cially an albumose derived from certain specimens of pepsin. Dr. Hare had tested antifebrin on animals suffering from this artificial fever with a similar result. It should be added that in the experiments in which they obtained a reduction in the rate of heat production they also observed a diminution (though a smaller one) in the rate of heat loss. Dr. Wood had, moreover, assured himself that the result was apparently unaccompanied by any measurable effect on the circulation, at least when the antipyrin was given in therapeutic doses.

Lastly, two out of many inquiries into the effect of the drug on metabolism, as evidenced by the excretions, were considered. One by Robin, communicated to the French Academy, was vitiated by faults of method, inasmuch as it did not appear that any precautions were taken to secure nitrogenous equilibrium in the patients observed; still, the results, taken for what they were worth, were suggestive. Robin found, by examination of the urine of healthy and diseased persons before and after taking antipyrin, that the drug in health always diminished the urine, the total urinary solids, the urea, and the chlorides, and that it increased the uric acid. In acute (febrile) diseases these effects were less marked than in health, and varied somewhat with the particular disease. The conclusion he derived from his chemical examination was that antipyrin acted directly on the nervous system, lowering its excitability, and diminishing the catabolic and oxidative changes in the tissues.

A far more careful investigation had been carried out in 1886 by Riess, of Berlin, on typhoid patients. He chose patients in the height of the fever, and their diet and other circumstances being so regulated as to make the successive days comparable, he measured the entire excretion of nitrogen during nine consecutive days. During three days the fever was left untreated; for the next three the temperature was kept down by antipyrin; and for the last three it was allowed again to rise. The result was, briefly, that the nitrogen excreted during the days under antipyrin, when the fever was suppressed, was less by 15 to 30 per cent. than during the days before and after, when the fever was allowed free course.

ON THE TREATMENT OF HABITUAL CONSTIPATION IN INFANTS.

By EUSTACE SMITH, M.D. F.R.C.P.,
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SLUGGISHNESS of the bowels in infants is a common source of trouble in the nursery, and the derangement is one which it is not always found easy to overcome. Occasional aperients in such a case give only passing relief. The bowels, indeed, are unloaded for the time, but when the action of the aperient is at an end, they are left no less sluggish than before. Habitual constipation is very common in infants who have been brought up by hand; and on inquiry, the trouble will often be found to date from the time at which bottle feeding was begun. Still, infants at the breast are not exempt from this annoying derangement. A deficiency of sugar in the breast-milk, or, as is sometimes seen, a milk the curd of which makes a firmer clot than is common in human milk, will often cause habitual torpor of the bowels which resists treatment with some obstinacy.

It is, no doubt, to improper, or at any rate inappropriate, feeding that the bowel trouble is usually to be referred. An excess of starch in the diet, or any food which overtaxes the child's digestive power and thus burdens the alimentary canal with a large undigested residue, may set up the costive habit. By such means a mild catarrh of the intestinal mucous membrane is excited and maintained. There is excess of mucus, and the faecal masses, rendered slimy by the secretion, afford no sufficient resistance to the contractions of the muscular coat of the intestine, so that this slips ineffectually over their surface.

Another cause of constipation is dryness of the stools. Even in the youngest infants the evacuations may sometimes be seen to consist of little round hard balls, often the size of sheep droppings, which are passed with difficulty every second or third day. This form of costiveness is generally due to insufficiency of fluid taken. The food is made too thick, or the needs of the system in the matter of water are in some way overlooked. But whether the constipation be due originally to excess of mucus or deficiency of fluid, it cannot continue long without affecting injuriously the peristaltic movement of the bowels. As the colon

grows accustomed to be over-loaded, the intestinal contents can no longer exert a sufficiently stimulating influence upon the lining membrane, and the muscular contractions begin to flag. If the infant be poorly fed and badly nourished, this languor of muscular contraction may be aggravated by actual weakness of the muscular walls; and as under these conditions the bowel is apt to be over-distended by accumulation of its faecal contents, the expulsive force at the disposal of the patient is seriously impaired. Constipation, resulting from the above causes, is often made more obstinate by the infant's own efforts to delay relief. A baby whose motions are habitually costive knows well the suffering which undue distension of the sphincter will entail, and often yields to the desire to go to stool only when it is no longer possible for him to resist it. The pain is sometimes aggravated by the formation of little fissures about the anus, and the violent contraction of the sphincter set up by the presence of those fissures forms an additional impediment to free evacuation.

