MEDICAL DISEASES OF CHILDREN.

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1. The health of the milk yielder.

O. Klemm has published (*Jahrb. f. Kinderheilk*, 1898, Bd. xlvii., p. 1) a very thoughtful, if rather wordy, address on what he calls the "ground principles" of infant feeding. His thesis is that the whole secret of feeding infants successfully lies in seeing that the yielder of the milk (whether mother or cow) upon which the child lives is in thoroughly good health. If an infant at the breast does not thrive, has dyspeptic symptoms, or shows a tendency to become rickety, the first thought of the physician should be not to prescribe cow's milk or some patent preparation, but to ascertain whether the milk yielded by its mother may not be at fault, owing to her bad health, bad habits, or nervous temperament. As he very truly says, the contrast between the good condition of an infant who is dragged up by its mother without any great care, and the failing health of another infant whose mother is most careful and most anxious, is often very striking. He explains, with some rather metaphysical discussion as to the influence of the *psyche* on the nutrition in general and the secretion of milk in particular, that the mother's anxiety to do well by her infant may itself be the cause why it does not get on. He quotes with approval, though he is too polite to subscribe to it altogether, the saying, "Die Amme soll wie eine Kuh sein"—"The wet-nurse should be like a cow." He took some pains to verify these *à priori* views by analysing a number of specimens of milk. In the case of thirty-seven women, of whom some had healthy, others rickety infants, others infants who were below the normal in development without obvious evidence of disease, he always found, if the infant were becoming rickety or were otherwise not doing well, that the milk in some way departed from the normal standard. As a rule, the proportion of proteids was too low and that of milk-sugar too high. The most original point in his paper is the observation that the proportion of iron present in the milk of women whose infants were not doing well was always below the normal. The proportion even in the milk of a healthy

woman in the earliest months of lactation, at which period it is highest, is very small (0·0005 per 100 milk); and it apparently tends to decrease as lactation advances, for in the sixteenth to the eighteenth month of lactation he found it only one-fifth of the amount present in the earliest milk. It must be remembered, however, that an infant over the age of three or four months drinks about three times as much as an infant under one month, so that the total dose of iron would be not very much below that received during the first months. In the milk of mothers who have infants who are weakly or rickety the proportion of iron may fall as low as one-tenth of the normal, independently of the stage of lactation reached. The indication then, in many cases in which advice is sought for the infant, is to treat the mother, her body or mind, and, in particular, to treat anæmia, if present in her. If the infant is being fed artificially, a change of milk will probably be advisable, although the proportion of iron in cow's milk does not, it would seem, vary so much as in the human species.

2. Tuberculosis and milk.

The importance of tuberculosis as a factor in the causation of the high mortality of infancy and early childhood seems at length about to receive the attention which it deserves. Sir Richard Thorne recently (*Brit. Med. Journ.*, Nov. 12, 1898) dwelt on the fact that during the last half-century there had been an immense reduction in the death-rate from many forms of tuberculosis, notably phthisis, in connection with great sanitary improvements that had been effected; and he pointed out that infants and children ought, according to all experience, to have benefited correspondingly. But when the death-rates from tabes mesenterica—a form of tuberculosis in which the infection is received into the alimentary canal instead of the lungs—was examined, it was found not only that all the gain attained at other ages had been lost in the case of children and infants, but that, in addition to this, there had been a very heavy increase in deaths under one year of age from this cause. This increase had gone hand in hand with a steady increase in the consumption of cow's milk as a food in England. English people were almost the only civilised nation in the world who habitually consumed uncooked milk. He showed from official returns how large was the amount of tuberculosis amongst milch cows, and, quoting the report of the Royal Commission on which he had served, he explained that the artificial conditions under which milk was now produced in cow-houses—which the animals sometimes never left for a moment during a period at times reaching a whole year—were precisely those most certain to produce that increase of this

disease in cows which had been going on. Fortunately, the immediate danger to man was limited to the existence of tuberculosis in the cow's udder; but the early stages of this affection were most difficult to detect, and it was a form of tuberculosis which tended at times to spread with great rapidity. The danger to man, and especially to the infant population, was one of real gravity, and the loss of child life due to this disease in milch cows was appalling. He urged that English people should be educated to cook milk before using it, since if milk were boiled for a single instant the danger of tuberculosis would be gone. **Delépine** (*Lancet*, 1898, vol. ii., p. 735) has recorded the interesting observation that, on examination by inoculation of the bodies of thirteen infants dying of marasmus, and specially selected because they afforded no naked-eye evidence of tuberculosis, nevertheless tuberculosis existed certainly in two, and probably in seven.

