

BRITISH MEDICAL ASSOCIATION :
SUBSCRIPTIONS FOR 1879.

SUBSCRIPTIONS to the Association for 1879 became due on January 1st. Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches, are requested to forward their remittances to Mr. FRANCIS FOWKE, General Secretary, 161, Strand, London. Post Office Orders should be made payable at the West Central District Office, High Holborn.

The British Medical Journal.

SATURDAY, DECEMBER 27TH, 1879.

THE OFFICE OF REGISTRAR-GENERAL.

MAJOR GRAHAM has resigned the appointment of Registrar-General, which he has held and administered with successful energy for more than thirty-seven years. Appointed in 1842, through the interest of his brother, the late Sir James Graham, Bart., when civil registration was in its infancy, he has contributed not a little to its progress and success by his capacity for organisation, and for the control of about three thousand local registration-offices scattered throughout England and Wales. Since 1842, various changes in the law regulating registration have from time to time been carried out, which have combined to make the registration system of to-day very superior to that which was in operation when Major Graham assumed office. He had the good fortune, on his appointment, to find Dr. William Farr in charge of the statistical department of the office. Dr. Farr's statistical work in connection with the General Register Office—which, perhaps more than the labour of any other single worker, has tended to initiate and to stimulate national sanitary progress—has been so fully appreciated by the public, that there is no need to dwell upon it here. The Registrar-General himself has most liberally acknowledged, in the concluding sentences of his last annual report, his obligations to Dr. Farr, who has earned a world-wide reputation for the weekly, quarterly, and annual statistics published under the authority of the Registrar-General. The exceptional statistical abilities of Dr. Farr have for many years so identified his name with the General Register Office, that a large portion of the public, and frequently the press, have concluded that he was Registrar-General. This misconception, while it was a proof of the public appreciation of Dr. Farr's valuable services to sanitary and statistical science, involved no real disparagement of the services of Major Graham. The public knows little of the duties of Registrar-General, except those which appertain to public health and vital statistics. Major Graham has, however, for the past thirty-seven years, exercised a constant and efficient personal control over the machinery by which the marriage, birth, and death registers are called into existence, and from which Dr. Farr has evolved the vital statistics which have served as a model for such statistics in all parts of the civilised world.

In recording our deserved tribute to the value of Major Graham's long service as Registrar-General, we would willingly pass unnoticed the offensive tone which he has, in his reports, at times assumed towards the medical profession. This would have been the easier, had he not been sufficiently ill-advised to reprint and issue, during the past few months, to his three thousand registration-officers, a summary of some remarks which he submitted to the consideration of the Royal Sanitary Commission in July 1869. Those reprinted remarks only remind us unpleasantly of Major Graham's constant opposition and attempts to ridicule the registration of diseases, the registration of still-births, and the appointment of medical officers to assist coroners by primarily investigating all causes of death not certified by registered medical practitioners. No useful purpose would now be served by representing the studied tone of disparagement which throughout those remarks he chose to assume towards the medical profession, or his ill-disguised sympathy for bone-setters, herbalists, and other quacks.

Since these remarks were written, a new Registration Act has come into operation, which, among other changes, has made it compulsory upon medical practitioners to furnish medical certificates of the causes of death of their patients. Civil registration has steadily improved; and we wish that Major Graham would have allowed us to forget his prejudiced opposition to further registration reforms, which he was determined to leave to his successor, who, in 1869, he prognosticated would be "superior to him in ability".

It is announced that Sir Brydges Henniker, Bart., has been appointed to succeed Major Graham as Registrar-General. Beyond having served for a year or two as private secretary to Mr. Sclater-Booth, President of the Local Government Board, we are unable to discover any special claim or qualification for the appointment which he has had interest enough to obtain. The new Registrar-General may possess special fitness for the post; but when such an appointment as that of Registrar-General is filled up through private or political interest, as in the present case, doubt as to the result of the selection is with difficulty repressed. If the appointment of a Local Government Board official signify the subordination of the General Register Office to the position of a mere department of the Local Government Board, which is still governed by its Poor-law element, we cannot look with favour on the impending change. There can be no question that the General Register Office should form a component part of a national Public Health Department; but the Local Government Board, although charged with important public health duties, is still in spirit the Poor-law Board, and, as such, is unfitted to organise and control public health administration. Under present circumstances, therefore, we do not hail with satisfaction the prospective emasculation of the General Register Office at the hands of a nominee of the Local Government Board.

There is one other aspect of the impending changes in the Registrar-General's Department which cannot be passed over. It is well known that Dr. William Farr, who has served as Superintendent of the Statistical Department almost since the foundation of the office, was a candidate for the vacancy caused by the retirement of Major Graham. The Government best knows the grounds on which they set aside the claims of Dr. Farr, based upon so eminent a public service, in favour of the private secretary of one of the Ministry, whose qualifications for the post are at any rate unknown. Such misuse of patronage affords a discouraging commentary upon our system of party government, and paralyses the zeal and energy of the permanent Civil Service of the country. We are not surprised to hear that Dr. Farr, under the influence of his disappointment at not obtaining an appointment, for which his distinguished services appeared to give him the strongest claim, has placed his resignation in the hands of the Lords of the Treasury. It may, we trust, be hoped that the Government, which failed to recognise his claim to the appointment of Registrar-General, will signify their approval of his services by liberal interpretation of his claims for pension, even if they afford no other mark of their appreciation of his invaluable and original work in vital statistics. Under the new Registrar-General, and deprived of the services of Dr. Farr, the future of the General Register Office is not free from anxiety. The effect of its past administration has been one of continued usefulness and important assistance to sanitation. There is no reason why its sphere of usefulness should not be enlarged; let us, at any rate, hope that it will not be abridged.

THE NURSING AT GUY'S HOSPITAL.

ABOUT two months ago, the Treasurer of Guy's Hospital thought it desirable to appoint a new matron, whose principles involved "a new system of nursing"; this he unfortunately did without having previously consulted the medical staff. This isolated action on his part is much to be regretted, and has ended in a disruption and disorganisation of the nursing in the hospital. The new matron brought with her a system to which she has endeavoured to bend the previously existing arrangements. The result has been the resignation or dismissal of some of the oldest and most efficient sisters, as well as the loss of many of

the best trained and most competent nurses of the hospital; some of whom have spent the chief part of their lives in the service of the institution.

The new rules for nursing have been enforced without an effort having been made to find out whether or not they were practicable, or whether or not they would be disapproved of by the medical staff. Consequently, nurses who had been trained in special wards, and thus had the necessary special knowledge, were changed in rotation into other wards, where they had fresh duties to perform, of which they were ignorant, and which they had to begin to learn. This plan left the special wards, so treated, deprived of nurses able to do the necessary special work required of them. The injury thus suffered by the patients is manifest. Another rule is being enforced, which is as unnecessary as it is thoughtless and cruel. The matron has decided that those patients who are not confined to their beds throughout the day shall rise and dress themselves at five o'clock in the morning. Such treatment must in most cases retard, and in not a few absolutely prevent, the recovery of the patient. It was hoped for some time by the medical staff that this matter would be settled in a satisfactory manner, without becoming a matter for public discussion. They remonstrated in vain with the Treasurer. He replied by summoning a meeting of Governors, at which he took the chair, and at which a vote of confidence in him was passed. This meeting was composed of five Governors. The representatives of the staff were thus ignored. A question involving not only the satisfactory and peaceable working of such a large and important institution as Guy's Hospital, but the well-being of the thousands of patients who go there for medical relief, cannot be settled in such an arbitrary manner, and by so small a meeting, in a manner opposed to the opinions and experience of the medical staff.

The position of the Treasurer of Guy's Hospital is, to a certain extent, autocratic and despotic. It can, however, only remain despotic so long as the despotism is an intelligent one and conducted upon principles of constitutional compromise. If it be found that the present mode of administering the hospital results in a dead lock, it becomes a matter for public investigation. Neither the profession nor the public can allow a charity, which is almost a national one, to be injured in its beneficial progress. Unless the present confusion can be satisfactorily set straight, it may be necessary that the subject of the organisation of the governing body of the hospital be inquired into by the Charity Commissioners.

The *Guy's Hospital Gazette* has set forth some of the disadvantages of the new system which it is being sought to force upon the hospital. The Treasurer has thereupon intimated to the Editors that no complaints could in future be allowed to appear in the *Gazette*. This arbitrary proceeding is tantamount to a confession on his part that his action regarding the nursing does not bear public investigation and discussion. It is to be hoped that more moderate counsels will prevail, and that the recommendations of the staff will be listened to before it is too late to avoid a more public scandal.

FACTORY LEGISLATION.

CORRESPONDENTS assure us that the present amended Factory Act, which has been in force from the 1st of January this year, does not work satisfactorily; and we, therefore, propose to make a few remarks upon it. The clause making compulsory the production of copies of birth-registers is found objectionable. The surgeon cannot certify for any persons, under sixteen years of age, who do not produce copies of their birth-registers when they are to be obtained. This has caused endless trouble and inconvenience. Although the Act has been in operation eleven months, the same difficulty exists now as at the commencement.

The factory employers justly complain, saying: "You know these children are quite fit to work the hours we require, and you will not pass them because they will not comply with the demand of the registrar to pay from two shillings and sixpence to three shillings and sixpence for a copy of the register of birth, which he is entitled to charge, being over fourteen years of age." Some of the employers have said:

"You have several times refused to pass some that have produced birth-registers, because you did not consider them strong enough; now, if you have the power to refuse when the conditions are complied with, we think you ought to have the power to dispense with the registers when you find the children physically strong enough to work the hours we require." All the factory surgeon can say is, that such is the law, and we wish that those who made it had to carry it out.

The surgeon has the power to refuse giving a surgical certificate for all persons under sixteen years of age, if they be suffering from any infectious diseases of the head or body generally, which renders them unfit or incapable of working the factory hours; but no discretion is left to him as to their physical capacity. It is, however, well known to all medical men that some children are much stronger at fourteen than others at sixteen.

