

Dec. 31st last 19,918 persons. The average rent of each dwelling was slightly less than 5s., and of each room rather more than 2s., the rent in all cases including the free use of water, bathrooms, laundries, and sculleries. The births among the resident population of these buildings in 1894 were equal to 36.3 per 1000, which was 6.3 per 1000 above the aggregate rate in London. The rate of mortality was only 15.7 per 1000, and 2.0 below the average rate in the whole of London. This death-rate includes 49 deaths of residents of these buildings that occurred in various hospitals, but it does not appear to include any correction for deaths of residents who drift into the workhouses and workhouse infirmaries, and this undoubtedly explains, at any rate in part, this remarkably low death-rate in a distinctly working-class population. The trustees of this fund have not made much addition to their buildings for several years, but have been employing their surplus revenue in repaying the sum of £390,000 borrowed from the Public Works Loan Commissioners, which has thus been reduced to £111,000. It is stated in this report, moreover, that since the beginning of this year two new blocks of buildings in Stamford-street, containing 110 rooms, have been occupied, which must have raised the resident population above 20,000 persons. The housing of this large population in improved and sanitary dwellings is a grand result from the operation of the Peabody Fund, and it is inevitable that the scope of its benefits will be very considerably increased in the not distant future.

THE BUCKINGHAMSHIRE SANITARY CONFERENCE.

THE report of the proceedings of this Conference, which was held at Aylesbury on Oct. 31st of last year, has recently been issued in pamphlet form, together with an introduction by Miss Florence Nightingale. Our readers will remember that in THE LANCET of Nov. 10th we gave a short account of the eminently successful Conference, and we are glad now to have an opportunity of drawing attention to the report. The Conference was held under the presidency of Mr. Frederick Verney, chairman of the sanitary committee of the Bucks County Council, and we believe we are right in saying that at the time of the Conference the relations between the sanitary committee and the council as a whole were such that many members of the council were desirous of terminating the existence of the committee. Fortunately, however, the very influential conference which Mr. Verney was instrumental in calling together, and the publicity which was given to its proceedings, succeeded in bringing home to the council the advantages from an administrative standpoint of a sanitary committee, and we are now able to chronicle that the life of the committee has been prolonged and received fresh vigour. Miss Florence Nightingale, in her introduction, points out that "money would be better spent in maintaining health in infancy and childhood rather than in building hospitals to alleviate and cure disease," and in saying this she places her finger upon a great blot in preventive medicine—our heavy infantile mortality. We can but feel that the Bucks Sanitary Conference has done well to publish its proceedings in their present form, as the circulation of the pamphlet cannot fail to assist in bringing about that popular education in sanitary matters to which one of the speakers more especially drew attention. We again congratulate Mr. Verney upon the success of his enterprise, and trust that all newly elected district councillors in Buckinghamshire will make themselves familiar with the contents of the report. There are few counties in our knowledge where there are better opportunities for sanitary reform than Buckinghamshire, and more especially is this the case with regard to isolation accommodation and the housing of the working-classes.

IN consequence of the recent indisposition of Sir John Erichsen (from which he is, we are glad to say, rapidly recovering) the complimentary dinner to him and his distinguished colleagues Sir J. Russell Reynolds and Sir John Williams, which we announced would take place on Wednesday, March 13th, has been postponed to Wednesday, March 27th.

AT the Council held on March 13th, the resignation of Alderman Vaughan Morgan as treasurer of Christ's Hospital was accepted, but he will continue to act until a successor is appointed. Alderman Vaughan Morgan remains treasurer under the old governing body of the endowments excepted from the scheme.

DR. LIDDELL, the former Dean of Christ Church, Oxford, presided at a meeting held in the Sheldonian Theatre, Oxford, on Friday, March 8th, to consider the proposed testimonial to Sir Henry Acland. It was resolved that the testimonial should take the form of a benefaction in connexion with the Sarah Acland Home for Nurses.

THE debate at the Pathological Society of London upon the Pathology of Diphtheria will be resumed at the meeting on Tuesday, March 19th. Mr. W. Robertson will read a paper upon the Immunisation of Horses. Dr. Washbourn, Dr. Sims Woodhead, and others have promised to take part in the discussion.