There is another form of constipation in infants which we should be always vigilant to detect. This is the torpidity of the bowels induced by opium. In well-to-do families the use of soothing syrups and other narcotic preparations is now less common than was at one time the case; but now and then we find a baby drugged for reasons of her own by an unscrupulous nurse, and showing the earlier symptoms of narcotic poisoning. So long as the sedative continues to be given the bowels are costive, the child often vomits, his relish for food in great part disappears, and he lies with pupils firmly contracted in a dull heavy state, from which he cannot easily be roused. In young babies the use of opium seems to lessen the action of the kidneys, the urine is scanty, and on examination of the surface of the body the healthy elasticity of the skin will be found to be seriously impaired. When pinched up between the finger and thumb the skin lies in loose folds on the abdomen or only slowly recovers its smoothness. If this inelasticity of skin be noticed in a baby whose pupils are closely contracted, and who seems habitually heavy and drowsy, with little relish for his food, it is well to remember that these symptoms may possibly be due to the action of a narcotic.

An infant whose bowels are habitually costive is not necessarily injured by the want of a daily relief. Often the child seems perfectly well in health, and, except for occasional local discomfort when he gets rid of an unusually large or hardened mass, may appear to suffer no inconvenience at all. In other cases there is flatulent distension or frequent colicky pain, the child sleeps badly, has a furred tongue, and cares little for his food; the motions are often light coloured from undigested curd, and are passed with violent straining efforts, during which the bowel may prolapse or the navel start. This straining is a not uncommon cause of hernia.

In remedying this condition attention to the feeding and clothing of the baby is of little less moment than the use of drugs. When the infant is at the breast a teaspoonful of syrup given three or four times a day before a meal will often quickly restore the normal regularity of the bowels. If the stools are habitually dry and hard, we should see that the child takes a sufficiency of liquid with his food. In addition, it is useful now and then to make him drink some plain filtered water. In the case of a baby in arms, the possibility that the child may be thirsty and not hungry seems rarely to be entertained; but in warm weather, when the skin is acting freely, the suffering amongst young babies from want of water must often be acute. At such times the urine is apt to be scanty and high-coloured, and may deposit a streak of uric acid on the diaper. When fluid is supplied, the secretion both from the bowels and the kidneys quickly becomes more healthy; and a dessert-spoonful of some natural saline aperient water, given at night, aids the return of their natural consistence to the stools.

The form of constipation which is due to mild intestinal catarrh is common enough in young babies. This is owing, no doubt, in great measure to over-abundant feeding with starchy matters, or to the giving of cow's milk without taking due precautions to ensure a fine division of the curd. Still it cannot be denied that we sometimes find the same derangement in infants whose diet is regulated with proper care and judgment. In them the intestinal catarrh is frequently the consequence of exposure, for the sudden withdrawal of all protection from the lower limbs and belly which the process known as "short-coating" too commonly involves is a fruitful cause of chill. In children so denuded, the feet and even the legs as high as the knees may be quite clammy to the touch. Under such conditions the susceptibility of the patient to alter-

nations of temperature must be extreme, and the bowels are, no doubt, often kept in a state of continued catarrh from rapidly recurring impressions of cold.

Where the constipation is due to this cause our first care must be to protect the infant's sensitive body so as to put a stop to the series of catarrhs. To do this it will not be sufficient to swathe the belly in flannel. The legs and thighs must also be covered, for a lengthened experience of these cases has convinced me that so long as a square inch of surface is left bare the protection of the child is incomplete. We should next see that the infant's dietary is regulated with due regard to his powers of digestion. Excess of starch must be corrected, and it is best to have recourse to one of the malted foods. Mellin's food is especially valuable in cases where there is this tendency to constipation, as in many children the food has a very gentle laxative effect; but as Mellin's food contains no unconverted starch, and can do nothing to prevent the formation of a dense clot when the curd of milk coagulates in the child's stomach, it is advisable, when giving it with milk, to ensure a fine division of the curd by the addition of some thickening material such as barley water. A child of six months old will usually digest well a good dessert-spoonful of Mellin's food, dissolved in milk, diluted with a third part of barley water. A certain variety in the diet is of importance in all cases where the digestive power of the infant is temporarily impaired. Therefore, it is advisable to order an additional food to be given alternately with the Mellin and milk. Benger's "self-digesting food" is useful for this purpose, and rarely disagrees. It must be given, like the Mellin, with cow's milk, but without the barley water, for the pancreatine it contains has a digestive action upon the curd, and removes the tendency of the latter to firm coagulation. In addition to the above, if the child has reached the age of ten months, he may take a meal of veal broth or beef-tea once in the day, and with this it is advisable to give some vegetable, such as broccoli or asparagus, thoroughly well boiled. At this age, too, the milk for the morning meal may be thickened with a teaspoonful of fine oatmeal, and sweetened with a teaspoonful of malt extract. In the case of many infants suffering from habitual constipation, the appetite is very poor, and great difficulty is found in persuading them to take a sufficient quantity of nourishment. This indifference to food is almost invariably associated with coldness of the extremities, and usually disappears when measures are taken to supply necessary warmth to the feet and legs.

