the worst attack he ever had, just on entering a first-class railway carriage; there was no other passenger, and, in despair, he sat down on the hot tin. In an instant, the pain was gone; and since then, when attacked, he flies to the fire and toasts himself, or applies an India-rubber bag full of hot water, with the best results.

In conclusion, let me point to the fact that, in all these and similar cases, medical treatment is worthless; and that the surgeon alone can effect a speedy and radical cure. I would, therefore, impress on our teachers of surgery the necessity of showing their class-pupils how to deal with common affections of the anus. The young practitioner too frequently begins his professional career with a competent knowledge of operations he may never be required to perform, and in total ignorance how to proceed in dealing with the simplest and commonest affections requiring operative skill.

ON THE FEEDING OF INFANTS DEPRIVED OF BREAST-MILK.

By GEORGE CRICHTON, M.B. Edin., Twickenham.

THE question of the feeding of infants is not settled by the simple formula of "milk and water" in certain proportions, or "milk and lime-water." It is a rule, not absolute, but of expediency. Cows' milk is not the best obtainable substitute for the sustenance generally provided by Nature. Asses' milk is acknowledged to be superior. Nevertheless, being universally obtainable, cows' milk will always form the important factor in any general rule on this subject of infant-feeding. But suppose the supply of this should fail? Suppose, as everyone, at least in towns, finds, cows' milk, if obtained fresh, be not of such good quality as may be desired, nor to be had in such quantity, then, I think, it must be permissible to advise the use of condensed or "Swiss" milk. It has, indeed, some advantages, *e.g.*, it turns sour less readily, and the supply is not so apt to run short. It is difficult to see why the addition of sugar only to the normal constituents in milk should make this, as has been said, less suitable than ordinary fresh milk; for cane-sugar is always added to the usual mixture of milk and water. Children of all ages can take in considerable quantities of sugar. I am of opinion that the amount of sugar in condensed milk makes no difference to a healthy child, but that, in those of inherited weakly constitution, whose digestive powers are feeble, or where even the slightest intestinal catarrh from whatever cause has arisen, it undoubtedly acts injuriously, and must be at once and entirely withdrawn. Is it not probable—at all events, it is possible—that, however carefully conducted, the process of manufacture has induced some slight change in the solid constituents, inappreciable except through the subtle alchemy of digestion? Suppose, for instance, some transposition of elements should make the casein less digestible. The various sugars have the same chemical formula, but properties varying considerably.

To return, however, to ordinary cows' milk: let us at once ask the question, Why do we add one-third or two-thirds of water? I mean, other than empirically. Because it would be too strong without, says the nurse, thinking of her brown tea-pot, as if milk were like tea, and had to be watered down to suit tender stomachs. But ought we not to give the little one the least possible trouble? and the more weakly the infant, ought not the diet to be as nourishing as we can make it? For instance, I have never found other than good from the addition of an extra teaspoonful of cream to every meal. Cream is supposed to be "rich," and is certainly indigestible in the cases of some "bilious" adults. But there are few children to whom cream is not beneficial. We do not, by the addition of so much water, come nearer to the proportions found in human milk. The quantity is too great. In fact, soon after delivery, human milk contains less water than ordinary cows' milk, in the proportion of 828 to 870. The amount of sugar, on the other hand, is greater, in the proportion of 70 to 47.7. Hence we easily see why sugar should be added. Again, the proportion of fat is 50 to about 31; therefore, cream should likewise be added. The casein, however, is in excess in cows' milk.

There can be no question as to the propriety of adding sugar and cream to cows' milk, to bring it nearer to a child's natural diet. As the composition of cows' milk varies in no particular more than in the proportion of butter it contains, doubtless, in some instances, the addition of cream may be scarcely necessary. As to casein, if we cannot easily abstract a portion of it, by the addition of water we may make it fall into a proper proportion, and accommodate itself to a suitable percentage. In such manner, we indeed get a

tolerable substitute for mother's milk: one that is found to answer fairly well. It may be that the somewhat excessive amount of sugar usually added makes up for the neglect in adding cream, both being heat-producers in the animal economy.