The municipality of Paris appointed some time ago a very strong Commission to investigate the subject of the milk supply. Its report has now been issued, and contains a special section by **MM. Budin, Comby, Miquel, Roux,** and **P. Strauss** on the artificial feeding of infants. It is pointed out (*Arch. de Méd. des Enf.*, Aug., 1898) that microbes may reach cow's milk either from the cow itself, if it be suffering from tuberculosis or aphthous fever, or with dust or dirt in the vessels, or with the water used to wash them. To insure that the milk shall be free from dangerous qualities, it is necessary to destroy the microbes that it contains, and the Commission express the opinion that the only practical and efficacious means of doing this is by heat. Further, the opinion is expressed that "methods of preserving milk by the addition of chemical substances are fraudulent practices, and often dangerous to the health of the consumer. They ought to be rejected." Refrigeration is useful to check changes in the milk during transport, but is not in itself a means of sterilisation. Pasteurisation—that is to say, heating the milk once to a temperature of about 60° C.—they condemn as insufficient to destroy the dangerous germs in the milk, though the process may be properly utilised under favourable conditions to facilitate transport. When circumstances permit the milk to be consumed within twenty-four hours, heating to 100° C. affords sufficient security. The milk should not be taken out of the vessel in which it has been heated, and should be kept in a cool place. If the milk is boiled in an open vessel, the cover should not be replaced until after it has cooled, as vapour of water rising from the hot milk condenses on the cold cover and forms drops, which carry down into the milk germs

and other impurities. If it is thought desirable to cover the milk while still hot, the lid ought first of all to be placed in boiling water. It is necessary to keep the milk in a cool place, because, though boiling kills nearly all microbes, there are some which resist that temperature, and will develop in the milk, and so produce changes in it, if the temperature of the air is sufficiently high, as may be the case during summer or in a warm room. The Commission, after expressing the pious opinion that human milk is always to be preferred for infants, goes on to recommend that cow's milk destined for the use of infants ought to be sent out in closed bottles containing enough for one meal. The bottles should be put into cold water, which is then brought to the boil and kept at that temperature for three-quarters of an hour. When the infant is to be fed, the bottle of milk is to be warmed in water. If it be considered desirable to dilute the milk, this must be done before the milk is sterilised in the bottles in the manner above described. Milk remaining in a bottle should not be kept and given to the child later. After use, the bottles should be cleaned with soda or soap and water to remove the fatty particles, and then rinsed at the tap. Great importance is attached to this cleansing. If one or more unopened bottles remain over from the previous day's supply, they must be heated again for three-quarters of an hour in boiling water. Much importance is attached by the Commission to the following clause in its report: "When the milk must be kept for more than twenty-four hours before it is consumed (preserved milk), it ought not to contain any living microbe. In practice this result can be obtained by a single heating to 110° C. (230° F.) for a sufficiently long time, or by discontinuous heating at a lower temperature. Milk heated under these conditions does not lose its nutritious qualities." Milk preserved in this way may be given to children and infants, but before doing so it is necessary on every occasion to make sure (1) that its appearance is good—that is to say, that its colour is not too dark, that it is not clotted, and that it has the normal appearance of milk; (2) that when the bottle is opened no gas or bad odour is given out; and (3) that it has not any disagreeable taste. If the cream has risen to the surface, it must be redistributed by shaking the bottle after it has been warmed. Milk thus preserved should be poured directly into the feeding-bottle, which should previously have been thoroughly cleansed and treated with boiling water. If it be necessary to dilute the milk, boiled water should be used for this purpose.