In all cases where an infant's bowels are habitually costive, it is of the first importance to enter thoroughly into these questions of clothing and diet. In addition, care should be taken that the bowels are regularly stimulated by manipulations from without. The sluggishness of peristaltic action which forms a part of every case of habitual constipation may be very materially quickened by judiciously applied frictions. The nurse should be directed to rub the child's belly every morning after the bath. She should use the palm of the hand and ball of the thumb, and, pressing gently down upon the right side of the abdomen, carry the hand slowly round in a circular direction following the course of the colon. The frictions may be continued for five minutes. In obstinate cases the child may be laid down upon the bed, and the bowels gently kneaded with the thumbs placed side by side; but in this case, too, the movements should follow the course of the larger bowel.

In addition to the above treatment, more special measures have often to be employed. These may be divided into two classes: the class of suppositories and injections, and that of remedies given by the mouth.

The class of suppositories and injections aims at producing an immediate evacuation of the bowel, and in no way tends to promote more regular action in the future. These remedies are, therefore, useful in clearing the way for further treatment, but there their value ends. A suppository of Castile soap introduced into the rectum is a time-honoured method of inciting an evacuation in the child. Another old-fashioned plan has lately been revived, which consists in the injection of forty or sixty drops of pure glycerine into the lower bowel. In each case energetic peristaltic action of the alimentary canal is induced, and the bowel is thoroughly emptied of its contents. Of these applications the action of the glycerine is very rapid, and in a few minutes the effect of the injection is seen. The soap suppository acts more slowly.

Injections of soap and water, or other liquid, have an entirely mechanical action in relieving the patient. To be effectual such injections must be large, consisting of at least half a pint of

fluid, and should be thrown very slowly into the bowel. Still, although of service when given only occasionally, the frequent use of large injections is not to be recommended; indeed, this method of treatment is distinctly hurtful in cases where the costiveness has become a habit. Even in young babies great dilatation of the bowel and serious weakening of its muscular coat have often followed the daily use of the enema pump.

For the permanent cure of habitual constipation remedies given by the mouth are greatly to be preferred, but, at the same time, strongly acting purgatives are worse than useless. Our aim should be to find the smallest dose which will awaken a normal degree of energy of peristaltic action, and to give this dose regularly so as to induce a habit of daily evacuation. The daily dose is most efficacious when combined with a remedy which tends to give tone to the muscular coat of the bowel. For this purpose a useful draught is composed of half a drop of tincture of nuxvomica combined with ten drops of tincture of belladonna and twenty of infusion of senna, made up to a fluid drachm with infusion of calumba. This draught should be given at first three times a day before food, but soon two doses in the day will be sufficient, and it is rarely long before one dose given at bedtime has a sufficiently laxative effect. Our object is not to excite watery evacuations, but to induce as faithful an imitation as possible of a normal action of the bowels. The liquid extract of cascara is useful in many cases, especially if combined with tincture of belladonna. Twenty, thirty, or more drops of cascara extract, with ten of the belladonna tincture, may be given with a few drops of glycerine in a little water every night. In the west of England a remedy held in high esteem consists of half a grain of sulphur coloured red with cochineal. That this apparently insignificant dose is often efficacious when given regularly every night I can testify from my own experience.

In cases where the motions are drier than natural, as if from imperfect secretion of the intestinal glands, the addition of liquid to the diet, already recommended, may be supplemented by the administration of some saline aperient two or three times a day. This treatment is made more effectual when the saline is combined with small doses of nuxvomica and quinine. For a baby of 6 months old five to ten grains of sulphate of soda may be given with one quarter of a grain of quinine, half a drop of tincture of nuxvomica, and a minim of aromatic sulphuric acid, in a teaspoonful of water three times a day before food. As in all cases where the remedy prescribed has been chosen with judgment and given in appropriate quantity, the continued administration of this draught, so far from rendering the bowel dependent upon the medicine, stimulates it to act spontaneously, so that the dose has soon to be given less frequently, and in no long time can be discontinued altogether.

By means such as the above the most obstinate case of constipation in the infant can be cured with little difficulty, but to be successful the treatment must not be restricted to mere drug-giving. The food of the child must be regulated with care, his clothing must be inquired into, and his general management passed under review. Where this is done, drugs given in comparatively small doses will act with sufficient energy, and will soon restore their normal regularity to the bowels.

ACUTE SUPPURATION OF THE KNEE-JOINT TREATED BY CONTINUED IRRIGATION.

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ACUTE suppurative of a joint, as a result of injury, is becoming a less frequent surgical possibility. An improved method of treating wounds, a more exact acquaintance with the inflammatory process, and, above all, a fuller knowledge of the disposition of serous membranes, have all tended to make this condition comparatively uncommon. Some fifteen years ago it is probable that there were very few large accident wards that could not have provided an example of a joint in a state of acute suppurative. Although the condition is less frequent in occurrence, it is hardly less serious in result, especially where a large articulation is involved, and the inflammation is vigorously established. There may be no great risk to life or even to limb, but there is a prospect of long-continued trouble, and of a joint recovering with much impaired functions.