We have now approximated to the ideal milk. But, on account of the behaviour of the casein of cows' milk, practical experience obliges us to further water the milk. Our fine percentages are thus rather ruthlessly shaken.

Some months ago, I was summoned late in the evening to an infant five months old. It was in a condition almost of collapse, pale, with sunken eyes, and greatly depressed fontanelle. It had been fed since three months old with Swiss milk; the last week, with cows' milk diluted. It was sinking from diarrhoea. An injection *per rectum* of a few drops of laudanum checked the diarrhoea to some extent. Wine whey in teaspoonfuls frequently administered (it was unable through weakness to suck) revived it. This diet was continued for twenty-four hours, and the injection was repeated. Subsequently it was fed on equal parts of whey and bread jelly (white decoction of Sydenham), with a teaspoonful of cream in each meal. It recovered on this diet, and nearly regained infantile plumpness, suffering, however, occasional relapses of diarrhoea. Medicines did only some good, apparently answering fairly for three or four days, and then failing to have any effect. I found, as Dr. Eustace Smith points out, that changes of the drugs employed, or of the form in which administered, were effective. Opium, in various forms, and bismuth seemed most beneficial. Ultimately the diet was varied, *e.g.*, veal broth, yolk of egg, etc.

The point to which I would draw attention was the child's inability to digest milk. This was tried in the smallest proportions, alkalinised with bicarbonate of soda, with lime-water, and with barley-water. Condensed milk, which was said to have agreed with it before, was likewise tried. The common result was either a renewal of the intestinal catarrh, or else sickness. Yet everything else it took agreed. I mentioned above that it took whey and cream well, *i.e.*, de-caseinised milk.

Here, then, we have a case, not perhaps very rare, of inability to digest casein, at least, the casein found in cows' milk. Amounting almost to an idiosyncrasy, it nevertheless points very decidedly to one definite cause of infantile indigestion and consequent diarrhoea.

The comparative indigestibility of the casein of cows' milk depends upon its coagulation in one mass instead of in flakes, and the consequent difficulty—a chemical and mechanical one—of its re-solution. This occasionally happens with mothers' milk, and is apparently modified by the addition of water, lime-water, or bicarbonate of soda only (Vogel), to cows' milk.

It is apparent, from the foregoing observations, that the unsuitability of cows' milk unmixed depends upon the casein (1) as to its excessive amount; and (2) as to its rapid coagulability—so that extra stress is laid upon the delicate infantile digestive powers. It is, therefore, mainly in rectifying these two points that we may hope to obtain success. By means of a process suggested by Professor Frankland, more than twenty years ago, both these indications seem to be carried out. Many independent observers attest this, and to theirs I would add my humble opinion, drawn from closely observed cases. That the method is not in more universal use is, perhaps, to a small extent due to the want of sufficiently specific details as to its preparation. Having in this paper propounded queries, I may be permitted, in conclusion, to give (what I consider) the answer, by stating in detail how I am accustomed to have Frankland's process carried out.

In the morning, put half a pint of new milk into a convenient vessel, *e.g.*, a thin china breakfast-cup, and place it in a cool place. In the evening, skim it, preserving the cream; and into the skimmed milk put a piece of rennet an inch square, and stand the cup in a saucepan of hot water in a warm place. In from five to fifteen minutes, the milk curdles. Break up the curd with a spoon, remove the rennet (which will serve again), and pour off the whey. Boil the whey for a second, when a further curdling takes place; then strain the whey. To the quantity mentioned, add one quarter of an ounce of sugar of milk, the cream removed at the first, and one pint of new milk. The process is complete. It is generally sufficient to make it once a-day, though probably in larger quantity than we have taken for illustration. The process requires care; but, after a few trials, it is really very simple and easy. Of course, everything must be kept perfectly clean.