3. The nutritive value of artificial foods.

Lamtling, of Lille (*Arch. de Méd. des Enf.*, Sept., 1898), in the

course of an elaborate study of diet and nutrition at various ages, expresses the opinion that, after weaning, the food of a child should be modified progressively, by diminishing the amount of the fats and increasing the amount of the carbohydrates. In discussing various patent foods, which are now so largely employed, he states that they are, as a rule, much too poor in albumin and in fats to be considered complete foods, or even to form the preponderating part of the diet. Without taking into account their deficiencies in salts, they do not supply the minimum quantity of albumin required by the infant, which is proportionately high, and the three categories of a perfect diet—albumins, fats, and carbohydrates—are imperfectly combined. The body is constantly losing both matter and energy, the expenditure of energy in the child is about thrice that of the adult in proportion to its weight; for instance, a child weighing 18 kilos. loses 1,490 calories per square metre of surface, whereas an adult weighing 67 kilos. loses 1,550 calories per square metre of surface, so that, in proportion to its weight, the infant loses two to three times as much heat as the adult. The infant needs a larger proportion of albumin. He gives the following table, showing the mode in which an infant fed on the following foods obtains its energy. For every 100 calories it obtains :—

	From the albumins.	From the fats.	From the carbohydrates.
With human milk	18·7	52·9	28·4
„ Nestlé's food	10·6	10·6	78·8
„ Morton's food	10·4	14·2	75·3
„ le Racahout	2·9	14·3	82·8
„ la phosphatine Falières	2·2	4·2	93·6
„ la farine Dutaut	2·9	0·2	96·9

He considers that these various powders are "too poor in albumin, and still more too poor in fat; they are of value only for the carbohydrates; some of them are not, in fact, anything more than a mixture of sugar and starch"; as an addition to diet they have one advantage which is not to be despised, namely, that they introduce some variety into the dietary of the infant and young child.

4. The digestive ferments.

The activity of the digestive ferments in various diseases of infants and children is a question of a good deal of importance in treatment, but it is not one as to which very much is known. Considerable interest, therefore, attaches to a paper by **Jakubowitch**, of St. Petersburg (*Jahrb. f. Kinderheilk.*, Bd. xlvii., p. 195), who made a detailed examination in fifty-three children, of ages varying

from five days to twelve years. The patients died of various diseases, acute and chronic, and the glandular tissue was in all cases obtained not more than two hours after death. The experiments were directed to ascertain the degree of activity of the peptic digestion of the mucous membrane of the stomach, and of the action of the pancreatic extract on albumins, starch, and fat. The first conclusion to which Jakubowitch comes is that the digestive ferments of the child retain their active properties for some time after death. The peptonising ferments both of the stomach and of the pancreas were in all cases found to be enfeebled, but in some cases much more than in others; thus, they were practically absent in cases in which death had been brought about by congenital syphilis, by tuberculosis, by typhoid fever with dysenteric complitions, and by hydræmia. They produced a fair amount of digestion in cases in which death had been due to leukæmia, to scarlatinal nephritis and catarrhal pneumonia, but in the last-named disease the stomach was far more active than the pancreas. Similar differences between the stomach and pancreas were observed in infantile cholera, septicæmia, and one or two other diseases, whereas, in purulent pleurisy and in "dysentery" the pancreatic ferments were more active than the gastric. In a third of all the cases the emulsionising ferment of the pancreas was absent, and in the others more or less weakened. The sugar-forming ferments were in all cases very much less affected than the peptonising and emulsionising. **Moro** (*ibid.* p. 342), working under Escherich's direction, has also made some observations on the activity of the diastatic digestion in infants. He made ten experiments on the pancreas of infants dying at the ages from one to twenty-three days, and came to the general conclusion that the pancreatic extract, even at birth, has some diastatic action, but that its activity increases rapidly. The main purpose of his paper, however, is to describe a series of experiments on the degree of activity of diastatic ferments present in the intestinal contents and in the fæces of infants. He comes to the conclusion that, as a rule, they contain from the time of birth a diastatic enzyme, which increases rapidly in quantity during the first few weeks of life, and that this enzyme is secreted by the glandular organs of the intestines, traces of it being discoverable in the pancreatic extract from infants newly born. Perhaps the most interesting point in this paper, however, is the observation that human milk normally contains a saccharifying ferment, but that no such ferment is present in cow's milk. The ferment is present in the fæces and, according to Moro, accounts for a large part of the powerful diastatic properties of the fæces.