The sixpenny fees settled by the Act are a grievance of which medical men may justly complain. There are about one thousand surgeons engaged in factory work, whose duty it is to visit factories periodically or specially, as required, for the purpose of examining and certifying children and young persons as to their freedom from disease and bodily infirmity, which would render them unfit for working the time allowed by the Factory Act. They are also required to report upon accidents caused by machinery. In the performance of these duties, they are not assisted by the inspectors to the extent they ought to be. The surgeon resides within his district, and is brought into almost daily communication with the managers and overlookers, and is consequently continually appealed to for information which ought to be given by the inspectors; but, as the latter generally reside at some distance, and do not visit the factories more than three or four times a year, and in many districts less, it is thus apparent that the medical man is called upon to do, not only surgical but inspectorial duty, and for this important work he receives the ungracious sum of sixpence for each certificate, if given at his residence. The system of grouping five certificates together, including a visit within one mile, for the fee of two shillings and sixpence, is an encouragement to keep the children at work before receiving the certificate longer than allowed by the Act. The value of the services rendered by the medical men was acknowledged by the Royal Commissioners who were appointed to obtain evidence with a view to the consolidation of the previous Acts. In their report, it is stated: "That the certifying surgeons, by their scientific knowledge and intelligence, have largely contributed to the fair acceptance which these Acts are now obtaining among all classes they affect." They also testify to the ample evidence which came to their notice of the interest taken in the important share of their work in the administration of the Acts. In the face of ample evidence thus given of the value of the surgeon's work, the paltry fee of sixpence for each certificate is a niggardly economy which will not tend to keep up the surgeon's interest in his duties.

ENTERIC FEVER IN INDIA.

II.

IN the later parts of the report by Surgeon-General Ker Innes, to which we referred in last week's JOURNAL, the questions of age and recent arrival in India are discussed; and the accuracy of Bryden's doctrine, that both are important factors in increasing the susceptibility of our young soldiers to this disease, is duly insisted on and supported by statistics. The author then turns to the question, whether "any measures can be adopted in India for obviating or diminishing the annual losses from enteric fever among this class of men". This, of course, can only be answered by a reference to causation. "If the enteric fever of this country be a specific fever, depending upon a specific poison; and assuming, what is certainly required to sustain the theory of a continuous transmission of the disease, that the poison, or *materies morbi*, is capable of retaining its vitality or activity for long periods of time outside the body, and that the appearance and disappearance of the disease (with widely separated intervals of time) in a given locality where it has once become established, may consequently be accounted for without the introduction of any fresh

case; or, if it be essentially a filth fever, and originate spontaneously from pythogenic causes; then we can, on the first assumption, limit the spread of the infection; and, on that of the second, we should be able, by well-directed efforts, to secure its extinction as far as military cantonments are concerned." The possibility of the disease being maintained and spread by infection is then considered. Can it be accounted for by importation, or one or other of the following channels—contaminating of air, water, milk, or other beverages; soiled linen in connection with washing arrangements; a common latrine; conservancy arrangements; the extension of the disease from the natives, or from something connected with their habits? All that can be reasonably said on each of the above possible causes is carefully considered. The result arrived at is that, in the opinion of the author of this report, medical officers have utterly failed in India to trace out the intimate connection of this disease with filth-causes or specific infection, with which, according to European authorities, it is invariably associated. Such failure does not convince us that genuine filth typhoid does not exist in India. The evidence in this report is, to our mind, conclusive that the enteric fever of India is, in all essential particulars, the same as that of Europe; and it is difficult to believe that this filth factor, which is so powerful in this country, should not operate in India, however difficult it may be to prove it. We have, in our notice of Dr. Gordon's report, shown that, however perfectly filth may be excluded from modern barracks in India, and from the water-supply, it is impossible to expect that soldiers who suffer from this disease, and who freely frequent places not so guarded, and drink water and other beverages not under the control of the sanitary authorities, have not been exposed to filth causes. The author of this report candidly admits as much; for, in the twenty-seventh paragraph, he thus expresses himself: "While, however, I am very sceptical as to the applicability or adequacy of the causes assigned by European authorities to account for all, or anything like all, the facts in this country, I would, on the other hand, guard myself against being supposed to deny their existence. On the contrary, there is no doubt that enteric fever is an infectious disease, capable of spreading in a community under certain circumstances, and of adhering to, and forming part of, the medical history of a corps for a long time; and that many cases are traceable to a common cause, such as contaminated water or organic-laden air." We entirely concur in this opinion, for the reasons given above. It is not our business to reconcile it with the confident statement before given, viz., the failure to trace out the intimate connection of the disease with filth causes or specific infection.

Here we must pause; we cannot do so without once more thanking the author, or authors, of this report, which we consider a valuable contribution to military medical and sanitary science.

A NEW trial has been ordered in the Hampstead Hospital case, the defendants to pay the costs of the first action.

PROFESSOR ERB of Heidelberg has received a call as Professor in the Policlinik in the University of Leipzig; and Professor Czerny of Heidelberg has been invited to become Professor of Surgery in Prague.

DR. ADAMKIEWICZ, assistant in the Clinic for Nervous Diseases in the Charité Hospital, Berlin, has been appointed Ordinary Professor of General and Experimental Pathology in the University of Cracow.

MR. CHURCH reported to the Chemical Society, at its meeting of November 20th, the second part of researches from which he deduces that white foliage does not possess the power, even in sunshine, of decomposing the carbonic acid in the air.

At the meeting of the Liverpool Medical Students' Debating Society, held on Friday, the 19th instant, under the presidency of Dr. Carter, Mr. Taplin read a paper on "The Army Medical Service". The majority of the members present voted in favour of Mr. Taplin's motion: "That the Army Medical Warrant (1879) is equitable, just, and likely in every way to prove beneficial to the service."

IN one of the hospitals at Berne, fifty patients suffering from severe frostbite were treated last week.

THE case of the death of Whitwell, who is alleged to have had fatal pneumonia induced by ill-treatment in Pentonville prison, will again call public attention to the health-arrangements of that prison.

DR. LETTS, formerly assistant to Professor Crum Brown in Edinburgh University, and latterly Professor of Chemistry in Bristol, has been appointed to the Professorship of Chemistry in Queen's College, Belfast, *vice* Dr. Thomas Andrews, resigned.

A PUBLIC meeting held at Eastbourne, having decided to erect a local hospital in memory of the Princess Alice, it is announced that £2,000 has already been subscribed for the purpose, leaving a like sum yet to be raised.

MEASLES is very prevalent at Bolton. There have been within a month two hundred and ninety-four cases, forty-four of which have ended fatally. The Medical Officer of Health has advised the closing of the schools.

THE managers of the Royal Institution have awarded the Actonian Prize of £105 to Mr. G. S. Boulger, F.L.S., F.G.S., for an essay on "The Structure and Functions of the Retina in all Classes of Animals, viewed in Relation with the Theory of Evolution".

DEPUTY SURGEON-GENERAL JOHN ANDREW WOOLFRIES, M.D., C.B., the Principal Medical Officer of the British forces during the Zulu war, has been gazetted Commander of the Order of St. Michael and St. George.

OWING to the ravages of fever in the Karnal, Gurgaon, Rohtah, Delhi, and Hissar districts of the Punjab, the officiating sanitary commissioner, Dr. Adam Taylor, has been ordered to proceed to these places with the view of ascertaining the cause of the epidemic.

ON the 11th instant, a new cottage hospital for Evesham and its neighbourhood was opened with much ceremony. The building has been built at a cost of £1,131, and affords accommodation for eight patients in four wards, two for either sex, together with operating-room, mortuary, and the usual offices.

THE Court of Appeal has dismissed the appeal of the London and South-Western Railway Company against the verdict by which a jury had awarded £16,000 damages to Dr. Phillips, a physician who had sustained injuries upon the company's line, which had incapacitated him from the exercise of his profession.

M. CAZENEUVE reports to the Académie des Sciences concerning the influence of phosphorus on the urinary secretion. Experiments on the dog and the cat show that phosphorus, given in toxic doses, causes increase of urea, phosphoric acid, sulphuric acid, the total nitrogen, and iron. The author disagrees with the view of certain physiologists who regard the liver as the principal organ formative of urea.

AT the Brackley (near Banbury) petty sessions, Mrs. Rhoda Bishop of Culworth House, the widow of a surgeon, was committed for trial on the charge of receiving into her house two lunatics without being licensed to do so under the Lunacy Regulations Act. She was admitted to bail. The prosecution was instituted by the Lunacy Commissioners.

THE death of Mr. James Long of Liverpool is announced. Mr. Long had attained his seventieth year, and had for thirty years lectured on anatomy and surgery in the Liverpool Royal Infirmary School of Medicine. He also acted for many years as one of the honorary secretaries of the Royal Infirmary. Mr. Long was highly esteemed among his professional brethren; and had contributed much, up to a late period, to the medical journals. We shall publish an obituary notice in an early number.

A PAPER with the curious title of the *Rag-Baby* is forwarded to us from Philadelphia, printed with green ink on white paper. We are distinctly of opinion that printing in green on white paper is a very great improvement over black upon white. It is probably more expensive and troublesome than black; but it is undoubtedly much more agreeable to the eyes; and though at first sight a little strange, as being an unaccustomed effect, it is, on the whole, not unattractive.

AT the last meeting of the Linnean Society, Mr. Holmes exhibited, for the first time in England, the leaves, flowers, and portion of the trunk of the tree (*Andira araroba*) yielding the so-called Goa powder. This vegetable secretion appears to destroy and replace the woody tissue of the heart-wood. The source of the powder was long enveloped in mystery, but, from its containing chrysophanic acid, it was believed to be the product of a fungus. Recently, it has been found that the cane grows in Bahia, is sent to Lisbon, thence exported to the Portuguese colonies in the East, where it is used as a specific for ringworm.

DR. BROWN-SÉQUARD has laid before the Académie des Sciences some recent experimental researches on "a new property of the nervous system". Certain parts of the nervous system, he says, when under irritation, cause suddenly, or nearly so, a notable increase of the motor or sensitive properties of other parts of the system. Thus, transverse section of a lateral half of the base of the brain increases the motor properties of the parts of this centre before the section, while the opposite is produced on the opposite side; the same with section of the sciatic nerve, or a lateral half of the dorsal or lumbar cord.

NOWELL v. WILLIAMS.

IN the Common Pleas Division, on Saturday, an application was made on behalf of Dr. Nowell, who recently brought an action to recover damages from Mr. Williams, his brother-in-law, for alleged false imprisonment in a lunatic asylum, on which we commented at the time, for a rule calling upon Mr. Williams to show cause why there should not be a new trial. The application was made upon various grounds. In giving judgment, Mr. Justice Lindley said the opinion of the court was that the verdict was not against the evidence; but they held that a letter written to the defendant, and which had been admitted as evidence, should have been kept out. The rule was therefore granted on the ground of improper reception of evidence.

