

We are therefore reduced to two conjectures: To the improbable supposition that either a cheesy pneumonia may exist which does not contain tubercle bacilli, or else we are obliged to classify this form of pneumonia in a category, which we would call pneumonia morbillosa or pseudo-caseosa.
CLINICAL STUDIES OF LUMBAR PUNCTURE.

E. STADELMANN (Mittpeil a.d. Grenzgeb. d. Med. u. Chir., 1897, ii. 3 and 4). Lumbar puncture is described by various authors as an easy operation, which may also be employed to advantage in private practice. This view is strenuously opposed by Stadelmann. After describing the technical steps of the operation, he arrives at the following conclusions, both from his own experience and that of others, as to the value of Quincke’s lumbar puncture: Quincke’s lumbar puncture is both of a therapeutic and diagnostic value.

As a therapeutic measure it is indicated in all cases in which symptoms of cerebral pressure are present, especially in hydrocephalus, meningitis serosa, encephalitis, saturnina, chlorosis, accompanied by cerebral symptoms, tumor cerebri, meningitis, uremia, and acute infectious diseases presenting grave cerebral symptoms.

Neither the specific gravity—which is independent of the amount of albumin present—nor the amount of sugar contained in the fluid, are of any diagnostic importance.

An increased amount of albumin in the fluid points to the existence of an inflammatory process.

The normal spinal fluid is perfectly limpid and as clear as water. A turbid fluid points to existing inflammatory processes.

A positive conclusion as to the nature of the disease cannot be drawn from the amount of pus present in the fluid.

Positive conclusions can only be drawn from positive and never from the negative results of lumbar puncture.

As a proof of the existence of purulent meningitis, the presence of bacteria (diplococcus Fränkel, staphylococci, meningococci intracellularis of Jaeger-Weichselbaum) only can be accepted, for the reason that pus is also present in tuberculous meningitis, as well as in cerebral abscess.

The presence of tubercle bacilli in the fluid is positive proof of tuberculous meningitis. Their absence does not, however, exclude this disease.

Cerebro-spinal fluid, mixed with blood, may be obtained from the accidental admixture of blood from the puncture, and from the presence of meningeal or ventricular hemorrhage. The former may be excluded, when numerous punctures each time bring forth a fluid mixed with the same amount of blood.

CONtribution to the Symptomatology of Animal Parasites.

Peiper (Deutsch. Med. Wochenschr., 1897, xxiii, 763) demonstrated the case of a ten-year-old girl, whose affection he had at first diagnosed as meningitis, and who had shown rapid improvement and recovery after a dose of castor oil and santonin. The stools, which were profuse, contained a large number of round worms. It is pretty certain that the men-
Ingeal symptoms were dependent on the presence of the round worms: Grave nervous disturbances, convulsive seizures of different forms, already repeatedly disappeared on the passage of round worms or other human parasites.

Most authors look upon the nervous symptoms as of a reflex character, Since we have learned by numerous observations that animal parasites may contain a poison, or that they may produce by metabolic action substances possessing poisonous properties, the thought arises whether certain disease symptoms which present themselves in helminthiasis may not be traced back to the poisonous effects of the helminthes.

In regard to ascarides, we may, in the first instance, be allowed, from numerous observations, to positively assert that they contain some poison, either within themselves or adhering to them; and the thought that this poison may be absorbed by the intestine producing manifestations of a general character, and especially disturbances of the nervous system is just as reasonable. Why this poison is not formed in every case of ascarides, or why its toxic effect on the nervous system is not manifested in every case has yet escaped our investigation. Perhaps the duration of the illness, the number and virulency of the parasites, should be taken into consideration. As regards tape-worms, Peiper believes that the symptoms observed in many patients, especially the nervous forms, as cephalalgia, pruritus, disturbances of vision and of sound, mydriasis, also general prostration, anemia, tired feeling, etc., should not be attributed to helminthiasis. In this case the diagnosis of its causal connection will also rest on the fact whether or not the symptoms have appeared after the acquisition of the parasite, and have again disappeared after its removal.

Of other helminthes, the bothrioccephalus, and its concomitant anemia deserve mention. There is hardly any doubt at present as to the connection of this form of pernicious anemia with the bothrioccephalus. The affection emanating from this tape-worm is undoubtedly caused by a poison of its own manufacture, which produces a destruction of the red blood corpuscles. In ankylostomiasis also, we may assume the presence of a protoplasm poison, which is manufactured by the ankylostomata.

There are also present, without doubt, in the echinococcus fluid substances which have a toxic action. Thus we find peritoneal irritation occurring after puncture of an echinococcus cyst in the abdominal cavity, in spite of all preventive measures. This is liable even to occur where not the slightest turbidity or suppuration of the contents of the sac is present. The appearance of urticaria after puncture or after spontaneous rupture is not an infrequent occurrence. Fever, singultus, nausea, pain in the joints, herpes, have also been observed.

In all probability some poisonous action may also be attributed to the trichocephalus. The presence of oxyures may undoubtedly also induce nervous symptoms.

In many cases of trichinosis, very intense disturbances: malaise, nausea, eruptions, vomiting, vertigo, dullness of the mind, etc., make their appearance a few hours after the injection of trichinous meat. Occasionally the disease is ushered in with the symptoms of a gastro-intestinal catarrh. In this case grave symptoms may already frequently appear.
at a time when the advent of the parasite could not yet have produced marked anatomical changes. It is more probable that a toxic substance is being absorbed here. The assumption that the animal parasites of man may, even under certain circumstances, exert a deleterious influence on the organism, is corroborated by experiments and observations in the pathology of our domestic animals. Peiper comes to the following conclusion: It is quite probable that the animal parasites contain or excrete toxic materials, which act as poisons, especially on the nervous system, as also on the formation of the blood. They only manifest themselves, however, clinically where a certain number of the parasite carriers are present.

OCCLUSION OF THE INTESTINE CAUSED BY A FECAL TUMOR IN A CHILD THREE DAYS OLD.

Riether (Wien. klin. Wochenschr., 1898, xi., 9), had a child three days old under his care for six days, suffering with coprostasis, the cause of which was only disclosed at the autopsy.

The child was admitted to the Foundling Asylum on November 29, 1897, and placed in the hands of a nurse. On November 30 the nurse reported that the child refused to drink, and had frequently vomited greenish matter copiously. The child, who weighed 3,040 grammes, rested quietly on its back. The face was pale; the internal organs were normal; the abdomen was greatly distended; the skin was remarkably glistening and pale, and was netted with dilated veins; the umbilical cord was mummified and partly thrown off, the visible part of the wound of the navel granulating; the abdomen was very tense and tender; percussion was tympanitic all over; auscultation revealed an occasional purring or rolling noise; the temperature in the rectum was 37.4°.

Treatment: Two high irrigations were administered without producing any stool.

On December 1 and 2 the same conditions prevailed, only the weight was reduced to 2,970 grammes. The child received several injections, and was given an infusion of chamomile and a saline laxative equal parts. No stool was yet obtained. December 3 the bodily weight was 2,900 grammes. The child refused all nourishment; the vomited material was of a dark yellow color and had an acid but not feculant odor. Following an intestinal injection a very sparse, smeary, brown evacuation occurred, in quantity about as much as a coffeespoon would hold. This in all probability came away from the portion of the intestine situated below the obstruction. December 4 the weight was 2,800 grammes in statu quo. Castor oil was administered per oris and per anum, but no movement resulted. December 5 the weight was 2,720 grammes. The child frequently vomited copiously a brownish feculant fluid. The pulse was scarcely perceptible. Evening temperature, 39.6°. December 6 the weight was 2,600 grammes. Temperature, 36.5°. Total collapse. Death occurred at 9 A.M.

Autopsy revealed an abdomen greatly distended and very tense. The
organs of the neck and the thorax presented nothing abnormal, except that the diaphragm was crowded up high, and the lower lobes of the lungs showed atelectasis. The stomach and intestines were greatly distended. The small intestine was distended by gas to the size of a man's thumb; the large intestine was dilated, by hard, brown fecal masses, to the size of nearly three finger breadths; the feces were of the consistency of gruel in the cecum, colon ascendens and transversum. The rectum was contracted and empty and its mucous membrane was somewhat reddened. The serous coat of the large intestine was discolored and of a brownish tint, that of the small intestine was evenly reddened by injection of blood-vessels.

ROTHELN AND ITS TREATMENT.

Blaschko (Therap. Montash. 1893, xi., 659.) The diagnosis of rotheln is to be made when a child, during an epidemic of measles, becomes slightly feverish and presents a reddish eruption accompanied by enlargement of the papilla of the integument, with absence of eye-symptoms and of nasal and bronchial catarrh. When the general condition and the appetite do not suffer, the erythema after a few days becomes paler, the skin either desquamating not at all or only slightly, and particularly if the child has already passed through an attack of measles.

Infection in the family is rare. As a rule only isolated cases are found. Epidemics, as in scarlet fever and measles, very rarely occur, and then only in boarding-schools, orphan asylums, etc.

Neither complications nor sequela have been observed in rotheln.

Treatment: The child should be kept in bed for a few days; put on a bland diet; allowed to leave the room only after eight days; and may again return to school after fourteen days.

Isolation in the family does not appear necessary, the brothers and sisters of the patient may be allowed to continue their attendance at school.

After the disease has run its course, luke-warm ablutions and friction, with moistened almond flour, at first luke-wa.m, then cold, may be ordered, to remove the scales, which are generally invisible, and also the germs of infection from the skin.

In opposition to the view expressed by other authors that rotheln is a disease sui generis, Blaschko asserts that it should be considered as a mild form of measles only.

ON INFLUENZA IN CHILDHOOD.

B. Furst (Deutsche Med-Ztg. 1897, 789) enters minutely into a description of his treatment of influenza in children, which has given him very satisfactory results during the various epidemics occurring since 1890. The child is isolated, put to bed and, when necessary, is given a slight laxative. Milk and light gruels form the diet. For the pharyngeal
catarrh, remedies are administered which will remove swelling, secretion, and obstruction. For this purpose the local application of oil terebinth, or a 1 or 2 per cent. solution of menthol in alcohol, have given the best results. In conjunction with this, gargles of boric acid and chloride of sodium solution are given where a catarrhal laryngitis is present. These solutions are to be used in the form of sprays. For the bronchial catarrh, expectorants are prescribed. As regards internal medication, none have given such uniform, prompt results, free from any unpleasant after-effects, as salipyrin. Whenever Fürst exhibited this remedy early in a case of catarrh, which seemed to be due to influenza, he was frequently able to abort the disease. In accord with v. Mosengeil, Moncorvo, Hennig, and others, he attributes to this remedy nearly a specific influence. Complications on part of the lungs and kidneys are less frequent; the catarrhal symptoms remain moderate; the most unpleasant symptoms (fever, headache, somnolence) are suppressed in their beginning; the tendency of the catarrhal symptoms to descend and become a cause of bronchitis or pneumonia is done away with. Salipyrin should, however, be administered early, and the doses should not be too small. Children up to five years of age are given 0.25 grammes; those from five to ten years, 0.5 grammes; from ten to fifteen years, 1.0 grammes (15½ grains) as a dose, three times a day, in some slightly sudorific tea. After two days the doses may be reduced to two a day, which should be continued three or four days. During this time the patients are strictly confined to bed. If this is done no relapses occur, and debility—for which a small amount of alcohol may be given, when necessary—very rapidly disappears. Later on children are gradually to be hardened in a rational manner, as they otherwise incline to relapses, because one attack does not render them free from the possibility of another.

TREATMENT OF ACUTE LARYNGITIS IN CHILDHOOD.

(Le Monde Med. 1898, i; Der Kinderarzt 1898, ix., 58.) The best treatment of acute laryngitis in mild cases consists in the inhalation of steam, painting the throat with iodine, and covering it thickly with cotton. With this a hot foot-bath containing mustard should be ordered. In case the cough is very troublesome and very frequent, preventing sleep, two, four or six coffee-spoonfuls of syrup of codeia should be administered according to the age of the child. In severe cases the front of the neck should be covered with sponges soaked in hot water, which are to be frequently renewed. If acute laryngitis is, however, complicated with spasmodic seizures, the latter can only be successfully combated by keeping the child in a room filled continuously with steam, as steam renders the mucus more fluid, and thus facilitates its expectoration. In the hospital, steam is generated in the following manner: The open end of a steam pipe is placed over a screen about the height of the bed, the steam, which is generated from a covered cooking vessel outside the sick-room, is allowed to continuously flow into the latter. In private practice, steam may be generated in the following way: The bed is covered with a spread or
a counterpane. Beside the bed a pot is placed containing boiling water, which is kept boiling by means of an alcohol lamp. The steam generated is now gathered under the spread, and saturates the air which the child breathes. It will be necessary, however, to observe that the patient is not covered up too much nor too warm. If so the respiration will be made more difficult instead of being relieved. During the free intervals the child is to receive a coffee-spoonful of the following mixture three times a day:

$$\begin{align*}
R & \text{ Kali bromal} & \text{1.0} \\
    & \text{Syr. ether} & \text{Syr. aurant cort.} & \text{20.0} \\
    & \text{Aqua destill} & \text{aa}
\end{align*}$$

In the evening a suppository may be applied consisting of the following:

$$\begin{align*}
R & \text{Extr. belladonna} & \text{0.5} \\
    & \text{Glycerin pure} & \text{2.0}
\end{align*}$$

A lukewarm bath may also be given daily, containing the following:

$$\begin{align*}
\text{Extr. belladonna} & \text{1.0} \\
\text{Flor. et folii tilia} & \text{50.0} \\
\text{Aqua bullient} & \text{1,000.0}
\end{align*}$$

After the bath the child is again returned to bed and its feet wrapped in cotton.

In the place of bromide of potassium we may order codein, 0.01 grammes (1/6 grains) pr. die, in children under one year of age; in those over three years, 0.02 grammes, giving this in teaspoonful doses and increasing if necessary. When all means of relief are of no avail, and the child is taken with paroxysms of asphyxia, the face becoming cyanosed, and a pulsus paradoxus indicates heart failure, surgical interference in the way of intubation or tracheotomy is necessary, and of these, intubation is to be preferred in hospital cases, while tracheotomy should be done in private practice, for the reason that the patient is under continuous observation in the hospital.
CHOREA.*

By Walter F. Boggess, A.B., M.D.,
Louisville, Ky.

In presenting the paper for this evening's discussion, while recognizing the fact that among the neuroses of childhood none is worthier of more careful study than chorea, I shall not make my paper a didactic one, dealing with its very interesting legendary history and symptomatology, but shall confine it almost entirely to a consideration of its etiology and treatment.

Chorea is distinctly a neurosis of early life. In Stephen Mackenzie’s statistics, of 439 cases, 34 per cent. occurred between the ages of five and ten; 43 per cent. between the ages of ten and fifteen; 15 per cent. between the ages of fifteen and twenty; leaving only 8 per cent. occurring before the fifth year and after the twentieth. Sinkler reported two cases occurring after the eightieth year. Those cases which occur after the twentieth year are probably mixed neuroses, occurring with other psychic disturbances amounting to insanity or to dementia (vide, two cases in tabulated report).

From Mackenzie’s tables, the largest number of cases

*Read before the Louisville Clinical Society.
occurred about the thirteenth year. Of my sixteen cases, six or seven occurred between the tenth and fourteenth years—the youngest age two-and-a-half years, the oldest thirty-two years. I have never seen a case in an infant, although Sinkler reports a case of congenital chorea, said to be due to fright of the mother during pregnancy.

All authors agree that sex is an important etiological factor, and that the female sex, owing to lack of development of inhibitory power of motor centers, especially at the beginning of womanhood, is peculiarly liable to the disease. In my table, fourteen out of the sixteen cases were females, a higher percentage, however, than Gowers makes, who found 365 boys among 1,000 cases.

Heredity, *per se*, plays a minor part in this disease.

Climate seems to exercise but very little influence upon this disease, as to heat or cold; but there is an influence exerted by seasons. Doctors Mitchell and Lewis claim that there is a correspondence between the number of attacks and the number of rainy and cloudy days.

As to race: I have never seen a case in a negro, although I had ample opportunity for observation while in charge of a large children's clinic composed largely of negro children.

Should I be asked upon what etiological factor I lay most stress, I should unhesitatingly reply the rheumatic diathesis. Upon this point, however, there is a diversity of opinion. Some claim that the frequent occurrence of this diathesis with chorea is only a coincidence, while others admit that an intimate relation exists between these diseases. The majority of recent writers, such as Mackenzie, Bouchard, Gowers, Osler, Sachs, Maclangen, and others, hold the latter view.

I take it that no one doubts the constitutionality of rheumatism or the hereditary transmission of the same. This transmission means that a certain diathesis or a particular state of the body is handed down from parent to child. That some peculiar condition of the motor system is handed down in rheumatism we know, that this transmission follows the laws of other inherited predispositions, both mental and physical, we do not deny. Such facts we can only indicate as true, we cannot explain them.

Eliminating the so-called nervous theory of rheumatism, in explanation of the relationship between that disease and
chorea, we must turn not to that part of the nervous centers whose derangement causes delirium, wanderings, and such phenomena as are noted in many inflammatory heart troubles, but to that part whose function it is to initiate and regulate movement,—the motor centers.

The choreic symptoms are not due to prior heart troubles (the so-called embolic theory), but result directly from the disturbing action of the vitiated blood upon the nervous centers. As Mackenzie tritely sums the whole matter up: "Rheumatism is essentially a disease of the motor apparatus, chorea is essentially a disease of the motor centers." The motor apparatus which suffers in rheumatism and the motor centers affected in chorea have a distinct physiological connection, consequently a pathological one. I am sure could I go more fully into this relationship, I could clearly show that the rheumatic diathesis predisposes, physiologically and pathologically, to chorea.

The question now remains, granting that such a relationship exists, how is chorea induced, what is its exciting cause? The motor centers, like all other parts of the nervous system, are more susceptible to disturbances in the female than in the male, and in the young than in the old. While it is not necessary for the patient to have had rheumatism, a rheumatic diathesis is sufficient for some fright, some nervous shock, some gastric or uterine trouble to set up a chorea, to excite the motor centers, the heart's condition being only an accident or an accompanying symptom, an exciting cause but not essential to the production of chorea. The motor centers are most easily disturbed in people of a rheumatic constitution, because rheumatism is a disease of the parts of the body over which the motor centers preside.

In the attached tables two cases followed scarlet fever. It is a well-known fact that a frequent complication of scarlet fever is rheumatism.

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>Occupation</th>
<th>Diathesis</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16</td>
<td>Seamstress</td>
<td>Father gouty, brother died of organic heart trouble.</td>
<td>Strong healthy girl, had never been sick, no heart trouble.</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>Pupil......</td>
<td>Had growing pains (?) mother was rheumatic.</td>
<td>Died suddenly, and upon post-mortem found organic heart trouble.</td>
</tr>
<tr>
<td>Case</td>
<td>Age</td>
<td>Occupation</td>
<td>Diathesis</td>
<td>Remarks</td>
</tr>
<tr>
<td>------</td>
<td>-----</td>
<td>------------</td>
<td>-----------</td>
<td>---------</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>Child</td>
<td>Father had rheumatism.</td>
<td>Chorea appeared after scarlet fever.</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>Pupil</td>
<td>Uncle had chorea, mother nervous, and grandmother great sufferer from rheumatism.</td>
<td>Had a mitral murmur.</td>
</tr>
<tr>
<td>5</td>
<td>19</td>
<td>Worked in pants factory</td>
<td>Brother had inflammatory rheumatism with heart complications, mother had rheumatism.</td>
<td>Strong, healthy buxom, irregular in menses.</td>
</tr>
<tr>
<td>6</td>
<td>14</td>
<td>Pupil</td>
<td>Rheumatic family.</td>
<td>Had never been sick in her life.</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>Child</td>
<td>Several members of family subject to tonsillitis, grandparents rheumatic.</td>
<td>Rather a delicate child.</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>Pupil</td>
<td>Followed scarlet fever.</td>
<td>Had previously been healthy, no organic heart trouble.</td>
</tr>
<tr>
<td>9</td>
<td>13</td>
<td>Pupil</td>
<td>Rheumatic family, had growing pains, torticollis.</td>
<td>Very mild case.</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>Married</td>
<td>Father rheumatic, mother delicate.</td>
<td>No assignable exciting cause save fright.</td>
</tr>
<tr>
<td>11</td>
<td>32</td>
<td>Maiden</td>
<td>Mother crippled with rheumatism, father alcoholic.</td>
<td>Marked mental deterioration.</td>
</tr>
<tr>
<td>12</td>
<td>26</td>
<td>Male</td>
<td>No family history.</td>
<td>Chronic, in the asylum.</td>
</tr>
<tr>
<td>13</td>
<td>12</td>
<td>Pupil</td>
<td>Father had rheumatism, patient subject to tonsillitis.</td>
<td>Healthy otherwise.</td>
</tr>
<tr>
<td>14</td>
<td>10</td>
<td>Pupil</td>
<td>Brother had purpura hemorrhagica of rheumatic origin, patient subject to tonsillitis.</td>
<td>Fairly healthy.</td>
</tr>
<tr>
<td>15</td>
<td>5</td>
<td>Child</td>
<td>Father had asthma.</td>
<td>Had had severe attack of pneumonia, mitral murmur.</td>
</tr>
<tr>
<td>16</td>
<td>2½</td>
<td>Child</td>
<td>Rheumatic history, cried with pains in its limbs.</td>
<td>Mild case.</td>
</tr>
</tbody>
</table>
In all these cases there is abundant evidence of a rheumatic diathesis; and in case fifteen the father had asthma, which is, according to Haig, a rheumatic manifestation.

Pathology.—In treating of this subject, as chorea is a functional disturbance of the motor centers, we find the same difficulties that we encounter in the pathology of epilepsy; yet we often find in both diseases evidences of actual cerebral disease. In post-mortems upon epileptics, we often failed to find gross cerebral disease when we thought it was present, and *visa versa*. So it is with chorea. See collected eighty-four cases of chorea upon which post-mortems had been made; in sixteen no changes in normal structure were found; in thirty-two there were lesions of the brain and nerve centers; in the remainder there was congestion of serous membranes.

After all the various theories as to the pathology and the various post-mortem findings are summed up by Sachs in this statement: "The only just inference from all this (the various theories) is that the accurate pathology and morbid anatomy of chorea are still unknown. All that we can claim is that in the majority of cases there is considerable change in the gray-matter of the central nervous system, in the motor centers, and in the cortex." . . . "The tendency of the present day appears to regard chorea as due primarily to vascular changes, and such vascular changes may be the result of infection."

**Prognosis:** Complete recovery is the rule.

**Treatment:** Mild cases demand but little treatment, but severe cases may try the skill, tact, and patience of the physician.

The first step of importance is absolute rest. In chorea this is essential, but often difficult to carry out. The duty of the physician is to impress this fact upon the mother in the most emphatic manner. After the first few days it is a very easy matter to keep the child in bed.

Next in importance to rest is a nutritious and easily digested diet. Baths are also of importance to soothe a restless child and make the skin active.

As to medicinal treatment, arsenic, iron, iodide of potassium,
manganese, and tonics are recommended. Among them arsenic holds the lead. To get the proper effect from arsenic, it must be pushed to its full physiological limit, varying from three to twelve drops three times per day. These patients can sometimes take enormous doses of the drug. Doctor Seguin insists that eighteen to twenty-seven drops of Fowler's solution, three times a day, constitutes the proper dose; but my experience is that few can take such large doses.

Looking at the disease from a rheumatic standpoint, how does arsenic benefit these cases? Arsenic acts, as do all so-called alteratives, in modifying the nutritive processes of the body. The clinical pathologist cannot combat the empirical results of the clinical therapeutist. Arsenic does influence nutrition. Rheumatism is largely a disease of mal-nutrition, hence any remedy that regulates nutritive processes relieves rheumatism. In many forms of rheumatism arsenic has been proven of great value in the same way as iodide of potassium. Salicylic acid and the salicylates are used sometimes with good effect, but they soon disorder digestion.

My treatment consists in giving iron, arsenic, manganese, and strychnine in full doses; salicylates occasionally; and to quiet these patients I use one-quarter grain codeia with three to five grains of antikamnia.

REMARKS.

Dr. J. W. Irwin.—The essayist has established fairly well what many others before him have established, that is, chorea is frequently a result of rheumatism, and rheumatism is not a result of chorea. His pathology is accurate as far as our knowledge goes. The greatest number of cases occur between the ages of eight and twelve years; it may occur before six years, and it may occur after sixteen, but the disease is rare before six and after sixteen, although I have seen it after the age of fifty, and I have seen it under the age of two years. I had one case under my care in which chorea came on between the seventh and eighth month; the patient is not yet well; the child is now eleven years old. It is an example of the fact that chorea may occur under the age of a year.

In speaking of the treatment the essayist failed to mention a very important drug which Dickerson has laid especial stress
upon—I allude to sulphate of zinc. I think sulphate of zinc holds a very high place in the treatment of chorea, beginning with small doses and gradually increasing up to the point of causing emesis. An adult will take seven or eight grains a day; beginning with a small dose, the quantity should then be increased slowly—one-fourth grain at a time—until nausea supervenes. I have seen more positive effect from zinc than any one drug I have used, and think the results were more lasting than from arsenic.

Another remedy of great use in chorea is the application of the ice-bag. Confine the child to bed and apply an ice-bag along the upper part of the spine and to the base of the brain, but do not allow it to remain sufficiently long to do harm.

Dr. Carl Weidner.—One theory upon which great stress has been laid by many authorities is the supposed existence of gross organic lesions, such as emboli, in the brain. The same statements have been applied to epilepsy, and authors speak of emboli and punctate hemorrhages in different parts of the brain. In epilepsy we have a disease which is more lasting, while in chorea we have a disease which may entirely disappear in two months, or a longer or shorter time, and this fact is against the existence of what we would call gross lesions in either the bloodvessels or the nerve centers. A condition which is as transient as chorea must depend upon some temporary derangement of the nerve forces, perhaps some irritation in the vessels, most plausibly some toxic agent in the blood or some spastic condition of the bloodvessels, or disease of certain nerve cells.

The connection between rheumatism and chorea has always interested us. Whether the same poison causes chorea as causes rheumatism, whatever that poison may be, is a question, but the results are directly opposite. In one we have as a result of the poison a disorder of the nutrition of the joints, and of the fibrous structures particularly, and in the other we have a spasmatic condition of certain groups of muscles.

The occurrence, also, of one-sided chorea—hemichorea—is something that seems hard to explain by a general blood condition, still we know that this form of chorea occurs. So it may be said that we know very little about the cause. One of the most frequent causes, as mentioned by older writers, is fright. This may not be recognized today as exactly a cause, but in
some cases fright may be followed by chorea without any history of rheumatism. Many such cases are on record. Any nervous shock may cause choreic movements. Then again we find it frequently as a complication of other nervous affections; Huntington’s chorea of adults is one of these instances. We frequently find chorea accompanying various psychic disorders, dementia, etc.

One of the most marked instances I have seen in which peripheral irritation produced chorea was in a boy twelve years old who had always been perfectly healthy. Without any history of rheumatism, he began to have choreic movements so that he had to be taken away from school—which, I think, should be done in all cases of chorea occurring in childhood. He was unable to write or to draw because the muscles jerked in an irregular manner. In an examination I found a very long and narrow prepuce, and thinking that this might have something to do with the disease, he was circumcised. This was followed by prompt and complete relief without other treatment.

As to remedial agents in the treatment of chorea, I think arsenic gives the best results. I agree with the usual classic treatment laid down by the authorities: “Arsenic in increasing doses.” I have seen, however, within the last year a case of marked general chorea, in which arsenic, bromides, the zinc preparations, strychnia and everything else usually recommended failed.

Dr. Wm. Cheatham.—Like Dr. Weidner, I think there must be some cause of chorea which Dr. Boggess did not refer to. Especially is this true in regard to chorea of a reflex nature. We see much of this form of chorea of the laryngeal muscles, the muscles of the eyelid, etc.—these cases cannot be relieved by constitutional treatment alone, and not until proper local treatment is instituted do the symptoms disappear. We have a great many cases of laryngeal chorea which are relieved by operations for removal of adenoid growths in the nasopharynx, sometimes by simple treatment of the larynx when catarrhal conditions exist. I do not see how we could have chorea of the muscles of the larynx, or of the eyelids, unless there were some cause to bring about an explosion of nerve force at these points. We also find that errors of refraction constitute a frequent cause of chorea of the lids. Sometimes
severe cases of chorea of the lids, that is typical symptoms of chorea—choreiform movements—the same as occur in any other part of the body, are only relieved by local treatment. These cases are due sometimes to nasal troubles, giving a reflex from the nose, the conjunctiva, and especially from errors of refraction. These are cases in which constitutional treatment seems to have no effect.

It is also well known that, especially in female children, if one case of chorea develops in a class at school, it is followed by perhaps a dozen others of what is known as imitative chorea.

Dr. W. C. Dugan.—A number of years ago I went through the children's ward, Bellevue Hospital, New York. There were a number of cases of chorea in the ward at the time, and Dr. Jacobi called my attention to the heroic treatment he pursued, giving large doses of arsenic—thirty or forty drops of Fowler's solution. After returning home I was consulted by a young man, about eighteen years old, who had epilepsy and chorea. I commenced with ten drops of Fowler's solution, and increased it rapidly, finally giving him three drachms three times a day. He had no trouble in taking this quantity, and showed no disposition to have the drug withheld, in fact he quite insisted upon having it. I do not wish to go on record as advocating Fowler's solution in such large doses, but simply mention this case and the quantity given.

Dr. Louis Frank.—There are some things about the accepted pathology of chorea which strike me as being rather strange. Reasoning from what we suppose to be the correct pathology, I have often wondered why choreic movements cease during sleep. We know that these movements do cease during sleep, and begin again as soon as the child is awake. Another strange thing is the fact that we have imitative chorea. We find that in the school room where one child develops chorea, it is soon followed by several others. How can this be explained from a pathological standpoint? If there is any gross pathological lesion, it is a little strange that the movements should cease during sleep, because certainly the pathological conditions must be still present, also that the disease should manifest itself, as it often does, imitatively, being communicated, so to speak, from one child to another.
I have probably not seen more than twelve cases of chorea, and within the last few years not nearly so many as formerly when I was in general practice. My plan was to treat them by putting them to bed and maintaining absolute rest. It has not been my custom to give arsenic in as large doses as mentioned by previous speakers, five drops of Fowler's solution three times a day is as much as I have ever given. I have always laid great stress upon the importance of keeping these children absolutely quiet in bed, and have had universally good results.

The worst case of chorea I ever saw was a patient of Dr. Weidner's, whom I saw during his absence from the city, in which it required large doses of morphine and bromide to keep the child quiet. The patient was a girl thirteen years of age. During sleep the movements entirely ceased, and during her waking hours rest could only be secured by large doses of morphine.

What effect rest in bed can have upon the supposed pathological lesions is something which would be hard to explain. I have seen cases in which nothing in the way of medication was given, yet by the rest treatment perfect cures resulted. I had a case under observation several years ago which had been treated by electricity, arsenic in large doses, iron and other drugs, for three or four years, the child showing absolutely no improvement. After being placed at rest in bed for four weeks, without any treatment other than a simple tonic (not containing arsenic), the child was perfectly cured, and is well today.

I have seen one case of chorea in a girl which, I believe, was due to masturbation. This child was put in bed in absolute rest, her hands confined so as to prevent masturbation, and the result was also a perfect cure.

Another case was in a boy five or six years old in which there was a very adherent and narrow prepuce. Circumcision accompanied by rest in bed also effected a perfect cure. In this case no drugs were given.

I have seen another case in which simply stripping loose an adherent prepuce, without circumcision, rest in bed, arsenic accompanied by Gude's pepto-mangan, resulted in a perfect cure.

I now have under observation a boy who had an adherent prepuce, which was stripped loose. The boy was placed in bed,
given Gude’s pepto-mangan, which has been followed in two weeks by a complete abolition of all symptoms which are incidental to chorea.

These things struck me as being rather peculiar, and not compatible with explanations usually based upon the supposed pathology. I do not know of any pathological lesion, central in character, which would operate in this way. I do not deny that such lesions may exist, but believe the subject is very obscure; that it is a field in which considerable painstaking work and investigation needs to be done, as there are many things to be explained.

Dr. T. P. Satterwhite.—During a practice of about thirty years I have probably seen my proportion of cases of chorea. I have never seen, so far as I have been able to trace, any connection between chorea and rheumatism. I consider that chorea is purely a nervous trouble. It is pre-eminently a children’s disease. It is a self-limited affection, rarely running longer than a few months; it rarely becomes chronic, and more rarely proves fatal.

As far as the pathology is concerned, I do not believe there is any evidence of a lesion in the brain or in the spinal cord. We do not know the cause of chorea. If the history of all cases were thoroughly analyzed, those children suffering with chorea would be found to be the offspring of neurotic parents. Chorea is a neurotic disease. We find various nervous diseases, as stammering, winking and blinking of the eyes, etc., are species of chorea.

My personal experience leads me to believe that peripheral irritation is one of the most common causes of chorea. I now have under my care a child ten years of age, a very robust girl, who is manifesting slight symptoms of chorea of the upper extremities following a severe attack of acute eczema. Of course it has been said that eczema frequently accompanies rheumatism, and it might also be argued that in this case the chorea was rheumatic, as the child had eczema.

There are a thousand and one treatments suggested for the relief of chorea. Arsenic probably stands at the head of the list, and most physicians use this drug. We know that all medicines create more or less disturbance of the digestive apparatus, and as in chorea this is a matter of especial impor-
tance, I believe electricity should take a prominent place in the treatment. There are two forms of electricity, and in the treatment of chorea the sedative and not the stimulating form should be used. We want to keep the patient quiet, if possible.

Dr. J. J. Moren.—The ground has been so well covered that I will not attempt to offer a lengthy discussion of the subject. In answer to Dr. Satterwhite's question regarding electricity: I suppose he refers to the static current. That is the best form for use in the treatment of chorea. The positive pole is regarded as sedative, while the negative pole is stimulative. I have certainly seen good results following the application of static electricity in the treatment of chorea. For the galvanic or faradic current I cannot say as much, as I have never seen either used for this purpose. Patients will often come in very nervous, with moving and jerking of the muscles, etc., and after application of static electricity for a few minutes, they will be perfectly quiet; they can steady themselves; the choreic movements are less frequent, also less violent, and they feel like resting.

As far as the pathology of chorea is concerned: The authorities now want to name the pathology as a disturbance of the motor neuron, that there is a disconnection between the end brushes of the neuron which connect them with other cells.

I would like to mention one case in this connection, especially as a dispute arose between myself and another physician as to which was the condition present, an embolus or hemichorea. The patient was a girl, seventeen years old, who had previously suffered with some throat and nose trouble. She was treated for that and received some benefit. She reported to her physician, complaining of a nervous twitching of the right shoulder, which extended to the right arm. She noticed this particularly in the morning. In the afternoon there was a twitching of the right leg. Her physician prescribed some sedative treatment—bromides and arsenic. He thought the trouble was hemichorea. He referred the case to me, and on examination I found the reflexes of the right side were markedly exaggerated, and there was considerable diminution of sensation on that side; she would scarcely flinch when pricked with a pin. The trouble had come on suddenly. She had a history of rheumatism in early childhood, and I learned that
at one time she had some pericarditis. I expressed the opinion that her present trouble was the result of embolism, that it was not a case of hemichorea, that disturbance of sensation never occurred in chorea, and instead of the reflexes being exaggerated, they are diminished in chorea. No improvement has followed various methods of treatment; the child has become steadily worse, not being able to control herself in the least as far as the choreic movements are concerned. After being under iodide of potassium for eight or ten days, she developed a cramp-like pain in both arm and leg, which yielded nicely to bromide.

Dr. P. F. Barbour.—I have seen a great number of cases of chorea since I have had charge of the children's clinic at the Hospital College of Medicine, and have noticed that cases are more frequent in the Spring. The damp weather may possibly have something to do with this. I believe, though, it is largely due to the exciting influence of cramming for examinations at this time among the children at school; I believe this to be an important factor in the etiology of chorea. I have had several cases come back with chorea three years in succession. If these children are taken out of school they improve without any medication.

As to age: Children under five years old are rarely the subjects of chorea. I have seen only one case in a child under five years, and that was undoubtedly produced by fright. I think it would be very difficult to make a diagnosis of chorea in a child eight months of age. In Dr. Irwin's case, however, the subsequent history of the case confirms the diagnosis made.

As to the treatment of chorea: I agree with Dr. Boggess that arsenic stands at the head of medicinal agents, but if we confine ourselves to arsenic in the treatment of chorea, we deprive ourselves of many other valuable agents. All forms of medication to build up the child's general health and improve the concurrent anemia, should be used—iron, manganese, mercury—and salicylate of sodium or ammonium where evidences of rheumatism are present. The remedies named comprise most of the drugs of use in chorea, though I would not omit cod liver oil in the more chronic cases.
Dr. W. F. Boggess.—We not infrequently see chorea and also rheumatic conditions following the exanthemata, particularly scarlet fever. Rheumatism is a frequent accompaniment of scarlet fever, and if we have chorea following these acute diseases you will still find that there is a rheumatic history.

There should be made a distinction between true chorea and pseudo-chorea, imitative chorea, blepharospasm, etc.—all these are called choeric movements, but they are not true chorea.

With further reference to the relation between chorea and rheumatism: Rheumatism is essentially a nutritive disorder, or, as it has been called, a trophic disorder of the motor apparatus, while chorea is looked upon as a disorder of the motor centers. The motor centers, of course, presiding over this part of the body are influenced by rheumatism, and in that way we find a close connection between the two diseases.

As to the embolic theory of chorea: It is based upon the fact that in a large percentage of cases of chorea that have previously had rheumatism with endocardial trouble, it is found that the choreic movements are explained by the fact that some vegetations have become detached from the heart, and as a result emboli have been produced in the brain.

Imitative chorea, I believe, is a purely psychical disturbance, the motor centers being interfered with by such psychical disturbance.

The most common cause of chorea, as nearly all authors agree, and as I tried to make plain in my paper, is the strong connection which exists between this disease and rheumatism. Rheumatism is probably the most important etiological factor.

The rest treatment is undoubtedly one of the most important measures to which we can resort in the management of chorea.

I agree with Dr. Barbour that more cases of chorea occur in the Spring than at any other period during the year, and I touched upon this fact in my paper. I stated that there seemed to be a greater number of cases during, damp, rainy weather, etc.
THE FEEDING OF INFANTS.

By J. Darwin Nagle, M.D.,

New York

EVERY modern invention, device, or appliance tending to decrease the mortality of artificially fed infants, especially during the hot Summer months, may well be considered of value to humanity. It is an established fact that the health of future generations is entirely dependent upon

the first feeding of infants, and no other nation has given this matter more careful consideration than the French, who believe the marked depopulation of the French race more or less directly attributable to the large mortality among infants artificially fed. They have enacted laws directed toward saving infant life. The Roussel law requires that every child
under two years of age, placed out to nurse, be constantly under the supervision of the law. Public dispensaries furnish sterilized milk, and every care is taken that the receptacle from which the child takes its nourishment should be of the cleanest possible. As the editor of *Pediatrics* has remarked on "Sterilized Milk and Infant Mortality read at the Health Congress at Madrid," M. Geny also showed that the majority of infants who succumb to complaints of the digestive organs are those who are fed from the bottle, but that the rate of infantile mortality from this cause has been greatly lowered by abolishing tubes or introducing better bottles and sterilized milk. He therefore was of the opinion that the great saving of infant life in Paris since 1893 is due,
* * * and (3) to the more general use of sterilized milk and improved feeding bottles."

The ordinary feeding bottle is open to the objection that the child sometimes pulls off the nipple from the neck of the bottle and either swallows the nipple or deluges itself with milk, and also large quantities of air are apt to be swallowed with the milk on account of the vigorous suction of the infant.

My attention has recently been called to a bottle which seems to overcome the usual objections to the modern nursing bottle, and has the additional advantage of being easily kept clean. The illustrations will explain the feeding bottle and the manner of using it.

Fig. 1 shows the bottle perspective. The nipple appears practically part of the bottle, but can be removed for the purpose of cleansing or supplying a new one. It is attached to the bottle by two rubber cords and a ring. The nipple suspended from these thick rubber cords is passed through a single opening in the bottle, carried up, and adjusted over the flange on top of the neck.

Fig. 2 is a cut of the bottle with the nipple adjusted. In this device the aperture through the neck and upper part of the bottle forms a means of so attaching the nipple to the bottle that, while it can be detached by an intelligent force, it will be impossible for a child itself to remove or swallow it. This aperture divides the neck of the bottle into two channels, contracting thereby the lumen of the bottle so that the nipple when inverted during feeding is always filled with milk. It can also be cleansed with ease on account of its peculiar shape, and can easily be grasped by the hand of the smallest child.

61 West Thirty-fifth Street.
REPORT OF A CASE OF COMEDO AND ACNE IN AN INFANT.*

By F. Bierhoff, M.D.,
Clinical Assistant, Department of Pediatrics, College of Physicians and Surgeons, New York City.

The following case exhibits a condition sufficiently uncommon in the infant (developing, as it did, during the first year), to warrant its being reported:

—, U. S., female, thirteen months, Kingsbridge, New York City, was brought to the writer's class at the Vanderbilt Clinic, for treatment of a quotidian intermittent fever. Upon stripping the child, for the physical examination, the following condition was noted. Encircling the upper portion of the thorax, forming, as it were, a necklace, were hundreds of comedones. The area involved was, over the greater part of the anterior aspect, about 1½ inches in width, tapering towards the shoulders, and covering the surface from a point a little above the clavicles well down toward the mamma. Upon the shoulders they were scant. Over the entire upper portion of the back there were comedones, mingled with the lesions of acne, from papules to pustules, this latter probably due to greater warmth, moisture, and irritation. When seen, the condition had already existed for two months, and the mother stated that it had followed upon the repeated application of camphorated oil to the chest for the treatment of a mild bronchitis. The comedones were easily expressed, and exhibited the characteristics of the ordinary "blackhead" of adult cases. The involved skin felt quite rough to the touch. The face was free.

An unsuccessful attempt was made to obtain permission to photograph the case, and the patient passed from under observation without permitting treatment of the skin lesions.

*The case is reported by the courtesy of Prof. A. Jacobi and Dr. F. Huber, the Chief of Clinic.
While acne and comedo, with their associated forms of secretory disorders of the skin, are most frequently seen about the period of puberty—the former is not by any means rare in young children. Comedo, however, is decidedly so.

Hyde (Keating's Encyclopedia of Diseases of Children, Vol. II., page 4) says: "Comedones have been found in children as early as the second year of life." Van Harlingen (Twentieth Century Practice of Medicine, Vol. V., page 498) says: "The disease is preëminently one of the period of puberty."

139 West 126th Street.
In the *Annals of Gynecology and Pediatrics* for May is an article by Prof. Harold Williams, on infant hygiene, in which some useful points in regard to the management of young children are set forth. Naturally on a subject already so fully dealt with there is nothing new to be said, but the old well worn axioms are presented in an attractive manner. These remarks, too, only apply to the children of the well-to-do. However, as there is probably almost as much ignorance among this class as with their poorer sisters in regard to the proper management of young children, we will commend it to their attention. Dr. Harold Williams says concerning the nursery: "Since in this apartment the baby is to pass twenty out of every twenty-four hours, it is obvious that much of his future well-being depends upon the selection and arrangement of this apartment. When convenient it is an excellent plan to provide two adjoining rooms, the one to be used as a day, and the other as a night nursery. Preferably the nursery should look to the South, morning sun being more advantageous than afternoon sun, but no room should be used as a nursery into which the sun's direct rays do not penetrate. . . . The temperature of the nursery should be between 65° and 70° F., never above the latter. The ventilation of the nursery should consist in the provision of fresh air without the creation of draughts. This is usually accomplished by means of the windows and chimneys. The artificial lighting of the nursery is also of great importance. Electricity is the best light; if gas
is burned, the Welsbach burner is a good form; at night the windows may be kept open when the temperature of the outer air is not below 40°F. Each child should have a separate bed. It should be of iron, and the sides high enough to prevent its falling out. The pillow and mattress should be of hair, the latter protected by a rubber sheet. The bath should be given every morning to a healthy child. The temperature of the bath should not be below 95°F. during the first three months of life. It should be tested by the thermometer and not by the hand. After three months it may be gradually cooled down to 85°F. Dr. Williams also gives good advice as to the choice of a nurse, feeding, and other valuable hints in infant hygiene, to which we are unable to refer at length on account of lack of space. The article is well worth a careful perusal.

Playgrounds for the Children of the New York Poor

Last summer we emphatically urged the need or rather the necessity of open spaces in the tenement districts of this city as health resorts for the children of the poverty-stricken inhabitants. There is probably no large town in the world so overcrowded as parts of New York, nor so ill-provided with what have been so aptly termed the “lungs” of a city. This condition of things is to a large extent unavoidable owing to its cramped situation. There is no room, as in London, for large parks in every section of the metropolis, but yet it is doubtful whether the efforts made to supply the want are as strenuous as the merits of the case deserve. Outdoor play-grounds for children have been the subject of agitation for some considerable time. Under Mayor Strong’s administration it seemed as if most of the difficulties in the way would be quickly removed, and that not only would open spaces, wherever procurable, be utilized as playgrounds, but that in addition roof playgrounds would be established on those school buildings in course of construction. Under the new municipal regime, however, it
appeared for a time as if all these rosy anticipations would come to naught. The corporation counsel announced as his opinion that the city had reached its debt limit. Happily, he has reversed this opinion, which will make it possible to complete the park at Houston and Stanton streets, in the most overcrowded portion of the city. The plans for this park include a playground placed between two small parks, which will be at a level, permitting of its being flooded in winter and used for skating and sliding. In addition to these parks the Outdoor Recreation League has acquired the use of several unoccupied lots which it wishes to equip as outdoor gymnasiums. It was also decided at a special meeting of the School Board for the Boroughs of the Manhattan and the Bronx to open twenty schools as public playgrounds on Wednesday, July 6, and that they shall continue open until September 3. The Board appropriated $15,000 for instituting these playgrounds, and provision was made for maintaining them. The play schools will differ from the vacation schools in that the exercises will be held in the open air. If the suggestion made by us last summer, that bathing facilities should be provided for the children, could be carried into effect it would greatly enhance the usefulness of these playgrounds. The motto of the up-to-date physician is prevention rather than cure, and in no way can this object be attained more effectually than by inculcating into the minds of the young a love of healthy exercise and of cleanliness. These open air gymnasiums should be the physical and moral salvation of many.

Management of Deserted Infants

The management and treatment of motherless and deserted infants is one of those problems that, despite our much boasted progress in civilization, appears to be as far from a successful solution as ever. We have often called attention to the sad and, in some instances, scandalous conditions prevailing
in foundling homes and children hospitals in different parts of the world, and we trust that medical journals, by continually harping upon the same string, may arouse the interest of the general public in these unfortunate outcasts, and thus lead to a bettering of their lot. The *Medical Press and Circular* for June 15 contains an article by Dr. W. Alexander, surgeon to the workhouse hospitals in Liverpool, in which he gives his experience—extending over many years—of the results attending the treatment of deserted infants. A department is reserved in the Workhouse in Liverpool for all motherless infants up to the age of two years, excepting those suffering from contagious disease. An interesting point alluded to by Dr. Alexander is that although hereditary and congenital diseases were carefully looked for by post mortem examination and all other means at his disposal, evidence of transmitted taint was found in only one-fourth of the number, in the rest the diseases found were due either to climatic or dietetic causes and were preventable diseases. The mortality in 1896 was 57 deaths out of 150 infants—a mortality of 38 per cent. In 1897, out of 214 infants admitted 69 died or a mortality of 32.2 per cent. Dr. Alexander has found, like all those who have had experience in the management on a large scale of babies, that the number of infants in one ward must be strictly limited. He says: ‘‘We have found again and again that whenever the number in our baby ward went up beyond ten or twelve cases that the babies began to fail, although the other conditions were apparently the same. They seem to poison each other notwithstanding that the cubic space would be quite sufficient for the same number of adults.’’ Special stress is laid in this article on the paramount importance to these babies of good nursing, and that care should be taken that the nurses selected should have an instinct for children and be well trained. Regarding this feature, the author remarks: ‘‘Every medical man must have observed how some women intuitively know the baby language, and can feed a child successfully on any
healthy food, regulating the quantity, the frequency of the meals, etc., with great precision. Other women know nothing about this, and a delicate baby in their hands, with the very best intentions on their part and no lack of zeal, is bound to come to grief."

It is a fact too well known that diphtheria as well as various other infectious diseases are communicated and spread by children at school. Diphtheria, the most deadly of these diseases, has been shown to be less prevalent during vacation periods than during school time, thus adding another proof to the many already adduced concerning the mode of its communication. It is spread by contact between infectious particles and the mucous membranes. Consequently when children are massed together in large numbers there is ever the danger that some amongst them may be carrying the bacilli of diphtheria in throat or nose, and that the infection may be conveyed from one to another by means of hand-rails, slates, books, lead-pencils, desks, and doors. Much may be effected in the way of prevention by inculcating into the children’s minds the gospel of cleanliness; no child is too young to learn its teachings with advantage. School Boards can also do something to stay the spread of infection by taking certain precautionary measures with respect to the school buildings themselves. The following simple rules, recommended by the Board of Health of the State of New Jersey would, if faithfully adhered to, restrict to some extent the ravages of diphtheria and scarlet fever: 1, Each day during the prevalence of infectious disease, after the school is dismissed, the janitor is to scrub with warm water, soap, and a stiff scrubbing brush, all parts of doors, casings, and other wood-work which can be touched by the hands of children. 2, The floor should be in good repair and without open cracks or crevices. It should be sprinkled
with clean water daily before being swept. 3, Lead pencils (there should be no slates) should every day be immersed in a 5 per cent. solution (1 to 20) of carbolic acid and wiped dry. 4, Books which have been used by a pupil who is suffering from any one of the communicable diseases should be destroyed by fire or they may be treated by exposure to formaldehyde gas. 5, During each vacation the walls and wood-work should be wetted with a solution of bichloride of mercury (1 to 1,000) and the windows should be kept open to admit great floods of sunlight and pure air. 6, Water coolers are unclean and unnecessary. They should not be allowed in school buildings. When practicable, drinking fountains, consisting of a jet of water rising from the center of a piece of marble, requiring no cups, should be supplied. 7, Individual seats and desks should be provided in every school. 8, Light and airy cloakrooms should always be provided, and hooks should be so separated that the garments of different pupils will not come into contact.
BRITISH MEDICAL ASSOCIATION.—SECTION OF DISEASES OF CHILDREN.

Sixth Annual Meeting, July 27, 28 and 29, 1898.

[SPECIAL REPORT FOR PEDIATRICS]

Dr. Joseph Bell, President, in the Chair.

Dr. Bell, in opening this section, recalled the fact that when the Association last honored Edinburgh by its presence its work was divided into six sections, and among these the special subject, diseases of children, had no place. They now had sixteen sections, and among these diseases of children occupied an important position. It was his pleasing duty, then, to welcome them to Edinburgh, and to express, on behalf of his colleagues, the great pleasure it gave them to see such distinguished men coming, some of them from a great distance, to give them the benefit of their instruction and the pleasure of their society. Besides having a special section of its own, the subject of diseases of children had been advanced in Edinburgh by an increase of hospital accommodation, and their new Royal Hospital for Sick Children had been opened within the last two years, and was worthy of a visit by the members of the section. While on that subject, might he be pardoned if he expressed to the section an opinion, purely an obiter dictum, that there was a risk of overdoing what might be called the driving of sick and hurt children into hospitals, to the exclusion of home treatment. That might be considered a foolish idea, but the general practitioner all over the country was gradually beginning to see that hospitals were being used by patients who had no right whatever to public charity, to the grave detriment of the independence of the middle class, who were already too well disposed to get all they could for nothing, and also impoverishing the practitioner. The very poor, who had dirty homes, and who starved their children, might have a sort of reason when they brought their children to light, air,
and food; but the great middle class should be reminded of their responsibilities. There was no reason whatever why a large number of operations which crowded the wards should not be done at home. Mastoid and antrum cases, tuberculous glands and joints, radical cures of hernia, phimosis, and the like—why should hospital surgeons slave at doing these for nothing for patients whose relations were often much richer than the surgeon? Oh, the answer was, they could not keep the wound aseptic. Well, if they could not keep a child aseptic in a decent home, they were not much worth; and till the State paid the doctor, or public charity supported him as well as the palatial hospital, some patients should still be left in their homes. Besides, for a small child, could any nursing in hospital, however good—and they knew how good it generally was—make up to the child for removal from its mother; or, in dying cases, comfort the mother who had no longer the child to nurse, but only was allowed an hour by its bedside in a long ward? In conclusion, he asked his hearers to think of these things, for hospital surgeons were apt to forget the family tie as well as the family practitioner.

The section was opened by a discussion on "The Treatment of Spinal Caries." In the unavoidable absence of Mr. Victor Horsley, who was to have opened the discussion, his paper was read by Dr. Creasy. Mr. Horsley began by speaking of the treatment of tubercular osteitis generally. The accepted treatment of tubercular osteitis is the opening of the cavity, exposure of the bone, and removal of the diseased tissue. Tubercular osteitis of the spine should be treated in the same way as tubercular osteitis in any other part of the body. It is, however, customary to treat cases by means of rest and general treatment. This method is successful in a certain number of cases, and in a certain number only, and then only with deformity, and with risk of extension of the disease.

There is no reason why we should not adopt the same treatment here as in other parts of the body. There is no special risk in operating on an early case. The principal risks are, in the first place, shock, which is to be avoided by performing the operation in two stages; and in the second place, general infection (or possibly rousing a preëxistent but quiescent disease). In two such cases old tubercular disease was found.
Early operation will arrest deformity and obviate the further risk of later extension of the tubercular process.

The conclusion is that we should give up treatment by rest only, and substitute treatment by early operation and temporary fixation of the spine. As to the method of fixation, elastic extension is one of the best. This should be carried out by anklets from the extremities of the lower limbs, and extension from the head as well as from the axilla.

Leaving the very early cases, we come to those where an abscess has formed. The presence of an abscess may be difficult to make out, and can often only be guessed at. The treatment recommended for such cases is free incision, thorough emptying, and sewing up, using Trevis' method in cases of psoas abscess. In cases of affection of the cervical spine, the abscess should not be opened through the mouth, on account of the risk of infection by septic organisms, but laterally, where it can easily be reached, and the lymph glands which are also affected can be removed at the same time. Laminectomy may be necessary in order to reach the abscess, and in such cases the pedicles should be removed completely to provide for the thorough exposure of the cavity and free drainage. Complete removal may also obviate the necessity for a second operation which might otherwise be required.

The operation of rachiclasis is partially a revival of an operation which has been discarded elsewhere, and which has nothing special to recommend it when applied to the spine.

Mr. Robert Jones (Liverpool) said, in the discussion which followed the reading of Mr. Horsley's paper, that if we could be quite sure of removing all the tubercular disease, no doubt operation would be the proper course. But it might be said that in very early cases the majority recover under treatment by simpler methods, while in advanced cases, with deformity complete, removal is dangerous and often impossible.

Extension by elastic traction, if sufficient to produce rigidity, is simply intolerable to the patient. As ordinarily used, no rigidity is produced, and the treatment is correspondingly ineffective. Mr. Jones recommended that all cases, whether there is much deformity or not, should be treated in the recumbent position, with the spine in a position of lordosis. This can be effected by a curved mattress or splint. When this is
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done no deformity can arise. The patient is absolutely comfortable provided the curve only extends to the lower end of the spine. The legs should lie on a plane.

When the caries is sufficiently improved (say in from six to eighteen months) a change of treatment is necessary. The plastic apparatus of Sayre is ineffective. One requires an apparatus that will pull the shoulders well back and keep the spine more or less in a position of lordosis.

With regard to operation. Where complete removal of tubercular material is impossible, it is better to wait till the skin is almost involved, and then to make a small opening.

As to the immediate rectification of the spine, Mr. Jones reported ninety-eight cases, with fourteen deaths, at periods varying from six weeks to nine months afterwards. His feeling with regard to Calot's operation is that it is going to succeed.

Mr. R. W. Murray (Liverpool) said that his experience of fourteen cases of forced rectification had not been very satisfactory. There is a remarkable deficiency of formation of new bone, and it is doubtful whether the gap formed by the extension will be filled by sufficiently strong new bone.

Of his cases the majority are at present in good health, but in all the deformity has recurred. Two cases have died. In these the deformity had recurred, and there was no attempt at the formation of new bone; in fact a sort of false joint had formed. A third child has developed a psoas abscess.

Mr. Noble Smith (London) said that after an experience of thirty years he had come to rely more and more on properly applied apparatus, and on general treatment, and he would say that out of an experience of hundreds of cases he had not had more than 1 per cent. of deaths. He would like to controvert a number of points in Mr. Horsley's paper. (1) As regards extension and fixation in bed. This is unsatisfactory, and the patients are in no way so well off as with apparatus. (2) Tubercular osteitis. It is practically impossible to remove the disease completely. If you remove the pedicles and laminae, you are, in many cases, removing the only sound parts of the vertebra. Besides it is not necessary in order to get recovery to remove every part of the dead bone. This is well
seen in cases of hip-joint disease. (3) Fixation succeeds in a majority of cases and without great deformity. If great deformity results, this must be from inattention to detail.

Mr. Tubby (London) recommended that in early cases the child should be kept in the recumbent position till the tenderness and rigidity pass off, and that the spine should be supported for some time afterwards. In cases where there is a distinct hump, further experience will enable us to select cases suitable for Calot's operation. Out of twenty-nine cases selected for the operation, one died two months afterwards, from general tuberculosis. In this case there was an old tubercular cavity in the lung. Four cases have perfectly straight spines, and the rest have greatly improved. Two cases developed abscesses. The operation is still on its trial but is likely to be very useful in selected cases.

Mr. Thomas (Birmingham) emphasised the importance of being on the lookout for early cases of the disease. In such cases the spine should be fixed carefully and efficiently.

When an abscess has formed, the question of opening arises. This depends on many factors. As a rule, if there are no urgent symptoms, it is better to wait, keeping up rest and general treatment, till the skin appears red or other local signs appear. Then open freely, drain, fill with iodoform emulsion, wipe out the emulsion, and stitch up, never using a drainage tube. Afterwards prolonged rest is necessary. As to Calot's operation, this method is still quite on its trial, but is likely to be useful in comparatively slight cases.

Dr. Churchill (London) also spoke briefly, enforcing the importance of conservative treatment, and especially the benefit to be derived by keeping the patient as much as possible in the open air, and at the seaside. The patient can be carried on a wicker basket or tressel from home or hospital to the shore.

Mr. R. W. Murray read two papers, both of which were copiously illustrated by photographs of his cases.

(1) On the Treatment of Congenital Club-foot. In
infants, manipulation may be sufficient, but in many cases it is necessary to divide subcutaneously all the resisting structures on the inner side of the foot. In children who have learned to walk, a more extensive operation is usually required. The older the child the more important is the bony deformity, and if the child has reached the age of three or four years the bones will probably require attention. The removal of a wedge of bone from the convexity of the foot is to be recommended, and sufficient should be removed to allow of slight over correction. The tendo Achilles is now divided, and the foot dressed and put up in plaster-of-Paris. Failure may arise from two causes: Firstly, suppuration. Owing to the thickness of the skin, great care must be taken in cleansing the foot. Secondly, insufficient removal of bone. (2) On Hare-lip and Cleft Palate. Mr. Murray has had an experience of 122 cases of hare-lip, the majority on the left side, and associated with cleft palate.

When possible he selected the fourth week as the time for operation. The method recommended is practically that described by Mr. Edmund Owen. This has the advantage of securing a continuous line of mucous membrane for the upper lip, while the curved scar resulting is less suggestive of hare-lip than a vertical one. The chief trouble is with the nostril, and it has been found useful to approximate the ala of the nostril of the affected side to the septum nasi by means of a small button suture.

The prominent premaxillary mass may be removed in double cases. The main objection is the flattening of the lip, and this may be largely obviated by subperiosteal removal.

As to closure of the cleft palate, the age usually recommended is between the third and the sixth year. But by this time the child has learned to talk, and to talk badly. It is better to operate before the child has learned to talk at all. Probably the best period is when the child is about twelve months old. The operation is more easily performed than in younger children, and the children learn to talk quite naturally.

Mr. Tubby contributed a short paper on "The Occurrence of a Pad on the Dorsum of the Foot in Rickets."
In 100 cases of rickets noted, a pad was present on the dorsum of the foot in 86. These might be divided into three classes:

(a) Those where the pad is semifluid in consistency, and involves only the soft tissues—20 cases. In these the average age was seventeen months; the average duration of the rickets, as far as could be made out, two months.

(b) Where the pad was dome-shaped, with some implication of the bone—49 cases. Average age twenty-seven months; average duration eleven and three-quarter months.

(c) Where the swelling was mainly bony—17 cases. Average age four years; average duration twenty-seven months. In a few cases a similar appearance was present on the hands.

Mr. Collier (London) read a paper on "Dislocation of the Hip Occurring in the Course of Infectious Diseases." After briefly relating two cases of dislocation of the hip occurring in scarlet fever, in both of which reduction was effected after extensive myotomy—in one case three years after the dislocation had taken place. Mr. Collier said that dislocations occurred but rarely in typhoid fever and acute rheumatism; occasionally in scarlet fever; and very rarely in typhus. In typhoid fever dislocation is apt to occur in the early days of convalescence when the patient is very feeble. Sometimes the precise time of occurrence is not noticed. No previous joint phenomena have been present. The dislocation produces very little pain. Reduction is easy, and recurrence may take place.

In acute rheumatism there is acute inflammation of the joint and much suffering. Reduction is followed by relief of pain.

In scarlet fever the symptoms are often latent, as in typhoid. Suppuration in the joint occurred in one of Mr. Collier's cases. Rupture of the capsule has been found, but it is doubtful if this occurs in many cases.

Mr. H. J. Stiles (Edinburgh) read "Notes on the Operation of Clearing Out of the Mastoid Antrum in Infants and Young Children." Mr. Stiles pointed out that intracranial complications of mastoid disease are relatively less frequent in children than in adults, due, no doubt, to the absence of mastoid cells, and to the fact that the antrum is situated well above the
tympanic cavity and drains directly into it, and thence through the deficient drum into the meatus. The operation of opening and cleaning out the antrum differs in one or two respects from the operation in adults, owing to anatomical peculiarities. First, the mastoid process is absent, and does not appear till the second year. This leaves the stylo-mastoid foramen, and consequently the origin of the facial nerve exposed on the lateral, and not on the under surface of the skull. Second, the posterior extremity of the temporal crest constitutes the surface guide to the roof of the antrum. No such guide exists in the infant, and if the ridge formed by the root of the zygoma is taken as a guide there is a danger of opening into the middle fossa of the cranial cavity. The principal dangers in the operation are (a) injury to the external semi-circular canal and (b) injury to the facial nerve. The former is serious and may be followed by sepsis. The latter may be due to the nerve being divided in the primary incision, which, consequently, in its lower part, must be made cautiously, and must not go down to the bone.

(To be continued.)
BOOK REVIEW.

The Development of the Child.—By Nathan Oppenheim, Attending Physician to the Children's Department of Mount Sinai Hospital Dispensary, New York. Macmillan Company, 1898.

This book, written by a medical man, is intended for all those, lay and professional, who would display an intelligent interest in the development of the child. It is an interesting contribution to child study, of which we have heard so much of late, and, possibly, just a little too much. After reading of the dangers to be encountered in the education and training of children, of what should and what should not be done with them and for them (and there is a formidable list of such things), the wonder grows that in former years even tolerable specimens of manhood were ever evolved. The present author, like others, is looking for that "perfect type" of man which it is some comfort to know has not yet been attained.

Dr. N. Oppenheim has performed a serious task in a most creditable fashion, and has exercised good judgment in utilizing the vast amount of material which he has collected. In the first two chapters, entitled "Facts in the Comparative Development of the Child," the author has stated, with great minuteness, the gradual changes during the period of development of the various organs of the body, and has shown the effects of nutrition upon the growth of the several organs and systems of the body.

On the subject of heredity and environment it is difficult to say anything strikingly new, for that subject has been fairly monopolized by Darwin, Spencer, and Weissman. The author's pessimism comes to the front in the discussion of this subject, and he seems to be somewhat unmindful of the fact that American children, above all others, have always received great attention. He runs the risk of contradiction, therefore, in stating that "for the right care of children no training in the mothers, nurses or teachers is considered essential. With them the main test of whether a child is being properly fed is that he does not die," etc. Extravagant statements of this character
do not help the cause much, and we trust that the author will judge teachers, mothers, and nurses of the present day a little more leniently than he has done.

The book contains chapters on the place of the primary school and on the place of religion in the development of a child. The blending of the medical and the moral is illustrated by the following: "An easily-comprehended reason why children's moral training should consist largely of applied ethics is the fact that they understand and assimilate concrete results much sooner than the theoretical rules which underlie them. The growth of the brain is such that parts of the cerebrum which have to do with the elaboration of abstract matter is very slow and is about the last to reach fruition. One may not expect children to have reasonable conviction, but one may be sure that they will readily enough follow repeated examples. . . . There must be a constant atmosphere of the moral life which the child is supposed to have. From this atmosphere will come much better results than from any kind of teaching to which he may be subjected."

The author insists in various places upon the importance of good example, for children, as he says, truly enough, imitate rather than ideate. He is evidently both teacher and preacher,

Chapter VII., on the value of the child as a witness in suits of law, seems a little out of place, except as it bears evidence that the child does not appreciate the value of oaths in the legal sense. It occurs to us that the chapter on the development of the child criminal would have followed much more naturally upon the one on Heredity and Environment. The genius and the defective are discussed in Chapter IX. Like other authors of recent date, Oppenheim is inclined to rate genius as a species of morbidity. To this we cannot accede, and the discovery that genius is not omniscient is not sufficient to prove its morbid characteristics: "There is a bourne where the dull black of idiocy and the brilliant white of unusually great mental power meet and blend in the quiet gray of commonplace." It may be true that "the pathological intensity of Tristan and Isolde, and the esoteric mysticism of 'Die Götterdaemmerung,' is far from being the product of a normal and admirable cerebral balance"; but if it be true, how much better off the world would be if there were more of this species of unbalanced minds. The author concedes that true genius in a
man of noble and complete development has never, so far as is known, existed; in which case future centuries have something to look forward to.

While we cannot agree entirely with many of the author's speculations, good results will follow from a perusal of the book. Oppenheim deserves special thanks for calling the attention of the laity to the methods practiced by the elder Seguin and others in the attempt to improve the mental and physical condition of idiots. He is also to be commended for the large number of interesting data which he has brought together, and for the careful and pleasing style of his diction, which proves that for the author the writing of the book was a true labor of love.

B. S
Diarrhea.—Dr. J. N. Hurty, of Indianapolis, says that one cause of infantile summer diarrhea is the filth and ferments acquired by infants when crawling upon dirty floors. These find their way by soiled hands and otherwise into the mouths of the little ones. Recently in a family of young children, where bowel troubles were at the time prevalent, he saw an infant crawl across a spot which a few moments before had been soiled by its sick sister. The soiled place had been wiped with a wet cloth, but the child had diarrhea in a few hours. Among the preventive recommendations of the Indiana State Board of Health is one advising a clean sheet to be tacked upon the floor, and the child not to be permitted to crawl off the same.

The Care of School-Rooms. Periodical Disinfection.—The Michigan State Board of Health recommended (July, 1898) to all school boards and other officers and persons having in charge assembly rooms, that they cause to be observed the following methods of care, in the interests of public health:

That the regular care of school-rooms includes sprinkling the floor before sweeping, the subsequent dusting of desks or wiping them with a clean damp cloth, and the airing of the room before its use.

That interchange of books be allowed only under such conditions as render the transmission of disease impossible. That the use of slates be discontinued.

That persons known to be affected with tuberculosis of the lungs, or who persistently cough and expectorate, be denied the privileges of such room, either as a teacher or pupil. That all spitting upon the floor by any person be strictly forbidden, and that proper conveniences for receiving sputa be supplied.

That, at least once a year, the room and contents be thoroughly disinfected, the woodwork and floor washed with
an antiseptic solution, the walls whitewashed, and the plumbing and ventilating inspected.

Urticaria.

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M. Sig.—Use as a wash. Follow by dusting with rice powder.—Gaucher, Der Kinderarzt.

Diphtheroid and Impetiginous Stomatitis.—Sevestre and Gaston have described under the name of diphtheroid stomatitis, a group of various affections, which were caused by staphylococcus infection and which clinically resembled diphtheria, but were etiologically distinct from it. One form of these is the impetiginous variety. The author describes two cases of this affection, which were caused by streptococci and were at the same time accompanied by impetigo of the face or of the hairy scalp. The authors are of the opinion that this mouth and skin affection was brought about in the first instance by the last-named microorganism and that the staphylococcus should be looked upon only as accidental.—Revue mens. des mal. de l'enf.

The Therapy of Infantile Paralysis.—Tendon transplantation in a case of spastic cerebral paraplegia (so-called Little's disease) was successfully practiced in a case by Eulenberg. Sixteen years ago Nicoladeni first recommended the operation of tendon, or rather muscle transplantation of paralyzed members. Unfortunately, only slight attention was paid to this suggestion. In recent times Drobnik, Felix Francke and Vulpins have again introduced it successfully in the treatment of paralytic deformities of the feet. As the present case conclusively shows, this operation may also be carried out with benefit in the in the spastic forms of infantile cerebral paralysis.—Deutsch. Med. Wochenschr.

Duodenal Ulcers in Children.—The great rarity of duodenal ulcers in childhood is dwelled upon by Simmonds in an address delivered before the biological section of the Surgical
Society. He presented two specimens of this affection. The first case was that of a boy eight years of age who died from a nephritis following a pneumonia. The duodenum contained numerous shallow ulcers of the size of a pea. Under the microscope the base of the ulcer, which in one place reached below the serosa, presented a small-celled infiltration and masses of microbes. The author does not venture to say whether or not the ulcer was mycotic. The second case was that of a girl, four years old, who died eleven days after a burn of the upper portion of the body. The duodenum presented a number of small and one large ulcer the size of a two-penny piece, which had penetrated deeply, and laid bare the pancreas. It gave rise to hemorrhages from the erosion of a small vessel. Under the microscope numerous small blood-vessels, filled with hyaline thrombi were discovered on the margin of the ulcer. The ulceration was caused by thrombi of the vessels and by the digestion of tissue which was robbed of its blood supply. The author then pointed out the rare occurrence of duodenal ulcers in burns, as compared with the statements made in text-books. He has only met with this affection twice in fifty autopsies on persons whose death was due to burns.—Münch. Med. Wochenschr.

A Case of Lumbar Kyphosis Treated According to Calot's Method.—Czajkowski reports a case of lumbar kyphosis occurring in a two-year-old child, who was hardly able to walk on account of the pain. The kyphosis was situated at the second lumbar vertebra, whose spinous process formed an angle of 55 to 60°. On extension of the patient both in the upright and in the horizontal positions the kyphosis was not diminished; pressure exerted on this spot produced pain. The operation was performed under narcosis, and the prominent vertebra disappeared immediately after the operation; a plaster jacket was applied while the patient was still anesthetized, and allowed to remain in position for twelve weeks. The patient was examined again after a few months and the nearly total disappearance of the kyphosis and great improvement of the general health was noted. The author had doubts whether this condition would be permanent.—Gaz. Lekarsk.
ABSTRACTS

A COLOSSAL BRONCHIECTASIS IN A VERY YOUNG CHILD.

Huebner (Berlin Klin. Wochenschr., 1898, xxxv., 66) presented the following history with a specimen, which was then demonstrated by Virchow in the Berlin Medical Society (5, 1, 98):

As a rule, cases of bronchiectasis of moderate degree are frequently met with in childhood. In the chronic catarrhal pneumonias, which make their appearance mainly during an attack of whooping cough, and especially when the latter is complicated by measles, they frequently continue for months before culminating in a fatal issue. We often meet with a lower lobe, at times also both lower lobes, so studded with cylindrical bronchioles that the cross-section of such a lobe has the appearance of a sieve. These cases, probably, very frequently lead to death. They may, however, go on to partial recovery, and Huebner is inclined, from clinical experience, to believe that a perfect restoration of this condition may occur. He does not, however, believe it impossible that larger sacculated bronchiectasis may occur from these cylindrical bronchiectasis when the child is neglected. At all events we often meet with children presenting similar symptoms as the following case, where death does not occur, but the patient is lost sight of after a time. Many bronchiectasis of adult life may have been thus acquired in childhood.

In the present case, the bronchiectasis has developed very gradually without the intervention of any infectious disease, unless it was the affection mentioned in the history.

The child, who was three years old at death, was not descended from a healthy family. The grandfather is said to have been consumptive, and the mother to have suffered from a chest affection. The child received the breast in the beginning, but was later artificially fed, and developed in a perfectly normal manner up to the second year of life. Only once, at the age of one year, did it suffer an attack of gastro-enteritis, which, however, passed off without leaving any sequela. Later on it frequently suffered from bronchial catarrh. Huebner has had the child under observation for one year. It came under treatment in the middle of January, 1897, after having taken to its bed in the beginning of the year with the symptoms of some respiratory disorder. Dullness and a diminished respiratory murmur was found to be present over the left lower lobe together with a moderate retraction of the left lung or at least a con...
tion of the left thoracic cavity. The idea of a pleuritic effusion with pleural thickening seemed plausible. Exploratory puncture resulted negatively, although in a few instances a very small amount of pus flocculi were found which, however, were not attributed to empyema. They consisted of broken down leucocytes, which might also very well have had their seat in the bronchi. The child was dismissed in the middle of February in a fair condition. In July it was readmitted, and now the symptoms of bronchiectasis, with retraction of the lung, were gradually more and more distinctly developed. The apex beat was pushed towards the left by degrees, and could finally be felt in the anterior axillary line. The amount of dullness was about the same as in January. During this period the semilunar space remained free. The physical symptoms pointed rather to a pleuritic thickening even in the beginning of the second period, until one day, after a severe paroxysm, symptoms of a cavity formation developed in the left lower lobe of the lung. Now fever made its appearance occasionally, which alternated with long afebrile intervals. During the presence of fever, dullness was usually developed accompanied by diminished vesicular breathing, then cough and expectoration followed, and after copious expectoration, the symptoms denoting a cavity always again developed, namely, amphoric breathing, metallic tinkling, and the tympanitic sound, not the change of sound which, as we know, is hardly ever found in children. The child improved very much for a time, increasing about three kilogrammes in weight in the course of three months, which weight it maintained, with few exceptions, during the intervals that it was free from fever. It was happy, playful, etc., so that Huebner frequently came very near discharging it from the hospital. Towards the end of November it was afflicted with measles. These ran a favorable course.

The examination of the sputum, which was frequently made, always gave negative results. On November 27 the measles first appeared. When it had run its course the temperature suddenly began to rise again. The child now rapidly lost flesh, and suddenly great numbers of tubercle bacilli were discovered in the sputum.

This last finding was rather surprising, and raised the question whether we were not dealing with a lung affection complicated by a tuberculosis of the bronchial glands. The autopsy proved, however, that the first diagnosis was correct, namely, that the disease as observed before the advent of the measles was in truth nothing but bronchiectatic of the entire left lung, involving an extraordinary large surface. The specimen showed the organ was filled with numerous cavities—true dilatations of the bronchi. Nowhere was there a trace of cheesy deposit. Tuberculous nodules are, it is true, found in the enlarged bronchial glands, as well as in the right (otherwise healthy) lung; they are, however, all recent, grey, and isolated. This tuberculous deposit was, therefore, of recent occurrence, in all probability dating from the attack of measles. Thus the case undoubtedly presented one of those rare examples in which a chronic affection of the lungs becomes infected with tuberculous matter, and that from the surface of the mucous membrane. Death was not due to the existing bronchiectasis, but to this secondary affection, which took its course under the debilitating influence of the measles. The pathogenesis of the forma-
tion of the bronchiectasis itself is here obscure. Cases of congenital bronchiectasis are met with, and Huebner has seen such a case.

Virchow demonstrated the specimens in the case. One of the lungs had become totally useless as an organ of respiration, hardly any isolated portion remaining which could be said to be in condition for conducting respiration. The other lung was not hypertrophied, but was greatly congested, and would, in all probability, have become useless in a short time, from an extension of the inflammatory changes. The right lung, however, presented such extensive loss of parenchyma, as is only met with in the most extreme cases, and which Virchow only very rarely had seen. If this be an undoubted case of consumption, it may as well be called phthisis. This, therefore, represents one of those cases which demonstrate that we may have a form of phthisis in which tubercles are absent. The original disease ran its course without tubercles. The large bronchi are lined throughout with mucous membrane, which accompanies the dilatations nearly as far as the surface of the lung. Undoubtedly we have to do here with the dilatations of canals previously present; there is not a sign of any ulcerating process. As regards the organs of the throat, the tonsils are greatly swollen, an angina tonsillaris being present. They extend as far as the rhima glottidis; lower down the trachea a simple catarrh only is found.

Baginsky: The presence of bronchiectatic formation is often overlooked in children; it is less rare than we imagine. It usually follows whooping cough, but also occurs occasionally with bronchitis diffusa, and bronchopneumonia. A case mentioned by Baginsky in his text-book finally succumbed also to milary tuberculosis after a long period of illness. This was the case of a boy who contracted whooping cough at the age of four and never fully recovered, but suffered with a chronic bronchial catarrh accompanied by a demonstrable extensive bronchiectasis; the affection continued for over ten years, when death occurred, with symptoms of tuberculous peritonitis. Cases of this kind are not at all to be numbered with the curiosities.

A CASE OF CONGENITAL HEMI-LATERAL HYPERPHTROPHY.