5. Treatment of gastro-enteritis.

The dietetic treatment of gastro-intestinal affections in infants has been reviewed at length by **A. Czerny** (*Rev. Mens. des Mal. de l'Enf.*, July, 1898, from *Allg. med. central. Zeit.*, Nos. 26 and 27), who expresses the opinion that there is at the present time complete agreement among physicians upon the following three points, and upon them alone: (1) The necessity of limiting the diet during the first twenty-four or forty-eight hours of an attack of acute gastro-enteritis; this limitation of the diet is of infinitely greater value than any treatment by drugs. (2) The necessity, in the case of those infants in whom artificial feeding causes dyspepsia, of replacing it by the breast. This usually succeeds, but in some cases the infant does not take the breast well, does not gain in weight and the symptoms of digestive disturbance persist, though they are less severe. He expresses the opinion that it is a mistake to be quickly discouraged because improvement is often very slow; so that if no more is done than to maintain the *status quo*, this ought to be considered a very good result, and adds that, in any case, it would be a mistake in such cases to replace the natural by artificial nourishment. (3) The value of a diet containing starchy foods for infants who are nearly a year old, and who, while taking relatively little milk, pass copious stools, containing a large quantity of mucus; a special form of enteritis exists in these cases, which is quickly recovered from if the child is given a diet consisting of starchy foods from which all albuminoid bodies are excluded. Beyond these three points he considers that there is no general agreement, and expresses the following personal opinions: (*a*) That sterilised milk is not of more value in gastro-enteritis than milk which has simply been boiled for ten minutes. (*b*) That the milks devised by Gärtner and by Backhaus * are not well borne, more especially in those cases in which vomiting is present. (*c*) That the same is true of peptonised milks. It has never been proved that casein is difficult of digestion and assimilation. The failures which occur with all kinds of milk preparations are to be attributed to a want of definite information as to why dyspeptic infants assimilate badly not only albuminoids, but also fats and hydrocarbons. Czerny thinks that the only point absolutely established is the conclusion of Keller that in dyspeptic patients there is a general lowering of the power of oxidation; in consequence he thinks

* The mode of manufacture of Gärtner's milk was described in the "Year-Book of Treatment" for 1895, p. 183. Backhaus's method is a modification of Gärtner's, differing chiefly in this, that the "separated" portion is treated with rennet so as to get rid of curd. It is, in fact, a kind of whey-cream mixture.

that the diet in such cases should consist of substances which are easily oxidisable. **Guaita** (*Rev. Mens. des Mal. de l'Enf.*, August, 1898) considers that great importance attaches to the treatment of the early gastric symptoms; he gives at once a drachm of castor oil and repeats it in six or ten hours. On the following day he gives three doses of $\frac{3}{4}$ gr. of calomel, which are administered at intervals of an hour; in other cases he gives as much as four grains of calomel divided into four doses—two given with one hour's interval in the morning, and two with the same interval in the evening. If the gastric irritation be very intense, he commences with the calomel, which checks the vomiting, and gives the castor oil on the second day. Like Czerny, he prefers to give for the first one or two days nothing but boiled water, though there is no objection to giving lime water, or infusion of camomile, if the condition of the tongue, of the abdomen, or of the stools appears to call for these medicaments. In summer he allows as much as one ounce of cognac during the twenty-four hours, copiously diluted. If there is a tendency to diarrhœa, he prescribes infusion of cascarilla diluted with an equal quantity of water, or one of the following powders two or three times a day: calomel, gr. ss., bismuth subnitrate, gr. vij, salol, gr. iss. If the onset of the attack is marked by high fever and convulsions, Guaita applies an ice-bag to the head, and mustard plaisters to the limbs. In such cases he begins with a dose of calomel as large as gr. iss., and gives an injection of boric lotion. In spasmodic croup, which he has observed as a complication 88 times among 5,000 infants, he adopts the treatment above indicated, and has always observed the croup to cease after the administration of the castor oil or the calomel. This, he holds, proves it to be due to reflex irritation, starting from the stomach, so that it is unnecessary to invoke teething or worms to account for it. When convalescence is established, he gives a cod-liver oil mixture containing a small dose of phosphorus.

