

rams, from which it is forced into presses by compressed air. After the water has been reduced from 95 to 50 per cent. the sludge falls in cakes direct into railway waggons and is removed to farms belonging to the corporation. The water which has been expelled flows back to be repurified. The sludge may also, if desired, be mixed with street refuse from a loading bank alongside the rails. On leaving the mixing pit the sewage proceeds to the precipitation tanks outside. These are twenty-four in number, arranged in two rows, each tank holding 80,000 gallons. During the day each tank is filled in rotation. In these reservoirs the sewage is kept in total quiescence until the process of precipitation is complete. The work of separation having been effected, the fluid on the top is emitted through self-floating automatic valves, the invention of Mr. Alsing, and runs in thin sheets over the stepped bottoms of the aeration beds, which correspond in number with the precipitation chambers. The sludge returns by underground channels to the main building to be pressed. The day treatment is effected on the intermittent system, the precipitation taking place while the sewage is at rest for about an hour; but during the night, when there is much less water, the sewage, mixed with the chemicals, runs through the precipitation tanks from one end to the other on the continuous system. The liquid from the aeration beds flows by a joint central channel into the filter tanks. The tanks here number sixty; twenty are filled with gas coke, through which the liquid passes previously to filtering through the remaining forty, which are filled with gravel and sand from Arran. The effluent, after filtration, is discharged into the river in a pure state from a sanitary point of view. It is perfectly clarified by the process and is described as tasting like rain water. It looks like rain water also, being only two and a half times darker than Loch Katrine water. Both the sludge and the effluent are destitute of smell. It may have been imagined that the sewage works and the processes carried on there would prove to be a nuisance, but such is not the case. From the time that the sewage receives its mixture of sulphate of alumina and lime there is no offensive smell. At the opening ceremony, which took place last week, though the works had been in full and satisfactory operation about a fortnight earlier, Lord Provost Bell touched upon a very important aspect of this scheme in pointing out, in the first place, that Glasgow was not the only sinner on the Clyde as regarded river pollution, every town and village and every coal-pit and factory on the river and its tributaries adding its share to the general nuisance; now, however, that Glasgow had shown the way, it might with a good grace insist on similar measures on the part of its neighbours. In particular the burghs to the westward of the city, having a separate official existence, but being in actual fact continuous with and part and parcel of the city, would have to join with Glasgow in extending the scheme; already, in fact, the corporation had been gradually taking all the drains in the western districts to one common point to enable them to take the whole of the west-end sewage, on the north side of the river, to Dalmuir, where the city had an estate of 277 acres, purchased in 1877 for this purpose. The second matter discussed by Lord Provost Bell was the relation of manufactories, collieries, dye works, tanneries, &c., to the city under the sewage system now adopted. The question now arises whether the whole city of Glasgow is to continue to subsidise those manufacturers by allowing them to pour all their spent products into the drains originally prepared for sewage. In the eastern district now dealt with, the worst in the city as regards factory pollution, it will cost the city twice as much to treat the sewage as it would to treat that from a purely domestic locality. The corporation will probably ask for Parliamentary powers enabling them to face this difficulty. That there is here some real ground of complaint, even from a sanitary point of view, receives curious confirmation in the report of the proceedings of the Health Committee on the 30th ult., in which reference is made to the annoying prevalence of most offensive smells emanating from the sewers in the north-western districts; this has been going on for years and is known to be due to the discharge of noxious chemical materials into the sewers. Unfortunately it is not exactly easy to discover the real culprits.

Uninhabitable Houses.

At a recent meeting of the special committee of the town council appointed to carry out the provisions of the section of the Glasgow Police (Amendment) Act, 1890, in regard to unwholesome houses a large number of houses in the east

end of the city were condemned as uninhabitable. With reference to one block the medical officer of health states that in the last five years the death-rate among the tenants was 58 per 1000, and that in one year the death-rate of children was 26 per 1000 of the children born. In the whole city during these five years the general death-rate was 24 per 1000, and the death-rate of children 15 per 1000.

Presentation to a Medical Man.

The members of the ambulance class at Auchinleck met in the town-hall on Tuesday evening and presented Mr. Andrew with two cases of surgical instruments as a token of their appreciation of his instruction.

May 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Adelaide Hospital, Dublin.

THE late Mrs. Fuller left £1000 to this institution for the endowment of one or more beds in a ward therein to be named the "Mary Anne Fuller Beds." The dividends accruing from this sum of £1000 can be used, but the principal must be left intact.

Queen's College, Cork.

