Mr. Image, and Mr. Kilner, are to be congratulated on the firmness with which they have resisted the attacks directed against them. It may also be hoped that at the next annual meeting all parties will co-operate to place the institution on the best footing for carrying out the purposes for which it is intended.

THE ROCHFORD ISOLATION HOSPITAL.

A COMMITTEE of the Southend local board have visited and reported on the premises that do duty in the neighbouring Rochford rural district as a hospital for infectious diseases, and the report is strongly condemnatory of everything attaching to the place, including its structure, furniture, and administration. In Dr. Thorne Thorne's official report of 1881 on the Use and Influence of Hospitals for Infectious Diseases, this building was spoken of in terms sufficiently disparaging to have condemned its further use; but if any change has taken place, it seems to have gone from bad to worse. It is to be hoped that some proper and decent provision will be forthwith made for the reception of the infectious sick of this district.

THE SEWERAGE OF MARGATE.

A FURTHER important step has been taken towards dealing with one portion of the scheme of sewerage on which Margate has decided, and which will, it is hoped, by June next secure for that health resort a system by which the whole of its sewage will be carried to the extremity of Foreness Point, and thence discharged into currents that will take it finally away into mid-sea. There was at first some opposition to the scheme which Mr. Baldwin Latham is carrying out, but all are now heartily co-operating with the measures in progress.

NUMBER OF DENTISTS IN GERMANY.

ACCORDING to Dr. Paul Börner's "Reichs-Medicinal Kalender für Deutschland" for the year 1888 there are 16,864 medical men and 514 dentists in practice among a population of 46,840,587 inhabitants in the German Empire, while the number of chemists' shops is 4671, and of hospitals 2737. In face of these figures, it may be truly said that the dental profession is not overcrowded in the Fatherland.

THE GENERAL MEDICAL COUNCIL.

A MEETING of the General Medical Council has been summoned for Tuesday, November 26th, at 2 P.M. The Executive Committee will hold a sitting on the preceding day at 1.30 P.M., in accordance with the standing orders, for the purpose, *inter alia*, of preparing the programme of business for the consideration of the Council.

FOREIGN UNIVERSITY INTELLIGENCE.

Algiers.—M. Planteau of Bordeaux has been appointed to the newly created chair of Pathological Anatomy. M. Treille has been appointed to another newly established professorship—viz., that of Tropical Diseases.

Bahia.—Dr. Nina Rodrigues has been appointed Assistant Professor of Clinical Medicine.

Cracow.—Dr. Jos Oettinger, Professor of Historical Medicine, is about to retire. A new surgical clinic has just been opened for the reception of patients.

Genoa.—Dr. Morselle, of Turin, has been appointed Professor of Mental Pathology.

Groningen.—Dr. Koch of Amsterdam has been appointed to the chair of Surgery, in succession to Professor Korteweg.

Königsberg.—The temporary charge of the late Professor Jacobson's Ophthalmological Clinic has been given to Professor Vossius.

Liège.—Dr. Firket has been promoted to the full Professorship of Pathological Anatomy and Bacteriology.

Montpellier.—M. Granel has been appointed to the chair of Botany and Natural History, in succession to the late Professor Martins. M. Imbert has been appointed Professor of Medical Physics, in succession to the late Professor Moitessier.

Würzburg.—Dr. Reichel has qualified as *privat-docent* in Surgery.

DEATHS OF EMINENT FOREIGN MEDICAL AND SCIENTIFIC MEN.

THE deaths of the following eminent foreign medical and scientific men are announced:—M. J. Puls, a well-known Belgian entomologist, a pharmacist by profession.—Dr. Landtsert, formerly Professor of Anatomy in the Medico-Chirurgical Academy in St. Petersburg. After retiring from the chair at the end of twenty-five years' service, he employed himself in teaching anatomy at the Academy of Arts.—Dr. Kozloff, who at one time held a professorship in the University of Kieff, where his duties were to teach Pathological Anatomy, Physiology, Anatomy, and the History of Medicine. From 1871 to 1882 he was Medical Inspector in the Medico-Chirurgical Academy in St. Petersburg. For some thirty years he was editor of the *Voyenno-Meditsinski Zhurnal* (the *Military Medical Journal*).

