

fited and interested by the reports which these gentlemen will no doubt contribute to the literature of medical and sanitary science.

WE are informed that another competitive examination for entry into the Naval Medical Service will be held early in November.

THE medical officers of the Dublin South Dispensary districts have had their salaries increased annually by £25, making a total of £125 each, independent of vaccination and other fees.

MR. LESAGE, of Dublin, forwarded last week to her Imperial Majesty the Empress of the French the second remittance of 10,000 francs subscribed by the citizens of Dublin for the relief of the wounded of the French army.

THE Conservators of the Thames, in their lately issued report, give it as their opinion that the period has now arrived when the provisions of the Conservancy Act in respect of towns which pass their sewage into the river should be fully carried out.

THE reduced temperature of the last fortnight has brought the mortality of London down from the high rate of the previous weeks. Diarrhœa continues to decline in fatality. Scarlet fever was rather less fatal last week than in either of the three weeks preceding.

WE understand that Deputy Inspector-General C. J. Gordon, C.B., and Surgeon-Major Wyatt, have received orders to proceed to France for the purpose of inspecting the army hospitals, and reporting on all points of interest connected with the surgical, medical, and sanitary matters of the present war.

REPORTS ON SEWAGE IRRIGATION.

No. I.

NOTWITHSTANDING the opposition of some eminent scientific men—notably of Mr. Hawksley, C.E., and Dr. Letheby—the question of sewage irrigation has made enormous progress during the session of Parliament which has just closed. The Committees of both Houses have taken a mass of most interesting evidence, and for the first time public authorities have been endowed with compulsory powers for the purpose of enabling them to purchase land upon which to dispose of their sewage. Although, happily, the adverse evidence of the distinguished gentlemen above-named failed to influence the Committees of Parliament, it may have a misleading effect upon the public mind, the more so as some of the most erroneous portions of the evidence have been industriously promulgated in pamphlets and paragraphs. The evidence which convinced Parliament was more than sufficient to establish the conclusions of the Royal Commissioners in favour of sewage irrigation, which we regard as the only reasonable, economical, and safe method of utilising the refuse of our large towns, and of preventing the wicked waste which is now so general. It is perhaps not too much to say that this method of utilisation ought to enable us to do without the purchase of a single ounce of food from any other country; and that the superior methods of cultivation required by it ought to give ample employment to every human being in these islands who requires work. The question then is, not whether sewage irrigation be desirable, but how it can best be carried out;

and if for a moment we seem to turn our back upon this fact, it is only for the purpose of securing our rear against the futile attacks which have been made, at the instigation of vested interests, to impede the progress of the system.

In the first place, it is objected that sewage irrigation will not pay. We readily admit that profit is a fundamental condition of success. But is this objection either well founded or probable? We think not. Everyone knows the superior value of land which can be irrigated with common water. It is notorious that irrigation works have proved profitable in every part of the world: *à fortiori*, irrigation with water *plus* the manurial ingredients contained in sewage must be still more profitable, especially as the greater part of the manure is in the only form in which it can be assimilated by vegetation. Now if a manufacturer is convinced of the economy of a new invention, he does not give it up because his first attempts to carry it out are failures; but he patiently continues his experiments until, if the principle be sound, he eventually succeeds. It is no argument against sewage irrigation to object that it has not paid hitherto; even if that were true, which it is not. It is a new process of a very complicated kind. All the old-fashioned notions of the ordinary farmer, his pig-headed reverence for the practices of his forefathers, his ignorant belief in his own experience, will certainly obstruct the introduction of a method which will revolutionise the practice of farming. There must be new methods of cultivation, new kinds of produce, new successions of crops, and new methods of converting the produce into the forms most convenient for use. A new generation of farmers, possessing free and independent minds and vastly superior scientific knowledge, must be raised up before sewage irrigation may be expected to realise all of which it is undoubtedly capable; and it would be unreasonable in the extreme to hope that, under its present unfavourable conditions, it should always pay.