Arnheim (Berl. klin. Wochenschr. 1897, xxxiv., 1123). Presented this case two years ago to the Berlin Medical Society, and its history since then is now related. The case suffered from dyspnea which was essentially inspiratory, and manifested itself in the child by extensive retractions of the surpra-clavicular region and of the lower portion of the thorax; it also presented an extensive stertorous respiratory murmur, which could be distinctly heard at a distance, and resembled the breathing of croup. There was also present extensive ectasia of the epigastric veins and of the left side of the heart. Arnheim at that time referred the affection to a co-existing vitium cordis, produced perhaps by a patency of
one of the embryonal paths of communication, or by an absence of the ventricular septum, arterial and venous blood in that case intermingling, and thus producing an obstruction in the capillaries of the lung, at the time of the diastole, which, on the occurrence of the systole caused a suction of the air-current in the alveoli, and in this manner produced a prolonged stridor. On the other hand, the presence of a congenital bronchio-stenosis might also be conceived, although the clinical symptoms were not in its favor and a variation in the respiratory murmur on one side was not present. The child, however, was also a subject of severe rhachitis and for this reason died of an intercurrent broncho pneumonia. Arnheim was able to obtain an autopsy. A plaster of Paris mould of the hand demonstrated that this also had increased in size, according to the general progressive character of the affection, together with increase in the size of the body. A much greater interest was, however, excited by an examination of the internal organs. The specimens in the first instance demonstrated that the internal organs of the right side were also more strongly developed than those of the left side. The right kidney was markedly enlarged, also the right ovary. The organs of the thorax presented primarily a great hyperplasia of the lymphatic glands, which is a result probably of rhachitis, and was developed in the course of the disease; the mesenteric glands were greatly enlarged. As we are not justified in assuming that this was a fetal condition—the child having been perfectly normal at birth—neither are we debarred from believing that it was for the purpose of determining the etiology of the case. The condition, also, of the heart did not present anything extraordinary. Excepting that an hypertrophy of its right side, namely the right auricle and the right ventricle; (which Arnheim refers to the right-sided hypertrophy); a slight retraction of the aortic pockets; a slight abrasion and a certain narrowing of the aorta was present. It seemed remarkable, on the other hand, that the calibres of the bronchial tubes in the right lung, on cross section remained gaping in the upper and lower lobe; and it was found that the whole bronchial vessels were hypertrophied within the area of these two lobes. The microscopical specimens demonstrated that the small bronchioles were surrounded by cartilage on all sides, and took part in the hypertrophy as well as the rest of the bronchial vessels, including the glandular elements, the peribronchial mucous glands, connective tissue and mucous membrane. Arnheim, therefore, through a comparison of the anatomical conditions with the clinical symptoms, comes to the conclusion that a certain loss of elasticity took place in the right lung, which was caused by the unusual development of the great bronchial system. We may probably explain the inspiratory murmur essentially by the fact that a purely mechanical friction of the air current took place on the extensive surface. The venous ectasia of the thorax also seem to indicate that the left lung was compelled, on account of an obstruction to respiration in the right half of the thorax, to greater expansion, and hence a mechanical compression of the lung and with it backward pressure in the periphery resulting.

Virchow designated this case as an altogether peculiar one, the like of which had never come under his observation before. Here we find the
same phemomena, which we are accustomed to see externally—the irregular development of certain portions of the extremities, the nearly gigantic development of the members of the hand or foot, not only extending to the lobe of one lung as a whole, but also to individual parts of it. To such a degree, indeed, that a ring of cartilage nearly completely encircles a whole bronchus, in a situation where, as a rule, very little cartilage is found in the bronchi. This is something altogether extraordinary and unusual.

ON THE DANGERS OF RITUAL CIRCUMCISION.

R. Pott (Munch. Med. Wochenschr. 1898, xlvi., 108). The greatest danger in ritual circumcision is the hemorrhage. A piece of the glans penis is occasionally removed, which may give rise to a dangerous and even a fatal hemorrhage. A hemorrhage may also be of the parenchymatous variety, and the blood which oozes may be so devoid of coagulating qualities that before a cessation of the hemorrhage occurs the child of eight days may bleed to death. Should the local hemorrhage be controlled, the danger to the life of the child is by no means removed as secondary hemorrhages may take place. Statistics tell us that congenital hemophilia is relatively frequent in Jewish families and that it has a predilection for the male members of these families. We know it to be true that in bleeders the hemorrhage is apt to take on a much more dangerous character when arising from seemingly unimportant lacerations, as in circumcision, than from far greater operative wounds. Without doubt some of the deaths from hemorrhage after circumcision may be ascribed to habitual congenital hemophilia. The previous history would in only very rare cases show a heredity to hemorrhages in the child. We have to deal here with a temporary inclination to hemorrhage in earliest childhood, which has been called a transitory hemophilia in contradiction to the habitual hereditary variety. The nature of this disease is still obscure; this much, however, we know, that purely local disturbances can not in a single case account for the hemorrhage. Transitory hemophilia seems to be congenital in cases in which the child's parents were syphilitic or as a result of septic infection. That other general infections may play a rôle cannot be doubted, as a sufficient number of cases still remain in which neither sepsis nor syphilis can be accused. Ritter's statistics, which embrace 190 cases personally observed in the foundling asylum at Prague, offers sufficient evidence that the danger of hemorrhage in children reaches its height on the seventh to the thirteenth day of life, i.e. the greater number of hemorrhages occurred on these days (about 60 per cent.); of these the eighth day of life presented the greatest number of hemorrhages, and the tendency to bleeding decreased with each day to the ninety-seventh, after which no bleeding of this nature was observed. Ritter is inclined, it is true, to admit only spontaneous hemorrhages to the class of transitory hemophilia and to exclude the traumatic cases. The
author, however, feels convinced that the latent hemophilia up to this time dormant may be aroused by a traumatic hemorrhage. If, therefore, circumcision had not been practised on the eighth day, in the boys disposed to hemorrhage, they would in all probability have remained alive, or at least would not have succumbed to their transitory hemophilia. Two cases reported by Richter were interesting in this connection; in both cases there occurred umbilical hemorrhage, in one child on the ninth, in the other on the seventh day, which ceased in one case after twenty-four, in the other after forty-eight hours; the first case was circumcised on the thirteenth the second on the twenty-first day by the ritual ceremony, without excessive loss of blood. Circumcision ought not to be performed on the eighth day, but later, as is the practice of the Mohammedans (with the Persians at the fifth or sixth year, with the Turks at the thirteenth year). The number of cases ending fatally as a result of circumcision is quite large.

Another danger which threatens the child is caused by the ignorance of the operator as to antisepsis and asepsis. Many curious things are often used by them for the purpose of checking the hemorrhage; their personal disinfection, that of their instruments, etc., is highly questionable; it is not to be wondered at that accidental wound infection is not at all infrequent and many children die from septic infection. Even more dangerous is it when these operators make use of antiseptic drugs, as for example, carbolic acid, corrosive sublimate or iodoform, which as we know ought only to be employed with the most scrupulous care in early infancy, for they become dangerous in the hands of the layman and have in fact already produced much harm.

The sucking of the wound, after circumcision, formerly carried out by all operators, but at the present time only very rarely practiced, admitted a new danger; the infection by syphilis, tuberculosis, etc., in this manner has been frequently reported.

These dangers demand a radical reform in ritual circumcision. Much would be already accomplished, if circumcision could be placed under government control, at least so that only operators who have studied their vocation and have passed an examination could obtain the right to practice circumcision. In this way the possibility of punishing those inflicting injury on their patients could be assured.

SCARLET FEVER.

C. SEITZ (Münch med. Wochenschr., 1898., xlv., 76). From a study of material during the past ten years seen at the Universitätspoliklinik in Reisingerianum in Munich, the author recommends the following treatment of the various clinical forms of throat affections which make their appearance, in the course of scarlet fever, and which are even more frequently the starting point of other serious complications than the kidney affections. As so-called scarlatinal diphtheria has no relation whatever to true diphtheria, the indiscriminate employment of antitoxine in
searlatinal throat affections cannot be recommended. The author lays great stress on the systematic disinfection of the pharyngeal cavity in the early stage of the disease, no matter whether deposits are found here or not, at intervals of two or three hours, by gargles or irrigations, with solutions of common salt, borax, etc., and especially is this to be carried out in febrile and somnolent patients. If we should find deposits in the pharynx in the first few days, we would do well to carefully wipe these off with a pledget of cotton, without employing any force, however, and also to touch the spot with a 3 to 5 per cent. solution of carbolic acid by means of a cotton swab. Should a fetid discharge from the nose and mouth indicate the presence of a more serious affection of the nose and pharynx, nasal irrigations for the removal of debris and for keeping the respiratory passages free are also indicated; they do not accomplish any other good.

After the streptococci have emigrated from their original site in the throat and nose, to the glands, they menace with their invasion the various organs of the body, but especially so the circulation. For combating this dangerous complication, Heubner has introduced the method originally proposed by Taube, of systematically injecting carbolic acid into the tissues of the tonsils and the soft palate, and has obtained exceedingly favorable results from it. The results obtained by the author are in a line with these observations. In every case an unmistakable symptomatic effect was at once obtained soon after the first injection, in so far as marked relief occurred to the difficulties of deglutition from the anesthetic effects of the carbolic acid, which lasted a number of hours. As a rule, the previously continued high fever began to fall after the second injection, and the enlarged and tender lymphatic glands at the angle of the jaw frequently disappeared with startling rapidity, accompanied by a continued improvement of the general condition. A bad effect on the kidneys was never noted. The author employed these carbolic injections even in cases where nephritis was present, and found the amount of albumin to diminish day by day. Occasionally the urine presents the color found in carbolic acid poisoning; this symptom disappears, however, as soon as the injections are stopped. Pain of any duration is not experienced from the injections. To carry out this little operation there is no need of any further assistance than that which can be given by the mother and nurse. For this purpose the syringe recommended by Taube, having a canula 6 c.m. long, which can be screwed on, and which has a small disk soldered about ½ c.m. below its point to prevent its deeper penetration (danger to the vessels) should be used. A daily injection of 1 c.m. of a 3 per cent. solution of carbolic acid, which should, however, be distributed over a number of punctures, are to be made; these injections should be continued until the temperature remains pretty nearly normal, and the swelling of the lymphatic glands has disappeared; this is usually accomplished in from three to eight days. The cure by the local process in the pharynx takes more time and should be treated later on by irrigations and gargles. Indications for making the injections are when, at the end of a week, the fever remains high or again rises, and the increase of swelling in the lymphatic glands of the neck reveals the seat
of the cause; good results may even be obtained in cases during the second week, where a general invasion by streptococci can be excluded by the absence of pneumonia and inflammation of serous membranes.

THE TREATMENT OF CONGENITAL SYPHILIS IN FOUNDLING ASYLUMS.

M. Szalardi (Wiener klin. Rundschau, 1898, xii., 135). Syphilis hereditaria in infants, as as is well known, is a very grave disease, and is, without exception, fatal in bottle-fed babies. The author has been fortunate enough to keep alive a large percentage of these cases. In the Landesfindeehaus in Budapest, these children are only admitted when accompanied by their mothers, and in exceptional cases only (where found in the street or when the mother is dangerously ill) they are received without the mother. Each mother is required to nurse her own child in the institution. The women are generally received into the institution eight or ten days after confinement, and are allowed to remain, if mother and child are healthy, on an average for three weeks. In the institution congenital post-conceptional syphilis is rarely met with. As a rule, only such cases are observed where the father is syphilitic, and the mother while carrying a syphilitic fetus does not become infected, but is only immune to syphilis. The children borne here have, therefore, already been infected at the time of conception, and have already had the disease for eight or nine months. The symptoms presented by the child correspond with those which we usually find in acquired syphilis at this period of the disease. If a careful examination is made a few days after birth, it will be found that these children are poorly developed, rachitic, anemic, of a waxy color, and in spite of a sufficient supply of nourishment, do not increase in weight. We also meet with intractable forms of eczema and seborrhea. Tertiary symptoms, for example, peeling of the skin of the soles of the feet, fingers, and toes, rhagades of the lips, papular eruptions on various parts of the body, copper-colored circular ulcers of the extremities, pemphigus, psoriasis of the plantar surfaces of the feet and palmar surfaces of the hands, are found quite as infrequently here as in this period of acquired syphilis. These symptoms occasionally make their appearance only months or even years after birth, no secondary symptoms having at any time appeared. The child may be said to have passed through the second period of the disease during uterine life.

The only treatment for congenital syphilis is that which we employ in acquired syphilis: Inunctions of mercury, using one gramme of unguentum cinereum daily. In exceptional cases, where, for this example, is not well borne, corrosive sublimate baths, and calomel internally may be used.

If these children remain at the breast they usually bear the mercury very well indeed, and a large percentage of relative cures is obtained.

After all symptoms have disappeared, and the child is daily gaining
in weight, it is sent to the colony with its mother, where she continues to nurse it. The mother is required to bring the child to the institution for inspection every fortnight. After a luetic mother has nourished her own child sufficiently long, it is weaned, and another luetic child substituted for it.

Szalardi has shown that breast-milk during the period of nursing does not change in quality, so that a wet-nurse of one year may be intrusted with a child eight days old for nursing, and vice versa, a child six months of age may be nursed by a woman with one week's breast-milk, provided that she has a sufficient quantity.

In this manner we succeed in providing luetic infants with wet-nurses whose mothers are incapable of nursing them.
INFANTILE SCURVY, WITH REPORT OF CASES.

By Isaac A. Abt, M.D.,
Chicago.

Professor of Diseases of Children, Northwestern University Woman's Medical School; Attending Physician Diseases of Children, Michael Reese and Provident Hospitals.

The earliest reported of these cases were erroneously described as cases of acute rachitis. Möller,¹ of Königsberg, in 1859, described his first case. In 1862 he reported upon two more cases, one of which came to autopsy.

Bohn² in 1868 described a similar case. The cases reported by these authors show a striking similarity with reference to the symptomatology. The patients had severe pains, attended by swelling of the extremities, along the course of the long bones. Diarrheas were of frequent occurrence. Scorbutic stomatitis was commonly noticed, the pulse was frequent, the temperature normal. These cases were all accompanied by grave constitutional disturbances. After several months of ineffective treatment with iron and the iodides, a majority of the cases recovered after having been placed under favorable hygienic conditions.

Similar observations were made by Striebel,³ 1863; Adersen,⁴ 1866; Förster,⁵ 1868; Bohn,² 1868; Senator,⁶ 1875; Fürst, 1882; Weihl, 1883, and others.

Möller referred to the gingivitis and subperiosteal hemorrhage and considered them rachitic phenomena. Förster,⁵ 1868; Hirschsprung,⁶ 1872, described similar lesions as rachitic. Thomas Smith,⁷ 1875, first described the hemorrhagic periostitis of the diaphyses of long bones.

We are indebted to Cheadle,⁸ of London, 1878, who de-
scribed the disease in detail as infantile scurvy, later as osteal or periosteal cachexia with scurvy. Thomas Barlow,\textsuperscript{9} of London, 1883, with a rich experience in this class of cases from clinical and pathological sources, went into the detailed pathology. He considered these cases a combination of scurvy and rachitis, the scurvy being an essential, constant element, the rachitis being a variable element, in that it is not always present. It is interesting to note that the acknowledged master, Henoch,\textsuperscript{10} doubts the existence of acute rachitis of the older authors. He says he has seen many thousand cases of rachitis, that he has never observed an accompanying fever which could not be ascribed to a bronchitis or other acute process. He warns against the possibility of mistaking a case of periostitis or osteomyelitis for a case of rachitis. Of a scorbutic affection no mention is made in this keen observer's writings.

The following cases from my experience illustrate the course of the disease:

A. W., female infant, eleven months old. Parents healthy; the grandmother on the maternal side is affected with diabetes; both of her grandmother's parents and one sister died of this disease. This is the first child. The labor was a difficult one, and was terminated by forceps. A bony ridge over the frontal bone persists and indicates the position of one blade of the forceps. The child received mother's milk for six weeks. At the end of this time the supply of maternal milk was exhausted. An artificial diet of sterilized milk was chosen. The milk was carefully sterilized, properly diluted, and was given at suitable intervals. In all, it may be said that scrupulous care was observed in the nursing and management of the child, which thrived fairly well. It was inclined to be constipated, and an occasional attack of dyspepsia necessitated slight alterations in the diet. At one time a mixture of milk sterilized with oatmeal water was used; at another time barley water; again, small quantities of malt extract were added to the milk to sweeten it. Under this latter mixture the child remained unusually free from dyspeptic attacks. The little one made constant and steady gains in weight and flesh; was bright, responsive, and differed in no way from children of a like age.

The lower incisor made its appearance promptly at the sixth month. At the end of the ninth month six teeth had ap-
appeared. At the tenth month the child was fed in addition to sterilized milk some of the simpler amylaceous foods. The child did not show any trace of rachitis.

When the little patient had become eleven months old the constipation had become more marked, the act of defecation had become painful, the feces at times were covered with a few drops of fresh blood. Examination at this time revealed a number of anal fissures involving the muco-cutaneous surface and appeared as linear cuts, posteriorly in the median line was a larger, broader and deeper fissure with a distinctly red, ulcerated base, involving the skin and mucous membrane of the anus. The appetite and digestion at this time remained good. The child was fretful and irritable, slept interruptedly, and held the right leg rather rigid, flexed, and slightly abducted. Active motion of the leg caused the child to cry. Repeated cauterization of these anal fissures with the nitrate of silver stick having given no relief, a surgeon was called for counsel.

The child was anesthetized and the surgeon expressed it as his opinion that the hip joint was free from disease, that the symptoms from which the child suffered were due to the anal fissures, and he proceeded to stretch the sphincter.

The operation soon gave relief from the blood-stained stools, from the painful defecation, yet the child did not improve as was hoped for. The patient remained fretful. An occasional rise of temperature was recorded. The right leg remained abducted and painful, and the child resented all attempts to move the limb by prolonged crying.

On June 30, 1895, the child’s twelfth month, she made the impression of being more acutely sick.

On examination the patient was emaciated, excessively pale, perspired a great deal; did not desire food; lay supinely on her back, the least movement caused her to cry with pain. Fontanelle only slightly open, no craniotabes. Visible mucous membranes anemic. The gums were spongy and swollen, with ulcerations at both angles of the mouth. These ulcers were half the size of a silver dime and covered by a grayish membrane which could be readily removed. About upper and lower incisors were several ecchymoses, each the size of a pea; they were of a purplish hue. On the tongue were aphthous ulcers. The pharynx was free. There was no glandular enlargement; the voice was husky.
The soft parts of the thorax were emaciated. The junction of bony with cartilaginous portion of ribs presented marked prominences. Auscultation and percussion at this examination negative.

The abdomen was tympanitic and protuberant. Spleen negative. Liver negative.

The epiphyses at the wrist were markedly enlarged. Petechial spots on both lower limbs. The lower limbs were swollen from the thighs down, swelling most marked in right leg, which was abducted. Great pain was experienced upon pressure of the limbs, or passive movement. Marked edema about both ankles; right arm swollen, painful and edematous.

July 6.—Swelling and edema in lower limbs have increased. The little patient was unable to move her right arm. Passive motion of this member or pressure over it caused great pain. The arm was edematous. The ulcers in the mouth were increased in size. A microscopical examination of a dried preparation of blood, stained with hematoxylon and eosin, and methyl blue preparations were made. Aside from a slight poikilocytosis nothing unusual was noticed.

Examination of urine revealed albumin distinctly present, also a few narrow hyaline casts. A distinct reaction for sugar was obtained by employing Fehling's and Nylander's test solutions. A quantitative test made by employing Fehling's solution gave a half per cent. of sugar.

The respirations were accelerated, varying from fifty-four to sixty-eight per minute. The temperature followed an irregular course. The treatment at this time was largely dietetic, consisting of freshly expressed beef juice, orange juice and fresh milk.

July 10.—Urinary examination revealed presence of sugar, one-half per cent., and albumin. Swelling and pain in limbs not abated. Child inclined to nausea and vomiting. Abdomen tympanitic. The frequent stool contained undigested articles of food and much mucus. They were offensive and of a greenish color. Ecchymosis on gums. Ulcer in mouth unimproved. Entertaining a fear that that the continued use of unsterilized cow's milk was possibly the cause of digestive disturbances, the fresh milk of the goat was substituted. The pure goat milk did not agree with the child. This milk was next diluted one-half with sterilized water, and peptonized by
using Fairchild's peptogenic milk powder. For the dyspepsia, calomel, bismuth and essence of pepsin were administered in appropriate doses. Camphor and nux vomica and alcoholic stimulation were administered to counteract, if possible, the rapid and irregular cardiac action; cod-liver oil inunctions were employed.

July 15.—The pain and swelling remain unchanged. The dyspeptic symptoms continue. The child perspired a great deal. It was found necessary to discontinue the use of goat's milk entirely. Cow's milk was again employed. Orange juice, fresh beef juice and cod-liver oil inunctions were continued. All other medication stopped. Albuminuria and glycosuria unchanged.

July 25.—Fresh cow's milk disagreed, and it was found necessary to discontinue its use. Egg albumen water was substituted. Dyspeptic symptoms continue to be the principal cause of anxiety. Scorbatic symptoms on the decline.

August 2.—Gastro-intestinal symptoms have become intractable. Child vomited, retained absolutely no form of nourishment. Stools were frequent, contained much mucus and were offensive.

All forms of nourishment were stopped with exception of small quantities of egg albumen water frequently repeated, and alcoholic stimulation.

In order to nourish the child and combat the dyspeptic state which was threatening its life, also to supply a fresh food to combat the scorbatic state, the services of a healthy wet nurse were secured, and the child fed with mother's milk from a nursing bottle. The patient did not take kindly to the mother's milk for the first three days of its use, though the stools rapidly improved, and the vomiting became decidedly less frequent.

August 10.—Scorbatic symptoms have nearly disappeared, has taken twenty-six ounces of mother's milk for past twenty-four hours, relished it and was eager for its new food. The stools were much improved, child had not vomited.

August 11.—Took thirty-two ounces of mother's milk, weighed thirteen pounds.

August 17.—Continued to take mother's milk, as much as thirty-eight ounces in twenty-four hours. Ate a Graham cracker daily, drank veal broth and fresh beef juice, weighed
fifteen and a half pounds. Swelling of the extremities and pain entirely disappeared, she moved her limbs, raised her head, was bright. Rachitic condition remained.

The child continued the use of mother's milk till October, since which time she has improved greatly in strength.

On the 1st of November she began to walk, and has learned to speak a great many words.

A. R., female child, age twelve months, was seen in September, 1896. She had been sick during all of the summer with gastro-intestinal disorders. The child had been fed on sterilized milk, proprietary foods.

About the 18th of September, 1896, I saw the child for the first time. The child had been restless for about two weeks, it cries every time it is moved, both legs lie helpless, as if paralyzed. The legs are swollen, the swelling reaching from the epiphyses to the knees. The skin covering the affected areas is glossy. The pressure over the swelling painful. No other bones affected, gums are swollen and bleed readily. The pulse was 120. Temperature 100.8. Physical examination of the chest and abdomen negative. No signs of rickets. The urine is negative. Stools are hard, child is constipated.

Treatment.—The child was ordered fresh milk properly diluted, one ounce of beef juice a day, and also the juice of one orange daily. The child was kept under observation for ten days. It made a steady and uninterrupted progress, and at the end of this time had entirely recovered from the scorbutic condition.

I have seen a number of children in the last few years who showed some evidence of scurvy, though usually not well marked and who recovered promptly after antiscorbutic treatment was instituted. These were principally children who were fed on sterilized milk. Some of these children were extremely restless, cried a great deal, suffered pain when pressure was applied over the long bones, and some had soft spongy gums. These were undoubtedly incipient cases, and if they had not been influenced by treatment, would probably have developed into the more severe type.

The glycosuria which occurred in the first case was not noted in any other of the reported cases. The glycosuria persisted for a number of days and caused genuine anxiety. If it proved to be a diabetis mellitus, it had grave prognostic sig-
nificance. The glycosuria was temporary, and disappeared in the course of a short time.

Etiology.—Barlow observed that the poor children of London who live on bread and potatoes, and who are crowded in tenement houses which are poorly ventilated, remain remarkably free from this disease. According to an analysis of thirty-six cases by Northrup and Crandall, 36 per cent. were fed on proprietary food exclusively; 18 per cent. an exclusive diet of condensed milk or evaporated cream; two children received a diet of sterilized milk exclusively. In three cases a weak solution of milk and water. In only one case was fresh milk the exclusive diet. Thus we see the largest contingent of cases in this series were those who received proprietary foods.

Louis Starr observed five cases who received sterilized milk. All recovered rapidly upon receiving fresh milk, with the addition of a small quantity of raw beef juice and orange juice to the diet.

Northrup reports a fatal case in a nursing infant.

Cantani believes that a hunger for mineral salts, a partial inanition, is the cause. The opinion is shared by Garrod, Buzzard, Ralfe and others. The deficiency of potassium bicarbonate and sodium phosphate in the nourishment decreases the resistance of tissues, gives rise also to an increased porosity of the vessel walls and interferes with the vital activity of the red blood corpuscles. This chain of conditions, according to Cantani, is cause sufficient for the development of scorbutus and hemorrhagic diathesis.

The disease affects children principally, during the last third of their first year, no cases having been observed before the fourth month or after two and a half years.

A variety of other opinions as to the cause of the disease exists.

Babes believes from a bacteriological study of three cases to have found a long, thin bacillus occurring in clusters in the gums. He believes that the bacillus is peculiar to the buccal cavity, but that under conditions of deteriorated general health the bacillus is excited to an activity which is capable of producing the scorbutic gingivitis. He claims that innoculation produced characteristic mouth lesions.

Bornträger is of the opinion that scorbutus is a bacterial
disease, and he isolated a coccus from the spleen of a person dead with this disease. He admits that the etiological importance of this micro-organism is not fully established.

Baginsky 16 says it would be difficult to conceive any other cause for this disease than a specific agent.

Rehn 14 reports a case, and says on a-priori grounds he would have maintained that the disease was of an infectious nature, though bacteriological examinations gave negative results.

These bacteriological examinations have not led us very far. In the light of our present knowledge, both clinical and experimental, we are justified in concluding that even if possible one or more micro-organism contribute to complete the clinical picture by acting locally in the mouth or in other organs, the improper nutrition is an an underlying and an effectual cause which has been observed in all cases and verified in a large majority.

Starck, 17 Kiel, reports three cases of infantile scurvy which yielded to antisyphilitic treatment, and suggest the possibility that lues is a causal factor in the production of the disease.

A. Koppen 18 concludes that infantile scurvy has no necessary relation with rickets. He also believes that the nourishment only plays a part in the production of the disease in so far as the artificial foods are capable of producing a gastrointestinal disorder or intoxication. Fermentation in the intestines and the production of toxic products lead to an autoin intoxication. He believes that the remedies that are employed do good, because they relieve the constipation. He quotes a case of Freudenberg's, where yeast was given at Baginsky's advice to relieve the fermentation, and the case recovered.

On the basis of this intestinal sepsis the author explains the hemorrhage, the anemia, the albuminuria, the small rapid pulse and the irregular temperature. The occurrence of bronchitis and pneumonia are explained in the same manner.

Hirsch, 19 Sprung and Fürst 20 believe that the disease is a modified rickets.

Symptoms.—The mode of onset is various. Most frequently the disease develops within a few days; the child desires to lie on its back; makes no unnecessary movements of its body; resists any attempt to touch or move its body; chang-
ing the napkin, bathing even in the most careful manner causes these little patients to cry pitifully as if in intense pain; or they observe the movements of their attendants with a look of anxiety fearing lest they should be caused additional pain. This is the condition known as scorbutic cachexia. These symptoms may last a variable time, usually a number of days. No localized swelling is observed up to this time. The changes present in connection with the long bones are of extreme importance, because they occur most frequently and are the most characteristic of the affection in childhood. Swelling of the bones due to subperiosteal hemorrhage is the most important diagnostic sign of the disease. A swelling may be observed over the diaphyses of the long bones; most frequently over the femur, tibia, less often the humerus or forearm; the process having once started may become bilateral or involve upper and lower extremities. The lower extremity, which most frequently involved, is painful, helpless, or is flexed or abducted. Edema may be observed over the malleoli, over arms and eyelids. This condition may last unchanged for weeks, but in time tends to become less painful.

The gingivitis is not always present. As a rule, it is absent in those children who have not yet cut their teeth. It may be absent in children who already have several teeth. At the points where the teeth have appeared the typical lesion occurs. The gums are swollen, spongy, are apt to bleed if touched, and are covered by ecchymoses of a purplish hue. Aphthous or ulcerative stomatitis may occur.

Hemorrhages may occur in the various organs and tissues of the body. Hemorrhage into the eyelids and under the skin has been observed. In Cassel's case a hemorrhage under the skin caused a tumor as large as an apple. Hemorrhages of the brain and meninges have been observed; into the orbit, causing exophthalmus, into the intestines, causing bloody stools; into the urinary tract, giving rise to hematuria.

The anemia is present in all these cases, and is proportionate to the number of bones involved and the extent of the hemorrhages.

Fever is not always present; if present, it is of an irregular or intermittent type. The cause of the fever in these cases, if we reject the specific nature of the disease, may be partly explained by the disordered alimentary tract or other complications.
Emil Reinert\textsuperscript{21} offers an explanation which commends itself. He believes the fever is such as commonly occurs with severe anemia. It occurs where a considerable disintegration of extravasated blood is going on, or where a resorption of such an extravasation is taking place. The pulse is soft, small and frequent. It is by this time a well observed fact that the disease may occur without a sign of rachitis. Northrup and Crandall\textsuperscript{11} report eight cases where rachitis was entirely wanting. On the other hand, rachitis may have been present before the onset of the disease. It may occur simultaneously with the onset of the scorbutic condition, or may not appear until the scorbutic symptoms are on the decline. Barlow\textsuperscript{9} believes that rachitic children are most frequently attacked, or it may justly be maintained that both diseases are the result of improper nutrition and poor hygienic conditions and the same conditions which can cause a rachitis can sometimes cause an infantile scurvy.

The skin over the affected area is placed on the stretch and is glossy. Petechiae may occur. In the case reported in this paper a severe diffuse urticarial eruption on face and front was observed; it appeared and disappeared daily for a number of days. Fractures of the long bones have been observed. Detachment of the epiphyses is not altogether of infrequent occurrence. The appetite in these cases is very much diminished. The sleep is most often disturbed. Gastro-intestinal diseases, bronchitis, pneumonia, and a variety of other diseases are apt to occur as complications, and not infrequently are the causes of disastrous results to these already enfeebled patients.

Pathological Anatomy.—From the original autopsies of Barlow\textsuperscript{9} and numerous others, among whom may be mentioned Northrup\textsuperscript{21} of our own country, we are indebted for our pathological knowledge of this disease. The extremities present the most constant pathological changes, which are most commonly found in the thigh or leg. If one cuts down upon such an affected area, one finds that the musculature retains its normal contour and structure, but is infiltrated by a serous or gelatinous substance. Occasionally an extravasation of blood may be seen which is located between or in the muscles. The periosteum, which, under normal conditions, is more vascular in the child than in adults, is swollen in this disease, thickened, stained with blood and overvascular. In an affected thigh, for
example, the periosteum is raised from the shaft of the femur by a more or less complete sheath of blood clot. The coagulum is of a dark, grumous appearance. The shaft of the bone most frequently under these circumstances appears thinner; indeed, the shaft tends to atrophy owing to its being deprived to some extent of its nutrient supply. It is clear how in these thin bones a slight degree of violence can produce a fracture.

The above changes may occur in the tibia; they occur less frequently in the bones of the upper extremity. Barlow and Mackenzie observed similar changes in the ribs. Barlow also found the scapula the seat of a periosteal hemorrhage. In rare cases the bones of the cranium, the superior maxilla, and crest of the ilium, have been involved.

Detachment of the epiphyses is of frequent occurrence. The joints remain nearly always free from hemorrhage. Hematoma of the dura mater and hemorrhage into brain have been recorded. The solitary follicles of the intestine have been the seat of hemorrhagic infiltration. In the pyramids of the kidneys slight hemorrhages have been demonstrated. Liver and spleen are normal, or at the most show a slight fatty change. The lungs may be the seat of hemorrhagic infarct. Retinal hemorrhages seldom occur.

Diagnosis.—In well marked cases the diagnosis is not difficult. Great pain and tenderness on one or both lower limbs; swelling of the thighs; unrest; pseudo-paralysis; sometimes edema; the characteristic changes in the gums; such a classical array of symptoms make the diagnosis clear. But it is not always so easy. Visible hemorrhages are frequently absent. In toothless children the gingivitis is often absent, or the prodromal symptoms may be prolonged, and no inconsiderable time may elapse before the characteristic symptoms develop. The fact that the children improve, if placed upon an antiscorbutic diet, is not an unimportant diagnostic factor.

Differential Diagnosis.—Congenital syphilis can be excluded by the history of the case, by the absence of syphilitic lesions on skin and mucous membranes. In congenital syphilis we never have the history of such severe pain. The pseudo-paralyses of syphilis are limited nearly always to the upper extremities; the swelling is never so intense as in these cases of infantile scurvy, and is more prone to occur on epiphyses than on diaphyses. Separation of the epiphyses occurs in both
In differentiating from acute rheumatism we recall that in rheumatism the epiphysis is affected, while the diaphysis remains free; there is always a pronounced local heat and redness in rheumatic inflammation, and always more hyperpyrexia.

A spinal paralysis might be thought of, though in such cases there is no tenderness, no swelling. An osteomyelitis or periostitis occurring alone or in combination are possibilities which might suggest themselves in a given case. These diseases, however, occur seldom, run a rapid and pernicious course, with excessive high fever and chills, frequently with suppuration and necrosis, and may end fatally. The general impression that one receives from such a patient is of a more severely acute febrile type than occurs in infantile scurvy.

In a case of infantile scurvy, seen early, before the swelling of the lower limb has occurred, the possibility of a hip-joint disease might suggest itself. We know that the early age at which infantile scurvy most frequently occurs, hip-joint disease is very rare, although no age is exempt. Diffuse pain, abduction or slight flexion of the limb, the occurrence of acute pains at night, sufficient to awaken the patient with a sharp cry, would lead one to inquire into the condition of the hip-joint. If the hip-joint be manipulated the muscular rigidity and degree of motion will put one on the right track; the progress of the case, if infantile scurvy, will develop a train of symptoms which will make the diagnosis clear.

Prognosis.—If the disease be recognized sufficiently early and proper treatment instituted the prognosis is fairly good.

Fürst collected 166 cases, of which 111 recovered—67 per cent.; 31, or 18 per cent. died, and in 24, 15 per cent., the course and result remained unknown. Severe hemorrhage causing excessive anemia darkens the prognosis. Complications on the part of the digestive or respiratory tract add additional danger to the life of the patient.

Treatment.—Brilliant results are obtained in these cases by providing a suitable diet. Fresh cow's milk, or mother's milk, beef juice, orange or lemon juice, fresh vegetables, mashed potatoes, as recommended by Cheadle, are the most suitable articles of diet. The child should be brought under the best possible hygienic conditions, good ventilation should
be provided for, and under favorable conditions of weather the child should be out of doors. In the severer cases, where a state of collapse exists, or the pulse is very rapid and irregular, alcoholic stimulation should be given. Cod liver oil, by mouth or inunction, is especially indicated, when the child recovers from the scorbutic condition, to aid nutrition. Iron should be administered in those cases where anemia persists.

Vomiting, constipation, dyspepsia, diarrhea, must be treated by adapting the diet as nearly as is possible to the age and condition of the patient and by the use of appropriate drugs. Small doses of calomel, mercury, and chalk, pepsin or bismuth, may be used as is indicated. Care should be taken to overcome the constipation which is frequently present.

For the swollen and bleeding gums, a mild antiseptic and astringent solution is grateful to the patient.

Care should be exercised in handling these children. Owing to the fragility of the bones fractures occur readily. These infants should be preferably kept on a pillow or cushion on which the child can be picked up or carried about.

REFERENCES.


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CONDITION OF THE POOR IN LARGE CITIES.

The means of redemption of the poor from the moral and physical degradation into which so many of them have fallen is the most serious problem confronting the philanthropist in these days. In all large cities the same sad tale is told of grinding poverty, overcrowding, and of human beings herding together like animals amidst dirt and disease. It was in London that this unnatural state of things was first appreciated in its true significance, and where special means were devised to meet it. Investigations had been made which revealed an appalling situation and which was recognized by medical men as a constant menace to the health of the community at large. The houses of the poor were found to be in such an unsanitary and dilapidated condition that London was aroused, and a great hue and cry was raised with regard to "the submerged tenth and their bitter lot." These disclosures touched the great heart of the people, the apathy of the rich was swept away, money was forthcoming in abundance, all sorts and conditions of men and women made it their duty to live and work amongst the denizens of the slums, and endeavor by help, precept, and example to brighten and elevate their sordid existence. The municipal authorities and the county council of London have also taken the matter vigorously in hand, and through their efforts acres of unsavory rookeries have been demolished and on their site fine, well built, hygienic buildings, supplied with every convenience, have been erected. Owing to the peculiar location of New York City, it is the most heavily rented and overcrowded city in the world. It is said that the population of New York is twice as dense as in the most crowded part of London. The inhabitants, too, of its poorer districts are probably the most cosmopolitan and poverty stricken of any civilized country. For years there was little or no restriction on immigration and consequently there has been an ever increasing influx of the wretchedly poor, almost the scum of all nations. In 1830 the population of the lower parts of New York was almost exclu-
sively American or English speaking. In the same parts now
the English language is rarely heard except as spoken by the
children. That section of the city between the Bowery and
East River, Grand and Houston streets has been successively
occupied by Americans, Irish, Germans, and has now come
into the possession of Russian and Polish Jews, another part
of the down town district is taken up by Italians, in yet
another portion Negroes predominate, in fact most nationalities
are more or less represented in this Babylon of the new world.
By the perfection of the efforts of the organized charities much
has been done to improve the lot of the poor in New York,
and it is well understood that the best if not the only means
of attaining this object is by giving the little ones the chance
of developing into healthy men and women; physical improve-
ment should be the first aim, after that will come as a natural
sequence mental development.

THE WORK OF ST. JOHN'S GUILD.

Of all the charity organizations of New York City none
have done better or more efficient work among the children of
the tenement district than St. John's Guild, and of all the
work performed by its members no part of it has borne more
lasting and beneficial fruits than their efforts to save infant
life.

There is nothing the inhabitants of the tenement houses
need so much as more room, sunshine, and fresh air. These
conditions are absolutely essential to the well being of infants.
St. John's Guild has endeavored as far as lies in its power to
supply these wants by providing a Floating Hospital and by
establishing a Seaside Hospital for the accommodation of sick
children and their mothers. Before, however, giving a descrip-
tion of the manner in which this charity is carried on a short
account of the origin and subsequent progress of St. John's
Guild will be of interest. The guild was founded in 1866 as a
charitable and religious society in Trinity parish. It was then
a wholly parochial concern. In 1874 its scope was considerably
extended and it ceased to be connected with Trinity parish.
This departure had a most satisfactory influence on the sup-
port accorded to it by the general public, and its funds
increased in a corresponding ratio.

The Floating Hospital was initiated in 1875 and in 1881
the Seaside Hospital was erected on Staten Island. During this time the Society was extending its field of labor and directing its energies into newer and broader channels, and in 1892 the Children's City Hospital was opened and the Women's Auxiliary Association was instituted. Thus it will be seen that from a mere parish society St. John's Guild has come to be non-sectarian and one of the largest charity organizations in the world devoted to the care of sick children. As we mentioned before the

Floating Hospital made its first trip in 1875 since which time it has carried over 800,000 children and mothers. The custom now is to make six trips per week, starting on alternate days on each side of the city. The ship makes three calls to pick up her passengers—on Mondays, Wednesdays, and Fridays she starts from the foot of West Fifty-second street stopping at Thirty-fifth street and Tenth street. On Tuesdays, Thursdays and Saturdays the patients embark at the foot of East Twenty-eight street, Third street, and Market street. In the excessive hot weather which has prevailed in New York lately, the accommoda-
tion on board, although providing for 1,600 women and children, has not been equal to the emergency and many deserving cases have perforce been excluded for lack of room. The spectacle of the children with their mothers waiting in line to be examined by the physician in charge before being permitted to go on board is an interesting and instructive one, and the task of the doctor requires the exercise of much discrimination and tact besides necessitating the possession of very considerable linguistic attainment, as among the applicants will be found members of various nationalities. Admission to the ship is granted by means of tickets, each of which must be signed by a qualified medical man. Some of these tickets are available for the day only, some for a longer period, while others admit to the Seaside Hospital at New Dorp for two weeks, renewable for a longer stay at the discretion of the medical attendants. It need hardly be said that the greatest care is exercised to prevent the embarkation of infectious cases. After these necessary precautions have been taken and the full complement of sick and prostrate children and mothers have been taken aboard the good ship proceeds on her voyage of mercy. The ship itself is well adapted to her purpose. She is a double decked barge nearly 300 feet in length of which the forward part of the lower deck is taken up by a cabin reserved for the use of managing staff, by a spacious bathroom and by other offices. Aft are two wards containing fifteen cots and a bed, one of these wards is also utilized as a surgery and dispensary, where the doctor holds his court, attending to those cases which require immediate surgical or medical care. The upper deck is covered in and provided with seats sufficient to accommodate all the passengers, the sides are unobstructed along its entire length affording an excellent promenade. It is here that the children, babies, and their mothers—with the exception of those who are in the wards—spend their day, sheltered from the heat of the sun, and inhaling at their ease the pure, health bearing sea breezes. The dining room, an idea of whose ample extent may be gathered from the fact that in it is found room for 350 at each sitting is down below, adjoining it are the kitchens, pantries, larders, etc. The daily routine of work is somewhat as follows: The sick children and infants are examined and treated by the physician in charge, those who are considered really ill are placed in the comfortable cribs in the
wards, while the others, after being given medicine suitable to their ailments, join the company on the upper deck. Pasteurized milk is given to the infants at frequent intervals, and at 12 o'clock, at which time New Dorp is usually reached, dinner begins to be served. The food consists of stew made from the best of meat and vegetables, with plenty of bread, and one cannot fail to be struck by the scrupulous cleanliness of all the appointments and the evident hearty enjoyment of the children of this good, wholesome diet. But we are getting along rather too fast with our description and have omitted to make mention of perhaps the most important function that takes place aboard. Good old John Wesley is credited as the originator of the oft-quoted remark that "cleanliness is next to Godliness," and this axiom is carried out to the letter by those responsible for the management on the Floating Hospital. Whether cleanliness is worthy of being classed next to Godliness as a virtue may be disputed by some, but at any rate none will deny that the habit is in a high degree conducive to good health, and indeed, in some affections, a quite necessary procedure. An average of 350 children and babies are bathed each day, and the mothers can also, if desirous, indulge in the unaccustomed luxury of a hot sea water bath. When the lack of facilities for bathing in the homes of the poor is taken into account the magnitude
of this boon, irrespective of hygienic considerations, will be
more readily appreciated. The bathroom is large and airy,
supplied with a number of tub and shower-baths, and is under
the supervision of a head nurse with two assistant nurses.
To the energy and earnest co-operation of the staff in charge
of the Floating Hospital is due without doubt much of its con-
spicuous success, and a visitor cannot watch their labors with-
out being deeply impressed by the fact that their hearts are
altogether in their work. The doctor, matrons, and nurses
may be said to be busy from the time they leave their starting
point, at eight in the morning, until the time they reach
home, at six in the evening. The care and responsibility of
1,600 children, infants, and mothers, the majority of whom
belong to the lowest strata of society, many of them sick, and
with the thermometer standing above 90° in the shade will
give some idea of the difficulties with which they have to con-
tend. The staff consists of Superintendent, Mr. Richards;
Captain Cobb, Dr. McCauley, physician in charge; Mrs. Chase,
matron; Mrs. Thomas, assistant matron; Miss Walton, head
nurse, assisted by Miss Palmer and four others; Miss Manter
and two assistants in charge of the bathroom; Miss Nevill in
charge of the milk for children; Mrs. Ward, storeroom super-
intendent, with ten assistants. Space fails or we might expa-
tiate on the size and equipment of the kitchens, on the good
work being done by Mrs. Thomas in endeavoring to implant
habits of thrift in the minds of the children and on several
other features deserving of mention.

On arriving abreast of New Dorp the ship is moored about
a mile out and upon being sighted from the shore a
launch is sent off in which those patients who have received
admittance tickets are conveyed to the Seaside Hospital. The
situation of this hospital is an ideal one; it is placed at a dis-
tance of about 200 yards from the sea, well sheltered at the
sides and back, standing amidst picturesque surroundings,
and having at the rear ten acres of ground.

It is a long, two-storied building, of single depth, contain-
ing two large wards, with separate wards, operating room, dis-
pensary, and offices. The large wards are of equal size, each
capable of holding eighty patients. The cots are placed at
the sides, and above each cot at the foot swings a cradle at
such a height from the bed that it can be easily reached—a
SEA-SIDE HOSPITAL.
capital arrangement, as the mother can lie in bed and rock the cradle without rising. The lighting and ventilation of these wards is excellent, as there are windows on either side, and on the front, facing the sea, are wide piazzas, in which in the day time, when fine, the babies cradles are swung.

Behind the main building and running at right angles to it is the annex, containing the public dining room, kitchen, and the rooms devoted to use of the staff of management. The laundry and electric plant are situated in a separate building. One feature in connection with the Seaside Hospital is the special attention given to the preparation of the infant food. A room is set apart for this purpose, furnished with the latest machinery for modifying and sterilizing milk after the most approved methods. The rational treatment of sick babies by judicious diet and fresh air is here followed out thoroughly.

As in the hospital ship, the beneficial effects resulting from bathing is well recognized, and the bathroom at the Seaside Hospital is naturally on a much larger and more elaborate scale. There are eleven spray baths, each one being contained in a separate compartment. Hot and cold water is supplied, and a thermometer is so placed that the exact temperature of the water going to the sprays can be observed and regulated by an attendant. Dressing rooms are also provided for the mothers and larger children. The catering for the mothers and those children who are well enough to enjoy good food is on a generous scale, and the site of the large dining room at meal time filled with these poor tenement dwellers is one to touch the hearts and to loosen the purse strings of those more fortunate beings who have never felt the bitter sting of poverty. In fact the hospital is thoroughly equipped in every respect and is a model of what such a place should be, the only fault is that it is not large enough for its needs. Owing to the excessively hot weather of this summer all the available space has been occupied and many deserving cases have been refused admission for lack of room. From its inauguration in 1881 the Seaside Hospital has fully demonstrated its value, both as a convalescent home and as a means of saving infant life, the rate of mortality among this class being much less than in city hospitals, and the experience of its medical staff during its existence of eighteen years has added further emphatic testimony to the great superiority of breast-feeding to artificial
capital arrangement, as the mother can lie in bed and rock the cradle without rising. The lighting and ventilation of these wards is excellent, as there are windows on either side, and on the front, facing the sea, are wide piazzas, in which in the day time, when fine, the babies cradles are swung.

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nourishment. The Seaside Hospital has a large medical and nursing staff, in addition to the able resident physicians, Dr. DeHart and Dr. Pyle. Several well known New York specialists on the diseases of children make frequent visits. The institution is under the competent control of the Superintendent, Mr. Harroun, assisted by the matron, Mrs. Harroun. One feature in connection with the work of St. John's Guild should especially commend it to the notice of philanthropists is that its charity is extended to all, irrespective of creed or nationality, and it may also be mentioned that the cost of naming a crib or cot on the Floating Hospital is $500 and in the Seaside Hospital $100. Before concluding this article, a few remarks on the beneficial effect of fresh air and change of scene on the complaints of children and infants from a medical standpoint may not be out of place. By some it is argued that the good effected by a day's trip on the Floating Hospital or even by a week or two weeks' stay at the seaside is at the best but tem-
porary. Those, however, who have had much experience in the matter tell quite a different tale and assert that a trip on the Floating Hospital has an almost magical influence on various infantile ailments and particularly on diarrhea. As to the health giving effects on sick children of a stay at the seaside we cannot do better than quote the following words of the late Dr. White, of Brooklyn: "Appetites improve, coughs cease to be troublesome, ulcers heal, growing deformities are arrested, cheeks fill out and grow ruddy, spirits become buoyant, the step elastic and child-like, while the sickly smile gives place to the hearty laugh of childhood, or as very happily expressed by a friend: 'They come in men and women,—they go out little children.'"
EDITORIAL COMMENTS

Meeting of the British Medical Association at Edinburgh

The meeting of this association, re-held in the capital of Scotland, is reported as being in every way a great success. It is claimed for Edinburgh by the perhaps too partial inhabitants that it is without a rival in beauty among the cities of the whole world. Without, however, going to this extreme, it must still be confessed that in its picturesque situation, in its magnificent buildings, in its literary work and historic associations Edinburgh stands pre-eminent. The city, too, is particularly well adapted for the meeting of a body like the British Medical Association. The medical school is, after Vienna, the largest in the world, the splendid erection known as the new university and devoted solely to medicine has already cost more than $1,500,000, and is the most complete building of its kind in Great Britain, and probably, taken as a whole, no country can equal it. The infirmary is the largest and certainly the best built in the United Kingdom, it now contains considerably more than a thousand beds; and, lastly, the professors are all distinguished men, some of them indeed, as Rutherford and Cossar Ewart, of world-wide fame. There is, besides the University in Edinburgh which has among its students about 4,000 in medicine alone, a College of Physicians and Surgeons. As a literary center, Edinburgh does not hold the proud position she did in the days of yore when Scott, Burns, Christopher Wilson, Simpson and many other giants in literature and science lived within her borders, and when she rivaled London in this respect; but there still clings to her the prestige of these old days, and in fact she still plays no unimportant part in the world of letters. At the meeting just con-
cluded there were present many Americans of note, including Dr. Osler, of Baltimore, and Professor Bowditch, of Harvard University, and the event was made the occasion of further emphasizing and cementing the good will now existing between the two great divisions of the Anglo-Saxon race.

The complaint has been made, and we think with justice, that at the meetings of the British Medical Association the papers read, though often of a high class and of an interesting nature, display a lamentable lack of originality, and that they are for the most part a hash-up of ancient matter. No new theories are promulgated. However, this failing, if it be one, is in keeping with the conservative tendencies of the British school of medicine, whose members invariably exhibit a decided objection to giving to the world their discoveries until they have convinced themselves that these discoveries are founded upon a firm basis. This characteristic was in evidence at the meeting recently concluded, the papers on tropical diseases alone excepted, in this section Surgeon Captain Ross gave the results of investigations made by him in India on the origin of malaria. Another conspicuous feature of the meeting was the increasing interest displayed in diseases of children—this fact was plainly demonstrated by the large number of papers read in that section, and by the subsequent animated discussions. We may in this country, I think, take much of the credit for giving the much needed impetus to the study of "pediatrics" as a specialty in Great Britain, we showed the way and it seems now as if the Britons have after mature consideration decided the path is one to be followed. The first paper read at Edinburgh was contributed by Victor Horsley, the subject being spinal caries in children. He said that the question of the best treatment of the lesion of the bones was more important than that of the subsequent deform-
ity. He held that vertebral caries should be treated in the same way as tuberculous disease of the bone elsewhere, and advocated early operation. There was no special danger attaching to aseptic operations on the spine. Shock could be entirely avoided by performing the operation in two stages. Some considered that operation might arouse quiescent tubercle or the dissemination of tubercle. This he sought to prevent by free flushing with dilute perchloride lotion (1:5000). He had no experience of Calot's operation, which did not provide for treatment of an abscess, and there was no guarantee that it would permanently relieve the deformity. Mr. Jones, of Liverpool, did not agree with Horsley as to the wisdom of operation, and said that he had performed the Calot operation ninety-three times with seven deaths at periods of six weeks to nine months after the operation, the same proportion of deaths occurred as in a number of cases which were not submitted to this procedure. He believed there was a future for the operation. Other speakers followed, the majority of whom dissented from Horsley's views with regard to operation in spinal caries.

Mr. Jonathan Hutchinson mounted his favorite hobby and aired some of his well-known theories on the transmissibility of syphilis. However, Mr. Hutchinson has had so large and varied experience of this disease and has given so much time to the study of its idiosyncrasies that whatever may be the opinion regarding the correctness of his views they will at all times be received with respect. As regards prognosis, Mr. Hutchinson thought that after showing symptoms of congenital syphilis in children patients usually enjoyed excellent subsequent health. He did not believe in transmission to the third generation, and thought that these patients might marry without any risk. He was still of opinion that two years was long enough for a man to
wait before he might marry without risk of transmitting the disease, but it was possible that the duration of transmissibility was longer in the case of women.

The most important paper read in the section on children's diseases was that of Dr. David Lees, dealing with the above subject. After pointing out that disease of the heart among children is in the majority of instances due to rheumatism, and after referring to the great mortality among children as compared with adults from this disease, Dr. Lees proceeded to touch upon the question of dilatation, which he maintained was usually present in sub-acute first attacks, even when pyrexia was slight and arthritis not present. Fatal results were not due to effusion into the pericardium nor to endocarditis. These conditions seemed to affect the mortality very little, but plastic pericarditis and dilatation played a very important part in the fatal result. Dr. Osler thought it was important to guard against repeated attacks of rheumatism. Dr. Ewart contended that in dilatation fluid was always present, and Professor Baginsky drew attention to the immense size of the heart in some of these cases of dilatation. In the *Edinburgh Medical Journal* of a recent date Dr. F. Broadbent contributed an able article on rheumatism in children, in which he shows that in childhood and early adolescence rheumatism in its manifestations takes a different course from the same disease occurring in adults; in childhood and youth the articular manifestations are slight, but in spite of any marked symptoms the heart rarely escapes, and owing to the insidious nature of the inflammatory process irreparable damage may be done before the severity of the cardiac symptoms compels the patient to seek medical advice or take to his bed. According to Dr. Sturges it is exceptional for the victim of endocarditis to escape pericarditis, and eventually within from six weeks to
three months one of three things will happen. (1) The area of cardiac dullness may decrease till it is nearly normal in extent, indicating that the heart has approximately gained its normal size, in which case a satisfactory recovery may be anticipated. (2) The area of cardiac dullness may remain permanently enlarged though the patient has become convalescent, in which case it is probable that universal adherence of the pericardium to the heart is taking place, and though the patient recovers the heart will be permanently crippled. (3) The area of cardiac dullness may still further increase, the liver become enlarged, and dropsy set in, and the patient die with all the symptoms of right ventricle failure. Dr. Broadbent remarks with regard to treatment of rheumatic affections of the heart in children, various local applications, such as ice-bags, leeches, and blisters over the precordial area have been advocated, and according to Dr. Lees it is best to limit the amount of cardiac dilatation. Administration of salicylates is of doubtful benefit, and perhaps the most useful remedy is quinine and bicarbonate of potash. Nothing, however, does much good; it is therefore most important that any indications of danger threatening the heart should be early recognized and guarded against. When any symptoms of coming heart trouble is detected, the first steps that should be taken is to prescribe absolute rest.
SOCIETY REPORTS

BRITISH MEDICAL ASSOCIATION.—SECTION OF DISEASES OF CHILDREN.

Sixth Annual Meeting, July 27, 28 and 29, 1898.

[SPECIAL REPORT FOR PEDIATRICS]

Dr. Joseph Bell, President, in the Chair.

(Second Day, July 28, 1898).

Mr. Jonathan Hutchinson, in opening the discussion on Certain Aspects of Congenital Syphilis, said he had nothing new to bring forward, but would refer briefly to some points of interest.

As regards the bones, the occurrence of a form of bone disease resembling that found in the acquired disease—both tibia affected, with enlargement and bending of the bones—is now well recognized.

The keratitis is conclusive evidence of congenital syphilis, and is never simulated in any really deceptive manner. It usually occurs not earlier than the fifth or sixth year, and seldom before the age of thirteen or fourteen, and may occur even as late as forty years. This latter fact is difficult to explain, yet the disease may set in then and run the ordinary course. No other symptoms are present, and the explanation must be in the development of tissue, and not in any recrudescence of disease. Inflammation of the knee and other joints may occur at the same time as keratitis, but never after the age of twenty years.

Deafness is well recognized, but is not known to occur at a late period. It usually occurs in adolescence. Gummata in cellular tissue and in the tongue may occur, but are extremely rare in inherited syphilis. The speaker had seen one case of a gumma in the substance of the tongue, in a woman of thirty-three, whom he had himself treated for congenital syphilis in
infancy. He had also treated her sister for congenital syphilis and her father for acquired syphilis. Had he not known the history of the case diagnosis would not have been possible. Under treatment the gumma disappeared in six weeks.

Degenerative changes in the nervous system may occur late in adolescence in patients who suffered from congenital syphilis in infancy, but who were quite healthy during childhood. Evidence of damage to the brain during the infantile period may supervene during adolescence. To mention one case, a young gentleman who suffered from congenital syphilis in infancy is now, at the age of twenty, threatened with keratitis. The right eye diverges and is almost blind, being just able to count figures. It presents evidence of slight choroidoretinitis and a crescent-absorption close to the outer margin of the disc. The left eye is now threatened with keratitis, but the vision is good. This patient is exceptionally intelligent, very fond of music, chemistry, etc., and can learn anything communicated to him by the ear; yet, though very anxious, he has never been able to learn to read.

The rarity of all forms of chronic skin disease was then referred to. There is no evidence that congenital syphilis predisposes to any form of chronic skin disease, except phagedemiac lupus, which we all recognize as syphilitic. There is no evidence of the simulation of the common form of lupus, psoriasis, etc.

The vast majority of cases that have passed through the secondary stage enjoy good health, with nothing to indicate that they had ever suffered from congenital syphilis. There is nothing to indicate that there is any danger of the transmission of syphilis to the third generation.

Serious remote results of congenital syphilis are really very rare, and in spite of the number of published cases, they must be looked on as quite exceptional. The fear of such results is probably much exaggerated. As to the prevention of syphilis, the only way, in the belief of the speaker, is the promotion of early marriage. In cases of acquired syphilis, after the lapse of two years the risk of congenital syphilis in the offspring is very slight. It may be possible, at any rate in the case of the mother, for the risk to last for an indefinite period longer; still such is very rare. The speaker is not sure that he ever saw more than two cases of interstitial keratitis in one family.
It is very common for the first child to be syphilitic, and for all the rest to be healthy.

The difficulties in diagnosis are far greater than is generally believed, and many cases are so diagnosed that really are not so. It is unwise to trust to one's own observation unless the whole history can be ascertained. For example, an infant was covered from head to foot with an eruption which everyone who saw it believed to be syphilitic, and which rapidly cleared away without special treatment. In this case the child was the sixth of the family; no snuffles had been present, and the rash occurred as a sequel of vaccination.

Dr. Ashby (Manchester), who also opened the discussion, dealing with the lesions of the brain and other internal organs, spoke of the difficulty of diagnosing cases where the nervous system or the internal organs are affected. Cases may be considered as fetal, infantile, and tertiary (syphilistarda).

Great difference of opinion exists as to how far the nervous system may be affected during fetal life. Observations are very few and very doubtful as to the occurrence of gummata. Hennoch almost goes the length of denying that they occur, while Fournier may be quoted on the other side. A case of his own presented evidence of syphilitic meningitis having occurred during fetal life.

As to infantile cases, the case may be seen through the early syphilitic stage, and appear to be getting on well, when it may begin to suffer from fits. The fit is of the Jacksonian type, with, later, localised paresis. This paresis may spread to other limbs, and a spastic condition may supervene. The child becomes idiotic, and dies in a wasted condition. On post-mortem one finds syphilitic endarteritis with fluid under the arachnoid, and softening more or less general over the whole surface of the brain. Dr. Barlow has described a unique case with gummata on the cranial nerves.

The simple posterior meningitis of infants has been confused with syphilis. There is head retraction, vomiting, drawing up of the limbs, etc. Dr. Still has shown that these cases are due to micro-organisms.

Cases of hemiplegia in young children are very rarely syphilitic, but due to thrombosis or some such lesion.

In cases of chronic hydrocephalus, one often gets a syphilitic history, and one must admit that such cases may be syphi-
lich, though the great majority are not so. Syphilitic changes have been found post mortem in very rare cases only.

Changes in the cord and meninges may produce symptoms which simulate those of cases of pseudoparalysis.

The brain lesions of the tertiary period are tolerably well-known.

Professor Baginsby (Berlin), in the discussion which followed the reading of these papers, spoke of the occurrence of malema in early infancy, many cases of which are certainly syphilitic. In one case where a post-mortem was made, nothing definite was found till the testes were examined, and there in the vascular system were undoubted syphilitic changes.

Intestinal ulcers have been found in such cases, but are rare. Enteric syphilis with diarrhea is one of the worst forms. He could not remember any case of hydrocephalus or microcephalus which was undoubtedly syphilitic.

Dr. Telford-Smith (Lancaster) sent some notes collected at the Royal Albert Society for Idiots. Out of 500 cases examined he found only three acknowledged cases of syphilis, and only eight with undoubted stigmata, although a probability existed in many other cases. Probably the majority of cases, with a sufficiently strong hereditary taint to produce idiocy, die before reaching the age for admission, viz., six years.

Dr. Jonathan Hutchinson, Jr., spoke of a unique case of meningocele produced by a large gumma in the occipital lobe. The child was fourteen years of age, and on the upper part of the skull there was a pulsating tumor, the bones having been eroded from within. There was also double optic atrophy.

Enlargement of the liver and spleen and intestinal nephritis are all now recognized. Enlargement of the liver may produce obstruction of the vena cava.

Disease of the lymphatic glands may be due to syphilis, and may be difficult to diagnose from tubercular disease if other syphilitic lesions are absent.

Dr. Finlayson (Glasgow) also spoke of the difficulty of ascribing nervous symptoms to congenital syphilis. In hydrocephalus and other cases one often thought of syphilis but had
great difficulty in making up one's mind to ascribe the disease to that cause.

Dr. John Thomson (Edinburgh) asked whether others had noticed a tendency for certain organs and tissues to be affected in certain families. This had been suggested to him by five families:

1. Of twelve children only two survived infancy. Both had syphilitic teeth. Both were deaf.

2. Of ten children, five suffered from syphilis. Three died in infancy. Two grew to boyhood, and both suffered from multiple epiphysitis.

3. Father and mother were both exposed to infection. Of three children, all had snuffles but no rash. All were fairly strong at birth, but gradually wasted and died at ten, five, and eight weeks. A post-mortem was made on the third only, and extensive intercellular cirrhosis of the liver discovered.

4. Of four children, three suffered from congenital syphilis, snuffles, then rash, and later epiphysitis; very severe in the first two cases and affecting all the limbs.

5. Of seven children, five only survived infancy. Of these, four suffered from choroido-retinitis. Two were mentally affected and suffered from optic atrophy.

Dr. Jules Comby (Paris) emphasized the importance of early diagnosis and treatment. In some cases definite signs appear only after the lapse of several weeks (muco-plaques, ano-genital fissures, etc.) but in these cases a characteristic facies might sometimes be noted even before the occurrence of symptoms.

The pseudo-paralysis of Parrot is to be distinguished from obstetrical paralysis, which appears earlier, and spinal paralysis which appears later.

As to treatment, mercury by the mouth and by inunction, is usually very satisfactory, but in some of the later lesions iodide of potassium is advisable.

Mr. Jonathan Hutchinson, in reply (to Dr. John Thomson), said that a long series of cases in one family is very rare. As to the family of seven with five syphilitic, mentioned by
Dr. Thomson, he did not think the evidence conclusive that all five were really syphilitic.

As regards treatment, Mr. Hutchinson said that he uses specifics less and less, and does not think of pushing treatment as in acquired cases. If the child is very ill treatment must be pushed, otherwise symptoms should be treated as they arise. There is no reason for using specifics if the child appears healthy. Certainly they should not be used because an older child suffered from syphilis. A mercurial course in infancy may, and usually does, produce damage to the enamel of the permanent teeth.

As to the use of iodide of potassium, he never gives it to a child or man if he can help it. It produces lowness of tone of the nervous system, and should only be used when absolutely necessary.

Dr. Jules Comby (who spoke in French) in his paper on Movable Kidney in Children, said that he had been on the lookout for this condition for several years, and had been surprised at finding eighteen cases: two in the first year, six in the first ten years, ten after the tenth year. Of these eighteen there were sixteen girls and two boys.

Symptoms are usually absent, but there may be paroxysms of pain, or even occlusion of the ureter from twisting of the kidney, resulting eventually in hydronephrosis.

Treatment in most cases is unnecessary. If severe symptoms occur the treatment is surgical. Fixation of the kidney in one of the cases mentioned gave good results.

Prof. Baginsky (Berlin) read a short paper on Hospitalism and Atrophy of Children in which he controverted the idea of primary atrophy. Atrophy results from a primary inflammation producing changes in the intestinal mucus membrane. Cases of so-called primary atrophy are simply cases of starvation.

The paper was illustrated by a large number of lantern slides showing the changes in the mucus membrane.

Dr. G. A. Sutherland and Mr. Watson Cheyne on The Treatment of Hydrocephalus by Internal Drainage.
This paper was devoted to the description of a case in which a new method of treatment had been carried on.

The patient was a child, three months old, suffering from advanced hydrocephalus. The bones of the skull were widely separated, and mental and physical developments were at a standstill.

An incision was made over the lower angle of the anterior fontanelle. A small incision was made through the dura. There was no fluid in the subdural space. A small drain was taken composed of sixteen strains of catgut tied together at one end. The tied end was pushed between the brain and the dura; the other end was pushed through the brain substance into the ventricle. The skin was then stitched up.

Subsequent disturbance was very slight. On the sixth day, when the wound was dressed, the head was swoollen and tension absent. In fourteen days the frontal and parietals were overriding. Further notes show gradual diminution of the size of the skull. Later the right side, which had not been operated on, was found to be bulging, and four months after the first operation the same procedure was carried out on the right side.

At the present time, a month after the second operation, all the bones are overriding, and the child is in good health. In this case the foramen of Munro had evidently become closed.

Mr. Stiles said that he had operated on the same lines, at the suggestion of Mr. Watson Cheyne, in three cases. In the first case the child died of meningitis on the fifth day.

In the second a horse-hair drain was used. The wound was healed on the sixth day. Two months later the head was found to be bigger than before.

In the third case the child died the same night with a high temperature.

A post-mortem examination in the two fatal cases showed that, so far from the communication between the ventricles and the subarachnoid space being blocked, it was abnormally free.

Dr. Sutherland, in reply, said he believed the explanation of the disease lay in some obstruction to the exit of fluid
from the ventricles, though he admitted that such obstruction could not always be found post-mortem.

A rapid rise of temperature (to 105° F.) may result simply from the rapid emptying of the ventricle.

To be Continued.
Cycling and the Action of the Heart was considered by Dr. M. Mendelsohn in the Berlin Medical Society during a discussion on the hygienic value of wheeling. The following noteworthy statement was made: The effect which wheeling may have on the blood-pressure and thereby on the heart itself, is of the greatest importance. In his own practice, as well as in that of Prof. Oertel's, a large number of observations were made in which an unfavorable influence on the heart was caused by wheeling. The relaxation and functional debility of the cardiac muscle was easily demonstrated, and the number of sudden deaths during wheeling are increasing, due to cardiac strain. As another warning against the excessive use of the wheel—especially during childhood—we may mention the observations made in France, during the yearly enlistment of recruits. It was found that a large percentage of those recruits, who were expert wheelmen, had to be declared unfit for military duty on account of morbid changes of the heart muscle, or from the occurrence of marked changes in the spinal column, the thorax, etc.

The Treatment of Warts.—Louvel-Dulongpre advocates the following painless treatment, which also has the advantage of leaving no cicatrix: A concentrated solution of bichromate of potash in boiling water is prepared by gradually adding to the latter enough of the salt to make a saturated solution. On cooling, a certain quantity of the salt will again be precipitated. The supernatant fluid is to be applied once a day by means of a brush.—*Med. Neuigkeiten.*

The Treatment of Trachoma with a Solution of Iodine is recommended by E. A. Nesnامoff, who looks upon trachoma as a lymphoid saturation of the adenoid tissue of the conjunctiva, accompanied by the formation of follicles which are constructed like a net-work and possess a decided capsule in the majority of cases. The application of iodine has always been followed by extraordinarily good results; within two, at the
most three weeks, all the follicles will disappear and the conjunctiva returns to its normal state. A half per cent. solution of iodine in glycerine should at first be employed. After the conjunctiva has been painted with this two or three times, it becomes dry and the eye does not react as strongly to the irritant action of the iodine. Later on a 1 per cent. solution of iodine in white vaselin oil is used by Nesnemoff. Before applying the remedy the conjunctiva is dried with hygroscopic cotton. Only in the most intractable cases is it necessary to employ a 1½ per cent. solution of iodine, or to increase the strength to a 3 and 4 per cent. solution, according to the following formula:

B  Iodi puri .......... 2.0 to 3.0 (30 to 40 grains)
Ol. vaselin alb...... 100.0 (3¼ ounces)
Aeth. sulfur....... q. s.

Finally it should be mentioned that iodine dissolved in liquid white vaseline is one of the best remedies in purulent inflammations of the conjunctival sac.—Centralbl. f. pract. Angenheilk.

Eczema of the Lips caused by Mouth Washes and Tooth Powders, was observed by Prof. Weisser (Breslau) in a few cases. A boy, six years of age, was suffering for months from a squamous eczema, surrounding the mouth. All treatment employed proved unsuccessful; but as soon as the mouth wash was discontinued the eczema at once disappeared. A similar experience was had in a second and a third case. In a fourth, which occurred in a young lady, the affection had existed for two years, obliging the patient to continuously apply ointments. After all mouth washes and tooth powders which contained olive oil or peppermint oil were relinquished, a marked improvement of the eczema occurred. According to this, we are seemingly justified in ascribing to the ethereal oils, usually present in mouth washes and tooth powders, a bad effect on on dermal affections occurring in the vicinity of the lips and oral cavity.—Wien. Klin. Wochenschr.
ABSTRACTS

A CASE OF CHRONIC HYDROCEPHALUS DUE TO HEREDITARY SYPHILIS.

J. Heller (Deutsche Med. Wochenschr, 1892, xxiv., 74). In 1892 Heller published a "case of chronic hydrocephalus due to hereditary syphilis," whose history was somewhat as follows: In June, 1890, Heller applied the forceps to a primapara, thirty-six years of age, on account of inefficient labor pains. The fact that in a primapara of this age no rupture of the perineum occurred, was sufficient proof that the head of the child was not pathologically enlarged. As the infant did not thrive on artificial food, a wet nurse, previously carefully examined by Heller, was engaged. At first the child seemed to improve in health, but soon commenced to droop again; distinct symptoms of enteritis and of atrophy made their appearance, and toward the end of July undoubted evidences of a syphilitic exanthem revealed themselves, which disappeared under specific treatment (corrosive sublimate baths) and calomel three times daily. At the same time the general health improved (feeding was continued during this period by the wet nurse who had been apprised of the nature of the disease), and in the early part of October the child was apparently as well developed both bodily and mentally as the average child of the same age. At the end of January, 1891, Heller had opportunity of again seeing the infant, who then presented a perfect picture of hydrocephalus chronicus. The head was shapelessly enlarged, the face remarkably small, the forehead very high, the parietal bones bulging prominently outward in the form of a balcony; the great fontanelle was as large as a man’s hand, while the posterior fontanelle could be clearly outlined; the hair which had previously covered the head, the eyebrows, and eyelashes, in the normal manner was completely absent; the bald scalp was traversed by thick, blue interlaced veins, which showed conspicuously through the skin. The skull measurement at the chin and vertex and around the forehead at the level of the tubera frontalia, as well as in other diameters, exhibited a marked increase in size from the normal type. There were no convulsions. The mental condition of the patient was of an extremely low order. Antisyphilitic treatment (potassium iodide 1.0-2.0; 120.0, a teaspoonful three times a day, in all about 20 grs.) produced a retrogression of the symptoms, and in five months the patient presented no abnormal features. It may be mentioned that rachitis could be positively excluded. The case was decidedly one of hydrocephalus and syphilis, although it is true that the latter disease could not be proven (the father being unknown—the symptoms left little room for doubt on the matter). Nevertheless the questions might
be asked, may not a rachitic skull have been mistaken for a hydrocephalic head?

Did the patient really have hereditary syphilis?

Is it possible that such grave changes in the vessels could occur as we must suppose present in syphilitic hydrocephalus, the only preceding symptom of hereditary syphilis being a slight exanthem?

Both of these questions have been satisfactorily answered by time. Heller has followed the subsequent career of the patient, and has been able to see him several times each year. The child, who is seven and a half years old, has never had a symptom of rachitis; teething and the development of the osseous system took a perfectly normal course, and in fact at the age of from three to four he was to outward appearance large, strong, and very well grown, and free from convulsions, spasm of the glottis, etc. It may well be assumed that severe rachitis leading to hydrocephalus would have manifested itself in changes of the skull, as well as in other ways. Up to the close of his seventh year the child showed no further symptoms of hereditary syphilis, consequently all treatment was suspended. In the summer of 1897 he began to suffer from a bilateral ocular inflammation, an interstitial keratitis, which was appropriately treated. In August the child was again brought to Heller on account of a beginning bone affection which greatly affected the general health and presented the following symptoms: The skin and mucous membranes of the patient were anemic, although he had developed into a large boy for his age. By reflected light, an interstitial keratitis could be observed in both eyes; opthalmoscopie examination of the fundus of the eye was found to be impossible. The reflex was normal. The upper incisors (second dentition) presented distinctly Hutchinson's changes. The left half of the lower lip showed a formation with a lardaceous deposit resembling a condyloma. The left tibia below its tuberosity presented a swelling about 4 c.m. long and 2½ c.m. broad, which undoubtedly originated in the periosteum (periosteal gumma). On the left humerus was also a tumor, likewise a periosteal gumma situated anteriorly when the boy approximated the inner surface of the hand to the extremity about 1 c.m. above the epiphyseal margin; size, both in length and breadth, 3½ c.m. Circumference of the arm over the swelling 18½ c.m. (right arm 15 c.m., the skin covering the tumor was perfectly normal).

Treatment.—Immobilization of the joints; locally, mercury plaster; internally, potassium iodide (4.0-6.0, 260.0; a teaspoonful three times daily). When about 40 grs. of potassium iodide had been taken, the syrup of the iodide of iron was prescribed; the diet was carefully regulated; result, complete recovery. Heller took a Roentgen-ray photograph of this gumma at the height of its development, which gave an accurate representation. A shadow 6 c.m. long, resembling the segment of a circle, is seen in the skiagram at the site of the tumor lying on the inner side of the distinctly retained contour of the shadow of the humerus.

This shadow is 4-5 m.m. broad at its broadest point; its intensity is very variable in its different portions.

How can this shadow be explained? A tumor containing so little blood and lime salts as a gumma is not shown in a skiagram, or if it were
its form would be altogether different. Ossific changes, the formation of an exostosis, enlargement of the bone, could not be present. Apart from the fact that the clinical history, and its rapid disappearance are at variance with this conjecture, its demarcation from the normal contour of the humerus would not be possible in the skiagram. There can, therefore, be no doubt that the enlargement was due to a deposit of lime at the margin of the bone and the periosteal gumma. It is known that a solution of the lime salts takes place at the boundary of the bone in every periosteal gumma, the pathological designation of this being the so-called bone cicatrix; portions of the lime salts are then deposited in the gumma, so to speak, before they are absorbed. Thus the skiagram has reproduced with extraordinary fidelity a pathologic-anatomical process, corroborating the diagnosis and furnishing the proof that a grave form of hereditary lues was really present, which stood in an etiological relation to the previously appearing hydrocephala.

POISONING BY PETROLEUM IN CHILDHOOD.

C. Baron (Der Kinderarzt, 1878, ix., 73) says that we are already in possession of a comparatively large number of cases of poisoning by petroleum in the adult, from which we learn that the symptoms, which occur during the intoxication, are, on the one hand, dependent on the manner in which the oil is introduced into the body (whether by inhalation, by absorption through the skin, or taken by the mouth), and on the other hand, on the quality of the petroleum, whether it contained a large or small proportion of the "light" or "heavy" oils. The quantity of oil ingested seems of comparatively little importance. The symptoms when the vapor of petroleum is inhaled, especially if it is greatly concentrated by a lack of fresh air, are similar to those following illuminating and well-gas poisoning; they commence with a certain euphoria, but rapidly lead to unconsciousness, with appearances of cyanosis, vertigo, headache and vomiting. After an energetic rubbing with petroleum, which a man employed for the removal of itch, Lassar observed an extensive edema of the skin, ascites and albuminuria, symptoms which persisted for four months, when death occurred. When petroleum is administered internally, the patients usually present in part gastro-intestinal and in part nervous symptoms, the gravity and number of which seem to depend more on a certain idiosyncrasy and on the quality of the oil taken than on its quantity.

As regards cases of poisoning by petroleum in children, only a very few have been reported. One such case is described by Johannessen. It was a girl two years of age. She died with increasing somnolency and great respiratory difficulty a few hours after having taken an unknown quantity of petroleum. The autopsy disclosed an extensive atelectasis of the lungs, as well as hyperemia of the bronchi, but no pathologic-anatomical changes which could be assumed as the cause of death. Conrad reported the case of a boy not quite two years old, who, after swallowing an unknown quantity of petroleum, was attacked by giddiness, increased
frequency of respiration, lowered temperature, and rapid pulse. This ill-
ness ended after a few days in recovery. Conrad gathered together the
published cases and found five others of this kind in children of the ages
of eleven months to two and a half years, all of them recovered.

Baron gives the following short history of another case: On February
5th of the present year he was called in the afternoon to a child fifteen
months old, who, after having, on the day previously, swallowed an un-
known quantity of ink, had treated herself on the morning of this day to
about 50 grammes (over 1½ ounces) of American petroleum from a dam-
age night-lamp. The child coughed a great deal after this, and for a long
time had a deep dark purple hue. The endeavors of her relatives to pro-
voke vomiting by administering luke-warm milk, warm oil, salt and water
and finally soap-suds, were for a long time unsuccessful, but finally a
small amount of fluid, smelling strongly of petroleum was vomited.