THE REGISTRATION OF INFECTIOUS DISEASE IN SWITZERLAND.

THE Board of Health of the Canton of Zürich have just taken an important step with regard to the prevention of infectious diseases. They have ordered that every case of such diseases, however slight, is to be reported to them; and for this purpose they have furnished every medical man with books provided with counterfoils. Sanitary commissions, instituted with this object, will be obliged to send instructions to the medical men when the cases are considered serious, and will prescribe the means of disinfection, the isolation of the sick, and other precautionary measures. The results of the information sent by the practitioners will be published every month, under the direction of the Board of Health.

THE LATE EXAMINATION IN THE MEDICAL DEPARTMENT OF THE ARMY.

SEVENTY-FOUR candidates presented themselves before the London examiners. When we consider the brief interval between the publication of the warrant and the examination, the number of candidates must be considered satisfactory, and good evidence that the new terms are regarded in the schools with favour. Of the above, sixty-five candidates were selected by the examiners; but, as seven more came up to the minimum standard, they were accepted by the authorities, evidently on account of the pressing need for army medical officers in all quarters. Judging from the marks gained in the London examination, we augur well of the qualifications of the majority of the successful candidates; Mr. Barker, who heads the list, has scored 2,590 marks out of 3,100, which is the limit for the compulsory examination, and

Messrs. Keogh and Clark are not far behind him, the former with 2,525, and the latter with 2,330 marks. Mr. Clark is, we understand, a son of Dr. Andrew Clark. Eighteen of the candidates have gained over 2,000 marks, and many others fall little short of the same respectable standard.

FOR PIGS OR MEN?

IT would be very interesting, the Editor of the *Analyst* thinks, if some of the millers would tell us if alum is ordinarily mixed with pigs' food. Of course, public analysts have no concern with the matter directly, but when samples of "flour fourths" are said to be intended for the food of pigs, and not men, the question naturally arises, "In what way can the alum do good to the pigs?" It has never been publicly stated that swine showed any preference for bread artificially whitened.

THE HEALTH OF QUEEN MARGHERITA.

EVERYONE who has seen the fair and amiable Queen of Italy must take an interest in her. She is the idol of the nation, and, by her tact, courtesy, and affability, does much to ensure the popularity of the House of Savoy, and to break down the barriers which still separate the "Neri", or adherents of the Vatican, from the Court at the Quirinal. All parties alike regret her illness. She left Rome in the beginning of July in perfect health, but exposure to the night air at the Lido in Venice during the summer brought on a slight ague, the intermittent attacks continuing even after her arrival at Monza. She improved rapidly after going to Bordighera, having had no further ague-fits there; and now it is satisfactory to learn from Professor Baccelli, who was sent from Rome to see her, that all that remains is weakness and anæmia, with liability to slight hysterical attacks. She would return to Rome at once, were it not thought more prudent for her to avoid the fatigues of the necessary receptions and entertainments of this time of the year. There is no truth in the report that the Queen is *enceinte*. It arose from the fact of Professor di Martino of Naples, a well-known obstetrician, having been summoned to Bordighera to take medical charge of her Majesty during the absence of the ordinary physician in attendance, Dr. Rossi.

AUTO-EXPERIMENT.

OF the devotion of the late veteran M. Michel Chevallier to the cause of scientific inquiry, an interesting anecdote is related from the early part of his career. A case of poisoning was to be tried at Paris, in which acetate of morphia had been used, and Chevallier, who had sold the salt to the murderer, was summoned as a witness. Anxious to have the full nature of this hitherto untried poison well established, and being limited as to time, he immediately undertook a thorough investigation of its toxic effects on his own system, and succeeded so well that at the trial he was able to give a detailed description of the symptoms attending the use of the drug in question.

PAYING PATIENTS IN ST. THOMAS'S HOSPITAL.

WE hear that a scheme has been submitted to the Charity Commissioners by the authorities at St. Thomas's Hospital, which contemplates the admission of "paying patients" to occupy the wards now vacant in that hospital under two arrangements. The first part of the scheme includes the establishment of "paying wards" on the home hospital system, in a part of the hospital which will be set aside for that purpose. They will have separate medical administration and a medical officer in charge, who will be paid out of the funds supplied by the payments of the patients. Any patients admitted to the wards will have the option of calling in consultation any medical man whom he pleases as his own visiting attendant, and he will arrange separately with such medical attendant as to fees, as though living in his own chambers. Another part of the scheme contemplates admission at lower rates to the ordinary wards of patients, who will be scattered throughout the wards, and who will make payment on a scale calculated only to pay the cost of maintenance. In this way, it is intended that the whole of the available beds at St. Thomas's Hospital shall be utilised. This scheme, although possibly open to criticism in some of the latter parts, is a palpable improvement.

on that at first suggested, and includes many of the modifications which we pointed out as necessary in order to make it in any way practicable.

A NEW HOSPITAL.

THE sum of twenty-four thousand pounds has recently come into the possession of the little town of Halesworth, in Suffolk, for the purpose of building a hospital. This sum was left by a Mr. Patrick Steed, who came to Halesworth in 1824, and established there a large business as a maltster. By his will, the money was to be applied for founding a hospital after the decease of his wife, who died in 1876. A difficulty having arisen owing to the construction of the will, the amount has only lately been received; but the inhabitants have already had a meeting on the subject, and an admirable site has been procured at a trifling expense.

HOSPITAL SATURDAY.

THIS movement, so far as the metropolis is concerned, has never attained great success. Relatively to the other English towns, the amounts raised in London have been insignificant and unsatisfactory. If all the managers of the London hospitals were canvassed, we believe it would be found that there is a widespread feeling that Hospital Saturday has proved a failure. This opinion will be strengthened by the circular which has just been issued by the Council. In it they display much ignorance of the mode of management which prevails universally at the London hospitals. They declare, in this circular, that the Council are entitled to all the privileges accorded to other subscribers. This sentence is loosely worded; and it simply amounts to the assertion that that Council are entitled to nominate a governor to each institution which receives a grant. Many of the questions issued by the Council are regarded as unnecessary, inquisitorial, and prying; and, altogether, the hospital managers would not be sorry to see the movement dropped. This feeling is heightened by the knowledge that many of the patients to whom the Council give tickets are unfit objects of charity. It is notorious that the working-classes themselves regard the movement with anything but favour; and the small success hitherto attained seems to warrant the conclusion that Hospital Saturday in London could well be dispensed with.

A NEW CONVALESCENT HOME.

THE Teignmouth Infirmary was established in 1848, and at that time it was the only medical institution available for the towns of Dawlish, Newton, and Teignmouth. At each of the two former towns, however, cottage hospitals have been successfully established, and in consequence the income and the work of this institution have been seriously reduced. Under these circumstances, the managers have availed themselves of an opportunity which may not recur, and have sold the present infirmary buildings to the Great Western Railway Company. They have further decided to change the institution from an acute to a convalescent hospital. This decision is a wise one, as more convalescent homes are greatly needed. We commend the new scheme to the sympathy and support of those who take an interest in medical charities.

THE GASTRIC GLANDS OF MAMMALS.

MR. LANGLEY, in a recent contribution to the *Proceedings of the Royal Society*, reports that in the glands of the fundus of the stomach of all mammals investigated, viz., dog, cat, rat, and rabbit, the chief cells are, in rest, crowded with conspicuous granules; the border cells are either without conspicuous granules or are finely granular. During digestion, the granules in the chief cells diminish. The stomach of the rabbit has certain structural peculiarities; the principal of these is that a large portion of the greater curvature contains glands, in which the chief cells are not coarsely granular. The glands of the greater curvature contain scarcely more pepsin than the glands of the smaller curvature and pylorus. But in the smaller curvature and pylorus there are few, if any, border cells; whilst there are many in the greater curvature. Hence the border cells are not directly connected with the formation of pepsin. The glands of the fundus contain a very much

larger amount of pepsin than the glands of the greater curvature; that is, where there are coarsely granular chief cells there is a large amount of ferment. Further, during digestion, the fundus-glands contain less ferment than in hunger—a fact observed first by Grützner—and it is during digestion that the chief cells have fewest granules. Hence, the conspicuous granules in the chief cells are directly connected with the formation of ferment. Since in passing from the fundus to the greater curvature we meet all stages of granularity in the chief cells, and since the chief cells of the greater curvature do not differ in any essential point from the pyloric gland-cells, he concludes with Heidenhain that the pyloric gland-cells and the chief cells of the fundus are fundamentally the same. He considers, however, the chief cells of the fundus to be a highly differentiated form of the pyloric gland-cells, a form more especially designed for the production of pepsin, and probably other solids of the gastric secretion.

A MUCH-NEEDED REFORM.

THE Council of the Hospital Sunday Fund, in setting apart one per cent. of the amount annually placed at their disposal, to enable them to give surgical instruments and appliances to deserving people, have taken a wise course. The regulations under which these appliances will be distributed are highly to be commended. Any minister of religion who makes application for a patient in writing to the Secretary of the Fund will receive a proper form of recommendation, which can then be taken to any of the participating hospitals or dispensaries. When the patient presents this recommendation to the institution he has selected, a member of the medical staff examines the case, and orders the necessary instrument, which he afterwards sees properly fitted. The surgeon then directs the patient where he can get the appliance he needs. As soon as he has obtained it, and it has been fitted to the satisfaction of the medical officer who has seen the case, an invoice, bearing the hospital stamp, is forwarded to the Secretary of the Fund, who in due course pays the instrument-maker. By this simple method, an incalculable amount of good has been already done, and all the abuses incidental to the system in force at the various surgical aid and truss societies are avoided. This new system benefits the patients who are really deserving, it simplifies the work of the medical staff of the hospitals, and materially aids the managers, who are by its means able to reduce the sum they were formerly compelled to spend upon surgical appliances. Mr. Henry N. Custance, the Secretary of the Fund, deserves great praise for the simplicity and completeness of the new system, which is sure to accomplish much good to all concerned.

MEDICAL HEROISM.

A CORRESPONDENT of the *Times of India* says that fever is raging in Kattywar, and adds: "The senior medical officer is sticking to his work with a devotion that commands admiration, seeing that he, too, is suffering from the plague of fever, and has to rise from his bed constantly to attend to the wants of suffering humanity. The province is fever stricken, and has been so for the past three years."

THE PROFESSION IN CAPE COLONY.