Some remarks are necessary on the procuring of rennet. This is not to be obtained through the ordinary channels. So-called "essence of rennet" will not do. Application must be made to the

family butcher for a fresh rennet. Should he have lived in the country, he will be able to prepare it for you. "A rennet," I may observe, is the term given by butchers to a calf's stomach. If not obtained ready prepared, the stomach is to be cleaned, with as slight washing as is absolutely necessary, and buried in salt. It is now ready for use, and keeps for an indefinite time. "Rennets" are easily to be procured in the cheese-making counties. I had at first some trouble in finding where to go to for a supply; one grocer, to whom I applied, advising me to try the corn merchants', understanding that rennet was some kind of seed. This must be my apology for entering into a somewhat trivial matter.

A little cream may be added, if the milk be poor. To sum up: we have in the result a milk containing sugar, fat, casein, and salts, in due proportions; and, more than this, although the explanation is not quite evident, a food perfectly digestible, which is, of course, the point to be regarded above all merely chemical considerations.

CASE OF ACUTE PERITONITIS FOLLOWING INTES- TINAL PERFORATION.

By WILLIAM JULIUS MICKLE, M.D., Grove Hall, Bow.

M. M., aged 45, formerly a soldier in the 17th regiment, was a helper at a laundry for some years, and had made no complaint of any malady whatever, although some mitral obstruction had been made out. Early one morning, complaining of constipation, he was given an aperient. After breakfast, the bowels were freely moved. Then, seeming well, he worked all day until about 4.30 P.M., when he felt abdominal pains, or "cramps," as he called them, coming on, returned to his ward, laid himself down, and looked pale. Next, he was doubled up, groaning, breathing noisily, and complained of "cramps" over the belly, which was tender, and which he would not allow one to examine. The pain was obviously intense. The pulse was frequent, and variable in this respect; somewhat sharp. Tincture of opium was given internally, and a light hot poultice and turpentine were applied to the abdomen. At 9 P.M., there was slight vomiting of food and mucus, and later of a greenish fluid.

Next morning, he lay either on his back or on the right side, with the knees drawn up. The pain was continuous, and he stated it to be worst along the middle line; the tenderness, however, was highly marked over the cæcum; and in both flanks were slight dulness on percussion, and doubtful obscure fluctuation. He was cruetating, and then spitting out in mouthfuls, a dark-greenish, flaky and flocculent, soup-like material, with brownish, soft, lather-like flakes floating on the surface. Temperature 99.7°; pulse 117, soft, feeble; respiration 38, somewhat laboured, moaning. No urine was passed. The bowels were not moved; the tongue was moist, with a greenish and brownish coat. The tips of the ears, nose, and fingers were chilly. The eyes were heavy; the face was of leaden hue. The pain was heavy and continuous, with exacerbations, during which it resembled the piercing of knives. There was no sign of tumour, strangulation, or intussusception of bowels.

I ordered him to have one-third of a grain of morphia hypodermically; also to take, each hour, five minims of tincture of belladonna, one minim of dilute hydrocyanic acid, and one-sixteenth of a grain of morphia. He took three doses of this. Half an ounce of milk was given every half-hour.—At 1.30 P.M., his nose was cold, his features collapsed; pulse feeble; prostration was advancing.—At 3 P.M., he was somewhat drowsy; respiration varied from 18 to 24, and the pulse from 110 to 120, feeble, soft, small, becoming imperceptible. The pupils were moderately contracted. The patient, in reply to inquiries, said that the pain was relieved. After this, he gradually became comatose, and the respiration irregular, jerking, as if by several contractions of diaphragm; and, later, hiccough came on. Brandy was given by the mouth, and it and carbonate of ammonia by the rectum, while heat was applied to the feet. The pulse remained at from 110 to 120, and death occurred at 5 P.M., or twenty-four hours and a half after the first complaint of abdominal pain.