After an enema had been administered, the stools, which had a strong
odor of petroleum, were obtained shortly after three o'clock. A quarter
after five o'clock the child was in the following condition: The patient
is of medium size, strongly built, and furnished with abundant adipose
tissue. The color of the skin is markedly cyanotic. Consciousness is
absent. The pupils are moderately dilated and react sluggishly to light.
No visible changes are found in the mouth and pharynx. The breath
has an exceedingly strong odor of petroleum, is stertorous and greatly
accelerated (fifty-eight to the minute). Over the bronchi, medium and
fine vesicular râles are heard. Pulse 162, irregular as to number of beats
and strength. Temperature 38.5 C. in rectum. The treatment consisted
of extensive irrigation of the stomach, and only after more than four litres
had been used did the odor of the petroleum cease to be detected in the
washings. Shortly after the employment of this measure, a warm bath,
followed by packing the body in sheets, was administered, and black
coffee, camphor with benzoic acid 0.025 (½ grain) were ordered at first
every hour and later every two hours. At six o'clock consciousness par-
tially returned, the pulse, however, was yet irregular, 156 per minute. The
breath still retained a strong odor of petroleum; respiration had become
somewhat slower (forty-five). A stool produced by a clysma possessed
the characteristic odor of petroleum. The child made a rapid recovery,
and on February 7th was well.

This case has many points in common with that reported by Conrad,
especially the increase and difficulty of respiration. Whether these symp-
toms are to be explained through a specific action of the petroleum on the
lungs, or whether it should be looked upon as due to the well-known
action of petroleum on the central nervous system, especially on the
centre of respiration, or whether the hyperemia should be explained as a
secondary symptom, the reporter could not decide. On the other hand
we are taught by this case that the absorption of petroleum by the
stomach and the intestine takes place only very slowly. The poison seems
to have been more rapidly taken up by the circulation and exhaled by the
lungs. Whether various kinds of petroleum would act differently as to
their absorptive powers, has not been demonstrated, but it seems likely
when we recall the ending of this case and of that reported by Johan-
nessen. At all events, we learn from this case that even though petroleum has been injected for a long time we should make an attempt to remove the poisonous contents of the stomach by copious irrigations and thus increase the possibility of an early recovery.

THREE CASES OF CONGENITAL DISPLACEMENT OF THE SCAPULA (SPRENGEL’S DEFORMITY).

Pischinger (Munch. Med. Wochenschr., 1897, xliiv., 1471) says that since Sprengel, in 1891, described four cases of congenital dislocation of the scapula, only about thirteen others have been reported, but no conclusions as to the cause of the deformity have been reached from their study. In reporting additional cases, the author at the same time examined critically all the cases on record.

Of the seventeen cases reported, eleven were on the left side, four on the right side, and two were not determined; the difference in the elevation of the two scapula, as reported, was 1½ to 6 c.m. (1½ to 2½ inches), the age one to thirty years (ten over eight years, one over fifteen years). The scapula was described, as a general rule, simply as raised in a vertical direction. Sprengel was the only one who described an oblique position, so that the distal portion was displaced somewhat downwards, and the base of the scapula formed an angle with the spinal column. As regards the distance of the scapula from the spinal column, the observations do not agree. A scoliosis was present in nine cases, in five the curve of the superior thoracic spinal column towards the deformed side was convex, in four it was normal. The upper extremity was in no case markedly restricted in its movements. In every case the raising of the arm above the horizontal plane was restricted but to a marked degree in only two cases. For this reason there is no record of muscular anomalies.

After describing three new cases the author makes the following comments: In all three cases the left scapula was raised, and its position to the vertical plane was unchanged, so that the base of the scapula fell pretty nearly in line with it and the spinous processes retained their symmetrical position. The size of the scapula, the height and shape of the lower and upper inner angle did not deviate. The left arm seemed further removed from the median line than the right; there was present, therefore, a hyperplasia of the body of the scapula. In the first and second case an oblique position of the clavicle, with a raising of its distal end, was marked but a difference in its length was not noted. All three cases presented enlargement and shortening of the neck, a greater depth of the axilla on the deformed side, the supra- and infra-clavicular indentations appeared markedly flattened, and in the first case, an apparent shortening of the left arm was quite noticeable. The first and third case presented a slight dextro-convex scoliosis of the upper portion of the thoracic spinal-column. As to movements, rotation, and raising of the arm to a horizontal plane, were both perfect. In the second case the arm could be fully raised, in the first only to an angle of about 120°; in the
former a slight sinistro-convex scoliosis became apparent, in the latter the existing scoliosis was increased and the scapula drawn nearer to the spinal column, without, however, changing its position in any other manner; in the third case, raising the arm could only be accomplished, even passively, as far as the horizontal plane. Raising the shoulder could always be accomplished, but only to a somewhat restricted degree. The muscles, however, were not the cause of this. Electrical examination of the muscles in this region, in the first case, showed normal electrical re-action.

Three cases of acquired elevation of the scapula, observed by Eulenburg, induced the author to consider it probable that the picture of a congenital elevation may be perfectly simulated by a traumatism or by a contusion (as in this case). Furthermore, it might be possible that the aspect of the symptoms, the position of the scapula, the direction of the spinal column, and the motility, could become modified and disturbed from diseases (for example—rachitis), and in older persons by static factors. For this reason, the etiology should be studied in marked cases and should be observed at a very early period. This has been done in Sprengel’s cases. He was told by the parents of two deformed children, that on birth, which proceeded in a normal manner, the left arm was fixedly thrown over the back. In the third case the child would bring the left arm into this position during sleep. As we find an elevation of the scapula in healthy children, when the arm is flexed and thrown over the back, Sprengel has advanced the theory that such a position might be produced by the uterine muscular tissue if only little amniotic fluid is present and that where this position is long maintained the elevation of the scapula is produced by a change in the muscles. Schlange, on the other hand, inclines to the view that the effect of amniotic adhesions are to blame. Two cases, reported by Koelliker, stand alone, in which an exostosis at the inner and upper angle of the scapula and extending anteriorly held the bone in the elevated position. An autopsy on a third case disclosed that the exostosis consisted of “the angle of the scapula itself which was slightly prolonged”; Koelliker then took Sprengel’s view and looked upon the slight exostosis present as a secondary development. Sprengel’s theory is very plausible. While the uterus in a normal condition is able to change every position of the fetus, is unable to do so in the absence of amniotic fluid. However, an abnormal position which remains till the beginning of labor, may be corrected intra-partum. The labor pains may possibly bring the arm, which was previously lying on the back, to the front. Accordingly, a normal position of the new-born may very well be reconciled with this cause of the elevation of the scapula.

Although Schlange’s theory can explain most of the phenomena, there is no slightest basis for it. In the report of cases there is no record of either groove-like impressions, and cicatrices, marks, and skin-lesions, or other defects, caused by amniotic bands. Assymetry of the skull was of most frequent occurrence, and it was sound that in every case the oblique diameter on the side of the elevated scapula was the greater one. As a support for the theory of an intrauterine lack of space, the bilateral pes valgus may be mentioned. The other deformities present are not
easily explained: Sprengel, one case of exostosis of a rib; Schlange, one case of trophic disturbances on the left side; Bolten, a total absence of the left radius and a rudimentary thumb on the right hand; Pischinger, one case in which the left mamma was larger than the right and the muscular tissue of the left arm was weaker than that of the right. Finally, Sprengel's theory is supported by the presence in the sister of one of his patients of a bilateral congenital luxation of the hip-joint; aside from this no deformities could be elicited in the history of the family.

Thus, the idea that congenital elevation of the scapula is caused by the fixed position in a backward direction of the arm, due to a deficiency of amniotic fluid, although theoretically determined and rendered probable is not positively demonstrated.

THE HYDROTHERAPEUTICS OF MEASLES.

Jurgensen (M. f. Wasserh., 1897-11-Der Kinderarzt, 1898-1x-80). A systematic antipyretic treatment is not indicated in the majority of cases. Exceptionally it may be necessary.

1. We are obliged to interfere when grave cerebral symptoms make their appearance together with a rapidly rising temperature: Coma, delirium, and convulsions.

It is safe to employ an affusion of cold water—not above 15° C.—of short duration, say for one-half to two minutes. The head and nape of the neck are to be especially considered.

Should the cerebral symptoms remain uninfluenced, younger children may be given a bath of 20 to 25° C., older ones a somewhat cooler one, of only five minutes duration at first; toward the end of the bath, a douche of short duration to the head and neck may be administered, using very cold water. The body of the patient is to be thoroughly rubbed; after the bath vigorous dry friction ought to follow. A little wine administered before and after the bath is to be recommended.

2. Interference is justified, if an extensive bronchitis accompanies a high temperature. In this case we may obtain good results from abstraction of heat, which should be regulated by the height of the fever. This should, however, always be followed by cold effusions to the back and chest. This treatment should only be carried out long enough to reduce the fever from its excessive height.

3. During a light attack of measles, baths when administered towards evening will alleviate the condition of the patient. These may be given from 25° to 33° C., and may be continued from 10 to 15 minutes. Following the bath, sleep will be sounder, and the cough will probably be somewhat modified.

The treatment of affections of the respiratory passages is of much greater importance. When the cough is hoarse and barking, the head of the patient should be raised; warm milk given internally, and as gargles, slimy decoctions are to be recommended; the nasal cavities should be kept free, and steam be generated in the sick-room. With this, Priesnitz' pack,
made with warm water, is to be applied to the throat, and this should be renewed only three times in twenty-four hours. Should the affection become worse, the patient is to be placed in a warm bath of fifteen to twenty minutes duration, and at the same time vigorous friction applied to the skin. When stenotic symptoms appear, an emetic is indicated; if this is not successful, an operation becomes necessary. An incipient capillary bronchitis, accompanied by high fever, should be treated by the methods above mentioned. Should the bodily heat fall below normal, abstraction of heat should not, of course, be practised. Deep inspiration should, however, be encouraged. This may be done by pouring very cold water in a stream having only the thickness of a centimeter (0.39 inch), on that part of the occiput where the medulla oblongata has its seat, from the spina occipitis downwards. If we are successful in tiding the patient over the immediate danger, we may later employ more plentiful effusions, in a full-bath, suitable to the degree of bodily temperature.

If we are unable to carry out these measures we will have to employ the cold pack. The arms should never be included. Where the whole trunk is enveloped, the feet should be kept warm by covering them with heated cloths, etc. As a rule the towels, which ought to be thoroughly wrung out, can be renewed every half hour. When the frequency of respiration is reduced and the forehead and abdomen are not burning hot to the touch, or when sleep comes on, the towels are not to be renewed until the indications for their use again arises.

As regards the hygiene of the skin during convalescence, the author orders a warm bath daily until the patient is able to leave his bed.
RHEUMATISM IN CHILDREN.*

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An attack of acute rheumatism in the adult presents three prominent symptoms—a swollen and inflamed joint, a high temperature, and a profuse acid sweat. This conception of the symptomatology of rheumatism, as it occurs in the adult, has so moulded the concept of rheumatism that for many years it was believed that only adults suffered from such attacks. Children do not have the same clinical symptoms as the adult. The swollen and acutely inflamed joint is very rare, even in later childhood, the temperature runs a much milder course and the acid sweats are seldom encountered. The investigations of recent years has shown that children are attacked with rheumatism more frequently even than adults, but the clinical picture is more impressionistic and the symptomatology more varied than is the case in older people.

Few diseases are as distinctly hereditary as rheumatism. Statistics of course vary as to the number of cases that may

*Read before the Louisville Clinical Society.
truthfully be declared to be inherited, but the best authorities claim that from 50 to 70 per cent. is not too high an estimate. It is of great advantage in all doubtful cases to inquire particularly into the family history.

As to the immediate cause of an attack, we are in the dark. Cold and exposure to dampness with a rheumatic diathesis will initiate an attack in a susceptible person. To explain an attack of acute arthritis occurring in an adult it may be necessary to fall back upon some microbe, but it is not much in evidence in children so far as the joint symptoms are concerned. Bad hygiene and food are factors in producing rheumatism as well as other diseases.

In childhood females are slightly more liable to rheumatism than males, and especially so to the chorea which frequently follows it.

The symptoms which are most characteristic of rheumatism are arthritis, endocarditis, and fibrous nodules. The symptoms which are suggestive are chorea, torticollis, tonsillitis, and erythema.

Arthritis is very mild, as a rule, and is often overlooked. There is very little swelling of the joint, perhaps no redness or flush, a temperature of 100° F to 101.5° F, and perhaps no complaint on the part of the child except at bed time, when the "growing pains" make themselves felt. "Growing pains" are often the precursors of endocarditis. Arthritis should not be confounded with the various affections of the joints dependent upon other diseases, such as syphilis, rachitis, tuberculosis, scurvy, and traumatic injuries to the joint. Infantile paralysis frequently begins with severe pains in the muscular tissues, but the subsequent progress of such cases is entirely different from that observed in rheumatism.

Endocarditis is much more frequent as a symptom and a complication of rheumatism in children than in adults. Valvular lesions are often discovered in children in whom it is difficult to get any history at all of a rheumatic attack. At times it seems that the valvular murmurs are due to a functional derangement of the heart muscle or the reparative processes are so great in children that the inflammatory exudate is absorbed. At any rate the development of a murmur in children is not of so great prognostic importance as in those who are older. One should be on guard against mistaking
anemic murmurs for an organic lesion and *vice versa*, for rheumatic children are usually more or less anemic. There are, as a rule, no subjective symptoms connected with the development of endocarditis, as the compensation is easily arranged in the young.

Pericarditis may also occur as the result of the rheumatic poisoning, but it is diagnosed only with difficulty. The tendency is towards recurrence, with adhesions between and obliteration of the pericardial sac, so that its recognition and treatment are important.

The fibrous nodule was first described by Barlow and Warner in 1881. They are small fibrous bodies, varying in size from that of a pea up to that of an almond. They occur more frequently at the back of the elbow or over the malleoli. In the few cases I have seen they were scattered over the body, principally near the spine and in the extensor tendons of the fingers, and were painful. Cheadle states that they occur only in rheumatism.

Chorea, torticollis, tonsillitis, and erythema are not so frequently overlooked as the symptoms which have just been discussed, for they are diseases which require treatment in themselves.

Their close connection with rheumatism is not so often remembered, consequently such a severe lesion as endocarditis complicating one of them may pass undiscovered.

Chorea has become more associated with rheumatism in the professional mind than the other three. The more accurate the history we obtain in choreic patients the more frequently shall we find that some one or more manifestations of rheumatism has preceded, accompanied, or followed the chorea, and no case of chorea should be treated without thorough examination of the heart, and at short intervals.

Tonsillitis is frequently recognized as a form of rheumatic infection and its treatment by anti-rheumatic remedies has usually been attended by the best results. The pain and discomfort, even of follicular tonsillitis, is much relieved by treatment along the same lines. In children, acute tonsillitis is more distinctly rheumatic than in adults, and it is very often found with the other manifestations of the rheumatic diathesis.

Several varieties of erythema are closely connected with
this protean malady, especially the erythema papulatum and erythema marginatum. I have seen the erythema marginatum more frequently in these cases than the erythema papulatum. Erythema nodosum, in spite of the local pain and soreness, is not a rheumatic affection and has probably no connection with that diathesis. Purpura rheumatica, which is classed by some authorities as an erythematous disease, is quite rare in childhood though it is seen not infrequently in adults.

Torticollis or wry neck is one of the local or muscular forms of rheumatism occurring in mild degree in many cases. It should be differentiated from caries of the upper cervical vertebra and the chronic form of wry neck associated with lesions of the spinal accessory nerve or eye strain, etc.

There are a number of other diseases which are often met with as complications of rheumatism, such as pleurisy, pneumonia, meningitis, but their claims to being forms of rheumatic involvement need confirmation. Rheumatic affections of the eye are not usually found until in adult life.

The diagnosis of rheumatism follows very naturally from what has been said. The mild arthritic lesions with very slightly elevated temperature, the pains in the extremities, growing pains, or a fever continuing for several days with no objective symptoms, should put us on our guard, especially if there is a history of rheumatism in the family. The occurrence of several of these symptoms in a child makes the diagnosis easier. It will be diagnosed more frequently if one remembers the various features of its clinical picture.

The treatment of rheumatism now is much more successful than it was formerly. Salicylic acid and the salicylates have given us a powerful ally in relieving the pain, which is the most distressing feature of rheumatism. How the salicylic acid acts is not well understood unless we accept Haig's hypothesis that it eliminates a stored up uric acid. It is an anodyne and at the same time an eliminating agent, in both of which respects it is preferable to the old opium treatment. As to the best method of administering salicylic acid there is some controversy. Salicylic acid itself is disagreeable to take, and produces such ringing in the ears as to be a dangerous drug for use in partially deaf people. Its compound with phenol, known as salol, is free from disagreeable effects upon the stomach, but the large proportion (40 per cent.) of phenol had
a bad action upon the blood and kidneys, especially of children who have an idiosyncrasy to phenol. Methyl salicylate, oil of wintergreen, is an agreeable preparation. However, the profession has about decided in favor of the sodium and ammonium salts. Personally, I prefer the ammonium salicylate, as it is much less disagreeable to take than the sodium salt, and the ammonium tends to neutralize the depressing effects of the salicylic acid. It is not nearly so nauseating as the sodium salt and may be pushed rapidly until some result is accomplished. Either salt should be largely diluted with water when taken, as the disagreeable taste is thereby lessened and the water aids in eliminating morbid material. Some cases, however, are unable to take salicylic acid in any form. In them the relief of pain is best effected by antipyrin, phenacetin, or lactophenin in small doses.

While neither the salicylates nor the coal tar preparations cure the rheumatism or prevent endocardial lesions, yet they relieve the most distressing features of the case, and by rest in bed in bad cases we help to prevent the endocarditis.

Profuse acid sweats are very uncommon in childhood, but the fact that they occur in rheumatism would suggest the use of alkalies. Potassium is the alkali most used in such cases, but here again there is great liability of its depressing action on the heart, so that I prefer to use the calcium or magnesium hydroxids, as milk of magnesia, for the alkaline effect.

The special indications should be met by appropriate treatment, always looking, however, towards elimination as an aid to relief.

The tendency to recurrence of the rheumatic attacks should be met by general tonic treatment with cod liver oil, and the anemia by the various hematonics, as iron, arsenic, mercury, etc. Protection from cold and dampness by suitable clothing should be insisted upon, and every effort made to get and keep the child in good condition. The special tendency of rheumatism in childhood, even in its mildest manifestations, to affect the heart should never be forgotten.

With these general directions should be combined in all the forms of rheumatism the special treatment of that condition.

Dr. S. G. Dabney.—There is no doubt in my mind that a great many affections of the throat are rheumatic in origin;
it must be admitted, however, that many men of wide experience and observation claim that rheumatism is a consequence rather than a cause of tonsillitis, and the view has even been expressed by some writers that the micro-organism which produces rheumatism enters through the tonsil and emigrates from there. I can hardly think that the usual form of follicular tonsillitis is rheumatic; it seems to me it is invariably produced by a specific cause—a micro-organism; it is most likely contagious, as we often see it pass through an entire family. Rheumatism in such cases is, more than likely, coincident.

In the so-called rheumatic sore throat, which we see most commonly in adult life, pain sometimes comes on suddenly, the local manifestations are absent or insignificant compared with the severity of the pain; there is often considerable difficulty in deglutition, and wandering pains about the throat with very little appearance of inflammation.

I believe quinsy is usually rheumatic. There is some difference of opinion, however, upon this subject. I recognize that quinsy can hardly be brought into this discussion, because it is comparatively rare in children. I have seen it in one case—a child five years of age; there was a very marked quinsy with profuse suppuration. We must admit that rheumatism does not usually go on to the production of suppurative disease, but we see quinsy so frequently in adults who are distinctly rheumatic and in females with a history of rheumatism, that I believe it, more than any other form of tonsillitis, is apt to arise from rheumatism.

Dr. Carl Weidner.—That rheumatism occurs in young children is something that has not been recognized at all times, but is undoubtedly a fact; that it has not been recognized is probably due to the fact, as the essayist has stated, that the symptoms are less marked, not always so typical as in the adult. I have seen in my own practice a child, three years old, with a typical rheumatic arthritis. We know that cases have been recorded in which children of several days to several months old have had rheumatism. One case has been reported by Jaccoud in which rheumatism developed in a child a few days old, the mother having had the disease during pregnancy. Can we call this a hereditary trouble, or by what name should we designate it? Certainly we must admit that the
experience of close observers goes to show that there is something which may be transmitted from mother to child. The case I have in mind is very striking, the mother having had rheumatism, the child developed the disease shortly after birth. Again there is an instance on record in which one woman gave birth to twelve children, eleven of whom developed rheumatism at a tender age. How can we explain it except by the fact that some predisposition or tendency is transmitted from mother to offspring? Still we are largely in the dark as to the cause of rheumatism. Most authors agree that we have to deal with an infection, and the clinical picture corresponds to that more than anything else. The irregularity of temperature, the rise of temperature coming on with each new attack, the tendency to recurrence, the sweats, etc., are similar to many other infections.

The relation between chorea and rheumatism is of considerable interest. Until last Summer I was of the opinion that chorea was always looked upon as following rheumatism, but in studying the question I find that authors differ upon that point considerably. In my experience it has been that way as far as I have been able to make the diagnosis of rheumatism and chorea in relation to each other. I have found that chorea has followed or has developed in children who have previously had rheumatism. Of course, we have other causes of chorea besides rheumatism. Tonsillitis is frequently the only ascertainable symptom of rheumatism, as I am sure will be verified by Dr. Dabney. I had a case recently, a young girl, who complained of severe pain on swallowing. On examining her throat I found practically nothing to account for the pain; the tonsils were only slightly enlarged; she suffered with no tenderness, swelling, nor pain of the joints at the time, but gave a history of previous rheumatic attacks. I looked upon that as a rheumatic tonsillitis, and appropriate rheumatic treatment relieved the pain.

The good effect of remedies, such as the salicylates, salophen, etc., can only be explained by stating that they reach the poison, the cause of the disease. I further think that these remedies should be given as long as there are any active manifestations, no matter whether in the joints or the heart, just the same as gonorrhea ought to be treated as long as gonococci are present in the secretion from the urethra.
Dr. Florence Brandeis.—I would like to express my appreciation of the fact that so much attention is now being paid to the so-called growing pains. This is one of the greatest difficulties I have to overcome in my practice, the fact that mothers should pooh-pooh at the growing pains of childhood. Those who look upon rheumatism as following chorea may not have paid sufficient attention to the vague pains suffered by the child previously and which were always called growing pains.

Dr. P. F. Barbour.—Dr. Dabney misunderstood my remark as to follicular tonsillitis. I do not believe that this form of tonsillitis is closely connected with rheumatism, but the salicylates do relieve the pain and the discomfort in the throat. I believe follicular tonsillitis is a microbic disease, and that it is contagious.

As to Dr. Weidner's question, whether rheumatism is a microbic disease or not? This is a question upon which we cannot speak dogmatically. Rheumatism in the child is different in its symptomatology from the disease in the adult, and the germ theory does not explain it as well. Inflamed joints, fever, sweating, etc., we might ascribe to microbic infection, but in the rheumatic conditions of childhood we do not have these symptoms. Granting that a micro-organism is the cause of rheumatism, it is either very much milder in its action in the child, or the child is very much more resistant to its influence. The point Dr. Weidner makes, that we cannot have elevation of temperature without microbic infection, will not hold here, because we all know that in attacks of insolation, etc., there is an elevation of temperature possibly from morbific products formed in the body itself, and I do not see why the body cannot form in the intestinal canal or in the lymphatic channels a substance that would occasion an elevated temperature in the body. I do not know that the microbe is to be taken into account in the slight elevations of temperature from which children so frequently suffer.

As to whether chorea always precedes or always follows rheumatism. It has been pretty well settled that it may either precede or follow rheumatism. In this connection, Cheadle, who is the best authority on this point, has shown that chorea did precede, in many cases, an outbreak of rheumatism.

Haig seems to hold that uric acid in the body is able to
account for the symptoms of rheumatism as well as for a great many other conditions, and possibly reference to his work will answer Dr. Weidner's objection to lithemia being the cause of rheumatism, though I do not believe that it is the only cause of such attacks.
SYMPTOMATIC RASHES IN CHILDREN.

By David Walsh, M.D.,
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The proposition that dermatologists are not concerned with the general or constitutional causative conditions associated with many cutaneous maladies is now happily an exploded fallacy. While it is true that the science of bacteriology has given us much additional information as to the local origin of a large number of dermatoses, yet, on the other hand, it has furnished us with evidence of the far-reaching effects of bacterial products upon the various excretory organs of the human body. The symptomatic rash, however, —meaning by that phrase the rash that is due to some internal cause (which may be acquired or hereditary)—covers much ground outside and beyond the mere microbial field. Thus, for instance, there are the various drug eruptions, and the polymorphic skin troubles associated with rheumatism, gout, uremia and other general pathological conditions.

The relationship between diseases of the skin and of other systems—for that is the ultimate problem—is simplified if we regard the skin as one of a group of organs engaged in waste and accidental impurities from the body. If the waste products chance to be of an irritant nature, as happens with the gouty person, we have resulting inflammatory disturbances of the whole group of excreting organs, as shown by the nephritis, bronchitis, diarrhea and multiform skin eruptions associated with gout. If the accidental impurities are irritant, we have a similar chain of excretory irritations. Thus cantharidin absorbed from a blister may set up hematuria, and a dose of copaiba be followed by a copious skin eruption. Some of the exanthems, such as scarlet fever, may affect one or all of the excretory outlets, the damage in that case being due either to the actual micro-organisms or to their toxic products. From a consideration of these and kindred facts the present writer in 1890¹ published the view that some forms of dermatitis might be due to the excretory irritation (a) of micro-organisms, (b) of

¹ Med. Press and Circular, October 22, 1890.
bacterial products, (c) of drugs, (d) of the virus of various blood-borne diseases (e.g. gout).

The examination of a general proposition of that nature must necessarily be conducted in a cautious manner. Yet the writer ventures to think that any medical practitioner who approaches the study of the skin diseases of children with this theory in view will find the key to many phenomena that would be inexplicable in any other way. The most commonly accepted alternative explanation of symptomatic rashes has hitherto been the hackneyed assumption of reflex neuro-vascular disturbance. Let us apply that conveniently vague hypothesis to scarlatina. Both dermatitis and nephritis are undoubtedly due to a common specific virus, if the one be of neuro-vascular origin, why not the other? Yet we do not hear any such explanation offered as to the kidney trouble, it is only brought to bear upon the skin, where it simply describes without explaining and proclaims to the world the non-committal perplexity of the specialist whose vision is still limited by imperfect knowledge.

The subject thus introduced to the reader is so wide that it would be hopeless to attempt anything like an exhaustive treatment within the limits of the present article. Something, however, may be said upon the important subdivision of the toxin rashes.

The connection between gastro-intestinal disturbance in children and skin rashes, which may be of an urticarial, scarlatiniform or eczematous nature, is a well-established clinical fact. The assumption that the cutaneous trouble follows upon bowel-absorption is supported by analogy with the rash that often appears after the use of an enema in adults, a result that is almost certainly due to the absorption into the system of a toxin stirred up and perhaps rendered soluble by the fluid injected into the rectum. Probably the gastro-intestinal disturbance, in ninety-nine cases out of a hundred, is set up by improper feeding, by the agency of which the alimentary canal is loaded with indigestible food that irritates the intestine and no doubt favors adverse bacterial developments. At other times the bacterial products may be previously formed in the milk and other foods administered by the mouth, or, again, it may be contained in the milk of the mother, whose mammary glands, like all other excreting organs, are capable of elimi-
nating drugs, micro-organisms, products of micro-organisms, and sundry other poisons that may exist in the blood. It is interesting to note that all these observations bring one back to the practice of former generations which directed the clearing out of the irritant matter from the child’s bowel with a purge, and insisted upon the need of attention to the health of the nursing mother. Nowadays, however, we can push our minuter knowledge of etiology to its logical conclusions. For instance, we may treat the rash of a suckling child by attending to the septic uterus of the mother. Anyway, the great practical lesson to be borne in mind by the physician is that a rash occurring in children without obvious reason demands careful investigation of all the conditions of environment, not only as regards the offspring but also of the mother.

An interesting observation in this connection is the fleeting rash associated with diarrhea in children. The writer ventures to call this an “excretory” rash. It is obviously toxic in origin and is worthy of the close attention of all who are interested in infantile ailments. At present the subject is being investigated by the author, who would be glad to hear the experiences of readers of PEDIATRICS in this direction.

The “teething” rash that still represents the dominant pathology of the nursery is probably in most instances the result of toxic absorption. Errors of infant feeding are so common and universal that there is no need to fall back upon the natural process of dentition to account for symptomatic cutaneous troubles. In a not distant future it seems likely that “teething” as well as “chills” will disappear from medical etiology as relics of a barbarous and pre-scientific era. The modern description of a “teething” rash would be in most cases a symptomatic erythema due to absorption of a bowel toxin.

The rashes of the exanthems, one would imagine, may be due to irritation set up by the elimination either of specific organisms or of their products. In our present state of knowledge it is impossible to do more than advance a reasonable hypothesis. However, it seems likely that the early anomalous rashes associated with measles, scarlatina, and other specific exanthems, may be due to an early toxic erythema, apart from the later and severer dermatitis in which the actual specific micro-organisms may be more actively concerned. In this
connection it may be well to note that in ptomaine poisonings there is sometimes an early rash before the onset of the severe symptoms.

The introduction of serum therapeutics has put into the hands of any medical man a means of testing by actual experiment the effect of blood-borne bacterial products upon the skin. By the hypodermic injection of antitoxin he may have the whole theory of excretory irritation displayed before him. The resulting signs and symptoms may include multiform erythema, joint-pains, nephritis, diarrhea, and possibly (although not to the writer's knowledge) bronchitis.

One great practical deduction from the foregoing considerations is that any internal condition capable of inflaming the skin may also damage other and more vital organs, as for example the kidney. It is the usual practice to give prolonged courses of drugs known at times to give rise to rashes, arsenic, for example, and one is almost tempted to ask whether some margin of the immense amount of untraceable organic disease may not be caused by our mistaken essays in medication.

The theory of excretory irritation has been discussed by the writer in a small book in which further information may be found. Much additional evidence in its favor has recently accumulated. Thus a great deal of accurate knowledge has been gained with regard to the bacteriology of the blood. Arloing has shown the toxicity of normal sweat, while Salter has demonstrated the presence of tuberculin in the sweat of phthisical.

Hallopeau regards toxin as the direct cause of a vast number of skin eruptions. Neumann, of Vienna, holds the same view and says emphatically that drug eruptions are due solely to chemical action upon the skin. Kaposi attributes many toxic erythematous to the excretion of toxins by the cutaneous surface. Bouchard makes the very interesting observation that certain rashes are associated with dilated stomach, a fact which he accounts for by assuming the cutaneous excretion of toxin. Queiroto, of Milan, Eiselberg, of Berlin, and others

2. Excretory Irritation, Dr. Walsh, London, Bailliere, 1897.
3. Lancet, Sept. 4, 1897.
support the view of excretory toxic irritation. The elimination of the actual microbes by the skin has been maintained by Leloir, Linges, Gaertner, Brunner, Babes and others.

The study of the symptomatic rashes of childhood offers an inviting field of investigation, and one that has been to a great extent unexplored. To those who make a special study of the diseases of childhood, it is hoped that the foregoing remarks, however imperfect, may have some suggestive value.

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PEDIATRICS.

PRACTICAL POINTS IN THE TREATMENT OF ADENOIDS.

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THE symptoms produced by adenoids have been carefully studied, not only by the throat specialist, but by those engaged in the practice of children's diseases. The evil effects of their presence, immediate and remote, have received considerable attention, and the importance and necessity of removal at an early date is recognized and advocated by authorities. Numerous instruments have been devised; in the hands of their inventors good results have been reported.

The writer does not intend to add another to the long list, but simply proposes to give his experience in this line. Several years ago, through the courtesy of a friend, he procured a Mourré modification of Gottsteins' curette.

![FIG. I.](image)

The instrument was used with considerable success in a large number of cases and proved most beneficial when the obstruction was principally in the median line. The instrument was too large for small children, a smaller one was therefore ordered, and in return an instrument embodying the same principle, made by another firm, was received.

The Delstauche modification of Gottsteins' curette is shown in the accompanying illustration. The guard provided with the curved hooks is depicted thrown back. At the time of operation, the shield with its hooks is snapped up against the curette proper. The dotted line shows the manner in which the parts are separated and cleaned.

Its mechanism is simple and readily understood; it can be easily cleaned and kept aseptic, and with ordinary care does not get out of order.
With the smaller instrument, not only those in the median line but the growths situated laterally are accessible, and can be cleared away. In experienced hands, narcosis is not necessary as the operation is not painful and can be quickly performed.

Method of operating: As pictured in the cut, the little patient is placed on the lap of the mother or attendant, the head of the child being firmly held between the knees of the operator.

Thus placed the patient is under control. Frequently the mouth gag is dispensed with, and only in cases of unruly children is it employed. The further steps do not differ from those employed in the case of the ordinary Gottstein.

A further advantage in this position lies in the fact that the danger of blood entering the air passages is avoided. As a rule if no constricting collar or dress tends to obstruct the return circulation in the neck and head, the amount of blood lost is inconsiderable, and the bleeding ceases spontaneously when the child is quieted and allowed to sit up.

The after treatment is simple and consists in dropping or pouring small quantities of a normal salt solution or 2 per cent. solution boric acid into the anterior nares three or four times daily. Many writers consider the growths to be the local manifestations of a constitutional dyscrasia, and it has appeared to me that their recurrence may be prevented to a certain extent by the internal use of syrup of iodide of iron in doses of 5 to 30
drops with water three times daily for months, in addition to the nasal injections referred to.

A boric acid ointment (2 per cent.) made up with lanolin and lard, gently introduced by means of a probe and absorbent cotton, has given me good results in many instances.

_Prognosis._—A few words of caution may not be out of place. It is not well to promise the complete and immediate abrogation of symptoms by the operation. Mouth breathing, in many instances, is due not to one, but to many causes. In a small proportion of cases the mouth breathing is due to the presence of hypertrophied lymphoid tissue only, removal of which gives immediate relief.

Unfortunately, and this is particularly true of many of the older cases, others are associated with acute or chronic nasal catarrh, general thickening of mucous membrane of nose and throat, large tonsils, deviations of cartilaginous or bony septum, highly arched palate, imperfectly developed ethmoidal and sphenoidal sinuses, with deficient growth of the other bones in this vicinity because of imperfect ventilation of their air chamber, due to obstructed nasal respiration. It is thus evident that the removal of the adenoids remove but one element in the chain. The associated naso-pharyngeal catarrh disappears gradually; the thickening of the lymphoid tissue and mucous membrane of the nose and adjoining parts may take a number of months until a normal condition is reached; the enlarged tonsils, the deviated septum (bony or cartilaginous) must be remedied by appropriate surgical means.

Mouth breathing, persisting for months or perhaps years, has interfered with the proper development of the bone of the face as well as certain facial muscles. The muscular tone of the parts is lowered, allowing the jaw to drop, thereby apparently adding to the length of the face. It may be necessary to tie up the jaw, particularly at night, massage the facial structures, and teach the little patients to breathe through the nose in a proper manner. After the lapse of months, when proper surgical means have been employed, and the patency of the nasal channels fully established, the proper interchange of air between the sinuses and antrum, and nose, will aid in the further development and growth of the bones of face, and materially improve the child's appearance.

209 East Seventeenth street.
At the meeting of the British Medical Association recently held in Edinburgh the discussion as to the origin of eczema was deeply interesting. Mr. Malcolm Morris upheld to a great extent Unna's view that the disease is of parasitic origin, going so far as to declare that he was of the opinion that parasites were capable of producing eczema even if it were not actually a parasitic disease. Dr. Talcott Fox said "that since the promulgation of Unna's ideas on eczema he had determined to study again the condition known as eczema, unbiased, as far as possible, by the learnings of his early training. In offering a few observations on the disease in children, he said he did so because in them the problem was, in a measure, free from some of the complications met with in later life. In infants and children he saw two phases of eczema. The first was the state commonly known as eczema, which began most frequently in infancy on the scalp and descended thence over the face to cover, in some instances, the greater part of the surface. The second phase consisted of dry, reddish areas, with scanty adherent scales, separating along the lines of flexion, but these patches might also, when irritated, take on a vesicular form indistinguishable from the first phase. This was also a descending inflammation, beginning on the face or scalp, as a rule, which he used to call seborrhea, but that was, no doubt, a bad term. This was the common affection described by Savell as epidemic among children. These phases ran into one another so much that he had constantly the greatest difficulty in separating them."
next place he could find no cause whatever in the majority of children, for the patients were apparently in excellent health. He did not deny the influence of constitutional disturbance such as rickets or gastro-intestinal trouble in increasing the irritation and intensifying the inflammation, but the phases of eczema seemed to him to be essentially of local origin. It was possible that the future might disclose varieties caused by various parasites.” The theory of parasites as a cause of eczema is rapidly gaining ground. Professor Lassar, of Berlin, scouts the idea of irritation from internal sources being a cause of eczema and points out how favorable are the skin changes in eczema to the growth of saprophytic and pathogenic microorganisms.

Valude some time ago published the results of the systematic employment of finely powdered iodoform to the eyes of new-born babies, and claimed that the effects of this treatment were very satisfactory. The iodoform is dusted into the conjunctival sac as soon as the child is born, the lids having been first cleansed, and before the cord has been cut. The advantage claimed is that the powder, or some of it at least, remains in the folds of the conjunctiva for a considerable time after the application, whereas solutions immediately drain away. This procedure has been followed by a large number of medical men, but there are many physicians who are not in favor of the use of iodoform in cases of ophthalmia neonatorum. Dr. T. Bar discusses the treatment of infantile ophthalmia in the Journal de Clinique et de Therapeutique Infantile of August 18. The writer disbelieves in the efficacy of dusting the conjunctiva with iodoform, he also does not favor the use of boric solution, and is even of the opinion that perchloride of mercury from 1 in 1,000 to 1 in 4,000 does not wholly answer the purpose. According to his views the only
remedy which can be entirely depended upon is the old-time solution of nitrate of silver. The mode of its employment by Dr. Bar is one that is not usually followed. He uses a weak solution (1 per cent.) and administers it by instillation. It is stated that this method has been attended with much success, while other practitioners have given the same testimony, and, at any rate, it is certain that a weak solution has this advantage over a stronger, that one cause of local irritation is obviated. Dr. Bar advises the use of nitrate solution for all newly born children as means of preventing ophthalmia. Whether this is not carrying the preventive treatment to too great lengths is a matter of opinion, but the advice as regards the treatment of infantile ophthalmia is most assuredly sound.

The medical journals of this country are unanimous in condemning Professor Behring's attempt to create for his own profit a monopoly in the manufacture and sale of diphtheria antitoxin, and some of them express their sentiments in no unmeasured terms. It is a striking sign of the trend of public and medical opinion as regards matters German—brought about by a certain extent by the discourteous action of the German admiral at Manilla—that the scientific acquirements of their professors are no longer regarded with the feeling of almost awe that once pertained to them. There was a time, and not so long ago either, when the claims of German scientists to be considered not only as in the front rank, but so immeasurably superior in original research to the philosophers of any other country, were accepted without demur by the American people. We were content to sit meekly at the feet of our Teuton Gamaliels and to accept their utterances with the same childlike faith as the ancients gave to the words of the oracle of Delphi. There now appears to be a strong
disposition on the part of the medical profession to rebel against this thraldom and to enquire whether, after all, this faith has been altogether justified, and Behring's action has been the means of letting loose a flood of literature on the subject. The London *Lancet* of August 27, in a leading article deals with the question of Behring's patent in a temperate and common sense manner. After pointing out that the methods pursued by Behring and the company with which he is connected are both foolish and opposed to medical ethics, the writer says: "We would fain think that Professor Behring himself has had no active part in the proceedings to which his name is attached, and that he is not really desirous of exploiting his admirable scientific researches to his own advantage. May not the manufacturing company which undertakes the preparation of the serum under his auspices have been the active party in the business, swayed thereto by the commercial instinct, which has nothing in common with pure science. If, however, Professor Behring has been more than passive, and is indeed responsible for these repeated applications to the United States Patent Office, then we can only express our deep regret that he should have persisted in a course which has no parallel in the annals of scientific medicine. It cannot fail, as indeed has already been the case, to evoke much scrutiny into the precise claims of Professor Behring to the discovery of the immunizing serum. Such a claim on his part has been styled 'preposterous,' and it must be confessed that large as has been his share in the work, many others have contributed to it, whilst the whole foundation of 'artificial immunity' was laid by the genius of Pasteur. With even more justice might claims have been made for patents for thyroid extracts, not to mention many other remedies which have been freely given to the world by those who first discovered their properties. No one desires to see pharmacology entangled in a maze of monopolies or therapeutics dominated by patent medicines." We have no wish to try to belittle the good work
done in the German laboratories within the last generation, but it must be said that its scientific men have a rather too exalted opinion of their own attainments and a somewhat too contemptuous regard for the intellectual capabilities of members of another race.

The fact that good physical health in a child is of more importance than exceptional mental acquirements is becoming day by day more fully recognized. In all civilized countries the necessity for medical supervision of children—and especially of young children—in schools is freely admitted. The Germans were the first to initiate the system, and although their curriculum does not altogether commend itself to the American people, yet it contains many features worthy of emulation. The Board of Education in New York City has introduced several novel measures into the methods of training the young under its care. Among the most noteworthy of these is the newest experiment in education—the child study laboratory—commenced early in August, and now at the end of its first series of examinations. The object of this enquiry is to discover the variations from the normal standards of physique, variations from the normal standards of nervous conditions, the variations from normal time reactions in the simplest intellectual processes. These investigations are being made by Dr. H. S. Curtis and Dr. G. E. Partridge, of Clark University. A physical record of a child is first taken and then moral and mental tests are made. The result of these experiments has been in a manner somewhat astonishing, and has once more demonstrated the widespread prevalence of defective eyesight among the children of the public schools. Experiments made among a similar class of children in England, Germany, and Russia, gave practically the same results. The
hearing of the New York children was also ascertained to be poor, with great differences between the right ear and left ear. The data collected by Doctors Curtis and Partridge during these experiments are now being tabulated, and will doubtless provide some curious and remarkable reading.

Compulsory Infantile Vaccination no Longer in Force in England

One of the most retrograde steps ever taken by any government has recently been taken in England. For some considerable time there has existed among a small but extremely assertive class in that country a bitter and unconquerable opposition against vaccination. As we say, the individuals composing this anti-vaccination army were small in numbers, but what they lacked in numbers they more than made up by their activity and by the vehemence of their attack. In short, in this respect they resembled all fanatics, and now the government of England, in the words of the London Lancet: "The strongest of the century" has given way to their demands and has, in obedience to their wishes, virtually repealed the laws enforcing infantile vaccination. Here in this country the inestimable value of Jenner's great discovery as a preventative of small-pox is so universally recognized, that the feeling against it in England is very difficult to understand. Such conclusive proofs, too, as to its efficacy have been again and again afforded in every country in which the treatment is practiced, that the action of even a few in preaching an anti-vaccination crusade seems to us incomprehensible. Almost as incomprehensible is the course passed by the English Government, for at the same time as it renders compulsory vaccination of no effect, its members, one and all, assert their strong belief in its beneficial preventative results. The measure agreed upon, which, to all intents and purposes,
does away with compulsory vaccination of infants, provides that no parent will be convicted for refusing to have his children vaccinated if he proves to the satisfaction of the court that he has a conscientious disbelief in the principles embodied therein. There can be no doubt but that the loop-hole for escape provided by this clause will be readily seized upon, and that the active emissaries of the anti-vaccination league will so inculcate their opinions into the minds of the ignorant classes that conscientious scruples will quickly be immensely multiplied. Undoubtedly some of the prejudice against vaccination in England, especially among the poorer portion of the population, has been due to the carelessness of some medical men in performing the operation and also to the inferior quality of the lymph used. However, so far as the lymph is concerned, this cause of objection to vaccination has, since the introduction of glycerinated calf lymph been removed. A common sense view of the question appears to be that it is distinctly unfair to the better educated majority that it should, through the faddist opinions of a small and ignorant minority, be exposed to the dangers of a pestilence like small-pox, and it is probable that if instead of abandoning compulsory vaccination, those in authority in England had firmly stood out against the agitation and had resolved to enforce the law strictly, that the movement against it would have died a natural death. At any rate it seems safe to make the assertion that this country and other nations who have become convinced by experience that vaccination is a safeguard against the ravages of small-pox, will be very chary of following England's lead and of trying what Lord Lister calls "a tremendous experiment." It is interesting to note that Scotland and Ireland refuse to have the new law put into operation within their borders and that the English Government does not intend to alter the existing regulations in regard to vaccination in India, thus plainly showing that in the case of England it is taking steps at variance with its better judgment.
DISCUSSION: Rheumatic Heart Disease in Childhood, with special reference to (a) Physical Signs, (b) Prognosis, opened by Dr. D. B. Lees.

Dr. Lees said that acute rheumatism is a very serious disease in childhood; it is, in fact, one of the chief destroyers of children. Dr. Poynton had collected 150 cases of fatal rheumatic heart disease in children, and in nearly one-third (35 out of 115 available) the fatal attack was the first that had occurred. Also of 100 available cases 86 had exhibited symptoms of fresh rheumatism, indicating that death was due not simply to previous heart disease, but in part to a recent toxic process. Evidence of endocarditis is, indeed, usually found post-mortem, but is often slight, consisting only in slight thickening or small vegetations. In short, in carditis the fatal result is not usually due to endocarditis.

The late Dr. Sturges, in the Lumleian lectures for 1894, drew attention to the frequency and fatality of rheumatic "carditis," and stated that of 16 cases of severe type 12 died.

As to the nature of the lesion present, in all but one of Dr. Poynton's cases the mitral valve was affected, but in 76 the changes were very slight. Marked thickening and puckering were present in only 3 cases, and marked mitral stenosis in only 9. Marked mitral regurgitation was noted as present in 11 cases, but in some of these was probably due to dilatation only.

The aortic valve was affected in 51 of the cases collected by Dr. Poynton (or 34 per cent.), and in only 9 was the affection more than slight.
Pericarditis.—In only 9 of the 150 cases was the pericardium stated to be healthy. It was noted as adherent in 113 (75 per cent.), and in 77 of these (50 per cent.) the adhesion was complete over the whole surface of the heart. Severe pericarditis, therefore, was present in over 50 per cent. of all cases, and this must be a considerable factor in the arrest of the heart's action.

Any considerable effusion of fluid is infrequent. In only 38 (25 per cent.) is it noted that any fluid was present at all. In not more than 12 was the amount more than two ounces. The highest amounts recorded were five and six ounces, each in one case.

Effusion, therefore, plays a less important part than is generally supposed.

As regards the muscle of the heart, some morbid condition is noted in 34 of the 150 cases as soft, tough, fibrous, etc. If microscopical examination had been made, doubtless some change would have been found to be common. The visceral pericardium is part of the heart itself, being continuous with the fibrous tissue of the heart and with its bloodvessels, nerves and lymphatics. Further investigations are needed as to the changes in the heart substance. The possible results of the changes noted are two—dilatation of the heart resulting in over work and consequent hypertrophy. Dilatation is specially mentioned as present in 92 cases, and as marked in 56. Hypertrophy was present in only 58 cases, and in some of these may not have been genuine but apparent only (from inflammatory edema, etc.).

The conclusion to be drawn from these statistics are that endocarditis and pericardial effusion seem to play but little part in the mortality, the main factors being (1) pericarditis of plastic type, (2) dilatation of the heart.

As to the diagnosis in these cases, murmurs are of comparatively little importance. The important points are (1) friction, (2) evidence of dilatation. The first is generally recognized, but the second must be dwelt upon. The principal sign of dilatation is the increase in the deep cardiac dullness. Tracings were shown on the screen to illustrate the changes in the area of dullness produced by pericarditis and by dilatation, respectively. Dullness in the fifth interspace to the right of the sternum has been suggested as an important sign of pericardial
effusion, but this is not reliable, and may be due to dilatation of the right auricle. An extension of dullness in the second and third interspaces, as shown by Dr. Sanson, is a valuable sign. The tracings showed that dilatation is very common in rheumatism, and is not limited to cases of pericarditis. It may occur in subacute slight attacks, with no pericarditis and little joint effusion, and appears to be due to a toxic influence on the heart muscle. It may be compared to the similar dilatation found in influenza, which appears to be certainly toxic. In both cases dilatation may remain permanent, producing gradual cardiac failure and death some years afterwards.

As to the significance of murmurs, it can hardly be doubted that a persistent and unvarying systolic murmur at the apex, conducted into the axilla, is good evidence of mitral regurgitation, and it seems certain that regurgitation must tend to produce ventricular dilatation. But it is probable that a large part of the dilatation observed is not due to co-existing mitral regurgitation, but that both dilatation and regurgitation are persisting effects of the acute attack, the former due to a poisonous influence on the muscle, the latter to synchronous endocarditis. At autopsies the apparent damage to the mitral valve is too slight to account for the symptoms of cardiac failure.

As to a presystolic murmur, we must watch its development to understand its significance. The first evidence of mitral disease is always systolic, the second sound being still audible. Later the second sound becomes double (whoa-ta-ta). This doubling is only heard at the apex, and is, therefore, different from the reduplicated second sound heard at the base in cases of advanced mitral stenosis. No explanation of the method of its production is altogether satisfactory. Marked mitral stenosis is rare, is a slow process, and takes years to develop.

Aortic disease is rare. Regurgitation is usually very slight. A slight double murmur at the base is more probably due to pericarditis, and is then of great importance.

_Prognosis._—In conclusion, the prognosis may be said to depend not on the valvular lesions supposed to be present, but

(1). On the amount of dilatation.
(2). On the presence of pericarditis.
Dr. Poynton said the evidence was accumulating that rheumatism was a microbic disease. If due to a toxine, it is difficult to understand that the pericardium should be affected and the myocardium escape. The fact that effusion is slight and endocardial changes slight, it is an important indication that the myocardium must be affected.

Dr. Lindsay Sleven spoke of the occurrence of heart disease in chorea. In 96 of chorea, the heart was affected in 37, not affected in 54, not noted in 5.

Of these 37 the conditions noted were:

- Mitral, with persistent ventriculo-systolic murmur ............... 18 cases
- Mitral, with occasional ventriculo-systolic murmur............... 5 "
- Mitral, with aortic and ventriculo-systolic murmur .............. 4 "
- Mitral, with ventriculo-systolic and ventriculo-diastolic .......... 1 "
- Mitral and aortic, with ventriculo-systolic and ventriculo-diastolic. 1 "
- Accentuated second sound at base and reduplication ............ 6 "
- Irregular and excited cardiac action. 2 "

The immediate prognosis is on the whole good. The remote prognosis must always be grave, and sometimes very grave. It is not in childhood that we see the remote effects, but rather in youth and early adult life.

Dr. Still said that in cases of pericarditis from other causes one got very little dilatation; certainly much less than in rheumatism.

Cases of a polyarthritis, which is not rheumatic, but which somewhat resemble the rheumatoid arthritis of adults, occur in childhood. In these there may be complete adhesion of the pericardium, and yet during life no sign of dilatation could be made out. Again tuberculous pericarditis is a slow process. Adhesion occurs, and yet there is no dilatation.
In reply Dr. Lees dealt mainly with Dr. Ewart's criticism. He thought that in adults the same phenomena occurred, and the same explanation held good as in the case of children.

Dr. Ewart had said that if great dilatation took place, marked symptoms should be present, but he agreed with Dr. Fisher that very great dilatation might occur in the entire absence of symptoms. As to the point that dullness comes and goes, he could not say that this was so, in the absence of relapses, and in any case he did not see why effusion should be more likely to recur than dilatation.

As to the percussion signs, he believed that Dr. Ewart is misled by the use of a pleximeter with rapid percussion. Percussion should be by the fingers; it should be slow; and it should be light. If these points are attended to, the results of percussion are surprisingly accurate, and this is borne out completely by post-mortem investigation—by percussing out, passing needles through the chest wall, and studying their position.

The patch of dullness at the back, mentioned by Dr. Ewart, has not been sufficiently investigated to be of value.

The following were read by title:


A vote of thanks to the President, Dr. Joseph Bell, was proposed by Dr. Finlayson, and the proceedings then terminated.
ABSTRACTS

A CASE OF ANOPHTHALMOS.*

Thomas C. Evans, M.D. (Lecturer on Ophthalmology, Otology, and Laryngology in the Kentucky School of Medicine, etc., Louisville, Ky.)

The author said that Dr. Fowler recently brought to his office a male child, five days old. Examination showed entire absence of both eyes. Except that the palpebral slit was shortened, the ocular appendages were apparently normal, the conjunctiva and orbits resembling an orbit after enucleation; no punta lachrymalia could be made out; the eyelashes were normal in position and appearance.

This child was the sixth one born of healthy German parents, not related; four of the other five children are living, robust and well developed. The baby weighed eight pounds at birth, and except the anophthalmos, is perfectly developed; physical condition good.

The parents attributed the deformity to maternal impression. During the third month of pregnancy a neighbor met with a fatal accident, resulting in an ugly gash in the forehead, and the mother remained all day in the room with the corpse.

The accompanying photograph was taken five weeks later. At this time the child is well nourished.

Anophthalmos is a rare deformity, more frequently bilateral than unilateral. In 1887, Doctor Collins, of the London Ophthalmic Hospital, collected and tabulated all the recorded cases up to that time. His tables show a record of forty-three cases—thirty-one of bilateral and twelve of unilateral anophthalmos. Of the bilateral cases the oldest recorded was fifteen years; ten died in the first two months; one at fourteen months, and one at four years. In two cases the parents were cousins. In one family two out of three children were affected. In another three out of eight children were affected. Of the thirty-one bilateral cases four had other deformities; one a left-sided hare-lip; one a double hare-lip and six digits on each hand; one a palatine fissure, and one a deformed lower jaw with flexion of carpus and hand on forearm. Three were said to be very intelligent, and two were stupid. The majority were said to be healthy, and five were puny and below the average size. Post-mortem examination was made in nine of the thirty-one bilateral cases; no trace of an eyeball or anything resembling it could be found. The optic nerve did not in any case enter the orbit; in one it ended in a cone at the optic foramen; in another in a fibrous filament, and in five the chiasma was absent.

* Abstracted from proceedings of Louisville Surgical Society, original to be published in Louisville Journal of Surgery and Medicine.
In these cases most likely no primary optic vesicle has budded from the primary encephalic vesicle, or, having developed, it has failed to form a secondary vesicle. One peculiar fact is that, in the entire absence of the globe, the ocular appendages,—lids, conjunctiva, lachrymal apparatus, and muscles,—should reach such a state of perfection.

In twelve of the thirty-one cases tabulated by Collins, maternal impressions were mentioned as factors in the etiology. But if the anomaly be due to arrest of development of either the primary or secondary optic vesicles, as post-mortem evidence seems to demonstrate, the exciting cause must occur very early in pregnancy, because formation of the primary optic vesicle begins about the third week and the secondary about the fourth week of intra-uterine life. Consequently the question of maternal impression must, in this case, as well as in the majority of cases, be regarded as merely a coincidence.

"The rule for this class of cases seems to be that they are born of healthy parents, unrelated, and are themselves healthy, well formed, and free from other abnormalities. That it affects both sexes equally, and that in all probability none live to puberty."—Collins.

In discussing the case Dr. J. M. Ray said, in his examination of children at the Kentucky Institution for the Education of the Blind, he encountered a case of this kind in a female child aged thirteen years; a large, strong, healthy looking girl, physically well formed, above the average in intelligence for a child blind from birth. The ocular appendages were present, but like all cases where the eye is removed in early life, there was atrophy of the muscles of the face with shrinkage about the orbit. The mother and father were not related, and were both healthy.
Another child in the same family had something the matter with its eyes, but what the character of the trouble was he was unable to say.

While cases of anophthalmos are not common, many of them are scattered through medical literature.

**A CASE OF CURED CEREBELLAR ABSCESS.**

Beckmann (Berlin Klin. Wochenschr., 1898, xxv., 68). The case presented to the Berlin Medical Society is interesting from its rarity, for during the last decade about ten cases of cerebellar abscess only have been reported, in spite of the great advance in cerebral surgery. A girl, six years of age, was brought to Beckmann's polyclinic on October 14, 1897, suffering with violent pain in the right ear, the pain having lasted for five days. The acute otitis media present obviously originated in the enlarged and greatly inflamed pharyngeal tonsil; accordingly as a preliminary step this was removed. As the pain, contrary to expectation, did not abate, a paracentesis was twice performed on the following day, which, however, had no further effect than allowing the escape of a small quantity of mucus. When Beckmann saw the child for the first time, on October 21, a swelling and tenderness which had been observed over the mastoid process on the 18th, had disappeared. Temperature, 38.8° C. The mother reported on the 23d that the child had been on the previous evening taken with chills, besides complaining of continuous pain. The bony wall of the posterior auditory canal, near the tympanum was seen to bulge anteriorly, and on October 23 an opening was made into the mastoid process. Immediately below the cortical layer a rather large deposit of pus, about the size of a five-penny piece, of a greenish hue, was found; the posterior wall of this deposit was formed by the sinus. After opening the normal antrum, removing a few cells containing pus, and enlarging until healthy tissue was reached, the sinus was still further freely exposed but not opened. In spite of these measures the pyemic temperature and chills still continued, without, however, the appearance of metastasis.

October 27, sinus operation. The sinus was opened and cleansed of disintegrated masses of thrombi. On exposing the sinus still further into the neighborhood of the bulb, solid thrombi were met with. The anterior wall of the sinus was excised and tamponed. The course of the disease, subsequent to this operation, was afebrile, with the exception of a rise in temperature on the second day to 39.1°; the child appearing to be progressing favorably, was sent to its home on November 10.

However, on the evening of November 12 the temperature again reached 38.5°, the child complaining of headache and vertigo, with some stiffness of the neck. On the morning of the 15th vomiting came on and continued for three hours, there was also great complaint of throbbing in the temporal region. Temperature, 38.5°; pulse, 126. Vertigo, inability to stand, absence of paralysis, normal pupillary reaction, immobility of the neck. On the 14th the vomiting, continuing two hours again, recurred,
the temperature keeping steadily at about 38.6°. Headache complained of on the diseased side; localized in the temple; no tenderness on percussion; no slowing of the pulse.

Operation after enlarging the skin incision and the opening in the bone posteriorly, and splitting the greatly thickened dura, normal cerebral tissue protruded. Immediately after the first puncture with the scalpel the abscess, situated about 1 cm. from the surface, was struck, and about 5 c. of yellow, thick odorless pulse was evacuated. The cavity was drained with a drainage tube, wrapped in iodoform gauze. The disease then ran an afibrile course, free from any complications, while vertigo, headache, vomiting all disappeared. The drainage tube was removed on November 25. On December 20 the flesh wound had closed, and in such a manner, that it was considered unnecessary to apply a protection plate. The cheerful talkative mood of the child who laughed and joked while the dressings were being changed, although the pain must have been quite considerable, should be mentioned. This condition was noticeable from the time of the sinus operation up to the abscess operation, after which it again lapsed into its previous state of remarkable quietude, and showed a greater disinclination for the changing of the dressings. The patient has recovered with perfect hearing and with no bad results.

DEMONSTRATION OF A HYDROMENINGOCELE CONGENITA.

Leo (Verems-Veilage Zur Deutscher Med. Wochenschr., 1898, xxiv., 3). This demonstration took place in the Niederrhein Gesellschaft fur Natur-u Heilkunde at Bonn (15, 3, 97). The subject of the demonstration, a six year old boy, comes from perfectly healthy parents. Four other children of the family had died within the first two years of life from acute affections, and did not present any retardation in development. Immediately after the birth of the boy a swelling was noticed on his head, which was, however, only present when the child was lying down, and disappeared in the erect position. There has been no subsequent material change, and the tumor is said not to have increased in size. Its circumference is greatest after the child has been lying for some time in the horizontal position, that is during sleep; otherwise the patient has developed normally, both in body and mind, and has especially never had the slightest convulsion. He is at the present time well grown for his age, of an extraordinary bright disposition, and only presents on the top of the head laterally, and particularly to the left of the sagittal suture, a narrow depression, some centimeters long and apparently but a few millimeters broad, of an irregularly bulging configuration. It was not possible to demonstrate by simple palpation on account of the narrowness of the depression that this is a case not only of indentation of the skull cap, but also of true fissure of the latter. It seems, however, certain, as mentioned before, that on lowering the head a tumor of the size of an apple appeared at the same spot, which obviously could only come from the inside of the skull, proved by the fact that pressure exerted on the opening of the
fissure prevented its appearance. Therefore, it may be concluded that the above-described case is that of the cephalocele class, namely, with a hydromeningocele. This, in fact, was demonstrated by the narrowness of the hernial opening, the gradual even swelling and disappearance of the tumor, by its change of position, and its fluctuating contents. Although in most cases of cephalocele such grave sequæ as convulsions, idiocy, etc., appear, and the majority of children die during the early years of life, the prognosis in the present instance is certainly to be looked upon as relatively favorable, and it is to be hoped that this boy will continue to develop normally, and that the hernia will not increase in size. It is without doubt a matter for consideration whether the recurrence of the hernia should not be prevented by a compressive apparatus, as the action of variations of pressure on the functions of the brain might exercise a harmful effect.

A CASE OF LARYNGOCELE INTERNA.

H. v. Schroetter (Wien. klin. Wochenschr., 1898, xi., 86,) has had the opportunity, as he reports to the K. K. Gesellschaft der Aerzte in Wein (21, i., 98) for the past six weeks to observe a very rare affection of the larynx at Prof. v. Schroetter’s clinic. The patient, a boy eight years of age, was brought by his mother, who stated that his speech was indistinct, that he could not sing like other children, and that he complained of shortness of breath after much bodily exertion. At the examination, which was rendered somewhat difficult by the presence of hypertrophied tonsils (since removed), von Schroetter observed that the entrance to the larynx was blocked by a vesicular body, which he noticed disappeared at inspiration. It could then be ascertained that he was dealing with an apparently cystic formation, which was not attached to the epiglottis, but that the ventricle of the left side, and, as was discovered later, also of the right side took part in the formation of a tumor; that there, in consequence, occurred a ballooning of the tumor of the sinus of Morgagni, caused by the expiratory current, accompanied by distension and bulging of its medial wall, in effect an air tumor. The external examination of the larynx and trachea, which was from a knowledge of the appearance of air tumors in this situation, at once undertaken, did not reveal any bulging or protrusion on coughing. This case did not, therefore, belong to those conditions described as larynocele or tracheocele, but was the isolated appearance of an air tumor within the larynx, and which might probably be fittingly designated by the name of aerocele ventricularis or laryngocele interna. According to the descriptions given in anatomical text books, abnormal conditions of development and dilatations of Morgagni’s pouches, as they are known to be present as physiological formations in the ape, extending below the hyoid bone, are occasionally met with in the human body. Grüber has described two such cases. Virchow gave this condition the name of laryngocele ventricularis. Nothing is as yet known of the occurrence of vesicular formations, which confine themselves only
to the inside of the larynx. This condition must then be looked upon as congenital, even though anamnestic. Reports seem to be at variance with this view. The findings in the larynx are various, according to the force of the expiratory air currents. At times both pouches become distended in the act of expiration, and in phonation, at times only one, and in that case usually the left, or else both vesicles follow each other in succession. An operation is being considered from phonetic reasons.

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THE HEREDITARY TRANSMISSION OF FUCTIONAL AND ORGANIC DISTURBANCES OF SPEECH.

Gutzmann (Allg. Med. Central Ztg., 1898, lxvii., 159), according to a communication to the verein für innere Medicin at Berlin, has made made studjes of 2,228 speech disturbances, as regards the deaf and dumb. In the first place, he found that of 548 inmates of the Berliner Taubstummenanstalt, 45 per cent. were suffering from congenital loss of speech and hearing; 50 per cent. from acquired deafness and dumbness; and in 5 per cent. its origin was dubious. The number of scholars with hereditary loss of speech and hearing was 238; of these 41 or 17.2 per cent. were afflicted with hereditary taint; under the circumstances, not a very high percentage. It seeme... remarkable that the parents on both sides had been deaf and dumb in twelve out of forty-one cases. This was especially noticed in Berlin. A number of authors have given statistics regarding the marriages between deaf and dumb persons. In 724 such marriages, in which both parents were affected and producing 1,580 children, only 20 were found to be deaf and dumb (13.3 per cent.), an extraordinary small number. Again, taking into account the total number of marriages, the percentage was only 2.8 per cent. In 517 marriages in which either husband or wife was deaf and dumb, out of 1,220 children born only 7 or 0.6 per cent. were born deaf and dumb; in 104 marriages, in which both husband and wife were similarly afflicted, the percentage amounted to 4.6. As a general rule, therefore, direct transmission occurs in but a comparatively small number of cases, and when occurring is most frequent in those instances where both parents are deaf and dumb. The oft-repeated assertion that the deaf and dumb are most numerous among the Jews does not hold good as regards Berlin. In respect to the influence which marriages between blood relations is stated to exert in this matter, the investigations of Gutzmann tend to prove that the effect of such influences is greatly exaggerated, as out of 548 inmates the truth of the assertion was proved in only 4 cases. Interesting, in comparison with these figures, are those gathered from the 3,000 deaf and dumb scholars of the United States of North America. Of these about one-third were congenitally deaf and dumb, and of this number 467 or 50 per cent. were tainted hereditarily.

Congenital defect of the palate was observed by Gutzmann in 287 cases. The influence of heredity on this defect was but slight; it was
positively inherited in fifteen cases, and probably in two. A cross taint especially seems to have been present in these cases, as can be traced in a number of published genealogical trees. Thus Merkel reports the following history of a healthy pair and their children: Among the descendants of the man were two persons with cleft palates. Of the eleven children nine were still born, with absence of cleft palate, the two living ones having cleft palates. The man contracted a second marriage with a healthy woman, procreating four children, three of whom were born with cleft palate. Out of two normal sisters of this man one married to a normal husband, bore a son with cleft palate, who, in his turn, married a healthy woman, and among the seven children born to her were four boys without and three girls with a cleft palate. The other sister, too, marrying a normal man, had a family of seven, of which number five boys were born with and two girls without a cleft palate. Gutzmann himself has known of an instance of a cleft palate descending from the father to two sons, and of another case in which three brothers, descended from normal parents, and affected with cleft palates, were married to normal wives, the defect was not transmitted to any of their many sons, but only to the daughter of one. Stigmatismus nasalis, according to Gutzmann, is revealed in children who are disposed to this form of speech disturbance by a certain position of the teeth, "bowed teeth." The tongue impinges on the inside of the upper row of teeth as in pronouncing the sound "C," the air escapes at both sides, and thus is produced the lateral lisp (Leitwaert's Lispela). Out of 83 cases this position of the teeth was present in 99.3 per cent. Of these 60.2 per cent. were males and 39.8 per cent. were females. An hereditary taint was determined in 38.5 per cent. of the cases. This affection is frequently met with among the Jewish race, which is, as we know, inclined to this abnormal position of the teeth. In 589 cases of stuttering, studied by Gutzmann, the same faulty speech was found in 25.6 per cent. relatives, and in 26.7 per cent. of the cases was developed from unknown causes, while traumatisms, disease, imitation were the etiological factors responsible for the remaining cases. Out of 162 cases of stuttering, where relatives were also affected in the same manner, a true heredity could only be demonstrated in 29 per cent., the father having stuttered in 57 cases, of which number in 20 cases he had stuttered in youth or was already dead, the stuttering was handed down by the mother in 20 cases. Stuttering brothers and sisters numbered 115. Of 152 stammering individuals, 92 were males and 60 females. An hereditary taint could be established in 59 or 39.5 per cent., in 44 cases the father, and in fifteen cases the mother was affected with disturbance of speech. Dumbness with retained hearing power was observed by Gutzmann in 289 cases, 160 of those affected being males and 129 females. Heredity was established in 107 cases, or 37 per cent., and this always proceeded from the father's side. It is worthy of note that in 52.6 per cent. of cases in which dumbness not accompanied by deafness was present adenoid growths were discovered, these may probably be regarded as an outlet for scrofulosis.
THE IMMUNIZATION OF SICK CHILDREN WITH DIPHTHERIA ANTITOXIN.

Slawyk (Deutsche Med. Wochenschr., 1898, xxiv., 1885). While in former years house-infections of diphtheria made its appearance again and again the children's clinic of the Charité-hospital in Berlin, in spite of all preventive measures, this has totally disappeared since the children have been systematically immunized with Behring's antitoxin from the year 1895. As observation soon proved that the protection afforded by immunization under the conditions of a hospital continued about twenty-one days, the directions accompanying the antitoxin still contain the false statement that 200 units of immunization afford protection against diphtheria for eight weeks—the children were inoculated every three weeks from January, 1896. The method has now proved successful for two years; house-infection by diphtheria has not again occurred. This positive proof of the protection afforded by antitoxin is the more convincing as no hygienic changes, which could have reduced infection, were made during this time of observation. As the number of inmates also was not less than in previous years, and the gravity of the cases was the same, we are not warranted in assuming that the diphtheritic infection has been much more benign in recent years, and that a decrease in the mortality of diphtheria is to be thus explained. That we were able to keep the clinic free from infection during this whole time, in spite of the frequent occurrence of grave cases of diphtheria, was, in all probability due to the systematic immunization which was carried out. In order to note whether the so-called "mild" epidemic which at present exists would also absent itself from the clinic if the immunization was discontinued and to see if continuous immunization of all the patients in the hospital could be dispensed with, prophylactic immunization of the children resident in the non-infectious wards was discontinued in the early part of October, 1897. As early as the beginning of November an idiotic patient suffering from heart and kidney disease was stricken with diphtheria and very soon afterwards the children who were lying to either side of the first patient, and who were suffering from a tuberculous pulmonary affection, contracted diphtheria.

A fourth case of infection occurred in a child from the measles-ward which had not been regularly immunized after twenty-one days. These four children all suffered with diphtheria, which was demonstrated in cases one and four, aside from the culture experiment by the autopsy and animal experimentation. On the occurrence of these four cases, further inoculations for immunization purposes had been stopped, the latter was again resumed with the result that no infection with diphtheria has occurred for two and a half months up to the present time. Since the introduction of inoculation every three weeks, 500 children have been operated on 874 times in this manner and not a single one contracted diphtheria. It is therefore to be recommended that in hospitals where infection by diphtheria cannot absolutely be avoided the children should be protected against the latter by prophylactic inoculation, with an antitoxin containing 200 units of immunization. Unfavorable effects with this small amount need not be

PEDIATRICS.
feared. Early age or severe disease, excepting a moribund condition are no contra-indication.

AMAUROTIC HEREDITARY IDIOCY.

B. Sachs (Deutsche med. Wochenschr., 1890, xxiv., 33). In the year 1881 Warren Tay called attention to a rare condition of the eye in a child twelve months old. There were present "symmetrical changes in the vicinity of the macula lutea." The child was hardly able to hold up its head, and could only slightly move its limbs. The mental development was defective. In the first examination the papilla seemed to be perfectly normal, but in the neighborhood of the macula lutea a distinct, somewhat diffused white speck, more or less circular, was observed, in the center of which a reddish-brown point was to be seen, which appeared quite prominent on the white field.

The picture was altogether similar to that which we find in embolism of the central artery. Tay believed that he was dealing with a congenital change. At a second examination, however, five months later, he observed that the papilla had become atrophied, but that no change had occurred in the macula. Three years later he reports the appearance of three similar cases in the same family, and states that the ophthalmoscopic findings and the other symptoms were identical in all cases, furthermore, that the three children had succumbed to the disease previous to their second year of life.

This condition of the eye was observed subsequently by others (Magnus, Goldzieher, Hirschberg, Knapp, etc.). Without having had any previous knowledge of this, Tay fully described, in 1887, the first one of the above cases; it had given him the impression of a sort of idiocy, and interested him particularly because he was able to demonstrate extraordinary changes after death in the cells of the cortex. The hereditary character of the disease became clearer to him in the course of years, after having had an opportunity of observing in two families, in one family two, in the other four children, succumbed to the affection. Up to the present time twenty-seven fatal cases have been reported, Sachs having personally observed ten. The symptom complexus is unusually distinct. At birth and during the first few weeks of life, the children present a perfectly normal condition. After two to four or eight months the parents notice that they become indifferent; that they are not interested in their surroundings; that the eyes are rolled about; that they neither sit up, nor are they able to hold the head straight; and that few movements are carried out spontaneously. Contraction of the field of vision is frequently only surmised after months have passed, and then an ocular examination discovers this characteristic condition of the eyes. The weakness noticed in the extremities gradually increases, and thus the picture progresses to that of a more or less complete diplegia, generally of a spastic, occasionally, however, also of a flaccid nature. Convulsions are either altogether absent or make their appearance only occasionally. The reflexes are
either increased, normal, or decreased, the electrical reaction of the nerves and muscles remains normal. The psychical development is hardly noted in the slightest degree. At the end of the first year of life or only very little later, these children became totally blind; perfect idiocy was plainly marked; a condition of marasmus was gradually developed, to which the children succumbed before the end of the second year of life, one single child only remaining alive after this age. The main symptoms are, therefore:

1. A psychical defect, noticeable in the earliest months of life, which leads to total idiocy.
2. Weakness of the extremities resulting in total paralysis of a flaccid or spastic nature.
3. Diminution of vision, leading to total blindness, changes in the macula lutea, later, atrophy of the optic nerve.
4. Marasmus, which rapidly ends fatally.
5. Appearance of this affection in several children of the same family. Occasionally we also meet with nystagmus, strabismus, hyperacusis, diminution of hearing. The characteristic ocular finding is never absent.

The symptom complexus led to the supposition that an important disturbance in the development of the child's brain had occurred, and this was, in fact, found to be the case on examination. Widely disseminated disturbances were found to be present in the cerebral cortex, the spinal cord was also partially involved, and the retina markedly so. The large pyramidal cells were absent to a great extent in all the regions of the cortex, or were markedly degenerated. Are we, however, dealing with a primary degeneration or with such changes in the cells as are found in the retardation of development? The practical absence of normal pyramidal cells supports the latter view. With regard to the degeneration of the spinal cord, which was observed by Sachs, he thinks the view justified, that he was dealing with a defective disposition of the spinal segments of the pyramidal tracts. If we wish to harmonize the changes found in the spinal cord with those of the cerebral cortex, a secondary degeneration of the pyramidal tracts must be conceded the whole disease, however, should be explained as a faulty disposition of the central nervous system in many directions.

What is its etiology? This is totally obscure. In the history of Sachs' cases there was no mention of syphilis or alcoholism in the parents. In other instances the parents were blood relations, were affected with grave forms of psychoses in their families, or gave a history of traumasisms during pregnancy. One fact only is clear, that this affection makes its appearance especially in children of Jewish parentage. The family characteristic is furthermore extraordinarily prominent in every case. The affection is more or less intimately related to other family affections, but should, however, on the other hand, also be placed in a separate class from these. It can only be mistaken for the common congenital idiocies in those cases where the characteristic ocular disturbances, and the rapid course of the affection are overlooked. It greatly resembles the congenital family diplegias, but these may also be distinguished by bearing in mind
the factor just named. The eye-symptoms of the affection under consideration, on the other hand, remind us greatly of family affections of the optic nerve, although hereditary syphilis probably plays a prominent part in these, and also it makes its appearance very much later in life. There are also certain resemblances to hereditary spastic paralysis, Friedreich's disease, and to hereditary cerebellar ataxia (Nonne-Marie). We may yet succeed in clearing up their relationship.

ON FUNCTIONAL NERVOUS AFFECTIONS IN CHILDHOOD.

Saenger (Munch med. Wochenschr., 1893, xlv., 249). These affections were considered by Saenger, in the Aerztl. Verein, at Hamburg, (r, 2, 98) and attention was drawn to the fact that hysteria, in the first instance, and more frequently even neurasthenia, was often met with in childhood. Saenger had great facilities for observation in a large private practice besides the opportunities afforded by an enormous clientele visiting the eye clinic of the Alten Allgemeinen Krankenhaus during a period of eight years. It seems remarkable that the greater number of neurasthenic children applied at the Poliklinik on account of visual defects, which were diagnosed as "nervous asthenopia."

Saenger divided his material into four groups: (1) Neurasthenia. (2) Hysteria. (3) Neuro-hysteria. (4) Hereditary neuropathy psychopathic (nimderwerthigkeit). The symptoms met with in these groups are the following:

1. Anemia was present, as a rule, instability of the psychical equilibrium, anxiety, rapid fatigue, complaints of cardiac palpitation, vertigo, precordial distress, increased vaso-motor irritability, a feeling of dissatisfaction, constipation, insomnia (a difficulty in getting to sleep, pavor nocturnus), frequently also a tremor of the eyelids when the eyes were lightly closed; occasionally true phobias.

2. Greater intelligence than is usually found in neurasthenics, a lurking, watchful, sly facial expression, stigmata as in the hysteria of the adult, monosymptomatic phenomena; aphonia, contractures, paralysis of the extremities, cough, tremor, anomalies of carriage (hysterical scoliosis, torticollis), blepharo-spasm, ptosis, hemichorea; in rare cases amaurosis.

3. This is the form most frequently met with in children, presenting manifold phenomena and variously combined interesting symptoms. There is only slight intelligence, indifference; pains are complained of in the head and eyes, nervous asthenopia is present, also photophobia, contraction of the field of vision, absence of the conjunctival reflex, absence of the pharyngeal reflex, enuresis, somnambulism, hallucinations.

4. Hereditary reflex, frequent convulsive seizures during the first years of life, later conditions resembling tic in the form of grimacing and choreic movements; great peevishness and sensitiveness, stubbornness, violent temper, afraid of being alone; involuntary naughtiness, viciousness, strong egotistic qualities, with a tendency to torture man and
beast. These mental defects, frequently accompanied by retarded bodily development, and also by imperfectly balanced brain power.

Between these groups all transitional forms may be found. Boys and girls are attacked in about equal proportions. The age at which they are most usually affected is between ten and fourteen years, testifying to the unfavorable influence of our present methods of teaching and schooling.

Prognosis is favorable in the first three groups, unfavorable in the fourth.