Marfan (*Arch. de Méd. des Enf.*, July, 1898) insists strongly on the necessity of restricting the diet of infants suffering from cholera infantum and acute gastro-enteritis to boiled water for a certain period at the beginning of treatment. He looks upon it as the most fundamental part of treatment. He points out that the fear that the infants will not bear this deprivation of nourishment is unfounded—what they will not bear is deprivation of fluid—and he lays it down as a rule that the quantity of milk withheld must be replaced by at least an equal quantity of boiled water. During the acute stage of these diseases all kinds of

food undergo decomposition in the gastro-intestinal canal. The main action of the boiled water is that it arrests all gastro-intestinal putrefaction; at the same time it gives the stomach and intestines rest, it relieves the thirst, which is often very great, it maintains diuresis, which it is essential to maintain to ensure elimination of toxins, and it stops the dehydration of the tissues, which in acute gastro-intestinal disorders is always very marked. The water ought to be boiled for a few minutes, and should be kept in the vessel in which it has been boiled. It should be given cold in a bottle or cup previously thoroughly cleaned in boiling water. For the first few hours no addition should be made to the water, but if after a trial the infant does not take the pure water freely, a little sugar may be added, but in no case should any albuminous substance be given in it. In a serious case of gastro-enteritis this restriction to water alone should last for at least twenty-four hours; if the child is then better, if vomiting has ceased, if the diarrhœa has very much diminished, if the temperature is nearly normal, it may be put to the breast every four hours, or it may be given, if brought up on the bottle, small quantities of sterilised milk, diluted with an equal quantity of sweetened water; the boiled water should still be given in the intervals between these feedings. If the improvement has not been conspicuous, nothing beyond the boiled water should be given for another twenty-four hours. If relapse occurs, the milk must be withdrawn again and boiled water alone given. Marfan says that the improvement on this watery diet is often so rapid that there is a temptation to resume feeding with milk too soon. If a case is seen late, he recommends, in addition to the diet of water, subcutaneous injections of normal saline solution, and the use of hot baths at 96° F. These baths exercise a sedative influence, lower the temperature, stimulate the skin, and favour diuresis. If during convalescence diarrhœa continues, he gives minute doses of calomel, or small doses of bismuth subnitrate. In less severe attacks of gastro-enteritis the water diet is valuable especially in those cases in which the gastric symptoms (vomiting, etc.) are prominent. Marfan says that, as a rule, even cachectic infants usually bear the water diet well, though it may be necessary to stop it after eight or ten hours. **Mongour** (*ibid.*) arrives at the same conclusion, but he has maintained an absolute diet of water for as long as six days. Other French writers prefer to render the water faintly alkaline, or to administer a natural alkaline mineral water, such as that of Vichy or Vals.

6. Acetonuria in gastro-enteritis.

The occurrence of acetonuria in gastro-enteritis is a subject to which **Vergely** has recently called attention (*Rev. Mens. des Mal. de l'Enf.*, Jan., 1898). He gives a series of cases and draws the conclusion that acetone, diacetic acid, and beta-oxybutyric acid are frequently present in the urine of infants and children suffering from digestive derangements. The symptoms of a typical case described by him are nausea or vomiting, complete anorexia, great thirst, extreme restlessness and excitability, and a peculiar sweet odour which may be detected in the breath and in the urine. The bowels then may be constipated, and diarrhœa is not a prominent symptom. When convalescence has commenced, the odour disappears from the breath, but persists for some time longer in the urine. The attack is accompanied by some fever, and at the onset the temperature may reach 103° or 104° F. In most cases it falls to normal in a few days and convalescence commences, but in some cases the fever continues for a week or ten days and a suspicion of typhoid fever is apt to be raised. The state of nervous excitement, however, is quite different from the hebetude or muttering delirium of typhoid fever. The complex of symptoms—(1) Gastric disorder with some fever; (2) sweet odour of urine; (3) restlessness, talkativeness, and insomnia—are in Vergely's opinion characteristic. **Professor Deniges**, who estimated the amount of acetone, found in one case as much as 10·5 per litre of urine. In this case the urine also contained beta-oxybutyric acid in the proportion of 6·87 per litre. In another case Deniges found acetone 5 grm., and beta-oxybutyric acid 7 grm., in a litre of urine. Vergely believes that beta-oxybutyric acid, diacetic acid, and acetone present in these cases may be formed in the alimentary canal by the action of micro-organisms on the albumins and sugars of the food. Since in young children the emunctories are usually healthy, the toxic bodies are quickly eliminated and the prognosis is good, but relapses are not uncommon. The treatment should be simple; a few doses of rhubarb and soda or magnesia, preceded, if the patient is seen in the earliest stage, by an emetic. The diet should be carefully regulated by the elimination of the meat, fish, eggs, and milk—that is to say, it should consist solely of carbohydrates. If the patient is restive under this diet, weak soups may be given, but the best drink is an alkaline water such as that of Vichy or Vals, freely diluted.