GLOWING accounts have been circulated in the daily press of the prospects of medical men going out to Cape Colony. In order to prevent any disappointment to gentlemen who may be induced to try their fortunes there, we publish a plain unvarnished statement of facts from a reliable correspondent. He writes:

Medical men are rushing out here in large numbers; and, from the sparse population, it is quite impossible they can all obtain remunerative practices, while the disadvantages of living are very great. The only compensating influence is the climate, which brought me here, and my family; but, as to society, there is simply none. Living is high, and house-rents enormously so. The Boers are a disagreeable set, and their language is something indescribable. They are very ignorant, and expect their medical man to divine their complaints by simply looking at them—feeling their pulse, examining their tongue—and they simply withhold any information that would throw light on their disease; and this is their favourite mode of proving a skilful physician; if he be wide of the mark in guessing, then he is set down as of no use. Then they are

prejudiced against Englishmen and the English Government. In short, taking all the disadvantages into account, I do not think the remuneration greater than the average practice at home. Quacks are to be found everywhere, going from farm to farm, and I have reason to believe extract more money from the Boers than the legitimate practitioner. The distances to be travelled are very great, and the sleeping accommodation not of the most comfortable or agreeable kind. The food may be plentiful and wholesome, but it certainly is far from tempting in appearance. In short, I would not advise anyone to come out here.

An article in the *Graaff Reinet Advertiser* also warns young medical men from leaving England for Cape Colony with exaggerated ideas of stepping into easy and lucrative practice at once, whilst, as a matter of fact, the medical profession is now pretty well represented in the colony. When the Transvaal becomes more settled, and the country is brought thoroughly under British rule and administration, there may be a good field for medical men; but at present, as far as Cape Colony is concerned, the representatives of the healing art are numerous enough, and many of them are only making a living.

THE PRINCESS ALICE MEMORIAL IN DARMSTADT.

THE form which it has been decided that the English memorial to the late Princess Alice shall take is the endowment of the Hospital and School for Nurses in Darmstadt, which Her late Royal Highness founded, and in which up to the time of her lamented death, she took a great and practical interest. Indeed, the loss of the support which the late Grand Duchess gave to this institution would have seriously imperilled its efficiency, but for the aid which the trustees of the English Memorial Fund are enabled to permanently guarantee to it. The surplus, after the endowment of the hospital, will be given towards the maintenance of other kindred institutions in which the Princess was personally interested. The following inscription will be placed on the hospital in Darmstadt: "This Hospital and School for Nurses, founded by Her Royal Highness the Grand Duchess of Hesse, Princess Alice of Great Britain and Ireland, has been endowed for ever as a memorial of Her Royal Highness, by those in Great Britain and Ireland, India, and the Colonies who revered her pure and noble character and her life of loving self-sacrifice. Si monumentum requiris circumspecte. Obiit December 14, 1878."

METROPOLITAN HOSPITAL SUNDAY FUND.

THE annual general meeting of the supporters of this fund was held, at the Mansion House, on December 18th—Sir Rutherford Alcock, in the unavoidable absence of the Lord Mayor, presiding. The Chairman said that the Council had every reason to be satisfied with the result of this year's collection, it being larger than that of last year, notwithstanding the prevailing commercial depression. It was, therefore, evident that the interest which the public took in the fund was broadening and deepening; and it was further gratifying that the distribution of the funds had given general satisfaction. On the motion of the Rev. Dr. Kennedy, seconded by Mr. O. E. Coope, M.P., it was resolved: "That the laws of the constitution which have been in force during the past year be continued;" and the 13th of June was fixed for the next collection on behalf of the fund. The amount realised by the collection this year was £26,501, as compared with £24,904 last year. A discussion took place as to the propriety or otherwise of admitting the Royal Hospital for Incurables to the benefits of the fund, and the question was referred to the Council for consideration.

THE STATE OF MEMPHIS.

YELLOW fever is now conquered by the winter cold for the time at Memphis, and the citizens are returning. We are glad to read that, at the conference of the Sanitary Commission of the National Board of Health, the city authorities, and the committee appointed by the citizens' mass-meeting, David P. Hadden, representing the citizens' committee, pledged strict compliance on the part of the people in all suggestions advanced by the committee for the improved condition of the city. A new survey of the city is to be made. All our British experience is in favour of radical measures of local sanitation; destruction of all the sources and foci of contagion, for thorough disinfection is almost impos-

sible under any circumstances, and complete purification of the soil, air, and water; effective canalisation, and complete removal of excreta; with an effective sanitary organisation for the immediate notification of disease, and means of ready and complete isolation. Our experience of quarantine, and our observation of its working everywhere, point it out as the most insufficient and untrustworthy of precautions; although at given times and places it becomes inevitable. But it proves nearly always a desperate resource and a broken reed.

THE "DREADNOUGHT" HOSPITAL.

THE coloured illustration in the Christmas number of the *Graphic*, by J. C. Dollman, in which the seamen of all nations are represented descending the staircase to the Christmas dinner in Greenwich Hospital, is an interesting study. In the foreground, a native of Cashmere is leading an aged pensioner; and, behind them, is a naval reserve man, with his arm in a sling, who has under his charge a *Warspite* boy, suffering from ophthalmia. Still further in the rear, are representatives of America, Portugal, France, Germany, Sweden, Russia, Italy, and Spain. Still higher up the staircase, we notice natives of China, the East and West Indies, South America, Brazil, Japan, and many other countries. All the faces are true to life, and were either sketched by the artist or taken from photographs. We understand that Mr. Dollman is painting a large picture on this subject for the next Royal Academy. In no other place can the lover of anthropology more readily study the distinctions of race; and anyone who is interested in the subject had better pay Mr. Burdett a visit at the hospital at one o'clock on Christmas Day, when the annual dinner will take place as usual. It is to be hoped that this hospital, which is one of the few entirely free hospitals of the country, will receive a due proportion of the Christmas donations of the charitable. We know of no more deserving institution.

THE MEDICAL OFFICER OF HEALTH FOR THE PORT OF LONDON. MR. WILLIAM JOHNSON SMITH, Hunterian prizeman, has discharged the duties of Port Medical Officer for many months, during the late Dr. Harry Leach's illness. As *locum tenens*, he has won golden opinions from all with whom he has been brought into contact; and, should he become a candidate, his success should not, and probably will not, be a matter of uncertainty. Mr. Johnson Smith has for ten years acted as one of the medical officers of the *Dreadnought*; and his knowledge of seamen, and of the duties of Port Medical Officer, are considerable. It appears, however, that, until the salary is fixed, no steps will be taken to fill up the vacancy; and, meanwhile, Mr. Smith will continue to act as Port Medical Officer. So important a post should not be inadequately paid; and we venture to hope the Corporation of London will not offer less than £600, with the prospect of an increase to at least £800. Such a sum is the smallest amount that can be justly given if regard be had to the remuneration of other medical officers of health throughout the country. Dr. H. Campbell Pope, who obtained the gold medal in hygiene of the London University, is a highly qualified candidate, and will, no doubt, receive much support if Mr. Smith elect not to contest the appointment. To the candidates for the office must also be added the name of Mr. Browning, the Medical Officer of Health for Rotherhithe, who has, by many excellent papers and by reports of unusual value, shown high qualifications for such an appointment.

ELECTRIC PHENOMENA OF THE TISSUES.

At a recent meeting of the Physical Society, Dr. Shettle of Reading read a paper on the influence of heat upon certain forms of induction-coils, considered more especially in relation to the inductive power which the blood exercises on the various structures of the body. The author found that, when a copper and a zinc wire were insulated from each other by parchment-paper and paraffined silk, and wound in close proximity to each other, an induced current was indicated on a galvanometer whose terminals were connected to the neighbouring ends of the zinc and copper wires respectively, the other ends being left free. When the latter were connected across, the deflection was *nil*. On raising the temperature of the two wires by causing hot water to flow

inside the coil into which they were wound, the deflection was largely increased. These experiments led Dr. Shettle to imagine there is a similar action in the animal body. The heart is made up of nerves and muscular fibres winding spirally, and some of these wind round each other so as to form a spiral cord round which the blood-capillaries also wind. Dr. Shettle compares these nerve and muscle bundles to the coils of zinc and copper wire in his experiments, and infers that electric currents may be induced in them as in the wires. The flow of the warm magnetic blood would also tend to produce currents in them. Dr. Shettle further drew attention to the fact that animals live and move in a magnetic field, and that electricity must be generated in them by their movements internal and external.

SECTION OF THE CILIARY NERVES.

The origin of sympathetic ophthalmia is still a matter of discussion; it is, however, generally referred to the irritation of the ciliary nerves, and not to that of the optic nerve. According to the *Journal de Médecine et de Chirurgie Pratiques* for December 1879, M. Abadie has consequently come to the conclusion that by destroying by section the influence of these nerves, he would arrive at the same result as by enucleation of the eyeball. He has obtained this result in a good many cases. The section of the ciliary nerves did not modify the state of the eyes when the cornea was transparent; in the other cases, the patient tolerated the presence of an artificial eye, and sympathetic ophthalmia has thus been arrested.

SCARLATINA AT DERBY.

DURING the last eighteen months, scarlatina has been very prevalent at Derby. The outbreak commenced early in the third quarter of 1878, and at the termination of that quarter 33 deaths had been registered from it. Its virulence continued, and by the 31st December the number had increased to 61. During the first quarter of the present year, 63 more deaths from it occurred; in the second quarter, 71; and in the third quarter, 52. Thus, in five quarters, no fewer than 247 persons have died from this disease. In one of his reports on the subject, the medical officer of health ascribes the mortality to 1. The ignorance and indifference exhibited by people in going to and from the infected houses, and allowing their children to do the same; 2. The allowing of persons during the convalescent, but infectious, stage to go about the streets, or to school, or to play; 3. The ignorance on the part of those in care of the sick as to the means to be adopted with regard to infected clothing, bedding, etc.; 4. The overcrowding of houses by one family; 5. The fact that many of the sufferers are children whose parents object to allow them to go to hospital; and, finally, 6. The absence of knowledge as to the existence of such cases until a death occurs. Now, whilst some of these causes of prevalence cannot be overcome until people can be educated to a sense of the danger they are incurring to themselves and their neighbours, there are others that can be dealt with under the provisions of the existing laws on the subject; and we cannot doubt but that, if these laws had been put in force with adequate stringency at Derby, such a distressing record of scarlatina fatality would not have been presented. Especially are we surprised at the little effort that seems to have been made to secure isolation of patients. The Corporation have an infectious hospital, to which cases might have been removed; but this was in such a state that the medical officer of health felt that, before he could propose its opening to the Town Council, the wooden walls of the building should be lined, so as to keep out the wind and the cold, for "it would not be safe to locate patients in it who were afflicted with such severe maladies as scarlet fever." It is true that certain arrangements were made by which some patients were treated at the Derbyshire Infirmary; but that the outbreak should be allowed to attain such enormous dimensions without some really active steps being taken to secure isolation, is to us inexplicable. There would seem, moreover, extra reasons why the infectious hospital for the district should be thoroughly efficient and in readiness, since Derby has not only taken powers to itself under Section 93 of its Improvement Act of last session to require the notification to its medical

officer of every case of infectious disease in the district, but has also taken powers similar to those of the Jarrow Town Council (see page 471 of the present volume), which can only be carried out with thorough efficiency when the Corporation fever-hospital is in complete working order.