Theoretically considered, there is no sharp dividing line between hysteria and neurasthenia. Moebin's old definition of hysteria, according to which all those morbid changes of the body are hysterical which are caused by imagination, is not at present accepted, as stigmata, anomalies of the reflexes, contraction of the visual field, are frequently not even known to the hysterical individual, and for this reason cannot be referred to the imagination. Of what, however, the abnormal functional changes in the nervous system consist, we have not as yet been able to say. Saenger views hysteria as a neuropsychosis, while he attributes neurasthenia to some process of exhaustion. The faculties of the neurasthenic patient do not possess the power to recuperate as rapidly as those of the healthy individual, they are therefore exhausted very early and in a measure, the individual organs are less enduring, weaker, unable to carry out the demands made on them. The cause of this morbid condition may be found in defective environment, in early mental maturity—which is frequently forced, in childish ambition, over-pressure of modern education, and in the early necessity of earning a living—depriving the patient of sufficient sleep and relaxation. The medical supervision of schools by physicians appointed for that purpose, who are sufficiently versed in the bodily and mental organization of the child, would be of extraordinary benefit in this direction.

In the treatment itself we must advocate taking these children from school, giving them the opportunity for recuperating, improvement in diet, and by ordering general neuro-toxic measures, douches, cold rubbings, baths, electricity, energetic suggestions as to psychical development, but never by hypnosis.

DISCUSSION.

Zenker took up the subject of hysterical scoliosis. Children permit one side to droop; this deviation may be distinguished from Pott's disease by the absence of all torsion. In addition to this, the easy rectification, and the other hysterical symptoms accompanying it, should be taken into consideration. In these functional diseases of childhood, over-burdening the mind and poor hygienic school conditions are decidedly of greater etiological importance than heredity. Similar deformities are met with in ischias, an affection which also frequently rests on a hysterical basis.

Hess emphasized the fact that hysteria and neurasthenia are often complicated in children with some organic nerve affection. He had seen cases of true infantile spinal paralysis complicated among other conditions with hysteria, chorea minor, and with neurasthenia cerebralis.
NONNE pointed out that very frequently the monosymptomatic form of hysteria is met with in children. Sensory disturbances in hysteria are certainly not, as has been frequently asserted recently, an affect of treatment, suggested to the patient by the examination; it is rather a very important objective symptom. All the various forms of neurosis which occur in injured laborers may also develop in children after traumatisms. In one case such convulsive seizures occurred in a boy after an injury to the toes by a nail on which he had stepped while bathing; the case was looked upon as one of tetanus traumaticus, until a diagnosis of a "traumatic neuroses" could be later made. In other cases Nonne observed ataxia, aphasia, contractures, paraplegias, etc., a further reason why we should proceed with the greatest care in adults as regards the explanation of this symptom complexus.

Nonne is a great friend of hypnosis, from which he had frequently obtained, in over 300 cases, surprising results, but never any injurious effects. As children are easily influenced by suggestion physiologically, hypnosis is readily induced, and the latter form of treatment is frequently of great importance, for the very reason that the one symptom, usually the only symptom of disease present, can be removed in one sitting. Electricity also acts only as a suggestion.

LIEBREICH drew attention to the point that it is possible that individuals, functionally diseased as children, may perhaps furnish the main contingent of those cases, which, later on, come under observation as traumatic neuroses. The most prominent symptoms in neurotic and hysterical children are found in the oculo-pupillary region, for the reason that the eye, according to Saenger's theory, is the most abused organ. Here we have to deal with the following symptoms especially:

1. Contraction of the field of vision, accompanied by a lowered function of adaptation of the retina, that is, a slower recuperation than in the normal state. 2. Disturbances of vision (a) through psychical influence; (b) slight disturbances and small variations of accommodation, for example, in the same child a slight myopia of 1 D today, after a week, hyperopia with astigmatism; (c) double vision appearing occasionally, causing little disturbance; (d) differences in the size of the pupil, one pupil being at times larger, at times smaller than the other; immovable pupil (rarely); 3. Disturbance of sensation, and the corneal and conjunctival reflexes; in such cases we must not forget that where the cornea and conjunctiva is diseased (ulcus, macula, phlyctenula, etc.), the reflex will be abolished over the diseased areas, while it may be present over the healthy portions. These symptoms may rapidly disappear when healing takes place; an anesthesia of the cornea, however, is, in many cases, present for years after all other stigmata have disappeared.

LENHARTZ called attention to the fact that a typical simulation may also be carried out by children; hysteria has also been diagnosed where at the autopsy, cysticerci in the brain were found to be the cause of the symptom complexus.
Aly thinks that it is of especial importance in the treatment of these cases, that the physician makes an imposing impression on the child; corporal punishment occasionally gives very satisfactory results.

Krause is opposed to this form of treatment and mentions a case from English literature where the physician administered a slap on the ear to a child, which was, in his opinion, hysterical, the patient immediately falling over dead; a tuberculous focus was found to be present.

Voigt mentioned a case in his own practice where, during the administration of a cold douche to a girl believed to be hysterical, such an attack of asthma was induced that the patient was only kept alive with the greatest exertion.

Rumpf does not believe that the physician is justified, personally, to chastize the child; he may, at the most, recommend such educational treatment to the parents.

A CONTRIBUTION TO THE ETIOLOGY OF INFANTILE CEREBRAL PARALYSIS.

Nartowski (Przegląd lekarski, 1897, No. 31. Centralh f. Kinderheilk, 1897, iii, 130) observed a case of infantile cerebral paralysis which could be referred to a traumatism occurring at birth. The birth was unexpected (Sturz-geburt) and before assistance could be procured the child was born, striking the floor with its head. Five days after birth convulsions of the right half of the body appeared, which lasted four days intermittently. The child then remained well up to the fifth month, when, suddenly, right lateral convulsions appeared, which also afterward affected the left side of the body. Since then these paroxysms occur every three or four weeks, presenting the picture of a genuine epilepsy. The patient also daily experiences light attacks, which only involve the right lateral half of the body, commencing in the facial muscles and then passing to the upper and finally to the lower extremities—Jacksonian epilepsy. Finally attacks of so-called petit mal are also observed, which occur ten to sixteen times a day, and are characterized by disturbances of consciousness of only short duration.

The boy, five and a half years of age, who has a healthy and robust appearance, presents distinct traces of an old rachitis, and a weaker development of the right lateral half of the body, which is especially noticed in the facial muscles and the bones and muscles of the upper and lower extremities. The arm is held in the position of adduction, the forearm and hand in that of pronation. The foot assumes the varoequinus position, and is dragged a little in walking. There is also present a disturbance of speech, namely, some motor aphasia.

Unquestionably an intrameningeal hemorrhage occurred at birth, which caused an injury to both motor and speech centres within the cortex of the brain, and caused a retardation of its development.
A CASE OF DISSEMINATED SCLEROSIS IN A BOY NINE YEARS OF AGE.

Z. Schabat (St. Petersburg Med. Wochenschr., 1898, xxiii., 20). This affection is a disease of middle life. It has often been reported, it is true, that its prodromal symptoms are first recognized in early childhood, that in other cases the affection is congenital. However, sclerosis enplagues is met with but seldom in the very old and in children. For this reason it is interesting that a physician of the experience of Sachs should mention as his youngest patient a boy fourteen years of age, who is said to have first contracted the disease when ten years old. And particularly so, as the case deviated somewhat from the usual course.

The patient is nine years old, his parents, respectively, being forty and forty-one years of age, having been married for fifteen years. They have had eight children, the fourth of whom is the present patient. Before and after his birth, three brothers and sisters have died in the first few months or years of life. The mother has aborted once. A sister, four and a half years old, is still alive and healthy. There is no trace of syphilis in either parent. No nervous affections ever occurred in the family. The patient was born at full term, was healthy at birth, and nursed by his mother. He first began to walk at two years of age. He had passed through an attack of both measles and scarlet fever. The latter ran quite a severe course, edema was not observed, however. At eight years of age the patient was sent to school; he was bright, and learned to read in the course of the winter. Even at this time (one and a half years ago) the parents noticed a tremor in both of his hands. The weakness and tremor of the hands gradually increased, so that the child became unable to eat alone. Shortly after this his legs also became weak and his speech affected. The patient frequently fell down, contracting a waddling gait, throwing his legs about. When walking the boy himself noticed that he could run more easily than walk slowly. At Christmas his father took him to the bath, where he became faint, commenced to vomit, and was taken home in a greatly debilitated condition. From this time on the disease progressed rapidly. About two weeks before Easter of the present year the patient had another fainting spell; he remained unconscious about eight days, then he again improved.

Status praesens, May 15th. The patient is of moderate build, and fairly well nourished. The color of both skin and mucous membranes is normal. There is no asymmetry of the skull. The movements of the head are normal in every direction. The pupils are of normal size, and react well to light. The functions of the ocular muscles are normal. Nystagmus is observed on movement of the eyeballs in a horizontal direction. The fundus of the eye is normal. The upper branches of the facial nerve (forehead, temples,) are normal. The right naso-labial furrow is somewhat less marked than the left. The right angle of the mouth is slightly depressed. The patient is unable to whistle. When the cheeks are blown out the right is less distended than the left. There is a great flow of saliva from the right angle of the mouth. There is present a pariesis of the lower branch of the right facial nerve. The tongue, when
protruded, deviates somewhat to the right; there are fibrillar twitchings. The masseters are normal. The patient has good sight and hearing. The uvula is straight, motility of the arches is normal. The tactile sensation and that of pain in the face is normal. Speech is monotonous and hesitating; the patient rapidly tires of speech, mumbles his words, and, therefore, speaks indistinctly. When talking there is a tremor of the head. Deglutition is accomplished normally. The muscles of the right half of the thorax and of the right arm are smaller than those of the left. Pressure exerted on the muscles of the trunk and the extremities, especially the lower ones, is painful. The muscles of the right arm are relaxed.

The muscular strength of the upper extremities is much weaker on the right side than on the left. The right arm can only be lifted with an effort by the patient to the horizontal plane, during which action the chest protrudes anteriorly, and the whole trunk goes into a state of tremor. Even this position the patient is unable to maintain longer than a minute, and the arm is soon dropped. On making passive motion of the arm a marked rigidity is noticed, due to spasm of the extensor muscles. Both upper extremities present (rather more on the right side) a pronounced ataxia, or more correctly incoordination; the latter finds expression in the fact that every voluntary movement is accompanied by tremor, which is increased when the patient is aware of being observed, or when he is asked, for example, to touch a certain point with a pen (intentional tremor). The respiratory muscles of the chest are functionally normal. The pectoral muscle of the right side is more flaccid than that of the left. The spinal column is free from abnormities. The patient is uneasy when seated, bending the head to the right, protruding the chest, and leaning on his arms to keep himself from falling. At times the tremor becomes general, in the recumbent as well as in the sitting posture. He is unable to stand without being supported; even when supported with one arm the patient trembles a great deal, the trunk leans forward, and the legs are separated. He is able to stand a short time when supporting himself on two chairs with both arms. Locomotion, when his body is supported, is mixed, spastic-paretic-atactic; the right leg is raised with difficulty, the left is thrown forward; in the meantime the patient supports himself only on the toes. Crossing of the legs is frequently noticed. Walking and standing is still more difficult when the eyes are closed. The lower extremities are equal in strength. Contractures are more distinct here than in the upper ones. We are able to excite a foot clonus, Pes Equinus; when the patient is seated, or supports himself on the floor, the volar surface of the foot is on a plane with the leg, and does not form any angle whatever with the latter. Electrical
irritability is increased; when the peroneal muscles are irritated they go into a clonic spasm, and the tremor becomes universal.

The symptom complexus was so manifold that it could not be assigned to any known form, except to multiple sclerosis. We might, perhaps, think of hemiplegia spastica, or Little's disease; these, however, commence at a very early age, rather improve with time, and are characterized by a universal rigidity of the muscles. A tumor of the brain could not produce the intentional tremor, and would also not explain the other symptoms. There were absent, besides, pain in the head, neuritis optica, etc. Infantile paralysis has an acute beginning, generally runs a rapid course, and paralysis remains stable in all the extremities. Paralysis agitans is only met with at a greater age, and the tremor in this case is also more regular and more rhythmic. Hysteria can be excluded, on account of the gravity and stability of the symptoms. The case reminds one of primary spastic paraplegia, but the condition of the upper extremities, the hesitating speech, the nystagmus, could not be explained by an affection of the lateral columns alone; besides all this, primary lateral sclerosis is acutely developed. Friedreich's disease is excluded by the absence of heredity, the increased knee-jerk, the incoordination of the upper extremities, the stammering speech, and the comparatively rapid course. The only diagnosis possible is disseminated sclerosis. The plastic paraplegia of the legs, the increase of muscular irritability (increased reflex foot-clonus) pointed principally to an affection of the pyramidal tracts, and as the disease commenced with a weakness of the upper extremities, it is to be surmised that the sclerotic foci were first formed in dorsal portion of the spinal cord, which implied a secondary degeneration of the pyramidal tracts.
THE CHOREA OF SYDENHAM AND ITS TREATMENT.

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Chorea has provoked much discussion, both as to its nature, the anatomical alterations which accompany it, and, finally, the therapeutic measures proposed to combat it. It has been agreed to divide these cases into two groups: essential chorea and symptomatic chorea. In the first group are comprised the chorea of pregnancy and childhood (non-paralytic); in the second are classed hemorrhagic, hysterical and congenital chorea. The frequency of chorea varies greatly, as is well known, with the latitude. According to all writers on this subject, it becomes more common as the distance north from the equator increases. But it is necessary to state here, as I have done several times in other places, that the opinion of those who deny the existence of the disease in tropical countries is erroneous. Rusz de Lavinson, Rochoux, Darcote, and others declare that they have never heard of the disease in the tropical climates they have visited. Bruner-Bey and E. Bertherand have, however, found it in
Egypt and Algiers. Besides this, it need only be remembered that the remedies for chorea, which have proved most efficacious and have been everywhere accepted, are those which were largely studied in my clinic in Brazil, as antipyrin, and those which were first used by me, as exalgene, asaprol, and, finally, analgene.*

Statistics show that chorea attacks girls more frequently than boys. Of the eight cases described in this article, five were girls. My personal observations have proved that the disease is wholly confined to the white race. Among my last eight cases were two mestizzos and one negro. According to the observations which I have published in several previous articles, children in the Arctic zones are subject to it also. Many attempts have been made to ascribe the disease to predisposing causes, which I shall briefly enumerate. In the first place, the influence of nutritive disorders, resulting from bad hygienic conditions or from the overfeeding of children, etc., has been cited. Morbid conditions involving the general health have been mentioned in this connection, such as anemia, chloremia, tuberculosis, scrofula, and rachitis. Other writers, regarding chorea as an affection of the nervous system, have sought to establish a connection between it and the neurosis in question. An attempt has thus been made to class it as a manifestation of hysteria. The same thing has been done in regard to neurasthenia, epilepsy, neuralgia, violent emotion and fear. Some writers have drawn attention to the fact that chorea sometimes accompanies the infectious diseases and sometimes it precedes them. Rellet and Barthez have declared that pneumonia is a predisposing cause; others, eruptive fevers, malaria, syphilis, etc. I feel obliged to include rheumatism, if we are to accept the result of these latest researches of these writers as to the nature of this disease.

* Moncorvo.—Antipyrin in Infantile Maladies and the Treatment of Chorea; Paris, 1888, Bierther.
Moncorvo.—The Treatment of Chorea by Antipyrin; Paris, 1889, Bierther.
Moncorvo.—A Case of Chorea Treated by Exalgene, followed by Cure.—Bell, Generale de Therap., Paris, 1891.
Moncorvo.—The Treatment of Chorea by Exalgene.—Bell, Generale de Therap. Paris, 1892.
Moncorvo.—The Use of Asaprol in the Treatment of Chorea.—K. m. des Maladies de l’Enfance, 1896.
It is well known that Achalme, and, later, Thiroloix announced that they had succeeded in isolating from the blood of patients affected with rheumatism a bacillus resembling the bacillus of anthrax, and which they cultivated in different media. When innoculated into animals it gave rise to symptoms resembling those of rheumatism. More recently, November 19, 1897, Triboulet, Coyon and Zodoc presented to the Société Médicale des Hôpitaux an interesting paper on the discovery of the bacillus of Achalme and Thiroloix. On the autopsy of an individual who had died of an acute articular rheumatism complicated by pericarditis and chorea, the result of the bacteriological examination made by these writers was entirely in accord with those made by Thiroloix. The bacillus, when cultivated in sterilized milk and in beef-tea, gave rise to aerobic and anaerobic cultures. The blood of the vena cava, a fragment of the mitral valve, and a segment of marrow, in sterilized milk alone, gave typical results in anaerobic cultures. These observers succeeded in isolating from the cadaver forty hours after death the bacillus which Thiroloix had five times isolated from the blood of patients suffering from rheumatism. If future researches establish the virulent nature of rheumatism, we shall, perhaps, be authorized in considering it one of the most common direct causes of chorea. In fact, the rheumatic nature of chorea has been maintained by a large number of authors. Roger admitted this from the first. Germain Sée recognized it in two out of five cases. Henoch, who accepted the opinion of Roger, believed that the rheumatic manifestations might even follow the chorea. In 108 cases of chorea, Hughes found 14 complicated by acute articular rheumatism and cardiac lesions. Senhouse Kirks reported 36 cases of chorea, of which 33 were complicated by rheumatism and 3 by cardiac lesions in the absence of rheumatism.

Duchateau found rheumatism in 451 out of 1,600 cases of chorea. Other writers have reported a smaller percentage. Burton-Browne met with it in but 15 out of 104 cases, Prior in but 2 out of 92, Herlingham in but 21 out of 80. More recently Charles Leroux reported only 18 cases of rheumatism or articular pains out of 80 cases of chorea.

From an etiological standpoint, I classify the cases I have personally observed as follows:
Preceded by rubeola (measles):

- 2 yrs. before chorea, 1 case.
- 5 " " " 2 "
- 7 " " " 1 "
- 3 " " " 1 "
- 6 " " " 1 "
- 8 " " " 1 "
- 10 " " " 1 "

Preceded by variola (small-pox):

- 2½ yrs. before chorea, 1 case.
- 6 " " " 1 "

Preceded by scarlatina (scarlet fever):

- 8 yrs. before chorea, 1 case.

Preceded by varicella (chicken-pox):

- 5 yrs. before chorea, 1 case.
- 6 " " " 1 "

Preceded by yellow fever:

- 2 yrs. before chorea, 1 case.

Preceded by malarial fever (marsh fever):

- 4 yrs. before chorea, 1 case.

Simultaneous with or preceded by hereditary syphilis, 5 cases.

In connection with articular pains and cardiopathy (heart lesions):

- Articular pains preceding chorea.................. 3 cases.
- Mitral insufficiency............................... 5 "
- Associated with tuberculosis...................... 3 "

Preceded by nervous affections:

- Fear............................................. 2 cases.
- Violent emotions............................... 1 "
- More or less precocious hysteria.............. 6 "
The same cases may be divided according to family antecedents as follows:

Grandfather with cerebral lesions...................... 1 case.
Grandmother very hysterical............................. 1 "
Mother hysterical........................................... 5 "
Mother sick with marsh fever during pregnancy........ 1 "
Father rheumatic............................................ 1 "
  syphilitic................................................... 5 "
  with cerebral and hemiplegic lesions................. 5 "
  alcoholic.................................................. 3 "
Maternal cousin hysterical................................. 1 "

Still another case which was treated and cured by analgène, and which was the subject of one of my latest publications in the *Journal clinique et thérapeutique*, was that of a girl 9 years old, whose illness had been preceded by severe rheumatic pains, accompanied by systolic murmurs at the apex of the heart. I could also mention many other cases perhaps more strikingly illustrative of the connection between rheumatism and chorea. I am inclined to believe that in a large number of cases this connection is not recognized, owing to the lack of precise knowledge, or because the rheumatism of infancy is almost always of so benign a type that it very often escapes observation. All pediatrists, however, are agreed that although in childhood rheumatism presents ordinarily a very mild form, it is often followed by visceral changes which are frequently very grave. In support of this etiological theory we are justified, it seems to me, in calling attention to the successful use by Valney and myself in the treatment of chorea of agents derived from the aromatic plants, such as antipyrin, exalgène, asaprol and analgène, remedies which play, as is well known, a very important rôle in the treatment of rheumatism. The cases which I here report are recent examples of this. Analgène, which I first used in 1896, has produced very successful results. It was administered in tablet form, in doses which varied from 2 to 8 grams (31 grains to 123.44 grains) in twenty-four hours, and was invariably well tolerated by children. Regarding the time necessary for the cure, I present the following table:
Cured in 18 days............. 1 case.
" " 23 " ............. 2 "
" " 27 " ............. 1 "
" " 28 " ............. 1 "
" " 32 " ............. 2 "
" " 45 " ............. 1 "

Total ............. 8 "

With some of these patients the total dose was much increased. For instance, the little girl before referred to was given 130 grams (2006. grains) in 50 days. Another child was given 174 grams (2,685 grains) in 45 days. Still another, 88 grams (1,358 grains) in 25 days. During the treatment muscular force and nutrition improved almost without exception in proportion to the gain in weight. No inconvenience was complained of. The urine was a red-yellow color. In one case examination revealed traces of albumin, but it was afterwards learned that this albuminuria dated from a period anterior to the admission of the child to my clinic.

The following are the cases to which I have alluded:

**Case I.—Hysteria, Chorea, Respiratory Murmur.**—
A. B., a girl of 11 years, mestizzo, was brought to my clinic October 29, 1895. Mother profoundly hysterical. Paternal grandfather died with hemiplegia. Father syphilitic. Of six children, one is dead. The fourth child, a girl, suffers from convulsions, with loss of consciousness. Labor was normal, patient being born at term, and well developed. Dentition took place at one year; patient walked at the same age. Rubeola at 10 years, followed some time after by varioloid. On October 18 she was seized with the hallucination that an old man with a long, white beard, entered her room and slept in her bed. She had previously been intelligent and fond of reading, but subject to emotional attacks, which ended either in crying or laughing. From this time on there was a gradual weakening of the mind, accompanied by difficulty of articulation and twitching of the muscles of the face and limbs of the right side. On the 27th, at 11 o'clock in the evening, she had a convulsion, without loss of consciousness but accompanied by screaming, which lasted until 3 o'clock of the following
morning. At 3 o'clock in the afternoon she had a second seizure. Speech became very indistinct, and there was constant twitching of the muscles of the right shoulder, arm, and leg. The latter dragged in walking. The choreic movements ceased during sleep. Weight, 30 kilograms, 600 grams (67.45 avor. lbs.). Dynamometric force, 10 kilograms (22.04620 avor. lbs.) at the right side, 11 kilograms (24.25782 avor. lbs.) at the left. Three grams (46.29 grains) of analgene were administered.

September 30, twitching of the muscles extended to the left side. Pulse irregular. Systolic murmur at the apex of the heart, extending to the left and upper part. Diastolic aortic sounds were present. The analgene was continued.

September 31, dynamometric force was 13 kilograms (28.6606 avor. lbs.) at the right side and 12 (26.45544 avor.lbs.) at the left. Nights calmer. No more weeping. Better articulation. Patient was able to write, although with some difficulty, her own name. Walked more firmly, and could even run without discomfort. Choreic movements greatly decreased. Analgene was continued in the same dose.

November 4, dynamometric force had reached 20 kilograms (44.0940 avor. lbs.) at the right and 25 kilograms (55.11500 avor. lbs.) at the left side. Speech was perfectly distinct. Marked decrease of choreic movements. The same dose of analgene was administered.

November 9, in conjunction with the choreic manifestations there was a recurrence of hysterical attacks which terminated, after a period of lethargy, in fits of weeping.

November 11, chorea entirely cured. Speech perfectly clear. Writing regular. Sleep calm and peaceful. There still remained occasional twitching of the shoulder, and from time to time renewed hysterical attacks, manifested either by moodiness or by forms of aphasia, which appeared only by suggestion while the patient was awake, for she was not at all hypnotizable. At this time trional proved beneficial in producing a calm, which promises to be lasting. But it is to the almost uninterrupted use of analgene that I attribute the cure of the chorea, of which no vestige remained by December 5.

Case II.—Hereditary Syphilis, Rachitis, Chorea.—Jean, 7 years old, was admitted to my clinic July 3, 1896. Her
father had frequent attacks of syphilis. Mother's cousin hysterical; mother very nervous. Had 3 miscarriages and 9 children of whom 3 are dead. During the third month of pregnancy with this boy, she fell as she was mounting a staircase with a large pail of water on her head. In the seventh month she had a lymphangitis of one leg. Confinement was without accident and at the normal time. Fifteen days after birth the patient developed a general cutaneous eruption. Had no digestive trouble; dentition normal. Walked at ten months. Rubeola in the second year. Excessively nervous from birth. For the last four months has had nightmares. June 9, was scolded by his mother for a trivial fault, and suffered a violent emotion. Four days later choreic movements appeared in the muscles of the entire right side. These contractions disappeared during sleep. The mind became weakened and articulation difficult. A change of character manifested itself in increasing sadness, indifference, and marked loss of affection. At the time of his admission there was continuous motion of the muscles of the tongue, which rendered speech almost impossible. The right side of the face was distorted by frequent muscular contractions. Voluntary movements of the limbs of this side were incoordinate. The muscles were very weak and the right leg dragged slightly. Dynamometric force was 5 kilograms at the right and reflex somewhat exaggerated, and 9 kilograms at the left. Rachitic deformities. Hyper trophy of the peripheral glands. Cicatrices of the lumbar region. Marked deviation of the uvula. Mother stated that six months previously patient's knee had begun to swell and became painful.

Treatment consisted in the administration of analgene in daily doses of 2 grams (30.86 grains) gradually increased to 4 grams (61.72 grains). The remedy was well tolerated, and the urine showed no trace of albumin. Cure was complete in 32 days. The child regained entire control of the muscles, and dynamometric force was restored to 10 kilograms (22.94620 avor. lbs.) on both sides.

Case III.—Hereditary Syphilis, Rachitis, Tuberculosis, Chorea.—Idilia, 9 years old, negress, was admitted to my clinic November 24, 1896. Mother healthy; father alcoholic. Seven children, of whom one was born dead. Four
others died young. Patient was the sixth child. During this pregnancy the mother suffered from marsh fever. Patient had coryza from birth, together with swelling and redness of the gums. Dentition about the twelfth month; walked at the tenth month. No convulsions. Rubeola in the fourth year. Marsh fever at 7 years. At the age of 2 years she became nervous, irritable, moody, and cried frequently. Six days before admission the muscles of the face, shoulders, and limbs were attacked with twitching and loss of strength. She walked with dragging and unsteady step. Patient showed emaciation, flabby muscles, swollen gums, and crooked and ulcerated teeth, rachitic deformities, chondro-costal thickening and double genu-valgum. Physical signs of pulmonary tuberculosis had manifested themselves two weeks before. Arhythmic muscular contractions of the body and limbs were continuous. The face was distorted by grimaces. Articulation was impossible. There was marked impairment of the intelligence, with loss of memory, psychic disturbances, and hallucination. Dynamometric force 11 kilograms (24.25082 avor. lbs.) on the right side, 9 kilograms (19.84158 avor. lbs.) on the left. Choreic movements did not disappear during sleep and patient awoke with a start. She was also troubled with insomnia. Sensibility normal, patellar reflex not exaggerated. Mother stated that 12 days previous to the appearance of the choreic manifestations the child complained of pain in the knees, but these joints showed no alteration. Pulse irregular; slight bruit de souffle at the apex of the heart extending to the left upper part. Weight, 20 kilograms, 22 grams (44.13 avor. lbs.).

Analgene was prescribed in doses of 2 grams (30.86 grains) every 24 hours. October 26 the dose was increased to 3 grams (46.29 grains). On the 29th improvement was marked.

By October 31 the choreic movements had diminished appreciably and disappeared during sleep. The movements were nearly under control, intellect brighter, and speech clearer. Hallucinations had ceased. Patient was animated, and good spirits returned. No vulvo-vaginal discharge. Urine yellow, with slight traces of albumin.

The daily administration of 3 grams (46.29 grains) of analgene was continued, and by November 3 the choreic manifestations had almost ceased. Voluntary movements were more nearly co-ordinated, speech less difficult, walking less
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unsteady. Muscular contractions ceased during sleep and intelligence increased. Dynamometric force 10 kilograms (22.0\text{.1620 avor. lbs.}) on both sides. The analgene was continued.

November 6, choreic manifestations disappeared and voluntary movements were entirely under control. Appetite good, sleep calm. Traces of albumin were still found in the urine.

November 16, chorea cured. The child walked and ran without the least inconvenience. Articulation distinct; mentality normal. Traces of albumin. Weight, 21 kilograms, 300 grams (42.95 avor. lbs.). Analgene in doses of 2 grams (30.86 grains) every twenty-four hours.

November 21, no traces of chorea. No albumin in urine. Analgene discontinued.

No further choreic symptoms have been observed, but the albumin, which had entirely disappeared during the administration of the analgene, was again found to be present in the urine some weeks after the discontinuation of the remedy. The albumin again disappeared after the use of the analgene.

Case IV.—Hereditary Syphilis, Rachitis, Chorea.—Joaquin Morales, 8 years old, born in Granada, was brought to my clinic November 18, 1896. Mother in excellent health. Neither she nor any of her family have suffered from a nervous affection. The father, a Spaniard, acknowledges syphilis, and is alcoholic. Eleven children, of whom 4 are dead. The oldest is 5 years old, the youngest 1 year. The mother says that all have suffered from cutaneous eruptions, coryza, etc. Patient is the seventh child. Pregnancy normal, labor difficult and prolonged (two and a half days), followed by profuse hemorrhage. Child apparently healthy at birth. Nursed by mother until he was 6 months old. Drank wine in excess at the age of four. No convulsions in early childhood. Rubeola at the age of five. Scalp covered with crusts from infancy. Dentition normal. Walked at 15 months. Six months before admission to my clinic muscular twitchings suddenly appeared in the right arm and leg. After three months these yielded to treatment but had returned 8 days before in greater severity, and involved nearly all the muscles of the body.

The child, who weighed 23 kilograms (50.70626 avor. lbs.) was thin, pale, and weak. Scalp still covered with crusts.
Inguinal glands somewhat tumefied. Rachitic deformities; inability to stand upright; body assumed grotesque attitudes owing to the constant arhythmic muscular contractions. Grimaces; speech much affected; dental erosions. Limbs weak, and voluntary movements incoordinated. Unable to lift a glass filled with water, still less to raise it to the lips. Gradual weakening of intelligence and memory. Twitchings did not cease during sleep. Dynamometric force 11 kilograms (24.2508 lbs.) on the left side and 8 kilograms (17.63696 avor. lbs.) on the right side.

Analgene was given in doses of 2 grams (30.86 grains) in twenty-four hours. On November 28 the dose was increased to 3 grams (46.28 grains). November 29, weight was 23 kilograms, 600 grams, (52.02 avor. lbs.). At the same time there was marked decrease of the choreic symptoms. Voluntary movements more under control; walked with less difficulty.

November 30, dose of analgene was increased to 4 grams (61.72 grains), and was well tolerated. An almost daily examination of the urine failed to show albumin. Analgene was continued up to December 13, when the chorea was pronounced cured. The child was fat and rosy, and had recovered speech and normal movements; ate well and slept calmly.

Case V.—Hereditary Syphilis, Rachitis, Tuberculosis, Chorea.—Aldemar, 8 years old, was admitted to my clinic October 4, 1886. Father rheumatic. Mother weak and hysterical; has had three miscarriages and eight children, of whom three are dead. One child, now 12 years old, had a stroke of apoplexy two years previously, followed by hemiplegia of the left side, now somewhat less severe. Another, 21 years old, is very nervous.

Labor normal; birth at term. Patient was slow in learning to walk. Rubeola at 1 year, variola at 2 years. No rheumatism. Was pale and emaciated, weighing only 23 kilograms, 500 grams (71.66 avor. lbs.). Rachitic deformities; asymetrical skull; dental erosions, hypertrophy of peripheral glands. Mother stated that the twitchings of the muscles of the face, tongue, body and limbs manifested themselves without prodromal symptoms. They were more pronounced on the left side, and increased in severity. Legs dragged in walking; face distorted by grimaces; inability to take hold of
objects; speech inarticulate; nocturnal hallucinations; no cessation of twitching during sleep; weakness of the intelligence and memory. *Bruit de souffle* at the apex of heart, extending to the left axilla.

Raucedo had been present for some time; inspiration was rough and blowing; no trace of albumin. Force dynamometric 12 kilograms (26.45 pounds) on the left side, 9 (18.85 pounds) on the right. Two grams (30.86 grains) of analgène were given every twenty-four hours.

December 5, decrease of choreic symptoms, and dose was increased to 3 grams (46.29 grains).

December 6, gait improved. Twitchings restricted almost entirely to left shoulder and arm; no albumin; analgène increased to 4 grams (61.72 grains).

December 9, chorea almost disappeared; walked steadily; could write almost as well as before illness; speech clear; sleep peaceful; no nocturnal hallucinations; patient happy and playful.

December 21, last symptoms disappeared; patient had good color; weighed 23 kilograms, 600 grams (52.02 avor. lbs.); appetite excellent; sleep quiet and prolonged; no trace of albumin. Analgène was continued in undiminished doses until January 18.

Choreic manifestations have not reappeared; weight increased to 23 kilograms, 800 grams (50.70 avor. lbs.); dynamometric force to 13 kilograms (28.66 pounds) on the right side. Analgène was always well tolerated. Total dose was 164 grams (2684.82 grains) in forty-five days. Urine was colored slightly by the remedy, but showed no trace of albumin.

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**Case VI.**—Hereditary Syphilis, Rachitis, Hysteria, Chorea of Sydenham. Bleorrhagic Vulvo-Vaginitis.—Georgina, 9 years old, was admitted August 18, 1897. Mother a Portugese; has had for years frequent attacks of polyarticular rheumatism, which confined her to her bed. Was also subject to attacks of hysteria. Father tuberculous. Of thirteen children five are dead. The little patient is one of twins, the ninth and tenth of the children; born in Portugal, and was brought to Rio de Janeiro at the age of three; nursed by mother; was always very nervous, especially so during the
past two years, the least emotion throwing her into a violent but short paroxysm; small-pox at 2½ years; rubeola at 5 years; yellow fever at 6 years.

Nine days before admission, a child in the neighborhood having died, she took part in the funeral ceremonies, walking beside the coffin and holding in her right hand one of the rings attached to it. After proceeding about one hundred yards, she was obliged to return to her home complaining of pain at the scapulo-humeral, humero-cubital, radio-carpal and knee joints of the left side. A slight rise in temperature followed. There were no external signs of inflammation. The febrile condition lasted five days. The morning after the attack her mother noticed frequent arhythmic contractions of the muscles of the left side of the face, shoulder, and limbs, accompanied by great weakness of the parts. Patient soon became unable to use a fork at table, and lost control of the lower limbs, through weakness and the lack of co-ordination of movement. This condition extended to the left thoracic region, and the twitching of the tongue interfered seriously with speech. The muscular contractions did not entirely cease during sleep, and hallucinations were frequent.

With the exception of the articular pains and the fever, all the symptoms increased in severity until she was admitted to my clinic. Hygienic conditions had been bad. Patient was pale and thin, weighing 20 kilograms, 600 grams (41.41 avor. lbs.). Muscles were flabby, the skin dry and rough, and the sub-muscular glands were tumefied. Rachitic deformities; skull elongated antero-posteriorly and contracted transversely. The palatine vault was hollow, the upper jaw projected. Incurvature of the diaphysis of the tibias; the inferior epiphysis enlarged.

The child had a sullen manner, ate scarcely anything, walked with painful difficulty, and could not articulate. Inco-ordinate movements of the limbs of the left side, and twitching of the shoulders and arm of the left side. Dynamometric force was 10 kilograms (22.04620 avor. lbs.) on the right side and 6 (13.22772 avor. lbs.) on the left.

Respiration normal. Heart beats irregular; slight systolic murmur at the apex, extending to the left axilla; pulse weak. The mother stated that patient had suffered for two years from a vulvo-vaginal discharge which was at first of a
greenish color but later became yellowish and less profuse. Inquiry as to the cause of this discharge revealed the fact that the child had contracted it from the mother, with whom she slept. Examination of the vulvar region showed edema and redness of the labia minor, which were bathed in a thick yellowish liquid, the region of the posterior commissure of the labia major being covered with a slight erythema. At first there was frequent and painful micturition, which subsided after a few days.

Microscopical examination of the vaginal discharge revealed the presence of the gonococcus of Niesser. Vulvo-vaginal injections of a \( \frac{1}{2} \) per cent. solution of permanganate of potassium, and analgene internally in doses of 2 grams (30.86 grains) every twenty-four hours, were prescribed.

August 20 the dose of analgene was increased to 4 grams (72.72 grains).

September 1 the twitchings had markedly decreased, and co-ordination of voluntary movements returned. The child was able to feed herself; speech became clearer, and she walked almost normally. Twitching during sleep and hallucinations entirely ceased.

September 6, weight was 21 kilograms (46.29702 avor. lbs.); appetite good; patient had better color, and was bright and playful. The vulvo-vaginal discharge had nearly disappeared.

Case VII.—Hereditary Syphilis, Rachitis, Chorea.—Marie, 11 years old, was brought to my clinic December 7, 1896. Maternal grandmother hysterical. Father died of tuberculosis. Patient was the first of three children, preceded by one abortion and one miscarriage. No convulsions; rubeola at 4 years; varicella at 5 years; external signs of congenital syphilis; dentition at 11 months; walked at one year. Two weeks previous to admission she was seized, without apparent cause, with twitching of the muscles of the trunk and shoulders, more particularly of those of the left side. Control of voluntary movements was lost; speech was impaired; walked in a zig-zag. Twitching continued during sleep.

Dynamometric force was 6 kilograms (13.22772 avor. lbs.) on both sides. Systolic murmur at the apex of the heart, ex-illa. Weight 24 kilograms (52.91088 avor. lbs.). Analgene
was prescribed in doses of 3 grams (46.29 grains) in the twenty-four hours.

December 11 dynamometric force 11 kilograms (24.25082 avor. lbs.) on the right side, 6 (13.22772 avor. lbs.) on the left. Condition of patient much improved, the body being almost free from choreic twitching and the movements of the arms more nearly co-ordinated. Speech had regained its clearness; sleep untroubled and quiet. Anaalgene was continued.

December 15, steady improvement. Weight, 23 kilograms, 500 grams (51.80 avor. lbs.). Child walked without the least inconvenience, and had regained control of her arms. The dose of analgene was increased to 4 grams (61.72 grains) in the twenty-four hours, and continued until December 30, on which date no traces of chorea remained. Cure was, therefore, obtained in twenty-three days, and the total dose of analgene amounted to 84 grams (1296.12 grains).

**Case VIII.**—Hereditary Syphilis, Rachitis, Hysteria, Chorea.—Girl of twelve and a half years, was brought to my clinic February 7, 1898. Mother hysterical. Father healthy. Patient was the second-born of eight children. Her eldest sister is very nervous. Birth was normal. Mother's milk supplemented by cow's milk. No convulsions. Scarlatina about the fourth year. Rubeola a year and a half later. Varicella about the seventh year. No cutaneous affection. At the age of six she began to have frequent attacks of headache, accompanied with nausea and vomiting. About a year later she was attacked with pains in the knees and ankles, these joints, however, showing no signs of alteration.

On January 8, while apparently in her usual state of health, she was seized with twitching of the muscles of the left side. These twitchings ceased during sleep, and increased in severity when the patient was observed. A few days later they attacked the right side of the body. All the symptoms which marked the cases just described were present.

When she came under my treatment she was unable to stand upright, to feed herself or to articulate. Sensibility was normal; the reflexes were a little exaggerated. Dynamometric force was 7 kilograms (15.43234 avor. lbs.) on the right side and 6 kilograms (13.22772 avor. lbs.) on the left. Weight, 21 kilograms (46.29701 avor. lbs.). She was thin and pale. The skull was
elongated antero-posteriorly; the suboccipital and cervical glands were hypertrophied, and there were erosions of the teeth.

Analgene was prescribed in doses of 2 grams (30.86 grains) a day. On the 16th the dose was increased to 4 grams (61.72 grains). Treatment lasted twenty-eight days. Three days after the administration of analgene the choreic symptoms began to disappear. At the last visit to the clinic the child held the body in perfect repose, walked without the smallest difficulty, spoke distinctly, was gay, playful, and had entire control of the voluntary movements. Weight had increased to 22 kilograms (48.50164 avor. lbs.) and the dynamometric force to 8 kilograms (17.63696 avor. lbs. on both sides.

The dose of analgene was gradually reduced, first to 3 (46.29 grains) and finally to 2 (30.56 grains) grams a day. Analysis failed to show any trace of albumin in the urine, and its color was but slightly changed by the analgene.

CONCLUSIONS.

From observation of the foregoing cases, and of others elsewhere described by me, I have drawn the following conclusions:

1. The frequency with which nervous and other symptoms are met with in chorea places beyond doubt their influence as etiological factors.

2. Hysteria appears to exercise a marked influence on the onset of chorea, so much so that some authors have regarded the latter as a form of it.

3. According to certain writers who have remarked the close connection between chorea and the infectious diseases common to childhood, it would seem possible that the former is but a secondary affection, the sequel of these virulent diseases.

4. On the one hand, the close relation between chorea and rheumatism, so long admitted by clinicians of the highest standing, and, on the other, the bacteriological nature of rheumatism as proved by Achalme, Thiroloix, Triboulet, Coyon,
and Ladoc, lead me to see in chorea only the cerebro-medullary tendency of a rheumatic infection developed in a hysterical or neurasthenic temperament.

5. Of the numerous remedies to which resort has been made in the treatment of chorea, I give the preference to those derived from the aromatic plants, such as antipyrin (the proper dose of which I have determined), exalgener, asaprol and analgine, whose curative action in the treatment of chorea I was the first to demonstrate.

6. While these remedies have been of undeniable efficacy in the treatment of rheumatism, it is equally true that under their action all choreic manifestations disappear within the space of from eighteen to fifty days.

7. My personal observations have assured me of the successful outcome of this treatment, at least in the case of children whose subsequent history I have been able to follow.
WHOOPING-COUGH.*

By R. B. GILBERT, M.D.,

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WHOOPING-COUGH, with its complications, ranks third in the list of fatal diseases of England and America. In London, during the past ten years, whooping-cough has caused more deaths than measles and smallpox combined. Dr. Edward Smith’s statistics showed that whooping-cough was the most fatal of all diseases in children under one year of age, and that 68 per cent. of the deaths from this disease occurred under the age of two years. The annual report of the Board of Health of New Jersey for 1897 showed that whooping-cough during the preceding four years caused more deaths than scarlet fever. (Whooping-cough, 1,196; scarlet fever, 922).

Whooping-cough has been recognized since 1578, when Dr. Baillou, of Paris, described an epidemic of severe cough among children to which he gave the name *tussis puerorum convulsiva*, and spoke of it as a disease not previously known. Epidemics were not common until about the middle of the Eighteenth Century, but the disease seems to have steadily increased since that time.

The explanation of the rapidly increasing epidemics in the last hundred years is, doubtless, the increasing facilities for intercommunication and the aggregation of people: railroads, public schools, especially the latter-day institution known as the Free Kindergarten, are some of the modern agents for disseminating contagious diseases, particularly those which do not confine their victims to bed.

Frequently a mother or nurse may be seen in a crowded street car with a child in a paroxysm of whooping-cough; indeed, the practice of many physicians is to send nurses out with such patients to give them an airing. A popular idea

*Abstract of a paper presented to the Section on Pediatrics at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colorado, June 7 to 10, 1898.
exists that whooping-cough is a trivial affection, that every one must have it, thus proper care is not enforced to prevent its dissemination. Systematic effort should be made to educate the public in preventive measures.

The exciting cause of this disease is a contagion; it is doubtless a germ, but its nature has not been satisfactorily demonstrated. Several microscopists have demonstrated the presence of bacteria in the sputum, but there is a lack of harmony as to the specific microbe. Afanassief and Schwenker have probably approached near the truth in the matter; they have repeatedly demonstrated numerous short rod bacteria, which they call the \textit{bacillus tussus convulsiva}.

The germs, whatever they may be, tenaciously maintain their vitality, and are numerous in the sputum, saliva, and even the expired breath of the afflicted one. Handkerchiefs, bedding, and wearing apparel, may be the means of transmission from one person to another. The disease is contagious in all stages, but particularly so during the paroxysmal period.

While it is probable a certain micro-organism is the cause of whooping-cough, just how the symptoms are brought about and the seat of affection have not been clearly shown. Some authors claim the seat of the disease is in the bronchial mucous membrane, and is due to irritation of the terminal filaments of the pneumogastric nerve; others hold that it is in the mucous membrane of the larynx, especially its posterior wall between the arytenoids, the so-called "cough region," where a mass of viscid mucus accumulates and irritates the sensitive filaments of the superior laryngeal nerves, and by reflex excites spasmatic action of the expiratory muscles. However, much may depend upon contagion or the catarrhal condition, certainly there is a decided hyperesthesia of all the nerves controlling the air passages.

Since whooping-cough is highly contagious, and so fatal in young infants, it becomes our duty to do everything in our power to prevent its spread. Can a case be pictured where there is greater danger to life than a young infant attacked by whooping-cough during the summer when diarrhea is so likely to occur, if it be not already present? Surely the most skillful practitioner will view such a case with grave apprehensions?

Too often the exposure to whooping-cough occurs before
parents or physicians are aware of it; a child is permitted to attend school while having a persistent cough which reaches the "whooping" stage before its true character is recognized. Thus one child infects others in a school-room, who in turn carry the infection home to, it may be, one or more new-born or young infants, developing in them possibly their fatal sickness.

The want of early diagnosis is, I believe, responsible for much of the spread of this disease. Could we make a positive diagnosis during the first week, and thus early isolate the cases, then, indeed, would the "ounce of preventive be worth many pounds of cure."

Our text books tell us that during the first, or catarrhal stage (which lasts about three weeks), the symptoms of whooping-cough are so like those of ordinary bronchitis that we cannot distinguish between them, but must wait for the second or paroxysmal stage before we can know certainly the nature of the disease. The three weeks that a child is permitted to go around with an unrecognized pertussis is the period in which the contagion is most freely disseminated; he is allowed to attend school, go visiting, and even kiss new-born babies.

Diagnosis in the first stage is rather difficult. Could we at once detect the specific germ, the *bacillus tussus convulsiva*, we might be certain of the diagnosis, but that is yet a difficult matter even with the expert microscopist, and not practicable for the busy practitioner. What is needed is a plain, practical method by which the practitioner, or even an intelligent nurse or mother, may recognize the disease in its earliest stage.

By close observation in private practice and clinical work, I have evolved a simple and practical scheme by which the malady may be recognized in the first week, viz.: In a suspected case the nurse or mother is required to mark on a chart the number of coughing spells the child has during the day and night for forty-eight hours, noting the duration of each paroxysm, the character of each cough, the number of times he coughs in each paroxysm, the length of time intervening between the paroxysms; also whether the patient coughs more at night than during the day, and record the temperature every fourth hour.

If these instructions are followed, if the disease is whooping-cough, the chart will show the patient has had a coughing
spell about once in each hour during the day, and about once in each half hour during the night; also that he has coughed six or eight times at each paroxysm, beginning with a big, loud cough, and tapering down to a mere "hack." A deep inspiration is then followed by a sense of relief; after which he resumes his play, to be disturbed no more for an hour or more, when the same programme is repeated. The same performance is continued at night, except the intervals between coughing spells are only about half as long as during the day, the temperature remaining normal.

If the disease be simple bronchitis, the chart will show a slight hacking cough has occurred at intervals of about one minute throughout the day, the coughs being uniform in character, and, as a rule, but one or two hacks at a time. At night the cough occurs less frequently, and there is a slight rise of temperature.

To impress this plan upon students, I prepare upon the blackboard a diagram, which, at a glance, shows the differential points between whooping-cough and bronchitis thus: The letter "C" represents the "hack" or "cough" in size and frequency, the large letter a hard cough, the smaller letters the smaller cough. The line drawn between the groups of "C's" represents the intervals of rest between the coughing spells. The diagram of whooping-cough would read as follows:

\[
\text{C C C c c c c -- C C C c c c c -- C C C c c c -- etc.}
\]

That of simple bronchitis:

\[
c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow c \rightarrow \text{etc.}
\]

If by this or any other method every practitioner, indeed every nurse and mother, could recognize whooping-cough within the first week and promptly isolate the cases, taking care to keep infected children away from infants under two years of age, it would be a long stride toward stamping out the disease and greatly lessen its rate of mortality.

The well-known complications common in whooping-cough, as hemorrhages, cerebral congestion, bronchitis, and
pneumonia, are dangerous in children over two years of age, but decidedly moreso in younger infants. Another common and dangerous complication accrues to younger infants not infrequently, especially during hot weather, viz: diarrheal affections. Usually one or another of the complications named is the immediate cause of death.

Other complications frequently occur, even in older children, and while they may not prove fatal, often leave the patient an invalid; as hemorrhage into the orbit, causing defective vision; dilated valves of the heart; and enlarged broncho-tracheal lymphatics, the latter most frequently occurring in children having the scrofulous diathesis.

The prognosis of whooping-cough is generally good in children over two years of age, and exceedingly bad in infants under that age. The mortality tables which I have examined show that about four-fifths of the deaths occur in infants under two years of age. From observations I am convinced that the mortality is greatest in extremely hot or very cold weather; hot weather contributing to diarrheal complications, cold weather increasing the tendency to pneumonia.

Treatment.—Prophylaxis is of the greatest importance. The disease being specific in character and highly contagious, health officers should enforce heavy penalties for wilfully exposing whooping-cough patients in such manner that other children may be infected. The sanitary laws of none of our cities include whooping-cough in the list of contagious diseases so far as my knowledge goes.

The curative and palliative treatment of whooping-cough has severely taxed the ingenuity of the medical profession for several generations, and numerous remedies have been recommended. Dr. Thomas M. Dolan, of England, who has written extensively upon the subject, in a six-page article* reviews all the modern remedies used. He leaves us somewhat in the dark by concluding his article with this language: "We are now brought up to date with all that is in any way known about pertussis. We must only hope that as science advances we may be able to find some immediate cure for this distressing malady."

Since several authors have demonstrated the specific bacilli of pertussis, and even located their hiding and breeding places

*Pediatrics, New York, January, 1898.
in the respiratory tract, it has been suggested, and by some attempted in practice, to apply germicidal medicines directly to the respiratory mucous membranes. This plan, at first glance, appears to solve the problem; but aside from the danger of poisoning the patient by such remedies, we must remember the great difficulty of spraying the larynx of children, especially very young infants, in which the disease is most dreaded.

The day may not be far distant when some "serum-therapist" will launch a specific antitoxin, "a few drops of which may be administered with a hypodermic syringe and cure in one night." Enterprising manufacturers have entered the field and have already offered us "at a reasonable price" numerous contrivances for curing whooping-cough, such as fumigating lamps, sulphur candles, syrup of chestnut leaves, whooping-cough lozenges, etc. However, up to the present we are undetermined in the matter of treatment, and, as Dr. Dolan says, we only hope as science advances we may find a cure.

If we never find a remedy which may be called a "one night cure," I believe we already have means which will cure in a few nights and days. It is most desirable to cut short the disease before it reaches the dangerous (spasmodic) stage, especially in the case of young infants. By limiting the disease to the first (catarrhal) stage it is robbed of its danger to life, the first stage not being dangerous even in younger infants.

Within the last few years I have experimented with different remedies, aiming to find one which would abort the disease, and will conclude by briefly outlining the plan that has been most satisfactory and the treatment which I use almost exclusively. I cannot fully explain the modus operandi of the remedies employed (this, however, might be said of most of those we administer).

The remedies are not new, nor do I claim originality in their application; I may claim, however, that I push the dosage more rapidly than is deemed advisable by others. The great danger to life, especially in young infants with pertussis, during hot weather, fully justifies the procedure.

The moment the disease is recognized, I order an average dose of the tincture of belladonna given once every eight hours, to be increased one drop daily until the full physiologi-
cal effect is obtained, viz: widely dilated pupils, flushed cheeks, dry fauces, etc.

The maximum dose being reached in five or six days, it is continued until there is decided lessening of the severity of the cough, which may be confidently expected within ten days from the beginning of treatment. In addition to the belladonna I give every three hours during the night full doses of potassium bromide combined with phenacetin, which insures prolonged tranquil sleep and fewer coughing spells.

For a child one year old I write thus:

R Tr. Belladonna ..................... 5i
Sig.—One drop every eight hours, increasing one drop each day until the tenth day. Label bottle "No. 1."

Also:

R Potas. Bromid .......................... 3ii
Phenacetin .................................. grs. x.
Mucilaginis Acacia .....................
Aqua Pura .................................. 3d 5i

M. Ft. sol. Sig.—Teaspoonful every three hours during the night. Label bottle "No. 2."

It will be observed I have addressed the treatment wholly to the relief of symptoms, believing the symptoms due to general hyperesthesia of the nerve filaments supplying the mucous membrane lining the air passages. Whether the remedies given internally act upon and destroy the "bacillus tussus convulsiva" or not I am unable to state. I can understand, however, that tone and tranquility of the neuropathic element of the disease may be restored by the remedies named; and lastly, the efficiency of the treatment has been abundantly proven in my clinical experience.

712 Third street.
REDUCTION OF AN OLD DISLOCATION OF THE ELBOW JOINT*

By William L. Rodman, A.M., M.D.,
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This case is an old dislocation of the elbow joint. The history is as follows: A boy, 13 years of age, while wrestling with an older lad, was thrown and caught himself upon his hand; he felt as if he had sustained some injury of the elbow joint, and he suffered considerable pain. Examination was made under chloroform, and the diagnosis was made of a sprain, no fracture or dislocation could be made out. There was considerable swelling for some days after the accident, and a second examination did not reveal any other trouble.

An examination yesterday convinced us that there is not only a dislocation, but a complete one of both bones of the forearm. My own opinion is based upon a very beautiful sketch made by my assistant, Mr. Dunn. I am glad to learn that Professor Holloway has recently been lecturing to you on injuries to the elbow joint, and he has, doubtless, described many of the lesions which may occur. You can have a dislocation of both bones backward, as in this case, and, strange as it may seem to you, you may have a dislocation of both bones forward. You can also have a dislocation of both bones externally, or a dislocation of the radius alone, backwards, forwards, or externally, but it cannot be dislocated internally on account of its attachment to the ulna; and you may have a dislocation of the ulna backward.

This is one of the most difficult joints to treat, whether the trouble be fracture or dislocation, and elbow joint dislocations undoubtedly give more trouble and cause more chagrin to the surgeon than lesions of any other joint in the body. Therefore in these cases one should be most careful and guarded in making a diagnosis or prognosis. An anesthetic

*Clinical Lecture delivered at the Kentucky School of Medicine Hospital.
should always be used for diagnosis. Swelling after lesions of the forearm is rapid and great, and on account of this swelling you will often be in doubt unless an anesthetic is given. Therefore I enjoined upon you in all cases of injury about the elbow joint, whether you are satisfied with your diagnosis or not, to give an anesthetic and make certain that you are right. You can then not only make a more accurate diagnosis, but you can also reduce the fracture or the dislocation more readily on account of the relaxed condition of the muscles.

There is another feature about dislocations of the elbow joint. You may make an error of diagnosis in a dislocation of the shoulder joint, and even after two or three weeks there will be no trouble in getting the bone back in place. Unfortunately this is not true of the elbow joint. I have never seen an unreduced dislocation of the elbow joint that could be reduced after three weeks had elapsed. I have seen some of the most distinguished surgeons make repeated efforts to do this, yet I have never on any occasion seen an elbow joint dislocation reduced after the third week. Therefore authorities speak of this joint particularly as one where the dislocations become old or chronic very soon. The shoulder joint and the hip joint are so situated that you can reduce dislocations three, six or twelve months after the injury. The reason why dislocations of the elbow joint become chronic or old in so short a time is usually due to this fact: The bone comes back as in this case; the periosteum is stripped up; the olecranon process is bound down by adhesions to the posterior surface of the humerus; true bony adhesions are thrown out between the olecranon process below and the posterior surface of the humerus above, and it is so difficult to break these adhesions that you will invariably fail after the joint has been out of place for a short time.

We propose today to perform an operation such as will give this boy a useful arm. We will put him thoroughly under the influence of an anesthetic; then make attempts to reduce the joint without an opening or converting a simple into a compound dislocation; if we do not succeed in getting the bones back in place by the ordinary measures, then we will resort to cutting into the joint and forcibly press the bones into position if we can. This boy is young, and it would seem altogether wrong to allow him to go on through life a helpless cripple.
Therefore we feel not only justified in opening into the joint, but we also feel satisfied that we shall obtain good results. After doing this, it is quite possible that we may have an ankylosed joint; but if he has an ankylosed joint, his arm will be such position that he will have the greatest possible use of it (of course in its present position it would be almost absolutely useless), at right angles with the hand, midway between pronation and supination. This is the very best position in which you can have the elbow joint if it is going to be permanently stiff. A person with the hand in that position can button his collar, can put on his clothes and bottom them without difficulty, etc., etc., whereas with a stiff elbow joint with the hand extended it is practically useless.

What are the ordinary methods of reducing a dislocation of the elbow joint? Simply extension and counter-extension will be all that is required in the majority of cases, but the old-fashioned way of taking the elbow over your knee, as I show you, is not a bad one. It brings the bones into good position. You use the knee as a fulcrum, then force the bones into position by making extension. This is a very good plan, but I have always succeeded by extension and counter-extension in effecting reduction in acute cases. I have seen the tendon of the triceps cut by the elder Gross and other distinguished surgeons, and never have I seen the bones reduced if the dislocation has existed for two weeks or more. Cutting the triceps will do no good, because the trouble is not with the muscles, it is due to adhesions between the olecranon process and the lower surface of the humerus.

The boy has now been anesthetized, and by manipulating his arm you will observe the very limited motion we get. We will now make extension and counter-extension and see if we can reduce the dislocation. You see how difficult it is to reduce a dislocation of this kind, and you can also understand why it was not reduced even under chloroform on a former occasion by the family physician. Anyone may fail to get the bones back into position in a case of this kind. I have seen the best surgeons fail to do it, and in this case it was not the fault of the family physician that he failed to reduce the dislocation. I am using all the force that I feel justified in doing, and am satisfied that reduction cannot be accomplished.

We have now tried for fifteen minutes, faithfully, earnestly,
scientifically, under complete anesthesia, with three of us working on the case, to reduce the dislocation, and we have made no impression upon it. We shall now apply an Esmarch bandage, and then make an incision into the joint and a complete reduction in that way. There are different ways of making incision into the joint; you can go in upon either side, or you may go in posteriorly. I prefer the latter plan, as I believe it is the better one. I shall make a straight incision over the posterior aspect of the joint just as if I were going to reset the elbow joint. We will go straight down over the posterior surface of the olecranon, and the incision will be found four inches in length, so the upper one-half will be over the posterior surface of the humerus, the lower one-half over the posterior surface of the ulna. This will give us very good access to the joint and dislocated bones. We will cut down and separate the fibres of the triceps, then we shall detach the triceps from the olecranon, turning the flap to either side down to the periosteum, then after separating the adhesions between the olecranon and the posterior surface of the humerus, we will make an effort to replace the displaced bones. I hope we shall succeed. This procedure is quite a modern one, and under aseptic precautions I believe it is not only justifiable, but not to do it in the present case would fall short of doing our duty to the patient. There is not a great deal of danger in opening the joint at the present day. Formerly, however, the operation was attended by grave dangers; we now go into joints with the same impunity that we do the abdominal cavity, the brain, etc. I have never had ankylosis or suppuration follow an arthrotomy or arthrectomy, nor do I anticipate any trouble in this case.

In making our incision posteriorly we are away from all the important nerves except the ulnar. It is a very easy matter to cut the ulnar nerve in doing a resection or even an arthrotomy; the ulnar nerve, you will remember, passes down between the internal condyle and the olecranon process, and this is a point you must avoid in doing an operation upon the joint when your incision is made posteriorly. If you make an incision too far over toward the radial side you must be careful lest you go to the posterior interosseous nerve. If an incision were made anteriorly, of course there would be danger of
injury to the musculo-spiral nerve, the median, and the large blood vessels.

I am cutting through the fibres of the triceps and separating them from the periosteum; we now dissect down the periosteum and all the fibres of the triceps; remember there is something more than an insertion of the triceps into the olecranon, it is inserted into the fascia of the forearm, which must not be sacrificed. I make a second incision over the head of the radius, and we at once come down upon it in its abnormal position. We shall be careful not to do harm to the tendon of the biceps, which, as you know, is inserted into the tuberosity of the radius. The coronoid process has been lifted entirely out of its fossa. I find that it can be reduced, but it again slips out. The olecranon has ruptured the ligament entirely so that the bone slips up on the outside. The adhesions are so firm that I shall separate them by means of a small chisel, after which we will reduce the head of the bone.

The question that comes up in my mind now is whether we shall attempt to get future usefulness of the joint, or put it in a condition for permanent ankylosis. Considering all the circumstances, although the injury to the structures about the elbow are rather extensive, I will make an attempt to get a useful joint. The adhesions between the olecranon process and the posterior surface of the humerus have been chiseled away, and we have now succeeded in reducing the dislocation. The olecranon depression into which the olecranon process fits in the humerus was absolutely filled with inflammatory and adventitious material; the olecranon process could not sink down into the olecranon depression on account of this fact. The adventitious material has been curetted away and now the bones are in perfect position. Even after getting rid of the adhesions I had some trouble in lifting the coronoid process over the end of the humerus, but by taking an elevator and forcing it over, while extension was being made, we succeeded in getting it into good position.

We have completed the operation with very little injury to the soft parts. I think it would be best for us to dress this arm straight for the present. The bones being in perfect position we will now remove the Esmarch bandage. I have saved the periosteum; we will make firm gauze pressure to stop all hemorrhage, then bring over the flaps of the periosteum and
fibres of the triceps, and I think we will get a useful joint. A
question of importance that comes up here is how the fibres of
the triceps should be sutured, whether it is better to put in a
permanent suture or one that will remain for several weeks, or
whether it would be best to put in a suture of silkworm gut
going down to the periosteum and taking them out in a week.
Owing to the fact that in this joint we desire to get the greatest
possible latitude in the way of motion, the latter plan seems the
most favorable. We will use silkworm gut, going down through
all tissues, and let them stay there for a week or ten days and
by that time I think the tendon, periosteum, and muscle will
have united without trouble. We will insert a small drainage
tube into the lower angle of the wound. All hemorrhage has
been arrested by gauze pressure, and we will now proceed to
close the wound. Upon second thought, I believe we will
practice drainage with a strand of iodoform gauze instead of a
rubber tube. Exposure of the bone has been done sub-perisos-
teally, but the periosteum has not been destroyed, therefore it
is brought together without difficulty. In closing the wound
my sutures are carried down to the bone, as those of you who
can see the procedure will observe, I lift up the periosteum
including all the tissues, and take a good deep stitch so as to
maintain the parts in perfect apposition, using as the suture
material strong silkworm gut.
In many directions Great Britain may be said to lead the way in the practical application of preventive medicine. At the same time her wisdom has, for the most part, been acquired in the stern school of experience, which demands instant action and tarries not for the findings of scientific dalliance. Her legislators insist on good systems of house drainage and water supply and then await with composure the result of subsequent bacteriological investigations into the habitat and nature of complicating microorganisms. In some ultra-scientific nations that process is reversed, but whatever may be said from a logical standpoint in favor of the verification of promises, we must nevertheless bear in mind the present limitations of human knowledge. At any rate the results of somewhat rough and ready insular methods have been so far distinguished with a tolerable amount of success. Of late years the introduction of compulsory education and the establishment throughout the Kingdom of large public schools, has evolved fresh problems in prevention. The new system has created a number of centres that offer a virgin soil for the invasion of many infectious diseases. Nor can there be any reasonable doubt that the board schools of Great Britain play a great part in the spread of such maladies as measles, scarlatina, ringworm, ophthalmias, and diphtheria. Hitherto the board schools have, to all intents and purposes, escaped systematic medical control. In London, to take a particular instance, the regulation of the whole of the enormous school board population is nominally in the hands of the medical officer of the school board. When it is stated that the gentleman named is also medical officer of health of a populous suburb and also a professor and director of a laboratory in a London medical
school, it would be obvious that he is not likely to have much
time or energy to devote to the interests of the board school
children. More than that, he claims absolute administrative
rights over the school premises, from which he seeks to exclude
all district medical officers of health, and it is only quite
recently that any of the latter have had the courage to dispute
the legality of his position. Under such circumstances it is
unlikely that public opinion will permit the continuance of so
great an anomaly as that of a school board system without
proper medical control. So far as diphtheria is concerned
there have been presages of a coming storm both from scienti-
fic and from social quarters. The mortality from the disease
has mounted rapidly since 1883. Education was made
compulsory in Great Britain in the year 1870, but several years
elapsed before the schools were built and the system got into
full swing. It is reasonable to assume, therefore, that the
epidemic of diphtheria has been roughly parallel with the
development of that system. The registrar-general's returns
show that the mortality came from the disease, which was
below the mean average between the years 1863–1883, in the
latter year crossed the line and mounted to a climax of 235 per
cent. above the mean in the disastrous year, 1893. Since the
last mentioned year the number of cases has slightly dimin-
ished, but the case mortality has considerably fallen, owing,
doubtless, to the introduction of specific serum therapy during
the last two years. The probable connection between school
board environment and the increase of diphtheria has been
pointed out by various observers, notably Dr. Newsholme and
Mr. Shirley Murphy. In 1896, Dr. Dixey, of Oxford, at the
British Medical Association, in Carlisle, insisted upon the con-
stant rise of the diphtheria mortality curve coincidently with
the two chief holiday periods. In 1898 he has been enabled to
strengthen his conclusion with the added experience, which he
summarizes thus: "The interruption to the usual course of
diphtheria mortality coincident with the two chief school holi-
day periods is again apparent in both 1896 and 1897. The new evidence, like the old, tends to show that school infection is an important, though not the sole factor, in the spread of diphtheria." Leaving new fields of discussion and speculation, however, the little town of Southall, in West Middlesex, has embarked upon a highly interesting practical experiment in the extirpation of the disease. For twenty years diphtheria has been present in the district in sporadic, and for several months past, in epidemic form. The drains were good, the water supply above suspicion, and the general sanitary environment of a high average standard of excellence. The medical officer of health, Dr. Windle, was led to suspect the agency of the schools because of the direct personal type of its infectiveness, and also because its incidence was confined to children of school age. In consequence of his representation, the members of the district council and of the school board held a conference and determined to institute a systematic bi-weekly medical examination of all scholars. It is interesting to note that a similar course was adopted some eighteen months ago with regard to an outbreak of scarlet fever, and that, as a matter of fact, not a single case of the kind has cropped up in the district since its exclusion at that time. The Southall experiment is to be continued until the end of the year, and there can be little doubt that it marks a solid improvement in the systematic network of preventive medicine, the meshes of which are being gradually tightened, with the result of an ever-increasing standard of public health and therefore of public wealth. In all civilized countries the medical control of the public schools cannot fail to bring important social and economic advantages in its train.

D.W.

Specialism

In spite of an occasional protest on the part of some journals, the process of sub-division in medical work for the purpose of getting more
and better results for the whole profession by the individual efforts of a few men working in a limited field, still continues. In fact there seems to be no limit to the degree to which this specialization may be carried. Whatever may be the opinion as to the final effect of this opening up, and possibly magnifying, new branches, there can be no doubt in the minds of the profession at large of the value derived from specialism in one department,—that of laboratory investigation and diagnosis.

At first sight, it would seem that anyone who has graduated within the last few years, since the marvelous development of bacteriology and its sister sciences, would be able to do his own work, but when one stops to consider the subject from various points of view, it becomes plain, that the advent of the specialist is only a question of time. Even at the present one reads such statements as the following, made by Dr. Da Costa: "The time is indeed at hand in which, without ready access to a laboratory manned by experts in all these lines or the association with a trained laboratory assistant, no physician can do his patients, himself, or his science justice." More recently, Dr. Poore, writing in the Edinburgh Medical Journal, says: "Science and practice are indivisible. . . . No man can carry out such investigations unaided, and the most that can be expected of the busy practitioner is to know when such examinations are necessary." He continues: "Signs are not wanting that the laboratory specialist will soon find a remunerative field of work, and that his labors will be appreciated by the profession at large." This, then, being the opinion of men in both America and England, let us glance a moment at some of the obstacles in the way of the practitioner doing the work himself. Two of these are time and expense. Go to the simplest piece of diagnostic laboratory work, the examination of sputum, and it requires a microscope with its accessories and the necessary staining solutions. A man must be doing such work constantly, or he will find his bottles empty at the very moment when he most needs the dye. So is it with all
other microscopical work, while any extension of his efforts leads to expenditure of considerable sums for incubators, sterilizers, and other costly apparatus. After a few months his ardor begins to cool, his enthusiasm gradually dies, and the office laboratory is given up. Any one with the least experience in the laboratory knows of the amount of time consumed. On the other hand, one man, devoting all his time to the laboratory can easily make all the necessary examinations for a number of practitioners, and, his hand being continually "kept in" can accomplish better results with less expenditure of time and energy.
BOOK REVIEWS.


This work, as its title denotes, is written solely from a clinical standpoint, and with the object of especially drawing the reader's attention to the anatomical and physiological peculiarities of childhood, and to the various changes which are produced by different diseases. Much stress is laid by Dr. Thomson on the necessity for treating children, when ill, with tact. It is pointed out that many have this tact instinctively. Some only acquire it in the requisite degree with time and experience, while to those who have no liking for children, and are out of sympathy with them, it may never come at all. The first chapter deals with the growth and development of the child, and gives a description of the complaints associated with this development.

With regard to teething as a causation of disease, the author does not accord to it the prominent position given by many writers, but, on the other hand, he does not go to the other extreme and agree with a number of medical men in Germany and America, who claim that "teething produces teeth and nothing else." He is of the opinion that, "like menstruation, pregnancy, and other natural states, it is often accompanied by marked symptoms, both local and reflex, and like them may produce temporarily a tendency to disease which is not present at other times. The pages treating of the diagnosis of congenital syphilis gives, in a short space, a clear idea of the symptoms and course of the disease, and the subject is, together with the chapter on physiognomical diagnosis, excellently illustrated by characteristic photographs. As regards craniotabes, Dr. Thomson does not altogether agree with the views of Dr. Carpenter, who considers that 74 per cent. of cases of craniotabes are syphilitic, but he allows that the most severe degrees of this condition are rarely found, except in children who are syphilitic as well as rickety. The section on
heart disease is a brief and concise account of its clinical aspects in the young. The importance of cyanosis in determining the congenital nature of a heart case is dwelt upon. Considering the limited space devoted to its discussion, that portion of the book referring to mental deficiency in children is an able exposition of its various forms. Cretinism is also well considered.

The chapters on infant feeding and the hygiene of the nursery express in succinct language the most advanced views on the subject, and Dr. Thomson freely acknowledges his indebtedness to the works of recent American writers collecting information on the subject. The author agrees with Dr. Barlow that patent foods, condensed milk, or milk which has been subjected to prolonged sterilization, is responsible for almost all the cases of infantile scurvy. The section dealing with medicinal treatment is, perhaps, the best in the book, and may be particularly recommended to the notice of young practitioners. Dr. Thomson's work is not intended as a text book, but as a supplement, gathering together in one volume information usually found scattered in various parts, and it may be said that his endeavor to supply a much felt want has been attended with great success.

An American Text Book of the Diseases of Children, including Special Chapters on Essential Surgical Subjects, Orthopoedics, Diseases of the Eye, Ear, Nose, and Throat, Diseases of the Skin, and on the Diet, Hygiene, and General Management of Children.—By American teachers. Edited by Louis Starr, M.D., Consulting Pediatric to the Maternity Hospital, Philadelphia; late Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Member of the Association of American Physicians, and of the American Pediatric Society; Fellow of the College of Physicians of Philadelphia, etc. Assisted by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania; Visiting Physician to the Methodist Episcopal Hospital; Fellow of the College of Physicians of Philadelphia, and Member of the American Pediatric Society. Second edition revised. Philadelphia. W. B. Saunders, 925 Walnut street. 1898.

This comprehensive and elaborate text book has been compiled by over sixty authors, the great majority of whom are connected with a medical school. It is one of the most striking features of the present day in the medical world generally, and
more particularly as regards the medical and surgical literature of this country, that there is an ever-growing tendency to produce this description of book. That such works are needed, or, rather, called for, is a patent fact, or the production would not continue to increase. In this age of hurry, when, as Dr. Starr remarks in his preface, "the practitioner must too often read as he runs, and the student of necessity is unable to devote his study hours to one branch of medical science," it is impossible to spare the time necessary to consult various authorities unless their writings are condensed between the covers of one readily handled volume. Thus the procedure in question has its advantages, but, on the other hand, it is doubtful whether these advantages are not more than counterbalanced by the defects of the system, and it may be asserted that, on the whole, the custom cannot be designated an unqualified success, while it must be decidedly harmful to individual authorship. Be this as it may, at any rate it must be allowed that such works are in request, and this being so, that the volume edited by Dr. Starr is a very excellent example of the principles set forth in the preface. It is carefully condensed, the subject matter is limited to practical points, the collaborators are well selected, each article is up to date, and it contains chapters on special subjects which constantly come under the notice of those who work with or make a study of the ills of childhood. The present book is a revised and enlarged edition of that published in 1894, and contains, with index, 1,244 pages, and is divided into fourteen parts. The introductory chapter written by Dr. Starr is devoted to the clinical investigation of disease and the general management of children, and, although containing nothing especially new, is thoroughly abreast with the times and as an exposition of the subject is worthy of the reputation of its author. To review the different articles at length would, however, be impossible with the limited space at our disposal, so that it must suffice to briefly notice the more important and novel features. Infectious diseases in all modern text books present points of the greatest novelty, and to this class of disease full attention has been paid by the writers in this section, and the classification has been rearranged to include tuberculosis and malaria. In view of the events which have been happening in connection with vaccination in England recently, the monograph on vac-
cinia and vaccination by Dr. Wescott is exceptionally interesting. Much of the prejudice existing against vaccination is due to the widespread belief that it is responsible for the majority of the eruptions of childhood. Owing to the paucity of the literature on the subject and references in standard works, many rashes are put down to vaccination, both by parents and by medical practitioners, which have absolutely not the most remote connection with vaccination. Thus it is of supreme importance that every medical man should possess a correct and precise knowledge of the matter, and should be able at once to distinguish between rashes due to vaccination and those resulting from other causes. The discussion on Asiatic cholera, although the disease is one that does not affect intimately this country, is a splendid contribution, and will afford the student a good insight into its manifestations. Tuberculosis, diphtheria, and malarial fever are also well considered.

One of the very best contributions is that on diarrheal diseases by Dr. Vaughan, and is a model of condensation. The new articles include "Modified Milk and Percentage Milk Mixtures," "Lithemia," and a section on "Orthopedics." Those rewritten are: "Typhoid Fever," Rubella," "Chicken-pox," "Tuberculosis," "Hydrocephalus," and "Scurvy." America has every cause for pride in her production of works on diseases of children, and the work edited by Dr. Starr well upholds this reputation.
ABSTRACTS

PROFESSOR BEHRING TO HIS CRITICS.

We read in the Deutsche medicinische Wochenschrift of September 15 the answer of Professor E. Behring to his critics, relative to the patent which the Washington authorities have recently granted to him for his diphtheria antitoxin. He appears to have been impelled to his statement by a polite request on the part of the editor of the Deutsche medicinische Wochenschrift, and by some caustic remarks which were published in the Berliner Tageblatt of September 5, under the heading Science and Business. The writer in the latter journal, a well-known daily paper of Berlin, considers the question of this patent from the moral standpoint, and compares the high morality of Helmholtz with his ophthalmoscope, Pasteur with his methods of immunization, Liebig with his chloral, and Lister with his antiseptic treatment of wounds—none of whom sought a patent for his discovery—with the base immorality of Behring seeking a patent for his diphtheria-antitoxin. In answer thereto, Behring states that, as far as he is aware, our patent laws are of recent date, and that neither Helmholtz nor Liebig, even, had they so desired, could have made use of them. But that, nevertheless, it is well known that Liebig, as also other renowned chemists, even in years gone by, were not averse to turning their discoveries to their financial profit, and that since the existence of the patent laws, chemists of great renown in reality have not hesitated to have recourse to the—for scientific men, according to the Berliner Tageblatt—“immoral” expedient of patent claims. He feels unable to say what would have been the actions of Pasteur and Lister could they, without difficulty, have patented their discoveries. He is not disposed to consider the interests of foreigners, particularly of those foreigners who might themselves make use of the patent laws. The Germans should rather decline to sustain the inconsiderate piracy of certain American firms, in that they should not take seriously, nor join with them in, their hypocritical clamors of “stop thief, stop thief.” In answer to the statement that one is unaccustomed to view the physician as a merchant with medical wares for sale, he queries: Who says that he is still a physician? On the contrary, he says that he renounced the medical profession a long time ago, and since then has been obliged to resort to business methods to acquire the necessary means to enable him to prosecute his experimental therapeutic investigations. In 1802, in his paper entitled Die praktischen Ziele der Blutserumtherapie, he asserted that he was no longer concerned in the application of the results of his scientific investigations in practical medicine. While at this time the significance of his discovery was appreciated even in foreign countries, no helping hand was held out to him. On the other hand, the French people collected 1,000,000 francs for the Pasteur Institute to further the practical application of serum-
therapy, and the French Republic gave a yearly grant of 200,000 francs to the same institution. But what was done in Germany? Behring writes that he stood not only in danger of moral destruction, but was also threatened with want of the necessities of existence. He would have been obliged to make use not only of his few possessions, but also of his entire credit, to continue his experimental investigations. The Höchster Farbwerke finally coming to his assistance, he was relieved of financial distress. He begs to assure the writer in the Berliner Tageblatt that it is to-day in Germany a very hazardous affair for a discoverer or an inventor, trusting to the gratitude of the nation, to lose sight of the business advantages of the discovery or invention. "A tender soul might, perhaps, find a certain justification for the moral wrath of the authority in the Berliner Tageblatt, in case the poor Americans should be injuriously affected if my patent should in reality be allowed. How much foundation in fact, however, there is for such fear may be judged from the fact that the Höchster Farbwerke and I have mutually resolved to furnish for the same price more reliable preparations than those heretofore put upon the market by American firms.