7. Intestinal astringents.

Koelzer reports from Heubner's clinic, in Berlin, the results of a series of clinical observations on the action of intestinal astringents (*Jahrb. f. Kinderheilk.* Bd. xlvi., p. 280). The drugs

used were tannigen (di-acetyl-tannin), tannalbin (a compound of tannic acid with albumin), and tribenzoylgallic acid, but the results of his investigation would appear to be applicable to other remedies of the same class. In Heubner's clinic cases of intestinal disorder are classified according to the character of the stools, as (1) dyspeptic (green with much mucus); (2) intestinal catarrh (watery diarrhœa); (3) enteritis (stools containing mucus, many cells, and often blood or pus). Class (1) is believed to be due to abnormal decomposition of the contents of the intestine, with slight irritation of the intestinal mucous membrane; classes (2) and (3) to primary changes in the mucous membrane. The first general conclusion at which Koelzer arrives is that the astringent remedies have a very marked effect, if they can be brought to act in the right place. They are essentially local remedies, and their action must be reinforced by regulation of the diet, and by remedies directed to the relief of the general symptoms. He finds that the astringents enumerated are useful in the treatment of the local sequelæ of acute dyspepsia, and in simple intestinal catarrh if the diet is regulated at the same time. They are untrustworthy in chronic dyspepsia and in true enteritis. They have no influence, either good or bad, on the general symptoms due to intestinal disorders, except in so far as by checking the local affection they may indirectly tend to lessen the general symptoms. Tannigen and tannalbin are of about equal strength, and the amount found necessary for an infant was 7 to 8 gr. a day in four doses; tribenzoylgallic acid contains about 35 per cent. of gallic acid, which is liberated in the presence of alkalies, so that gallic acid is formed in the intestines soon after the point at which the pancreatic juice enters. The dose should be twice as great as that of tannigen. It was often found advantageous to combine with these astringents small doses of calomel, and this was particularly the case in treating the sequelæ of acute dyspepsia. **Goundobine** (*Arch. de Mal. des Enf.*, 1898, p. 309), who speaks highly of tannalbin as a remedy for entero-colitis, subacute enteritis, and acute enteritis of infants and children, and for the acute dyspepsia of infants, gives to an infant gr. iss from twice to four times a day, and increases the dose by 1½ gr. for each year of life.

8. Coryza.

Coryza in infants is often a condition of considerable importance, owing to the fact that it interferes with sucking, and may even render it impossible. Further, it is probable that it favours the occurrence of bronchitis and broncho-pneumonia, owing to the inhalation of infective nasal mucus during strong inspiratory efforts.

It is often exceedingly difficult to treat, owing to the smallness of the nostrils and the difficulty of getting a view of the parts. **Nägerli-Ackerblom** (quoted *Jahrb. f. Kinderheilk.*, Bd. xlviii., p. 351) believes that the use of brushes, etc., to make applications to the interior of the nose, is not free from danger when the operator is not guided by the eye, and states that for the last six years he has used with great success a 2 per cent. solution of cocaine (in equal parts of glycerine and distilled water). A drop of the solution is dropped into each nostril three or four times a day with a dropper. The power of breathing through the nose is, he says, rapidly regained under this treatment.

9. Venesection.

Baginsky (*Berl. klin. Woch.*, May 23, 1898), in an address delivered before the Berlin Medical Society, spoke out very strongly as to the value of venesection as the best remedy for one condition in childhood which may be brought about in more than one way. He said that when from any cause the circulation threatens to be arrested, owing to failure of the action of the heart against obstruction, venesection is as distinctly indicated as is tracheotomy or intubation in stenosis of the larynx. He related several cases in illustration of the condition to which he considers the treatment to be applicable: one case was that of a girl, aged seven and a half years, admitted after eight days' illness into the hospital, with the diagnosis of inflammation of the lungs and heart failure; there was marked cyanosis, extreme dyspnœa and orthopnœa, the pulse was imperceptible at the wrist, and the heart's action was irregular. Slight improvement took place after hypodermic injection of camphor, inhalation of oxygen, and strophanthus internally; the child, however, continued very ill, and had occasional exacerbations of the dyspnœa, during which the "air-hunger" was intense. Forty-eight hours after admission 120 c.c. (a little over 4 fl. oz.) of blood was withdrawn by venesection. While the blood was flowing the extreme cyanosis disappeared, the lips became red, the pulse distinctly perceptible, and the breathing quiet, while the general condition of the child was altogether changed. The venesection was made at mid-day, and at five p.m. the breathing was again somewhat difficult, and a leech was applied over the left mastoid; from this time the child steadily improved, and eventually recovered. Another case of a boy, aged nine years, was of a similar character, but the effect of venesection to between 3 and 4 fl. oz. was equally prompt and more permanent. In a third case, a girl, aged seven years, admitted almost moribund with extreme dyspnœa, associated with the onset of measles, the free opening of the median vein at first in the