THE CASE OF BADER VERSUS GORDON.

IN reference to this case, which we noticed in the JOURNAL of December 13th, we have received the following note from Mr. Bader.

"In June 1875, Mr. Gordon, aged 25, a barrister, consulted me for cataract in the left eye. He being myopic, I was doubtful as to the condition of the retina. At an interval of a week, he was examined twice. There was only cataract; I therefore explained to him that, to improve sight, the cataract would have to be removed. Mr. Gordon expressly wished not to be detained from business; he had the treatment by extraction, and that by absorption, explained to him; he selected the latter, on my assurance that he would not be confined to his bed. He clearly understood that, to render absorption more safe, there should be two operations: first, iridectomy; then the needle-operation. The appointments for these operations were made beforehand with Mr. Gordon. Why I should explain to a patient the mechanical details of an iridectomy, especially if he is to have an anæsthetic, I cannot see, in spite of the rider of the jury. Is it kind or wise to depress the patient's mind by such descriptions, and then to give an anæsthetic? Both operations went on well. After the needle-operation, Mr. Gordon called once, and then only reappeared in 1878. I again advised the treatment of the cataract; and, he discontinuing attendance, I sent him a bill for work done in 1875. Then Mr. Gordon refused payment, accusing me of malapraxis. Annoyed by this, I brought the action. To keep my name out of the papers, I was advised by an old friend to withdraw my claim; and, by appointment, saw Mr. Gordon at his chambers, and made the proposition. When Mr. Gordon insisted upon my paying his costs, which his solicitor put at £100, later reducing them to £60, I declared that the case should go on.—Mr. Gordon, from 1875 to 1879, was never detained from business; and, by the removal of the cataract, especially the iridectomy having been done so long ago, can have useful sight restored whenever he pleases. As to the advisability of removing cataract from one eye in young persons, the other eye being sound, Mr. Bowman, Donders, and von Gräfe advise it especially in young persons. Mr. Critchett says no; but, in his evidence, states that, quite lately, 'he had done the operation for two ladies'. If, for appearance sake, Mr. Critchett thinks himself justified to operate, how much more was I right in recommending the operation to a young barrister for the improvement of sight. Mr. Critchett, in his evidence, states that I never did any work for him, or saw patients for him. After the trial, to enlighten Lord Coleridge on this point, I produced testimonials, given to me about eighteen years ago, in which Mr. Critchett, in very flattering terms, expresses his satisfaction at my attendance on his patients at Moorfields, whenever he went for a vacation. I much regret the animus shown by Mr. Critchett, though his kind disposition towards me of years long gone by will always be a pleasant recollection."

We have to add, after reading this note, that our observation expressed agreement with the rider of the jury and the observation of the judge; and we are still of opinion that, before operating on a case where binocular vision still exists, the patient should be amply warned of the risks of operation; and we consider that, if thus amply warned, Mr. Gordon might not have undergone iridectomy under chloroform at the surgeon's house, afterwards going home alone, and undertaking next day a journey by rail.

VERTIGO A TYMPANO LÆSO.

OUR Paris Correspondent writes: Dr. Bonnafont, has recently addressed a note to the Académie des Sciences on the different forms of vertigo and nervous phenomena due to inflammation of the tympanic membrane and middle ear. He described a certain number of pathological conditions of the tympanum which produce nervous phenomena, which Flourens and von Goltz attributed exclusively to the semicircular canals. Flourens taught that, according as these canals are totally or partially divided, the animal submitted to operation turns to the right or to the left, or preserves its equilibrium, but appears to be seized with vertigo. According to von Goltz, the semicircular canals are the principal organs of the sense of equilibrium of the head. Dr. Bonnafont observed a great number of analogous phenomena, but which were determined by inflammation of the membrana tympani and of the middle ear, com-

pression of this membrane from without inwards by hardened wax, polypi of the auditory canal or by accumulation of mucus in the drum of the ear, causing a pressure on it from within outwards, communicating at the stapes, and from thence to the entire apparatus of the internal ear. All the patients suffered from vertigo, titubations, and sometimes even vomiting. None of them experienced the movement of rotation, but often want of equilibrium.

CLINICAL SOCIETY OF LONDON.

THE last two meetings of the Clinical Society have been chiefly devoted to the question of excision of the hip-joint. At the meeting of November 28th, Mr. Tyson of Folkestone read particulars of an interesting case of traumatic aneurism of the scalp, the result of a blow produced by a stray shot from a gun. Mr. Croft next exhibited a little girl, aged four years, whose two hip-joints he had excised for symmetrical disease, at an interval of three weeks, some five or six months beforehand. A full report of this case appeared in last week's BRITISH MEDICAL JOURNAL. In the course of the discussion, Mr. Croft mentioned that he had now done the operation in forty-five cases; and Mr. Parker observed that, in five of eight cases excised by himself, he had found sequestra of dead bone in the joint. Such experience being unprecedented in the practice of the other surgeons present, Mr. Parker was requested to furnish notes of his cases; and Mr. Croft was further desired to give particulars of all his cases to the Society at a subsequent date. This he accordingly did with praiseworthy readiness at the last meeting, and Mr. Parker also read notes of his interesting cases. We are unable this week, through pressure on space, to report the proceedings; but may mention that records of the forty-five cases had been laboriously arranged by Mr. Croft in tabular form for ready reference, whilst twelve of his patients had been brought from all parts of the country for inspection by members. Most of the operations had been done antiseptically, and showed excellent results. He gave the indications for the operation, and especially insisted on the value of excision at a comparatively early stage of hip-joint disease. The meeting was prolonged for three-quarters of an hour; and at its termination Mr. Croft satisfied the surgeons still present that four of his patients could stand steadily and firmly on the leg operated upon eight, seven, four, and two years ago respectively. Messrs. Holmes, Hulke, Lister, Marrant Baker, John Wood, Mac Cormac, and Howse took part in the debate which followed; and the President appointed Messrs. Hulke, Holmes, Bryant, Croft, and Howard Marsh as a Committee to investigate and report to the Society on the whole subject under discussion. Mr. Croft, in his reply, drew particular attention to the specimens of bone excised which were brought to the meeting for inspection, and which showed that the disease of the joint in all the instances had been far advanced before recourse had been had to the operation. He also insisted on the importance to the patient's subsequent progress of preserving the great trochanter.

CHOLERA IN BRITISH BURMAH.

THE population of British Burmah, as given in the Sanitary Commissioner's Report for 1878, is 2,952,296, showing an increase of 17,315 over that of the preceding year. The birth-rate was 19.9 per 1,000, as compared with 21.08 in 1877; and the death-rate was 17.37, as compared with 17.44 in the previous year. The registration of vital statistics was, on the whole, slightly less efficient than it was in 1877; and, as pointed out by the Sanitary Commissioner, the statistics of both years are evidently very far from correct. The total number of deaths from cholera was 6,759, or 2.28 per 1,000 of the population. The number in the previous year was 7,276. Out of 14,559 villages from which returns were received, 189 were affected by cholera. A serious epidemic occurred at Akyab in the month of May. It seems to have been imported by a native of Chittagong, who had left Rangoon, where the disease was very prevalent, on the 21st April, and reached Akyab on the 24th, dying there the same day. The next death occurred in the same house on the 6th May; there were four deaths in houses close by on the 7th June; and from that time the disease increased in force until, up to the 6th June, 61 persons residing in the neighbourhood of

the house in which the first death occurred had died of the disease. It spread from thence all over the town, and caused, up to the 31st July, the deaths of 235 males and 49 females, as well as 10 deaths in August. The disproportion between the number of males and females who died was because the disease was almost entirely confined to the floating population, natives of Chittagong and India, who are, as a rule, unmarried males. They are very filthy in their personal habits, and are most careless as to the purity of the sources whence they derive their supplies of drinking-water. The Sanitary Commissioner saw them coming from a cholera-infected quarter (where dejecta must have been plentiful on the ground), and walk into the tanks to fill their water-vessels. It is not, therefore, to be wondered at that they suffered terribly from the disease. Epidemics also occurred in the Kyouk-hypoo and Moulmein Gaols; and in the months of June and July there was a serious outbreak at Konityua and other stations on the Irrawaddy Valley Railway. In the district of Rangoon, there were 694 deaths from cholera during the year, 144 occurring in June, and 416 in July. It principally affected natives of India; and its prevalence amongst them was caused by overcrowding, dirt, and impure water. Small-pox caused 1,406 deaths, or .47 per 1,000 of the population. Out of 14,459 villages from which returns were received, small-pox occurred in 28 only. To fever were attributed 28,821 deaths, or more than 56 per cent. of the total number, as compared with 26,601 in the previous year. The number of deaths from bowel-complaints was 4,640, as compared with 6,879 in 1877. The subject of sanitation seems to have received considerable attention during the year in relation to both towns and villages; and at Rangoon and Promé the municipal commissioners devoted especial attention to the matter. A series of simple suggestions on village sanitation, drawn up by the Sanitary Commissioner, has been translated into the vernacular, and 10,000 copies have been distributed amongst the rural population. Moreover, the desirability of introducing simple sanitary teaching in the schools of the province has been brought to the notice of the Director of Public Instruction.

THE HOSPITALS OF MADRAS.