The Münchener medicinische Wochenschrift of September 13 contains a note to the effect that whereas a statement concerning the patenting of diphtheria antitoxin by Professor Behring is still missed in the medical press, where one would naturally expect to find it, the matter has already been taken up by the lay press. Reference is then made to the article in the Berliner Tageblatt, and in the quoted excerpt we note the assertion that the writer believes this the first time in the history of medicine that such an occurrence has taken place. We judge that the Münchener medicinische Wochenschrift hardly approves of Professor Behring's course, as it directs attention to the fact that it cannot be justified because of the patenting of other medicaments, such as antipyrin, neither the discoverer nor the patentee of which was a physician.

The Klinisch-therapeutische Wochenschrift of September 11 comments upon a protest (in a Marburg paper) of Professor Behring against the criticisms of American and English professional journals, and seeks to justify his course. This journal believes that Professor Behring's action, instead of being in direct contravention to the tenets of our code of ethics, is in conformity therewith. Our contention that the experiences and inventions of one should be for the benefit of all, finds in Professor Behring's patent its widest application; "now the American people, instead of the expensive and frequent worthless preparations at present on the market, will be provided with a cheaper article prepared by the direct supervision of the discoverer."

The spirit of Behring's article is certainly far from admirable. His insinuations and sneers at Americans are undignified and untrue, and may help us to estimate his personal character more accurately. We have a profound sympathy for the suffering of many German scientists and their ill-requital financially, either by the Government or the community. But the fundamental and dammatory fact remains that not to Behring alone is due the discovery of which he is attempting to reap the entire reward. The division of the French prize between Roux and Behring shows
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that. This renunciation of his profession and its ideals is also highly suspicious, and his defense makes it clear that the renunciation was purely for commercial reasons. The whole affair is soaked in the pickle of commercialism. A man who has a "few possessions" and "credit" is not suffering for bread. Koch was not suffering, and he also is in the employ of and in profit-partnership with the same firm that owns Behring's cast-off professional soul. There is, fortunately, little danger that the serum of American manufacturers will be run out of the market by that of the Höchster Farwerke, either because this last is better, or because Behring's sordid patent will be sustained by our courts.

It is a matter of profound regret that German science so readily becomes subservient both to political and financial control. We trust that in this our English people will pursue the higher ideal.—Philadelphia Medical Journal.

A CASE OF LEUKEMIA IN THE NEW BORN.

L. Pollmann (Münch Med. Wochenschr., 1898, xlv., 44). This case, so far as age is concerned, is probably the youngest on record. It demonstrates that in all probability even the fetus may present the symptom complexus of leukemia. The child was a female, born May 18, 1897, whose parents did not live in unfavorable surroundings, and were able to supply sufficient nourishment to the child; they were themselves healthy. There were no discoverable signs of syphilis or malaria, nor where there any especial occurrences during pregnancy and birth. The midwife, however, was struck at once, after its birth, by the presence of red spots, about the size of a pin's head, on the forehead and legs of the child, and by its general appearance of debility. As time went on it became more and more apparent that the child was ill. It did not nurse a great deal, hence did not thrive well, and as a rule it lay in its cot most of the time in a perfectly apathetic condition. It was never known to cry; if it did occasionally make an attempt, it at once took on a dark-blue hue, the face became swollen, and extreme dyspnea occurred. The red spots increased in number, and very soon made their appearance in other locations.

Present state, May 1st. The child is poorly nourished, presenting a relaxed, pale skin of a yellowish hue. The lips are slightly cyanotic. The eyes continually closed. The forehead is covered with a great number of reddish-blue petechiae of the size of a pin's head to that of a hemlock seed. These are most numerous at the line where the hair and the forehead join, passing in a curve down to the ear; they are quite numerous also on both cheeks, less so on the legs and forearms, isolated over the uppermost portion of the chest and immediately below the neck. The umbilicus is perfectly normal, as are also the lungs and the heart; the impulse of the latter was found to be very rapid. The abdomen is greatly distended, which is especially due to the greatly enlarged liver and spleen, both of which could be distinctly palpated. The liver extended down the right side almost to the crest of the ileum, the left lobe began on
a level with the navel and extended far into the left hypochondrium. Its surface is everywhere smooth, its margin rounded. Close to the liver the spleen can be felt, which is also of a firm consistency, its lower portion being nearly on a plane with the navel; a distinct notch can be felt anteriorly on its median border. The subcutaneous lymphatic glands are not enlarged, nor are they palpable. The stools are very thin, of a greenish hue. Temperature, 38.3° C. Examination of the blood showed a very large increase in the number of leucocytes, their proportion to the erythrocytes being 1 to 8, and nearly all consisting of mono-nuclear cells, containing rather a large nucleus, and having a plainly visible, moderately broad margin of protoplasm. The number of red blood corpuscles in a cc. m. were two and a half millions.

Diagnosis.—Leukemia, in all probability complicated by a patent ductus arteriosus Botalli,

The general condition did not change markedly during the following days. The petechiae, however, greatly increased in number, so that the forehead, the anterior hairy portion of the head, the cheeks, and later also the lower portion of the neck and upper portion of the chest became densely covered with them; they also accumulated on the arms and legs, and were already beginning to make their appearance on the flexor surfaces of the joints, while the rest of the body, and especially the abdomen, remained entirely free. The abdomen was invaded by a copious scaling of the epidermis, and a furuncle of the size of a cherry, developed on the flexor surface of the left elbow. The temperature continually remained above 38° in the flexure of the groin and on the neck a few lymphatic glands became palpable to the touch. This condition continued to June 4. On the evening of this day, according to the parents, a sudden change in the general condition for the worse took place. The child became restless, moaning occasionally, dyspnea increased, and the skin became very hot to the touch. On the following day Pollmann found the child with a temperature of 41.50, with a very great increase of the cardiac beat, and faintly moaning. Towards evening death ensued.

The autopsy disclosed verrucous endocarditis of the tricuspid valve, hypertrophy of the right ventricle, a patent foramen ovale, a patent ductus arteriosus Botalli, enlarged liver and spleen, enlargement of the mesenteric and retroperitoneal lymphatic glands, emphysema of the left lung, uric acid infarct of the kidneys, general anemia.

Could the clinical diagnosis be upheld under these conditions? The more careful microscopic and histological examinations which have now been made, did, it is true, make it seem very probable that we had been dealing with a case of leukemia, and that in a complicated lienal-medullary form. Since the publication, however, of v. Jaksch’s work on anemia infantum pseud-leucemia, we are compelled as well as in all cases in children in which the state of the blood points to leucemia, to raise the question, whether we are not dealing with that form of anemia of which this author writes as follows: "In childhood we also meet with a form of anemia whose symptoms and clinical course answer to the picture of leukemia. We find extreme enlargement of the spleen, the
liver, the glands, a continued and very notable leukocytosis (proportion of the white blood-corpuscle to the red 1:20, 1:17, 1:12), nevertheless an autopsy does not show the presence of leukemia. In leukemia the liver and spleen enlarge equally in proportion to their original volume, in the affection designated by me, anemia pseudoleukemia infantum, a certain discrepancy is found between the size of the liver and that of the spleen, in the sense that the volume of the liver increases relatively slower to that of the spleen; furthermore, the liver is not, as in leukemia, felt on palpation, as a heavy tumor with a thick, heavy edge, but in spite of its increase in volume, its lower sharp border is distinctly felt." In the present case the increase in the size of the liver and spleen was indeed an equal one; the former, besides, could be felt as a bulky tumor with a thick, heavy border; the microscopical findings were also in accord with those designated as characteristic for leukemia by v. Jakusch. The case is therefore to be looked upon as one of pure leukemia, especially if we also take into consideration the resumé which v. Limbeck draws from various personal observations on anemia infantum pseudoleukemia, which declares that in these cases the changes of the blood make themselves felt in extreme anemia, a corresponding reduction of the coloring matter, and, as a rule, in a marked increase of the leucocytes, the latter belonging in a predominating proportion to the polynuclear forms. The case under consideration presented extreme anemia and marked leukocytosis, no predomination of the polynuclear forms, however, the latter not being found in true leukemia.

Did the leukemia in this case already exist before birth or did the child contract the disease later? On the fourteenth day of the disease, when Pollmann first saw the patient, he already presented marked symptoms of the disease, especially that enormous number of petechiae, which had already been in part observed immediately after birth by the midwife who at the time noticed the diseased condition of the child. It is therefore undoubted that the latter was born with a disease which produced hemorrhages of the skin. These, in the course of time, became more and more numerous until death occurred. Petechiae are, as we know, of very frequent occurrence in leukemia, especially in its acute form, and the most probable inference is that the disease had already begun in the fetus, although the leukemia condition of the blood, the enlargement of the spleen and liver might very well have been developed after birth; in fact the spleen and liver may markedly enlarge in a child within a few days, and in the same manner a leucocytosis may take place. The firmness of the enlarged liver and spleen in this case, were, it is true, in favor of a longer duration of the disease, and made the supposition of an intrauterine development seem very plausible. How about the etiology? Heredity, syphilis, malaria, were not present, neither did the mother suffer from any infectious disease during pregnancy. Which does not prove, of course, by any means that the mother did not harbor some infectious matter during this time. We are aware that, for example, in variola, the fetus may contract it in utero and may be born with its symptoms, while the mother remains perfectly healthy, the virus circulating in the blood, without, however, producing any symptoms; so are we also aware that in
the same manner infectious diseases may run their course with very few symptoms (for example, ambulant typhoid). In the case presented there was also found, among other things, an endocarditis of the right side of the heart, and the notes taken at the autopsy say of this condition: "The tricuspid valves present thin, red-colored deposits; one valve is split through the middle. Here somewhat thicker deposits were also found; the chorda tendina are slightly thickened." The thought is natural, of course, to bring the endocarditis into some connection with leukemia. A case of acute leukemia accompanied by endocarditis has been reported by Senator, but he does not enter further into their relationship. Other authors who met with complicating inflammatory conditions in cases of leukemia, especially in the region of the throat and pharynx, on the other hand give it as their opinion that these complications play an important rôle in the pathology of leukemia, be they looked upon either as primary or secondary affections, and then conclusions are drawn from one disease to the other.

An extrauterine endocarditis can undoubtedly always be referred to bacterial affection. What shall we say of the intrauterine endocarditis which this case presents? The anatomical finding is the same as in the post fetal verrucous form. According to this it is quite possible that a bacterial infection is also present here. Niegerth says of congenital heart diseases: "There are two factors to be considered from an etiological point of view, intrauterine inflammation and stoppage of growth; the former is usually met with in fetal endocarditis. As a causal effect of the latter diseases, which are liable to lead to such inflammatory processes in the mother during pregnancy, become operable, and especially articular rheumatism. Developmental retardation will be brought about or not according to the period in which the fetal heart becomes diseased. At the end of the third month the heart is fully developed. An inflammation occurring before this period will cause a defect, after this time no defect. According to this reasoning an infection of the fetus probably took place despite the absence of any maternal disease, which was instrumental in causing endocarditis; this infection could have only, however, taken place at the earliest period during the fourth month of gestation, otherwise a defect would have been produced. The negative result of the bacterial examination cannot shake this view.

THE FRESH AIR TREATMENT IN INFECTIOUS DISEASES OF CHILDREN.

Contal (Thése de Paris, 1897, Der Kinderarzt, 1898, ix, 76), stimulated by the favorable results obtained by Prof. Hutinonel through the systematic employment of fresh air in infectious diseases of children, has continued investigations on the same lines and arrived at the following remarkable conclusions:

Fresh air treatment is suitable to all chronic and subacute infectious diseases of childhood, hereditary syphilis, atrophy, whooping-cough, pro-
longed measles, broncho-pneumonia, chronic gastro-intestinal infection, rachitis, etc. Its technic is quite simple. As soon as the warm season begins, the children are taken into the open air. During the morning they are brought into the garden, in their little beds, and allowed to remain there until six o'clock in the evening. They should be placed in the shade and protected from glaring light and reflected heat. Curtains may be fastened to trees by means of wire, which will serve to partially shelter a room virtually open at the top. During bad weather we may even erec' tents open on one side and covered at the top. The most important results obtained from this procedure are as follows: The children will drink a larger quantity of milk, bodily weight increases, and fever abates. Thus, for example, the temperature, which, in a broncho-pneumonia complicating measles, reached 39°c. on the fourth day of the disease, was reduced to 37° after one day's exposure to the open air. Another remarkable case was that of a 3-year old cachetic and anemic child, who was suspected of suffering from tuberculosis, and who in less than three months contracted consecutively, broncho-pneumonia, whooping-cough, and measles. Notwithstanding all this, it was permanently cured through exposure to fresh air.

A CONTRIBUTION TO THE ETIOLOGY OF INFANTILE CEREBRAL PARALYSIS.

Landau (Przegląd lekarski, 1897, No. 47, Centralb. f. Kinderheilk, 1898, iii., 137). The patient, at present four years of age (one of twin sisters, the other succumbing at the age of eight weeks to convulsions), was seized with convulsions when two weeks old. At six weeks of age she was vaccinated, the resultant pustules suppurred for a period of three months. Toward the end of the first year of life a weakness in the the movements of the right arm was observed. At two years of age convulsive movements of the right lateral half of the body appeared, accompanied by disturbances of consciousness, which recurred at intervals until she came under treatment.

The child, who is well developed, presents distinct evidences of a former rachitis. The spleen is enlarged, speech is indistinct, and is confined to the utterance of a few simple words. Sensibility and intelligence are normal. The right lateral extremities are somewhat less developed than the left. The right hand is spasmodically closed; there is a right pes varo-equinus; the right leg is 1 c.m. shorter than the left; on the right side the general muscular strength is less than on the left. A nourishing diet, cool-baths, electricity, and a course of inunctions produced marked improvement; the convulsive seizures have not again returned. Landau believes the affection to depend either on congenita causes (lues?), or that it is due to the long continued suppuration after vaccination.
THE importance of the subject of infant feeding requires neither emphasis nor amplification, as every practitioner knows that the high percentage of infant mortality is largely due to imperfect nutrition and the so-called dietetic disorders.

That hoary scape-goat, "heredity," has been loaded with our sins of omission until, with broken back, he has dragged himself away to the wilderness of oblivion to keep company with "general debility."

Until recently the monographs and lectures on the care and management of the infant, and a good portion of our text-books on pediatrics, resembled more the popular cook books or Mrs. Blank's "Dietary for the Sick" than scientific treatises based upon known physiological and clinical data.

The past decade has witnessed remarkable activity in the physiological and clinical study of infant dietetics. From the great mass of material presented, a few facts and principles have been established beyond question, viz.:  
1. In a very large majority of cases the infant is best nourished at the mother's breast.  
2. The best substitute is a suitable wet-nurse.  
3. The best standard of quality for artificial food is average breast milk.
4. In cases where the infant does not thrive at the breast, the milk should be examined to determine wherein it varies from the average normal.

5. In disturbed lactation the nurse should be treated physiologically and hygienically to bring the total quantity of her milk, and the qualitative relation of its constituents to the requirements of that infant's nutrition.

6. That the regular use of the scales and the occasional analysis of the breast milk give the physician a remarkable control over the infant by the early detection and correction of dietetic errors. When temporary artificial feeding is necessary, an analysis of the breast milk will, if agreeing, give a standard for the preparation of the substitute food; if disagreeing, may suggest the cause of the disturbance and the corrective procedures.

7. In considering an article of diet, certain essential requirements must be borne in mind: (a) The symmetrical development of the infant requires certain food constituents, viz., fats, carbohydrates, albuminoids, mineral constituents, and water. (b) That normal nutrition requires a more or less quantitative relationship between these five essential constituents. Physiological facts, chemical analysis, and clinical observations many times repeated by careful observers, constantly agree as to the quantity, quality, and form of food; also methods and frequency of ingestion for the average infant.

Cheadle's essentials seem, in the light of our present knowledge, so axiomatic that the writer begs leave to quote:

1. The food must contain all the constituents, and in the same proportion as found in the mother's milk.
2. It must be administered in a form suitable to the physiological requirements of infant digestion.
3. The total quantity in twenty-four hours must be such as to represent the nutritive value of one to three pints of human milk, according to age.
4. It must possess the anti-scorbutic element.
5. It must not be purely vegetable, but must contain a large proportion of animal matter.
6. It must be free from taint of decomposition and pathogenic organisms. These essentials being settled, it is a source of surprise to the writer that the dietetic errors and pernicious methods of feeding so generally persist.
That some feed better than they know, is in evidence when we observe the ignorant young mother nourishing perfectly her vigorous babies while violating, perhaps, some of the technical canons of scientific feeding. That some know better than they feed, was made evident to the writer during the past year, when, in quest of information, he visited the fields of activity of some of the great pediatric teachers and thinkers of Europe. Who would question the ex cathedra character of the utterances of those sages of Great Ormond Street and St. Mary's, or of the brilliant coterie of observers in Paris, where children's hospitals and foundling homes do greatly abound; or the toiler, Biedert, the father of European milk modification, who even declines to patent his brain sweat; the ancient, ponderous Vincent, of Munich; the versatile irrepressible Escherrich, whose carefully-compiled statistics gridiron the pages of foreign journals; the great Gärnër, who once did some thinking and teaching about milk in the University of Vienna; Professor Widerhofer, with his vast clinical opportunities in the Kinderspital and Allgemeine Krankenhaus; the vigorous Monti, of the Poliklinik with his echoes, Herr Wolff and Popper, claiming to have mixed up Biedert with his own cream and thrown Gärnër off at a tangent from his milk and water centrifuge; the accurate, painstaking Lehmann and his go-you-one-better Hesse; the dignified, conservative Heubner, of Berlin University, and the resourceful Baginski, with his active lieutenants at the Friedrich Wilhelm; the polished, urbane Filatow, with his acres of maternity and foundling's wards in Moscow. These are a few of the many foreign workers whose relations to laboratories, hospitals, and the vast clinical fields peculiar to Europe have given their observations and deductions a weight that has stamped them upon all our pages as text.

To see these thinkers and their immediate disciples in their every day application of those principles of infant feeding, which have been an important part of our knowledge of infantile physiology, was the writer's main object in a tour of Europe. Surely it is in the great municipal, state, and eleemosynary institutions, whose sanitation is under the full control of the great professors, that the dietary principles so elaborately taught would be the most thoroughly applied. In the Great Ormond Street Children's Hospital, whose walls have listened
to the arguments of Cheadle for a balanced diet, they are ordering soups, barley water, and dilute cow's milk.

The same old haphazard feeding is seen all over Paris, with one or two exceptions. Sir William Priestly, writing of M. Budin's clinics in the British Medical Journal, quotes that teacher's opinion that the dilution of cow's milk is unwise and unsafe, and advocates the use of whole milk. He appears to be much pleased with an ingenious stopper used in the sterilization.

Vincent orders in the hospital and dispensary at Munich diluted cow's milk, sometimes goat's milk and farinaceous slops.

Fronz, at Widerhofer's clinic, was using soups and broths, dilute cow's milk, Russian tea, and cognac. Some Vienna physicians were prescribing Gärtner's milk. Monti, besides meat and vegetable soups, claimed to be using an improved modified cow's milk. His assistant at the Poliklinik, Herr Wolff, claims in a tabulated report great results from Professor Monti's modification; so the laboratory where this was prepared was, for this time, the writer's Mecca. Did you ever, in earlier days, seek the pot of gold under the rainbow? With like hopes and disappointment we sought for evidence of Monti Milk Modification. With the aid of the genial Herr Wolff we located the process in the great Vienna Molkerei, and hours were spent in inspecting a model butter and cheese factory, with most of the improved methods of handling, cooling, aerating, filtering, sterilizing, separating and pasteurizing milk, but no evidence of modification à la Monti. We were told that was done only at 10 A.M. At a morning call we were informed that the process was over for the day, but we were shown a box containing racks and hot water which suggested pasteurization—and we gave it up as a myth.

Similar was the experience at Prague, where the babies in the large children's hospitals were, it was claimed with great enthusiasm, fed secundum artem. Explicit directions led to the Molkerei, famous for its Kinder Milch Modifikation. At last with his own eyes the writer saw, in a neat, well-equipped, and prosperous dairy, the entire process, the far-famed modification of Säuglings milk. Shades of the reputation of Biedert and Lehmann, and even Professor Mother Gärtner! Six ounce vials were filled, a perforated cork inserted and stoppered by a
slender, tapering glass plug (possibly the device which so delighted the worthy Priestly at Paris), placed on racks and immersed in a hot water bath. After heat and time sufficient for pasteurization, the bottles were removed, cooled, and labeled Nos. 1, 2, 3, and 4; No. 1 containing 25 per cent.; No. 2, 50 per cent.; No. 3, 75 per cent.; and No. 4, 100 per cent. of cow's milk; the diluent consisting of sterile water, pure and simple. This diluted milk is prescribed by the leading physicians of Prague, and the enterprising Bohemian Molkerei man is laying up treasures on earth. I thought of the box in the Vienna cheese factory which was helping Monti on to fame, and when later, after watching Heubner's infants imbibing the various modifications of milk in the Berlin Charité, I discovered cases in the corridor filled with vials bearing the legends 1, 2, 3, 4. I again thought of Prague.

Baginski, in his hospital, did the best feeding, as it was not unusual to see his infants on definite proportions of Biedert's cream mixtures and cow's milk. He keeps his own cow's, reads half a dozen American journals, among others Pediatrics, the Archives of Pediatrics, and the Journal of the American Medical Association, and ere this the writer hopes he is modifying his milk on the American plan. We showed the prescription blanks for milk modification in the leading American cities to many foreign baby feeders, and likewise exploited the details in a paper before the Pediatric Section of the Twelfth International Congress at Moscow. In every case we were listened to with interest, but with only partly concealed incredulity as to the actual, practical operation of the American system. Their reluctance to accept our statements the writer is unable to explain, unless due to the European doubt as to the possibility of any good scientific work coming out of the American Nazareth. It may be a feature of European conservativism to dream, philosophize and experiment for a long time before applying the deductions to practical uses. It may be that infants are fed artificially in Europe, according to the teachings of modern science, but the writer failed to discover, in his visits to the hospitals and clinics of London, Paris, Brussels, Heidelberg, Berne, Zurich, Munich, Vienna, Dresden, Prague, Berlin, Moscow, St. Petersburg, Helsingfors, Stockholm, or Copenhagen, any instance in which specific definite percentage feeding was attempted.
Biedert's mixtures may be regarded as an effort at definite percentage. So also the formula of Lehmann and Hesse, and even Professor Gärtnert, may be definite enough. As much credit belongs to the better class of artificial commercial foods of our own country. The same objection, however, belongs to both; no attempt is made to adapt the preparation to the varying requirements of the physiology, pathology, or individual characteristics of the specific case.

The European idea, when one is in evidence, seems to be to adopt a mixture which most nearly resembles average mother's milk (except as to the anti-scorbutic qualities, for they all employ heat), and make this do with their 1, 2, 3, and 4, variations for all the babies. If it fails to agree, so much the worse for the babe. The food was all right, for it was sanctioned by the highest authorities.

The war is now on between Biedert, who has done more than any other man in Europe to establish percentage feeding, and Gärtnert, who has fallen into the commercial slough—the last catastrophe of noble scientific minds. He has attached unto his interests the brilliant and versatile genius of Escherrich, who is now making a spectacle of himself, moving up and down Europe abusing Biedert and descanting with silver tongue upon the virtue of the product of the milk and water wheel, labeled Professor Gärtnert's Mother's Milk, and sold by all druggists.

That America leads the world in artificial feeding of infants must be acknowledged by those who will carefully compare the actual progress in this branch. This condition is due to the fact that, under the stimulation of Rotch and others, American citizens are rapidly recognizing the necessity for exact, specific percentage feeding. Much, however, remains to be learned. We must study very closely normal lactation, its variations and disturbances, with their causes; also the effect of these different variations on infant nutrition.

But, says one, the market is filled with baby foods. Must we reject all? The answer may be obtained by applying the following tests:

1. Does the food contain all the constituents in about the same proportions as found in mother's milk?
2. Can this food be administered in a form suitable to the physiological requirements of the infant's digestion?
Can it be given in quantities adapted to the capacity of the infant's stomach?
Does it possess the anti-scorbutic property or has that been destroyed by cooking?
Is this food wholly or partly of animal origin?
Is it free from pathogenic micro-organisms?

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STRABISMUS CONVERGENS: HYPERTROPHIED TONSILS AND ADENOID GROWTHS.*

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THIS boy, E. A., aged 6 years, has had strabismus convergens for the past two years. Please notice how marked it is. You can all see that he has an internal squint, which the history shows was first observed when he was a little over 2 years old. That is the age at which strabismus is most apt to begin, between the ages of 2 and 6 years, because it is at this time of life that the child begins to use its eyes for near objects.

I have told you heretofore what constitutes a predisposition to this condition—that the eyeball is too flat from before backwards, therefore straining becomes necessary to see near objects. This boy has been wearing glasses for two years; you will observe that glasses have not cured him. He is still cross-eyed, a little less so perhaps with glasses than before, but the eyes still turn in markedly.

Suppose I take up the case systematically: Later we will consider whether it would be proper to operate upon this boy. First, in regard to the etiology of the affection. I have already spoken of the predisposing cause—an error of refraction of the eye. In plain English, the eyeball in the great majority of these cases is too short from before backwards. The exciting cause is oftentimes the use of the eye for near work. Sometimes one eye is impaired by a corneal opacity from phlyctenular or other inflammation; the eye then will be more likely to turn in than in cases where binocular vision has been unimpaired. So long as both eyes are perfect they will attempt to look together, whereas if one of them becomes somewhat interfered with from any cause—a spot on the cornea is perhaps the commonest cause—they tend to take that

* Clinical lecture delivered at the Hospital College of Medicine.
position in which the muscles would put them. The age in this case is characteristic, the trouble beginning as it did between 2 and 6 years. The majority of all cases of strabismus begin between these ages.

Now as to the diagnosis: In a child you can scarcely make a mistake, because paralytic squint in a child is rare. You will remember in our physiology we have been going over the cranial nerves, and I spoke to you about the sixth pair of nerves. You will remember I told you that this pair of nerves presided over the external recti muscles. If this child had paralysis of the external rectus muscle of the right eye, he might present a condition similar to that in which you now see him. To prove that there is no paralysis of the external rectus, you see he can turn the eye outward perfectly well; therefore this form is what is called concomitant strabismus in contradistinction to paralytic strabismus, because if we have paralysis of the muscles of the eye, the eye cannot be moved in the direction in which the paralyzed muscle ought to turn it, whereas here the affected eye moves with its fellow. This is the way in which we make our differential diagnosis.

Another point to be determined in squint may be illustrated by the following: I will have the child look at my finger then I will put my hand over the good eye, and you will observe the effect: the eye that was formerly turned in now rolls out and looks straight at my finger. It shows that the fovea centralis is still preferred in fixation—that there is central fixation as it is called. If he had been cross-eyed for fifteen or twenty years the eye would not turn out so well, because the macula would have lost this superiority, and he would have what is called eccentric vision.

In this case the boy's vision is good, and you will observe that it is always the right eye which turns in. You will notice further that his squint is constant. Sometimes squint alternates, affecting first one eye then the other. Sometimes the squint disappears entirely then returns. But here is a case in which the squint is constant, and it is always in the same eye. If you or I, at our age, were to be affected with a condition like that, if it should come on suddenly from any cause, we would immediately see double, because the object would be fixed on non-symmetrical parts of the two retinas. But in early childhood this diplopia is not observed.
One of the characteristic symptoms in diagnosis, as a rule, between concomitant and paralytic strabismus is that in the concomitant form there is rarely double sight, whereas in strabismus from paralysis of one of the ocular muscles the patient is very apt to have double sight, and he is apt to be greatly annoyed by it; the patient has vertigo; he cannot walk well or go up and down stairs because of his double sight. We have nothing of that kind, however, in this form of strabismus which comes on in the first few years of life, and which is due to entirely different causes.

As to the course of this disease: Suppose we leave it to itself, what would happen? Almost certainly it would remain as it is, or it would get worse. In rare instances internal strabismus has been corrected by nature in the course of several years; but those cases are exceptional. Left to itself, then, the eye will remain turned in. It will be used less and less, and its sharpness of vision will become more and more impaired from disuse. That suggests a phase of the subject that I might follow with great interest—in regard to the impairment of sight from disuse of the eye—suffice it to say that only in a limited sense does the eye become impaired from not using it. It will still retain the greater portion of its visual power even if it has long been disused, but within certain limits it does lose some of its efficacy.

Now, as to the treatment in such a case: It depends, first, upon the age of the patient; second, upon whether the squint is intermittent or constant; and third, upon the degree of the squint. We will briefly take up these three conditions separately:

First, in regard to age: You need attach no importance to crossed eyes in young babies. They roll their eyes about in a very uncertain way, and often in the first few months of life one of their eyes will turn in or out. This need cause you no anxiety. If, however, in a young infant, one eye remains constantly turned in, or turns in very frequently, it is most likely a case of internal strabismus, although it would be quite unwise to attempt any treatment at so early an age. Suppose the patient is 2½ years old, a pretty well grown child for that age, and one eye turns in frequently? Perhaps it is always the same eye, perhaps it is sometimes one and sometimes the other. If you are fairly expert with your ophthalmoscope you may be
able to adjust glasses to a child that will cure the strabismus and prevent the necessity for future operation. I am led to speak of the age, because a few weeks ago I fitted with glasses the youngest child in my experience. It was a child 2½ years old, a very healthy, fine-looking girl, unusually pretty, but with decidedly crossed eyes. I took the precaution to explain to the family that the result at best would only be doubtful as to cure, because it is exceedingly difficult to fit glasses accurately at so early an age. Of course in such a case your examination must be made entirely objectively, with the ophthalmoscope or other measuring instruments, as the ordinary tests cannot be applied to so young a child. I fitted that child with glasses, and the condition was cured, and remains cured today. The child wears the glasses all the time; it has been wearing them now for three or four weeks, and the cross-eyed condition has disappeared. Operative procedures will not usually be thought of before the child is 6 or 7 years old.

Second, the treatment will depend largely upon whether the squint is intermittent or constant. If the child is quite young, and the strabismus is intermittent, there is a better chance that glasses will affect a cure without an operation.

Third, treatment will depend upon the degree of the squint. If the degree is very slight you may expect more from the use of glasses and you should not at once urge operative measures. You will expect benefit from glasses especially if the squint is intermittent, because most of such cases can be cured without operation.

The proper treatment has already been outlined. It consists essentially in the adjustment of proper glasses, and if they do not prove curative, in cutting the internal muscle or sometimes the advancement of the external muscle. The operation which is generally done for relief of crossed-eyes is to cut the internal rectus muscle if it is strabismus convergens. The result of cutting is to make the muscle become attached further back on the eyeball. Occasionally we advance the external rectus instead, and sometimes we combine the two operations. The operation in itself is not difficult, but in little children it is usually wise to give an anesthetic.

Now to consider again the patient before us. Let us apply the different conditions I have enumerated to his case. First,
in regard to his age—he is between 6 and 7—consequently old enough for operative treatment. Second, the squint is considerable, and it is constant, so it will most likely not be cured by glasses. Third, the degree of the squint is very considerable, the eye turns in so that almost half the colored portion of the eye is hidden by the inner canthus, so it is of high degree. The indications, then, are for operative treatment; it is not likely that he will be cured after this length of time by the use of glasses; we have the history, which shows that glasses have been worn for two years. Of course it is possible that the oculist has not adjusted to him the glass that he needs; we recognize that a mistake might easily be made in this case; but the probability is that no glass will cure the condition.

I prefer a general anesthetic when operating upon cases as young as this, although it is rather difficult to gauge the effect. We will ask this lady to bring the boy back at our next clinic hour, when we will operate upon him, either cutting the internal rectus or advancing the external rectus as may seem best at the time.

As to the prognosis after operation, or what is to be expected from operative interference. If a patient has been the subject of constant squint for some months, certainly if the condition has continued for a year or two, it is not likely that the two eyes will be used for binocular vision even with operation. Most likely the patient will continue to use one eye. Of course he would use the other eye in a certain sense to embrace the field of vision, but he will not fix objects on the fovea centralis nor will he use it as he does the good eye. The cosmetic effect is the chief thing to be gained by operation.

Hypertrophied Tonsils and Adenoids.—This girl, M. G., is aged 4 years. Please notice the child’s expression as she sits in the attendant’s lap; most of you will make a diagnosis at once. The child has a rather drawn look at the bridge of the nose, an open mouth, a rather dull, expressionless and unintelligent appearing face.

We have this history of the case: She is a habitual mouth breather, breathing loud at night, and with that peculiar expression and drawn look about the bridge of the nose that is characteristic of adenoid growths in the naso-pharynx.

Now, we will examine the child and make our diagnosis
My first step will be to take a glance at the nostrils anteriorly; I do not expect to find anything wrong there, especially in a child of this age; they seldom have an hypertrophy of the intra-nasal tissue; it is common enough in older persons, but hypertrophic rhinitis is rare in early childhood. She seems to have considerable nasal discharge. You know how prone adenoids are to excite a secretion which, discharging through the nose, keeps up a constant irritation, a stuffy feeling about the nose.

Examining the throat, I find that she has a very decidedly enlarged tonsil upon one side; the other not so much enlarged. I am not going further than that today; the examination for adenoids in young children must usually be made entirely by the sense of touch; so far in our examination we have utilized the sense of sight only.

This is just the sort of case that will come to you many times in private practice. Most likely if the child's mother or some of the immediate family were here, we would be told that this little girl is subject to frequent attacks of sore throat; most likely she has a cough; very probably she has recurring attacks of inflammation of her ears, attended by earache and slight deafness.

Shall I go further and ascertain immediately if adenoid growths exist, and, if so, how are we to make the diagnosis? There is only one way, and that is by putting the finger back through the mouth into the naso-pharynx. It is impossible to use the rhinoscopic mirror in a child so young. I feel satisfied from the history of the case that there are adenoid growths probably of considerable size; but I do not intend to complete that part of the diagnosis this afternoon, I am simply going to remove the enlarged tonsils; that will be sufficient for this time; then we will have the child brought back later, and if adenoids exist we will remove them.

In regard to the indications for removal of the tonsils in children of this age: If mouth breathing, frequent attacks of sore throat, or inflammation in the ear, either acute or chronic, exist, with enlarged tonsils, then you ought to cut off the excessive portion; that much is plain and certain. If there are none of these symptoms, operation is not necessary, though it is demonstrated that one or both tonsils project beyond the median line, yet in such a case operative interference is per-
missible; not only will you make a freer breathing space for the child, not only will you prevent its cough, not only will you prevent its tendency to recurring sore throat, not only will you in a measure prevent future disease of the ears, but you will greatly lessen the child's susceptibility to diphtheria, scarlet fever, etc., and you will greatly lessen the danger from these diseases should they occur.

For removal of the tonsils a general anesthetic is not necessary. The child should be seated in the attendant's lap, or a member of the family may so act; the legs should be held between the knees, and this person should put his arms around the child's arms and hold it steady; your assistant will stand behind, and should hold the child's head up against the person who is acting as attendant; then, sitting in front of the patient, the operator with a head mirror reflects the light into the throat. I prefer for this purpose the Mathieu instrument, known as Mathieu's tonsillitome, and it is the one I have just used. If there is much bleeding from the operation it is better to wait a few minutes until the first gush of blood is over before you remove the second tonsil, as the blood necessarily obstructs the view. The technique of the operation is simple; you may or may not use a tongue depressor; if the mouth is moderately capacious I generally use one to hold the tongue down; carry your tonsillitome back, then turn the loop just over the tonsil, press it well up to the side, then clip. If you use the Mackenzie instrument it is advisable to have the throat pushed in from the outside, but with the Mathieu instrument this is not necessary.

The tonsils which we have removed from this little girl are nothing like so large as you have seen me remove from the throats of children, but they are large enough to cause a great deal of obstruction. It is the small ones that are hard to catch with the instrument. Large ones fit into the ring and are easily removed.

In doing these operations in private practice I advise you to pin around the child's neck an apron or rubber cloth to keep the blood from the child's clothing, and the same apron will serve to hold the child's arms. Make the assistant hold the child and a third party steady the head; and always have present a saucer of cracked ice and some tannic acid mixture. The latter should be thoroughly shaken, as it does not dissolve,
and let the child sip a little of it directly after the operation; it may also hold in the mouth some of the cracked or crushed ice; both of these agents are of use in arresting the slight hemorrhage that often accompanies removal of the tonsils.

I wish to warn you against expecting too much from cutting out the tonsils. It not frequently happens that adenoid growths are entirely overlooked in these cases of enlarged tonsils. The very symptoms that I have mentioned, viz.: obstructed breathing, nasal discharge, impaired hearing, purulent or catarrhal inflammation of the middle ear, cough, together with that characteristic facial expression—drawn look about the bridge of the nose, open mouth, and rather stupid physiognomy—all depend far more frequently upon adenoid growths than they do upon enlarged tonsils, but enlarged tonsils are also factors in producing these conditions; they are in the way, and removal of the adenoids will be much simpler and easier when the enlarged tonsils have been gotten out of the way. Removal of the tonsils is the simpler and quicker operation of the two, and it is well to begin with this first. If you are going to operate under anesthesia, then I advise you to do both at the same time; and if you are going to operate under anesthesia, removing both the adenoids and tonsils, then be sure to remove the tonsils first; the operation on the tonsils is done by the sense of sight; you must see the tonsil to put the hook over it properly and get it out. If you operate on the adenoids first, the blood from these cut surfaces will make it very difficult to see the tonsil. Therefore, when you operate under anesthesia for both conditions, begin with the tonsils and remove them first.
INFANTILE SCORBUTUS.
By C. E. Allen, M.D.,
Swanton, Vt.

INFANTILE SCORBUTUS is so closely allied to the disease, as manifested in the adult in its etiology, symptoms, and pathology, that a short history of the affection, as exhibited in the adult, seems necessary to obtain a clear conception of the subject.

Scorbutus is a condition of malnutrition induced by the continued use of a diet lacking in fresh vegetable material, with a tendency to death within a certain length of time should the conditions under which it arose remain unchanged.

In a well marked case of this disease there is a great degree of anemia, bodily weakness, and mental depression, with extravasations of blood into the various tissues and cavities of the body and a swollen and spongy condition of the gums, accompanied by tenderness, especially in the lower limbs, causing pain on motion or pressure.

Scurvy has been known since the earliest times, and before its etiology and treatment was understood, has, alone, and by its influence upon other disorders, been more destructive to mankind than any other disorder, notwithstanding which it has been most satisfactorily proven to be curable by means at hand in every habitable country.

It occurs only when fresh vegetable nutriment has been wholly or partially withheld from the diet for a considerable length of time. Scurvy does not appear when there is an abundance of fresh food and vegetables, though the food may be lacking in other ingredients necessary for perfect nutrition of the system in other regards.

In the early stage of scurvy the skin becomes pale and anemic, and the patient exhibits a listlessness of mind and a lack of desire to exercise or trouble himself about his condition. An energetic person becomes indolent and reserved, not speaking except when addressed, though if inquiry is made, will
complain of pain in the back and limbs, which he usually attributes to rheumatism.

There is no fever, except from hemorrhages into lungs or other cavities, and the patient usually sleeps readily enough.

Gradually small spots of extravasated blood appear, especially upon the legs and thighs, of a reddish-brown color. Often a number of these spots coalesce and form larger macula, while later in the disease larger areas will be noticed, giving the parts an appearance of direct violence. In connection with these external signs, dyspepsia is likely to intervene unaccompanied by physical signs of heart or lung implication.

The countenance indicates dejection or indifference, together with more or less bloating. The gums are generally so remarkably altered that many writers give this as a complete test of the disease, though other observers have found all the other symptoms of scurvy present, with the gums unaltered, or possibly paler than usual.

In most cases, early in the disease the gums are pale and contracted, but soon begin to show swelling at the margins, which gradually increases until the teeth are encroached upon, and finally may nearly disappear. The gums are dark and spongy, and disposed to bleed. The teeth become loosened, and if the condition continues are likely to fall out, and the odor from the mouth is intolerable, due to sloughing. The patient is likely to suffer from syncope at this stage of the disease, and his appearance is appalling.

His skin is dry and harsh, discolored with bruised spots, dirty looking, and bloated, and one unacquainted with the nature of the disease would think him entirely beyond the reach of human aid. Yet the change brought about in a few hours by the administration of anti-scorbutic diet is one of the most wonderful things known to medicine, and of itself proves beyond doubt that the principal cause of scurvy is an absence of such diet.

Our understanding of the final cause of scurvy is very obscure. That the immediate cause is a change in the quality of food, being deprived of certain vegetable acids, is obvious from the history of the disease. There are no microscopical changes in the blood, nor does a bacteriological examination afford any satisfactory solution of the difficulty. In fact, there are no changes in the blood, either anatomical or chemical, that
are peculiar to the disease. The most reasonable explanation of the phenomenon is that the relation between the blood and the capillaries and tissues is so altered as to permit some or all of the constituents of the blood to leave their natural receptacles and to enter tissues from which they are excluded in health.

Through the researches of Lind and other investigators in the early part of the century, the mortality from the ravages of scurvy in the adult has been almost entirely checked; but in infants during the time of bottle feeding, when the diet is of limited range, many cases develop, and I believe the mortality from this source is much larger than it should be.

The etiology, symptoms, and pathology, according to Cheadle and Barlow, of infantile scorbutus are identical with those noticed in the adult. The spongy, bleeding gums, which are so prominent a symptom in the adult, are usually well marked in children. This condition may be absent in cases developing before the appearance of the teeth. The sponginess is chiefly found about the teeth which have appeared, or about the teeth not yet through the gum. Occasionally only small submucous ecchymoses will be found, even as is seen in an adult patient who has lost his teeth.

Children are more subject to pyrexia in this disease, but this probably depends upon the amount of hemorrhage and inflammatory reaction with septic infection that supervenes.

As for the other symptoms, the earthy pallor, the anemia, muscular weakness, tendency to syncope, the edema, listlessness; and hemorrhages, the albuminuria, tenderness and swelling of the limbs, they are identical with those in the adult.

Careful observers have failed to record any cases of scurvy in infants at the breast, or in those fed with an ample supply of good cow's milk. On the other hand, those fed upon oatmeal and water, bread and water, desiccated foods, peptonized condensed milk, etc., with a very limited supply of fresh milk, or none whatever, are the subjects in whom scurvy is seen to develop, and in these cases in children, as with adults, the use of anti-scorbutics is a most convincing proof that the condition is one of true scurvy.

The following cases, one of which was attended by a brother practitioner, and the other in my own practice, demon-
strates the certainty with which scorbutus will develop in the absence of fresh vegetable material. In both cases the parents are in good circumstances and anxious to provide everything possible for their children’s welfare. In my experience the disease in this country is more likely to develop among the well-to-do, as they do not allow their infants to eat patato, etc., at table, as is customary among the poorer classes, and this practice, while it is likely to cause digestive troubles, is a preventive of scurvy:

Case I.—G. R., born of healthy parents, did well apparently on the nourishment given her to the age of six months, when she became fretful; her appetite variable, lost flesh to a certain extent, but not very perceptibly. No position seemed comfortable, and it was thought the child had rheumatism or had been injured by the nurse. She was kept upon a pillow, and at night would wake crying, when a change of position would relieve her. The child would not try to bear any weight upon her feet, was very sensitive to the touch, the tongue was inflamed, and the gums purple and swollen. There was no diarrhea, and food seemed to agree with her, but she did not care for it.

The diet had been condensed milk and farinaceous food. This was changed to fresh cow’s milk and Mellin’s food, together with orange juice, potato pulp, and celery juice. In twenty-four hours the child began to improve, and made an uninterrupted recovery.

Case II.—F. M., born of healthy parents, and, as in the first case, never nursed by mother, was fed upon milk and water for first few weeks, but, a diarrhea intervening, this was changed to desiccated food, which agreed with the digestion, and diarrhea was checked; but the child did not gain in weight or develop at all rapidly, and at the age of 7 months his weight did not exceed fourteen pounds. At this time the child became fretful, which was thought to be due to teething, but in a short time he became very sensitive to the touch, and soon the lower limbs seemed to entirely lose their power as if paralyzed, and the skin took on an earthy, anemic look. The gums were slightly swollen at the margin, with some sponginess, but not marked.
The child was now fed cow's milk undiluted, and given orange juice quite freely. A change for the better was noticed immediately, the lameness disappeared within two weeks, and now, at the age of 1 year, his weight exceeds the average weight of a child 1 year old.

The points which I wish to emphasize in these cases are:

1. — An absence of digestive disturbance to warn us that the food was inefficient.

2. — The misleading symptoms that pointed to rheumatism or infantile paralysis.

3. — The few symptoms present to lead one to suspect scurvy.

It is my firm belief that had we failed to discover the cause of the trouble, and had not corrected the diet, that both patients would have died, as medication without a generous supply of vegetable acids added to the diet is entirely useless.
The fact is day by day more strongly impressed on the minds of those who have the well-being of the rising generation at heart, that in order to ensure this desideratum the municipal control of the milk industry is the most important step to be taken in that direction. Statistics bearing upon the relation of milk and infantile mortality are forever coming to the front, and in the face of this condition of affairs the apathy of the general public with regard to a pure milk supply is greatly to be deprecated. Dr. Lemiere in the *Journal de Clinique et de Therapeutique Infantiles* contributes a paper dealing with the milk supply and infant mortality. The statistics quoted are chiefly those of the City of Lille. He notes that the death rate under two years in that city is 398.6, and in one parish it has risen to 520 for every 1,000 deaths recorded. Gastro enteritis is responsible for a large proportion of this death rate, and, as Dr. Lemiere truly remarks, this disease is preventable to a great extent by paying the necessary attention to diet and by ensuring a pure milk supply. The only possible manner in which an absolutely reliable milk can be provided, is that the trade in that article should be strictly supervised by competent persons. We do not deny that it is also necessary for mothers and nurses to take all needful precautions to keep the milk in a sanitary condition when in the house—especially should they avoid the habit of keeping it in a close bedroom all the night,—but it must be understood that all this labor is useless if in the first instance the vendors of the fluid cannot be relied upon, and that this is often the case is unfortunately true. What is required is a uniform or standard procedure of hygiene regulating the sale of milk. Dr. W. Heath, of Buffalo, has recently
issued a pamphlet containing many valuable hints tending in this direction, and suggests the following features as worthy of being incorporated to fortify existing laws relating to the milk industry:

1.—The method of indirect, though arbitrary, attitude toward the dairies supplying cities, and over which there exists no jurisdiction.

2.—The compulsory system of "tagging," giving character, dates, age of milk, prohibiting the sale of milk over twenty-four or thirty-six hours old.

3.—Sterilization and preparation at dairy for ultimate delivery, with label system of data and character.

4.—Prohibition of disinfectants. Milk-house conditions must preclude their necessity.

5.—Protection from infected house by interchange of bottles and receptacles.

6.—Record and supervision of the relation of contagious diseases to various milk routes.

7.—The abolition of street peddling and grocery store dealers.

Finally, we would impress upon medical men the necessity of instructing their patients in regard to the importance of cleanliness, and also as to the means best adapted for the sterilization of milk itself, as well as of the vessels in which it is contained and conveyed. A great reduction of infantile mortality is possible if proper municipal and domestic measures are taken to ensure milk being supplied and kept in a hygienic state.

Nothing will give a more realistic conception of the remarkable progress which has been made in medical science within the past two hundred years than to peruse the medical works written from the middle to the end of the Seventeenth Century, and to study and compare the
treatment in vogue then and now. At first sight we are apt to be overcome with astonishment at what appears to us in these advanced days to have been the colossal ignorance of even the leading lights of the medical profession at that time, and are perhaps too liable to forget that for our present advantages we have to thank the labors of those strenuous workers who have made them possible and paved the way for the splendid discoveries of the century now passing by. Dr. Robert Reyburn, in the Medical Record of September 24, gives an interesting and amusing account of some of the methods of treatment followed and the remedies used in certain diseases of children in or about the year 1650. For instance, Dr. Thomas Willis, an eminent physician who wrote and flourished at that period, has this to say on the treatment of epilepsy: "A man in this neighborhood had all his children dead of convulsions within three months after they were born. At length to prevent the same fate in a son of his that was new-born, he thought proper to try the power of medicine. I was called to him a few days after the birth, and ordered an issue in the first place to be made in his neck, and that two ounces of blood should be drawn next day at the neck by the application of leeches. I advised, besides, that for three days before each change of the moon, and again before the full, about five grams of the following powder should be given him morning and evening in a spoonful of the julep: 'Take prepared human skull, the root of male-peony, of each one drachm, pearls in powder half a drachm, mix them all together and make a very fine powder. Take of black-cherry water three ounces, the antiepileptic water of Langins an ounce, syrup of the flowers of male-peony six drachms. I likewise ordered the nurse to take a draught of whey, in which the roots and seeds of male-peony and the leaves of lily of the valley had been boiled, twice every day at the same hours.'" The writer goes on to say that under this treatment, supplemented by blisters applied behind the ears, and another bleeding at the jugular with
leeches, the child was cured of epilepsy, although at the age of 7 years an indolent tumor arose at the lower part of the backbone occasioning a distortion of the vertebra and culminating in a palsey. The famous Thomas Sydenham, far ahead of his time as he was, recommended bleeding for children suffering from measles or small-pox. While the other medical writers of the time prescribed as drastic and nauseous remedies for infantile ailments as the before mentioned Dr. Thomas Willis. Children living now have every reason to congratulate themselves on having been born when they were, although, as Dr. Reyburn remarks in concluding his article: "They must have been under better discipline than ours of the present day or they never could be induced to swallow such nauseous medicines."

Vaccination Rashes

Much of the prejudice against vaccination has arisen from the belief existing among the lay members of the community, that the majority of the skin complaints by which children are attacked are entirely due to vaccination. That the influence of vaccination in the production of various skin eruptions is greatly exaggerated in the minds of parents, would appear to be certain. While on the other hand there can be no doubt that vaccination is directly responsible for some forms of eruption, and indirectly for others. However, it is in a high degree unjust to lay to the charge of vaccination rashes of every description, even those which occur, perhaps, months after the operation has been performed. Dr. Robert J. Carter, writing on the subject to the London Lancet, for August 20, says: "Personally, I should hesitate to ascribe any rash as due to vaccination, except vaccino-syphilis, when, after examination, the site of the vaccination is found soundly healed, which may be roughly taken as occurring from four to five weeks after the operation." Again Dr. Crocker states that in no cases can an eczema be due to
vaccination where the vaccine pustule has completely healed before the appearance of the eczema. Pure vaccination rashes, that is those caused by the inoculation of pure vaccine virus and not to extraneously introduced germs, may be, according to Dr. Carter, practically classed amongst the other exanthemata. In fact, that vaccinia is a constitutional disease which more or less profoundly affects the whole of the tissues of the human organism in which it occurs. It can be easily understood that in the present state of feeling in many countries with regard to vaccination, that many rashes are ascribed to vaccination by the parents of children which are not remotely connected with it. And it is a matter of the greatest importance that every medical man should be possessed of sufficient definite and exact knowledge of the subject to be in a position to successfully combat the prejudices of parents and the false statements of the anti-vaccinationists.
SOCIETY REPORTS

THE LOUISVILLE MEDICO-CHIRURGICAL SOCIETY.

Hydrocephalus, Craniotomy, Eclampsia.—John G. Cecil, B.S., M.D.: Three days ago I was called by doctors Grant and Taylor to assist in a case of labor. Reaching the designated place at 12.30 o'clock, I found a girl 15 years of age who had been in labor since early that morning, and was having puerperal convulsions. The doctors in attendance had applied forceps at the superior straight several times, but each time the forceps had slipped off, and nothing had been accomplished. They had tried different kinds of forceps and had applied them in various ways.

My examination revealed a ruptured perineum, probably produced by the forceps slipping before the head was down in the pelvis; the next thing which presented was an enormous hematoma (fully as large as my fist) of the right labia, which interfered somewhat with manipulation. Digital examination revealed the vagina apparently filled with a hematoma (at least that was what I took it to be) forming on the child's head, the caput succedaneum. A pair of Tarnier forceps were put on without difficulty, which had been true of all forceps applied previously, and the compression screw was turned up to its last notch, as tightly as possible, so I thought I had a good "bite," but slight traction pulled the head through the forceps. I tried a second time, thinking possibly the forceps had been applied too low, with a similar result. Another pair of forceps were tried with no better effect. The Tarnier forceps were again applied, and this time I succeeded in getting the head slightly engaged, which had not been done before, but traction after that was of no avail. Meantime labor pains continued, convulsions being controlled with chloroform.

I then made an incision into the child's head with an ordinary scalpel, and an enormous quantity of water escaped in a gush (saturating a sheet which I had put over me), indicating the nature of the trouble—that of hydrocephalus. It could then be understood why forceps would not stay on; they could
be properly adjusted, but slipped off just as they would from a bag half filled with water.

The difficulties which then presented themselves were: A woman still unconscious from chloroform; a child undelivered in the pelvic canal; and no forceps that would hold. By introducing a blunt hook into the back of the child's head where it would hold, we succeeded in lowering it slightly; then getting the blunt hook under the shoulder and applying craniotomy forceps on the collapsed head, we brought it down low enough to get the arms out and deliver. Meantime the hematoma of the vulva ruptured, and a hemorrhage resulted from that source, but we proceeded regardless of this, and the bleeding soon stopped of itself.

The case is interesting in several respects: (1) the age of the woman; (2) the hydrocephalic head, which would not enter the canal; (3) our inability to keep forceps upon the head; (4) the opening, then drawing down and delivering the head, and (5) the ruptured perineum, which I afterwards restored—it had torn into the rectum.

After delivery the patient had two convulsions; they were not severe, however, and were easily controlled with chloroform. The patient's bladder was catheterized and very little urine found, and I presume this was the cause of the convulsions—deficient action of the kidneys. My advice to Dr. Taylor was such as is usually practiced in puerperal convulsions, viz.: To purge the patient freely, and to control the convulsions with chloroform, chloral, and bromides. The child had evidently been dead for some time before I reached the patient. The mother subsequently died.

REMARKS.

Dr. T. S. Bullock.—I think Dr. Cecil endangered his patient by so many attempts to deliver with forceps. It seems to me it would have been better to have at once performed craniotomy and delivered, instead of attempting to deliver with instruments after so many trials.

Dr. R. B. Gilbert.—The case is similar to one I had a few months ago. A married woman claimed to have carried her child to the beginning of the eleventh month; it was enormously large. The doctor in attendance had been giving the
woman chloroform for six hours; she had been in labor twenty-four hours. The child was dead; there was a large protruding fluctuating tumor, the caput succedaneum. Upon opening that, a quantity of black, bloody serum discharged; following this the head descended, but it was too large to pass through the canal. Craniotomy was practiced, but after macerating the cranium we could not get the child down; a blunt hook was fastened into the foramen magnum, and even then the child could not be pulled down. I remembered having heard Dr. Turner Anderson several years ago remark that turning was an improvement over forceps delivery, and proceeded to do a podalic version, and delivered a child, which weighed eleven pounds after the contents of the skull had been evacuated. I believe if Dr. Cecil had adopted this method when applying his blunt hook, he would have accomplished delivery easier.

Dr. J. A. Ouchterlony.—I remember to have had two or three cases of intra-uterine hydrocephalus. In the first one, as often happens, owing to mal-distribution of weight of the two extremities of the child, there was also mal-position, and the child had been born all but its head; it was a breech presentation; the cord protruded, and was cold and pulseless, and the efforts which had been made persistently to deliver the child's head had proved unavailing. An examination convinced me that it was a case of hydrocephalus. I introduced Thomas' perforator, and emptied the cranial cavity of its contents, then applied Churchill's craniotomy forceps; simply twisted the flaccid tissues of the head around it, and delivered very easily. In another case the head presented, and the quantity of fluid the cranial cavity contained was excessive. The physician in charge had met with the same difficulty in applying forceps that those who had charge of Dr. Cecil's case had encountered. And I may say, I think one of the signs of hydrocephalus is where the forceps slip off over and over again. In that case I did as in the first, viz.: emptied the cranial cavity by means of Thomas' perforator, applied Churchill's craniotomy forceps, and had no difficulty in bringing the child into the world. These cases are interesting, first because of their rarity, secondly, the almost inevitable death of the child prior to delivery and thirdly, the ease ordinarily with which the delivery can be accomplished when the nature of the case is recognized.
Dr. J. G. Cecil.—I did not recognize the hydrocephalic condition at first. Dr. Grant told me that he had to deal with an enormous caput, which was easily recognized. While the vagina was largely filled with this caput (which afterwards proved to be the hydrocephalic head), still by deep pressure we could feel the bones of the head, and also recognize the position of the child, which was still supra-pubic, not having entered the superior straight. Had I recognized the hydrocephalus at once, my course of procedure would have been what it finally was after the condition was recognized.

The criticisms that have been made are just. Still it is to be said in extenuation, that when I applied forceps the third time (I believe) I succeeded in lowering the body of the fetus, the head entering the canal, the bag of waters representing the head protruding from the vulva, and then it was recognized we had a hydrocephalus to deal with; meantime the head had already entered the superior straight and having got that far I thought we could accomplish delivery promptly, and did so after ten or fifteen minutes, using the blunt hook and craniotomy forceps, grasping the collapsed head and pulling until we could get hold of the shoulders and finally accomplish delivery.
PRACTICAL NOTES

FORMULARY.

Pertussis:—
R Peronin.......................... 0.08 (1.2 grains).
Decoct. alth........................ 96.0 (3 ounces).
Syr. alth........................... 10.0 (21/2 drams).

M. D. S.—One coffeespoonful three times daily (child four years old).—Ther. Monatsh.

Caries, Synovitis Fungosa, Osteomyelitis:—
R Hydrarg. sozoiodolic............... 1.0 (15.4 grains).
Glycerin. pur........................ 8.0 (2 drams).
G. arab. pulv.......................... 4.0 (1 dram).
Aq. destillat......................... 88.0 (2.8 ounces).

M. Sig.—1.0 to 4.0 to be injected every three or four days.—Witthauer.

Diphtheria:—
R Sodii sozoiodolic pulv. subtil 0.7-2.0 (10 to 30 grains).
Flor. sulfur.......................... 4.0 (1 dram).

M. Sig.—For insufflation.

The Subcutaneous Injection of Oil of Turpentine for preventing nephritis during scarlet fever is advocated by Pujador and Fauva. The latter finds the cause of scarlet fever to be a streptococcus infection, and as Fochier (Lyon) met with very favorable results in puerperal streptococci infection from the subcutaneous injection of oil of turpentine, he also employed it in scarlet fever with the special end in view to prevent the usual complication with nephritis. His success here was also very great. In 120 cases of scarlet fever in children, some of which were quite severe, as well as in a few cases of adults, perfect recovery after a few injections took place within three weeks, albumin never appearing in the urine at any time. Improvement already began three hours after the
first injection; that the turpentine had been absorbed was known by the violet odor of the urine. To prevent any local irritation it is recommended to inject the turpentine with a bicarbonate of soda solution. As for the rest, the injections are perfectly harmless. To obtain the action desired, children should not be injected with a smaller dose than 1.0 (15.4 grains), and adults as high as 3.0 (3.08 grains). Two or three injections are sufficient, as a rule, to obtain success.—Die Therapie der Gegenwart, 1898, iv.

To Prevent Otitis in Scarlet Fever, Comby recommends the painting of the posterior pharyngeal wall frequently with a 10 per cent. solution of resorcin (occasionally oliguria is thereby produced, with a greenish or dark tint of the urine). Naphthol camphor may also be used for this purpose in the following formula:

B Beta-naphthol .................. 10.0 (2½ drams).
Camphor ....................... 20.0 (5 drams).
Glycerin ....................... 30.0 (7½ drams).

M. Sig.—For external use.—Wien. med. Presse, 1897, xxx.

In the Treatment of Whooping-Cough, according to J. B. Busdraghi (Madrid), we should carry out three indications, namely: (1) disinfection; (2) quieting the nervous system; (3) preserving bodily strength. For the first Busdraghi employs a carbolic acid spray (sol. of carbolic acid 2 per cent.), for ten minutes at a time, once daily; for the second, trional has served him well in bringing about a quiet, lengthy sleep; the dose according to the age of the patient is 01-0.5 (1½ to 7½ grains). Should this remedy be insufficient he adds to it a spoonful of a 1 per cent. solution of chloral hydrat. For the third—the preservation of the strength—proper food is employed. Busdraghi has used somatose as a food with good result, which he prescribes, according to age, three or four times a day, in doses of one-fourth to one-half a teaspoonful dissolved in milk.—La corresp. med. 1897, xxx.
BOOK REVIEWS.

The Mental Affections of Children—Idiocy, Imbecility, and Insanity.
By William W. Ireland, M.D., Edinburgh, H M. Indian Army (retired list), Corresponding Member Psychiatric Society of St. Petersburg and of the New York Medico-Legal Society. Formerly Medical Superintendent of the Scottish Institution for the Education of Imbecile Children, and Medical Officer for Miss Mary Murray's Institution for girls at Preston. London: J. & A. Churchill, 7 Great Marlborough street, Edinburgh: James Thin, 55 South Bridge. 1898.

This work is virtually an enlarged and revised edition of Dr. Ireland's former book on idiocy and imbecility. The principal additions to the new work are the pages on the development of the brain in childhood, the pathology of gen- etous and paralytic idiocy, the chapters on sclerotic and syphilitic idiocy, and that of insanity of children. In his preface the author pays a pleasing tribute to the interest taken by the rising school of psychology in the United States in the lessons to be gained from mental pathology. In the opening chapters Dr. Ireland treats of the causation of idiocy, and states as his opinion that in the majority of cases it is due to neurotic heredity, considering that the influence of alcoholism has been greatly exaggerated. With regard to the influence of illegitimacy the author holds that statistics showing that idiocy is more prevalent among the illegitimate are not borne out by facts, and is rather inclined to think that the reverse is the case. Dr. Ireland, although regarding the question from a broad-minded point of view, does not agree with the teachings of Lombroso and his school, to the effect that idiocy is to be considered as an example of reversion to a lower type in the evolutionary scale, and on the point expresses himself thus: "If among barbarous tribes some correspondence of the weak minded and born delinquent had come into being, they would have perished in infancy or sunk in the efforts to gain food, or perished in the feuds of warring savages. If the creature had
progressed from apedom into an animal, like the burglar or the pickpocket, he would never have progressed any further. The habitual malefactor who fills our jails is a degraded product of our complex civilization. It is our social system with the sacredness which it attaches to human life that brings forth, sustains, and protects the existence of these creatures, who belong to a pathological type, not to a physiological one. It is a mere waste of time to study the habitual criminal apart from the antecedents which have led him, and the circumstances which keep him at war with society.” This appears to be more rational reasoning than that of Lombroso, who believes that in the habitual criminals of our large cities we see the reversion of the savages who at one time ranged the forests of Germany and Great Britain. The book is divided into the following classifications of idiocy: Genetous idiocy, microcephalic idiocy, hydrocephalic idiocy, eclampsic idiocy, epileptic idiocy, paralytic idiocy, traumatic idiocy, inflammatory idiocy, sclerotic idiocy, syphilitic idiocy, cretinism, and idiocy by deprivation. So far as microcephalic idiocy is concerned Dr. Ireland again states his disbelief in atavism as a cause notwithstanding the opinions of Vogt and other authorities in favor of this theory. He also has no faith in surgery for the relief of mental affections, and although successful results following the operation of craniectomy are occasionally reported, he distrusts the procedure, it being “founded on an incorrect pathology.” The chapters on cretinism and cretinoid idiocy are hardly so satisfactory as some of the others, but the treatment by thyroid extract is ably discussed.

Perhaps the best contribution in the book is that dealing with the insanity of children and insane idiocy. That part of the work referring to the education of feeble-minded children is worthy of the closest attention, especially the remarks advocating a close supervision of those in charge of idiot institutions. The concluding chapter will certainly prove the most entertaining to the lay reader. It is entitled “Wolf Boys,” that is children who have been lost in the forest or jungle and supposed to have been fostered by wild animals. Dr. Ireland served for many years as a surgeon in the British Indian Army and therefore had good opportunities of enquiring into the details of many of these cases on the spot. Some of the tales
told of "wolf boys" by Dr. Ireland have a strong flavor of Rudyard Kipling's Jungle Book, although it is only fair to Dr. Ireland to say that he is very sceptical as to their truth. The book throughout is distinguished by a fine literary style, and should enhance Dr. Ireland's great reputation as an authority on mental affections of childhood. The printing, illustrations, and binding are fair, but we will say right here that in these respects the British medical publishers have yet something to learn from those of this country.
ABSTRACTS.

PRIMARY ACUTE NEPHRITIS IN CHILDREN.

Andriotaki (La Medicine Moderne, 1898, ix., 52) practiced his profession of dentistry for four years in the various hospitals of Greece and in Constantinople, and had the opportunity of observing a number of children suffering with primary acute nephritis.

With the experience gathered on the Island of Halki, near Rhodes, he considers himself qualified to express an opinion corroborating Comby, that acute primary nephritis in childhood is a benign disease, which, in the great majority of cases, runs a favorable course.

Infantile nephritis frequently occurs, and is not difficult to diagnose; as a rule the child is attacked while in robust health, no infectious disease having preceded it, and the disease is therefore truly entitled to the name of "nephritis genuina seu primitiva."

Andriotaki observed twelve cases of this affection—eight being boys and four girls, ranging in age from 2 to 10 years. In four of these cases the disease began with a pharyngitis, or a nasopharyngeal catarrh; in the other patients the following symptoms pointed to this disease:

A puffed face, and edema of the lower extremities. As far as the etiological factor is concerned, the relatives of the patient laid it, in every case, to the catching of cold.

From a medical point of view, the catching of cold can only be looked upon as a factor which induced a weakening of the organism, and therefore diminished its resisting power toward the micro-organisms which are always present in large numbers in the oral cavity, and whose virulence, as is well-known, may be increased whenever the organism becomes weakened in its power of resistance from any cause, or as a result of any influence. Long, long ago, our immortal Hippokrates gave expression to the saying: "Man is diseased from the moment of his birth."

In acute primary nephritis, the origin of the disease must be ascribed to the harmful action of micro-organisms, which are present in extraordinary numbers, in the oral cavity. In the latter, therefore, must we seek for the origin of the pathogenic micro-organisms, and for the renal-inflammation.

The symptoms observed by Andriotaki in all his cases were: Puffiness of the face, edema of the extremities, a scanty, dark colored urine, and the presence of albumin in the latter. The patient complained of headache, and of other pains which could not be located, of insomnia, and general malaise—which invariably made their friends anxious.

Treatment strictly carried out was always crowned with a gradual decrease of all the symptoms. Andriotaki, above all others, instituted a general disinfection of the gastro-intestinal canal. After having freed
the organism from toxines by a purgative, he ordered benzanapthol, salol, bicarbonate of soda. As a local revulsive measure, he employed dry cuppings in the lumbar region, which were at times repeated; externally he prescribed friction with balsam, to be repeated two or three times a day. For the existing anuria he ordered baths.

Under this treatment, and the absolute milk diet enforced, as well as rest in bed, the albuminuria rapidly disappeared, and simultaneously with it also the rest of the symptoms, and perfect recovery was realized in a short time.

Andriotaki had an opportunity to watch these patients for a long period after they were dismissed from medical care. In spite of the unfavorable sanitary conditions under which these patients lived, and of the unsuitable diet they were obliged to eat, he did not observe one relapse. He mentions one case to show that the disease may run a favorable course, in spite of very unfavorable conditions. The case was that of a 5-year old boy, who presented all the symptoms of an acute primary nephritis. The measures proposed by Andriotaki—milk-diet, a quiet life, etc., were not heeded. The patient went about, and was often met by Andriotaki in his rounds in Halki. After a few days the child was again brought to his office. Notwithstanding the deficient care and mixed diet which the child received, the edema had disappeared and the urine was free from albumin. The child had perfectly recovered.

Andriotaki concludes with the following words: "Primary acute nephritis is a benign and readily curable disease if the proper treatment is strictly carried out. In the great majority of cases no bad effects are left behind by the disease."

THE TREATMENT OF TUBERCULOSIS OF THE GLANDS AND BONES BY MEANS OF SAPO VIRIDIS.

Gisler (Corresp. f. Schw. Aerzte, 1877, xxvii., 621) has treated on the whole 115 cases of tuberculosis with sapo viridis, of which 32.2 per cent. were unsuccessful, 49.1 per cent. improved, and 25.9 per cent. were cured. On an average, 51 days of treatment were devoted to one unsuccessful case, 92 days to an improved case, and 102 days to a cured case. Cases of tuberculosis of the bone were more rapidly cured on an average than those of the soft parts. During the course of treatment there was noticed an improvement of the general condition, especially an increase of appetite, decrease of glandular enlargement, namely, a gradual disappearance without disintegration, the more distinct appearance of individual plaques of glandular tissue, dessication and healing of carious fistulae, resorption of pleuritic or peritoneal effusions, and in some cases even the absorption of pneumonic infiltrations. The method consists in rubbing a piece of green soap of the size of a chestnut with a small portion of tepid water daily into a different part of the body, and washing it off after the lapse of half an hour. We may employ sapo viridis, sap. kalin. venal, or
even soft-soap, which is prepared from some animal fat, in place of the officinal linseed oil; for example, from cod liver oil. In place of the inunction, a Priesnitz pack made with spirits saponato-potash may be substituted.

As regards the manner of action, an increase in the alkalinity of the blood is out of the question, but we rather incline to the belief that a favorable action is produced by the massage, which is assisted and enhanced by the resorption engendered by the stimulating action of the soft-soap, as also by the irritation conveyed to the skin and the influence thus exerted on the regulation of heat, dissemination of the blood, and on glandular secretion.

BIFID NOSE.

At a meeting of the North London Medical and Chirurgical Society, held on January 21, 1897, Mr. W. R. H. Stewart, showed a man, aged 23 years, on whom he had performed a plastic operation for a broad and deep

Mr. W. R. H. Stewart’s Case of Malformation of the Nose.
Reproduced from the Laryngological Society’s transaction.

groove, in the middle line of the nose, running from the lower end of the nasal lobes downward between the lateral nasal cartilages. Along the floor of the groove was a scar, due to the removal of a tumor in infancy.
in all probability adenoid. At the operation the anterior margin of the septal cartilage was found much broadened. The result of the operation was very satisfactory.—Brit. Med. Jour., Feb. 6, 1897.

"SADDLE NOSE," IN WHICH A CELLULOID BRIDGE WAS PERMANENTLY BURIED.

At a meeting of the Liverpool Medical Institution, held on January 28, 1897, Thelwall Thomas showed a patient, aged 15 years, whose nasal bones had disappeared in childhood from congenital syphilis. Seven months before exhibition, a piece of celluloid, modeled like nasal bones, and possessing a well marked keel on its concave surface, was inserted subcutaneously through an incision made on the left side. Having been pressed into position, the keel fitted between the nasal processes of the superior maxilla, and the lateral portions rested on these processes. There was no appearance of irritation, and the personal appearance was greatly improved.—Brit. Med. Jour., Feb. 6, 1897.

THYRO-HYOID CYST.

At a meeting of the Laryngological Society of London, held on November 10, 1897, Mr. Wyatt Wingrave showed a little girl, aged 5 years, who, when a few months old, had a swelling below her chin. This swelling gradually increased to the size of a cobnut. Twelve months ago it became red and tender and was opened by her doctor. A discharge has been present ever since. On examination of the opening a fistula was seen in the middle line of the neck, superficial and apparently attached to the isthmus of the thyroid body, moving with deglutition and discharging pus-like matter, which was found to consist of epithelial cells undergoing fatty degeneration, suggestive of colostrum corpuscles.

The sinus was dissected, and on microscopical examination presented an irregularly corrugated canal with diverticula, lined by spheroidal and ciliated "palisade" epithelium, resting on an ill-defined hyaline basement membrane, outside which were occasional clusters of small-cell tissue; the wall was composed of densely packed bundles of white-fibrous tissue.

LUPUS OF THE PHARYNX AND LARYNX.

Dr. Lambert Lack, in Treatment for April 28, 1898, extols the internal administration of arsenic without local treatment for lupus of the pharynx and larynx, maintaining that it is a specific in this disease. In intra-
nasal lupus arsenic does not seem to be nearly so efficient, and he usually employs local treatment as well. He draws attention to the fact that lupus of the throat differs remarkably from other forms of tubercular disease of the same region, although the affections are histologically, and as far as can be judged, etiologically identical; and he thinks that the effect of arsenic in throat-lupus seems to still further differentiate these affections, as the drug has no influence on or acts adversely in the other tubercular affections.

A CASE OF EXTRA DURAL CEREBRAL ABSCESS OF AURAL ORIGIN WITH THROMBOSIS OF LATERAL SINUS, IN WHICH THE SINUS WAS NOT AFFECTED; RECOVERY.

Dr. Bronner relates this interesting case in the *Lancet* for April 2, 1898.

A boy, aged 14 years, had had occasional discharges from the right ear for several years; for seven months it had been constant. For six days the boy had complained of pain behind the ear, where a swelling had existed for the same period. He was extremely ill. Face flushed; partially comatose; very giddy; slight stiffness on the right side of the neck, and severe pains in the head. Temperature, 101°; pulse, 65°. Optic discs congested. The antrum was opened and found "only slightly diseased," but the attic was full of granulations and fetid pus. The lateral sinus was hard and evidently thrombosed. As there were no urgent symptoms and the thrombus was possibly non-septic, Bronner decided not to open it. Complete recovery occurred.

This is certainly a valuable lesson and deserves careful notice.

EMPYEMA OF THE ANTRUM IN A CHILD THREE WEEKS OLD.

Dr. Alexander Douglas, of Oamaru, New Zealand, reports this interesting case in the *British Medical Journal* for February 5, 1898. When first seen the right cheek was swollen, the right eyeball protruded, the eyelids hyperemic, and the conjunctiva congested. On looking into the mouth, bulging of the roof was observed on the right side; in fact the superior maxilla was prominent in every direction. Pressure over the cheek caused pus to exude from the right nostril. An opening was made inside the mouth, and subsequent syringing with boric acid lotion effected a cure. With regard to etiology: There was no difficulty in the birth, but the mother's nipple was sore, and discharged "matter" for the first week after delivery, the child's symptoms appearing a fortnight after delivery.
This case is an undoubted one of empyema of the antrum, due in all probability to infection from the nipple. Mr. D'Arcy Power, in the British Medical Journal for September 25, 1897, related a somewhat similar case. A wasting boy, aged 8 weeks, was admitted into the Victoria Hospital for Children on account of an abscess which had prevailed, and was discharging at the lower part of the right lower eyelid. The right side of the face was somewhat fuller than the left, and the skin of the lower eyelid and cheek was red and hot. A considerable quantity of pus could be squeezed out by pressure upon the cheek, and on looking into the mouth a small quantity of pus could be seen exuding from the alveolar border of the upper jaw. A probe, passed along the sinus of the cheek, showed that the upper part of the superior maxilla was bare. The sinus was enlarged, and an opening was made through the floor of the antrum so that a drainage tube could be passed from the eyelid into the mouth. About a drachm of thick pus came away at the time of the operation. Death occurred ten days later. Forceps were used at birth, and both sides of the face were bruised thereby, especially the right. When the child was a month old there was some difficulty in closing the mouth, redness and swelling below the right eye appearing about the same time. The abscess which formed was opened by the medical man in attendance. From the history this case does not appear to have been one of true primary empyema of the antrum but rather a traumatic infection of the tissues outside it.

THE RESUSCITATION OF THE ASPHYXIATED NEW BORN.

R. Furst (Der Kinderarzt, 1898, ix., 27,) says: Even the mature, normal infant suffers, according to the duration of birth, from a greater or less degree of asphyxia, during the short period in which the placenta is loosened, and pulmonary respiration is substituted for the placentar form. This is, however, only slight, and rapidly passes off. Slight periphreal irritations (the influence of the air, a slap on the nates, etc.) are usually sufficient to start the respiration, even in cases where the former is momentary arrested with a deep inspiration and a loud cry, at the same time that the cardiac impulse takes on its regular rhythmic beat. By the arrest of the fetal circulation, which takes place normally, all pathological conditions which might arise from this change into the permanent circulation are avoided. The aspect of the case, however, becomes different when the placentar circulation is interfered with or greatly restricted, either before or after birth, if abnormal labor pains, compression of the cord, premature rupture of the waters, premature loosening of the placenta, acute grave affections of the mother, etc., have already severed the connection between the fetal and maternal circulation, and have interrupted the supply to the infantile medulla oblongata of oxygenated blood, before pulmonary respiration has taken place in the child. Here we meet with a grave disturbance, which has been correctly named dyspnea, in contradistinction to the usually short apnea of the
normally born infant. We are not at first struck so much with the suppression of the radial pulse (asphyxia), which may be absent, as by the suppression for a long period of the respiratory function, and the difficulty in maintaining its regularity. Already in the uterus and intra partum, a grave disturbance of the circulation and of the reflex excitability of the medulla oblongata is indicated by the sudden deficiency in oxygen. The pulse becomes very weak, meconium is voided, and the child, making premature attempts at inspiration, aspirates amniotic fluid, blood, etc., and is thus in danger of asphyxiation. It may succumb even before birth to the premature irritation or paralysis of the respiratory center. Venous stasis in the brain, cerebral pressure, caused by hemorrhages, may appear in a tedious labor, especially when operative interference is necessary, so that the infant may be unconscious, making no attempts at respiration at all, or only weak, spasmodic, intermittent ones, although the cardiac impulse is not yet totally absent. This, in many cases, may also be true of the respiratory center, whose irritability is frequently only diminished. In still graver cases this irritability becomes less and less after birth, especially when the oxygen contained in the blood, which has not yet ceased to circulate, is still absorbed by the tissues, and carbonic acid gas is eliminated from the latter, the blood becoming more and more unfit for respiration.

