produce puzzling erythematous eruptions, but fail to do so in the majority of patients suffering from the same form of toxæmia.

The next case illustrates the severe type of infection of the urinary tract. It represents a class of case which might easily be, and I believe has been, mistaken for appendicitis, and be submitted to a useless operation.

CASE IV.

Woman, aged 28; pregnant five and a half months; had vomiting and rigors. Temperature 103°, pulse 130, respirations 32, abdominal tenderness, especially over the right iliac region and towards the right kidney; some dysuria. During the first week, sleeplessness, persistent vomiting, abdominal pain and dysuria were the most prominent features. The urine was acid, contained some pus, which increased in quantity later, and a motile bacillus in enormous numbers, which was Gram-negative, and on subsequent culture proved to be one of the colon group—that is to say, it produced acidity and dotting of litmus milk; fermented lactose; gave a luxuriant brown growth on potato, and did not liquefy gelatine. A three days' broth culture gave a deep purple colour when 1 c.cm. of a 0.02 per cent. solution sodium nitrite and 1 c.cm. hydrochloric acid were added.

In this case alkalis and morphine (by the mouth) proved valueless, owing to the persistent vomiting, and at the end of the first week the case was looking very grave. It was then decided to try the effect of a vaccine made from a six-hours' subculture of the patient's own bacillus. A dose of fifty millions (approximately) was injected on the morning of the seventh day of the illness.

The patient slept well that night without a narcotic. Next morning she said she felt "perfectly well." Her temperature, etc., were normal; the vomiting, the dysuria, and abdominal pain had disappeared. On getting up, however, a week later, there was some return of these symptoms, and, after repeated entreaties on the part of the patient, another dose of vaccine was given, and was followed by the same rapid and gratifying improvement as before. Her subsequent convalescence was satisfactory, and her accouchement was normal.

Before giving the first vaccine injection, the agglutination reaction of the patient's serum was tested against the bacillus grown from the urine. It was found that, whereas observer's serum in a dilution of 1 in 10 had no appreciable effect on this bacillus at the end of one hour, the patient's serum agglutinated it instantaneously—that is to say, it was found to be agglutinated as soon as the preparation was focussed. A considerable number of similar observations with different dilutions were subsequently made in this case. The general result may be stated thus: Obvious clumping occurred in a dilution of 1 in 50 in a few minutes; but even with a dilution of 1 in 10 motility was not completely inhibited at the end of two hours. Careful comparisons with a normal serum or serums are, I think, imperative if any definite conclusions are to be drawn in *coli* infections from the agglutinating capacity of the patient's serum.

CONCLUSIONS.

I do not propose to elaborate further any of the points raised in connexion with these cases at present; but I may briefly summarize the conclusions at which I have arrived from personal observations:

1. These infections are commoner and more important than the average textbook would lead one to believe.
2. They vary within wide limits in respect of their virulence, and therefore in respect of their clinical features.
3. Their recognition is important, not merely from the standpoint of accurate diagnosis, but also from the standpoint of efficient treatment in the severer types.
4. The slighter cases are apt to be overlooked altogether, the severer cases are apt to be misunderstood.
5. Clinical observations alone, however conscientious, are at present quite inadequate; bacteriological evidence is a *sine quâ non* of decisive diagnosis.

REFERENCES.

- ¹ *The Bacteriology of Peritonitis*, p. 147. ² *Journal of Hygiene*, vol. viii, September, 1908.

WE have received from Continental Travel, Limited, a handbook giving an account of Swiss resorts open in the winter, together with information as to the facilities they offer for winter sports and as to the accommodation offered at hotels. Also dealt with are the cruises to the Mediterranean which the company organizes during the spring. The book is of value since, apart from other points, exact information as to Swiss winter resorts is not elsewhere easy to obtain. It is edited by Sir Henry Lunn, and includes a number of articles on winter experiences by different writers, and also a record of a tour round the world. Another similar tour is now it seems in preparation, the leader being, we note, Dr. Thwaites, a former army medical officer.

ON THE DIET OF A PATIENT BEFORE OPERATIONS UNDER GENERAL ANAESTHESIA.

By ROWLAND W. COLLUM, L.R.C.P., M.R.C.S.,
ANAESTHETIST AND JOINT LECTURER ON ANAESTHETICS AT ST. MARY'S
HOSPITAL, PADDINGTON, ETC.

I do not propose to deal here with special cases, each of which must be treated on its own merits; however, as ordinary healthy patients who have to undergo some simple operation are so frequently subjected to an absurd period of starvation, or are given such totally unsuitable food before an operation, I think it is worth while devoting a little consideration to the subject.

I am fully aware that many members of the profession, especially those of the older school, will disagree with my views; and surgeons, anaesthetists, and general practitioners will be found to have opinions differing widely, not only from mine, but also from those of each other on this important question.

