with the weapons of science against these foes. Our allies, the Japanese, went into the Russian campaign prepared as fully against bacilli as against bullets, with the result that the percentage of deaths from disease was the lowest that has ever been attained in a great war. Which lesson shall we learn? Which example shall we follow—Japan, or South Africa with its sad memories?

We are not likely to have to fight three of the greatest former scourges—typhus, malaria, and cholera—though the possibility of the last has to be considered. But there remain dysentery, pneumonia, and enteric, against two of which we should be able to bring to bear successfully resources of modern science.

Dysentery, an inflammation of the large bowel, has been for centuries one of the most terrible of camp diseases, killing thousands, and, in its prolonged damage to health, one of the most fatal of foes to armies. So far as we know, it is conveyed by water, and only by carrying out strictly, under all circumstances, the directions about boiling water can it be prevented. It is a disease which, even under the best of circumstances, cannot always be prevented; but with care the incidence should be reduced to a minimum, and there should never again be widespread outbreaks in the camps themselves.

Pneumonia is a much more difficult disease to prevent. Many of us, unfortunately, carry the germ with us. In these bright days all goes well in a holiday camp like this; but when the cold and the rain come, and the long marches, the resisting forces of the body are lowered, the enemy, always on the watch, overpowers the guards, rushes the defences, and attacks the lungs. Be careful not to neglect coughs and colds. A man in good condition should be able to withstand the wettings and exposures that lower the system, but in a winter campaign pneumonia causes a large amount of sickness, and is one of the serious enemies of the soldier.

Above all others one disease has proved most fatal in modern warfare—enteric or typhoid fever. Over and over again it has killed thousands before they ever reached the fighting line. The United States troops had a terrible experience in the Spanish-American war. In six months, between June and November inclusive, among 107,973 officers and men in ninety-two volunteer regiments, 20,738—practically one-fifth of the entire number—had typhoid fever, and 1,580 died. Fortunately, in this country typhoid fever is not prevalent in the districts in which camps are placed. The danger is chiefly from persons who have already had the disease, and who carry the germs in their intestines, harmless messmates in them, but capable of infecting barracks or camps. You can easily understand how flies lighting on the discharges of such typhoid carriers could convey the germs far and wide. It was in this way probably, and by dust, that the bacilli were so fatal in South Africa. Take to heart these figures: There were 57,684 cases of typhoid fever, of which 19,454 were invalided, and 8,022 died. More died from the bacilli of this disease than from the bullets of the Boers. Do let this terrible record impress upon you the importance of carrying out with religious care the sanitary regulations.

One great advance in connexion with typhoid fever has been made of late years, and of this I am come specially to ask you to take advantage. An attack of an infectious disease so alters the body that it is no longer susceptible to another attack of the same disease; once a person has had scarlet fever, small-pox, or chicken-pox, he is not likely to have a second attack. He is immune, or has what is called immunity. When you expose a solution of sugar to the air, or if you add to it a pinch of yeast, a process goes on which we call fermentation, accompanied by a growth of little germs of the yeast in the fluid, and by an increase in temperature (in fact the solution has a fever), and the composition of the fluid alters, so much so, that you can inoculate it afterwards again and again with the same germ, but no further change takes place. Now this is what happens to us when bacilli make a successful entry into our bodies. They overcome the forces that naturally protect the system, and grow just as the yeast does in the sugar solution; but the body puts up a strong fight, all sorts of antibodies are formed in the blood, and if recovery takes place, the patient afterwards has immunity, for a time at least, from subsequent attacks. The body has mobilized its