We must sharply distinguish between two kinds or degrees of asphyxia, between a livid and a pallid. It may occasionally happen that the second graver form is developed in a short time from the first and lighter form. These two forms, however, are, as a rule, usually distinct. The livid form, presents a child with blood vessels over-distended with blood; the vessels of the umbilical cord and the skull cavity are also over filled with blood. The pulse is slow and full. The muscular tonus is retained, as is shown, for example, by the intestinal peristalsis. In favorable cases respiration is gradually resumed, the pressure in the arteries of the umbilical cord slowly decreasing. A cry is also emitted, and gradually the circulation, as well as the respiration becomes normal.

The pallid form, on the other hand, presents an altogether different picture, which may be compared to that of paralysis. The pale, flaccid child, does not present any muscle tonus, nor any intestinal paralysis. The bulbar reflexes are also absent. The cardiac impulse is weak and irregular; the arteries of the umbilical cord are not filled; and although respiration may be present, it is neither sufficiently continuous nor deep enough to furnish oxygenated blood to the medulla oblongata, which is nearly devoid of reflex irritability. Even where cardiac action continues longer than respiration, it will not be able, unless it succeeds in re-establishing the central reflex irritability indirectly by respiration, to prevent a fatal issue.

It stands to reason that a livid form presents a more favorable prognosis than a pallid one, and that the prognosis is determined as well by the degree as by the duration of its causes. Should these be already active some time previous to the conclusion of the birth, and should the condition be complicated by strong intrauterine aspirations on the part of the
child, by "Sluck-pneumonia," atelectasis of the lungs or lesions of the nerve centers, it naturally becomes more unfavorable. To Schultze belongs the honor of having cleared up the indications for treatment, so that there are hardly any difficulties to it at the present time. We are now in possession of sharply defined ideas. All attempts at resuscitation as a first principle must, however, be rapidly and energetically carried out, and be of sufficiently long duration; they should not be rigidly adapted only to the form of asphyxia at hand, but also to the stage with which we are dealing, and which may rapidly change under certain conditions. Our first endeavor, then, should be to bring on respiration (ventilation of the lungs) and circulation, and also to keep them active. If we are dealing with a livid, our greatest anxiety should be to stimulate the center of respiration by reflex irritability. The umbilical cord should not be tied too early, but peripheral irritation should at once be excited, taking care at the same time that the air passages have been freed from fluids. Per contra, in a pallid the first indication is to restore respiration and cardiac action, and to protect the lowered reflex irritability of the medulla oblongata from becoming totally extinct by supplying it with oxygenated blood. In the form of apparent death, the respiratory center is no more susceptible to reflex irritation. Its nutrition has been, so to speak, already interfered with, and it must again be made susceptible to such stimulation. Artificial respiration is the only method which will accomplish this object.

The treatment of a livid type consists primarily, therefore, in delaying the tying of the cord. Whether it is advisable to allow about a tablespoonful of blood to flow from the engorged cord after cutting it, is still sub judice.

After the cord is properly tied, cutaneous irritation should at once be affected. Rapidly plunge the child into cold water for a few seconds, and if the reflex is not altogether abolished, the child will soon pull up its legs and begin to cry. This is the most satisfactory and swiftest method of all, nor is this method at all injurious, if the infant is at once wrapped in a warm sheet. Should the first immersion not be followed by the expected result, it may be repeated a few times. Its action is more rapid than that obtained by the affusion of water, and induces more prompt and stronger reflexes than rhythmic traction of the tongue, which has been recommended by Laborde and Perinne (1893-94), and which not infrequently leaves behind unpleasant injuries to the tongue that prevent the child from nursing properly.

In a pallid form we should seek, above all, to energetically stimulate cardiac action and respiration. Neither the blowing of air into the lungs (which, under the most favorable conditions, will distend them with air containing carbonic acid gas, and may also force previously aspirated matter down deeper), nor the use of electricity, advocated in 1863 by Pernice, the application of which, in private practice, is attended with altogether too much loss of time, are effective. Although these methods may, perhaps, produce a deep inspiration, no alteration with expiration occurs, hence no rhythmic breathing. The only methods which are able to produce a systematic artificial respiration, and with it a removal of the stasis which
is present in the circulatory system, and a re-awakening of the slumbering central reflexes, are the mechanical ones, which have been especially studied by Spiegelberg, Olshausen, and Schultze. Marshall Hall’s method (1856), for use in the adult, is at the present time looked upon by probably all physicians as unsuitable of application to the new-born, on account of the tenderness and want of elasticity of the infantile thorax. So much the more, however, are the "swinging motions," recommended by Schultze, recognized and greatly employed. It should be mentioned that in carrying out this method, the author’s directions should be carefully followed in every detail, and especially should the hands be placed exactly as described by the author, for in deviating from these, and carelessly or violently carrying them out, numerous injuries (excoriations, suggillations, internal hemorrhages, and even fractures) may be inflicted upon the child. After eight or ten swinging motions (one minute’s duration at the longest), the child is at once placed in a warm bath and the expectoration, respiration, and heart’s action, the muscular tonus, as well as the capillary circulation, is controlled. Should the indication again arise, the swinging-motions are repeated in the same manner, alternating with the bath, so that 150 swinging motions are made within an hour. If the reflex centre is at all susceptible, and we are patient, there will take place a stimulation of the cardiac impulse, a ventilation of the lungs, and, following the regular rhythm of dilatation and compression of the thorax, spontaneous respiration. This may be taken as a sign that the swinging-motions can be abandoned, for now the disappearance of engorgement in the capillary system, as well as the decrease of cerebral pressure, the stronger, regular heart beat, the more rapid effect of stimulation, and the reappearance of the muscular-tonus, will soon be apparent. The catching of cold by the child may be virtually excluded. The baths will prevent an excessive lowering of temperature in the child. Fractures will not be produced if this method is correctly followed out, and any fractures already present are in themselves no contra-indication, although a novice may in this case inflict injuries to the soft parts with the ends of the fractured bones. For cases of this kind, N. Rosenthal (Berlin) has introduced a modification of mechanical stimulation for the production of artificial respiration, which is quite safe in the hands of the inexperienced. Various other methods which have been suggested are unable to replace Schultze’s swinging-motions, which have proved a reliable auxiliary to every obstetrician.

As Schultze’s swinging-motion at the same time facilitates expectoration of aspirated fluids, it also renders aspiration by means of an elastic catheter (recommended by Scheel 1788) and Hueter (1863) unnecessary. Although these methods (either aspiration by the mouth or by means of a syringe) are quite useful and are not difficult to carry out, for the reason that in apparent death all reflexes from a closure of the glottis are absent.

Apparently dead children, after having been resuscitated, should be carefully watched for hours, as relapses are liable to occur at any time, which, under certain conditions, may even cause death when least expected.
INFANTILE HYSTERIA.

BELZ (La Med. Moderne, 1897, viii., 500) says that infantile hysteria is met with in three forms: Convulsive, non-convulsive, and simple hysteria, all of which simulate certain diseases more or less closely.

Convulsive hysteria is characterized by paroxysms, which occur either in a child whose hysterical tendency is known, or in one who has been considered healthy. In the latter case these attacks are the first symptoms of the nervous affection. In the greater number of cases these convulsive symptoms may be only partial and circumscribed—for example, in chorea electrica, in tussis convulsiva, in stuttering, sniveling, etc.

Non-convulsive hysteria reveals itself by various symptoms, some of which are frequently met with, as paralysis, contractures, and hysterical spasm, psychic disturbances, somnambulism, etc.; and others which are more rare, as anorexia, trembling, hemorrhages, pseudo anginapectoris, etc.

Hysterical paralysis may be accompanied by muscular atrophy. It occurs, as a rule, at 9 or 10 years of age, and attacks various similar hemiplegy, paraplegy or dissimilar parts of the body, and frequently makes its appearance before other hysterical symptoms. The contractures are frequently also accompanied by atrophy, and occur suddenly, and often frequently form the only symptoms of infantile hysteria. Contractures may follow a traumatism, and in this case some relation will exist between the point which was involved in the injury and the seat of the contracture, but never between the moment in which the traumatism was inflicted and the time when the contracture made its appearance. In contractures, spasm is frequently indistinctly localized, and often only slightly visible, on account of its anatomical seat (globus hystericus, tetany, partial contractures of the abdomen). The psychical disturbances of infantile hysteria consist in a change of character, more or less marked, and a continuous tendency to simulation and untruthfulness, which may be brought on in the waking state and under hypnosis, by suggestion. The testimony of a hysterical child should only be taken with the greatest reservation. An increase of the psychical disturbances may lead to a delirious form of hysteria, and in exceptional cases to hysterical insanity accompanied by maniacal excitation.

Somnambulism is always a symptom of manifest hysteria in children, and may make its appearance without any sign of hysteria (genuine somnambulism) or with a hysterical tendency (hysterical somnambulism). In the latter form a convulsive paroxysm may precede the state of somnambulism. Infantile hysteria frequently simulates other affections, for example, hip-joint disease, Potts' disease, scoliosis, meningitis, infantile paralysis, tabes, etc. Hysteria, as a rule, affects boys as well as girls, during the ages of from 8 to 15 years, often occurring between 5 and 8 years, and occasionally before the fifth year. The first symptoms of the disease are frequently very distinct, and sufficiently marked to excite the attention of the physician. Convulsive attacks may, however, be indistinct and consist in general malaise, vertigo, epistaxis, vomiting, globus hystericus, delirium, pseudo-pertussis, hiccough, etc. The chief causes of...
infantile hysteria are heredity, emotional excitement, education, and contagion. Injuries have a tendency to produce localized hysteria. Infectious diseases may, in children and in adults, cause hysteria.

The diagnosis of hysteria, which, in the adult, is facilitated by the demonstration of stigmata (hysterogenetic zones, anesthetic and hyperesthetic zones, contraction of the field of vision), is difficult in children. Examination of sensibility, which presupposes a certain intelligence, furnishes us with uncertain data in these cases. Examination of the field of vision is much more difficult than in the adult, and hypnotic suggestion can only be employed in rare cases. Besides, infantile hysteria frequently presents only one symptom, so that we are obliged to make a diagnosis from this alone. The diagnosis is exceedingly difficult under these circumstances.

The prognosis is, as a rule, favorable, as hysteria in children is easily recognized, and proper treatment can be promptly given. A much more unfavorable prognosis must be given where the child is burdened with a strong hereditary taint.

Treatment should be confined to a strict prophylaxis, hygiene, isolation, hydrotherapy, valerian, and more especially suggestion in the waking state.
THE COLOR OF NEW-BORN NEGRO INFANTS

Editor of Pediatrics:

Dear Sir,—I read in your issue of July 1, ulto., page 40, "The Negro Baby, at the time of its birth, is exactly the same color as its white brother, and it only shows signs of color after an interval usually of several days, but often extending to many weeks! This on the authority of Dr. Fara-bery, whose statement (you add) will doubtless be supported by many medical practitioners who have had experience in Negro obstetrical practice." You properly add that this is not a matter of great moment, "but in these days, when one's knowledge is expected to be absolutely accurate, it is satisfactory to have even the most minute details made clear."

This last observation is my apology for troubling you with a line. I have practiced medicine forty-eight years in the what is known as the Black Belt of Virginia, where there are more negroes in some places than whites, and that in a densely populated area of country. Have seen thousands of negro babies, but have yet to see one white one. I had as soon expect to see a white crow. Even the cross of the white man upon the negro woman does not produce a white baby. There must be several degrees of dilution with white blood before the Pickaninny is borne as white as his white brother. Suppose you call for further testimony.

Very respectfully,

Jno. Herbert Claiborne.

Petersburg, Va., August 25, 1898.
experience tells us that the newly-born negro child is not "of exactly the same color as its white brother." The "exhibition in the Champs de Mars" could not convince us against facts that have come under our own experience for many years. The color of the newly-born scion of African parentage, whether of immediate or remote descent, is not the same as that of the Caucasian or American. It is a sallow or creamy white without the pink glow or tinge that marks the scions of Caucasian origin. The color of certain organs will give evidence of a trace of negro blood until an almost homeopathic dilution is reached. We must take issue with the French physician that there ever appears "a tender pink color" if the slightest trace of African or negro blood is present. The "tanned leather," familiarly known as "saddle color," belongs exclusively to a mixture of the white and black races. The pink, rosy hue of the cheek of the Caucasian never has been seen in the cheek of one having even one-eighth of negro blood in their veins. We believe we can distinguish the African blood, in certain organs, to the sixteenth dilution. The pigment is, no doubt, the cause, but it is so strong in the negro that an enormous dilution is required to make it unrecognizable, especially in the organs of generation.

New Haven, Mo., July 17, 1898.

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Editor of Pediatrics:

Dear Sir,—I notice under the head of "Editorial Comments" in Pediatrics of July 1, 1898, an article entitled "The Color of Negro Children When Born." After you assume the almost universal ignorance of the laity on the subject, and largely the medical profession, you proceed to treat the subject as a matter of no great moment, except as it relates to the importance of accuracy of knowledge in these days. And in that interest alone I ask to intrude these statements. A knowledge of just where Dr. Farabery got the information upon which to base the statement that "the negro baby at the time of its birth is exactly the same color as its white brother" would prove a revelation to be much appreciated by many members of the medical profession who have spent a life of active service among the negro race in the Southern States without
even a suspicion that they would be confronted with a white baby at birth by negro parents. That colony of Soudanese negroes which afforded that eminent French physician an opportunity to settle the vexed question must have been a peculiar lot; or the doctor was laboring under some mental or optical delusions to arrive at his deductions, since our ample experiences with the new-born negro baby justify no such deductions. I have been actively in the practice of medicine, including obstetrics, in Alabama, without intermission, since the Spring of 1858. Many others have had an equally large and ample experience to assume the attitude of authority on the subject under discussion, and our deductions would be that babies born of negro parents are black; some of them very black, others not quite so black as they get to be later. Those born of mulattoes or mixed bloods vary according to the predominance of the white or black race, but however light the general surface may be, if negro blood exists, the scrotum in the male is usually black, the female genitals do not show such distinguishing features so clearly. The offspring from a light mulatto or white mother by a black father will usually be very dark and vice versa. I must confess that it was a matter of great astonishment to me to find so many statements so far at variance with the facts in so short an article when facilities for correct knowledge on the subject are at your door. You can learn very near home that it takes neither sunlight nor climate to make the negro baby black. He comes into the world black and remains so unless by disease the pigment is destroyed, which sometimes happens.

Respectfully,

T. L. Robertson, M.D.

Birmingham, Ala., July 6, 1898.
OBSTETRICAL PALSY—REPORT OF THREE CASES.*

By Luther C. Peter, M.D.,
Philadelphia.

Instructor in Nervous Diseases, Medico-Chirurgical College; Chief of Clinic for Nervous Diseases, Medico-Chirurgical Hospital; Physician to the Department of Nervous Diseases in St. Christopher’s Hospital for Children.

The cases which I bring before you belong to an unfortunate group of palsies, caused by difficult labors and faulty manipulation in delivery. They were brought to my clinic in St. Christopher’s Hospital for Children because they could not use the left arm.

Two of the patients are brothers, 4 and 8 years of age, the only living children. One older child died immediately after a difficult instrumental delivery. The early history is about the same in both cases, and their present condition differs only in the extent of the palsy, and in the younger boy a slight change in the contour of the shoulder, caused by a broken clavicle.

Immediately after a prolonged labor, in which the child occupied a normal position—head presentation—the mother noticed that the older patient’s left arm was paralyzed. After several weeks the muscles began to show some wasting about the shoulder and upper arm, and in this helpless condition the arm remained for nine months. Improvement then began, and has continued, so that at present he has a fairly useful arm.

Upon examination we find he is a sparely built boy, and

*Read before the Philadelphia Pediatric Society, October 11, 1898.
delicate in appearance. His left shoulder droops distinctly, as shown in the accompanying photographs, and the muscular wasting brings out the bony prominences rather conspicuously. You will observe, too, that the shoulder is rotated forward, but the distances from the supra-ternal notch to the acromion processes are equal. The humerus is rotated inward, the arm slightly flexed at elbow, and the forearm usually in the position of pronation. The upper arm and shoulder muscles are flabby and wasted. They include the deltoid, biceps, and brachialis anticus, and posteriorly the supra-spinatus, infra-spinatus, rhomboids and serratus magnus. From a posterior view, the deformity is even more pronounced. Both scapulae are rotated outward on their long axis and stand off from the chest, which give the impression of a bilateral palsy. The condition is more marked on the left, however, and when the general development of the boy is taken into consideration, the right scapula may be considered about normal in its position. Furthermore, there has never been any weakness on the right side. When the left arm is raised, the scapula recedes even
more from the chest wall, so that now a hand may be laid in the hollow thus formed. In health the serratus magnus holds the point of the scapula in close apposition to the chest wall when the arm is raised, but in this boy it does not perform its function.

He can execute all of the shoulder movements fairly well, except those above the plane of the shoulder, which are rather feeble. At the elbow flexion is weak, but extension is normal. He cannot supinate the hand and forearm unless he moves the entire arm.

The deltoid, biceps, brachialis anticus, supra-spinatus and infra-spinatus muscles respond with a more vigorous contraction to the positive pole of a galvanic battery, when the circuit is closed, than to the negative pole, i.e., ACC > CCC. When, however, the poles are alternately placed over the nerves supplying the muscles, the fifth and sixth cervical, a normal reaction obtains, i.e., CCC > ACC. The reversed reaction also occurs over the motor points. When a slowly interrupted faradic current of moderate strength is applied, the muscles respond slowly and feebly. There is marked diminution in the irritability, not only of the muscles, but the nerves supplying the muscles are also much less irritable than those on the normal side. Although there is slight evidence of atrophy of the right serratus magnus muscle, there is no change in its electrical reaction, either to the galvanic or faradic current. The biceps tendon jerk is diminished, but all other reflexes throughout the body are normal. There are no facial palsies.

In the case of the younger brother, labor was much prolonged, and finally terminated by instruments. Like his older brother, his arm was paralyzed from birth, although partial usefulness was restored at a much earlier date.

Upon examination, muscular wasting is not so apparent. A large amount of fat gives plumpness to his figure, and masks to some extent the real condition. Upon close examination, however, we find the muscles wasted in distribution similar to that in the older boy, with the exception of the rhomboids and serratus magnus. A fracture of the left clavicle, which probably occurred during delivery, has caused shortening to the amount of three-quarters of an inch from the supra-sternal notch to the acromion. Instead of a droop
in the shoulder in this boy, we find it drawn up and shortened. The contrast in the shape of the paralyzed shoulder shows well in the accompanying photographs.

In the younger boy, although fewer muscles are involved, the movements in the upper arm and shoulder are more limited than in his brother. He cannot raise his arm much above the shoulder, and cannot place his hand back of his head. At the elbow the same condition obtains as in the older patient. The galvanic current, too, gives altered reactions, i.e., ACC > CCC over the muscles paralyzed and motor points; and CCC ACC over the nerve trunk supplying them. To the faradic current there is very feeble response.

In neither case has there been a tendency to contractures; the happy result, probably, of persistent massage by the mother. Sensory changes, if present at any stage of the palsies, are not in evidence now.

A third case, briefly, has the following history: An infant, 7 months old, plump, and to all appearances well, was brought to the hospital because it could not use its left arm. The
mother first observed this when the baby was 3 months old, but she was not sure that the condition did not date from birth. It has never had a convulsion, in fact, has never been sick. The arm seemed to be painless, and there was no history of injury. Labor was prolonged and instrumental.

The baby is quite fat, and shows neither wasting nor deformity of the shoulder. The elbow, however, is slightly flexed, and in this position the arm hangs by its side. Occasionally it moves its arm, but never to the height of the shoulder. Passively the arm can be moved at will without resistance and without causing pain. The biceps tendon jerk, and all other reflexes are normal. There are neither evidences of rickets nor other constitutional disorders, and the correlated symptoms of cerebral palsy are entirely absent.

In this case the diagnosis is not so clear, but after eliminating other conditions, I have classed it among the obstetrical palsies. After the superfluous fat of early infancy has disappeared we probably will find some muscular wasting. The electrical reaction, which could not be taken, may also confirm the diagnosis.

In the brothers we have a flaccid palsy of the left arm and shoulder at birth, or immediately after, not attended by either convulsions or febrile disturbance, and followed by atrophy of a group of muscles and altered electrical reaction. With these facts and a knowledge of prolonged and difficult labors, the diagnosis offers no difficulties.

Birth, or cerebral palsies, with which an obstetrical palsy might be confounded, are spastic, accompanied, as a rule, by convulsions, and not attended by so much wasting and altered electrical reaction. Acute poliomyelitis rarely occurs in an arm alone, and usually is accompanied by constitutional symptoms and convulsions. It is rare, too, in early infancy.

Since treatment can accomplish little, prophylaxis is of great importance in every difficult labor. To this end a word as to the direct cause is pertinent. It is a well-known fact that in the adult, injuries to the neck have caused a partial paralysis of the arm and shoulder, the distribution of the palsy being similar to that found in these cases. Erb found that by placing the pole of a battery over a point now known as Erbs' point, i.e., a point on a line drawn from the sterno-clavicular
articulation to the seventh cervical spine, and anterior to the edge of the trapezius, the deltoid biceps, brachialis anticus, supra spinatus, and infra-spinatus muscles could be made to respond. This point corresponds to the position of the sixth cervical nerve which, together with the fifth, supply the muscles named. Injuries in this location, by blows or carrying heavy weights on the shoulder, have caused atrophy in the muscles, as described. The position of these nerves is some distance above the shoulder, and it does not seem probable, therefore, that lateral compression of the shoulder will bring about the palsy, as has been suggested. Such an injury would involve the brachial plexus directly, and cause a more complete palsy of the entire arm. It is probable that traction upon the head with forceps badly applied, so as to compress the neck with the point of the blade, or an overstretching of the neck in drawing the head aside to deliver the arms and shoulders, are responsible for the injury in head presentations. When the breech presents delivery of the after-coming head, with the hand hooked over the shoulders, may cause the injury either by direct pressure or by over-stretching.

Few cases have come to autopsy, and little study has been made of the gross and minute changes of the nerves. Sachs, in his work on Nervous Diseases of Children concludes that the disturbance of function is due "in the milder cases to stretching or tearing of some of the fibres, possibly to slight injury of the nerve sheath, or a mild form of inflammatory reaction in the nerve tissue. In the severer cases the lesion may amount to an actual tear."

The prognosis for recovery is good in a large number of cases. In the severer forms the arm is more or less permanently paralyzed, and the most that may be hoped for by treatment is to preserve the nutrition of the muscles so far as possible by galvanism and massage.

During the last nine months the older of our patients has shown marked improvement. This is probably due largely to a thorough system of light gymnastic movements which he has been taught by a competent teacher—the movements being especially adapted to strengthen the paralyzed muscles.

2136 Oxford Street.
MOVABLE KIDNEY IN CHILDREN.*

By Dr. Jules Comby,
Chief Physician, Hospital for Sick Children, Paris.

ALTHOUGH floating kidney is somewhat frequently found in adults, and especially in women, it had not often been observed in children, and the silence of the profession on this latter point may well make us believe that the condition is not found in children. But having for several years looked out for displacements of the kidney among the children who came under my observation, I was surprised at the relatively high number of cases which I was able to find—eighteen in all—and I am now convinced that the condition is common at all ages. My personal observations have brought out certain facts with regard to age, sex, other morbid conditions, etc. Out of the 18 cases, 2 were aged respectively 1 month and 3 months; 6 between 1 and 10 years; 10 were above 10 years of age. But these figures correspond only to the dates of the examination and diagnosis; the mobility no doubt dated farther back than this; 16 of the cases were girls, 2 were boys, the same proportion of the condition in the female sex which is observed in adult life. In 14 of the cases the mobility was associated with dyspepsia and dilatation of the stomach, hereditary syphilis was obvious in 2 cases; chlorosis in 2; lienteric diarrhea in 1; migraine in 1; and psoriasis in 1. In nearly every case the affection was latent; in two it had been mistaken for a chronic appendicitis; twice it had been found and treated. As regards the cause, it was not possible to attribute it to the pressure of the corset, as the greater number of the patients wore neither corset nor belt. It is true nearly all were dyspeptic, having gastric troubles or pains in the stomach, suffering, perhaps, as a result of gastro-intestinal distension, to which ill-nourished children are subject, from elongation of the suspensory ligaments and prolapse of the viscera. But in the two subjects of hereditary syphilis in whom the floating kidney was discovered post mortem, the children having died after a few months, none of the above causes could be admitted, but

* Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.
the affection must be regarded as congenital. The congenital origin of floating kidney is believed by Litten, Gutterbock, Ewald, Albarran, to be the explanation of all cases. The kidney is possibly provided with a too lengthy pedicle, which causes it to float in the abdomen either spontaneously or as the result of some special effort of a distension of the stomach, of a tight constriction, or of a hyperthrophied liver, or an injury, etc. It is difficult to say why women are more liable to this organic displacement than men, but no doubt it has some connection with the abdominal conformation of the former.

The symptoms are very variable, and do not at any time afford much guide to diagnosis; often the affection is absolutely latent, and is passed over. Sometimes there is paroxysmal pain, which, on account of its seat on the right side, is attributed to appendicitis. The pains may come on after some unusual effort or fatigue. In these somewhat rare cases the kidney may become twisted and the water occluded, and a hydronephrosis, which may be either transitory, intermittent, or persistent, may supervene. Dyspepsia or constipation are often associated with a movable kidney. But no one symptom can be relied on, and the right iliac region must be carefully explored. If there is movable kidney, one finds on palpating before and behind near the umbilicus and in the hypogastrium a hard, round movable mass, fugitive, often not painful, which one can often seize between the hands, the left supporting the lumbar region, and the right pressing into the right side of the abdomen. Diagnosis is the more difficult the younger the child. The condition is often undiscovered because there are no symptoms, investigation of the part is difficult, and a child does not lend itself satisfactorily to exploration. But none of these difficulties are insurmountable. Among the conditions with which it may be confused are to be remembered: Coprostasis, appendicitis, different cystic or solid tumors of the kidney, perinephritis, stone, etc. It is not impossible to eliminate these different possibilities before proceeding to diagnose the existence of movable kidney.

The treatment is medical and surgical. When the affection is latent or well borne, when the pains are moderate or intermittent in character, rest and an abdominal belt may suffice to relieve. Bandaging rarely succeeds on account of the great mobility of the displaced kidney. A flannel bandage, wound
several times round the body and supporting the entire abdomen, is the best means of immobilization that can be devised. The dyspepsia and constipation, which are so often present, should not be overlooked, as the greatest relief often results from their removal. Should the pains persist or become unbearable, or attacks of peritonitis or hydronephrosis through twisting of the ureter occur, an operation should at once be performed for fixing the kidney to the posterior abdominal wall. This operation was done in the case of one of my little patients with the very best results.

DISCUSSION.

Dr. Burn Murdoch, (Edinburgh), thanked Dr. Comby for his interesting paper, and for the trouble he had taken in coming so far to attend the Edinburgh meeting of the Association. He expressed his interest in Dr. Comby's statement that he had found a large majority of the children affected with movable kidney to be females. This bore out his own experience in the case of adults. He thought the reason might possibly be looked for in the pelvic conformation. Whether Dr. Comby's conclusion, that the common cause of movable kidney was a congenital condition, was the true one or not, he thought further study of the question was necessary, and alluded to the great rarity of the affection in children.

Dr. G. F. Still referred to two cases of movable kidney in infants; one recognized during life, in which the right kidney was freely movable and could be pushed up under the lower margin of the liver and downwards on to the brim of the pelvis. The other case was found accidentally post mortem, the right kidney being easily pushed about an inch or more upwards or downwards under the peritoneum. In neither of these cases were there any clinical symptoms which could be attributed to the renal condition. In the former case the child was fat and well-nourished, and there could be no question of any laxity of tissues produced by wasting, as suggested by Dr. Jules Comby. It was not very rare to find a slight degree of mobility of the kidney post mortem, and probably, if one examined all cases specially for this condition, one would find it more frequently during life. It seemed almost certain, from
the early age of some of the cases recorded, that the mobility of the kidney was congenital.

Dr. Thodore Fisher (Bristol), referred to a case of displaced kidney occurring in an infant aged 18 months, which he had seen in the post mortem room. There had been great distension of the abdomen, rotating the liver so far backwards that its posterior surface rested upon the iliac crest. The right kidney had been displaced downwards by this rotation of the liver, and rested in the iliac fossa.
THE TREATMENT OF HYDROCEPHALUS BY INTRACRANIAL DRAINAGE.*

By G. A. Sutherland, M.D., and W. Watson Cheyne, F.R.C.S.

THE following observations refer to the treatment of that class of case in which hydrocephalus has been present from birth, or has developed during early life without any apparent cause. In those cases which come to a necropsy one frequently finds the membranes of the brain absolutely normal, and no pathological condition present save enormous dilatation of the ventricles. In the absence of any definite knowledge of the pathology of the condition, treatment is naturally directed to the relief of the hydrocephalus, which, although probably secondary, is really the cause of those grave symptoms which too often lead to a fatal termination.

It may be assumed that in chronic hydrocephalus there is a closure of some part of the channel through which the fluid secreted in the lateral ventricles naturally passes to reach the subarachnoid space outside the foramen of Magendie. The result is that the ventricular fluid increases in amount, gradually distending the ventricles more and more, compressing the brain tissue already formed, and preventing the normal growth of brain tissue in early life. This is purely a mechanical view of the production of hydrocephalus, but it seems to be, from our reading and observation, more probable than any other, and it has formed the basis of the method of treatment to be described.

The subject of the physiology of the cerebro-spinal fluid has been frequently investigated within recent years, among others, by Dr. Leonard Hill. He finds as a result of a series of experiments, that "the tension of the cerebro-spinal fluid and the cerebral venous tension are normally the same." This condition is dependent on the fact that "fluid escapes directly into the veins from the subdural and subarachnoid space at any pressure above the venous pressure." He was

*Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.
further able to prove experimentally that "no pathological increase of cerebral tension can be transmitted by the cerebro-spinal fluid, because this fluid can never be retained in the meningeal spaces at a tension higher than that of the cerebral veins." In hydrocephalus there is cerebro-spinal (ventricular) fluid under considerable tension, namely, that produced by the stretching of the brain and cranium. As long as this fluid is locked up in the ventricles, the tendency will be for it to increase in the absence of any channels of absorption; but if an outlet for it were provided into the meningeal spaces, then, according to Dr. Leonard Hill's observations, it would rapidly be absorbed by the veins until the cerebral venous pressure and the cerebro-spinal pressure were again equalised. It was resolved to test this in hydrocephalus by making an opening through the cortex cerebri, and introducing a drain into the ventricle which would allow for some time of the free passage of fluid from the ventricle into the subdural space. It may be noted that in connection with this method of treatment, the terms "subarachnoid space" and "subdural space" may be taken as synonymous, fluid passing from one to the other with the greatest ease.

This method has been employed in two cases of hydrocephalus, of which the following condensed notes may be given:

Case I.—Male infant, 6 months old, had suffered from birth with progressive hydrocephalus, for which medical treatment had proved unavailing. The head was much enlarged in all its dimensions, and the other signs of hydrocephalus were well-marked. The bones of the cranium were widely separated, the vertex being represented by a large membraneous space measuring 9 in. by 9 in. at its widest parts. The mental development was practically nil. The following operation was performed: A curved incision about 1½ inches long was made over the left lower angle of the anterior fontanelle, and the skin and deeper tissues were turned down from off the dura mater. A small incision, about a quarter of an inch in length, was then made. There was no fluid in the subdural space. Before the operation a cat-gut drain was made as follows: A bundle of finest cat-gut, containing 16 strands, and about 2 inches long, was prepared, one end of the bundle being tied
together and the other being free. As soon as the dura mater was incised, the tied end of this bundle was seized with a pair of sinus forceps and pushed downwards and slightly backwards between the brain and the dura mater for about an inch. The other end of the drain, which projected through the slit in the dura mater, was then grasped with sinus forceps and pushed through the substance of the brain into the expanded lateral ventricle. The brain was very thin at this point, and clear fluid escaped immediately. Having thus arranged one end of the drain in the subdural space and the other in the ventricle, three fine cat-gut stitches were employed in completely closing the opening in the dura mater, and the skin was stitched up with a continuous silk suture.

When the dressings were removed on the fifth day after the operation the wound was healed. The head was distinctly smaller in all its dimensions, and there was a complete absence of the tension which had been present before operation. This diminution in the size of the head steadily continued, and in a few weeks the space between the cranial bones was entirely obliterated, the bones were beginning to override, and the anterior fontanelle was much smaller, depressed, and pulsating. At the same time it was noted that the shape of the head was very asymmetrical, the left side appearing to be smaller than the right, and to have receded backwards. Although the changes in the head were so marked, there was no improvement in the infant's mental condition or physical development. The diminution in the size of the head continued until the bones were overriding to an extreme degree, and any further diminution by falling in of the bones was rendered impossible but the side of the skin was not greater than that of an infant of the same age with normal cerebral development. Three months after the operation the child died with symptoms of basilar meningitis. At the necropsy a considerable quantity of straw-colored fluid was found in the subdural space. The membranes were both dilated but not distended with fluid. The membranes at the base were thickened, and the ependyma of the ventricles formed a distinct membrane of a dark purple color, firm, but not granular. The opening into the left ventricle made at the operation was quite evident, and some strands of cat-gut lay in it, while the rest of the drain could be traced up to the opening made in the dura mater, at which
point the brain was adherent to the dura mater. The adhesions formed were soft and easily broken down, and amongst them lay the external ends of the cat-gut drain. The brain was soft, cystic in parts, and very imperfectly developed.

Case II.—This was also a case of advanced hydrocephalus in an infant 3 months old. All the bones of the skull, vertical and basal, were widely separated, and mental and physical development had been stationary since birth. An operation exactly similar to the one described in the last case was performed on the left side of the head. The brain tissue was extremely thin and anemic at the site of operation. The disturbance caused at the operation was trifling and transient, there being a rise in temperature for a few days, some restlessness at night, and vomiting. The dressings were removed on the sixth day and the wound was found to be healed. The head was smaller in all its dimensions, the tension of the fontanelle was absent, the spaces between the individual bones were less, and the proptosis of the eyes were not so marked. The skull appeared to be asymmetrical, as if the left side had moved backwards on the right (cf. last case). A fortnight after the operation it was noted that the bones at the base of the skull and the fronto-parietal bones were overriding, while there was still a slight interval between the two parietal bones. A flannel bandage was applied to the head in order to keep up the external pressure and aid absorption. A few days later a slight increase of tension was noted in the fontanelle, but this soon passed off.

A month after the operation the child was taking nourishment well, the cry was stronger, and the head was moved freely. The bones of the cranium were all overriding, and the only unclosed space was the anterior fontanelle, which measured 3½ inches in the transverse diameter. The site of the operation wound, which was at the left inferior angle of the fontanelle, now lay over the parietal bone, and was 1 inch from the fontanelle. For the next two-and-a-half months the condition remained practically stationary, and during this period the patient passed successfully through an attack of measles. There was a luxuriant growth of hair on the head, which concealed the shape of the skull, but ultimately it was observed
that the fontanelle seemed rather prominent on the right side. The head having been shaved, the following curious state of affairs was manifested. The asymmetry of the skull, which had been previously noted, was much more marked, the right side being evidently larger than the left. The right side of the fontanelle was prominent, tense, and fluctuating, and on a tracing being taken, was seen to cover a much larger area than the left half, which was not elevated. The left parietal was overriding the left frontal bone, while on the right side the corresponding bones were merely in contact. It was apparent that while the drainage of the left ventricle had been as complete as possible, that of the right had come to a standstill, and the fluid was again increasing. Accordingly an operation was performed on the right side of the head similar to that performed on the left four months previous. On opening the dura mater the brain bulged at once, there being no adhesions and no extracerebral fluid. On puncturing the brain, fluid was reached at a very short distance from the surface, and flowed at first with some force. A cat-gut drain was introduced in the usual manner. This operation was followed by complete disappearance of intracranial tension and gradual diminution in the size of the right side of the head. Six months after the first operation (a month after the second), the fontanelle measured two inches transversely, and all the bones of the cranium overrode to an extreme degree. There is a conjunctival reflex, and the child can see. She is gaining weight, and moves the head and limbs much more freely. There are no evidences of mental development.

From these cases it will be seen that the observations of Dr. Leonard Hill on the absorption of cerebro-spinal fluid through the meninges under physiological conditions also hold good in the pathological condition of hydrocephalus. No other mechanism will explain the disappearance of all tension, and the steady diminution in the size of the cranium which followed the operation. The process consisted in making an outlet for the ventricular fluid through the cortex of the brain, and as the external wound had healed in a few days there was no channel open to the fluid except through the meninges. In cases of hydrocephalus, where the ventricles have been tapped through the cranium, the usual course of events has been for the fluid to reaccumulate rapidly in the ventricles. As a result
of this method, on the other hand, the observer could note the
heal diminishing in size week by week, and that without any
sudden alterations in the intracranial conditions, such as have
led to such disastrous results in various forms of operation for
hydrocephalus, and have led many physicians and surgeons to
discard all operative measures in its treatment.

We think it may be taken as proved that if a permanent
opening can be made through the cortex cerebri in hydro-
cephalus, Nature will do the rest as regards removing the
fluid and preventing the recurrence of any injurious intracere-
bral pressure. * But the establishment of this permanent open-
ing, that is, the method of drainage, is a matter of some
difficulty in certain cases. In the above ones the drain, com-
posed of strands of cat-gut, seemed to act efficiently during
the period the patients were under observation. In a third
case, however,—the only other one of chronic hydrocephalus
which has been thus treated—the result was not successful.

The patient was twelve months' old, and had suffered from
hydrocephalus for two months. The anterior fontanelle
measured 5½ inches transversely. An operation similar to
that described was performed. The brain cortex at the site of
puncture was about ¾ inch thick. No decrease in tension or
in the size of the head followed this operation, and it was
repeated a fortnight later. The former drain was removed and
a fresh one introduced. Unfortunately the patient happened
to be in the incubation stage of measles, which appeared
in a few days, was accompanied by broncho-pneumonia, and
terminated fatally a fortnight after the operation. At the
necropsy both lateral ventricles, the third ventricle, the iter,
and the fourth ventricle, were much distended with fluid, but
no obstruction at the base in the shape of thickened or adher-
ent membranes could be discovered. In the right lateral ven-
tricle lay the ends of the cat-gut drain, which could be traced
up to the surface of the brain. At the site of operation the
dura mater was adherent to the pia arachnoid, and no fluid was
present there or in the subdural space, nor did it pass out of
the ventricle until the cat-gut drain was removed. There was
no evidence of any inflammation around the site of operation
—cerebritis or meningitis—and the operation had not affected
the health of the child or the hydrocephalus.
This case suggests two difficulties in connection with the establishment of drainage. First, the brain tissue between cortex and ventricle may be so thick as to close in around the cat-gut drain and prevent the passage of fluid. This difficulty did not arise in the two cases previously related because in them the brain tissue was extremely thinned out by long-continued intraventricular pressure. Secondly, the inflammation set up by the wounds in the dura mater and the cerebral cortex may lead to the formation of adhesions around the artificial outlet which seal it up. This difficulty may be met by making the opening in the cortex as far as possible from that in the dura mater, and allowing so much fluid to escape as will prevent the opposed surfaces from coming immediately in contact. Further experience is required both as to the best kind of drain for the purpose and the manner in which it is to be employed.

In chronic hydrocephalus the communication between the lateral ventricles is, as a rule, very free through the much enlarged foramen of Monro; in rare cases this opening is closed. Hence we thought that drainage of one ventricle would probably ensure an equal diminution in the amount of fluid contained in the other, and the operation was performed only on one side of the head. In both of the cases related, however, it was noted that the diminution in the size of the head was more marked on the side operated upon, and in the second case it became clear after a time that the discharge of fluid from the ventricle on the side not operated upon had ceased, and that the fluid was in fact reaccumulating. It seems probable that at first there had been a communication between the ventricles, but that later this had become closed, possibly by the descent of the falx cerebri, as the head diminished in size. To ensure equal and symmetrical relief of the hydrocephalic condition, it might be better to do two operations—simultaneously or with a short interval—one on each side of the head.

In this communication we have referred to intra-cranial drainage as applied to cases of chronic hydrocephalus. There are, of course, many forms of disease, acute and subacute, in which ventricular distension is the most serious complication, such as tubercular meningitis, simple basilar meningitis, tumor cerebri, etc. In these also treatment by intra-cranial drainage
affords some hope of relief, and we propose to give the results of our investigations on this subject later. In considering the question of operation in chronic hydrocephalus we have to keep in view first the relief of tension and second the restoration of cerebral function. The relief of tension is secured by the removal of the fluid accumulated in the ventricles, aided in certain cases by the diminution in size of the distended cranium. The restoration of cerebral function is dependent on the development of the brain. If the case is one of congenital hydrocephalus, and there have been no signs of mental development before operation, the prospect of the growth of cerebral tissue becomes less with each month that the infant has lived. If the hydrocephalus has developed in infancy, with failure of mental power, loss of sight and hearing, etc., a time is soon reached after which complete recovery cannot be looked for. The importance of an early diagnosis is manifest, and treatment should be adopted as soon as the affection is clearly recognized as chronic progressive hydrocephalus.

**DISCUSSION.**

Dr. G. F. Still said that it was important to differentiate the cases of hydrocephalus which were congenital in origin from those which are due to simple posterior basic meningitis. In the latter class one practical point in the bacteriology of that disease was to be remembered; namely, that the diplococcus of posterior basic meningitis might survive in the fluid in the lateral ventricles long after the acute stage of the disease was over; thus in one case pure growths were obtained as late as the hundred and third day from the onset of the disease. It seemed possible that in such cases there might be a risk of further infection if the fluid from the ventricles were drained with its micro-organisms into the subdural space, but such a risk could be avoided by postponing operation until the micro-organism had already disappeared. The date of this disappearance could only be determined by further bacteriological investigations. It certainly seemed to vary considerably; thus in one case the ventricular fluid proved sterile on the seventy-fifth day; in another, as already stated, the micro-organism was still present on the hundred and third day of the disease. In one case, an infant in whom artificial communic-
tion was established between the lateral ventricles and the subdural space, death occurred a few days after the operation, and was preceded by a rise of temperature. In this case the operation was done on the thirtieth day, and the fluid from the lateral ventricles gave pure cultures of the diplococcus of posterior basic meningitis. No necropsy was obtained, but it seemed possible that in such a case a further infection might have been caused by allowing the ventricular fluid, which contained large numbers of the diplococci, to run into the subdural space. This was, of course, merely a suggestion, and one is fully aware that the occurrence of pyrexia was too common after certain operations on the brain to be of much value as evidence of infection. But the suggestion is, perhaps, worth bearing in mind if the operation described by Dr. Sutherland and Mr. Cheyne be found worthy of further trial.
THE MICRO-ORGANISM OF SIMPLE POSTERIOR BASIC MENINGITIS IN INFANTS.*

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The simple posterior basic meningitis of infants—a non-tuberculous form of meningitis which occurs mostly within the first year of life, and affects especially the posterior portion of the base of the brain and also the spinal cord—is a condition of no great rarity. In the earlier half of the year it is always more or less prevalent in London, and there can be little doubt that many cases which appear in the Registrar’s returns as tuberculous meningitis are in reality cases of simple posterior basic meningitis. It has been shown on clinical grounds that there is good reason for believing that this form of meningitis is a specific disease, and I venture to bring before you some observations from the pathological and bacteriological standpoint which seem to confirm this view.

It is not my purpose to speak here in detail of the clinical symptoms of this condition. It will be sufficient for the identification of the disease if I briefly sketch its characteristic symptoms. An infant becomes fretful and feverish, has one or more convulsions, and vomits; then the head is noticed to be drawn back, or perhaps the head retraction is the first symptom noticed. Weeks pass by, and the head retraction persists almost always the most striking symptom, perhaps so extreme that the occiput almost touches the buttocks. The limbs are often rigid, and in many cases there is blindness, although it is very rare to find any inflammatory change in the optic disc. The child slowly emaciates, and in most cases some degree of hydrocephalus supervenes. Death occurs usually three or four months after the onset; sometimes, however, it occurs within six or seven weeks, and I have seen a fatal result in three

*Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.
weeks. On the other hand, in quite an appreciable percentage of cases, there is more or less complete recovery.

I wish to draw attention particularly to this variation in the duration of the disease, for it explains, I think, to some extent, the discrepancy of opinion which has existed as to its pathology and etiology.

The cases may be divided into three groups: (i) Those fatal within six weeks—that is, during the acute or inflammatory stage; (ii) Those fatal at the end of three or four months—that is during the chronic or hydrocephalic stage; (iii) Those in which recovery occurs.

Corresponding with these variations in the duration of the disease, there are differences of pathological appearance in groups (i) and (ii). In the former there is much lymph over the base of the brain and on the spinal cord, in the latter there may be no trace whatever of lymph, only thickening and opacity of the pia arachnoid, with adhesions especially between the medulla and cerebellum. These are briefly the morbid changes found, and it is important that it should be realized that there are such differences in the morbid anatomy of this disease in its early and its late stages. In the early stage the condition has not been sufficiently differentiated from what one might call "secondary" suppurative meningitis, particularly the common form due to the pneumococcus. In the late stage it has almost certainly been labelled sometimes as healed tuberculous meningitis, sometimes as a chronic syphilitic change.

I wish to lay great stress on one negative point in its morbid anatomy, which is curiously constant and characteristic.

In the simple posterior basic meningitis of infants it is almost invariably the case that no lesion, except such accidental complications as occur in any prolonged disease during the last few days or hours of life, is found in the viscera; whereas in other forms of meningitis exudation in the meninges is almost invariably secondary to some obvious focus of infection elsewhere. In 15 consecutive cases of suppurative meningitis which I examined, all except one, in which there was doubtful pneumonia, showed an obvious primary focus of infection, as may be seen from the following figures:
Lesions Associated with Ordinary Suppurative Meningitis in Fifteen Consecutive Cases.

Empyema ........................................ 5
Thick lymph on pleura .......................... 3
Slight pleurisy .................................. 1
Recent pneumonia (?) ............................ 1
Ulcerative endocarditis ........................ 1
Membranous colitis .............................. 1
Necrosis of petrous bone ....................... 2
Erysipelas ........................................ 1

In 15 consecutive cases of posterior basic meningitis which I examined not a single case showed any inflammatory lesion elsewhere, excepting 2 cases in which a lymph exudation about certain tendon sheaths was found, to which I shall refer again, and one in which early tuberculous lesions were found in the viscera—evidently a mere coincidence.

The middle ear in these cases, as in the vast majority of children who die of any disease lasting more than a few days, contains mucopurulent secretion, but I have never seen a case of posterior basic meningitis in which there was any bone disease in connection with the ear, or any evidence whatever of inflammation from the ear, and the same may be said of the nose.

Simple posterior basic meningitis, therefore, differs markedly from other forms of meningitis, in its morbid anatomy, and this fact, together with the constancy of its clinical and pathological features, seem to point to its being a specific disease due to some micro-organism. In 7 out of a series of 8 cases, reported at the Pathological Society of London last year, I found a diplococcus, which, so far as the evidence went, appeared to be the specific cause of the disease. The one case which proved sterile died three and a half months after the onset of the disease.

I have since then made four post mortem examinations of infants with this disease, and in two of these the microorganism was present in the exudation at the base of the brain, apparently in pure growth, but owing, probably, to the use of strong carbolic acid for the sterilization of instruments no cultures were obtained; the other two cases died, respectively on
the seventy-fifth and eighty-ninth day after the onset of the disease, when all exudation had already disappeared.

In another case I have recently obtained pure cultures of the micro-organism from the cerebro-spinal fluid taken from the lateral ventricles during life, in the course of an operation for the establishment of artificial drainage. It would seem, therefore, that the micro-organism is present during the earlier stage of the disease, but disappears later. In one case, however, I obtained it in pure growth from the depths of the lateral ventricles as late as the 103d day.

The diplococcus of posterior basic meningitis sometimes appears to be in the cells of the exudation, but more often it is outside the cells. The two cocci of which it consists have their opposed surfaces usually more or less flattened, and often closely resemble gonococci, especially when the intra-cellular appearance is seen. The diplococci are often in pairs, side by side, so that an almost sarcina-like appearance may be produced. Growth is rapid on agar-agar or glycerine agar, and reaches its maximum after about thirty-six hours. There is no growth at the ordinary room temperature, nor on gelatine, and growth on blood serum is scanty. It grows well in milk or broth. It is easily stained by methylene blue, but does not stain by Gram’s method.

An important feature is its long vitality; it often lives thirty days, or even longer, on agar-agar or glycerine agar, and this constitutes the most striking difference between this micro-organism and the diplococcus intracellularis described by Weichselbaum.

Inoculations were made into mice, rabbits, and guinea pigs, and it was found that subcutaneous inoculations did not prove fatal in any case; intraperitoneal injection was sometimes fatal, sometimes not.

This micro-organism differs widely from the pneumococcus. I have pointed out the differences elsewhere, and only mention the most important of them here. The diplococcus of posterior basic meningitis is smaller; it is never lanceolate; its growth is thicker and more opaque; its vitality is far greater, and it does not stain by Gram’s method. On the whole, it seems most reasonable to regard the diplococcus of posterior basic meningitis as a modification, by a process of natural variation of the diplococcus intracellularis, and this
modification of characteristics may possibly account in some degree for the clinical differences between the simple posterior basic meningitis of infants and the epidemic cerebro-spinal meningitis of which the diplococcus intracellularis is probably the cause.

The specific nature of the diplococcus of posterior basic meningitis seems to be confirmed by its presence in pure growth in the lymph about the tendon-sheaths in the curious periarthritis, which is almost the only complication, and that a rare one, of this disease. The finding also of this micro-organism in the cerebro-spinal fluid during life gives further confirmation. An infant, aged 5 months, under the care of Dr. Lees for typical symptoms of posterior basic meningitis, was trephined by Mr. Ballance on the thirtieth day of the disease, with a view to establishing communication between the lateral ventricles and the subdural space. A trocar and canula were passed into the lateral ventricle and the cerebro-spinal fluid was received directly on to agar-agar and glycerine agar media. Pure cultures of the micro-organism were obtained on both, and moreover some cells in the fluid were found to contain the micro-organism.

From the pathological point of view, the presence of this micro-organism if it be, as seems almost certain, the specific micro-organism of this disease is of considerable importance. I have already pointed out that in the early stage the disease may be confused by the pathologist with other forms of meningitis. One would probably be right in saying that whenever an exudation of lymph is limited, or almost limited to the base of the brain and to the spinal cord, and there is no visceral lesion or obvious focus of infection elsewhere, the condition is almost certainly not due to the pneumococcus or to any of the ordinary pyogenic organisms, but it is due to the specific disease, posterior basic meningitis, and can be differentiated bacteriologically in the earlier stage of the disease by the presence of the micro-organism which I have described.

A certain number of cases have been recorded in which adhesion and thickening of the pia mater at the base have been taken as evidence of past and recovered tuberculous meningitis.

One of the cases which I examined seems worth mention-
An infant, aged 11 months, developed symptoms of meningitis; there was persistent head retraction and vomiting, with irregular pyrexia for a few weeks, and a diagnosis of posterior basic meningitis was made. The infant survived the acute stage, and lived on with slight hydrocephalus for nearly four months from the onset. There was slow emaciation, and death apparently from exhaustion. At the post mortem the brain showed no trace whatever of lymph, but only fibrous thickening of the pia arachnoid at the base and some adhesion between the medulla and cerebellum. The lungs showed early tuberculous foci, with caseous mediastinal glands; there was very early tubercular ulceration of the intestine, and slight caseation of the mesenteric glands.

Here, then, is a case which, so far as morbid anatomy goes, appears at first sight to be almost positive proof of the possibility of recovery in tuberculous meningitis. The infant had a meningitis at the base of the brain which recovered, and within a few weeks of the meningitis it died of generalized tuberculosis.

Fortunately, however, cultures were made from the fluid in the recesses of the lateral ventricles, and pure cultures of the diplococcus of posterior basic meningitis were obtained. Had the micro-organism already disappeared, as usually happens at so late a period in the disease, one can well imagine that such a case would have gone to swell the number of supposed recoveries from tuberculous meningitis.

This case, at least, emphasizes the necessity for caution in deciding the nature of a past meningitis. Simple posterior basic meningitis may occur in a tuberculous infant, and an infant with simple basic meningitis may, especially in its enfeebled condition, develop tuberculosis.

Much the same might be said of syphilis. The fibrous thickening at the base of the brain in the chronic stage of posterior meningitis might easily be mistaken for a syphilitic condition. It would be strange, indeed, if this form of meningitis did not occasionally occur in a syphilitic child. The peri-artitis which I have mentioned is a possible source of error. I have once, at least, known the dusky reddening and swelling around a joint to be regarded as a point in favor of the meningitis being syphilitic. It was in that particular case that pure growths of the diplococcus of posterior basic meningitis
were obtained, both from the meningitis and from the exudation around the tendon sheaths close to the joint, which itself was healthy.

I may say, in conclusion, that my observations were all made on cases under the care of Dr. Barlow, Dr. Lees, and Dr. Penrose, to whom I am indebted for permission to make use of them.
EDITORIAL COMMENTS

Operating for Mastoid Disease on Infants and Young Children

It is well-known that mastoid disease is less frequent in young children than in adults. Nevertheless, the disease with them is probably more common than it is popularly thought to be. The treatment by operation for mastoid abscess, except in extreme cases, is opposed by the majority of medical men. Mr. Harold Stiles, M.B., F.R.C.S., Edinburgh, Surgeon to the Royal Edinburgh Hospital for Sick Children, who read an able paper on the subject at the recent meeting of the British Medical Association, brought forward a point which may, to a certain extent, explain this disinclination to use the knife and also afford a reason why, when this course is pursued, the results are often not so successful as they might be. Mr. Stiles says: "In this short communication I wish more particularly to point out the importance to the surgeon of the peculiarities of the anatomy of the temporal bone in the infant as compared with the adult. The excellent modern text-books on surgical diseases of children lead the surgeon to infer that the operation is the same in the infant as in the adult. While this is essentially the case there are, however, certain points of difference, which, if not kept in view, are liable not only to mar the success of the operation but even to lead to disaster." The correct mode of performing the operation is then given, which, for lack of space, we are unable to quote, but the particular feature of the paper to which we draw attention is Mr. Stiles' contention that the text-books on children's surgical diseases are not sufficiently definite in pointing out the slight anatomical differences in the mastoid region of children under three or four years of age and of those above that age, these differences rendering necessary a con-
siderable variation in the mode of operation on the part of the surgeon, and that if any deviation whatever is made from the correct procedure that disastrous consequences may, and probably will, follow. Whether operation is indicated so frequently as Mr. Stiles seems to think is a matter of opinion, but, on the other hand, as we remarked before, the non-success of extreme measures may be sometimes due to the operator not taking into consideration these certain points of difference in the anatomy of the temporal bone in the infant as compared to the adult. At any rate it would certainly be as well if the textbooks on surgical diseases of children were absolutely accurate on this point.

In view of the great and growing interest now being taken in tropical diseases generally and in malaria in particular, and also considering the fact that malarial fever is a complaint to which children are as subject as adults, it may be of interest to make a few remarks on the prevailing theory, that the mosquito plays a prominent part in its dissemination. The belief that malaria is caused by the hematozoön malariae, discovered by Laveran in 1881, is at the present time almost universal, and the goal to reach, which is the ambition of many ardent investigators, is the settlement of the as yet undetermined point, as to how the parasite enters the blood. Many and various theories have been promulgated from time to time, but the one most in favor in this year of grace is that the mosquito plays the part of the extracorporeal host of the plasmodium malariae. Several eminent scientific men have held the view that certain diseases may be conveyed by insects, of whom Linnaeus was undoubtedly the first. In 1881 Dr. Charles Finlay, of Havana, asserted that under certain conditions the mosquito was capable of acting as the transmittor of yellow fever. Bignami, in 1897, published a paper to the effect that the mosquito is the principal agent in spreading malarial fever, while still more recently Dr. Patrick Man-
son and Professor Koch have signified their agreement with these views. The fact may be mentioned, however, that Dr. Patrick Manson has for several years contended that the mosquito may "act as the intermediary host of filaria sanguinis hominis." Within the last few weeks these opinions have received striking if not convincing corroboration by means of the brilliant researches of Surgeon-Major Ronald Ross, of India. Dr. Ross has for some considerable time been engaged in investigating the rôle of the mosquito in the evolution of the malarial parasite, and after numerous experiments was able to report to the meeting of the British Medical Association that he had advanced so far on the road to ultimate discovery as to be able to prove that birds can be infected with malaria. Mosquitoes were fed on birds infected with plasmodia; shortly after the same mosquitoes were allowed to feed on birds whose blood was not infected by the parasite, and it was found after a lapse of time that the healthy birds had been infected by the parasite-bearing mosquito and that their blood was charged with plasmodia. Consequently but one more link is needed to render the chain complete, and when the analogy between bird and human infection has been established this link will have been supplied. The Lancet, speaking of the matter, says: "Much has yet to be done, however, before the full significance of the mosquito in malaria is worked out. Malaria, we know, multiplies, without the intermediary of any vertebrate. Does it do so solely in mosquitoes? If so, we have yet to learn how it passes from mosquito to mosquito. Does it multiply in other media? If so, what are they?" Dr. Ross is, however, to be congratulated on having carried his experiments to so advanced a stage, and, doubtless, the difficulties still in the way of a successful solution will be removed by him or by some other person. When the result is reached we may with confidence hope that not only will the scourge of malaria be stopped but that the prevention of other diseases incidental to the tropics may be in sight.
Christian Science in Regard to Children

The spread of quackery of every description has become so grave a matter that it behooves every regular medical practitioner to gird on his armor to fight this many-headed monster. There is one feature of the case which has scarcely received sufficient notice at the hands of the medical press of this country, namely, the perils to which young children are exposed when their parents or guardians resolve to follow the teachings of Christian Scientists, faith healers, or one or other of the wrong-headed sects. That this danger is no imaginary one has been proven often enough, and a case, which occurred in Kansas City some few months ago, showed in so clear a light the extraordinary beliefs of the Christian Scientists, as well as pointed out the necessity for steps being taken to protect children, that we will quote it in full. It appears that a woman in Kansas City, who had a young daughter suffering from diphtheria, called in to her aid a Christian Scientist, by name Baird. Mrs. Baird had been in attendance but a few days when the child died, and the mother was summoned to give her reasons why she had not procured the services of a medical man. She was asked by the judge to demonstrate the principles of Christian Science, and the following conversation then ensued:

"What do you mean by demonstrating the principles of Christian Science?"

"I mean that she imparted to my daughter an understanding of the truths of Christian Science."

"How did she do it?"

"Mentally and audibly."

"What do you mean by mentally and audibly?"

Mrs. Baird repeated certain words and read from Christian Science text-books on the unreality of disease and the allness of God.

"Did you call Mrs. Baird in to restore your daughter to health?"
"We called her in to instruct the child in the Spirit. We put out thoughts of disease by imparting truth. We do not recognize any disease. What is called disease is error. We drive out error with truth."

"Is it Mrs. Baird's business to cure disease?"

"She demonstrates."

"Suppose she demonstrates and the person dies, what then?"

"In that case it would be the fault of the demonstration."

"Do you know of Mrs. Baird treating other cases?"

"Yes, if you mean demonstrating in other cases."

"Does she receive fees for her services?"

"Yes."

"Suppose a person had an arm broken, what would you say to that?"

"That would be an illusion."

"Suppose that arm were cut off, what then? Would that be an illusion, too?"

"Yes."

"Your daughter is dead, is that an illusion?"

"Yes."

The above is an excellent exposé of the perniciousness of the teachings of Christian Scientists, and should tend to open the eyes of the public. In England things in this respect seem to be even worse than in this country, and both the Lancet and Hospital of October 15 had articles on the subject.

The Lancet appropriately terms the creed "unchristian nescience," a far more fitting appellation than Christian Science. If only for the sake of the innocent children, a firm stand should be made against these imposters, and a strong endeavor should be made to protect the young from the evil effects of the madness of their elders.
BOOK REVIEWS


This little work is one of the new collection of volumes either published or in course of preparation in Paris, and designed to record at frequent intervals new facts, discoveries and treatment in medicine, and which it is impossible to note as they occur in the larger text-books. As soon as a question crops up in the medical world the publishers of "Les Actualities Medicales" will make it their business to have a monograph written upon it by an authority. La diphterie, for instance, is compiled by two medical men who have had much experience in that disease when attached to the Hospital Trousseau, the largest institution devoted to the diseases of children in Paris. These authors state in the book before us that they have concluded, first, from a bacteriological point of view that the bacillus of Loeffler is the only true bacillus of diphtheria; second, from a clinical point of view, they have distinguished true diphtheria from associated diphtheria; third, from a therapeutic point of view, they have shown that the anti-diphtheritic serum, all powerful against pure diphtheria, is not efficacious against associated diphtheria. By associated diphtheria is meant that form of the disease in which septic microbes play a part. In short, the book is very interesting, and enriches with new ideas the already voluminous literature bearing on diphtheria.


It may be truly said now that of the making of works on the diseases of children there is no lack, but at the same time
there is always room for another good one. Dr. Dawson Williams, the able editor of the *British Medical Journal*, has succeeded in producing a valuable hand-book dealing with the clinical diseases of children, the subject matter of which has been almost wholly gathered from his long experience as Physician to the East London Hospital for Diseases of Children at Shadwell. No attempt has been made by the author to describe fully diseases which present symptoms similar at all ages, but he has confined himself to the indication of the special incidence of the diseases of childhood, to the elucidation of this special evidence, and, in short, to the treatment of the subject from a broad standpoint. The volume contains fifty seven chapters, and is, with the possible exception of that dealing with rheumatism—which does not sufficiently distinguish between the symptoms of that disease in adult and infant life—a clear and well written exposition of complaints of childhood. The most interesting part of the work is that referring to malarial fever and hydatid diseases, the latter especially being rarely met with among children in this country. Dr. Williams has had the advantage of Dr. Patrick Manson's assistance in revising the chapter on malarial fever, while Dr. Twynam, of Sidney, Australia, in which country hydatid disease in children is frequent, has performed the same service for the chapter on that disease. The book is fairly well bound and printed, and profusely illustrated, although it cannot be said that all the illustrations are of a very high order.
Sarcoma (?) of the Jaw in an Infant.—W. B. Pusey, M.D., Louisville, Ky.: A baby, 3 months old, was brought to me three weeks ago. At the second month the child began to suffer pain, and after twenty-four hours a small tumor appeared in the jaw about the canine tooth. This was opened by the physician in charge. No pus was evacuated, but there was much swelling. A few hours later the doctor discovered a tooth where the opening had been made, and removed it. However, the swelling of the jaw increased, and an abscess pointed at the rim of the orbit near the outer canthus. This was opened, and a second opening was made later at the same point. The swelling remained upon this side of the face, involving the nose. A free discharge of pus took place through the nose, through the opening near the orbit and through the second opening made in the jaw. Six days after the first visit the opening just at the angle of the jaw was enlarged, and two or three spicula of bone were removed. I also thoroughly probed the other openings, removing with sulphate of copper some exuberant granulations, and demonstrating to my entire satisfaction that the antrum was involved.

There is no history of either syphilis or tuberculosis in the family; there are three other children, all perfectly healthy. Roughened bone can be felt with a probe, so it seems there is extensive bone disease. The suppuration has not materially affected the child’s health. It had run down somewhat up to the time the tooth was removed, and the swelling was lanced, but following that the child gained in flesh. I saw the case today and washed out the sinuses thoroughly. The child does not apparently suffer any pain; it nurses at the breast and also from the bottle.

I would like to know the nature of the trouble, whether it is an infection following the incision in the swelling of the
jaw, or whether it is some primary trouble in the antrum, a malignant growth, a dermoid cyst, or other tumor.

Discussion.

Dr. James B. Bullitt: From the fact that the spicula of bone appeared so soon after lancing the swelling in the jaw, one would suppose that the original cause of the trouble—the swelling which was followed by extraction of the tooth—existed previous to the lancing process. Ordinarily I take it the antrum becomes infected chiefly in two ways, viz.: by the extension of an infective process from the root of a tooth, which is probably very unusual in children, and secondly by an infectious process extending along the line of the mucous membrane, which is a still rarer form. That the bone itself should be involved is another feature which makes the case different from one of ordinary antrum suppuration. I have no conception of exactly how this process should have occurred. It would be plausible or possible, of course, in the infant as in older children that bacteria capable of producing a suppurative process might get into the circulation and be deposited at this point; but it would be unusual for infection to occur at such a point. It is more prone to involve the long bones.

Dr. P. F. Barbour: The cause of the trouble must have antedated the removal of the tooth; there is nothing in a canine tooth in its normal position to give rise to swelling, suppuration, etc. We occasionally see teeth in infants soon after birth; I have seen them appear when infants were two weeks old. These teeth rapidly decay, and if extracted no trouble results. I do not believe the operation of lancing or the removal of the tooth was responsible for the condition of the child. It is possible the child sustained a fall, bruising the superior maxillary bone, then bacteria coming in contact with the injured bone may have set up suppuration, which has developed to the extent stated in the report.

Dr. J. G. Sherrill: I am sorry that Dr. Pusey has been unable to present the patient before the Society. The case is one of extreme interest, and I agree with Dr. Bullitt as regards
infection of the antrum—there are two or three ways in which it might occur. It might be due to disease in the follicle of the tooth itself, bacteria might have gotten into the circulation and become localized in this situation and as a result suppuration of the follicle occurred. Again the incision probably extended almost into the tooth sac, and when the tooth erupted, infection might have occurred. It looks more plausible, however, that the condition which produced the suppuration existed prior to the time the incision was made in the swelling over the tooth. Another manner of infection might be through the mucous membrane of the nose into the antrum. The whole of the superior maxillary bone is not fully ossified at this time of life and the rapidity with which this process developed would almost preclude tuberculosis or syphilis as a cause, unless the condition existed for quite a while before it was noticed. It looks probable from the fact that there was diseased bone in a child of this age, that one of three things produced it, viz.: either syphilis, tuberculosis, or sarcoma. I have seen sarcomata in the jaw of the adult, which on first inspection appeared to be simply a tumefaction at the site of a tooth. I watched one case for some months, and noticed each tooth as it was pushed out, the tissues would then bulge out into the opening thus made and pressure would cause discharge of pus. We know that sarcoma occurs in very young children, and this should not be overlooked. If a sarcoma is present the tumefaction will not subside, but will rapidly increase and the patient will succumb in a short time to the extension of the disease. Another cause, which has already been mentioned, is the presence of a cyst (dermoid) which might have produced the tumefaction, and after being opened, infection and suppuration might have taken place. An argument against this would be the fact of its breaking at three or four points through its bony shell. It looks improbable that a cyst being relieved at one point should penetrate in other directions. We have a bronchial cleft in this situation, and might have here a cyst. Taking all these factors into consideration makes it extremely difficult to determine what was the original cause. It would certainly, in my mind, narrow down between one or two things—syphilis and sarcoma. The latter seems most probable, as we know that the embryonal tissue is most frequently involved in this growth.
Dr. W. B. Pusey: The child is in better general health now than when I first saw it two weeks ago. There was absolutely no evidence of trouble, so far as the parents know, up to within twenty-four hours of the time the tumefaction was lanced, during which time the physician treated the baby for what was supposed to be colic. Suppuration began soon after lancing the gum and extraction of the tooth. I think the trouble must be either a dermoid cyst or a sarcoma.

General Sarcomatosis in An Infant of Eight Months.
—James B. Bullitt, M.D., Louisville, Ky.: I saw a case of great interest not long ago of sarcoma occurring in a very young child, and I believe it to be a fact that sarcoma occurs in very young children; some authors contend it is a condition which is sometimes present from birth.

This child was eight months of age when seen; with the history of having been born with a congenital hydrocele on the left side. This hydrocele had been tapped by the attending physician a number of times, and finally the same condition appeared on the right side. The left side was tapped seven or eight times, at the right side four or five times, when fluid ceased to be found, although the scrotum remained considerably swollen and hard.

The child was then brought here for consultation. It was believed to be a case of simple hydrocele. Upon examination it became apparent that the swelling of the scrotum was not due to fluid, but there was a solid tumor present. The history was that the child had been well up to the age of six months, when progressive emaciation appeared. This was supposed to be due to the fact that the child had been getting ten drops three times a day of a saturated solution of iodide of potassium. It had resulted in an extensive pustular skin eruption and emaciation. The mother called attention to the fact that over the left scapula there was a tumor probably the size of a bantam’s egg, and just below that another smaller one probably the size of an olive. She said these tumors had appeared within the last month, and had grown considerably in size. Over the buttock on the left side were also two small tumors. It was observed that these tumors gave the impression of being not in the deeper lying structures but immediately beneath the
skin and partially adherent to the skin, although the tumors were not in the skin nor its appendages.

After these smaller tumors had been discovered it became almost certain that the child must have a general condition of sarcomatosis. It had been observed already that the abdomen was very much distended, with numerous large veins running across it, and the question was asked whether the child was bottle fed, but the mother stated that she had always nursed it. The baby cried so much at first that it was impossible to get a satisfactory palpation of the abdomen, but after a while it became quiet, and then a large hard tumor could be distinctly felt in the abdominal cavity. It was chiefly in the left half of the abdomen, extending across the median line just above the pubic arch, being presumably a sarcoma of the kidney, which had reached very large proportions. The date when this sarcoma of the kidney had appeared was uncertain; it was also uncertain exactly when the sarcoma of the testicle appeared; but the nodules under the skin made their appearance at the age of five or six months. It is evident, however, that the condition of the scrotum as well as the disease of the kidney had existed before this time, especially that of the scrotum, and it is probable that the condition spoken of as congenital hydrocele was not a hydrocele at all but was simply associated with the tumor which was found in this locality.

Of course in a child presenting such a condition there seemed to be nothing to do; I presume the child will promptly succumb. In this connection one feels like making an experiment to see what could be done by means of Coley’s mixture. Recent publications have shown in spindle-celled sarcomata quite an encouraging percentage of cures by this method of treatment; but presumably these conditions in very young children are practically never of the spindle-celled variety. They represent the most malignant and rapidly-growing forms of sarcomata, and I presume they will always remain hopeless cases.

DISCUSSION.

Dr. W. F. Boggess: It is fairly common to find congenital hydrocele and not uncommon to find a very large scrotum filled with fluid, which disappears shortly after birth. When such conditions existed at birth they were called by the major-
ity of older authors sarcoma of the testicle. I remember having seen one such case. Whether they are true sarcoma or not I do not know.

Dr. P. F. Barbour: Sarcoma are frequently congenital in children. There are a number of cases reported. The youngest I have seen was a large sarcoma of the right kidney operated upon successfully by Abbe, of New York, in a child two years of age. Exactly how early in life such tumors may be recognized is a question. They have been reported to have been present at birth.
The Cause of General Dropsy of the New-born.—Adebert, after studying the literature on this point and minutely describing a case from personal observation, corroborates the view which is generally taken, that this disease of the newborn, is, as a rule, due to a syphilitic factor. He mentions one point in its diagnosis, which he believes has not yet attracted sufficient attention, namely, the presence of an abnormally large placenta. In every case, where a general hydrops of the infant is found with this placental condition, although all symptoms of syphilis are absent in the other organs, blood vessels, or intestines, we will succeed in finding traces of syphilis in one or other of its progenitors.—*Rev. mens. d mal. de l'enf*.

The Influence of Cow's Milk in the Dissemination of Diphtheria.—W. T. Howard says that in an epidemic of diphtheria, raging in Ashtabula, the origin of the infection was traced to the milk consumed. This came from a farm, on which one of the farm hands, though suffering from diphtheria, nevertheless continued to handle the milk. A striking proof of the infection and dissemination of diphtheria by milk was produced in this case by careful bacteriological research and tracing of the individual branches of the epidemic.—*Amer. Journ. of the Med. Sciences*.

Eczema of the Scalp in Infants.—

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acidi salicylici</td>
<td>1.0 (15.4 grains)</td>
</tr>
<tr>
<td>Zinci oxidi</td>
<td>5.0 (77.1 grains)</td>
</tr>
<tr>
<td>Lanolini</td>
<td>30.0 (7.7 drams)</td>
</tr>
<tr>
<td><strong>M. Ft. unguenti. Sig.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Unguenti diachyli Hebrae</strong></td>
<td>25.0 (6.4 drams)</td>
</tr>
<tr>
<td>Lanolini</td>
<td>5.0 (77.1 grains)</td>
</tr>
<tr>
<td>Hydrargri oxidi flavi</td>
<td>0.25 (3.8 grains)</td>
</tr>
<tr>
<td><strong>M. Ft. unguenti. Sig.</strong></td>
<td></td>
</tr>
</tbody>
</table>

—For external use.

—External use.
Intertrigo:
B  Acidi boricī ............... 0.25 (3.8 grains)
Lanolini .................... 25.0 (6.4 drams)
Vaselini .................... 5.0 (77.1 grains)
M. Ft. unguentī. Sig.—External use.

Scabies:
B  Flor. sulfur .................. 5.0 (77.1 grains)
Potassii carbon .............. 2.5 (38.5 grains)
Lanolini ..................... 30.0 (7.7 drams)
M. Ft. unguentī. Sig.—For external use.
—Centralbl f. Kinderheilk.

A Loud, Audible, Rhythmic Noise in the Left Ear, brought a 3-year-old girl to Hopmann. The noise first made its appearance in the course of a violent whooping-cough, which had at this time lasted nearly three months. When everything is perfectly quiet this noise may be heard a great distance from the child, and resembles the sound of steam escaping in puffs from a boiler. With the stethoscope it is always loudly heard, as a blowing sound, synchronous with the cardiac systole. This sound cannot be heard over the other ear, over the large vessels, and over the heart. Compression of the left carotid did not affect it; the only measure which somewhat weakens the sound is a firm tamponing of the external canal. In the present case dilatation of an artery can only be surmised, not demonstrated.—Munch. med. Wochenschrift.

Aphthæ:
(1) B  Potassii chlorici .......... 4.0 (1 dram)
Tinct. myrrhi ................ 3.0 (46.2 grains)
Aquæ ad ..................... 200.0 (6.6 ounces)
M. Sig.—For rinsing the mouth.

(2) In intractible and very painful cases the mouth may be painted with the following solution:
(a) B  Acidi salicylici .......... 2.0 (30.8 grains)
Spiriti ........................ 10.0 (2.5 drams)
Glycerini .................... 20.0 (5.1 drams)

or (b) B  Hydrargri bichloridi .. 0.10 (1.5 grains)
Aquæ destillati ............... 100.0 (3.2 ounces)
—Centralbl f. d. g. Therapie.
Enuresis Nocturna:—

R. Tinct. rhuris aromatici .......... 15.0 (3.8 drams)
     Atropiae sulphatis .................. 0.001 (1/7 grain)
     Tinct. ergoti ....................... 5.0 (1.3 dram)

M. Sig.—At night before retiring, 5 to 10, to 15, to 20 drops to be given in water (closely watch the pupils and difficult deglutition).

Doses of Bromoform according to Gay:

Children under two years .......... 0.05 to 0.1 (.7 to 1.5 grains)
     " 2 to 4 "  .......... 0.1 to 0.15 (1.5 to 2.3 grains)
     " 4 to 8 "  .......... 0.15 to 0.3 (2.3 to 4.6 grains)

Adults .......................... 1.0 to 1.5 (15.4 to 23.1 grains)

— Journ. de Med.

Intertrigo:—

After thorough cleansing, the following should be rubbed on:

R. Acid borici .......... 0.5 to 1.5 (7.7 to 23.1 grains)
     Lanolini .......................... 40.0 (1.2 ounces)
     Vaselini .......................... 20.0 (5.1 drams)

M. The parts should be cleansed whenever the ointment is applied.—Medic. Chirurg. Rundschau.

Hypertrophy of the Tonsils:—

R. Iodi puri .................. 0.06 (.9 grains)
     Potasii iodati .................. 0.12 (1.8 grain)
     Tinct. opii .................... 1.2 (18.5 grains)
     Glycerini ....................... 120.0 (3.8 ounce)

M. Sig.—To be painted on the tonsil mornings and evenings. Also, half a teaspoonful to a glass of warm water for a gargle.
ABSTRACTS

THE PRESENT ASPECT OF THE FOOD PROBLEM OF INFANTS SUFFERING WITH GASTRO-INTESTINAL AFFECTIONS.

Prof. Ad. Czerny (Allg. med. Central. Ztg., 1898, 26 and 27) does not discuss the treatment of the several forms of gastro-intestinal affections in the infant, but only confines himself to the generally important points which have a bearing on the therapy of feeding.

The older views are based on the rule relating to well known foods, until the right one is found; and we must admit that not a single one of these foods is injurious, and that each occasionally affords good results. But we have not yet discovered accurate indications for each individual food.

If we would, however, pursue a plan of feeding which will surely lead to the end in view, we are met by the idea that the greatest stress should be laid on the number of bacteria it contains, or on the quality or quantity of the food. We only seem to agree that, under all circumstances, the ingestion of food should, in acute gastro-intestinal affections, be altogether discontinued for a time, say about twenty-four to twenty-eight hours, until the condition of the feces indicates that the intestine has been thoroughly emptied.

Infants suffering with gastro-intestinal affections, according to experience bear the deprivation of food very well. If we allow them to drink, bland liquids, water or tea, their weight is not diminished but is eventually increased.

In like manner it is undoubtedly true that, under like circumstances, if we are dealing with a bottle-fed child, the introduction of mother's milk as food is greatly to be desired. In many cases this measure becomes life-saving; in others improvement does not take place. In these latter cases the cause of our non-success can hardly be found in the quality of the breast-milk, if this comes from a well secreting gland.

Only the milk from a gland which is in course of retrogression, especially from one in which the secretion is rapidly lost, is undesirable, for the reason that the soluble constituents of the milk, stagnating in the breast, the sugar of milk and also the fat of milk, are reabsorbed and respectively thrown out.