It is a peculiar fact that, though the diet of a patient before an operation is regulated mainly on account of the anaesthetic, it is quite exceptional for the anaesthetist to be consulted on the matter at all. In spite of this, however, he and his much maligned drugs are given all the blame for any unpleasant symptoms that may arise during or after the operation. Of course, a careful and experienced anaesthetist will obtain far better results under any system than one who is less competent; but his results might be enormously improved by subjecting the patient to a more reasonable and thoughtful preparation.

In an able article in the *Lancet* of April 4th, 1908, p. 993, Dr. William Hunter pointed out that the so-called "delayed chloroform poisoning" was actually due to starvation before and immediately after operations; and as this opinion emanated from a credited physician and pathologist, and not from an anaesthetist, I presume it will be accepted as being at least unbiased. In the general conclusions at the end of his paper, he lays down that post-anaesthetic vomiting is essentially toxæmic, due to the profound depression of the liver function, which will be greater if a liver, already weakened by disease or by poor nutrition, be further unduly weakened by food having been withheld for many hours before the administration. This enforced abstinence from food before the administration of an anaesthetic is, he says, largely responsible for the fatal effects of "delayed chloroform poisoning," and such effects could probably be completely prevented by taking care that the patient always had a very nutritious, well-sweetened, and easily digestible meal, two or three hours before the operation.

Moreover, the Sisters in the wards of the hospitals inform me that a result of the preparation of all ordinary operation cases by a routine method is that the patients whose turn comes at the end of a long list in the afternoon are always much more sick, and have far more straining than those who are done earlier, and have therefore not been over-starved to the same extent. It is the practice in many hospitals to prepare every patient as though he would be operated upon at 2 o'clock; whereas, if there be five or six cases to be done one after the other, the unfortunate victim who comes last on the list will be starved for some four or five hours longer than is actually intended. The old idea was that he would therefore have an absolutely empty stomach, and so would probably not vomit at all. Experience, however, shows that instead of suffering less after the operation, he really has far greater discomfort than the patient who is done first, and who is thereby saved from the miseries of the prolonged starvation.

At nursing homes, also, I am told that the patients nearly always suffer more after an anaesthetic if they are prohibited from taking anything by the mouth on the morning of the operation when the latter takes place at 10 or 11 a.m.

The usual errors in preparing patients for an anaesthetic, however, are by no means confined to the length of time during which they are made to abstain from food. They are frequently also given an unsuitable kind of food for their last meal. Thus, one sometimes hears of healthy patients being made to swallow some concentrated meat essence at 6 o'clock in the morning. This might be

possible at lunch time, but the stomach is not accustomed to this kind of food at the earlier hour, and it will certainly resent it on a day of such anxiety.

Besides, why should it be concentrated? A little extra water in the stomach can certainly do no harm. As every medical man knows, if a patient be starved all night, and given nothing whatever by the mouth in the morning, he can still bring up fluid which would be at least as likely to choke him as the extra water would; while, on the other hand, the amount of straining required to bring up this thick viscid mucus is greatly in excess of that required to get rid of the more liquid substance, and the patient's discomfort is increased accordingly.

Contrary to the usual belief, ether cases generally suffer less discomfort after regaining consciousness than chloroform cases; and this, I think, is partly explained by the fact that the secretion in the stomach is more copious and liquid when ether is employed. So I have gradually been converted to the opinion that the want of food, and particularly of fluids, is an important factor in causing the disagreeable after-effects which are usually falsely ascribed solely to the anaesthetic.

It should further be remembered that the stomach develops a habit of expecting, and demanding in no uncertain manner, a meal at regular definite times; and that, if it be disappointed in this expectation, it will cause its owner to suffer if he takes an anaesthetic, goes on board ship, or often even if he merely happens to encounter some unpleasant smell. Hence I think it is most important that the patient's usual meal-times should never be upset immediately before an operation. The quantity of food allowed, and to some extent the actual kind of the food, should be carefully regulated, but the hour at which it is administered should not be altered.

Thus, supposing an operation (in a healthy subject) is to be performed at 9 o'clock in the morning, the patient should be left asleep, unless he awakes of his own accord, until at any rate 7.30, when he may be given his enema. Then, if he be accustomed to breakfast at about 8 o'clock, he may have a thin slice of bread-and-butter, or a small piece of toast, with as much tea to drink as he desires. He will then be able to settle down much more contentedly to his newspaper until the surgeon arrives. Tea is, I think, preferable to coffee, as the former is usually taken with considerably less milk than the latter.