Nevertheless enough of practical evidence is accessible by which the public may be encouraged to persevere. At Edinburgh, which is one of the very worst specimens of economical irrigation—and bear in mind it is the economical question we are now exclusively considering,—the quantity of grass cut last year varied from fifty to seventy tons per acre, and the maximum value was £36 15s. per statute acre. At Rugby, Bedford, Norwood, Banbury—in all of which the management is in the hands of local boards—more or less profit has been made; whilst in private hands, which are more likely than public bodies to succeed in a new speculation of this kind, there are indications that success has been much more complete. Thus at Aldershot, land which six years ago was not worth 1s. an acre to purchase, has been laid out and drained by Mr. Blackburn for the reception of the camp sewage, and we are in a position to know that the produce of some parts of this farm are taken by contractors at an annual rental of £25 a year, a sum which is obviously sufficient to provide a wide margin for interest upon any sum which could possibly have been spent upon it. But, further than this, Mr. Hope, who has probably more knowledge of the value of sewage than any other person, has agreed to pay the authorities of the town of Romford £600 a year for the sewage of 6000 persons, to be delivered on his farm at Bretons; and although, at a rough calculation, the total expenses of the farm, including sewage, rent, interest on capital, horses, labourers, seed, &c., will not amount to far short of £30 an acre, he has no doubt whatever but that the enormous produce will still provide a profit; and if so, what an extraordinary result! This farm of 121 acres was thoroughly exhausted, it was not worth more than £4 an acre. It was worked for irrigation purposes by the authorities of Romford at an enormous loss. It formerly employed two men and a boy, and two horses. Now the average payment for wages is £25 per week, and there are fifteen horses continuously at work; and already some of the produce has realised the enormous income of over £70 per statute acre. Such, indeed, is the fertility produced by sewage irrigation, that Mr. Rawlinson has quoted an instance, upon which he stated he could con-

fidently rely, where the crop of cabbages and cabbage-plants yielded a gross return of £200 per acre.

Nor are there wanting other indications that sewage irrigation is really attracting the attention of landowners, to whom it is one of cardinal importance. Lords Salisbury and Warwick are about to establish irrigation farms, and other landlords are trying the system on a smaller scale; whilst we believe the gentleman who objected to sell his land at Reading, having been forced to do so, has made an offer to take the sewage of the town. We suspect that they will not be so simple as to give it him. On the whole, we may conclude that sewage irrigation ought and must eventually pay—that failures need not discourage its advocates. And we venture to predict that in a few years, after a little more experience, we shall hear no more of unprofitable sewage farms.

WAR NOTES.

THE enormous amount of literature which this war has evoked quite precludes the possibility of our compressing all the information of interest in the space at our disposal. We can only hope to chronicle, very briefly and imperfectly, a few of its more salient features. History is making itself so rapidly that events occur almost as quickly as they can be read; and it needs no prophet to foresee a reconstruction of the map of Europe.

We have wonderfully few details as to the state of health of the German armies. There have been rumours of diarrhoea, fever, and cholera, but these have not been substantiated. There can be no doubt, however, that a great deal of sickness must prevail. The French shut up in the garrison of Metz are suffering terribly from the effects of overcrowding, famine, and the foul atmosphere arising from the aggregation of wounded men.

With regard to the *physique* of the men, English surgeons and those who had abundant opportunities of comparing the German and French soldiers, agree in stating that the former are generally very superior to the latter in this respect. Under the Prussian system the mistake has been avoided of bringing immature youths into the field, who only break down in actual warfare, and serve to crowd the hospitals. The Prussian soldiers are, as a rule, tall and broad-chested; and this war has proved them to be self-reliant, dogged of purpose, and as stupidly unsusceptible of discovering when they are getting the worst of the fighting as are the English; but we fear that, this being said, the comparison between the amount of intelligence of the two is all in favour of the Germans.

The first thing that strikes those reading accounts of the different battles is the utter inadequacy of any organisation to provide for the wants of the wounded, where the slaughter is effected so suddenly and on so appalling a scale. When weapons like the mitrailleuse can be protected by some cover, and used against a body of troops advancing in close column, the number of wounded is immense. The chassépôt has a long range, and as the French always commence firing as soon as the enemy comes in sight, the German losses in advancing on French positions have been awful. The preponderance of wounded officers has likewise been remarkable. The Queen Augusta Regiment of the Guard had lost exactly half their number, and more than that proportion of officers. The Rifles of the Guard had only one officer left.