This stagnation may, however, also take place when the gland is only partly emptied. Thus it may occur where a wet-nurse takes to the breast a very sick, poorly nursing, infant.

It is, then, wrongly said: "The wet-nurse has lost her milk."

The best measure, under these circumstances, is to nurse a healthy child together with the sick one; all instruments invented for the purpose of artificially emptying the breast are imperfect.
PEDIATRICS.

We are obliged frequently, under these conditions, to be satisfied (when the sick baby gradually loses the gastro-intestinal symptoms), if the bodily weight only slightly increases, or even remains the same, perhaps for weeks, and we should be careful not to change the wet-nurse, or take refuge in artificial food. Vomiting is, as a rule, the last symptom to disappear.

One group of gastro-intestinal affections in all breast-babies and children, during the first few years of life, is characterized by mucous stools.

These cases, according to general experience, are most rapidly cured by a diet of cereals, with the absolute exclusion of albumen and fat. The hope which was entertained, that we might be able, perhaps, to bring about a cure of the diseased stomach and intestines by administering food free from germs, was not realized. This may, perhaps prevent the disease, however.

Sterilization of the milk, carried to the extreme, has even produced a very disagreeable result—Barlow's disease.

The author recommends that the milk be boiled not longer than ten minutes. Neither does he believe that the curdling, in large flakes, of cow's milk is of great importance in feeding.

The endeavor of Heubner and Hofmann to increase the caloric heat-producing power of diluted cow's milk by the addition of sugar of milk, is designated by the author, at least as far as sick infants are concerned, as having miscarried.

The methods of Gaertner and Backhausen to render all oxydizable constituents of cow's milk, including the fat, equal to that of mother's milk, have also failed in the sick infant. "Fettmilch" does not quiet vomiting, but often causes it. It is to be recommended where constipation is present. But a large number of sick babies do not thrive on it.

Keller, in his experiments, has shown that the great emaciation of children suffering with gastro-intestinal diseases is caused by a disturbance of oxydation, which finds its expression in the large excretion of ammonia, i.e., the acids in the circulation are not destroyed, as in the healthy infant, but are retained in the blood, and continually interfere with metabolism. It is mainly important to know, not how many calories is contained in the infant food, and how many of them are absorbed, but how many of them are oxygenated; and it is of importance to know that an infant suffering with a gastro-intestinal affection does not at once improve even when it is fed with good breast milk, for the reason that this is not as yet perfectly oxydated, the sugar of milk remaining in part undestroyed, and therefore a great amount of ammonia is excreted.

We have also learned from observation on children suffering from gastro-intestinal affections, that in feeding with cow's milk, fat, as a source of acids which are with difficulty oxygenated, may become dangerous to the health of the infant, so also many carbo-hydrates and albuminoid bodies. We are therefore practically obliged to find a food for infants suffering with gastro-intestinal catarrh, which is readily oxygenated, in which as few as possible non-oxydizable acid products of metabolism are produced, and to meet the harmful products by supplying the system with alkalies.
The attempts to render the casein of infant foods more digestible by peptonization, have also not produced encouraging results. The author declares the peptonized milks as unsuitable to infants suffering with gastro-intestinal affections; breast-milk contains neither peptones nor albuminoids.

The method recommended by Backhausen, which consists in precipitating the casein by lablenzym, and adding a solution of albumin after destroying the enzyme, has not, by any means, given encouraging results. It has, moreover, never been demonstrated that the casein of cow's milk is not easily digested; at least no proof has yet been offered, that the intestine is not able readily to absorb it.

The amount of albumin which is necessary to the infant (Heuber and Rubner, 6.2-6.5, *pro die*) is present even in strongly diluted cow's milk, and there is no necessity for giving infants a food especially rich in albuminoids.

There is no reason to doubt that infants suffering from gastro-intestinal diseases are not in want of an increased supply of albumin, otherwise they would not thrive best when receiving breast-milk (which is so greatly deficient in albumin), and all experiments with foods rich in albumin, in infants suffering from gastro-intestinal affections, would not have given such bad results. Not because a milk containing much albumin favors intestinal decomposition, but because it leads to disturbances in the intermediate metabolism, with which we are at present not well acquainted. It might also be mentioned that the deleterious influence of strongly diluted milk may, in part, be explained by the fact that the large quantity of water ingested removes much of the salty constituents of the organism. These salts may, however, be replaced by adding them to cow's milk, and their removal is certainly less injurious than over-nutrition with albumin.

The volumetric method of Eschbach, which seeks to know the amount of food necessary to the child in twenty-four hours, which would be taken by a child of the same age when nursed at the breast, gives an average figure, which is only applicable to healthy infants. Sick babies should only be fed with the smallest possible quantity which is sufficient for their existence; and the author permits sick babies to drink as much as they wish, at long intervals (four hours) only; other pediatrists reduce the quantity of single meals, and shorten the intervals.

COLD AS A FACTOR IN PEMPHIGUS OF THE NEW-BORN.

A. Kirchner (*Centralbl f. Kinderheilk, 1893, iii., 157*). True non-syphilitic pemphigus of the new-born, has not as yet been fully explained. During recent years the number of those who, even in sporadic cases, look for some infection as the cause, have increased. Staub* draws our atten-

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* Ueber pemphigus puerperalis und pemphigus neonatorum. Berlin klin. Wochenschr., 1893, No. 49, read at the second international dermatological congress, 10, 9, 1892.
tion to the frequent appearance of this disease where the mother is at the same time suffering with puerperal sepsis, and who occasionally also presents pemphigus. Peter † also describes such a case, where he was able to demonstrate in the contents of the blebs as well as in the milk of the mother and in the blood of the infant, cocci, especially the streptococcus pyogenes, and occasionally a diplococcus and staphylococcus pyogenes albus. Cultures of the former had already been made previously by Strelitz and Almquist from the contents of the vesicles. We might therefore be tempted to look upon pemphigus neonatorum without further thought as an infectious disease, and claim an infection also in every sporadic case. However, we meet at times with cases where it is difficult to prove this assertion. The following is such a case:

The baby, F., was born September 25, in the evening. Labor was tedious, occurring in a primipara. The waters had suddenly broken on September 23, no labor pains having been previously felt. After the waters had discharged, pains began to appear, but did not facilitate labor, as they were frequently spasmodic. The woman becoming weaker, a subcutaneous injection of morphine was administered on the evening of September 25, when labor terminated. The child was rapidly born after a short period of rest, which followed the injection. The infant was not asphyctic, and was well developed. It was not, I am sorry to say, weighed. The puerperal period was normal, except that the lochia remained bloody for some time, for the reason that the woman did not sufficiently take care of herself. Kirchner was called on October 4 to prescribe for the child, who was suffering from a vesicular eruption since the previous day.

October 4.—The patient had lost weight somewhat and was emaciated; the hands and feet were markedly cool and blue; the feet showed a nearly dark-blue tint. The temperature of the rest of the body was not raised, and was a little below normal. In a perfectly symmetrical grouping we find on the inner surface of both thighs, and passing backwards from here, a number of vesicles, pretty closely packed, about the size of a fifty-cent piece, situated on a reddened base; a few small ones on the inner side of the right arm; one each on the middle of the neck, and to the left of the occiput. The baby, nursed by the mother, takes the breast well, does not cry, and sleeps most of the time. Its stools have the appearance of the best rice porridge. Weight was seven pounds. Syphilis is positively denied by both parents. The attending elderly midwife has had no other case with a vesicular eruption; this is the second case seen by her. The first case occurred a number of years ago, and was due to syphilis. The patient had always been bathed at a temperature of 25° R., the temperature of the bath having been taken by a thermometer. Up to the present the child had been lying in the same bed with its mother, who perspired very freely, and did not always cover herself or the baby well. The temperature of the room was rather cool. It was not heated, and the child was only thinly clad. The eruption had at first appeared on the thighs. Kirchner ordered that the child should be placed in its own bed at once, and be warmly covered, and a warming

bottle be placed at it's feet if necessary. The site of the vesicles was anointed with boric acid ointment.

October 6.—A large number of vesicles have made their appearance on the posterior portion of the left thigh, in a symmetrical manner, also on both nates and on the scrotum. The right arm (at its inner aspect) presents numerous vesicles. A large one is situated on the trunk in the right groin. No further extension was noted, especially none on the head and throat. The first vesicles have reached the size of a mark. The child is now warmer to the touch; the hands and feet are not blue; the feet are perhaps still somewhat cool, not so the hands.

October 8.—A copious eruption of small vesicles, perfectly symmetrical, has made its appearance today on the lower half of the inner side of both legs. The vesicles are not as large as the early ones. In the median line, above the mons pubis, there is one large bleb. Many of the old larger ones have ruptured, and are in progress of healing. The child is now warm all over, and has a brighter and more rounded appearance.

October 10.—Today there appeared small vesicles, as a rule, of the size of a pea, covering the whole posterior surface of both legs symmetrically. The anterior surface of both is totally free from them. On the inner side of the left arm, and on the lips, at the vermilion border, small vesicles are also seen.

October 14.—A number of small vesicles have developed on the legs, covering their inner side, and the soles of both feet, while the anterior portion is now permanently free. The old vesicles have partly dried up. A new crop has appeared, and these are perfectly symmetrically distributed on both sides of the occiput extending to the ears, and are present on both sides of the neck. Also in the axilla, and on the inner aspect of both arms there have appeared fresh vesicles.

October 17.—On the whole posterior aspect of the trunk, and extending in a symmetric manner over the sides anteriorly, a number of small vesicles have appeared. Those on the occiput, neck, legs, and arms, are nearly all healed. But in isolated spots very small recent vesicles or small papules have shown themselves.

October 19.—No fresh vesicles have appeared. The old ones have nearly all healed, a few dry scabs only are left on the occiput and neck. On the inner side of the left heel, an ulcer the size of a lentil, takes the place of a small vesicle. Otherwise there is everywhere a normal formation of epidermis. The child is warm all over, has developed nicely, and weighs nine pounds. It has therefore gained two pounds in two weeks.

October 27.—No fresh vesicles have made their appearance, the old ones have all healed, also the ulcer. The child looks very strong.

The contents of the fresh vesicles, which were removed with the greatest care, were repeatedly examined microscopically for bacteria, with a negative result, however. Cultures could not be made for want of opportunity.

We have not the slightest grounds in this case to look upon it as an infectious disease. Very remarkable, however, is the symmetrical appearance of the vesicles on circumscribed areas of the surface of the body, within the areas of distribution of certain nerves, passing over alto-
gether nerve areas bordering on these, so that we are led to think of a neuritic inflammation of the integument, a trophoneurosis, which was developed under the influence of cold. In this relation Kirchner observed a certain similarity with a case met with in an adult, and described by him in the Archiv. für Dermatologie und Syphilis, 1892, p. 541. In this case pemphigus was developed from the daily effect of quite severe and long continued cold on a very warm and greatly perspiring skin. This also made its appearance symmetrically in exacerbations in certain nerve areas, beginning at the extremities. Quite a lowering of the surface temperature of the body had taken place in the child from the first day of its life. Whether any, or what kind, of noxious substances were probably formed in the body of the child under the influence of this cooling process, and which, circulating in the blood, made an impression on the central or peripheral nervous system within certain nerve areas, Kirchner will not decide. It is, nevertheless, remarkable that in this, as well as in other sporadic cases, as also in those described by Henoch‡ the eruption made its appearance exactly on the ninth day of life. This circumstance would again suggest the idea of some infectious cause, which, beginning to exert its influence on the body from the time of birth, showed itself after nine days by the appearance of vesicles. The cause of the infection might be developed by external influences, as in this case by the great reduction of the temperature of the body.

Kirchner was unable to find any record in literature on the symmetrical appearance of pemphigus in the new born. Henoch is the only one who mentions that the eruption occurs successively, but not in any certain order. In the case just described we might, aside from its symmetrical appearance, also draw attention to the distinct order in which it appeared, in that those extremities which were exposed to the greatest influence of cold were first involved; for example, the legs. Accordingly, the eruption in Kirchner's adult patient also made its appearance on the arms first, and had given him the greatest sensation of cold. In both cases the extremities were the first parts attacked by a severe form of the eruption, then the head, and lastly the trunk. In the adult a symmetrical appearance of the vesicular eruption in the area of certain nerve tracts has been frequently observed; for example, by Immermann.§ Kirchner wished also to point out the rare involvement of the plantar surfaces of the feet in non-syphilitic pemphigus.

‡ Vorlesungen über Kinderkrankheiten, Berlin, 1892, p. 52.
HARE-LIP AND CLEFT PALATE.*

By R. W. Murray, F.R.C.S.,
Surgeon, Liverpool Infirmary for Children.

During the last eight years I have performed 195 operations for hare-lip and cleft palate, and though I have nothing particularly novel to relate, I thought it might be of interest to summarize my experience and to direct your attention to certain details I have found of advantage.

For hare-lip I have operated 122 times. The deformity in the great majority of cases involved the left side of the lip, and was associated with a cleft palate. The age at which the operation was performed depended, of course, upon various circumstances, but I selected about the fourth week. I have frequently operated during the first week of life, but these early operations are not entirely free from risk, and I well remember a case in point. Some few years ago I was urged to operate upon an infant two days old, who had a hare-lip and cleft palate, but otherwise was apparently a well-formed child. I declined to operate because, although the child appeared healthy, she constantly vomited what nourishment was given. This she continued to do until her death a few days later. We fortunately obtained permission to make an examination and found the small intestine to be completely imperforate.

The method of operating I usually adopt is very similar

*Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.
FIG. I.

Aged 5 weeks.

Button-suture used for nostril.

Aged 11 months.
FIG. II.

Aged 2 months.

Button-suture used for nostril.

Aged 8 months.
to that suggested by Mr. Edmund Owen. The infant being under chloroform, I freely divide the lip on either side from the maxilla and alveoli, and feel sure the success of the operation largely depends upon the freedom with which this is done. I then prepare the edges of the cleft in the manner indicated in the diagrams.

It is well not to interfere with the premaxilla, by bending the bone back or otherwise, for it is quite remarkable how the closure of the lip influences the subsequent growth of the bone. I have noticed in a large number of cases where the gap in the alveolar margin has been considerable, that a few months after the closure of the soft parts over it the gap has practically disappeared, the alveolar margins being almost in contact. As regards sutures, I have never used hare-lip pins, preferring silk-worm gut and horse hair.

The advantage of this particular method of operating is that it ensures a continuous line of mucous membrane for the upper lip, and the subsequent scar does not suggest a hare-lip to anything like the same extent as if the scar was vertical. But, after all, the chief difficulty in these operations is not with the lip, but with the nose.

Before operation, when the cleft is complete, the ala of the nostril on the affected side is markedly flattened, and I have often noticed in my own practice and in the practice of other surgeons that, although the result of the operation has been satisfactory in respect to the lip, the result has been marred by a falling away of the nostril on the affected side.

To obviate this, I have for the last few years approximated the ala of the nostril on the affected side of the nasal septum by means of a button suture—an illustration of which, in position, is given in the accompanying photograph. This suture also tends to steady the whole lip, and so save the strain on the sutures when the child cries. This button suture should be removed on the third or fourth day, otherwise the nostril on that side is apt to remain too compressed. In cases of double hare-lip, when the intermaxillary bone is prominent, I almost invariably remove it, and a week or so afterwards proceed with the closure of the lip. A great deal has been written both for and against the removal of this bone, but to my mind the advantage of the removal when the bone is prominent far outweigh the disadvantages. If the bone is retained
Double hare lip and cleft palate. T. G., aged 1 year.

The internasal bone, which was very prominent, has been removed.
it acts as a wedge, preventing the closure of the anterior part of the palate; besides, in many cases the presence of this bone, even after being pushed back, would, considering the small amount of material we have for the formation of an upper lip, render the operation upon the lip extremely difficult.

The main objection to the removal of this bone is that the upper lip becomes shortened, and the lower lip consequently projects, producing an under-hung appearance. But this flattening of the upper lip can, to a very large extent, be obviated if the bone is removed subperiosteally.

In cases in which the clefts are complete, extending into both nostrils, I endeavor to economize what tissue we have for the formation of the lip in the following way: I first close one side in the manner illustrated in the diagrams, and so utilize the middle piece to the utmost, thus converting the double

FIG. IV.

To illustrate the application of a button-suture used in hare-lip operations, to approximate the ala of the nostrils on the affected side to the nasal septum, and so prevent the ala from subsequently "falling away." The suture is removed on the fourth or fifth day.
into a single hare-lip, and two weeks later operate upon the other side. By thus operating in two stages we obviate as much as possible the shortening of the upper lip.

Now, let us consider briefly the closure of the cleft palate. In all surgical text-books, and in most of the works dealing especially with this subject, the age stated at which the palate should be operated upon is somewhere between the third and sixth year. This, I am convinced is a mistake, for after all the chief object in closing a cleft palate is to render the powers of speech more perfect than they otherwise would be. If operation is delayed until the third year or later the child by
the child is about 12 months old, and I much regret that geographical considerations prevent me showing you some children whose cleft palates were operated on during infancy, and must ask you to take my word for it that the children now talk quite naturally, it being impossible to detect from their speech that they ever had cleft palates.

In these particular cases the cleft of the palate was not associated with a hare-lip. When the deformity includes both the lip and the palate I operate upon the lip about the fourth week, close the soft palate at the end of the first year, and subsequently close the hard palate. In this class of cases the result of operation, as regards the power of articulation, is necessarily not so satisfactory as when the palate only is cleft; but in favorable cases the defect in speech is not very noticeable.
REMARKS ON HARE-LIP.*

By I. Mossop, F.R.C.S.E.,
Hon. Surgeon Children's Hospital, Bradford.

The methods of operating in severe cases of hare-lip cannot vary to any great extent: to make the most of the material at your disposal is all that you can do, and any adjunct to the information we already possess is welcomed by the operator. My remarks do not refer to the simple notch or cleft in the lip, but to those widely divergent gaps which are usually in hare-lip associated with cleft palate, with scanty material to work upon. At the Newcastle meeting of the Association, in 1893, I was greatly interested in a paper by Dr. Thomas, of Birmingham, on "Some Points in the Operative Treatment of Severe Hare-Lip." He described a method of procedure which, in my experience, has proved successful, and which I strongly commend to your notice. His first aim is to secure symmetry of the nostrils; when that point is attained he later on deals with the notch which remains. He looks upon the formation of the nostril in severe hare-lip as the most important step in the operation, and rightly so, for if you fail in this you cannot afterwards rectify it, as you can that of an uneven cicatrix of the lip itself. There can be no doubt that the removal of the projecting premaxillary bones is in the greater number of instances an absolute necessity, and if after its removal the lip is flattened and appears to hang back from the lower lip, the dentist can in after-life remedy the defect.

The procedure suggested by Dr. Thomas is, in short, to restore the nasal aperture by bringing up the termination of the cartilage to the base of the column, and thus form a floor margin to the nostril.

I propose briefly to describe a case which was operated on by me at the Bradford Children's Hospital, and which appeared suitable as a test case. It was one of severe single hare-lip on the right side, with cleft palate.

D. S., aged 6 months, was admitted in May, 1894. Early

*Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.
in July I operated. After freely separating the cheek and nostril from the facial bone, I pierced the lip with a tenotomy knife below the termination of the cartilage, and divided it downwards and slightly inwards. This, when raised up to its position on the opposite side formed two raw convex surfaces. I then pared two corresponding surfaces on the opposite margin of the cleft, one on the outer side of the base of the column the other below and continuous with it. The two convex surfaces of, the outer margin fitted into the upper concaved surfaces of the inner margin. Three catgut sutures were applied, one in the center and one above and below. The wound was dusted with iodoform. The tension on the sutures was relieved by plaster thoroughly applied. In ten days it was so far healed and firm that I was enabled to proceed with the last stage; namely, to close up the notch in the lip, which was done in the ordinary way.

I am strongly of opinion that dividing the operation into two stages with a reasonable interval of time, as recommended by Dr. Thomas, is advisable for several reasons: (1) There is less bleeding to contend with; (2) the child does not require to be so long under the anesthetic; (3) you can deal with the cleft with more deliberation, and so insure a more perfect union of the muco-cutaneous margins.

The subject of the above operation is now 4½ years of age.
CLINICAL TYPES OF INFANTILE PNEUMONIA.*

By James Carmichael, M.D., F.R.C.P.,
Physician, Edinburgh Royal Hospital for Sick Children; Clinical Lecturer on Disease in Children, University of Edinburgh.

In introducing this subject to the Section, I desire to refer to acute pneumonia as met with in the early years of life during the period of infancy (properly so called) and until the fifth year of child life. During this period, as I shall attempt to show, acute pneumonia assumes certain types not so distinct and definite as manifested by the same disease in the adult. The advances made during recent years in the pathology of the disease, more especially from the bacteriological standpoint, have contributed largely to a clear understanding of the subject, and form a basis upon which a true classification of the disease may be founded.

In a paper recently read before the Edinburgh Medico-Chirurgical Society, while treating of pneumonia in its clinical relation, I made reference to classification, and in these few remarks, to which time assigns a strict limit, I shall endeavor to enlarge upon them.

Acute pneumonia, whether in the adult or child, is now known to belong to the group of infective diseases, and that it may be produced by a variety of infections is proven beyond dispute. The various micro-organisms during this growth and development give rise to toxemia, as evidenced by well-marked pyrexial symptoms, which have a more or less sudden onset and termination by crisis or rapid lysis. Not infrequently the constitutional symptoms are out of all proportion to the local lesion in the lung.

Before referring to the clinical types it is well to allude to the pathological appearances found in the lungs. True fibrinous pneumonia, although rare in infancy, is met with in a small minority of cases. The appearances show solidity of the lung with lobar consolidation. The air cells are filled with

* Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.
fibrinous exudate containing red and white blood cells and desquamated epithelium. Pleurisy is present. The cut section of the lung shows a smooth solid surface. Very different are the appearances in catarrhal pneumonia. The lung in this variety is vesicular; the cut surface shows isolated lobules or groups of these, prominent and of a purplish color, which soon become scarlet on exposure to air. On squeezing the lung, catarrhal fluid exudes from the smaller bronchi. Microscopic examination shows the air cells filled with mucous fluid and cellular elements. The cells are found to be germinating epithelial cells, which are rapidly thrown off from the alveolar wall, filling up the air cells. The older epithelial cells rapidly undergo fatty degeneration. The pathological process is essentially a catarrhal one. While these morbid appearances in the two forms alluded to are sufficiently distinct, the true fibrinous pneumonia, showing little variation in its different stages; in the catarrhal variety the appearances vary according to the duration of the process and the time the child has lived. When life has only been prolonged for a few days the appearance of lobular involvent are less distinct, the evidence of bronchial catarrh alone being well marked with a congested, sometimes slightly edematous, lung. In many cases, in a more advanced stage, the lung shows evidence of more or less consolidation in large areas, a process of splenization having taken place, with some fibrinous exudation into the lung tissues. On microscopic examination in these cases the proof of this is shown by the exudation of red and white blood cells, which crowd the alveoli and lung tissues. Numerous blood extravasations may also be met with beneath the pleura. These appearances characterize what is termed the mixed form of the disease, where fibrinous and catarrhal changes are combined. Clinically we can differentiate four distinct types:

(a) Complete consolidation, with lobar distribution and absence of signs of bronchial catarrh.

(b) No sign of consolidation; bronchial catarrh generally distributed over one or more—frequently both—lungs.

(c) Bronchial catarrh, with small areas of incomplete consolidation, lobular distribution.
(d) Bronchial catarrh, with larger areas of incomplete consolidation, lobar distribution.

The first form, or type (a): The true fibrinous or croupous variety, is distinct and definite, both in its clinical relations and pathology. The main factors are complete consolidation, sudden invasion, rapid crisis in from seven to ten days, symptoms not always proportionate to the degree of lung involvement, but rather to the toxemia.

Type (b): Clinically the features are those of bronchial catarrh, involving the minute bronchial ramifications (capillary bronchitis). The type of fever is similar to the other varieties of broncho-pneumonia. No evidence of lobular involvement can be made out by physical examination. Post mortem examination shows catarrhal inflammation of the alveoli and smaller bronchi.

Type (c): Signs of bronchial catarrh, sometimes chiefly confined to one lung, often to both; small areas of incomplete consolidation (lobular distribution). The type of temperature is irregular compared with the fibrinous form; the onset is gradual, not sudden, the duration of the disease from ten to fourteen or twenty-one days, ending by lysis, rarely but occasionally by crisis. The pneumonic areas can only be detected with certainty by the stethoscope, percussion being unreliable. The auscultatory signs are limited areas of broncho-vesicular breathing, with increased crying resonance and crepitations heard both during inspiration and expiration finer than those heard over the other portions of the lung.

Type (d): Signs of bronchial catarrh, with larger areas of incomplete consolidation. These cases usually are classed under the "mixed type." The auscultatory signs are similar to those of the former type (c), with this difference, that the percussion is impaired in proportion to the extent of lung involved. The note shows dullness, not so absolute as in the fibrinous form, as the lung is more or less vesicular. Of 142 of my hospital cases during the last five years, 107 showed the clinical features of broncho-pneumonia of various types, 35 showed all the features of the fibrinous form. This accords
generally with universal experience, showing that the acute pneumonia of infancy and early childhood is a broncho-pneumonia in the majority of cases. The infections being the same, why should the disease assume the form of broncho-pneumonia in the child and fibrinous pneumonia in the adult? Infection (micro-organism) attacks the most vulnerable tissues, those possessing the least immunity. Recent investigations on the anatomy of the lung at a late period show that at this time the alveoli have not appeared, the ultimate bronchial ramifications end in a loose connective tissue, which later on becomes thicker and stronger, and in which the vascular network is distributed. Over this, flat epithelium becomes developed, and can ultimately be differentiated from the columnar variety lining the minute bronchial ramifications. It is not until the fourth or fifth year of extrauterine life that the delicate tissues constituting the alveoli of the lung become fully developed. Prior to this time the air cells are relatively smaller than in the adult, their walls thicker, and the interstitial tissue larger in amount. The blood vessels of the alveolar walls are also very abundant. The connective tissue cells in the stroma, and also the epithelial cells, are very numerous and readily proliferate. Such being the anatomical conditions met with in the infantile minute bronchial tubes, alveoli, and interstitial tissues, the presumption is that these growing and immature tissues possess less immunity to the inroads of infective micro-organisms than the fully developed structures of the adult lung.

In conclusion, I could hardly omit in these few remarks a reference to the bacteriology of the acute pneumonias as disclosed by recent investigations. Valuable information is afforded us from the researches of Netter, Durck, Mosny, Meunier, Darier, Grancher, and others, which demonstrate that quite a number of micro-organisms are met with in this disease. The micro-organisms met with may be single or multiple, whether in the primary or secondary pneumonias. In the primary pneumonias of the fibrinous variety, Frieländer's coccus or pneumo-bacillus, or Fränkel's capsuled coccus, are the predominating organisms; streptococcus or staphylococcus being also found in a minority of cases. In primary catarrhal pneumonias one or other variety of pneumo-
coccus may be found alone, or streptococcus alone, or these two organisms combined.

In the secondary pneumonias of measles, diphtheria, influenza, pertussis, tuberculosis, in addition to the organisms peculiar to these diseases, streptococcus is frequently met with, more rarely pneumococcus. Bacteriology thus shows that acute pneumonia is in no sense a specific disease as produced by any special organism.

I conclude by quoting the words of Grancher, who in his recent treatise says: "The bacteriology of broncho-pneumonia is very complex . . . depending on it numerous pathogenic organisms, for whereas fibrinous pneumonia is associated almost invariably with pneumococcus, catarrhal pneumonia is produced by a variety of infections."
NOTES OF A CASE OF "APPARENT" SUPERNUMERARY TESTICLE.

By J. K. Tomory, M.D.,

Caithness.

HEALTHY child—A. M.—aged 3½ years, except for the presence of eczema capitis during dentition:

History of Case.—About beginning of June the mother first noticed a swelling in left groin, but did not think much of it. However, after about three weeks she began to suspect rupture, and told her husband. Shortly after this—that is, about end of June—I was asked to see the child. On first examination there was evident swelling over the left inguinal canal, and the external abdominal ring was, if anything, larger on this side than on the right side. In the middle of the canal, about half way between the ring and the commencement of the scrotum, was a hard, freely movable body of testicular shape, in size larger than a bean, and considerably larger than either of the testicles, which were both normal. On pressure the body still remained, but could, by manipulation, be retracted through the external ring. It did not seem to be at all adherent either to wall of canal or to spermatic cord. On squeezing the body between the fingers there was no pain caused; so that the body was evidently not sensitive, such as would have been the case in a normal testicle. I asked my friend, Dr. Alexander, to see the case with me, as I looked on it as a sort of curiosity. He, on examination, and by means of pressure, got rid of the body pro tem., but it soon descended. In a day or two I again made a thorough examination, and found that I could make the body disappear apparently through the external ring, but in the course of a few minutes it reappeared. I did this several times in order to satisfy myself that the body was not attached in any way.

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Family History.—The other members of the family are all healthy. The father's brother had an undescended testicle, but otherwise I could gain no precedent for this extraordinary appearance.

Diagnosis.—The question now arises—what is this body? On consulting available authorities I can find no case similarly mentioned, and Mr. McCarthy, in his article on Diseases of the Testes, in Quain's Dictionary, says of supernumerary testicles:

"Supernumerary testicles have been described, and men not infrequently believe themselves to be so gifted. The mistake has arisen from the presence of encysted hydroceles, or of fatty or fibrous tumors of the cord, or of old epiplocele. There is no well authenticated case recorded of the presence of more than two testicles."

Now in this case it is certainly not an encysted hydrocele, else it would not have been freely movable, and the feeling on palpation would have been altogether different. It is not an epiplocele, as the body is well defined, and not attached to the omentum or bowel at all. I do not think from its extreme mobility and "feel" that it is a tumor of the cord, else there would be some attachment (and a short attachment) in so young a child.

The differential diagnosis between supernumerary testicle and hydrocele of the cord seems to be more difficult; and I can only say that were this a case of hydrocele of the cord I should expect to be able to locate some attachment, whereas this body is perfectly mobile in all directions, and is not attached, as far as I could make out, either to the walls of the canal or to the cord.

By a process of exclusion I consider the body in question to be a gland similar in formation to a testicle, apparently wholly, or almost wholly, devoid of nerve supply, else there would be pain on pressure. At all events, the case is a most interesting one, and I hope worthy of your consideration.
Congenital Absence of the Humerus.—Dr. J. C. Gittings said: I have a case of congenital absence of the humerus to present, with a rudimentary attempt at a radius and ulna. There is no articulation with the shoulder joint, the union being purely fibrous. The carpal bones are represented by some four or five small bodies, the hand itself is somewhat small, though well formed. The particular interest in this case is its etiology. I believe there are only four admissible causes for deformities of this kind: maternal impressions, intrauterine constrictions from bands or from the cord, local arterial disease, or some deficiency in the original germ itself. In this case I was not able to have a personal interview with the mother, as she lives out of town, and the question of maternal impression must remain undecided. The question of constricting bands can be excluded on account of the comparatively perfect development of the hand, and for the same reason local arterial disease, so that we are forced to either one or other of the remaining explanations: maternal impressions, or some defect in the original germ itself. The radiograph that I had taken was not altogether successful, owing to the extreme nervousness of the child. It shows a full complement of phlanges and metacarpal bones, five carpal bones, and a peculiar formation which I take to be radius and ulna. Two short lines are seen, at an obtuse angle, and joined at the angle of flexion by a thin web.

From physical examination we would be led to think that the upper portion was a rudimentary humerus, but the fact that it is all of one piece, and partially joined by a web of bone, makes it seem more probable that it represents a malformation of the radius and ulna.
The boy was operated on for double genu valgum. After operation the temperature was 101°, and the following day instead of coming down it showed a rise to 102°, and for the succeeding two weeks it ran an extremely hectic course, for which I could find no cause, except an ill-defined exudation at the apex of the left lung. As it showed no tendency to resolve and was remarkable chiefly for its dullness, I aspirated and withdrew two or three cc. of a serous fluid, not bloody, which failed to show the presence of tubercle bacilli on staining, and was sterile on culture both on agar and in bouillon. Within four or five days of the exploratory puncture the temperature reached normal.

**Congenital Absence of both Femurs.**—Dr. Richard A. Cleemann said: In connection with the case just exhibited by Dr. Gittings, I expected to show an instance of the congenital absence of both femurs occurring in my obstetric practice, but for some reason the mother has failed to bring the child here. Its absence, however, need not prevent me from reporting the case. The anomaly is great enough to be placed in the group of "monsters," in the classification of Geoffry St. Hilaire; it belongs to the same family of *ectromelus*, and the same genus *phocomelus* as that presented by Dr. Gittings. The femurs are entirely absent, or in such a rudimentary condition that they cannot be distinguished without dissection, the legs seeming to be articulated directly upon the pelvis. The feet, otherwise perfect, are turned upwards and outwards (equino-valgus), but are readily placed in the proper position by manipulation; the right foot points backwards from external rotation of the limb, but can also be readily brought forward to its normal relations. In all other respects the child is normal, the penis and scrotum, which are said, usually, to share in lack of development when the lower limbs are thus affected, being perfectly formed.

The child, 3 months old, strong and lusty, is the offspring of a primipara, of Irish birth, now 30 years old, and married one year. As far as known no anomalies have been observed in her family or that of her husband, who is like herself of normal development. I saw nothing in her pregnancy to call for comment other than that the hydremia of that condition was more marked than usual. The "waters broke" prema-
turely, about twenty-four hours before active labor commenced the process thereafter occupying thirteen hours. The fetus presented by the right foot, the rotation outwards and backwards of which, described above, became of interest in the diagnosis of the position of the body. The foot pointed towards the left of the mother's pelvis, which lead to the natural inference that the back of the fetus was towards her right, while further observation showed that actually the opposite was the case, the back being towards the left.

I may add that there is a history of maternal impression in this case. The mother says that when she was one or two months pregnant she was accosted by a beggar with very short legs, whose appearance shocked and disturbed her very much. At this period of fetation the lower extremities appear only as a trace, so that to those who believe in the effect of maternal impressions in producing such anomalies, this encounter with the beggar may be looked upon as the cause of the unfortunate arrest of development.

**Dr. J. Hendrie Lloyd:** We have under our care now at the Home for Crippled Children, in this city, a girl who has complete congenital absence of both lower extremities. They are represented simply by little fleshy tabs at the hips. On one I think there is a rudimentary digit. There is no explanation for that case. The girl manages to get around very well by the aid of an apparatus designed for her by Dr. Shoemaker; the pelvis is set in a sort of basin supported by iron frames, with artificial legs and feet enclosed in shoes and stockings. She progresses by means of crutches. The malformation is much more extensive than in this case, but it evidently belongs to the same class of congenital deformities.

**Dr. W. S. Stewart:** What seems to be rather confirmatory of the fact that there are many anomalies resulting from maternal impressions, which certainly do occur, is that one such case almost involved a malpractice suit in my own experience. A pregnant mother was boarding in a house where a man with a glass eye sat opposite to her at the table, and she was particularly impressed by looking at that man's apparently natural eye, while still recognizing the fact that it did not move. When her child was born it could not see with the eye
corresponding to the one that was artificial in the man mentioned. I had the child examined carefully by a specialist and he said the eye was of absolutely no use to the child.

Another case was a child born without any injury in birth, as far as I could determine. It could not use its arm at all. I asked the mother if she knew of any cause, and she said that she did not, excepting that she, too, was boarding in a house where a man sat opposite to her who never used his arm; she could not account for the child’s condition upon any other ground unless I had done something in its delivery that had caused the paralysis. I at once took the child to Dr. Agnew and asked him to see if there was any displacement or other injury that could account for the condition. He examined it carefully and said that it was simply a want of function on the part of the nerves to that arm, and that it would certainly gain use of the arm eventually. It always remained in that condition, however, and I know if I had not taken the child to Dr. Agnew I would have been obliged to pay the penalty.

I think these two cases seem to point to the fact that there are such things as maternal impressions which produce such results as I narrated. I have written a paper upon this subject and made a collection of a great many cases, all of which seemed to be traced back to something of that kind. I will state one case: A lady saw a man fall from a jack upon which he was standing while painting the windows, of the house opposite. He was bespattered with blood, and after this she was constantly dreading that something would result from seeing him in this condition. She said: "I am afraid my child will have some marks on it." When it was born it was covered here and there with birth-marks in the regions in which she had feared they would appear.

Dr. J. C. Gittings: One of the most marked cases of maternal impressions on record occurred at the German Hospital a few years ago, under Dr. Whiting. A woman was admitted, suffering from fatal burns of the back, thighs, and buttocks. She was at the time over eight months pregnant. In the course of twenty-four hours, shortly before death, she miscarried. The child when born was apparently normal and was wrapped up and placed aside until after the delivery of the placenta. Some fifteen or twenty minutes afterward Dr.
Whiting found blisters had appeared on its skin in practically the same localities in which the mother had sustained the burns. The child lived but a few hours, and its body is at present preserved in the German Hospital Museum.*

Dr. F. A. Packard: I recall a rather interesting case, a patient, who had been kicked in the mouth when a child and received a wound which left a cicatrix looking precisely like that resulting from the operation for hare-lip. She had six children and throughout the whole of each pregnancy she worried constantly, and only ceased when she was told that the child when born did not have hare-lip. So that maternal impressions in that case at least were not very strong. In this case the woman really worried herself sick with each pregnancy expecting the child to have hare-lip, and the impression made upon the mother was, I think, much more powerful than where a person happens to see some deformed creature in the street.

Obstetrical Palsy.—Dr. L. C. Peter exhibited two cases of obstetrical palsy (see Pediatrics, November 15th, 1898) in brothers 4 and 8 years of age. In both cases the head presented, labor was tedious, and in the younger boy instruments were used. After this birth, the left arm and shoulder were found to be paralyzed, and in the younger patient the clavicle was fractured. The muscles of the shoulder and upper arm wasted rapidly, the shoulder drooped, the humerus was rotated inwards, the elbow slightly flexed, and the forearm in the position of pronation. In the older boy both scapulas were prominent, and their inner borders stood off from the chest wall—the left more than the right. There was no weakness on the right, and the muscles responded normally to galvanism. The biceps, brachialis anticus, deltoid, supraspinatus, infra-spinatus, the rhomboids and serratus magnus muscles on the left arm were wasted, and responded more vigorously to the positive than to the negative pole of a galvanic battery. The serratus magnus was not involved in the younger boy.

A third case occurred in an infant 7 months old. Labor was instrumental, and sometime after birth the left arm was

*Note.—I am indebted to Dr. Wilbert, of the German Hospital, for the radiograph, and his knowledge of osteology, both normal and pathological, as exhibited by the X-rays, has aided me greatly in my final opinion of the case.
found to be paralyzed. There was neither wasting nor deformity of the shoulder, no resistance on passive motion, no history of injury, fever, or convulsions after birth, and no evidence of rickets. The reflexes were normal.

Dr. Peters considered the direct cause of injury in obstetrical palsy to be compression of the neck by the blade of the forceps badly applied, or by stretching of the nerves by drawing the head aside to liberate the arms and shoulders in head presentations, and direct pressure by the operator's hand or overstretching of the neck in delivering of the after coming head in breech presentations.

DISCUSSION.

Dr. J. Hendrie Lloyd: I came here especially to see these cases, as I think they are extremely interesting. I should judge that the main involvement here is in the posterior thoracic nerve, the external respiratory nerve of Bell. It causes a paralysis of the serratus magnus muscle, which paralysis allows this peculiar bulging posteriorly of the lower angle of the scapula, giving the child a peculiar winged appearance. Such cases are rare. I never heard before of a case occurring from an accident during birth. Therefore I think they have a peculiar interest. I have seen but once in a child a bilateral paralysis of the serratus magnus muscle, the causation of which was obscure. This paralysis occurs sometimes in adults from carrying a heavy weight on the shoulder. The posterior thoracic nerve passes through the substance of the middle scalena muscle. The carrying of heavy weights on the shoulder may cause pressure on the nerve, or the trunk of the nerve may, perhaps, be twisted or strained in that muscle in that position, and thus is caused this peculiar paralysis of the serratus magnus muscle on one side, allowing the inner angle of the scapular to bulge. The serratus magnus muscle has the peculiar function of holding the scapula close to the thorax, and in that way presenting a firm basis of support for the action of the head of the humerus in the shoulder socket. As an example of birth palsy, this is a case of great interest. I think, with reference to the reactions of degenerations in these cases, that we should know positively about the faradic reactions before we attempt to say that there was a true reaction of degeneration. Dr.
Peter tells me he was unable to test the faradic contractibility, but it should be verified before the case goes on record. The deltoid and biceps muscles are certainly not paralyzed on either side.

Dr. J. P. Crozer Griffith: Whether or not the serratus magnus is affected, the history indicates that the whole left arm has been severely paralyzed. I have talked to the mother, and she corroborates what Dr. Peter says, that the child could not lift its hand higher than its head until recently. At the present time the smaller child can only lift the hand as high as its head. There is a great softness of the muscles. I think the cases have to go down as instances of true obstetrical paralysis. An interesting thing is that two children in one family should be affected. Another interesting point is the diagnosis from cerebral monoplegia. Cases of cerebral monoplegia occurring at birth do take place, although they are certainly very rare, and we have constantly to keep them in mind. Dr. Peter has dwelt upon the question of diagnosis. There seems no possibility of considering these cases of cerebral monoplegia. At the International Medical Congress in Moscow there were reported by Deschamps four cases of monoplegia of cerebral origin.

As to obstetrical paralysis, there is in a French journal a report of a so-called epidemic of obstetrical paralysis. There occurred in the practice of one midwife twelve cases of paralysis of one arm, all due to injury during labor. They were all apparently breech presentation, for the report states, further, that after the body was born traction was made upon it in order to extract the head. Guillemot, who reports the cases, takes the ground that the earlier and quite commonly accepted explanation of the production of the paralysis is wrong. That is to say, it is not an injury due to traction upon the arm or shoulder. We sometimes inquire whether the arm has been pulled upon, whether a blunt hook has been put in the axilla, and so on. Guillemot believes, on the contrary, that they are due to traction upon the body or head, or to extreme extension or flexion of the body, or especially to bilateral movements which wrench the fibers of the fifth to seventh cervical nerves, close to the vertebra. Féux has gone carefully into the question of the causation of obstetrical paralysis, and finds the
same explanation probably the true one. He has experimented upon rabbits and upon dead human fetuses to see what injury he could produce in extracting an after coming head, and has found the nerves injured in the manner described. We must always remember when asking whether any instruments have been used that the only way in which true obstetrical paralysis could be caused by the use of instruments is by traction and swinging the head from side to side, such a condition cannot be produced by pressure upon the skull.

Dr. F. Savary Pearce: In view of the fact that there was another child that was born with great difficulty and died soon after birth, and that these two boys have a very similar affection of the left arm, it might be a point of interest to know whether the mother had not a contracted pelvis, which necessitated extreme manipulation.

Dr. L. C. Peter: In regard to injury of the long thoracic nerve, which supplies the serratus, and to which Dr. Lloyd referred, I would say that I do not see any reason why it should not be affected, as well as the filaments that supply the other muscles. The nerve is derived from the fifth and sixth cervical, which are the trunks injured in these cases. The serratus is undoubtedly weak, although the electrical reaction is not materially altered. In the other muscles the electrical reaction is distinctly changed. The right side is not affected, although the scapula stands away from the chest wall. The boy is poorly developed, and this in itself accounts for the position of the scapula.

Arthritis of the Wrist.—Dr. Frederick A. Packard reported a case of arthritis of the wrist occurring in a 6 months old child, the subject of vulvo-vaginitis. Examination of the vaginal discharge showed the presence of gonococci in large number. Absolute fixation upon a splint was the only remedial measure that produced any benefit. Entire recovery ensued upon the use of this treatment.

Retropharyngeal Abscess.—Dr. Alfred Hand, Jr., reported a case of retropharyngeal abscess in a boy, 20 months old. The onset of the illness was sudden; there was a catarrh
of the alimentary tract, including the tonsils, without vomiting, but with a mucous diarrhea; a catarrh of the respiratory tract, extending from the pharynx well down into the swollen bronchi; an eruption of a few varicellar blebs; enlargement of the glands at the angles of the jaw, and a temperature curve ranging from 99° in the morning to 104½° in the evening. Wryneck, disturbances of respiration, phonation and deglutition were absent. Palpation and inspection of the posterior pharyngeal wall were negative until the eleventh day, when a slight fullness was detected a little to the left of the median line. This increased so slowly that fluctuation could not be felt three days later, but incision at that time evacuated a considerable amount of pus. The extensive induration subsided slowly; the febrile movement continued for several days longer, when the evening rise gave way to a fall of temperature amounting almost to collapse. This was repeated twice, after which convalescence was uninterrupted.
The Effect of Tobacco on the Development of the Young

The use of the cigarette with the young is so enormously on the increase in many countries of the world, notably England, that much alarm is expressed with regard to its evil effects, and legislative measures are said to be in contemplation to restrict the sale of tobacco. There are reasons for believing that the annual consumption of cigarettes in Great Britain reaches a total of something like 3,000,000,000, which is equivalent to two cigarettes per day in a tenth of the population. The price is so cheap, nine cigarettes for two cents, that they are within the reach of all. This habit is growing rapidly, and, according to a prominent weekly journal, can only be compared to what it was in the United States ten years ago, and it has been computed that in a few years 20 per cent. of the population will be cigarette smokers. Warning has been given time and again in both medical and lay journals that this pernicious habit, if indulged in to excess by immature boys and girls, will, in course of time, sap the vitality of the nation. Up to the present, however, these warnings have been like "the voice of one crying in the wilderness"—little heed has been paid to them. Nevertheless we take it to be the duty of scientific men who have made a study of the matter to continue to place the results of their researches before the public, so that at least it should not be said that the young slaves to the tobacco habit have not had the opportunity of learning the truth. Dr. E. Stuvers, President of the Wyoming Scientific College, has, in the last issue of the Quarterly Journal of Inebriety, given some instructive statistics illustrative of the effect of tobacco on the development of the young. From measurements of 187 of the class of 1891, Yale, he found that the non-smokers gained in weight during
the college course 10.4 per cent. more than the regular smokers, and 6.6 per cent. more than the occasional smokers. In height the non-users of tobacco increased 24 per cent. more than the regular users and 12 per cent. more than the occasional. In increase of chest girth the non-users had an advantage of 26.7 per cent. and 22 per cent., and an increase of lung capacity of 77.5 per cent. and 49 per cent. respectively. These observations with respect to the dwarfing effects of tobacco are corroborated by observations on the class of 1891, Amherst, made by Dr. Edward Hitchcock. He found that in weight non-smokers increased during their course 24 per cent. more than the smokers; in increase in height they surpassed them 37 per cent.; in gain of chest 42 per cent.; and in gain of lung capacity 75 per cent. Again, in France, the difference between the students in the polytechnic schools who smoked cigarettes and those who did not, in scholarship, as shown by their respective class standings, was so great that the government prohibited absolutely the use of tobacco in all government schools. Dr. Stuvers says, speaking of the effect of tobacco on the moral nature: "The use of tobacco has a peculiarly demoralizing effect on the moral nature of the young. In addition to making boys tired, stupid, and lazy, it makes them irritable, perverse, careless of the rights and feelings of others, besides, in many instances, leading to lying and even stealing." We do not hold a brief for the anti-smokers. Indeed, we are of the opinion, that, like vegetarians and teetotalers, they are often very intolerant, but we do hold strong views as to the need of repressive measures to control the lamentably increasing custom of smoking among the young.
from which children suffer have been traced in too many instances to over-pressure, to infection, or to the unsanitary condition of the school houses. It was pointed out in an editorial in this journal of October 15th to how large an extent the board schools of Great Britain are responsible for the spread of such maladies as measles, scarlatina, ringworm, ophthalmia, and diphtheria. This is also the case to perhaps a lesser degree in America. Here in New York City the sanitary arrangements of the school houses are almost as good as is possible, medical supervision is strictly carried out, and in every particular the system is a credit to the municipal authorities. There is one drawback, however, to which attention has not been directed, namely, the great height of the school buildings. Dr. Michael B. Feeney, Chief Sanitary Inspector, has recently contributed a letter to the *Medical Record* in which he shows that the unusual height of the public schools is extremely detrimental to those little ones who may be affected with heart trouble. After giving two instances which came under his immediate notice of children, who through the unusual exertion of climbing five or six flights, brought on injury to the heart, Dr. Feeney makes the following sagacious remarks: "As the City of New York is spending money without stint for the purpose of educating the rising generation, erecting public schools replete with every sanitary arrangement to prevent the communication of disease, and architecturally, in almost every case, ornaments which the city may well be proud of, I think that some of the more ornamental features might well be dispensed with, and the money so saved used for the purpose of installing one or more elevators for such children as those mentioned above, and who present certificates from their physicians, to the principal of the school, of their inability to climb several flights of stairs; or a larger space of ground could be taken and lower buildings erected, the class rooms of which could be reached without difficulty by any child whose heart was more or less seriously affected, and
also be more readily emptied in case of fire." Elevators most assuredly should be provided in those school buildings which exceed three stories in height. Even if a young child does not suffer from heart trouble, it cannot be said to be in any way conducive to its good health to toil up and down five flights of stairs two or three times in a day. The alternative plan suggested by Dr. Feeney, that more land should be taken and lower buildings erected is not practicable, on account of the scarcity of land and the consequent expense, but the cost of elevators would be comparatively so small that in the interests of the rising generation they should be installed forthwith.

Hereditary Morphinism in an Infant

This condition is fortunately so rarely met with in this country that it is regarded as an event which should be widely chronicled. In India, and, indeed, in most oriental lands, the custom of taking opium in one form or another is so general that it may be said the majority of the inhabitants are more or less saturated with the drug, and as a natural sequence their progeny are born with the taint. The prevalence of the opium habit among the children of India was referred to in the December number of Pediatrics when commenting on the results of the investigations of the British Opium Commission, and it was remarked that the members of this commission came to the conclusion that opium was not only beneficial, but even necessary to keep the native infants alive. However, as we have just said, morphinism in an infant in America is sufficiently uncommon to deservedly attract attention. Such a case has recently been reported by Dr. Layne, of Tractorville, O., in the Cincinnati Lancet Clinic. A patient of his had been in the habit of using morphine to allay pain at the menstrual period. She took about 6 grains a day, and in course of time was delivered of
a well nourished baby of normal weight. Knowing that the babe had been receiving an indefinite amount of morphia through the placental circulation, Dr. Layne was doubtful whether to continue to give it in small quantities. It was decided to withhold it for a few days to see what would happen. This was done. On the first day the child manifested no special discomfort other than a dislike for the breast. On the morning of the second day it began to show symptoms due to withdrawal of its customary stimulant; it refused food, was irritable and fretful, and showed considerable tremor of the extremities. After unsuccessful attempts to quiet, the father determined to try a hypodermic injection. Accordingly he gave it one-twentieth of a grain of morphine. This had no other than a soothing effect. No other injection was given, but a small dose of morphia has been administered daily by the mouth. The child is now 3 years old, healthy, strong and of bright intellect. This case is another proof that morphinism may be transmitted directly from mother to offspring in utero, provided the fetus survived the period of gestation.

Child Murder in Great Britain

The wilful sacrifice of children by parents in order to obtain money insured in burial clubs is said to be greatly on the increase in England. The Howard Association for the best methods for the treatment and prevention of crime, pauperism, etc., has just issued its report, in which this matter is referred to at considerable length. The report says: "There is much force in the words of a London coroner that 'in England it is patent to every coroner that infant life is recklessly sacrificed because mothers, midwives, and others, are perfectly well aware that unless it can be proved that the child has had an independent and separate existence, the law cannot reach them and even where it can be proved judges and jurors nearly
always endeavor to avoid a verdict of 'wilful murder.'" Again
a medical man at Birmingham, writing to a local journal, said:
"You are to my painful knowledge absolutely within the truth
when you state that every year hundreds of parents are guilty
of child murder in this town. The fact is there are no certain
signs whereby starvation can be detected. Frequently the first
thing the mother says: 'I suppose you will give me a certifi-
cate if anything happens.' Hardly a day passes without my
hearing it, and I generally find that the parent would gain
several pounds from some insurance office if the child died.'
In fact, an eminent English judge went so far as to say "that
it would often be a much more correct definition of these
so-called insurance societies to say that they are death insurance
societies. There is at the present time a lamentable increase
in the number of infants who are ruthlessly killed by their
parents in all parts of the civilized world. These remarks
especially apply to fetal abortion, which is perhaps of as fre-
quent occurrence in this country as in any other. This is due
to the prevailing idea that this procedure is not a criminal one.
When mothers become cognizant of the fact that criminal
abortion is a sin of a deep dye, and when medical practitioners
will no longer consent to prostitute their abilities by perform-
ing criminal abortion there will be hope that the practice will
cease. In the meantime strong repressive measures should be
put into force and the strong hand of the law should be used to
stay this objectionable custom.
BOOK REVIEWS

Manual of the Diseases of Children. By John Madison Taylor, A.M., M.D., Professor of Diseases of Children, Philadelphia Polyclinic; Assistant Physician to the Children's Hospital, and to the Orthopedic Hospital; Neurologist to the Howard Hospital; Consulting Physician to the Elwyn and to the Vineland Training Schools for feeble-minded children; Fellow of the College of Physicians, of Philadelphia; and William H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic; Instructor in Obstetrics in the Jefferson Medical College of Philadelphia; Fellow of the College of Physicians of Philadelphia; member of the Philadelphia Pediatric Society, etc., etc. Illustrated. Philadelphia: T. Blakiston's Son & Co., 1012 Walnut street. 1898.

The authors in their preface are decidedly too modest in their description of this work. They do not claim that the book is a treatise, but merely a brief but competent guide for student and practitioner. It is all that they claim and something more, and, although, as they say, the original manuscript has been condensed and several articles omitted so as not to form too bulky a volume, the contents are still sufficiently comprehensive to render their reading as useful and instructive as many larger and more pretentious works. There are in all twenty chapters, containing 728 pages, together with an excellent index. The first chapter deals with the physiology of the infant; the second with diseases occurring at or near birth, the third with general hygiene; the fourth with feeding and food; the fifth with the breeds of cows best adapted for infant feeding; the sixth with artificial food, etc.; seventh with diseases of digestive organs; eighth with diseases of the peritoneum; ninth with diseases of the liver; tenth with diseases of the genito-urinary system; eleventh with diseases of the genital organs; twelfth with diseases of the blood; thirteenth with general diseases; fourteenth with diseases of the heart; fifteenth with diseases of the respiratory organs; sixteenth with diseases of the nervous system; seventeenth with acute infectious diseases; eighteenth with diseases of the skin; nineteenth with general considerations of physical development;
and twentieth with diseases and accidents requiring surgical procedures.

The chapter treating of the breed of cows best adapted for infant feeding is of much interest, presenting, as it does, many novel features. After remarking that there does not seem to have been much opportunity, either here or in Europe, for scientific conclusions as to the distinct advantage to be gained by the use of any particular breed of cows for infant feeding, the authors go on to say that, clinically, there appears to be well established ideas that certain breed of cows are better than others for this purpose. It seems probable that the best cow to employ as a foster mother for the infant should belong to a breed that invariably and successfully raises its own young. The treatment of diseases is dwelt on at length, a plan much to be commended.

Although the book contains little that is original, it is so well arranged and the language used so clear and concise that it should take a prominent place among works of its class. The printing and illustrations are especially good.
A Novel Treatment for Asthma, consisting of injections of anti-diphtheritic serum, has been tried by L. Revilliod. The remedy was used because it is excreted by the respiratory tract, as shown by its effect in loosening the false membranes in diphtheria. This reason seems somewhat far-fetched. Seven cases were treated; three being cured, one permanently relieved, and three temporarily relieved. The injections, which each amounted to 10 c.cm., and numbered from three to ten, were given at considerable intervals, usually when an attack threatened. Under this treatment the attacks became less severe and occurred at greater intervals. We think it right to record this treatment, but we would not feel justified in employing it ourselves.—Rev. Méd. de la Suisse Rom. Practitioner.

The Administration of Enemata of Blood in Tuberculosis.—Dr. Whittaker has found marked increase in weight and gain in nutrition to follow their repeated use. To each quart of blood he adds half an ounce of bicarbonate of soda and sugar of milk and one grain of common salt. Two pints of a mixture consisting of equal parts of water and such blood are thrown high up the rectum. Bullock's blood was at one time, we believe, a favorite remedy in Paris, where patients used to visit the abattoirs in order to get it freshly drawn.—The Practitioner.

First Care of a Baby.—Hanson is one of those who believe that the baby who is started right stands a much better chance to grow up well and strong than if allowed to catch cold or get indigestion within the first few hours of life. He insists upon the following simple rules as being all important: (1) Do not expose the baby after birth to a greater change of temperature than is absolutely necessary. (2) Do not allow attendants to subject him to prolonged exposure while washing, but rub him over with lard (this usually being convenient), and quickly wipe him off and wrap him up warmly. (3) Do not
use too fine a thread in tying the cord, and dress the same with dry, sterile dressings. (4) Give nothing but tepid water or some very weak aromatic tea until there is sufficient milk in the mother's breast for the child's requirements. (5) Notice the clothing and see that the abdomen and chest are not constricted thereby.—Cleveland Med. Gaz.

A "Home-Made" Milk Sterilizer.—Dr. McClanahan states that a cheap and efficient sterilizer can be made in the following manner: Take an ordinary one-gallon tin bucket, twelve inches high, having a movable, closely-fitting lid. Have a handle soldered to one side for convenience in handling. Have a false, perforated bottom, to which are attached three legs, each one inch long. This is to be slightly smaller in circumference than the bucket, so that it will go inside and rest upon the bottom of the bucket. In the lid a small opening is to be made for the escape of steam. This sterilizer can be made by any tinsmith at a nominal cost.—American Journal of Obstetrics and Diseases of Women and Children—Med. Record.

Treatment of the Umbilical Cord.—Bastard, in a paper on the effect of baths in the treatment of the umbilical cord of the new-born, makes the following statements: Since 1891 Pinard has abandoned the daily bath of the new-born in his clinic. The author wishing to determine the advantages of this method, in a statistical way, undertook the comparison of two series of new-born babies, each series consisting of 110 infants, born without instrumental assistance, and each weighing over 3,000 grammes (6.6 pounds). The infants of one series received a daily bath, those of the second were given only one bath and that immediately after birth. In the infants not receiving a daily bath, the stump of the cord dropped off, on an average in five and four-tenth days; in those bathed daily, in seven and four-tenths days. Pathological disturbances, as periumbilical erythema, suppuration, etc., occurred in 6.3 per cent. of the former and in 19 per cent. of the latter. —Der Kinderarzt.

Bathing of the New-born in Relation to the Care of the Navel and to Bodily Weight.—By the observation of 400 infants, half of whom were given a daily bath, and the
other half not, Czerwenka determined in the first place that the process of mummification of the stump of the umbilical cord was not interfered with by the bath; the stump was thrown off on the seventh day in about 80 per cent. of the children who were bathed, and in about 94 per cent. of those that were not bathed. The author does not consider the dangers of infection by the bath as great as is usually assumed. The mortality due to umbilical infection amounted only to 0.5 per cent. As regards bodily weight, it was found that the average increase in those who were bathed, regardless of the method of feeding, was greater than in those not bathed. Therefore, the author concludes that it is wiser to continue the daily bathing of the new-born.—Wien. Klin. Wochenschrift.

Brewers' Yeast in Furunculosis.—Brocq praised the action of brewers' yeast in furunculosis when presenting a child in one of his lectures, and pointed out the great value of this substance in all suppurating forms of skin disease—impetigo, acne, and especially furunculosis. Properly administered, brewers' yeast would arrest an attack of furunculosis within eight days. The only difficulty encountered was in obtaining fresh yeast, as only this is efficacious. Two or three coffeespoonfuls are to be taken at the beginning of a meal in a little water. This dose may, however, be increased without bad effects. When brewers' yeast cannot be obtained, compressed yeast may be prescribed, although it is not so well borne. On account of its action on superficial suppurations, brewers' yeast might also be tried in gonorrhea.—Journ. de Med.

Ichthyol in Acute Laryngeal Catarrh. —Cieglewicz obtained brilliant results with ichthyol in acute laryngeal catarrhs. He orders its inhalation in cases of catarrhal laryngitis and the pseudo-croup of children by means of a Richardson's atomizer as a 2 per cent. solution in cold water. The inhalations were practiced, according to the severity of the disease, from three to five minutes at a time, once or twice daily. The patients accustomed themselves easily to the taste and smell. Cough and hoarseness rapidly disappeared. In some cases the effect was so surprising that an attack of coughing was cut short from one inhalation of ichthyol. No bad effects were ever experienced.—Praeglad Lekarski.
ABSTRACTS

THE DIFFERENT METHODS EMPLOYED FOR THE RESUSCITATION OF APPARENTLY STILL-BORN INFANTS.

(Der Kinderarzt, 1898, ix., 30.) The following is an excerpt from the work of Dr. M. Lange (Koenigsberg), "Physiology, pathology, and care of the new-born": "The most successful and well-known treatment for the resuscitation of the new-born has been called after its author, Schultze's Swinging Method. Its object is to induce energetic artificial respiration (like all methods for resuscitation in asphyxia), by artificial ventilation of the lungs, rendering the blood arterial to such a degree that the respiratory center again becomes susceptible to reflex irritation. This object in the lighter form of asphyxia (a livid) is accomplished by immersing the infant in a hot bath and applying friction to the skin, etc. Schultze's swinging method is carried out, according to the author's own description, in the following manner: After tying the cord, the mucus present in the pharynx is removed with the finger, the root of the tongue being at the same time pressed forward to raise the epiglottis. The child is then grasped in such a manner that the index finger of each hand is placed in each of the axillæ from behind, and the thumbs allowed to lie loosely anteriorly, while the three other fingers take their position posteriorly. The head is steadied by the palm of the hands. The operator then assumes a position with legs somewhat spread, holding the child before him for a second with the arms pronated, and then swings it forward and upward. As soon as the child reaches a position somewhat above the horizontal plane, the force of the motion is so regulated that the child's pelvis, with the lumbar portion of the spinal column flexed, gradually sinks over toward the abdominal side, which is thus turned toward the operator. In this position the contents of the child's thorax are compressed by the upward pressure of the diaphragm, as well as also by the walls of the thorax, and expiration is thus effected. After the pelvis has totally descended anteriorly, the child is swung downward until it assumes a position between the spread legs of the operator, the thumbs during this time again lying loosely on the thorax, exerting no pressure. In this position the body of the child is straightened out. The thorax freed from all pressure, expands on account of its elasticity, as well as by the descent of the abdominal organs and of the diaphragm. We thus produce a free inspiration. After resting a few seconds, the child is again swung upward and downward six or eight times, and then placed in a hot bath. While in it, the pharynx is cleansed, as quite an amount of mucus will have been brought up by the manipulation. Here we note whether the reflexes have again returned. If no spontaneous attempts at respiration are made, we may also practice mechanical irritation of the cardiac muscle during the bath, as recommended by Oehlschlaeger,
the vitalizing influence of which on the cardiac impulse of the asphyctic new born is, as a rule, easily demonstrated. The thorax, in this method, is rhythmically compressed in the cardiac region (about 130 times a minute). According to Winter, no child should be considered dead (having been born without cardiac impulse, or where the latter has disappeared during attempts at artificial respiration), without having been subjected to this rhythmical, rapid compression over the region of the heart. After the child has been thoroughly warmed in the bath, a few more swinging motions are to be practiced, and the bath again repeated, with the rhythmical compression over the heart. Should a prolonged bath be deemed necessary to the proper warming of the infant, it is advisable to practice alternate compression over the heart, and artificial respiration, according to Sylvestre, which may be carried out by the nurse, for when respiration is long suspended we find that the heart-beat becomes weaker, in spite of stimulation applied to the heart muscle. In this manner we must continue until reflex irritability, returns, after which the treatment of the first degree of asphyxiation is demanded, namely, cold affusions while the child remains in the hot bath, and finally immersion in cold water, etc. Schultze’s swinging method produces such an energetic ventilation of the lungs that we can, as a rule, hear the air entering and leaving the rhima glottidis. Should this not occur, we must assure ourselves that the root of the tongue, and with it the epiglottis, has not fallen backward. If the passage through the larynx is free, and the heart-beat does not improve after a series of four or five swinging motions, catheterization of the larynx, as far as the site of the bifurcation is concerned, and strong suction, is applied by the mouth. By this method more mucus is removed than in the employment of a bulb catheter. In inserting Nélaton’s catheter, we must be careful not to pass it into the esophagus. This may be avoided by pressing the point of the catheter forward with the index finger of the left hand as soon as it has reached the entrance to the larynx, while pushing the instrument onward exactly in the median line with the right. When the foreign material has been removed in part, or wholly, from the trachea, attempts at resuscitation are frequently successful in a very short time. As a rule, catheterization of the trachea, will, however, be found unnecessary where Schultze’s method is used, as the latter usually brings up great quantities of mucus.

Other methods of resuscitation of the gravely asphyxiated new born shall only be mentioned here, but not described, as they are not, for various reasons, to be recommended to the general practitioner. These are: Blowing air into the baby’s mouth with your own; blowing air into the tracheal catheter; faradization of the phrenic nerves; the artificial respiration of Marshall Hall; Howard’s “direct method” of artificial respiration; swinging the child, according to Lahs; the various methods of artificial respiration, according to Lazarewitch. Three methods which are practical and successful will be more minutely described: Artificial respiration, according to Sylvestre, Prochownik’s method, and Laborde’s rhythmical traction of the tongue.

Artificial respiration, recommended by Sylvestre (slightly modified by Pacini, Bain, and Behm) is practiced with preference by Ahlfeld, while
the child is in the hot bath. The child, lying in the bath on its back, has its shoulders raised (in the bath by the hand of the operator, outside of it by a large diaper made into a roll). The arms are now grasped in the neighborhood of the elbow joint and abducted until they reach a vertical position beside the head (inspiration). Following this by abduction, until they reach the side of the thorax, expiration is induced. The change of air in the lungs, according to manometric measurements, is nearly as great as in Schultze's swinging method, and even greater than in the other methods of artificial respiration. The only objection to this method is that during the artificial respiration the outflow of aspirated matter is obstructed. In conjunction with Schultze's method, in the alternate application of both methods, Sylvestre's artificial respiration, as already mentioned above, frequently gives brilliant results.

Prochownik's method consists in suspending the child by the legs and rhythmically compressing its thorax. It may be held by the legs, either by the nurse or by the physician himself. In the latter case the operator will only have the use of one hand for compression. In this method the mucus from the respiratory passages is very easily disposed of, and the hyperemia of the brain, caused by this position, acts as a stimulant to the respiratory center. Although Prochownik's method does not exert much influence on the change of air in the lungs, nor on the circulation, the combined effect of this method, according to the experience of a number of obstetricians, is so satisfactory that it is specially preferred by them in cases where Schultze's method cannot be carried out, as, for example, in fracture of the clavicle, and in other fractures of bones.

Rhythmic traction of the tongue, discovered by Laborde, who claimed his method to be applicable in the treatment of asphyxia from whatever cause, excited some notice, particularly in France. In his work, appearing in its second edition in 1857, which bears the title le traitement physiologique de la mort, he designates his method un moyen rationnel et le plus puissant de ranimer la fonction respiratoire de la vie. The numerous interesting casuistics which are found in this work prove effectively that Laborde's method is a very good one for the resuscitation of asphyxiated individuals from any cause, and also in asphyxia of the new born. Laborde's method is carried out in the following manner: After freeing the primary respiratory passages of mucus, the tip of the tongue is seized by the fingers, and energetically pulled forward forty or fifty times a minute. By using a piece of gauze, or the end of a handkerchief, the tongue is prevented from slipping out of the fingers. The occurrence of spontaneous respiration, after a greater or less number of tractions, is explained by Laborde by the hypothesis that the motor nerves of the respiratory muscles, especially the glosso-pharyngeus nerve and the laryngeus superior, are stimulated in a reflex manner by the irritation of certain esophago-lingual nerves. Although we might theoretically urge against this method, that if, as is the case in a pallid type, the choking reflex is abolished in the pharynx the presence of another reflex in the same location must seem quite surprising. Laborde's method is, nevertheless, so highly praised by
the French and Americans—in Germany only by Knapp—that it is impossible to doubt its efficiency. It is worthy of note, however, that Knapp could only obtain superficial breathing in a few cases with Laborde's method, and that normal respiration and crying could only be obtained by Schultze's method.

Measures of resuscitation should be employed until normal respiration takes place, or until the heart-beat ceases. The signs of good respiratory action in the child are: A rosy color of the skin, long continued and loud crying, violent motions of the extremities, a strong cardiac impulse, normal breathing, and the opening of the eyelids (the latter, according to Runge, is a particularly valuable symptom). All of these signs should be present before the endeavor at resuscitation is abandoned. Breathing must not only be regular, but it should also be free. Inspiratory retraction of the thorax must not be present. These suggestions only relate to infants which have been carried to full term. In premature birth, the absence of vitality mitigates against perfect resuscitation. If the child is left to itself too early, it will again become asphyctic sooner or later, and will surely become a prey to death, unless artificial respiration is early instituted. The reason why an asphytic child should be considered lost after a total cessation of the cardiac impulse, is grounded in the experience that children, seemingly dead, have been brought back to life after they have been worked over for a number of hours. Neuhaus describes a case where a noticeable improvement in the cardiac impulse was only obtained after one hour, and where the first breath was drawn one and three-quarters of an hour after the first attempts at resuscitation were made.

The after treatment of children, apparently born asphyxiated and resuscitated, should, above all, be directed to removing regularly for hours afterwards the mucus which is brought up from the trachea into the pharynx and mouth. It is also strenuously to be recommended that the child be kept on its side, and the head thrown well back and lowered, in which position the occurrence of cerebral anemia, as a result of recurring heart failure, is prevented. During the early period, after resuscitation has been established, the child should be examined every hour, and where possible it should be under continuous observation. As soon as signs of returning asphyxia are noticed, irritation should at once be applied to the skin, and a hot bath administered. Not infrequently the bath will have to be repeated every three or four hours. The best prophylactic measure against Schluck-pneumonia, or against extensive atelectasis, aside from the carrying on of measures for resuscitation until the child has perfectly recovered, is a repetition of the hot bath every five or six hours. While immersed in the latter, the child should be encouraged to energetic crying by irritation applied to the skin. After a severe case of asphyxia this measure is indispensible, even where the child has not yet shown any signs of relapse.
PEDIATRICS.

STUDIES IN THE PHYSIOLOGY OF INFANTILE NUTRITION.

Prof. A. Johannessen and Dr. Eyvin Wang (Hoppe Seylers Zeitschr. f. phys. Chem., 1897, xxiv. 5 and 6). The following experiments were undertaken to ascertain the nutrition of infants and the absolute quantity and chemical combination (food value): Each period of investigation covered six days in four children, which were given six meals during the day, and one during the night. The children experimented upon ranged in age from 4 to 5 months.

The period of each feeding was on an average 19 to 21.5 minutes, more frequently 15 to 20 minutes.

The quantity of milk suckled at one meal, taking into consideration the loss of weight from insensible perspiration, from enveloping the infant in oiled linen, was extraordinarily variable, the maximum varying between 233 grammes and 182 grammes (3595.19 grains and 2808.26 grains); the minimum between 53 grammes and 100 grammes; the average valuation between 128 grammes and 157 grammes (1975.04 grains and 2422.51 grains); the average quantity in twenty-four hours between 896 grammes and 1,100 grammes (1.96 avor. lbs. and 2.42 avor. lbs.); the amount pro kilogramme of bodily weight between 121 grammes and 166 grammes (1867.03 grains and 2561.38 grains).

The loss of weight by insensible perspiration varied between 10.5 grammes and 23 grammes (162.015 grains and 355.29 grains) in the hour, and pro kilogramme of bodily weight between 34 and 75 grammes (524.62 grains and 1157.25 grains) in twenty-four hours. The chemical composition of the milk was ascertained, and a variation of 0.9 per cent. to 1.3 per cent. in the amount of albumin; in fat of 2.7 per cent. to 4.6 per cent., in sugar of 5.9 per cent. to 7.55 per cent. was obtained.

The percentage of sugar is always less towards the end than at the beginning of nursing; the percentage of albumin and fat is directly vice versa; during the night the percentage of fat falls to its minimum.

Out of the four children, one child weighed 70 grammes (1080.10 grains) more in six days, having assimilated 70 calories per kilogramme of bodily weight, and 512 calories pro die; the second increased 95 grammes (1465.85 grains), having assimilated 106 calories per kilogramme of bodily weight, and 660 calories pro die; the third increased 147 grammes (2268.21 grains) with 106 calories per kilogramme and 667 calories pro die; and lastly, the fourth one increased 77 grammes (1188.11 grains) with 96 calories per kilogramme and 740 calories pro die.

A PECULIAR FORM OF KERATITIS.

J. Petrasko (Wien med. Presse, 1897, xxxviii., 1354). Petrasko came across a most peculiar case, which ran about as follows:

A girl, 4 years old, born of healthy, non-syphilitic parents, herself free from any symptoms of syphilis or rachitis, strong and well developed, all
organs being normal, began to suffer in the Spring of 1895 with an affection of the left eye. She complained of violent pains in it and in the left side of the forehead, and presented photophobia, and lacrymation, which were accompanied by a moderately injected conjunctiva. On a closer examination, an infiltration of a gray color, not raised, was found in the left lower quadrant of the cornea, somewhat larger than the head of a pin, projecting into the pupil by one-third; aside from this the rest of the cornea was perfectly clear, and nearly imperceptibly injected. The affection was said to have appeared without any cause. Petrasko, according to the condition present, could only attribute it to a slight trauma, and accordingly, treated the patient for a keratitis traumatica, under which the symptoms gradually disappeared.

Exactly four weeks after her first illness, which was some time after her dismissal, she returned with the same symptoms: Pain in the left eye and forehead, photophobia, with a small amount of objective symptoms of irritation. This time, however, examination disclosed an altogether different state of affairs. On the same spot, exactly where the infiltration had been four weeks ago, a smooth, reflecting depression (facette) of the size of a pin's head, could be seen, whose periphery was surrounded by an infiltration, which, in thickness above (towards the pupil), hardly measured 1 mm., being at this point of a deep gray color, and decreasing in a downward direction steadily in thickness, as well as in density, so that the lower third of the facette was hardly surrounded by a suspicion of infiltration. The diameter of the whole deposit did not exceed 4 mm. The infiltrate was deposited in the upper layers of the cornea, and the author was justified in looking on it as a superficial keratitis a very shallow ulcer of the cornea in the process of healing, which had resulted from a recurrence of the first infiltration, or else from a keratitis traumatica which, by chance, selected the same position. When, however, the bottom of the ulcer was more closely examined, it was seen, even with the naked eye, that we were not dealing with a simple facette; a very small kerato-conus, whose base, surrounded by a furrow of the facette, was seen in the center of the depression, and whose apex carried another minimal facette; in a word, a truncated cone. The facette, cone and its facette were smooth, shining, and sparkling. They consisted, therefore, in the residue of a process already passed, while the ring of infiltration around the facette, composed of innumerable radiating rays, was to be looked on as the product of the recurrence. Again, all symptoms disappeared under treatment without leaving any trace behind, the peculiar facette only remaining, to reappear exactly twenty-eight days later under the same symptoms, and in exactly the same form, and to run its usual course. This has now continued for two years.

Petrasko had the opportunity of observing the child during all this time, as she presented herself every other day. Potassium iodide, cod liver oil, salicylic acid, iron, arsenic, etc., were given, but no cure was obtained. The patient otherwise had perfect health. The right eye never became affected, and even in the left eye the rest of the corneal surface remains perfectly normal.

Petrasko was unable to meet with a description among the classified
forms of keratitis that tallied with this case, which was remarkable by its obscure etiology, peculiar course, and resistance to treatment. He believes that the case is a very rare form of keratitis, perhaps due to certain as yet unrecognized micro-organisms, but resting on a trophineurotic basis. If we were to name a certain stage of the process, we should call it a "chronic ulcer of the cornea." Petasko would feel grateful to specialists in eye diseases if they could throw some light on this case.

THE USE OF ITROL IN EYE DISEASES.

O. Mergl (Centralbl. f. Kinderh., 1898, iii, 153) says that in blen-norrhea neonatorum itrol is more effective than any remedy heretofore used. It should be dusted into the eye, in the form of powder, like calomel; besides this, compresses of ice water, and frequent bathing with lotions containing corrosive sublimate or itrol (1:2000) should be used. Suppuration frequently ceased as early as the second day, and never continued longer than eight days, under this treatment, excepting one case, which was complicated with an ulcer of the cornea. Even in this patient, a cloudiness, only, which could hardly be discerned, was left behind. In acute cases, lasting from three to five days, all the patients were perfectly cured, the whole duration of treatment, to the perfect restoration of the conjunctiva, varying between from six to eighteen days.

A METHOD OF TREATING OPHTHALMO-BLENHORRHEA NEONATORUM.

Elze (Wochenschr. f. Therapie u. Hygiene des Auges, 1897, i, 7 recommends a method, original with him, which gave extraordinary favorable results, and effected a very rapid cure—average time of treatment from three to four days. In individual cases, it is true the time of treatment sometimes extended over from five to ten days; this, aside from the gravity of the infection, is dependent on the changes which already have been wrought in the conjunctiva at the beginning of treatment. Papillary swellings of the former, which, on account of their furrows, prevent certain minute portions of the conjunctiva coming into contact with the medicament will naturally retard the healing process. In cases energetically treated at the outset we will find only a slight reddening of the conjunctiva left on the fourth day with only a slight amount of secretion, causing adhesions of the eyelids in the morning and at night. In many cases the eyes are opened voluntarily one day after the beginning of treatment.