THE Report for 1877 of the Surgeon-General of the Indian Medical Department, on the Administration of the Civil Hospitals and Dispensaries of the Madras Presidency, has only been recently published. From it we learn that, on December 31st of that year, there were 166 hospitals and dispensaries in operation, eleven new dispensaries having been opened and one closed in the course of the year. The chief obstacle to the extension of medical relief in the provinces is the paucity of medical subordinates; and, although the means of medical education have been increased, they appear to be still quite inadequate to furnish the number of medical agents required to meet the urgent wants of the Presidency. From most districts there are recurring demands for new dispensaries which cannot be opened, simply because there are no subordinates to take charge of them. The suffering and sickness of the late famine crisis brought home to the poorer classes the great value of medical aid; and it may therefore be expected that as the country is restored to its wonted prosperity, the demands for new dispensaries will greatly increase. The total number of available beds in the existing institutions is 1,872 for males, and 1,207 for females. Due attention seems, in most instances, to have been given to the repair and conservancy of the buildings. The total number treated in the presidency during the year was 82,820 in-patients, and 882,239 out-patients, or a total of 965,059 cases as against 820,599 and 754,348 in the two preceding years. The most remarkable feature in the figures for 1877 is the great increase of in-patients, the number being more than double that of the admissions of in-patient in 1876, and very nearly three times that of those admitted in 1875. This is no doubt a result of the famine, as its victims were beyond the resources of out-door relief. The daily average number of in-patients was 3,819, against 1,792 in the preceding year. The death-rate amongst in-patients was 199.14, and, amongst out-patients, 0.77 per 1,000. The privations of famine account for the enormous mortality.

The scarcity of both food and water over large tracts of the Presidency had a most disastrous effect on the health of the people; and, although actual starvation was only seen in certain districts, the health of the poorer classes in other localities was seriously affected by the dearth of all kinds of provisions. The young, the infirm, and the old suffered most, but many strong adults also fell victims to the combined effects of starvation and disease; and over large areas of the country, the health of the survivors has been permanently impaired. Amongst the population of the famine districts, bowel-complaints were especially common and fatal; and these, together with fevers, small-pox, cholera, dropsy, and other fatal forms of disease, completed a death-roll which in magnitude has no parallel in the annals of the Presidency. Of the cases treated, 1,679 were of small-pox, whereof 634 died; 132,152 (354 fatal) of malarial fevers; 21,800 in-patients, and 15,870 out-patients (4,122 fatal), of cholera; 38,010 (2,918 fatal) of dysentery; 41,576 (3,016 fatal) of diarrhoea; 15,847 of syphilitic complaints (47 fatal); 2,664 cases of labour (93 fatal); 56,893 of skin-diseases; and 81,892 of ulcer. The number of surgical operations on in-patients was 4,432, and, on out-patients, 20,151. Of these, 1,950 were major, and 22,633 minor, operations.

SCOTLAND.

HEALTH OF THE EIGHT PRINCIPAL SCOTCH TOWNS.

ACCORDING to the Registrar-General's report for November, there were registered in the eight large Scotch towns 3,182 births, of which 1,625 were males and 1,557 females; of these, 7.9 per cent. were illegitimate. There were 1,833 deaths registered, of which 938 were males and 895 females. It is pointed out that this is the smallest number of deaths in any November for twenty-four years, and is 880 under the average of the same month for the last ten years. The death-rates were per 1,000 as follow: Leith and Greenock 15, Dundee 16, Edinburgh 17, Glasgow and Paisley 18, Perth and Aberdeen 19. Forty-one per cent. of the deaths were of children under five years of age; Perth being lowest with 27 per cent., and Leith highest with 56 per cent. Zymotic diseases caused 274 deaths, or 14.9 per cent. Of 40 deaths from fever, 13 were returned as typhus, 26 as enteric, and 1 as simple continued fever. Whooping-cough caused 3.3 per cent. of the deaths all over, the Aberdeen rate being as high as 8 per cent. After whooping-cough, scarlet fever was the most fatal, and measles the least fatal, of the zymotics. There were 92 deaths from apoplexy and paralysis, 114 from cardiac diseases, and 57 from premature birth debility. Phthisis pulmonalis caused 213 deaths, or 11.6 per cent.; other inflammatory affections of the respiratory organs, 421 deaths, or 23 per cent. Four individuals were over ninety years of age, two of each sex, one of whom was ninety-eight. The mean barometric pressure was greater by 0.394 inch, the mean temperature greater by 0.4°, the wind-pressure greater by 0.67 lb., and the mean humidity less by 5, than during the same month in the preceding twenty-two years. The highest mean temperature was at Glasgow, the lowest at Edinburgh.

THE GLASGOW WESTERN INFIRMARY SAMARITAN SOCIETY.

THE annual meeting of the above Society, which is in connection with the Glasgow Western Infirmary, was held on the 15th instant. This Society, among other objects, provides clothing and surgical appliances for necessitous patients leaving the infirmary, gives temporary relief to their families, seeks to obtain employment for the cured, and sends convalescents to the different sea-side homes. From the report, it appears that the number of cases relieved during the past year amounted to 501, while nearly 300 convalescent patients had been sent to the different sea-side homes. The report was adopted; and, on the motion of Professor Gairdner, a hearty vote of thanks was passed to all those connected with the carrying on of the work of the Society.

IRELAND.

COUNTY MONAGHAN FEVER HOSPITAL.

THE election for a medical officer to the County Fever Hospital, in the vacancy caused by the resignation of Dr. Ross, took place on the 3rd instant, and caused considerable interest as to the probable result. Before the polling took place, the validity of certain votes was under consideration; and it was contended that, by the 47th Section of the Act of George III, everyone who subscribed a guinea at least a year before the election was entitled to vote. On the other hand, it was urged that no person had a right to vote who was not an annual subscriber of not less than a guinea, and had paid his last subscription a clear year before the election; and this view of the matter was ruled as the correct meaning of the Act by the Chairman, Lord Rossmore. There were two candidates, Dr. Woods of Monaghan and Dr. Hall, the former gentleman being successful by a majority of seven votes.

SURGEON-MAJOR REYNOLDS, V.C., LL.D.

AT the winter commencements of the University of Dublin, held on Wednesday week, the degree of *Doctor in Uroque Jure (honoris causâ)* was conferred, amidst much acclamation, on Surgeon-Major Reynolds. He was introduced to the Pro-Vice-Chancellor by the Public Orator, Professor Webb, in an eulogistic Latin speech. At the conclusion of the commencements, by permission of the Provost of Trinity College, a presentation of a revolver and case was made to Surgeon-Major Reynolds, in the Examination Hall. The chair was taken by the Rev. Professor Jellett, Senior Lecturer. The Rev. Dr. Haughton made a speech eulogising Dr. Reynolds for the noble conduct he had displayed in the defence of Rorke's Drift. He said that he was sure that, notwithstanding the numerous honours Dr. Reynolds had so deservedly received—the chief of which, in his (Dr. Haughton's) opinion, was the Gold Medal of the British Medical Association—Dr. Reynolds would prize the humble gift which he now, on the part of the subscribers, would request the Senior Lecturer to present to that gallant non-combatant officer. Dr. Jellett, in the course of an eloquent speech, spoke of the pleasure the University felt in bestowing the highest honour in its power on Surgeon-Major Reynolds, one of its own pupils; and said that, in rewarding merit of any kind, it should be remembered that not only the recipient, but the University itself, was honoured by its bestowal. Surgeon-Major Reynolds, having expressed his acknowledgments, said he was always proud to have belonged to Trinity College, Dublin; and hoped that, if any of his hearers entered the Army Medical Department, they would, if the opportunity arose, preserve the honour of the University of Dublin, as he had endeavoured to do. At the conclusion of his speech, Dr. Reynolds was carried out of the hall and across the quadrangle on the shoulders of the students, to whom he was subsequently obliged to address a few words on the new Army Medical Warrant, before being permitted to enter the Fellows' Room. The following inscriptions, the first from the pen of Mr. Tyrrell, Professor of Latin in the University, and the second by Professor Brady, are engraved on the ivory handle of the revolver.

"Iacobo Henrico Reynolds ob virtutem tantam ad Vada Rorkii Zuluviurum a. d. XI Kal Feb. MDCCCLXXIX praestitam condiscipuli amique alii SS. Trin. iuxta Dubl. versantes hoc donum tantulum—*χάλκεα χρυσέων*—reddimus."

"Martis habens laeva deatraque Machaonis arma
Eripuit vitas hoste dedique suis."

The case bore the following.

"Presented to Surgeon-Major James Henry Reynolds, V.C., LL.D., by his fellow-students and other friends in Trinity College, Dublin, at the Winter Commencements, 17th December, 1879, when the Degree of LL.D. (*honoris causâ*) was conferred upon him by the University of Dublin."

In the evening, Dr. Reynolds was entertained at dinner in the Commons Hall.

ANIMAL VACCINATION.

REPORT OF CONFERENCE HELD ON THURSDAY, DECEMBER 18TH,
BY THE PARLIAMENTARY BILLS COMMITTEE, TO CONSIDER
DR. CAMERON'S BILL FOR ANIMAL VACCINATION.

Speeches of the Chairman, Dr. Warlomont, Dr. Ballard, Dr. Carpenter, Mr. Ceely, Professor Simonds, Dr. Crisp.

THE adjourned meeting on Animal Vaccination was held at the rooms of the Medical Society of London, Chandos Street, on Thursday, December 18th, at 4 P.M. The Chair was occupied by Mr. Ernest Hart, Chairman of the Parliamentary Bills Committee; and among those present were Dr. Cameron, M.P., Dr. Alfred Carpenter, Dr. Robert Cory (of the Local Government Board), Dr. E. Ballard (of the Local Government Board), Professor J. B. Simonds, Dr. Hinckes Bird, Dr. Bridges (of the Local Government Board), Dr. Drysdale, Dr. George Henry, Dr. Collins, Mr. E. R. Denton, Mr. Ceely (Aylesbury), Dr. G. Wyld, Dr. E. Crisp, Dr. D. Nicolson, Mr. H. Lee, Dr. J. H. Gramshaw (Gravesend), Dr. Symes Thompson, Dr. Bowles (Folkestone), Mr. G. D. Brown (Ealing).