SMALL-POX is stated to have greatly diminished in Chili, owing to the spread of vaccination. In 1880 there were 7254 deaths from this disease; in 1883, 3188; in 1885, 3138; and in 1888 only 1477. The death-rate, however, taken on the whole, is still high, owing to the want of sanitation among the people.

AT the sitting of the Royal Commission on Vaccination on Wednesday, Dr. F. W. Barry was again (the third day) under examination, and it is probable he will be called at the next meeting.

DR. PETER HORROCKS performed Cæsarean section by Säger's method on Monday last at Guy's Hospital. Both mother and child are progressing favourably.

A CONGRESS of Russian medical and scientific men will be held in St. Petersburg from Dec. 27th to Jan. 7th. It will be divided into eleven sections.

THE death is announced of Mr. Vincent Richards of Goalundo, so well known for his researches on snake poison.

THE first Congress of Polish surgeons has just been held at Cracow.

WASTE OF FISH AND FISH PRODUCTS.

BY J. LAWRENCE-HAMILTON, M.R.C.S.

No. V.

THE alarming, augmenting, avoidable waste of fish and of products made or derivable from fish refuse, together with the waste of immature and of unsaleable fish is a question of national importance. These combined wasteful methods, sanctioned by chronic conventional custom, are factors which tend to increase the price of fish to the consumer, and are a heavy avoidable loss to the fisher-folks of the United Kingdom. In trawling, often the net is brought up without containing a single saleable fish. Whether the unsaleable fish amounts to 50 or 500 per cent. or even more as compared with the saleable fish is a subject upon which fishermen are proverbially reticent. When they do give information on

this point their evidence is so opposite and contradictory that the solution of this topic is not thereby advanced. However, when coasting smacks unavoidably catch nothing better than immature and other unmarketable fish, under a rational economic system, this fish should be used up for the manufacture of waste products which in the United States of America represent upwards of 14 per cent. of the total value of their fisheries. Excluding the waste of immature and of unmarketable fish, I estimate that upwards of £2,156,900 a year is wasted in the United Kingdom by omitting to work up the waste products of fish after the American plans.

Owing to pressure and other causes, almost all fish caught in the nets are either dying or dead before they are landed into the smacks. British fishermen frequently throw immature and unsaleable fish and fish refuse into the sea. From time immemorial the Chinese and Japanese have profitably worked up and economised the waste products of fish. The Americans boil fish to extract the oil useless for manure, whilst the bones are made into glue and other commercial products, and the remainder is used as manure. The Americans bone and skin their codfish, and pack it in tins; whilst thus making a higher-priced article, they derive extra profit by working up the skins and bones for by-products.

In the United Kingdom valuable waste products, derivable from fish refuse, are usually ignored in every household. Excellent stock or basis for soups can be made from the heads, bones, skins of fish, and of filleted fish, a familiar economy in China, where even sharks' fins often fetch about thirteen pence a pound. A bread of fish "flour" is popular in some countries. English rays are imported to France for making soup; bone earth from fish refuse for manure; albumen from fish blood. A "meat" extract is made from fish; it has no fishy flavour, and is alleged to be better and cheaper than beef extracts. This fish extract mixed up with pea-food, flavoured with herbs and salt, makes a good food-sausage. Herring meal, mixed with starchy food, affords a cheap and excellent food for cows, without giving any fishy flavour to their milk. In some foreign countries domestic animals and poultry are fattened on fish.

The heads, fins, entrails, blood, &c., yield excellent guano. From the skins and bones of fish a strong adhesive cement can be profitably manufactured. The dried skins of the shark, dog-fish, ray, &c., are useful for polishing wood and ivory, and in Egypt serve for the soles of shoes. These fish skins afford a kind of leather called shagreen. The dried skins of flat fish can be used for gloves, "leather" purses, for lining coffee, as a substitute for isinglass, and for artificial baits. The Chinese use painted and varnished fish skins as ornamental lanterns. In Japan wax is made from the skins and intestines of fish. Eel skins serve for whip thongs, and when dressed and dried make braces. In America, cusk and torsk skins have been patented for shoelather. Siberian peasants clean, stretch, and dry the skin of the turbot for leather bags and as a substitute for glass window-panes. In some parts of Asia the tanned skin of the salmon yields a prettily marked scale-like leather, and ray skins a good imitation of morocco. Imitation porpoise leather is often made from the skins of the seal, walrus, and white whale. The American white fish yield large good upper leather. Indian-ink is obtained from the sepia fish. The roe of the mullet supplies the *botargo* of Italy, and is an ingredient in Indian curries. Besides the sturgeon, the roes of many other fish furnish caviars.