Necropsy.—Omitting most of the parts examined, it need only be said that the abdominal cavity contained some turbid fluid, partly escaped from the bowel, and with sanguineo-purulent material floating in it. These were mainly on the left side of the abdomen. The parietal peritoneum was of an almost uniform scarlet redness. The great omentum was converted into a red fleece, the under surface of which was smeared in parts with purulent fluid. The appendices epiploicæ were smeared in a similar way, as were also some coils of the small intestine, the other coils being slightly lymph-

glued together. There was general inflammatory redness of the outer coat of the exposed coils of intestine. In the upper part of the small intestine were much yellow mucus and semifæcal matter. In the descending colon and rectum was patchy redness, and in parts slight excoriation. In the lower part of the sigmoid flexure was a perforating ulcer, with bevelled edges and sloughy surface, which was open through an appendix epiploica into the abdominal cavity. Another ulcer with greenish edges was just beginning to perforate. The heart contained clots and treacly-fluid blood; the endocardium was deeply blood-stained; there was mitral stenosis; the mitral valve was thickened, calcareous, and deformed. There was some hypertrophy and dilatation, especially of the left auricle. The heart weighed fifteen ounces. Some large gall-stones were found in the gall-bladder.

REMARKS.—As to the duration of this case—at least twenty-four hours and a half—it may be said that, writing of peritonitis, Dr. Habershon stated that instances of intestinal perforation are generally fatal in from five to ten hours; and Dr. J. R. Wardell mentions that, in his cases, death occurred in from seven to twenty-three hours, and cites duration-periods from other authors varying from four to one hundred and five hours.

Possibly constipation, or passing gall-stones, led to the irritation and ulceration of old cicatrices in the colon, results of disease, contracted when campaigning long before.

OBSTETRIC MEMORANDA.

REMARKABLE MONSTROSITY. ✓

ON November 2nd, my late partner, Dr. H. C. Linden, sent for me to a case of a primipara, aged 28, who had been some hours in labour. It was a breech presentation, and favourable progress had been made until the pelvic outlet was reached. There the head became jammed tightly, and, during the next two hours, did not advance in the smallest degree. As the pains were ceasing, notwithstanding the administration of ergot, it became necessary to deliver instrumentally. Several attempts at extraction by forceps proved futile, and, as exhaustion was threatened, the blunt hook was employed, and, after an hour's hard work, delivery was accomplished. The child was a full-grown anencephaloid male; life was extinct but very recently. The bones of the face were normally developed, but there was no calvarium. The cerebral substance was wanting, and its place was filled with bloody serum and a material which looked like a placenta; to this the placenta proper was attached by its membranes. It was very large, measuring 6½ in. by 3½ in., and was deeply fissured at its anterior third. Two abortive cerebellar lobes were present. At the upper portion of the spine there was an opening into the spinal canal, from which sprang a lobulated body. Four cords were present, three focussing at this point; one running from the placental cerebral substance, the other from the placenta, and the third joining the cord proper, a few inches from the umbilicus; the fourth passed from the placenta in the usual way, and presented a slight degree of fatty degeneration. It was rather large. The other cords had undergone fatty degeneration to a great extent. Being rather pressed for time, we were obliged to be content with a cursory examination.

Upon what hypothesis it can be accounted for, I would be glad to elicit the opinions of the members of the Association. The mother attributed it to being frightened by rats. I may add that she made an excellent recovery, without the slightest drawback.

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CLINICAL MEMORANDA.

HABITUAL CONSTIPATION.

I WOULD desire to supplement Dr. Mortimer Granville's prescriptions for habitual constipation by some with which I have frequently succeeded? Looking at it that, as a rule, constipation is due to want of tone in the muscular coat of the bowel, and to diminished glandular secretion, I usually prescribe a pill composed as follows. R Ext. aloes soc. aquos. gr. ij; ext. nucis vomice gr. ss; ipecac. pulv. gr. ss. M. ft. pil. To be taken each day with dinner. Strict orders must be given to the patient never to neglect going to stool at a fixed hour daily. This prescription usually answers within a month. Another remedy, not so nice, but nearly as efficacious, is a drachm of castor-oil, the first thing each morning, persisted in for some weeks. Should these remedies fail, a small enema, of about half a pint of