forces, and is safe for a few years at least against that disease. It was an Englishman, Jenner, in 1798, who found that it was possible to confer this immunity by giving a person a mild attack of a disease, or of one very like it. Against small-pox all of you have been vaccinated—a harmless, safe, and effective measure. Let me give you a war illustration. General Wood, of the United States Army, told me that, when he was at Santiago, reports came that in villages not far distant small-pox was raging and the people without help of any kind. He called for volunteers, all men who showed scars of satisfactory vaccination. Groups of these soldiers went into the villages, took care of the small-pox patients, cleaned up the houses, stayed there until the epidemic was over, and not one of them took the disease. Had not those men been vaccinated, at least 99 per cent. of them would have taken small-pox. Now, what I wish to ask you is to take advantage of the knowledge that the human body can be protected by vaccination against typhoid fever. Discovered through the researches of Sir Almroth Wright, this measure has been introduced successfully into our own regular army, into the armies of France, the United States, Japan, and Germany. I told you a few minutes ago about the appalling incidence of typhoid fever in the volunteer troops in America during the Spanish-American war. That resulted largely from the wide prevalence of the disease in country districts, so that the camps became infected; and we did not then know the importance of the fly as a carrier, and other points of great moment. But in the regular army in the United States, in which inoculation has been practised now for several years, the number of cases has fallen from 3.53 per thousand men to practically nil. In a strength of 90,646 there were in 1913 only three cases of typhoid fever. In France the enteric rate among the unvaccinated was 168.44 per thousand, and among the vaccinated 0.18 per thousand. In India, where the disease has been very prevalent, the success of the measure has been remarkable. In the United States, and in France, and in some other countries this vaccination against the disease is compulsory. It is not a serious procedure; you may feel badly for twenty-four hours, and the site of inoculation will be tender, but I hope I have said enough to convince you that, in the interests of the cause, you should gladly put up with this temporary inconvenience. If the lessons of past experience count, any expeditionary force on the Continent has much more to fear from the bacillus of typhoid fever than from bullets and bayonets. Think again of South Africa with its 57,000 cases of typhoid fever! With a million of men in the field, their efficiency will be increased one-third if we can prevent enteric. It can be prevented, *it must be prevented*; but, meanwhile, the decision is in your hands, and I know it will be in favour of your King and country.

A CASE OF RUPTURED ECTOPIC GESTATION COMPLICATED BY SPLENO-MEDULLARY LEUKAEMIA.

By LIONEL E. SUTCLIFFE, M.B., CH.B. SHEFFIELD,
CHESTERFIELD.

THE combination present in the following case of spleno-medullary leukaemia with pyrexia of such a marked character and for so prolonged a period, together with the fact that it was complicated with ruptured ectopic gestation, that there was shrinkage of the spleen coincident with the haemorrhage, and that it enlarged markedly and rapidly during the reactionary stage, are features of great interest.

S. A., aged 21, was admitted to the Lowestoft Hospital at 5 p.m. on January 10th. On January 8th, at 1.30 a.m., she had been seized with acute abdominal pain accompanied by vomiting. Three weeks previously she had menstruated normally, and had never missed a period since her marriage, twelve months earlier. The abdomen was distended, motionless, and universally tender. Rigidity was most marked on the right side, and the patient localized her most acute pain in the right iliac fossa. The temperature was 101.4°F., and the pulse 135.

Vaginal examination elicited the fact that there was a large, soft, fluctuant mass in the pouch of Douglas. The diagnosis of ruptured ectopic gestation was made, and the patient operated upon at 7 p.m. The abdomen was full of blood and clots; the ruptured gestation sac, which was in the right broad ligament, was removed, the stump ligatured, and the abdomen closed after being cleansed.

The temperature rose on the following day to 102.6° F., at which point it remained practically stationary until the sixth day after operation, when it rose to 103.2° F.; it remained almost constantly at 103° F. or 103.2° F. for six days—that is, to the twelfth day after operation. It fell steadily during the next two days to 101° F. as maximum, at which it remained practically stationary until the eighteenth day after operation, when it rose gradually during the day to a maximum of 103° F. once more in the evening.

This date marked a new era in the disease. Nothing could be found to account for this pyrexia; there was no suppuration in the wound, no pain or tenderness in the abdomen, no complication in the heart or lungs, and nothing abnormal to be felt in the abdomen. There was slight albuminuria. There was, however, one positive fact—namely, that in spite of her general improvement, apart from the raised temperature, the patient showed extreme blanching; she said, however, that she was usually very pale. On January 28th, when the further sudden rise of temperature occurred, the spleen was found to be easily palpable. The blood examined that day was found to contain large quantities of myelocytes, nucleated red cells (both megaloblasts and normoblasts), mast cells, and polymorphonuclear leucocytes in every condition. The temperature fell in the course of two days to 100° F., between which and 99° F. it oscillated for a fortnight more. The spleen continued steadily to enlarge until it reached to a fingerbreadth below the umbilical level and extended considerably into the right hypochondrium.

One additional feature throws some light on the condition of the blood. On the tenth day after operation the stitches were removed, and it was seen that there had been no attempt at healing. The edges of the wound were scraped and it was again united by sutures, but once more failed to heal. After being dressed with lotio rubra and after further scraping, it was again sutured.