Reports agree as to the admirable working of the corps of Krankenträger, or bearers of the sick. These men display great coolness and judgment in picking up the wounded whenever the fire slackens; but there is very little chance of the sufferers being attended to whilst a battle rages, and battles have, on several occasions, lasted all day. Some recrimination has ensued regarding the statement of the French having fired upon an ambulance. The fact is, however, that, in a general action, it is well-nigh impossible to tell the front from the rear, and an ambulance vehicle will occasionally get into a line of fire.

The wounded appear to have suffered even more than usual from thirst: this was probably much aggravated by the intense heat to which they were exposed.

The utilisation of railroads for the removal of sick and wounded forms a novel feature in modern warfare, and it is one to which we adverted at the opening of the campaign as well deserving of careful study. We require to know whether, with the increased facilities for removal of the wounded, it has been found practicable and safe in military surgery to defer operations, and what has been the effect of movement in increasing or not the gravity of the wounds themselves. The extent to which railroads have been used for the transport of the wounded may be estimated from the fact that the Saarbrück journals report that already 20,000 wounded have passed along their railway. In the space of four days 10,000 wounded and prisoners passed Bingerbrück station down the Rhine valley. A full description of the railway carriages and their arrangements is to be found in Professor Longmore's report on Sick Transport. The river steamers have also been largely employed for the conveyance of wounded men.

The sick and wounded have begun to arrive at all the principal towns, and are fast coming in. At Munich, and some other Bavarian towns, nearly 3000 had already been located, and a large number were arriving. The letter of a correspondent at Mayence, in *The Times* of the 30th ult., is very full of details about the wounded, and will well repay perusal. From Remilly, near Metz, a visitor describes the houses as all being filled to the roof with the wounded. "Many hundreds still lay in the streets, the greater part wet through and without shelter." Not a room was to be had for love or money. A little later four hundred peasant waggons arrived filled with wounded, and it was necessary to leave them all night in their waggons, though they had been travelling for two whole days from the field of battle. A special train, with a number of surgeons, 50 members of the sanitary corps, taking with them 250 beds, 450 coverlets, 3500 soda-water flasks, 20 cases of soap, and a large supply of bandages, icebags, stearine lights, oilcloth, irrigators, opium powder, and surgical instruments, left Frankfort for Metz on the evening of the 23rd ult., being the third despatch to that town, while three have also been made to Woerth. The severely wounded are rebanded at all the principal stations between Mainz and Berlin. During the night 2200 were sent on to Giessen and Marburg, and 30 waggons filled with Saxon wounded went forward the next morning. Through Mannheim, Darmstadt, and Würzburg trains of wounded passed to the interior; while, on the 22nd, 1600 severely wounded Prussians came from Gravelotte and Rezonville. The Rhine railways and steamboats are equally crowded. At Bingen, 600 wounded arrived by train at 10 o'clock in the evening; then 1000 three hours later; then, at 5 next morning, 1100 more—their destinations being Coblenz, Bonn, Cologne, Düsseldorf, and Hanover.

Medical aid is being contributed from all parts of Germany. Berlin is projecting a vast hospital, and 20,000 beds have been placed at the disposal of the hospital administration. Wissemburg has been selected for the ice-depôt;—what a relief it would have been to the wounded had the Krankenträger been able to carry with them a supply of ice! Suabia contributes its stately Königsbau to accommodate the wounded; while the palace of the Queen Dowager has been converted into magazines, and 300 ladies of rank work at sewing machines to prepare clothing and nursing materials. Hundreds of women and girls from the families of the troops are labouring for the Sanitary Union in the Burgher Museum; and on the 19th surgeons, deaconesses, and sisters of mercy arrived at Metz with every requirement for 400 beds. It is generally admitted that the International Aid Societies have done good service; while Dr. P. Frank, now at Paris as one of the medical representatives of the Society, is in all respects well adapted by linguistic proficiency and military knowledge, for a post of the kind.

At the last meeting of the Liverpool Workhouse Committee 1392 patients were reported to be under treatment in the hospital: of these 639 were fever cases, as compared with 523 last week, showing a further increase on the week of 116 cases of relapsing and typhus fever.