THE CHAIRMAN stated that since the last meeting he had received numerous letters agreeing with animal vaccination, and he laid before the meeting a reply by Dr. Warlomont of Brussels to the speech made on the last occasion by Dr. Stevens of the Local Government Board. Information had also reached him of the existence of a flourishing animal vaccination service at New York, the Board of Health of which city maintained a farm in New Jersey for this purpose. He had also learnt, through Dr. Pietra Santa, of the existence of private animal vaccine establishments in Spain—at Barcelona, Vittoria, Alava, Seville, Valencia, and Havannah. It appeared that in 1874 Dr. Lanoix himself inoculated with his lymph a calf at the veterinary school at Madrid; and that the general centre of vaccination in the State, instituted in the capital in 1875 at the instance of the Royal Academy of Medicine, had as its aim the cultivation, preservation, and distribution of both kinds of lymph, humanised and animal. As regarded Russia, Dr. E. T. Wilson of Cheltenham had kindly drawn attention to an article in the seventh volume of the *St. George's Hospital Reports* (1872-74), in which particulars were given, from his own personal observation, of the successful working of the St. Petersburg animal vaccination station. Adverting to the conclusions arrived at by Dr. Seaton in 1869, Dr. Wilson stated that, as regarded the first difficulty of transmitting from calf to calf without interruption, it had been overcome at St. Petersburg, where the lymph had at the time of his visit been transmitted from calf to calf for the previous five years. At St. Petersburg, by taking the lymph with great care at the fifth and sixth days of eruption, the failures from calf-lymph had been reduced from 12 to 2 per cent. The St. Petersburg experience was the same as that at other places as to the keeping of the calf-lymph; but some lymph which Dr. Wilson brought over with no special care succeeded in the hands of a public vaccinator and produced well-developed vesicles. With regard to the number of vaccinations that could be performed with the lymph from a single calf, Dr. Probelius, the superintendent of the St. Petersburg station, mentioned having made one hundred insertions, all successful, from five vesicles; and it was not uncommon to find from sixty to one hundred and twenty vesicles on a single heifer. Calf-vaccine was started at the Foundling Hospital of St. Petersburg in 1868, and had continued side by side with Jennerian lymph up to the present time. A heifer-calf, from two to four months old, was taken every fourth day; the abdomen was cleanly shaved on a table specially adapted for the operation, and from sixty to one hundred and twenty insertions were made in regular rows of from ten to fifteen pricks a-piece. A light bandage was then applied, and the calf rejoined its companions in a clean and well-ventilated stable. On the fourth day, the vesicles were ready. The lymph, however, was better on the fifth day, and none should be taken upon the seventh. It was pressed from the vesicle by means of a small tenaculum; and Dr. Wilson was assured that the effects were equally satisfactory, whether the vaccination was performed in the summer or in the winter. This information he (Mr. Hart) had thought it right to lay before the meeting. Among the letters he had received was one from Dr. J. S. Bristowe, President of the Society of Medical Officers of Health, who said: "While fully believing in the efficacy of arm-to-arm vaccination, and that the vaccine virus has lost none of its original virtues by repeated transmission from man to man, I am entirely satisfied, from the evidence which has been adduced, that vac-

ination direct from the heifer, properly prepared, is as certain, as efficacious, and at least as free from danger, as vaccination direct from the arm". Mr. Simon, of whom it was said at the previous meeting that, if he had continued in office as the medical adviser of the Government, he would have been prepared to recommend the use of the system, had written to say: "It is a fact that, before leaving office, I had been very desirous to make experimental study of the system of animal vaccination, in order to see whether we could practically get over the serious disadvantages which in 1870 prevented me from approving it; but whether I could wish to introduce the system for any of our national uses, would have been an entirely open question with me till I had gained the fuller knowledge which I thought necessary." Dr. Braidwood of Birkenhead, who was entitled to be heard on this question, said: "The example set me by such pioneers of medical science as Sir Thomas Watson and Mr. Ceely of Aylesbury seems the best under the circumstances; and I would, therefore, merely express thus my entire concurrence with your efforts to establish animal vaccination in this country."

The paper by Dr. WARLOMONT, in reply to Dr. Stevens, was then laid before the meeting. It was as follows.

I regret exceedingly that I shall not be able to be present at the adjourned discussion on the subject, whether it be expedient for the English Government to introduce animal vaccination officially into that country. I purposely state this question with precision, because it appeared to me to have been ill understood by the speakers who followed me at the meeting at which, thanks to you, sir, I was received with so cordial a welcome, for which I desire to thank my kind hearers.

I had, indeed, no thought of raising then all the questions relating to vaccination; such, for example, as that of vaccino-syphilis; that of the degeneration of lymph, human or other, by the lapse of time; the question, in short, which has given rise to so much and such lengthened discussion, of the transformation, still admitted by men of ability, hotly contested by others, of the virus of small-pox into vaccine virus by the simple transmission of the former through the system of the cow. These are all points which, in order to clear the path, we may provisionally disregard; they will come up for discussion later on. I should have had much pleasure in attending the meeting on the 18th, before the same assembly, in order to try to bring it back to the consideration of those fundamental principles which I have already laid down to them, and which seem to me to have been too much lost sight of.

One speaker only appeared to me to have kept to the true direction for the debate. His speech, full of spirit, wit, and appropriateness, in which he in very truth took "the bull by the horns" reopened the great line of thought, which we should do well, think, to follow more closely if any good is to come out of this inquiry upon this burning question, to which public attention, not only in England, but throughout the whole world, is directed.

Ought the Government to introduce animal vaccination officially into England? Dr. Stevens, Government Inspector of Vaccination, speaking, however, only for himself, examined the question in a very logical manner, and treated it from an elevated point of view. He commenced by establishing—what we had not contested—that lymph has not degenerated; the complete protection, said he, which vaccination actually affords, in a considerable proportion of cases, is sufficiently proved by the subjects who have been submitted to it. Is it necessary, therefore, in view of an improvement, which is as yet not clearly made out, to substitute a new practice, which has not been proved efficacious, for a practice which is fully satisfactory? This was his argument.

It would be easy to reply to this gentleman that, if he wait for these proofs to come to him, he will wait a long time, if he do not obtain personal experience (on which alone he is resolved to base his opinion) of the new method. And, if he do not do this, ought he not to take into consideration the experience of others? Now, the proof of the efficaciousness of animal vaccination needs no longer to be established.

I know that the speaker is not convinced, and that he takes refuge in the maxim, "Better is the enemy of well"; but nothing is more annoying than this dictum thus applied. So long as vaccination shall not have annihilated small-pox, it has not done all that it ought or can do; and we are very far from this. The epidemics of small-pox which follow each other almost uninterruptedly prove to us that the better certainly still to be searched for as regards prophylaxis.

Dr. Stevens is too enlightened a man, too capable and too conscientious an administrator, to wish to remain under whatsoever circumstances in the beaten track; and nevertheless, unconsciously perhaps he desires not to forsake the high road. But he seems to forget—and he will pardon my saying so—that there is in every language a word to express this constancy to the track of the past; viz., routine. Dr. Stevens, let me say at once, is not a man to whom such a term would be appropriate. It is, then, necessary that he should seek with us that

"better" which he still refuses to recognise, and which certainly animal vaccination is capable of affording him.

Dr. Stevens does not admit that the public should be allowed to make its choice as to the kind of lymph it should demand from the State. The latter, he says, ought to choose the best guardian of its children, and not offer it any other. It would not be possible to express a better sentiment; but in this matter other things must also be considered. If we had to make our choice, it would not take long to make it: the calf would immediately be found everywhere as the only admissible vacciner. Why, then, do we maintain vaccination from arm to arm? Because it is more practical, and is necessary to help us to tide over the period of transition in which we find ourselves at present. Vaccination, as a general rule, ought always to be done in preference with lymph taken directly and immediately, living and warm, from the selected vacciner. Now, we are still very far from the time when in each town, village, and hamlet, a vaccinated calf can be placed at the disposal of the vaccinator or of the public. Up to this moment, the infant must fill the place of the calf; but, be it said, as a makeshift only. We desire, indeed, to declare that if we have, in all our writings, demanded the maintenance of vaccination from arm to arm, it is simply because we cannot yet do without it. In proportion as the new method extends, the old one will gradually be extinguished.

If, then, we take our stand from the point of view chosen by Dr. Stevens, and have to choose one or the other lymph to recommend to the public, to the exclusion of the one rejected, we shall have to face the difficulties of application and to count their cost. These difficulties compel us to give in. I would suggest, then, to Dr. Stevens and to the department in which he so worthily occupies a distinguished position, the Belgian system, respecting which I propose to say a few words, necessary to a right understanding of the subject.

The State Vaccine Institute of Belgium has specially for its object the cultivation of lymph on the calf, and its distribution gratis, as seed, to all the practitioners of the country as frequently as they need it to renew their stock. To allow the annual renewal of this stock by strengthening it from the animal which seems the most fit for the purpose, and in keeping up without break this seed at the disposal of practitioners, is the special function of the Institute. It does not then, as might be thought, furnish vaccine matter for as many vaccinations as there are subjects to vaccinate, but only the seed for the purpose of preventing interruption of the service.

As to the public, the State does not furnish it gratuitously with animal lymph, though it may choose to prefer it; but the Director is authorised to furnish it on payment of a fee fixed by the decree constituting the institution. For this fee, every person who is well off, desiring to have original lymph, whether for the performance of vaccinations or of revaccinations in his family, can procure it. But the State has nothing to do with the details; that is the business of the Direction. It is the same with regard to vaccination from arm to arm; the State has no concern with it. To carry out effectually such a practice, it would be necessary to have as many institutions as there are populous centres. It would be necessary to go into matters of detail which only concern municipalities.

All that the State does in this direction, and these are the limits of its action, is to authorise the Director of the Institute to admit to vaccination at his establishment all the subjects who have a preference for calf-lymph: the poor are admitted gratuitously. This is all the State can do. Beyond the Brussels district, the poor must content themselves with the lymph cultivated by the vaccinators, who renew it every season; and the well-to-do with the same lymph, or with preserved animal lymph obtained from the Institute. This system is far from being perfect, since the poor cannot have their choice. It must not, however, be forgotten that in Belgium, vaccination not being compulsory, the State has fewer duties towards the public in this respect than in countries where compulsion is the law. Here there is an absolute moral obligation, which Belgium would not disregard if vaccination were compulsory. Its first duty, and it would not seek to evade it, would then be to put a supply of animal lymph gratuitously, and in a supplementary manner, at the disposal of practitioners of whom the poor demanded it.

Thus established, the institution could immediately commence operations in Great Britain, and be of immense service. London would be the first station, and some other great centres would be provided with stations in their turn. The London establishment would be the central institution: it would never allow its stock to fail, and would be always ready to renew or to help provincial establishments, which, for the sake of economy or other reasons, might from time to time suspend their working.