right, and afterwards in the left arm, led to the loss of only a few drops of blood. The left radial artery was then opened and nearly 3 oz. of blood were withdrawn; this was followed by immediate relief to the symptoms, and the child ultimately recovered. He referred, also, to some cases in which venesection did not save life, and expressed the opinion that venesection only acted mechanically and had no influence on the course of the disease which brought about the heart failure and dyspnœa. It fulfilled, however, the immediate indication to relieve the circulation, and might thus save life. Baginsky also spoke of the value of leeching in certain cases in children, and expressed the opinion that it was particularly indicated in infantile convulsions which do not yield to other treatment, and in uræmic eclampsia. In one case which he mentioned of acute nephritis in a girl, aged eight, the child, in spite of active treatment, had passed into a moribund condition, with coma and Cheyne-Stokes respiration. Six leeches were applied to the head, the convulsions ceased, and the child eventually recovered.

10. Pneumonia.

Söderberg (quoted *Jahrb. f. Kinderheilk.*, xlviii., p. 365) strongly recommends pilocarpin in the treatment of acute pneumonia and other "croupous diseases," for example, membranous laryngitis. He reports ten cases of acute pneumonia, six of them in children, treated with this drug; all recovered, and the duration of the disease was considerably reduced (from seven or eleven days to twenty-four or sixty hours). In a case of membranous laryngitis the patient was out of danger in less than two hours; a case of "croupous bronchitis" terminated in a day and a half. In acute pneumonia the symptoms became very much milder after the first dose of pilocarpine, and the pain disappeared in a few hours. Perspiration and salivation were marked, but no disquieting symptoms of collapse were observed, so that he considers the treatment to be free from danger. He gave the drug internally in watery solution, and in some cases administered at the same time alcohol or digitalis or strophanthus, when these drugs appeared to be necessary. Relapse he met by giving small doses of pilocarpine for a few days. **Schlesinger** (*ibid.*) found the mortality of 173 children treated in the Kaiser und Kaiserin Friedrich Children's Hospital, in Berlin, to be only 4 per cent. The treatment which gave the best results when the temperature was high was the moderate and careful use of the cold pack. The careful administration of stimulants, especially alcohol, was also looked upon as important.

11. Influenza in childhood has been studied by **Furst** (*Rev. Mens. des Mal. de l'Enf.*, Jan., 1898). He describes a period of

depression, with some nasal catarrh, and slight dry cough preceding the onset of the fever. It may last, he says, eight or ten days, and he speaks of it as the period of incubation, although it may be observed that this period, in the adult at least, is generally much shorter. The onset of the pyrexia is marked by shivering, the voice becomes hoarse, deglutition is sometimes painful, the nasal catarrh increases, and there is some dyspnœa; constipation is the rule, and in many cases there is severe headache, though in infants this may be replaced by convulsions. He believes that treatment may have a very material influence in cutting short the disease, and of all internal drugs prefers salipyrin, which he looks upon as almost a specific. At ages from five to ten years he gives 4½ gr. thrice a day; from ten to fourteen years, 15 gr. thrice a day. After a couple of days it will usually be sufficient to give only two doses a day. Salypyrin was originally made by Lüttke by heating together equal molecular weights of salicylic acid and antipyrin. It was first recommended as a remedy in acute rheumatism, but Von Monsengeil some years ago said that he found it most useful in influenza, especially in influenza with little or no elevation of temperature, as it did not produce the depression which antipyrin itself is apt to cause. Furst treats the pharyngitis and rhinitis, which are often the most troublesome symptoms of influenza in childhood, by pulverisations. For this purpose he prefers a 2 per cent. alcoholic solution of rectified turpentine, although he employs also a mixture of menthol, eucalyptus, and cocaine in a suitable menstruum.