MR. FRANCIS GOTCH, M.A. Oxon. (Hon.), B.Sc. Lond., F.R.S., Holt Professor of Physiology in University College, Liverpool, and late a Lecturer on Physiology at Oxford, has been elected Waynflete Professor of Physiology in the University of Oxford, in the room of Dr. J. Burdon Sanderson, now Regius Professor of Medicine.

WE learn with pleasure that Dr. R. C. A. Prior, the Senior Fellow of the Royal College of Physicians of London, is making a satisfactory recovery from the severe attack of influenza from which we reported him to be suffering last week.

MR. FREDERICK WEBB, M.R.C.S., L.S.A., of 113, Maida-vale, has presented to the Medical School of St. George's Hospital the sum of £1000 to found an annual prize in bacteriology.

SIR JOSEPH LISTER has accepted the Presidency of the British Association during the meeting which will be held at Liverpool in 1896.

THE THEORY AND PRACTICE OF PROTECTIVE INOCULATIONS.

BY E. E. KLEIN, M.D., F.R.S.

DR. KLEIN delivered a lecture on this subject at the London Institution, Finsbury-circus, on Monday, March 4th. Starting with the axiom that "the more accurately we know an enemy, the more easy it is to overcome him," Dr. Klein said it nowhere more adequately applied than in the prevention and treatment of disease. Since it had been conclusively shown that communicable diseases were caused by specific parasites which elaborated within the body specific poisons called "toxines," causing the particular symptoms of the disease, it had become possible to study more accurately these causes of disease and devise better means by which the life of the parasites and the action of their toxines might be inhibited or altogether destroyed. The treatment of infectious disease had been greatly advanced, and although some of these disorders were still in a stage of generalities far-reaching changes had taken place in others. The system of antiseptic surgery discovered and applied by Sir Joseph Lister—instrumental in reducing the mortality of

surgical operations, once very high, to an almost nominal figure—and the exact knowledge we now possessed of the propagation and spread of cholera and typhoid fever by means of water, milk, and other articles of food were cases in point. Scientific medicine, in contradistinction to empirical medicine, had acted on the more rational axiom that “he who cures may be the cleverer, but he who prevents disease is the safer physician,” and had gradually unravelled the complex problems of the nature and cause of disease, and in many instances devised means of preventing communicable disease. Dr. Klein then referred to the remarkable achievements that had been made in general sanitation and in the direct prevention of disease by means of protective inoculation, of which Jenner’s discovery of vaccination was the earliest example. In all civilised countries and among all civilised peoples the protective power of vaccination against small-pox had been amply confirmed and established. Two points were particularly worth considering—(a) was vaccinia or cow-pox a modified or attenuated form of human variola? or (b) was it a separate and specifically different disease? With regard to the first point, most pathologists and sanitarians agreed with the original proposition enunciated by Jenner—namely, that vaccinia or cow-pox was a mild form of small-pox in the cow, and just as an individual who had passed through one attack of small-pox was furnished with resistance and immunity against a second attack, so also an individual who had been successfully vaccinated has practically passed through a mild attack of localised variola, was therefore possessed of immunity against a second attack, and was protected against small-pox. In some other infectious diseases—scarlet fever, measles, and whooping-cough—one attack, however mild, furnished, as a rule, immunity against a second attack. This was acquired immunity, as distinct and different from natural immunity, as, for instance, the natural immunity of most young children against typhoid fever or cholera, and of many adult persons against measles. With regard to the second point, many pathologists, while recognising the protective power of vaccinia against small-pox, did not admit that cow-pox was an attenuated form of the human small-pox, but that it was a specifically different disease. This belief was based chiefly on the many failures which experimentalists had incurred in trying to produce cow-pox in the cow by inoculation of this animal with human small-pox. It was equally true, however, that there had been many positive results, inasmuch as in a few instances there had been produced in the cow by inoculation of matter derived from the vesicles of human small-pox typical cow-pox, which on transmission to the human subject produced vaccinia and not variola, and on further transmission from human being to human being continued to produce vaccinia in all its typical characters. Thiele, Ceeley, Badcock, and in more recent times Voigt, Fischer, King, Simpson, Hime, he (Dr. Klein) himself, and Copeman had had unmistakable positive results. The argument which maintained that vaccinia was of a specifically different nature from human variola was faulty for two reasons. First, as a matter of actual experience vaccination was now and then followed not simply by the production of a vaccine vesicle at the seat of insertion, but there appeared other additional vesicles even of the character of a general eruption; this, though of rare occurrence, was nevertheless a strong argument for its derivation from variola. Secondly, the “breeding true” of vaccinia in the human subject through however many transmissions and the failure of a reversion of vaccinia into variola were completely paralleled by what occurred in a disease occurring in the sheep, and was in all respects homologous to variola—namely, variola ovina or sheep-pox. Protective inoculation was used against this disease with large success in the South of France, Austria, and Germany. The lymph was “nursed” by local insertion through a succession of sheep, always producing a large local vesicle with mild constitutional symptoms. Such local inoculations had been practised over and over again, and as a general rule only at the places of insertion did a vesicle become formed; there was no general eruption, and therefore no reversion to the original type. It was clear from this that lymph derived originally from a vesicle of true variola of the sheep “bred true”—i.e., produced on transmission from sheep to sheep only local protective vesicles. If, however, this lymph were injected into the vascular system of a sheep true variola might be the result. Cheavau, he (the speaker), and others had had cases of this kind. But while the inoculation was made by cutaneous insertion local vesicles only resulted. From this it followed that the argument because lymph derived from the cow and transmitted through