The treatment itself consists in a combined application of nitrate of silver (1 to 2 per cent. solution) and ichtyol (5 per cent. ointment), pre-
ceded by irrigation of the eye every two hours with a solution of corrosive sublimate (1:4000) to remove the matter. After this cleansing process has been carried out, the everted lids, under careful protection of the cornea, are painted with a 1 to 2 per cent. solution of silver nitrate (according to the degree of inflammation), after which the ointment is applied to the conjunctival sac by means of a glass rod. The silver solution is dropped into the eye morning and evening (this, of course, is better done by the physician personally), and then the salve is again applied. If the application is only made once, we do not get such rapid and prompt results as when it is done three times. In severe forms of the disease, the 2 per cent. solution should be at once used, also in papillary swelling. After the puriform secretion has ceased, the number and strength of the applications may be diminished. Finally the ointment only is continued for a time.

A CASE OF SYPHILITIC PRIMARY DISEASE OF THE EYELIDS.

R. GAGZOW (Deutsche med. Wochenschr., 1898, xxv., 89) reports the following case:

The child of a locksmith, 15 months old, was brought by its mother to the Poliklinik on April 17, 1897, with the history that it had been sent in a healthy condition to relatives in the country, who wrote the parents, four days later, that a slight nodule had developed on the child's right eyelid. The child returned in that condition. The father and mother, as well as the second child, recently born, were said to be perfectly healthy, and the present patient had never been ill previously. An examination showed the following conditions: A well developed and otherwise healthy child. Left eye: no irritation, and is perfectly normal. Right eye: both eyelids were reddened, swollen, and had a doughy feel; the normal skin furrows as well as the palpebral fold are only just perceptible. The upper lid, which, especially in its external parts, was thickened, and hung down so that the palpebral fissure, when looking straight ahead, was only separated 2 mm. The eyelid could not be opened further in any direction. The inner canthus and the portions of both lids approximating it, was the seat of a somewhat rounded ulcer of about 1 cm. diameter, which occupied the innermost third of the free border on the upper lid, and extended not quite so far outward on the lower lid. The borders of the ulcer were quite sharply defined, only slightly raised above the plane of the bottom, and, like the latter, not infiltrated. The upper half of the ulcer was covered with a scab, which was only slightly adherent, the lower half with a smeary, purulent secretion. After cleansing the ulcer, we could see the grayish red, granulating, easily bleeding plane, which passes deeply in the canthus, in the form of a funnel, and which rapidly became covered by pure serum mingled with blood. The eye proper was normal. Anterior to the right ear, there was seen an enlarged gland, about 2 cm. in size, seemingly not painful, a large number of small
glands of the lower jaw on the right side were infiltrated, as also the glands on both sides of the neck, axilla, and the inguinal region. The child was very anemic, otherwise normal.

Treatment: Iodoform dressings and inunctions at first with 0.5 grammes of blue ointment pro die. On the 22d and 23d 1 gramme was used as a dose. After this the inunctions had to be discontinued until the 27th, on account of a slight rise in temperature to 38.5°. Following this there was frequent diarrhea, which always disappeared as soon as the inunctions were discontinued. Altogether 8 grammes were only used up to the time of dismissal, on May 16.

On May 12 a bilateral angina syphilitica made its appearance. The tonsils were greatly reddened and swollen and covered with a grayish exudate. The primary sore during the first few days extended somewhat, but then began to heal, the swelling of the surrounding parts at the same time diminishing, and the gland, anterior to the ear, also rapidly disappearing, so that on May 5 total cicatrization without any deformity of the lids was already recorded. On May 16 the child was dismissed on the application of its father. Up to this time no exanthem had occurred. The general health was very good.

What was the source of infection? The child must have been infected before leaving home, and it seemed reasonable to look for its origin in its own family. The father was at once examined, and showed a scar on the prepuce, and a secondary papular syphilide on the mucous membrane of the right cheek and the tongue. Infection was admitted by him as having occurred in July, 1896, and also the probability that he might have kissed the child on the eyes.

ADVANCE ON LARYNGOLOGICAL EXAMINATION OF YOUNG CHILDREN.

Kirstein (Berl. klin. Wochenschr. 1898, xxxv., 151) speaks of the usefulness of an instrument discovered by Escat, which renders it possible to examine young, obstreperous children by the laryngoscope. The instrument is passed over the base of the tongue, and the two hooks of the fork at its extremity then insert themselves laterally into the larynx, into the sinus pyriformis. The instrument, being first pressed downward, is then firmly pulled forward, and the mirror inserted. The external manipulation is, therefore, similar to that of Mount-Bleyer's hook. While this, however, is nothing more than a modification of Reichert's raiser of the epiglottis, a new principle is introduced into laryngeal examinations by Escat's instrument. When we wished to raise the epiglottis indirectly (that is, without touching the epiglottis itself) by any instrument, we knew only until now of the Jurasz-Reichert's principle, i. e., the exertion of pressure on the root of the tongue, in the neighborhood of the ligamentum glosso-epiglotticum medium. Escat's instrument, with its fork-like extremity, however, leaves the locality of the ligament glosso-
epiglotticum medium perfectly free, and seeks its point of insertion laterally. It is an extraordinarily useful instrument, as Kirstein pointed out in the Laryngolog, Gesellschaft (8, r. 98). In the old instruments we were obliged to insert a piece of metal between the base of the tongue and the epiglottis, the epiglottis is prevented from moving forward, and the lumen of the larynx is not quite free. In Escat’s fork, the epiglottis is free to nestle closely to the base of the tongue. The result is a brilliant one. Our failure to examine a child laryngoscopically in one sitting will now belong to the exceptions. The most intractable children, to whom no consideration is shown, and who are at once firmly held, and in whom the instrument is passed along the base of the tongue in a certain reckless manner, are easiest examined. These children hold their breath, and as soon as an inspiration is taken, a beautiful view of the larynx is obtained.

Escat’s fork can, of course, also be employed in autoscopy, and Kirstein is now experimenting along this line.

A BUTTON-HOLE MAKER IN THE BLADDER OF A FIFTEEN YEAR OLD GIRL.

A. HANC (Wiener med. Presse, 1898, xxxix., 580) says this foreign body was 8 cm. long, consisting of an ivory handle, and an additional piece of steel, about one-half of the whole length of the instrument, which was sharply pointed. The patient had introduced this into her bladder, with the handle foremost. The instrument had become wedged in the wall of the bladder in an oblique direction somewhat to the right of the internal orifice, so that the blunt extremity lay towards the fundus. The subjective symptoms were insignificant; the patient did not even experience much pain when changing her position. The urine was slightly tinged with blood, became turbid and ammoniacal on the fourth day after the introduction of this instrument. The general condition was good; the temperature normal. The instrument was easily located in the bladder. Bearing in mind the pointed extremity of the body, its difficult removal through the urethra, the possibility of perforating the bladder in changing its position, and to avoid rupturing the hymen, Hanc thought the high operation (sectio alta) necessary, but, nevertheless, made a previous attempt to remove the instrument by way of the urethra. The bladder was thoroughly irrigated with a solution of boric acid, and 200 grammes of the latter were allowed to remain in it; then a litotrite for children (Charrièr 13) was introduced, and the body repeatedly caught with exceeding care. These attempts at extraction were, however, futile, the instrument repeatedly slipping on account of the smooth surface of the foreign body. Hanc now dilated the urethra by means of graduated sounds; as this was very painful, in spite of cocain anesthesia, a high section was definitely determined on. Under narcosis another attempt was made at extraction, without a cutting operation.

After dilating the urethra with Simon’s sounds to No. 16, the little
finger of the left hand could be introduced, the foreign body dislodged and turned, and brought to the internal orifice, from where it was extracted with a blunt hook. No reaction followed this manipulation; the cystitis disappeared after a few antiseptic irrigations.

TRACHEOTOMY FOR THE REMOVAL OF A FOREIGN BODY FROM THE BRONCHI.

L. Szuman (Nowing lekarskie, 1897, No. 47—Centralbl. f. Kinderh, 1898, iii., 218) says a boy, 9 years of age, swallowed a small whistle. From the time of this accident he began to fail in strength, presented much fever, and was subject to violent dyspnea, and a severe cough. Szuman saw the patient five weeks after the accident had occurred. Exploration of the esophagus gave a negative result. It was, however, followed by a violent, spasmodic coughing paroxysm. Auscultation of the chest elicited the information that the left lung, particularly its upper portion, did not take part in the act of respiration; the percussion sounded dull over its whole surface. A laryngoscopic examination resulted negatively. The foreign body was undoubtedly wedged in the left bronchus. Placing the child in a inverted position, with the head hanging downward, and violently thumping the back, was unsuccessful. Szuman, therefore, performed a low tracheotomy, probing into the bronchi through the wound, and felt a hard body in the left bronchus, 11 cm. from the incision, which, having been somewhat loosed by a Volkmann's spoon, and given the proper curve, was thrown into the opening of the wound at the next violent coughing paroxysm, and proved to be a signal whistle, 2.4 cm. long and 1 cm. broad. Recovery was uneventful.
ON TENDON GRAFTING OR "FUNCTION TRANSFERENCE" IN THE TREATMENT OF INFANTILE PARALYSIS.

By Frederic Eve, F.R.C.S.,

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The idea of reinforcing paralyzed or paretic muscles by attaching or grafting on to them the tendon of a neighboring healthy muscle undoubtedly originated with Nicoladoni as long ago as 1882. In a case of paralytic talipes calcaneus he attached both peronei to the tendo Achilles with a good result. No further development took place until 1892, when Parrish of the United States, and Drobnik in Posen applied the same method to other forms of paralytic club-foot. The former, in a case of pes talus paralyticus with paralysis of the tibialis anticus, reinforced that muscle by attaching it to the extensor hallucis. The latter (Drobnik), in a case of pes equino-varus, attached the extensor hallucis to the paralyzed extensor communis digitorum.

In 1894 Winkelmann grafted a strip of the tendo Achilles on to the paralyzed peronei for paralytic club-foot.

Drobnik was the first to publish and analyze a series of cases (sixteen in all), thus placing the operation on a firm
basis. Latterly Goldthwaite (United States) has published four cases.

The technique of the operation of tendon grafting must necessarily vary with the muscles paralyzed, the position of the foot being determined by their antagonists. Although each case requires separate consideration, and scope exists for the exercise of ingenuity, yet useful facts may be learned from practical experience and the study of published cases. Some one group of muscles must at least be possessed of a fair amount of power in order that the requisite force may be obtained. Cases of flail-like joints, in which all the muscles are paralyzed, are only suited for arthrodesis.

It may be laid down as a general rule, that in selecting a muscle for grafting the one should be chosen whose action is most nearly allied to that of the paralyzed muscle or group, not only because such muscles are nearest, but also because restoration of voluntary function is more readily obtained. But the converse of this is sometimes, in my opinion, advisable, and we may select an antagonist of the paralyzed muscle. Thus in paralysis of the tibialis anticus with valgus, we may attach to it the peroneus longus, with a view to weakening the action of the muscles whose uncontrolled contraction is producing the deformity.

It must also be stated that before the operation we are considering is carried out, any faulty position of the foot must be rectified by manipulation, the application of plaster, splints, etc.

Talipes cavus will require preliminary operation in some instances. The equinus so often existing should be corrected either before or at the same time as the operation of grafting.

In two of my cases I elongated the tendo Achilles—as I think now, unwisely—at a period subsequent to the grafting operation. This I did by what is termed the Z method. This consists in splitting the tendon longitudinally and cutting outwards through the lateral strips in opposite directions above and below. The lateral strips are then approximated and sutured together in such a way that the tendon is elongated to the required extent. This operation has previously, I believe, been chiefly, if not entirely, employed
for shortening the tendo Achilles in cases of talipes calcaneus.  

Turning now to the operations appropriate to the special deformities of the foot, we may illustrate what may be done in cases of paralysis of the extensors by reference to the following case, in which all the extensors and the peronei were completely paralyzed as the result of an injury dividing the external popliteal nerve.

*Case I.*—W. G., aged 9 years, was run over by a van on August 14, 1897, and sustained a wound on the outer side of the popliteal space, for which he was treated at St. Thomas' Hospital. He was admitted to the Evelina Hospital on October 21st, three weeks after his discharge from St. Thomas'. The knee was flexed, owing to contraction of the hamstring muscles, and there was "foot-drop." None of the muscles supplied by the external popliteal nerve reacted to
faradism. November 13th: The external popliteal nerve was exposed, resected, and carefully united. It was atrophied and fibrous at the seat of injury. A plaster splint was put on, and after an interval, massage and electricity were applied to the paralyzed muscles for a considerable period. On March 8th no improvement existed, and the paralyzed muscles neither reacted to faradism nor galvanism.

Operation.—March 17th. The tibialis posticus was divided near its insertion and attached just below the ankle to the tendons of the extensor longus digitorum. Then the tendo Achillis was exposed, and a longitudinal incision about three inches in length having been made toward its outer side, the band thus separated was divided near its insertion, and its lower end, being carried round the fibula just above the external malleolus, was attached to the tendon of the peroneus longus, where it passes along the outer surface of the os calcis. On April 21st he had regained some power of dorsi-flexion of the foot, which, instead of dropping, is now at right angles to the leg, and he walks firmly upon it.

In a similar condition resulting from infantile paralysis, Vulpius relied entirely on the well-developed gastrocnemius. One-third of the tendo Achillis was attached to the tibialis anticus, the second third was sewn on to the peroneus longus, while the remainder was elongated to correct the equinus. As a result the foot was held in a slightly over-corrected position, and the patient, a girl of 18, could walk, without an apparatus, in ordinary shoes.

In an example of talipes equino-varus with paralysis of the peronei and extensor longus digitorum, a somewhat similar operation to that one was performed.

Case II.—M. A. K., aged 6½ years, was admitted to the Evelina Hospital on December 8, 1897. The left foot was in a position of extreme equino-varus as the result of infantile paralysis of the peronei, which did not react in the slightest degree to faradism. The extensor longus digitorum only reacted slightly.

Operation.—December 14th. The tendon of the tibialis anticus was divided and attached to the peroneus brevis, and
the tibialis posticus tendon, after division, was carried above the internal malleolus and attached to the extensor longus digitorum to reinforce it. The child developed scarlet fever, and was discharged from the hospital with the foot in a plaster splint on January 12th. April 11, 1898, the tendo Achilles was lengthened. At the present time the child walks fairly well with the foot flat on the ground. There is good power of dorsi-flection, and no adduction (Fig. 3).

The object of this operation might also have been accomplished by attaching the tibialis anticus to the extensor longus digitorum, and a portion of the gastrocnemius to the peronei.
In another case (III) the extensor longus digitorum was paralyzed, together with the tibialis anticus.

Case III.—E. W., aged 11 years, was under my care in the London Hospital. Dr. Hedley reported that the extensor longus digitorum did not react at all to stimulation at the motor point, while the tibialis anticus showed a very markedly diminished force of muscular contraction. No voluntary action of this muscle could be obtained.

Operation.—The tibialis posticus tendon was divided at its insertion and attached to the tibialis anticus, while to reinforce the power of dorsi-flexion of the foot, the peroneus brevis was attached to the tendon of the extensor longus digitorum. By a subsequent operation the tendo Achilles was lengthened. The foot is now braced up at right angles to the leg, and he walks firmly upon it without any tendency to eversion (Fig. 4).

In Case IV, the foot was in a position of equino-valgus, and the adductors of the foot were chiefly affected.

Case IV.—B. G., aged 2½ years, was admitted to the London Hospital November 24, 1897. There was old infantile paralysis of the right leg, with "foot-drop." and eversion. The child walked on the inner side of the foot. The peronei acted well. The foot could be everted and slightly flexed, but inversion was completely lost.

Operation.—The peroneus longus tendon was attached to the extensor communis digitorum and the peroneus brevis to the tibialis anticus. Both the peronei were used for grafting, it being these muscles which mainly produced the deformity. On January 18th, the limb was examined electrically by Dr. Hedley, and dorsi-flexion of the foot was obtained on stimulation of the peronei muscle. May.—The foot is now in fairly good position, but progression is impossible, owing to genu valgum and weakness of thigh muscles, with flexion of knee. July 1, 1898. No eversion of foot. There is distinct voluntary power of dorsi-flexion. The knee was straightened and the femur divided to rectify the genu valgum.

The above cases were shown at the Clinical Society last May.
In the somewhat unusual event of single muscles being paralyzed, less complicated procedures are necessary. Thus, the extensor longus digitorum may be reinforced by the extensor hallucis and half the tendon of the tibialis anticus. In paralysis of the tibialis anticus alone, Vulpius suggests that the displacement of muscles should be gradual, that is, that half the extensor longus digitorum should be attached to the tibialis anticus, the former being again strengthened by suturing to it the peroneus brevis.

In peroneal paralysis the outer third of the tendo Achilles may conveniently be taken as a graft; and to this may be added, if necessary, the outer portion of the extensor longus digitorum. I have not yet treated by "function transference" a case of talipes calcaneus. After shortening the tendo Achilles the procedure of Nicoladoni may be adopted, the peroneus longus being sutured to its outer side. If necessary, the calf muscles
may be further reinforced by the tibialis posticus or a portion of the flexor longus digitorum, should these muscles be unparalyzed.

In the first two cases submitted to operation the tendons were exposed by long oblique incisions in the required positions and usually placed over the dorsum of the foot near the ankle. I found, however, that such an extensive division of veins led the edema of the distal portion of the foot. In the last cases a different plan was adopted. The insertion of the tendon to be transplanted (for example, the tibialis posticus) was exposed by a small incision about an inch in length and the tendon was divided. Then a similar incision was made over the tendon of the same muscle, just above the internal malleolus, and the divided tendon was pulled through it. Next, supposing it was intended to attach it to the tibialis anticus, this tendon was exposed just below the front of the ankle by a similar incision. The skin and fascia intervening between this last incision and that through which the tibialis posticus tendon protruded above the internal malleolus was tunnelled under by means of scissors. The free end of the tibialis posticus was pulled through this tunnel and attached to the tendon of the tibialis anticus, the foot having first been placed in the position desired. The tibialis posticus would be attached to the anticus in such a state of tension as to retain the foot in the improved position.

Goldthwaite's plan of uniting the tendons was carried out in all cases. This consists in splitting longitudinally with a tenotomy knife the tendon of the paralyzed muscle, and drawing the divided tendon of the functioning muscle through the hole thus made, union being effected by three or four sutures passed through both tendons. In all the five cases upon which I have operated the wounds have healed by first intention, there has been no sloughing of tendons, and the union in all cases has been firm, as shown by the application of the faradic current to the "force-giver."

The tendon of the paralyzed muscle is always slender and atrophied. It is therefore inadvisable to divide or to split it (as has sometimes been suggested), since these procedures are liable to interfere with firm union between it and the graft. It may, however, in some instances be necessary to divide the power of the force-giver by splitting its tendon.
The improvement effected by this operation is brought about in a variety of ways. Where the action of the graft or functioning muscle, is nearly allied to that of the paralyzed one, which it enforces, the patient is soon able to accomplish voluntarily the new movement. This occurs, for example, when one of the peronei or the tibialis anticus are attached to the extensor longus digitorum, respectively, and when the hallucis is fixed to the extensor of the toes.

In Case I., with complete paralysis of all the extensors, where the tibialis posticus was attached to the extensor longus digitorum, the patient was soon able to accomplish a certain amount of dorsi-flexion of the foot voluntarily. Other factors also came into play in furnishing the patient with a firm base of support adjusted to the normal position.

In the first place, the graft or functioning tendon acts
mechanically as a supporting band applied where it is most required to the ankle and foot.

Secondly, if one or more of the contracted antagonists be selected for reinforcing the paralyzed muscles, the antagonists are weakened, and the deformity is thus treated as by tenotomy.

Thirdly, the involuntary contraction, on placing the foot to the ground, of the functioning muscles used as grafts, and acting in the required direction, gives the foot the necessary firmness, even although the patient cannot voluntarily accomplish the movements normally performed by the paralyzed muscles.

That the force-giving muscles can really be made to perform the movements of the paralyzed ones may be demonstrated by applying the faradic current to the motor points.

The operation of function transference has also been applied to contractures of the wrist, resulting in infantile paralysis, and a healthy sartorius has been used to strengthen a paretic quadriceps extensor.

Dr. A. A. Eulenburg has also employed the method in the treatment of cases of spastic cerebral paraplegia.  

NOTES AND REFERENCES.

1 Arch. f. Klin. Chir., Bd. XXVII., S. 660, 1882. 2 New York Med. Jour., 1892. 3 Deutschrift f. Chirurgie, Bd. XLIII., S. 473. 4 Op. Cit. 5 In selecting this particular move of elongating the tendo Achilles, I was unaware that it had been recommended by Vulpian. 6 Sammlung Klinischer Vortrage, No. 197, Nov., 1897. 7 Deutsche Medicinische Wochenschrift, April 7, 1898.
NOTE ON THE OPERATION FOR MASTOID DISEASE IN INFANTS AND YOUNG CHILDREN.*

By Harold J. Stiles, M.B., F.R.C.S.,
Edinburgh,

Surgeon to the Royal Edinburgh Hospital for Sick Children.

MIDDLE-EAR suppuration is a common affection in infants as well as in children. The acute and chronic cases merge into one another, and many of the latter are either tubercular from the outset or become so secondarily. Intracranial complications appear to be relatively less frequent in children than in adults; this is, in children, no doubt, due to the absence of mastoid cells, and to the fact that the antrum, being situated well above the tympanic cavity, drains directly into it, and thence through the perforated or deficient drum into the meatus.

While intracranial complications are comparatively rare, mastoid abscess—with or without caries, sinus, or sequestrum—is more frequent, and constitutes, in fact, the commonest complication of middle-ear disease in infants and young children.

As long as the auditus ad antrum is not blocked, and as long as the membrana tympani is more or less deficient, pus will not be retained under tension within the antrum, and the discharge may go on for months or even years without any complication. If, however, the inflammatory products within the antrum are unable to escape by way of the tympanum and auditory canal, the infective material finds its way to the surface, in the majority of instances, through the thin outer wall of the antrum, either along the course of the minute veins which traverse the bone in this situation, or by carious invasion.

No doubt the presence of the squamoso-mastoid suture, which crosses the outer wall of the antrum in the infant,

*Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.
favors the transmission of the inflammatory process to the surface.

When the discharge from the ear is profuse and of long standing, caries or necrosis is almost invariably present in the neighborhood of the antrum, even although there be no abscess. Less frequently the inflammatory process extends through the tegmen tympani into the middle fossa, through the posterior wall of the antrum to the lateral sinus, and still more rarely alongside the Eustachian tube to the posterior wall of the pharynx, where it gives rise to a lateral retropharyngeal abscess.

The above facts, which are familiar to all, are mentioned in order to show that the operation of opening the mastoid antrum is frequently called for in infants. In this short communication I wish more particularly to point out the importance to the surgeon of a proper appreciation of the peculiarities of the anatomy of the temporal bone in the infant as compared with the adult.

Strange to say, the excellent text-books which we possess upon surgical diseases of children lead the surgeon to infer that the operation is the same in the infant as it is in the adult. While this is essentially the case, there are, however, certain points of difference, which, if not kept in view, are liable not only to mar the success of the operation but even to lead to disaster. Let me refer briefly to the more important anatomical peculiarities in the temporal bone of the infant from a surgical point of view.

[The specimens I now show have been exhibited in the Museum.]

As is well known, the mastoid process is absent in the infant, and does not begin to develop until the second year. The absence of the mastoid process leaves the stylo-mastoid foramen—and therefore the exit of the facial nerve—exposed upon the lateral not the under the surface of the base of the skull. In an infant 3 months old this foramen is situated at a point 3 mm. behind the middle of the posterior segment of the tympanic horseshoe and a little less than 1 cm. below the floor of the mastoid antrum.

The posterior extremity of the temporal crest in the adult forms a distinct ridge, crossing the base of the mastoid pro-
cess, and constitutes the surface guide to the level of the roof of the antrum. In the infant no such ridge can be felt.

The relatively large size of the antrum, the thinness of its outer wall, and the relatively greater distance of the lateral sinus behind it, all help to simplify the operation in the child.

The absence of the mastoid cells and the rudimentary condition of the osseous portion of the external auditory canal are of less importance to the operator.

Lastly, as regards the anatomy, it must be remembered that the antrum is situated altogether above the level of the tympanic cavity, its floor being on a level with the upper edge of the tympanic membrane.

With these anatomical data the steps of the operation for opening the mastoid antrum in the infant may be given as follows:

The knife is introduced at a point a little above the upper attachment of the auricle, avoiding the temporal artery, and an incision is carried downwards and backwards close to the attachment of the auricle. As far as a point on a level with the middle of the meatus, the incision should extend through the temporal muscle down to the bone; but below this point it should divide integuments only, in order to avoid injuring the facial nerve.

The peristome along with the cartilagenous portion of the external auditory canal is then detached forwards and downwards until the rudimentary osseous roof of the canal is exposed. The divided lower edge of the temporal muscle, along with the subjacent peristome, is then separated upwards and backwards, so as to expose the whole of the outer wall of the antrum.

The chisel, or, in infants, the bur, is then applied at a point \( \frac{1}{4} \) inch above and behind the roof of the osseous meatus, that is to say, a few millimeters above the tubercule at the upper extremity of the posterior segment of the tympanic horseshoe.

It would be a mistake to introduce the finger into the wound with the object of feeling for a ridge formed by a temporal crest such as exists in the adult, because in doing so the surgeon would come upon the posterior root of the zygoma. If the ridge formed by the root of the zygoma be taken as the
guide, and if an opening be made immediately below it, the
operator will find that he has passed directly into the middle
fossa of the skull immediately in front of the antrum. Hav-
ing got into the antrum, the opening is cautiously enlarged
and the inflammatory products are removed.

Should a sinus exist, it will generally be found to traverse
the outer wall of the antrum. In those instances in which the
sinus is placed further back than usual, it must be enlarged in
a forward direction, or it may be necessary to make a fresh
opening into the antrum in front of it, in order to avoid the
lateral sinus. As a comparatively thick plate of bone inter-
venes between the posterior wall of the antrum and the lateral
sinus, the latter ought not, with ordinary care, to be uninten-
tionally opened into.

In cases where the mastoid disease is acute, it is not always
necessary to enlarge the opening into the tympanic cavity and
to clear out the latter.

I make it a rule, however, to open the antrum in all cases
of mastoid abscess, whether acute or chronic, and whether the
bone is obviously diseased or not. If, for example, in acute
mastoid abscess the surgeon contents himself with simply
incising freely down to the bone, as has been recommended
by Wilde, a second operation involving the opening of the
antrum will almost certainly be called for at a later period.

In chronic cases, after freely opening the antrum, it is
always advisable to test the patency of the auditus, for which
purpose a bent probe is usually employed. In place of a probe
I prefer to use an instrument used by dentists for introducing
soft filling into teeth—an instrument shaped like a miniature
sound but with a more bulbous extremity. I am in the habit
of referring to this instrument as a mastoid sound. To the
opposite end of the instrument may with advantage be added
a small, sharp spoon, which should be placed at a slight curve
to the handle.

Should the auditus be found to be narrowed or blocked, it
is often advisable to remove with a small sharp hook, at any
rate the incus, and in some cases also the malleus. And in
order to do this satisfactorily, it will be necessary to remove
that part of the osseous roof of the canal which intervenes
between the extremities of the tympanic horseshoe, in other
words, to perform Stacke's operation. In performing Stacke's
operation there is, as in the adult, the same danger of injuring the external semicircular canal and the facial nerve, as it lies in the aqueduct of Fallopius. Injury to the external semicircular canal is a serious accident, as it is liable to be followed by septic meningitis of the posterior fossa, the result of septic matter being conveyed to this region along the auditory nerve.

It should be remembered, however, that facial paralysis following this operation, may be due not only to injury of the seventh nerve as it lies in the Fallopian canal, but, as has already been mentioned, in infants under one year, to the nerve being divided at the lower extremity of the first incision if carried right down to the bone.

After, or even before, the end of the second year, the mastoid process, the outer wall of the antrum, and the osseous meatus undergo rapid development, so that when the child has reached the age of 3 or 4, the operation is practically the same as in the adult.
ABOUT SCARLET FEVER IN JAPAN.

By M. Y. Mayeda,
The Tokio Hospital, Tokio.


ALTHOUGH the origin of scarlet fever is not very clearly understood, yet the same is certainly known as one of the contagious diseases. It comes not always from contact, but it may be caught by infection from books, furniture, garments, etc. It is something like measles; the germ spreads itself in particles all around. Until lately, this disease was little known in the kingdom (Keu no Yamai)*; it has become more frequent, and the government has begun to take steps for its prevention. As in the rural districts of my country, it is unknown, or almost so, I think it my duty to describe my experience in this line, for the benefit of my medical friends. In the Tokio Hospital the patients have been mostly from 4 or 5 to 10 years of age. In ten patients there were only two over 20 years of age.

The relation of climate and sex is not clear. The incubation period, our author says, is about a week, a little over or a little less. The first symptom is a sudden chill, irritation of throat, swelling of the mucous membrane; temperature, over 39° C., which is constant. He never saw a patient with stomach pain, vomiting, or deranged digestive organs. The symptoms above mentioned last twenty-four to forty-eight hours, when the eruption appears first on the upper part of the body, then gradually on limbs, trunk, chest, abdomen, and back, not especially on chest and back. There is comparatively little eruption on the face, palms, and soles. At first the eruption consists of small spots of deep red color, gradually changing to blotches of different shades of red. The large

*According to Eastlake and Kendall, Japanese-English. "Keu, rare, remarkable, strange."

'No yamai, of disease." A. S. A.
spots are formed by a number of little spots. The eruption is accompanied with itching. It becomes worse in about two days, and about five to seven days later begins to disappear. Then comes desquamation, which lasts about two to four weeks. It is in small flakes on face and body, membranelike on limbs, hands, and feet (we should say in specks). In connection with these symptoms the author thinks it necessary to observe:

"1.—Fever, suddenly going up to above 39° C., then stationary for six days, when it begins to abate with the eruption. At that period there are generally complications. In consequence it will take from two to three weeks to come back to the normal state. The diminution of the fever is not like measles.

"2.—In the first stage the edges of the tongue are red, the centre coated. In two or three days the tongue is red and roughened all over and its glands are swollen.

"3.—The throat, after the eruption, is swollen and irritated; swallowing difficult; mucous membrane cracked; headache; anorexia; dryness of mouth." [The author mentions as complications—laryngitis and catarrhal pneumonia, and adds that this last complication retards the cure, in which we concur sincerely with him].

"Synovitis of Joints.—He found two in ten cases. The author says that cold applications were used, and in two or three days the complication disappeared, without bad effects (that means, probably, without taking the patient with it).

"Nephritis.—In quite a few cases the author says he has noticed some albumin in the urine; generally when the fever was on the wane, the albumin disappeared. In only one he found that it took quite a long time to get rid of the kidney trouble (which shows that the Japanese cases must be very mild). He found in one man dropsy of the abdomen. Throat and nasal diphtheria he found in a little girl, 7 years old, who was brought to the hospital ten days after the outbreak of the disease. When the author first examined the patient, he found the throat anemic, the nostrils stuffed up, and a brownish, watery discharge; by his treatment these symptoms were cured in a few days (he does not say what the treatment was). Then for five or six days the patient had paralysis. The author says he found bacilli of diphtheria in the nasal discharges.
Accompanying the throat trouble he sometimes found inflammation of the mouth. Sometimes the neck swells, and there is a formation of pus. In one patient there was inflammation of the ear.

The text-books, says the author, declare that kidney inflammation and diphtheria are very frequent in this disease, but in his experience at the hospital, only one among ten had these complications very distinctly. The author goes on to say that, however, many of them had albumin in the urine, as the text-books state. I should have thought that, in this case, many of them would have had nephritis in the first stage. In consequence of this the author thinks that Japanese scarlet fever is very mild, and, Japanese like, he declares that he does not know, and finally asks his medical friends whether it is so or not. (1) He questions that statement, and is in a state of doubt about it; (2) asks you what you think of it. That is the Japanese mind; it cannot be changed because its the climate.

"Finally the author declared in contradiction to the text-books, judging, with amazing boldness, by his own experience in one case which lasted five or six days, that the cases of paralysis must be far more general."
EDITORIAL COMMENTS

Criminal Abortion Across the Atlantic and on this Side

This form of crime is very frequent in most parts of the world, and has been greatly in evidence of late in England, where, within the past six months, there have been tried three qualified medical men for performing an illegal operation with fatal results. One of these was sentenced to seven years penal servitude, while another has just been condemned to death. It is stated in a reliable English medical journal that the police have full knowledge of a ring of medical men in a certain quarter of London who regularly practice as abortionists, and that active steps are being taken to bring them to justice. In this country, although there has been no great public scandal for a considerable time, the fact that abortion prevails to a large extent is well known. Dr. Storer, of Newport, who has for many years been an active anti-abortionist, referring to the matter a few months ago, said: "Much has been written on the subject from various standpoints, but fetal murder still prevails, a dreadful monster that, wounded at one point, evinces but fresh strength at others. The decrease of the rate of increase still goes on." It may then be taken for granted that the practice is a common one. What are the reasons for this state of affairs, and what means will most effectually put a stop to its continuance. The reasons are as clear to read as an open book, and are simply that the well-to-do woman of the present day is, for the most part, averse to undertaking the duties and responsibilities of maternity, probably believing, too, in the majority of cases, that before the fourth month or thereabouts the fetus is but a part of its mother and is not endowed with separate life, and that, therefore, in procuring abortion, she is not guilty of any deadly sin. How to effectually prevent abor-
tion is a most difficult problem to solve. With many women even the knowledge that in undergoing an illegal operation, they were conniving at murder, would not act as a deterrent, while it would be difficult to convince many more that in procuring abortion they were committing a sin of any magnitude. The only course open would, therefore, seem to be to punish those who are detected in the crime, with the utmost severity, the path that is now being pursued in England, although we agree with the following remarks of the Medical Press: "We trust, however, that the action of the authorities will not be limited to the arrest of medical men alone; the 'smart' women who seduce needy practitioners into relieving them of the troubles of maternity are equally guilty, and they should not be allowed to escape. If a few examples were made of these women it is quite possible that the work of the abortionist would soon undergo a serious diminution." Although the obstacles in the way of altogether preventing abortion are probably insuperable, yet some steps should be taken to check its widespread practice. Putting on one side all questions of morality and regarding the matter wholly from the standpoint of health, it must be confessed that abortion, conducted on a large scale, is certain to sap the vitality and to impede the progress of any nation.

_In the paper contributed by Dr. Louis Fischer, on infantile tuberculosis, at the last annual meeting of the American Medical Association, were included the following remarks: "That tuberculosis can be transmitted by the agency of raw milk from tuberculous cows is certainly not questioned, still it is surprising to note that even Koch does not believe this always to be the case." No one will deny that Dr. Fischer is perfectly correct in his assertion that the fact is unquestioned that tuberculosis can be transmitted by means of the raw milk of tuberculous cows, but_
there are others besides Koch who do not always believe this to be the case. It is thought by a number of authorities in Great Britain, at least, that unless the udders be at all diseased the chances of infection are slight. Still, as a writer in the Sanitary Record says, this can only be partially comforting, as nobody seems to deny that such a danger exists. Some diseases of the cow are communicable to man—conspicuous amongst which is tuberculosis.” Consequently, it is of the most vital importance that milk given to infants should be perfectly pure. Lecturing a short time ago on “The Administrative Control of Tuberculosis,” Sir Richard Thome, F.R.S., medical officer of the British Local Government Board, following on the lines of warning already addressed by Sir William Broadbent and others, carefully prepared the ground for an impeachment of the milk can as the chief factor in infant mortality from tabes mesenterica. He showed that whereas the reduction in the death rate from all forms of tubercular disease for all ages has been over 36 per cent. during the last thirty years, and over 8 per cent. for all ages for the form mentioned above, in the case of infants under 1 year of age there has been a large increase. The London Spectator, commenting on this statement, says: “Now, insomuch as the infection in this form is communicated through the digestive tract, the presumption ‘a priori,’ is, at least, strongly to the discredit of milk as compared with meat, and this presumption is reinforced by the fact that a large sale of suspected foreign milk has grown up of late years. The tone of the address, while calculated, in the main, to rejoice the heart of the butcher, will hardly commend itself to vegetarians or dairymen. We are all for prohibiting the free importation of impure or suspected milk, but we trust that when Sir Richard delivers an address on the milk supply, as a source of tubercular infection, he will not advocate the adoption of those extravagantly elaborate household precautions dear to the medical ‘crank’ of to-day, one of whom gravely pronounced the habit of keeping old boots in
the bedroom to be a serious obstacle in the way of attaining longevity. The modern victims of ‘bacteriomania’ justify the outburst of Frederick the Great as he collared a runaway: ‘Confound the fellow; does he want to live forever.’" We have quoted the statistics given by Sir Richard Thome and the facetious remarks of the *Spectator* thereon for these reasons: First, because they offer further proof of the danger to infant life incurred by feeding with impure milk and as showing the need for a much stricter supervision over the sale of that commodity than is now in force throughout Great Britain. We may certainly congratulate ourselves that we have in most American cities efficient Boards of Health; and secondly, because the words of the writer in the *Spectator* demonstrate the fact that the general public dislike being in any way inconvenienced if even for their own good. The assertion may be made with confidence that if close inspection was made of not only the imported milk but of the home dairies in Great Britain that infantile tuberculosis would, in place of increasing, soon decrease.

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<td>Our knowledge with regard to movable kidney has greatly widened within the past few years, and it has not only widened, but at the same time become very much more definite and accurate as to diagnosis and treatment. Rayer is said to have first diagnosed floating kidney in the year 1836. Charles J. Hare, in 1858, was the next to write a work of any note on the subject, giving clear instructions of the manner in which the patient should be examined and treated. All the old writers, however, deprecated any surgical interference, relying upon rest and the wearing of mechanical supports, and other palliative measures to ensure, if not a cure, at least an improvement, in the condition of the sufferer. About the year 1879 certain German surgeons began to recommend and prac-</td>
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tice extirpation of floating kidney as the only cure. Nephrectomy was, nevertheless, found to be decidedly too radical an operation, and nephorrhaphy or fixing the kidney was introduced. This method has, according to many authorities, been attended with conspicuous success, Edebohls, in America, having performed the operation fifty times in five years with but a single death. Bidwell, the English expert, says that in cases of floating kidney where neither belt nor truss can be worn, and in practically all cases of dislocated kidney, the question of operative interference must be considered. As to nephrectomy, the operation is unnecessary, and should not be undertaken except in a case of floating kidney, with a distinct meso-nephron, in which the whole of the kidney substance has been destroyed by long-continued hydronephrosis. In all other cases nephorrhaphy should be performed. Dr. Charles Noble, of Philadelphia, coincides to a large extent in these views, and recommends nephorrhaphy in cases of marked displacement, while on the other hand Dr. Max Einhorn, of New York, is a strong advocate for medical treatment only. Of the following facts we are now well aware: that movable kidney is much more frequent than it was at one time thought to be, some German statistics going to show that some degree of mobility of the kidney is present in about 1 in 250 patients. That the condition is extremely rare in males, and that the right kidney is much more often affected than the left. Up to quite a late date movable kidney has been esteemed an affection from which children were almost wholly exempt, and even now, in spite of apparent strong evidence in proof, this condition in young children is, by many skilled medical practitioners, looked upon with scepticism or regarded as an accident of very rare occurrence. Professor Jules Comby, of Paris, however, by no means takes this view, and indeed narrates from his own experience a number of instances of floating kidney in quite young children. This gentleman some little time ago read a paper on the subject, which appeared in Pediatrics Novem
ber 15, 1898, and was widely discussed, and from which we will quote: He says: "The condition of movable kidney has not often been observed in children, and the silence of the profession may well make us believe that it does not exist. But having for several years looked out for displacements of the kidney among the children who came under my observation, I was surprised at the relatively high number which I was able to find—18 in all,—and I am now convinced that it is common to all ages." This is perhaps a bold assertion, but coming, as it does, from a man of Dr. Comby's reputation and experience, it is worthy of consideration. Dr. Comby thinks that in many cases, owing to the difficulty of making a diagnosis of very young children, that floating kidney is often put down to other maladies, notably chronic appendicitis, and he remarks that in cases of hereditary syphilis the affection must be regarded as congenital. Litten, Guttenbock, Ewald, Abarrand, believed the congenital origin of floating kidney to be the explanation of all cases. As regards treatment, the French physician says: "The treatment is medical and surgical. When the affection is latent or well borne, when the pains are moderate or intermittent in character, rest, and abdominal belt may suffice to relieve. Bandaging rarely succeeds on account of the great mobility of the displaced kidney. Should the pains persist or become unbearable or attacks of peritonitis or hydronephrosis through twisting of the ureter occur, an operation should at once be performed for fixing the kidney to the posterior abdominal wall." Thus it would appear that movable kidney is a more common affection in young children than is usually thought to be the case. More proof, however, should be forthcoming before the condition can be regarded as of so frequent occurrence as stated by some. Nevertheless, when any suspicion of the complaint exists an accurate and careful examination should be made, and such treatment pursued as the severity of the case warrants.
Development of Traumatic Cataract in an Infant's Eye from Pressure of Forceps.—Dr. Edward S. Peck presented a report of such a case because of its rarity. He said that on the night of October 14, 1890, at 7:40 o'clock, he had been called in great haste to see a new-born child. The messenger said that the right eye of the baby had been forced out upon the cheek during instrumental delivery. A high forceps operation had been done by Dr. Brooks H. Wells. Examination showed that the right blade of the forceps had fallen across the right eye, and just under the right inferior lid, that the skin of the forehead had been injured and the helix of the right ear turned back, but not torn. Careful inspection showed a large sub-conjunctival hemorrhage, the whole inferior cul-de-sac of the conjunctiva being filled with blood, and the eyelid correspondingly swollen. The cornea was "steamy," and the pupil was larger than its fellow. The pupillary field rapidly changed from a dull grayish reflex to a whitish body, and, under atropin, the opacity of the lens slowly increased until a soft cataract entirely filled the lens. These changes occupied only about twenty minutes. The sclerotic and corneal coats were not ruptured. Instillations of 1 to 5,000 bichloride of mercury were made at regular intervals, ice-cloths were applied, and one drop of a solution of atropin, one grain to the ounce, was instilled every four hours for forty-eight hours. The next day the sub-conjunctival hemorrhage and lymph swelling had almost disappeared. A fully formed milky cataract filled the area of the pupil. Ocular tension had increased somewhat. On October 16, or forty hours after the injury, the eyeball had assumed its spherical form; its ocular tension
equalled that of its fellow; the lymph swelling was absent; the cataract remained opaque, milky white. On October 23, or the ninth day of the child's life, it was noted that the lids of the eye first opened slit-wise without aid. The corneal opacity still remained. The child was nursed by its mother. On November 16 both eyes were equally open; the cornea had regained its clearness and reflex; the soft cataract persisted; perception of light was manifest by subjective tests. The child was not seen again until March 26, 1891, or when five and a half months old. It was then found that the pupil was responsive to light, and both pupils were of equal diameter. The palpebral slit was of the same size in the injured eye as in that of the other eye. The ophthalmoscope showed a red reflex and the retinal veins and arteries could be traced. A spot of diffused cataract remained, the opaque spots showing themselves in "flocks." At no time did the child show symptoms of pain in the eye. About two years afterward the right eye began to show a slight divergent squint. The next examination was made May 10, 1898, when the child was 7 years and 7 months old. The right had vision of 20/70 plus, and with a glass of about 40 inches focus the vision was better than 20/50. The vision of the left eye was 20/12. The right eye showed a divergent strabismus of two and a half lines. A frontal scar was present, but the integument was not adherent to the bone. There was a probability of almost perfect vision being obtained in the right eye.

Dr. Peck said that this was the only case of the kind on record. Out of three carefully observed cases of evolution of cataract following injury, this was the only one in so young a patient. Other remarkable features of the case were the absorption of the cataract, the re-attachment of the retina, and the restoration of vision.

### DISCUSSION ON THE TREATMENT OF PNEUMONIA IN CHILDREN IN HOSPITAL AND GENERAL PRACTICE.

**The Management of the Fever of Pneumonia.** Dr. Henry Dwight Chapin considered this part of the subject, making no distinction between the catarrhal and croupous forms of the disease. He was of the opinion that undue prominence was often given to the one symptom—fever. It was quite possible that a certain grade of fever might be beneficial
when it accompanied the reaction of the tissues to infective and inflammatory irritation. It was also a clinical fact that, as a rule, children bear high temperature well, so that oftentimes antipyritic treatment might do more damage than the symptom against which it was directed. In many instances, the judicious treatment of the pneumonia would be found to constitute the best management of the fever. But in some children hyperpyrexia had a disastrous effect on the brain and nervous system, on the heart, lungs, and digestive organs. Here the indication for interference was not so much the exact degree of temperature as the amount of disturbances produced by it. In one case a temperature of 102° or 103° might call for special treatment; in another a temperature of 104° or 105° might call for treatment. High temperature may result in extreme cerebral irritation, restlessness, insomnia, or even convulsions. Sometimes, and especially in infants, it causes stupor or coma. Associated with the high temperature the heart might become weak and rapid in action, and the respiration greatly accelerated. The exhaustion is increased, and the spread of the congestion and inflammation thereby favored. The temperature of the pneumonia of children is rarely continuously high, and the fever is not so important in croupous, as in broncho-pneumonia, the former running a short course, and tending to recovery in spite of high fever and severe nervous symptoms. In the management of the hyperpyrexia, one should constantly avoid depressing remedies, such, for example, as the coal-tar derivatives. Dr. Chapin makes an exception to this rule occasionally in sthenic cases characterized by pain and great restlessness, and gives small doses of phenacetin along with some cardiac stimulant, such as caffeine or camphor. Antipyrin, and especially acetanilid, should not be given under any circumstances. On the whole, the application of water was the safest and most satisfactory method of controlling dangerous hyperpyrexia. Much might be accomplished by a thorough application of cold to the head, in this way not only reducing the fever but relieving the deleterious effect upon the brain and nervous system. Finely cracked ice placed in bladders, from which the surplus air has been expelled, may be moulded around the head, especially at the vertex and occipit. For the steady and convenient application of cold, he favored the use of ice-poultices, made by mixing finely cracked ice with flax-
seed meal in oil silk, and placing around and on top of the head. If this measure proved to be inadequate, the next resource should be the application of compresses directly to the chest. The child is stripped, wrapped in a blanket, and placed upon a table. A stimulant is given, and the feet are placed in contact with hot bottles. A compress, sufficiently large to surround the chest, is plunged into water at a temperature of from 70° to 95° F, and then applied to the chest. This is changed every ten or fifteen minutes, until the desired effect is produced. In order to disturb the child as little as possible, the nurse is directed to apply the compress from the front, slipping in the ends until they meet in the back, thus avoiding much movement or inconvenience to the child. The exact temperature of the water for a given case must be determined by the condition of the child and the temperature to be reduced. If the body temperature were 105°, the water might be 95° F or even warmer at first. If frequently repeated, even this comparatively warm water would often control the excessive fever. Of course, if the compresses were not changed until they became warm, the desired effect would be lost. If the fever proves obstinate, the temperature of the water could be gradually lowered until it reached 70°, 60°, or even lower. A better result sometimes follows the addition of one-fourth part of alcohol. Coldness of the feet and hands is a contra-indication to this use of cold. When the temperature has been reduced to 102° or 103° the compresses should not be renewed, but should be kept in position, when they act as a cotton-batt- ing jacket. Wide variations in the temperature point to the existence of a mixed infection. As a rule, children do not object to this mode of applying the compresses, and all the good effects obtainable by the tub bath he believed could be obtained by the proper use of cool compresses. In cases marked by cyanosis, prostration, and hyperpyrexia, good results would sometimes follow a bath at 100° F, with a friction of the surface.

The Treatment of Pneumonia at the Babies' Hospital.—Dr. L. Emmett Holt dwelt upon this subject. He said that it was in hospital surroundings, and in delicate children under 2 years of age, that one found the crucial test for the treatment of pneumonia. There were three ways in which
pneumonia might kill in young children, viz.: (1) By exhaustion; (2) by complications; (3) by acute toxemia. From his own hospital service he was led to believe that the relative frequency of death was 60 per cent. from the first; 25 per cent. from the second; 15 per cent. from the third. Nothing could be done directly to destroy the poison of pneumonia, and hence the best results follow appropriate efforts to increase the tissue resistance of the patient. An abundance of fresh air should be provided, and the child should have good nursing and proper feeding. Not less than 1,000 cubic feet of air should be allowed to each hospital patient with pneumonia, and more than this would be still better. In hospitals, it was well, one or more times a day, to change the pneumonia patients from one ward to another so as to secure sufficient fresh air. An important point to be borne in mind was, that the tendency was to do too much for the patient, thus unnecessarily annoying and irritating the little one. Water should be given freely and this was best done by diluting the food with water. In his experience the cough had been best controlled by inhalations of creosote, eucalyptol, and pine-needle oil under a tent. Frequently it was better to give food during the day, and stimulants at night. Moderate counter-irritation, especially in the early stage of the disease, was useful, and could be well maintained by a mustard paste applied every three or four hours for a few minutes at a time. The rule should always be not to give a single dose of medicine to the child unless it was distinctly indicated. The third group of cases was characterized by hyperpyrexia, profound prostration, and cerebral symptoms, the local condition being first one of intense congestion and edema, and later a widespread disease, involving, perhaps, portions of both lungs. Cardiac and respiratory stimulants were often required within twelve hours of the onset, and invariably after the third day. For this purpose he employed the following remedies, named in the order of their usefulness: Strychnia, nitro-glycerine, oxygen, alcohol, and caffein. Strychnia should rarely be given to a child of 1 year in doses of more than $\frac{1}{200}$ of a grain every three hours, except for a short time. Nitro-glycerine he had found useful in the early stages when there were a pale face, feeble pulse, and signs in the chest of intense engorgement. This drug, in connection with hot mustard baths, might accomplish more than anything else. For a short
time, \( \frac{1}{400} \) of a grain of nitro-glycerine could be given every hour; after that the interval should be lengthened. The tendency was to use alcoholic stimulants too freely; it was rarely necessary or desirable to give more than twenty drops of brandy hourly, or one ounce in the twenty-four hours. Caffein in doses of \( \frac{1}{10} \) of a grain would sometimes act better than strychnine, particularly in dull, poisoned patients, in whom the question of feeding was difficult. On account of the difficulty of administration and the feeble digestion it was often advantageous to employ forced feeding by the stomach tube, using, completely peptonized milk. The hyperpyrexia was best controlled by the cold pack. Hot baths, at a temperature of 105° or 106°, by the thermometer, frequently act admirably. One should be cautious about using in young children the powerful drugs mentioned, and hence the action of small doses should be carefully noted before resorting to larger ones. Another important point to remember was, that rest was fully as important as any other part of the treatment. Dr. Holt summarized the treatment as follows: (1) No depleting measures are ever admissible; (2) hygienic treatment is indicated, including under this head, fresh air, proper feeding, and intelligent care; (3) no unnecessary medication should be permitted; (4) many annoying symptoms may be relieved by local treatment; (5) the administration of stimulants should be deferred until demanded by the condition of the pulse; (6) high temperature is much more safely and effectively controlled by cold than by drugs; (7) greater caution is necessary in the use of powerful drugs than is generally observed; and (8) rest is quite as important as in any other serious disease.

The Treatment of Pneumonia in Infants and Children.—Dr. Henry Koplik said that the treatment of uncomplicated pneumonia in young children must remain for some time a matter of much discussion and honest difference of opinion. Acute primary broncho or lobar pneumonia in young children being an infectious disease, the lines of treatment were largely influenced by this fact. The treatment could never follow any hard and fast rules, and must be influenced by the age of the patient, the severity of the infection, and the amount of lung involved, and the general condition of the child. His experience with nitroglycerine at the bedside in
young infants had been discouraging. Caffein, ammonia, campor, and musk, were also very evanescent in their action. Strychnine, given hypodermically, in doses of $\frac{1}{400}$ of a grain, was exceedingly valuable. In sudden heart failure our reliance must be on hypodermic injections of alcohol and ether. Opium was very badly borne, and this drug was distinctly contra-indicated in feeble, idiot infants. Frequent baths of any kind were to be deprecated. A warm or cold bath should never be repeated, unless with the reduction of the temperature there was an entire absence of symptoms of cardiac depression. The physician should be at hand when the first bath is given. Baths should not be employed when the temperature had started on a decline, whether temporary or permanent. In tenement house practice, where baths could not be easily given, small doses of such drugs as phenacetin act very well. For an infant of six months to one year old, phenacetin could be given in doses of half a grain, along with one-half to one minim of the tincture of digitalis, every three hours. It should always be borne in mind that the temperature of pneumonia has not the same significance that it has in typhoid fever. It was his custom to resort to the administration of alcohol only in the asthenic cases, and not as frequently even in them as formerly. In many cases the alcohol does harm by driving the heart, reducing the appetite and interfering with digestion. Alcohol often causes nausea and vomiting, thus seriously interfering with nutrition. The pneumonia patient should be isolated from other children; the sick room should be at $65^\circ$ to $70^\circ$ F, and the air should be changed frequently.

The Treatment of Pneumonia Complicating Measles.

—Dr. Walter Lester Carr said that the patient should be in a well-ventilated room having a temperature of $65^\circ$ to $70^\circ$ F, and the air should be kept moist with steam. The nares should be irrigated from time to time with saline solution at a temperature of $100^\circ$ F. Friction between the scapula and in the axilla were serviceable in feeble infants. The child's crib should not be in the corner of the room or against the wall, and should be accessible from all sides without being in a draft. Counter-irritation to the chest by the application of one part of mustard to four or five of flour, or by the hot mustard bath, eases the labored breathing and calms the nervous
system. Poultices should be eschewed, as their weight and the necessity of constantly renewing them made them harmful. The moderate use of steam in the room was beneficial when the breathing was difficult, or the mucous secretions thick and troublesome. Sometimes the addition of the compound tincture of benzoin or of turpentine would favor expectoration. Water was always allowable, and should be given freely. As broncho-pneumonia is a protracted disease, more thought should be bestowed upon the feeding than is generally the case. Baths and wet packs are to be used to reduce high temperature, and frictions with water at a temperature of 90° to 95° F seemed to him the best method of controlling the hyperpyrexia. He was opposed to the use of baths lower than 60° F. Codeia, in doses of 1/16 to 1/4 grain, would be found beneficial when there was much restlessness. Nitroglycerine would often relieve the pulmonary engorgement. Strychnine, especially the nitrate, was useful, and should be given in solution, preferably hypodermically. Digitalis steadies the heart, but its contraction of the arterioles interferes somewhat with its use. Whiskey and brandy are needed in almost every case of broncho-pneumonia, not always early in the disease, but when the vitality is low or there is atelectasis it is most valuable. Alcoholics should not be given as a routine, but most children are better for the administration of alcohol some time in the course of a broncho-pneumonia. Creosote, in half to one minim doses, or two to eight drops of the carbonate, made an excellent addition to malt extract for these patients. He did not hesitate to administer cod liver oil in every case, unless the temperature were high, it favored expectoration. Quinine was helpful in a few cases in which the disease was protracted and was characterized by an irregular temperature, due to infection with pus germs. He did not favor the use of the coal-tar products, or nauseating expectorants, and he called attention to the fact that as young children do not expectorate, the use of such drugs often did nothing more than disturb the stomach.

Hydrotherapy in Pneumonia.—Dr. Simon Baruch said that he would not touch upon the value of fresh air, good food and general hygienic treatment, as he had been asked to treat only of the hydrotherapy, yet he did not wish to be understood
as under-estimating their great value. He would especially warn against the common and unnecessary use of alcoholic stimulants. The dangers of pneumonia in young children are: (1) Toxic contamination of the nerve centers; (2) respiratory embarrassment; (3) cardiac adynamia. First among the measures for combating these dangers he would place the application of cold water. Such an application causes contraction of the cutaneous vessels, which is followed by active dilatation, thus furthering the flow of blood through the enormous vascular area of the skin, which is capable of holding from 30 to 50 per cent. of the entire blood of the body. As a result, the heart was relieved of much of its labor. The application of the cold water increases the ventricular force of the heart, causing an increased flow of blood to the lung, to the skin, and to the kidneys, thus facilitating expectoration and increasing the activity of the great excretory channels, the skin and kidneys. In children under 3 years old, the tub bath, with continuous friction, was most efficacious. If the body temperature were between 101° and 103° F, the tub should be placed on two chairs near the bed and filled with water at 95° F. The child's face is bathed with water at 75° F., and it is then gently lowered into the bath, and the temperature of the latter reduced to 85° by the addition of ice. This bath might be repeated every four hours, so long as the temperature did not fall below 101° F. If the body temperature were above 101°, the temperature of the bath water might be reduced to 80°, but he did not favor reducing the temperature of the bath as low as had been advocated by some of the other speakers this evening. In the intervals of the baths, it was well to apply a wet compress to the body. This was best made out of three folds of old linen wrung out of water at 70°, and secured by a flannel bandage. It might be applied with advantage every hour when the patient was not asleep, thus making it unnecessary to resort to the baths so often. In most children over 3 years of age the full baths are too disturbing, but whenever the child is tractable he preferred the full bath. As the toxins of pneumonia endow the patient with less resistance to reductions in temperature than the toxins of typhoid fever, he made it a rule never to use baths having a lower temperature than 75° F, or of longer duration than eight minutes. Spontaneous reaction must always be provided
for by frictions during the bath, so that there should be no need for warmth and friction after the bath. When the patient becomes very chilly, and the face cyanosed, while the teeth chatter, the inference is that the technique of the bath has been faulty. The reaction may be enhanced, not by raising the temperature of the bath water, but by lowering it within reasonable limits and diminishing the duration of the bath. He would also insist upon the internal administration of cold water in quantities of two to four ounces, every two hours.

Dr. Floyd M. Crandall said that there were many differences of opinion regarding the treatment of pneumonia, yet there was a fair unanimity regarding the treatment, so far as its essential features were concerned. It was pretty generally agreed that these little patients require very little medicine, but got along best when not too much disturbed, and when the diet was carefully looked after. He favored the use of the pack, and the avoidance of the coal-tar derivatives, and insisted that the patient should be fed regularly, and not overfed, in the early stage of the disease, as later on it was often difficult to maintain a proper standard of nutrition. He had obtained excellent results from the application of mustard paste, and from inhalations of steam impregnated with creosote, using for the latter purpose the steam tent.

Dr. W. P. Northrup said that it was not at all uncommon to see a case presenting cerebral symptoms in which a diagnosis of meningitis had been made, and the ice cap used, although the subsequent course of the case proved it to have been one of pneumonia from the start. It was, therefore, important to make an accurate diagnosis. He would emphasize the importance of not applying a hot poultice to a child having a temperature of 104° or 105° F. Very little medication was required. Attention to digestion and to the ventilation of the sick room were of prime importance. For great restlessness he used cold packs to the trunk, and hot bottles to the extremities. He was not prepared to say that the traditional hot poultice should be altogether abandoned, but certainly it was generally used in such a way as to do very little good and much harm.
Dr. H. W. Berg said that he considered croupous pneumonia of such very little importance that he would rather see his child have a croupous pneumonia than a bronchitis, because the latter was so prone to terminate in a broncho-pneumonia. The physician often gained much undeserved credit because of the desperate appearance of the patient with croupous pneumonia shortly before the crisis. Croupous pneumonia gets well without drugs, and even under the old-fashioned and barbarous poultice treatment; broncho-pneumonia, on the other hand, requires the greatest diagnostic and therapeutic skill to secure a successful termination. He had always looked upon the oil-silk jacket as a thin, light poultice, and hence he objected to it. In his own experience he had found that small doses of the coal tar products, and particularly of antipyrin and phenacetin, had no effect on the temperature, but that large doses—two or three grains for a child of a year old—would reduce the temperature, though excessively dangerous. Medicine would have been better off, he thought, if this class of antipyretic drugs had never been known. He had found one drug very useful in broncho-pneumonia, and that was the sulphate of quinine. If given in small doses with milk sugar, so as to get the full bitter effect on the tongue of the child, quinine exerts a remarkable, although to him unexplained, beneficial action. Dr. Seymour, of Troy, had recommended treating broncho-pneumonia by raising the foot of the bed about eighteen inches, so as to call to our aid the force of gravity in securing the drainage of secretions from the bronchi. Dr. Brannan had given this method an extensive trial in hospital practice, and he had observed the cases, but had not been very favorably impressed with the method. In his opinion, if there was one thing to be avoided in the treatment of broncho-pneumonia of children it was stopping the cough. Nature has made this one of the safeguards, and if it were interfered with the secretion would accumulate in and beyond the terminal lobules, and would cause an extension of the pneumonic process.
PRACTICAL NOTES

Mouth-Washes for Sick Children:

B
Acid tartarici. .......... 3.0 (46.2 grains)
Aquæ destillati. .......... 180.0 (5.7 ounces)
Aquæ menth. pip. .......... 20.0 (5.1 drams)
M. Sig.—Mouthwash.

B
Acidi tartarici .......... 3.0 (46.2 grains)
Aquæ destillati. .......... 200.0 (6.4 ounces)
Menthol. ................. 1.0 (15.4 grains)
M. Sig.—Mouthwash.—Montii.

Oil of Creosot in Tracheal Diphtheria.—Drs. Ewart and W. A. Hubert say that when the obstruction in tracheal and bronchial diphtheria is not removed by tracheotomy, the case is, as a rule, looked upon as hopeless. According to their experience we may, even here, hope for a favorable termination through active interference. These physicians were able to produce a great change for the better in the case of a 2½ year old child suffering from a severe attack of descending diphtheria, where trachcotomy, injection of antitoxin, and oxygen inhalations made no impression, and where the dyspnea was visibly increasing, by instilling creosot-oil (1 to 20) into the trachea. A large drop of this oil was passed into the canula every half hour. The membranes quickly became detached, and were easily coughed up. The canula was removed on the fifth day, and ten days later perfect recovery had taken place under proper stimulating and tonic treatment. Dr. Ewart has for a long time employed instillation of oil of creosot into the nasal cavities for disinfecting purposes in the acute and also in the convalescent stage of diphtheria. The idea occurred to him to try this form of medication in the present case. The favorable result is solely due to the oil of creosot. The relatives of the patient, by mistake, had first dropped olive oil
into the trachea, which did not produce any effect whatever. The oil of creosot has a similar effect as an emetic in croup, but its action is much milder and more pleasant. It is recommended that this treatment be resorted to in the early stage of the disease, and not looked upon only as a last resort after tracheotomy. In diphtheria of the pharynx its action may be easier controlled. Whether this instillation is also feasible in diphtheria of the larynx will yet have to be determined by experimentation. Only a small quantity of the oil should be applied at one time, otherwise the obstruction may be increased by the clumping of the oil.—Deutsche Medicinal Zeitung, 1898, 13.
THE CLINICAL VALUE OF DIPHTHERIA ANTITOXIN ADMINISTERED PER OS.

Zahorsky, of St. Louis (Therapeutic Gazette, July 15, 1898), concludes, as the result of some experiments, that diphtheria antitoxin acts similarly whether given by the mouth or subcutaneously, but its effect occurs much later when given in the former way.

It is possible that the intestinal epithelium refuses at certain times to take it up, and therefore it is a less reliable method.

This mode should be employed in mild cases when objections stand in the way of its hypodermic use. It may be also used in mild cases in adults.

Its use by the mouth as a prophylactic measure is to be recommended, as it presents many advantages. However, if the child has been exposed to diphtheria for as much as two days the hypodermic method should be employed.

Joint pains, erythema, urticaria, and dysmenorrhea are not prevented.

From a clinical standpoint, therefore, it is to be urged that for curative purposes the administration by the mouth should be restricted to exceptional cases; but for prophylactic purposes this method should receive the preference.

THE TREATMENT OF CHRONIC TUBERCULOUS PERITONITIS IN CHILDREN.

Rocaz (Wiener medic. Ztg., 1898, xliii., 200) says that since the advent of the surgical treatment of chronic tuberculous peritonitis in children, the internal treatment of this disease has been relegated to a secondary position. The latter should, by no means, however, be allowed to become obsolete, for the reason that if properly carried out it will result in a cure. It should in every case be attempted at first; even where laparotomy is found necessary, its influence cannot be otherwise than auxiliary and helpful.

Medicinal treatment of tuberculous peritonitis may be divided into three important parts: Hygiene, nutrition, and treatment by drugs, internal as well as external.

1.—Hygiene. Children who suffer with chronic tuberculous peritonitis should be given the utmost rest; it may not be necessary to keep the child in bed, excepting when acute exacerbations occur in the course of
the disease; but running about and restless playing should be prohibited. Where it is at all possible these children should be sent to the country; we need not fear to keep them in the open air all day long, for tuberculosis is benefited by fresh air. The children should be allowed to rest in shady, dry spots, on a cot or in a hammock. In the apyretic forms, a sojourn at the seaside may influence the disease favorably. On the first appearance of fever, however, we must not hesitate to change the climate.

2.—Nutrition, in the treatment of tuberculous peritonitis, plays a very important rôle. Great care should be exercised, however, that the digestive apparatus does not become weakened. Milk, eggs, and broiled meats, may be recommended in all cases. Rocaz prefers, above all, raw mutton, which is much more readily taken by children. The meat should be finely chopped, mixed with sugar, and administered in the form of flesh-balls, flavored with a little rum.

3.—Therapeutic Measures (a) external: A rational treatment, acting as a revulsive measure on the abdomen in tuberculous peritonitis, and one which is followed by the best results, consists in painting the lower abdomen with tincture of iodine, carefully avoiding the umbilical region, and covering this with a thick layer of elastic collodion, which produces a compressive action as against the revulsive action of the iodine tincture. The iodine application may be repeated once in eight days. (b) the internal treatment should be directed, above all, to complications occurring on part of the intestines. Constipation is to be combated by slightly laxative drugs (castor oil, magnesia). Diarrhea may be held in check by subnitrate of bismuth, and salicylate of bismuth combined with antiseptic remedies. Benzonaphthol is also recommended.

Where fever is present, antipyrin and phenacetin may be employed. In the main, medication should consist in the employment of tonics and iodo-tannin preparations.

During the whole course of the disease, we should bear in mind that chronic tuberculous peritonitis has a natural tendency to cure a progressive fibrous transformation of the pathological condition going on. In a few cases only, and that very rarely, this sclerosis, continuing to develop in excess, becomes a menace to the patient in itself (fibro-adhesive form). Surgical intervention should, therefore, not be resorted to too early, unless there is present a very special indication for it. We should first employ the treatment as described above, allowing time for it to exhibit its curative action.

ON INTERMITTENT AND CHRONIC ICTERUS.

Albu (Deutsch med. Wochenschr, 1898, xxiv., 201) reports the following case: The patient, 16 years of age, was born of healthy parents. Hereditary syphilis, as well as abuse of liquor, was excluded. In early childhood the patient had had measles. At 6 years of age icterus first appeared, lasting five months. A second attack occurred when the
patient was 13 years old, and continued for eight months; a third attack occurred at 15 years of age, lasting six months, and this present attack is his fourth, and dates its beginning four months ago. According to the mother’s statement, the appearance of each attack of icterus was preceded by an angina, with febrile symptoms, lasting from eight to fourteen days (this statement is, however, doubted by Albu. At all events, it is not of any material interest in the etiology of the affection). During these attacks the child is said to have complained greatly of pain in the region of the stomach and liver, which were not colicky, however, but continuous, and were not noticed before the appearance of the icterus. Chills and fever were never present in the former attacks. During the present attack only occasional slight pains were complained of in the region of the liver. In the intervals of the attack the skin resumed its perfectly normal appearance, and the child seemed healthy. Recovery came on rather abruptly. Since the patient has been under Albu’s care, the objective symptoms, as well as the subjective condition, have remained stationary; the affection is, so to speak, still at its acme. The patient is always afebrile. Her appetite is good; the bowels regular; there is no complaint of any especial discomfort, but she has lost flesh, feels very weak, and is quite irritable.

Present state: The child is not very well developed, is badly nourished, and presents an intense icterus of the whole surface of the body, including the conjunctiva, of the mucous membrane of the mouth, and of the soft palate. The skin is marked with numerous lesions, due to scratching on account of itching. Aside from this there are no pathological changes, until we come to the liver. The latter is markedly enlarged, both lobes equally so. Liver dulness begins at the upper edge of the fifth rib and extends in the mammary line for three fingers breadth below the arch of the ribs. On palpation, the free border of the liver is found to extend somewhat lower still; its surface is firm and slightly uneven. It is also somewhat tender on pressure. The urine presents the usual color in icterus, and contains no albumin. The feces have been nearly entirely devoid of coloring matter for months.

The patient has already been under the care of many physicians, whose diagnosis differed greatly. Albu thinks the patient is suffering from a chronic choledolithiasis, which has led to an hypertrophic cirrhosis of the liver, as a result of the continued biliary obstruction. Choledolithiasis, it is true, is rare in childhood adolescence, but it does occur. It may be that congenital anomalies are a disposing cause, by which the presence of chronic choledolithiasis in certain families might be explained, and which Albu has frequently observed. Among these anomalies we might, perhaps, mention some affection of the biliary ducts, and the larger bile passages, which would favor a catarrhal affection. For example, their abnormal contraction, which would favor the formation of bile concrements. In the present case, we must assume a total closure of the ductus choledochus from the chronic icterus of the skin, and the decolorizing of the fecal matter, and Albu can see no reason why an impacted gall stone should not be present in this locality, although no calculi have as yet been found. Chronic biliary obstruction occasionally leads to an hypertrophic
Cirrhosis of the liver, and here it is where the danger lies, the probably present calculus should, therefore, be located, in the first instance, although we are not able even then to promise positive relief.

THE TREATMENT OF BRONCHIOLITIS, ATELECTASIS, ETC., OF VERY YOUNG INFANTS BY SCHULTZE'S SWINGING METHOD.

Fr. Schilling (Musch Med. Wochenschr., 1898, xliv., 329) does not advocate this method of treatment in all young infants who suffer with bronchial affections, but uses it only in grave cases of dyspnea and asphyxia, where the secretions are retained in the respiratory passages on account of insufficiency of the pulmonary and respiratory muscles. In cases of this kind this swinging method is, however, very effectual, as Schilling demonstrated in seven cases; the children ranging in age from two days to fifteen weeks. All of these cases—and among these were a few desperate ones—were favorably influenced, the mucus being removed by this means from the large bronchi, and frequently at the same time flowing out from the nose and mouth, after which the disease at once showed improvement. It goes without saying that care should be exercised, so as to do no harm with these manipulations. The physician should himself carry out this treatment, visit the patient several times daily; watch him carefully for some time; never exceed at one sitting the number of swinging motions by eleven or twelve. He should, after each motion, make a pause to observe the respiration, and remove the mucus when necessary by the finger, etc. Where these rules were carefully observed, Schilling has never seen any untoward symptoms.

FOR WHAT PERIOD OF TIME CAN IMMUNITY FROM DIPHTHERIA BE CONFERRED BY A SINGLE INJECTION OF ANTITOXIN?—THE DOSAGE.

This question is asked and answered as follows by Morrill in the Boston Medical and Surgical Journal of March 3, 1898. From actual experience he states that we are perfectly justified in believing:

That immunity in any given case, after no matter how thorough exposure to diphtheria, may be conferred, for at least ten days, by the injection of a small dose (100 to 250 units) of serum, provided it is given twenty-four hours previous to actual infection.

That a larger dose (260 units for a child of 2, up to 500 units to one of 8 or over) will confer safety for three weeks—or to be a little more conservative, for twenty days—under similar conditions.

That no harm will result from the treatment in a vast majority of cases of sick children, and probably in no case of a healthy child, provided the serum used is up to the present standard of purity.

In conclusion, anyone who thinks that antitoxin will prevent the occurrence of a follicular tonsillitis or of a coryza in an individual who
happens to have the Klebs-Loeffler bacillus in his throat or nose will be disappointed, for neither of these conditions constitutes a diphtheria any more than the co-existence of the pneumococcus in the saliva or a bronchitis constitutes a frank pneumonia. A physician who fails to promptly immunize the members of a family or close community in which diphtheria breaks out, neglects to do his duty by those whose safety lies in his hands.

THE DIGESTIVE FEVER OF CHILDHOOD.

Comby (Med. Moderne, 1898, ix., 105), under above name, describes a diseased condition, which consists in the occurrence of an intermittent fever, and which is produced by the products of digestion. The disease is usually met with in children between the ages of 3 and 10 years. All, or nearly all, of these children suffer from habitual dyspepsia. The greater number are artificially brought up, and are rachitic. Most of them are at an early age subjected to poor feeding; they eat a great deal without any restriction as to the kind of food taken, and drink still more. Frequently in these children we meet with the symptoms of atonic dyspepsia, enlargement of the stomach, etc. The disease does not seem to be influenced by the seasons of the year. It may be that the heat of Summer favors the appearance of symptoms, because these children drink more than usual at that time. According to Grasset, 80 per cent. of the cases are said to make their appearance from May to July. He is also of the opinion that boys are more frequently attacked than girls. The disease picture is presented as follows:

Without presenting any special disease, the child complains of not feeling well; is pale; the appetite is lost; there is no vigor or life in the patient; and he is visited every evening a few hours after his meal by an attack of simple moderate fever. The child with difficulty gets to sleep; is excited; its cheeks become flushed; the body is covered by perspiration; the skin is moist to the touch; it has a poor night, and sleep is disturbed by heavy dreams. The child awakens next morning with a normal temperature, but looks pale and poorly. These attacks may return day by day, or be interrupted by a longer or shorter period of neglect. The fever is as a rule, moderately high—38° to 38.5° C. Occasionally, however, exacerbations occur (40°-41°), and these may last a few days. These severe attacks only occur, however, at long intervals. The liver and spleen retain their normal size, so that malaria can be excluded, but the digestive function leaves much to be desired. As a rule, constipation is present, more frequently anorexia than voraciousness, and almost without exception, polydipsia. At times there are fetid discharges from the bowel. The tongue is usually coated.

If we recognize this condition early, the disease is pretty rapidly cured by appropriate measures. Should this condition be overlooked, however, the digestive disturbances increase, and a more or less severe form of gastro-enteritis or enteritis, muco-membranacea will make its appearance. The main factor in the treatment is a regulation of the diet. Quinine and
alcoholic tonics will increase the affection. We must prohibit the use of wine, irritating food, spices, acids, sweets, and herbs, as this diet is apt to favor the abnormal intestinal fermentation. On the other hand, there is indicated a vegetable regime: toasted bread, thickened soups, vegetables, prepared in the form of puree, eggs, cooked fruit, etc. Only once in twenty-four hours may tender meats be given. Brains, cotelettes from the calf or lamb, chicken, pigeons, etc. The number of meals should not exceed three a day. The first one should be light, and taken between 7 and 8 o'clock a.m.; the second may be more substantial, between 11 and 12 o'clock m., and the third less so, between 6 and 7 p.m. Liquids should be reduced to a minimum. Not more than 200 grains of fluid, either milk or water, at each meal should be the maximum. Constipation should not be combated if possible by purgatives or clysmata, but rather with a suitable diet. For this purpose some spinach, plums, or apple marmalade etc., may be employed.

At the most a few small doses of magnesia or rhubarb, combined with some antiseptic and euphettic remedies, may be given. Comby prescribes the following powders frequently, and continues them for eight to ten days:

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<tr>
<td>1</td>
<td>Sodii bicarbon</td>
<td>0.30 (4.6 grains)</td>
</tr>
<tr>
<td>1</td>
<td>Magn. calcin</td>
<td>0.75 (11.5 grains)</td>
</tr>
<tr>
<td>1</td>
<td>Benzonaphthol</td>
<td>0.20 (3.0 grains)</td>
</tr>
<tr>
<td>1</td>
<td>Pepsin</td>
<td>0.10 (1.5 grains)</td>
</tr>
<tr>
<td>1</td>
<td>Pulv. nuc. vom</td>
<td>0.02-0.03 (0.3 to 0.4 grains)</td>
</tr>
<tr>
<td>M</td>
<td>Fl. pulv. tales. No xx. Sig.—Two powders to be taken daily before meals.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Formula</th>
<th>Description</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Sodii bicarbon</td>
<td>0.20 (3.0 grains)</td>
</tr>
<tr>
<td>2</td>
<td>Magn. calcin</td>
<td>0.75 (11.5 grains)</td>
</tr>
<tr>
<td>2</td>
<td>Pulv. rh. áá</td>
<td>0.15 (2.3 grains)</td>
</tr>
<tr>
<td>2</td>
<td>Pancreatin</td>
<td>0.05 (0.7 grains)</td>
</tr>
<tr>
<td>2</td>
<td>Pulv. nuc. vomic</td>
<td>0.02 (0.3 grains)</td>
</tr>
</tbody>
</table>

Sig.—As above.

Should diarrhea be present the magnesia and rhubarb in these formulas may be substituted by bismuth. salicyl. If the patient's tongue be coated, calomel in fractional doses may be ordered for three or four days (0.001 to 0.02 grams of calomel to 0.5 grams of sugar of milk). In obstinate constipation small injections of glycerine are indicated.

DUMBNESS OR CONGENITAL APHASIA WITHOUT OBVIOUS MENTAL DEFECT OCCURRING AS A FAMILY TYPE.

Harold N. Moyer described before the Chicago Medical Society, October 26, 1898 (Chicago Medical Recorder, November 15, 1898) the case of a boy 9 years of age, who had spoken only one word, mamma, before he was 8 years of age. He was otherwise bright and intelligent and
could hear well. In spite, however, of the utmost efforts on his part he could emit no articulate sounds with the exception of the single word mentioned. Inquiry into the family history showed that the father had been similarly affected, not speaking a word until he was 6 years of age. He subsequently developed a good command of language, and later in life occupied a responsible position as superintendent of a manufactory. Two other children in the family, both boys, showed the same defect, although they learned to speak earlier—in both language began at 4 years of age. Both of these children occupied a station in life above that of the parents, and both showed an excellent command of language. One of these children learned to speak fluently within three months after speech began. A paternal uncle and one of his children were affected with lalling all their lives. The doctor referred to some of the classical examples of sudden speech in those who had been previously dumb. He also referred to Bastian's theory of the development of speech. The extreme rarity of the condition was shown by the fact that of over 4,000 mutes in Ireland, only 7 presented dumbness without either imbecility or deafness.
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