If the operation be at 10 or 11 o'clock, he may have a similar breakfast, but with (say) two thin slices of bread-and-butter, if he wishes, or a somewhat larger piece of toast, provided his usual breakfast hour be 8 o'clock. If, however, he be accustomed to breakfast at 9, the amount of solid food should be as in the first case, unless the excitement of the approaching ordeal has caused him to awake earlier than usual, under which circumstances he may also have his small meal a little earlier.

If the operation be arranged for 12 or 1 o'clock, he may be given an ordinary light breakfast at the usual time; meat, however, being avoided. A glass of water might, in this case, be taken with advantage at about 11 o'clock.

For an operation at 2 or 3 o'clock, the ordinary breakfast should be taken at the usual time, and a cup of hot clear soup or beef-tea at 1 o'clock, together with a little water to drink.

This same arrangement is suitable for a case to be done at 4 o'clock, except that in this instance a little toast, bread, or biscuit may be given with the soup.

If 5 o'clock be the appointed hour, the breakfast and lunch should remain the same, but in addition a cup of tea may be taken at (or a little before) 4 o'clock.

If 6 o'clock be chosen, the patient may have his ordinary breakfast, and then a light luncheon consisting of fish or poultry at about 1 o'clock, followed by tea with bread-and-butter at 4 o'clock.

Finally, a patient who is to be operated upon at 7 o'clock may partake of his usual breakfast, lunch, and tea, simply avoiding currant cake or anything rich at tea-time. No fruit of any kind should ever be taken on the day of the operation.

I need not carry this list further, as it is unusual to perform operations of the class I am now considering after 7 p.m., and I trust I have said sufficient to make it clear that more attention should be paid to the ordinary habits of the individual patient, in order to relieve him as far as possible from the discomforts of anaesthesia. I have

mentioned definite hours for the meals (8 a.m. for breakfast, 1 p.m. for lunch, and 4 p.m. for tea) merely for the sake of convenience. If the individual patient under consideration be accustomed to take his meals at some other hours, these should be substituted for the ones I have indicated. An exception may be made in the case of breakfast if the patient should awake much earlier than usual on the morning of the operation. In this case, if he feels inclined for food at an earlier hour than usual, there is no objection to his having it then instead of later.

In private practice there is not the slightest reason for neglecting to devote the requisite amount of attention to each case in order that the patient's habits may be upset as little as possible, though the matter may be somewhat more difficult in a hospital; first, because some definite routine is far more necessary in a large institution, and secondly, because hospital patients are more apt to swallow lumps of solid food without sufficient mastication than are the people one meets with in private practice. I do not think, however, that these difficulties would prove to be insurmountable if a genuine attempt were made; and the additional mental and physical comfort of the patient would be ample compensation for the extra trouble involved.

OPHTHALMIC SCHOOL CLINICS IN THE COUNTRY.

By R. BEATSON HIRD, M.D., F.R.C.S.E.,

BIRMINGHAM.

SCHOOL medical inspection cannot be regarded as complete unless the defective children receive the treatment they require. However interesting it may be to know the percentage of children in our schools who are suffering from various physical ailments, it is quite clear that the practical value must certainly lie in alleviating these. A nation's future depends on its children, and having found that many of them are physically defective, we must see that these are enabled to become healthy and useful citizens.

The treatment of defective school children has been occupying our attention for the past few years, and the question is still being debated as to who are to treat these children, and where the treatment is to be carried out. There are two classes of children to consider—namely, those dwelling in the towns and those who live in the country districts.

With regard to the town children, in some places the treatment is being carried out at the hospitals. At some of these special assistants have been appointed to cope with the much increased work, especially in ophthalmic departments, where the increase of refraction cases has threatened to strangle the routine work. Objection has been raised to the use of the hospitals for the purpose of treatment of these cases, though they are mostly drawn from that part of the population who rightly belong to the hospital class.

Another alternative to treatment at the hospitals is that of holding "school clinics," and paying medical men for undertaking the work. Such is being done in some parts of the country. It is of my experience in this matter that I wish to write. I do not intend to discuss the merits of one system as opposed to another. What the medical profession want to know is what is being done in different parts of the country, and how is it working with regard to all parties concerned. Then, perhaps, we shall be able to evolve some scheme which will work smoothly.

The question arises, What is to be done for the children in the country districts where there are no charitable institutions, and where cases demand special treatment? Of course, the children can be sent up to the towns to attend the hospitals. In the remoter country districts this has obvious disadvantages. Some parent or relative will have to accompany the child, thus adding to the expense. The greater part of a day has to be given up, often entailing a loss of wages to the parent. The expense in many cases is too heavy to be borne, and out of all proportion to the wages earned. There are other disadvantages, too, such as the "ticket system" and limitation of numbers, which are in vogue at some hospitals. In such cases the child runs the risk of not being seen after all. If the treatment can be carried out in these cases free