Especially about the middle of February, the decks of boats where cod-fish are killed are actually milk-white with cod-spawn, which should be used for artificially rearing cod-fish, as in Norway. Russian scientists have been specially successful in rearing fish from the roes of dead male and female fish. Mussels, one of the best baits for sea-fish, have often been destroyed to serve as a cheap manure.

RABIES.—The number of dogs in England officially reported during the week ending Oct. 12th as afflicted with rabies was eight, against a similar number in the preceding week. Of these seven were killed, and one died. The distribution was as follows: Sussex (Eastern Division), two; and Essex, Lancaster, Middlesex, Oxford, Surrey, and York (West Riding) one each. No cases were reported from London proper.

LONDON THIRTY YEARS AGO.

THE report for the year 1888, with which the Metropolitan Board of Works has wound up its career, has been made the occasion of a *résumé*, in which that now defunct institution replies to the comments and criticisms which have accompanied its demise by solemnly placing on record the services which in the course of its history it has rendered to the metropolis. Such a narrative can hardly fail to be interesting in no ordinary measure. It is, for example, strange and curious in a high degree to recall now the anarchic condition of London local government so recently as 1855, when the Metropolitan Board was constituted. In the report just issued the picture is strongly drawn. Contemporary testimony to the frightfully insanitary condition of the River Thames and of the slums is quoted from the pages of THE LANCET, and from evidence given by the late Lord Shaftesbury before a Royal Commission, which considered in 1854 the question of the housing of the poor. The description makes one wonder that such neglect of the most elementary principles of hygiene could ever have occurred in a civilised community. The problem of finding adequate room and wholesome dwelling places for the overwhelming population of the metropolis is formidable, and far enough from solution to-day. What it must have been when the river was nothing but an open sewer, and when we were forced to write, "Wheresoever we go, whatsoever we eat or drink within the circle of London, we find tainted with the Thames," it is far from easy to say or even to imagine.

The Board of Works assign the foremost place among the improvements which it has effected to the great work of sewerage and drainage which it has carried out. It is, no doubt, easy to over-estimate the merit of that work. Putting the picture of 1889 beside the picture of 1855, it is most natural that one should be led to exclaim, "What a vast change!" And vast, indeed, it is. But it does not at all follow from that that the reform is complete or the stage attained final. On the contrary, the work which the Metropolitan Board accomplished ought, in our judgment, to be regarded as a mere beginning. The costly and wasteful process of carrying the refuse of London out to sea and casting it away there is wholly unworthy of the science of the day. The historian of the Board narrates with some details the various attempts which have from time to time been made to convert the sewage of London into manure for agricultural use. It is his lot to record of every one of these attempts in succession that they have resulted in disappointment, and the conclusion if not actually drawn is sufficiently indicated that any such undertaking must of necessity be fruitless. We, however, for our part refuse to accept that inference. In spite of all past failures, arising as they have arisen again and again from unfavourable financial circumstances or other faults of management or design, the broad chemical facts remain that this troublesome waste contains highly valuable ingredients, ingredients of which the soil stands in need, and which have to be supplied from other sources at considerable expense. The problem is how to transport it from the place where it is a nuisance to another place where it is a desideratum, and we wholly decline to draw the inference that this problem is insoluble from the meagre data furnished by the unsuccessful attempts to grapple with it which have been recorded by the Metropolitan Board. It may be that considerable alterations will have to be effected in the drainage system which has been elaborated by the Board; it may be that much of the work which it has done has been done upon mistaken lines; but we confidently hope that it will eventually be found that a well-regulated town, even though swollen to the present proportions of the metropolis, can always find upon agricultural land an outlet for its refuse under an arrangement which, while easing the burden of removal, respects the economy of nature.

In perusing this report, we find ourselves more thoroughly in accord with the writer in his comments upon the work of the board in connexion with the preservation of open spaces, and the protection of infant life. Thirty years ago these were subjects which were but little understood, and even