Last week a notice, signed by the registrar, was posted in the College, stating that an extraordinary visitation will be held at the College on the 16th inst. for the purpose of inquiring into an appeal lodged against certain acts and decisions of Mr. Slattery, President of the College, by the following professors and members of the council:—viz., Professors Jack, Oryan, Hartog, Corby, Ridgeway, and Stokes. Counsel have already been engaged for the inquiry.

Vaccination: South Dublin Union.

On the 26th ult. the guardians of the South Dublin Union resolved that the prosecution pending against Mr. William Glynn, Rathmines, for non-compliance with the Vaccination Acts, be withdrawn until the Royal Commission appointed to inquire into the working of these Acts issues its report. This ill-considered resolution was much commented upon, and the subject attracted the notice of the Local Government Board, who communicated with the guardians in reference to the matter. They pointed out that the evidence as to the protection afforded by vaccination against death, or blindness, or disfigurement arising from small-pox was, to the vast majority of persons who have studied the subject, simply overwhelming; and that in the case of any individual infant the question the guardians had to consider was whether the scruples of the parent, or the future welfare of the child deserve the greatest consideration. The board were also of opinion that until further legislation takes place the Compulsory Vaccination Acts remained in force, and that speculations as to the character which the report of the Royal Commission on Vaccination may ultimately assume had no practical bearing upon the powers the guardians, possessed under the existing law. The guardians, having read the communication from the Local Government Board, adopted a resolution that the prosecution be proceeded with against Mr. Glynn for non-compliance with the Vaccination Acts.

May 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Paris Water-supply.

A WEEK ago the inhabitants of Paris had their sense of sanitary security disturbed by the appearance on every coign of vantage of huge posters stating that, in consequence of an accident to the Vanne aqueduct, Seine water would be distributed for some days, dating from May 2nd, to all the districts of the town, excepting the eighth (Champs-Élysées and Monceau), sixteenth (Passy), seventeenth (Batignolles), eighteenth (Montmartre), nineteenth (Belleville), and twentieth (Menilmontant) *arrondissements*. In another week or fortnight we shall see if the supply of this microbe-laden liquid has borne its usual fruit—viz., an increased prevalence of typhoid fever. Fortunately for those of our countrymen who crowd to Paris at this time of year the quarters frequented by them have been spared this

indiction; but, as I have more than once pointed out in these columns, tourists do not limit their explorations to the neighbourhood of their hotel, and it behoves them to keep themselves informed of the doings of the *service des eaux*, ignorance of which might cost them dear. I would counsel them to inquire on this point at a good English druggist's before they visit a strange district in Paris.

An Artificial Windpipe.

M. Péan presented to his colleagues of the Academy of Medicine on the 1st inst. a woman whose thyroid gland he had removed in 1890 for simple hypertrophy. The tumour, unfortunately, reappeared soon afterwards in a malignant form, and its ablation sixteen months ago necessitated the removal of the cricoid cartilage and the five upper rings of the trachea. Recovery has since been maintained, but the extent of the tracheo-laryngeal wound has not allowed of the recovery of phonation. An artificial windpipe, constructed by M. Kraus, is now worn by the patient, who can speak sufficiently distinctly to make herself understood.

The Cause of the Mal de Montagne experimentally determined.

M. Regnard¹ reminds us that it is proposed to bore a tunnel or chimney extending from the base to the summit of the Jungfrau. In this chimney, whose height will be 4000 metres, it is intended to instal a lift destined to convey passengers to the top of the mountain; but sinister warnings of the dreaded *mal de montagne*, which, it is said, will surely make the tourist repent his temerity, have brought the project to a standstill. Struck by the fact that this malaise affects mountain climbers at an elevation of about 3000 metres, while aeronauts only suffer when they have reached double that height, M. Regnard concludes that the difference is explained by the factor, muscular fatigue, which is present in the first and absent in the second case. In order to solve the problem he places under a bell jar two guinea-pigs equally developed, of whom one has to work a wheel (the climber) while the other is at rest (the aeronaut.) The air of the bell jar is then progressively exhausted so as to reproduce the atmospheric conditions obtaining at different heights. At a pressure equivalent to 3000 metres the climbing guinea-pig showed signs of distress, and at 4800 metres he renounced the struggle and remained lying on his back. The aeronautic guinea-pig, on the other hand, appeared quite comfortable up to an elevation of 6000 metres, and his condition became serious only at a height of 8000 metres. This experiment appears to prove that, although some of the symptoms of the *mal de montagne* are doubtless due to the rarefaction of the air, the chief determining cause is fatigue and the resulting exaggerated consumption of oxygen. M. Regnard opines that tourists who venture on the Jungfrau lift expedition will reach the top in good condition. Should this prognostication be true it constitutes one more proof of the usefulness to speculators of the much maligned experiments conducted in the physiological laboratory. Rabid anti-vivisectionists cannot now, however, logically avail themselves of the above-mentioned mode of transit to the top of the Jungfrau.