It seems certain that for some considerable time the patient had been the subject of this form of leukaemia—she had experienced fits of giddiness and breathlessness on going about, and had recently consulted a medical man for obstinate epistaxis.

It appears, therefore, I suggest, that the spleen was enlarged previously to the occurrence of the abdominal catastrophe, that it shrank with the progress of the haemorrhage, and with the onset of the reaction therefrom it again began to enlarge.

I find Sir William Osler quotes several cases which have come under his notice in which this occurred in the presence of a severe haemorrhage. The woman has now made a complete recovery, the spleen and blood both having become normal.

I am indebted to Dr. Bell, senior surgeon to the Lowestoft Hospital, under whose care the patient was admitted for operation, for permission to publish this case.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUBLINGUAL MEDICATION.

SIR.—I heartily endorse what Dr. William Paulson says (p. 541), as to the simplicity, cleanliness, and efficacy of sublingual medication, and have for many years used it daily in my practice. In 1885 I was returning to medical duties in Japan after furlough. The passage was exceedingly rough, I was weak from effects of malaria and dysentery, and so sick that I could take no kind of food, while brandy returned immediately. Happening to notice, however, that when a few drops of brandy rested under the tongue some internal glow was felt, I began to use that well-known remedy in this way with the best effects. I cannot remember having seen any notice of this method in print, but from that time I have used the ordinary subcutaneous tabloids in everyday practice, and have never known any inconvenience arise from placing them under the tongue. The results are very quick and sure, and I but rarely resort to hypodermic injections now. For this purpose the tablets might be made more palatable with advantage, but that is a small matter.

Stoke-on-Trent.

HENRY FAULDS, L.R.F.P. and S.

TREATMENT OF ACUTE GONORRHOEA IN THE MALE.

I HAVE read with interest the articles on this subject lately appearing in the *BRITISH MEDICAL JOURNAL*.

Thirty years ago, working in Canada with surgeons of that country, I adopted their method for acute cases seen early—that is to say, I ordered the usual rest, diet, diluents, etc., but began injections of a 2-grain solution of zinc sulphate on the first or earliest possible day of the disease, with instruction to the patient “to inject always after passing urine, and never to inject unless urine had just been passed.” The patient was given the usual syringe in a bottle, the cork (rubber) of which makes the handle of the syringe, and told to always carry it and always use it immediately after passing urine. With this treatment the discharge usually ceases about the fourth day. The patient should continue the injections as directed for three or four days after its disappearance, and then gradually lessen the number; there should be complete cure in from eight to ten days. Latterly I have used zinc permanganate instead of sulphate, and have given also hexamethylenetetramine (which I prefer to cystopurin) by the mouth. The results have been the same.

Mevagissey, Cornwall.

C. W. MONRO GRIER.

EIGHTY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

Held in Aberdeen on July 29th, 30th, and 31st.

PROCEEDINGS OF SECTIONS.

SECTION OF DISEASES OF CHILDREN.

DR. JOHN THOMSON, President.

A DISCUSSION

ON THE THYMUS GLAND IN ITS CLINICAL ASPECTS.

OPENING PAPERS.

I.—A. E. GARROD, D.M., M.A., F.R.C.P., F.R.S.

Physician to St. Bartholomew's Hospital; Consulting Physician to the Hospital for Sick Children, Great Ormond Street.

DURING active adult life the vital processes are in a condition of more or less stable equilibrium, and, unless disease intervene, the regulator mechanisms are so accurately balanced that there is little disturbance of the normal standards from year to year.

In childhood different conditions prevail. This is a period of active growth and development. The regulator mechanisms are not yet balanced; income is in excess of expenditure, and, as puberty is approached, the organism takes upon itself new functions in the interest of the race rather than of the individual.

We are learning how large a part is played in the regulation of the vital processes by internal secretions of glands, such as the thyroid, pituitary, and adrenals; and it is a reasonable hypothesis that the special features of childhood are due, at least in part, to the functional activities of certain glands of which the influence passes into abeyance when childhood is past. It is probable that the pineal is such a gland, but the glandular organ of childhood *par excellence* is the thymus, the clinical aspects of which, as yet so shadowy and ill-defined, form the subject of discussion to-day.

It is now generally conceded that the thymus is a gland of internal secretion, despite the resemblance in its structure to that of the lymphatic organs, and its enlargement in association with these in the victims of status lymphaticus. But the methods which have thrown so much light upon the functions of the thyroid have, in the case of the thymus, yielded far less definite results.