human beings did not ultimately revert to variola, but produced a local vesicle only, in no way justified the conclusion that the two diseases, variola and vaccinia, were specifically different. The conclusion to be drawn from this was that Jenner’s original contention was established. Dr. Klein then briefly referred to the work of Pasteur on anthrax and fowl cholera—a work which had been made possible by the discoveries of Koch. Satisfactory results in protective inoculations on the same lines as those pursued by Pasteur had been obtained in several—swine fever, swine erysipelas, &c.—but not in all infectious diseases. Unfortunately not in all infectious diseases did one attack protect, although a first attack furnished, for a time at any rate, a certain resistance; such was the case in diphtheria. In cases of acquired resistance or acquired immunity a condition was produced by the first attack by which the body was rendered unfit for a second attack. This sometimes happened after a mild first attack, but in other instances this only furnished a slight resistance and in still others no resistance. In these two latter cases the resistance could be increased by repetition of the mild attack and by using the second time a somewhat stronger virus and producing a somewhat stronger effect, but still only a passing one; and after many repetitions in these cases the resistance thus acquired could gradually be increased to a high degree. It had been shown, both for animals and for man, that the immunity produced by artificial inoculation of attenuated culture or acquired in the natural manner by a first attack of the disease was due to the presence in the blood of chemical substances produced in the course of the first attack; these substances were capable of neutralising the activity of the specific microbes. Moreover, it was found by Behring that the injection of blood serum of an immunised animal was capable of protecting an otherwise susceptible animal and of furnishing it with immunity, so that infection with the microbes of the particular disease was prevented. The degree of this protective or immunising power of the blood of an immunised animal stood in direct proportion to the degree of immunity or resistance which that animal had acquired by the previous injection or by the previous attack. That in diphtheria the blood of an immunised animal possessed an immunising or protective property in other animals had been fully proved, but it must be added at the same time that the protection thus produced was only of comparatively short duration. In the experiments in which the immunising and protective action of the blood serum of an animal artificially immunised against diphtheria or tetanus respectively was ascertained another important fact was elucidated by Behring, afterwards confirmed by a large number of workers—viz., that this serum not only possessed protective potency when injected into an otherwise susceptible animal, but that if injected into an animal in which the disease had already made its appearance it (the disease) could be cut short and the animal would recover. The serum, therefore, acted as a curative agent. Such serum had been applied both in diphtheria by Behring and Roux, as also in tetanus by Tizzoni and Centanni, with striking success in the human subject; and the published accounts of the cases so treated in Germany, Austria, France, Italy, and England placed it beyond doubt that in a large percentage of cases the disease was cut short and even in severe cases recovery achieved. A question of great scientific interest was the manner in which the serum of animals immunised against diphtheria or tetanus acquired its protective and its curative potency. Looked at from a theoretical point of view this double action might be due to either of two things: (a) the serum might contain one substance which had both these actions, or (b) it might contain two different substances, one for each separate action. The whole subject was only at the commencement of being understood, but this much was already certain, that the work on a sound experimental basis had already been productive of good results and was likely to be productive of still greater achievements in the field of protective as well as curative practice.

MEMORANDUM ON EPIDEMIC INFLUENZA.

WE have received the following memorandum from the Local Government Board, which will be read with interest at the present time:—

Influenza became epidemic in England in the winter of