May 8th.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Otago Medical School.

At a meeting of the Senate of the New Zealand University, held on March 8th, the committee recommended the following medical examiners for the November examination, 1894, and the April examination, 1895:—Pathology: Drs. W. S. Roberts and Albert Martin. Surgery: Drs. W. Brown and W. E. Collins. Medicine: Drs. Colquhoun and W. Fell. Midwifery and Diseases of Women: Drs. Batchelor and B. Moorhouse. The committee have had under their consideration the report which I have already referred to in these columns as adopted by the Wellington branch of the New Zealand Medical Association, in which it is stated "that the time has not yet arrived when medical degrees may with advantage be granted in the colony." In reply to this the Senate's committee have reported that there is no evidence to show that the views expressed by the Wellington branch are entertained by the profession generally in the colony. The committee go on to report that "large improvements have recently taken place in the hospital and that a system

of nursing has been established which brings the administration of the wards to a point of efficiency which leaves little to be desired." A new operating theatre has been built, and altogether the sum of about £8000 has been expended on improvements generally. There has been a daily average of fully 100 patients in the hospital, and 300 operations have been performed, fully 200 of which have been of a major nature. In the out-patient department 1500 new cases were treated. It appears further that the Benevolent Asylum, with over 200 inmates and a lying-in ward, and Seacliff Asylum, with over 500 inmates, are available for clinical purposes. The committee go on to state that a great deal of evidence as to the adequacy of the material available for the purposes of a school of medicine has been brought under their notice. The statements of gentlemen who have taken their degrees in this university and then proceeded to Great Britain are to the effect that their course of instruction here enabled them to obtain the corresponding qualifications granted by the Royal Colleges of Surgeons and Physicians of England, the examinations in London being of the same standard and conducted for the most part in the same manner. At the present time 5 per cent. of the profession in New Zealand have obtained their qualifications in the first instance from this university, and a good proportion of these have been enabled to go home and apply themselves for a time more advantageously to special branches of study, and, as far as the committee could learn, are occupying no secondary position in the ranks of the profession. The graduates are considered to have a preferential claim to hospital appointments and thus a further means of acquiring a fuller knowledge of their profession is obtained. The Hon. W. Rolleston, in moving the adoption of the report, stated "that the committee had taken a great deal of evidence and pains in investigating the statements made by the Wellington branch of the Medical Association." He was quite willing to believe, with regard to those gentlemen, that their zeal for the honour of their profession was not equalled by their knowledge of the facts of the case, and he thought the Senate must be prepared to give them credit for good motives in what they stated, but he must say that their case had entirely broken down. He looked upon the Otago School of Medicine not as an Otago institution but as a colonial institution, and as the centre in New Zealand of this branch of higher education. Sir Robert Stout, in seconding the adoption of the report, severely criticised the representations made by the Wellington branch of the Medical Association, and in doing so remarked: "Let our young people visit other places to expand their minds and gain wider experience, but we must arrange so that for all things necessary we are independent of outside help. If we are to have a national life in New Zealand we must train our sons and daughters to do everything necessary for that national life." The motion for the adoption of the report was then put and carried. I maintain that this report does not finally settle this most important question, and as the mail leaves the question is being further discussed at the annual meeting of the New Zealand Medical Association held this year at Napier.

Obituary.

CHARLES GIBSON, M.D. ST AND., M.D. DUBH,
M.R.C.S. ENG., L.S.A.

DR. CHARLES GIBSON, one of the oldest practitioners in the north of England, died at his residence in Newcastle on Saturday, April 21st, aged seventy-four. He was apprenticed to Mr. Carr, a medical practitioner at Newcastle, in 1835, and three years later entered as a student at the Newcastle Infirmary and at the Newcastle School of Medicine and Surgery. In 1842 he obtained the diploma of the Royal College of Surgeons of England, and graduated M.D. at St. Andrews University in the year 1851. For three years he held the post of lecturer in anatomical demonstrations and dissections in the Newcastle School of Medicine, and on the formation of the new medical college, of which he was a founder, was appointed lecturer on midwifery and diseases of women and children; the University of Durham recognising his services to this college by conferring upon him the degree of M.D. in 1859. The deceased gentleman took a prominent part in the establishment of the Newcastle Hospital for Women and

¹ Soc. de Biologie, April 28th.