We differ, then, as will be seen, from the opinion expressed by Dr. Stevens. According to him, the public must not have any option between the two lymphs; but we hasten to say that this option would

not occasion any inconvenience, since, according to our view, both lymphs, properly cultivated, are equally efficacious. In leaving the option to the public, and in giving to every one the means of carrying out his choice, we shall be doing wrong neither to the individual, nor the State, nor to public opinion. The latter, on the contrary, will be satisfied in a manner which has long been desired and waited for.

I beg my honourable opponent not to persist in his opposition. No one respects it more than I do, no one understands better than I what it costs an official charged with a grave responsibility to lay a rash hand—and it is so for him—on an organisation which gives him comparatively excellent guarantees; but no one is more assured than I am of the truth of the precept which I love to recall to mind, that in such a matter not to advance is to recede.

Dr. BALLARD said that, if there were lurking in the mind of anybody present, consequent on some things which he had read, some sort of suspicion that the department of the Government which was charged with the control of public vaccination in the country was actuated by any feeling of prejudice against the system of animal vaccination, his presence that day, as a representative of the Local Government Board, by direction of the President, might be taken as in some way doing away with that suspicion. Other Inspectors of the Board were more experienced than he was in the public arrangements of the country, and could speak much more forcibly and with more effect than he could. Nevertheless, when it was suggested to him that he should be present as the representative of the Board, he hesitated to accept the charge on two grounds: first, because he was much more apt at working than at talking, and next because he thought that possibly his views on the subject might be in advance of those of the Board; hence, at his request, his friend Dr. Cory, Chief Inspector of the National Vaccine Establishment, was associated with him. He hoped that this conference would hear something from that gentleman before the evening was closed. In the first place, it appeared to him that something should be said about the grounds on which the demand made in the proposed Bill of Dr. Cameron was founded. One of these grounds was the alleged deterioration of the humanised vaccine as now propagated. This, however, was withdrawn by Dr. Cameron at the last meeting.

Dr. CAMERON said he did not withdraw it, but left it for the purpose of being criticised.

Dr. BALLARD said he took the liberty of criticising some of the arguments Dr. Cameron used in support of his view. Dr. Cameron held, on various grounds, that the humanised vaccine lymph had deteriorated. He (Dr. Ballard) did not think he should have been very much disposed to say anything about this, had not Dr. Cameron given his reasons in letters to the *Times*; and, although the inference he drew might be good, his reasons were not equally good. He said it was all very well to describe the last severe epidemic of small-pox as exceptional, but during the twenty-two years in which there had been compulsory vaccination it ought to have made some impression; and he also said that statistics showed either that the protective virtues of the lymph were mythical, or that there was something radically wrong in our national system of vaccination. The epidemic of 1871-72 was exceptional; but there was a reason for that which Dr. Cameron did not seem to have taken into account. The epidemic arose in one of the worst vaccinated districts in France, and its ferocity was exceptional, and it spread in France, Germany, all Europe, England, and America, and it carried with it wherever it went its intensely ferocious character. For this reason, the epidemic was excessively fatal. He had before him tables, constructed for him in the Registrar-General's Office, showing really that the mortality from small-pox had, during the vaccination period in this country, been gradually and steadily lessening, with the exception of the particular epidemic period of 1871-2. Between 1838 and 1842, the mean annual death-rate from small-pox per million was 571. From 1847 to 1849 it was 303. In the next five years—1850 to 1854—when compulsory vaccination was the law, the mortality was 274; in the next five years it was 198; in the next five, 190; and in the next five years, during which the Vaccination Acts were amended, it was 145. In the next five years came the epidemic of 1871 and 1872, and then the mortality rose to 445; but in the next four the mean annual death-rate from small-pox had fallen lower than it had been before, viz., to 97, and yet during 1877 there was a recrudescence of small-pox. There had been a gradual and steady diminution of small-pox mortality; and if they were not to say they were to judge by total death-rate, but to take the mortality as it had occurred in recently vaccinated persons—say, children under five years of age, what was found in the non-epidemic years? Why, an improvement in the protection of children. From 1853 to 1856, the mean annual death-rate from small-pox in children under five years of age was 653 per million. Between 1860 and 1870, omitting the epidemic years, the mortality was 419 per million of infants under five years of age. From 1873 to 1876 it fell to 182. That did

not look very much like deterioration of vaccination. He did not say that vaccine in the humanised propagation was all that it ought to be or all that it might be over the kingdom, or that there was not a deterioration of the lymph in places. He knew there was, and that in the hands of some medical men vaccine did deteriorate; but that was in the hands of careless men. He had seen vaccine propagated which, on the eighth day, had produced vesicles having a broad areola, and he had seen it propagated where the areola had been declared on the seventh day. That ought not to be. There was a way in which the lymph might be deteriorated, apart altogether from any inherent character that might deteriorate it. The Local Government Board had for some time taken care to improve the vaccine of the country, not in quantity only, but in quality, and to stimulate the local vaccinators to better work by instituting a system of rewards. But sometimes in poor neighbourhoods among the labouring population, if he found a public vaccinator thoroughly well vaccinating and producing good large marks and scars, he saw in a number of instances some practitioner rising up and saying to the mothers: "There is not the slightest use in having your children punished in this way; take your child down to my surgery." Well, the child was taken down, and one prick was put upon the arm, and the mother was told that that was sufficient. It was sufficient, no doubt, for registration. He said, "Shame on such men!" he could hardly think of them without indignation. Every tyro knew the results of inquiries on that subject made by Mr. Marson some years ago, which had been confirmed in the hospitals round about London. Every student had been told the results of Mr. Marson's inquiries. There were two ways in which diminished protection might occur. It might occur locally, but that had nothing to do with what Dr. Cameron referred to in his letter. Dr. Cameron fell foul of their revered old friend Mr. Ceely, who, he was happy to say, was present to defend himself, and was quite capable of doing so. He (Dr. Ballard) objected to the term in this letter "small-pox lymph" when speaking of the lymph, he was going to say, created by Mr. Ceely. He thought that term ought not to be used, and he also thought that Dr. Cameron himself would be disposed to withdraw it. He said the vesicles were undistinguishable from the genuine article. Well, if not, he should be disposed to say they were the genuine article. He would take the liberty of leaving Dr. Cameron in the hands of Mr. Ceely and his esteemed colleague and friend Dr. Cory, whose book should be in the hands of every man who wanted to know anything on the subject. The next subject he had to refer to was the chance of syphilis being communicated. He did not think he need say much about that; he had already said all that was necessary. But, after all, the risk of syphilis in humanised lymph was infinitesimal, and might almost be put out of the question. It had been supposed that the introduction of the system of animal vaccination would induce parents to have their children vaccinated who declined to have them vaccinated now. What did that mean? It would appear to be based on this notion, that the deficient completeness of vaccination in this country was due to some really reasonable objection that people had to vaccination. He did not think anything of the kind. After all, the last returns brought the unaccounted for in vaccination among children born in this country to about $4\frac{1}{2}$ per cent.; and what was the reason? Those $4\frac{1}{2}$ per cent. were not vaccinated, not because the parents objected to vaccination, but through accidental circumstances—through neglect. The time for vaccination came round, and perhaps the weather was wet, or the mother was engaged in a day's washing, or she had to cook her husband's dinner, and in that way the time passed by, and then, perhaps, they removed to another place. In some places, no doubt, there were objections to vaccination; but this was only in places like Cheltenham, where there were agitators on the subject. He did not believe that, if human vaccination was entirely superseded by animal vaccination, they would get a single anti-vaccinator to have a child vaccinated. He was not there in any way to apologise for the Medical Department, for that department, even in the matter of animal vaccination, had no shortcomings to confess; but, on the other hand, he claimed for the department public gratitude for what they had done, and, he might add, public gratitude for what they had not done. Think what the state of things was now. Think of this—1838, 1839, 1840, 1841, and 1842, which were not particularly epidemic years, but small-pox then carried away 571 per million of the population. In 1871, 1872, 1873, and 1874, two of which were epidemic years, and ferocious epidemic years, the mortality from small-pox was 445, actually less than it was during the first five years of the registration period in this country. Was not there in that matter to be grateful to the Government for? In 1840, the first Vaccination Act was passed. In 1853 was the time of the first Compulsory Vaccination Act. In 1867, that Vaccination Act was amended, and it was not till 1871 that the arrangement we had now in force was perfected. It had taken all that time, and the Government of the country had been

working to perfect the system, and the objects which the Government had in view had been, and it intended to have them in view—first of all, completeness of vaccination, as near as possible, to have every child in the country vaccinated; secondly, efficiency, that every child vaccinated should be vaccinated thoroughly; and, thirdly, that every child should be vaccinated safely. Completeness, efficiency, and safety were the three objects. Had not these objects to a very great degree been attained? First of all, as to completeness; he did not think there was very much to complain of in $4\frac{1}{2}$ per cent. escaping vaccination; and he felt that number would be diminished. As regarded efficiency, it was his experience that efficiency was improving even during the time he had been inspector. He could see a great difference in his districts, and he could say that the character and quality of the vaccination was improving all the way through as to safety; and, with the exception of that unfortunate occurrence which they all knew of, he was not aware of a single case of syphilis having been communicated through vaccination. Dr. Stevens had never met with it; and he (Dr. Ballard) had never met with it at all. He believed humanised lymph was practically safe.

A gentleman asked whether the $4\frac{1}{2}$ per cent. unvaccinated meant that percentage of births.

Dr. BALLARD said it did. He did not know whether every one present understood what the arrangements of the Local Government Board were for the attainment of its objects, but he wished it to be known that there was a system of looking after the children. Every child was registered, and was never lost sight of until it was vaccinated, unless the parents had submitted to the legal penalties for non-vaccination. In one of his letters, Dr. Cameron said the children were vaccinated only at intervals of six months, in England. In sparse populations, vaccinations only took place twice a year; but, in rural districts sufficiently populous, once in three months. In town districts, where there were eight or ten vaccinees, it was done weekly. The National Vaccine Establishment did not supply all the lymph which was in use in the country. Every public vaccinator was supposed to keep up his own supply, and was supposed to know the child from whom he got it. He was responsible, and was made responsible; but the National Vaccine Establishment would supplement the supply where a man could not keep up his own supply. He (Dr. Ballard) had brought with him some of the papers which contained instructions for public vaccinators; and, if anyone had not read them, it would be just as well that he should, because it appeared that no precaution could be suggested which was not contained in those instructions. Further than that, those instructions were not only given, but the following them was enforced. He was sorry to say that, on several occasions, he had been the means of public vaccinators being requested to retire from the office they held, because they had not followed their instructions sufficiently to come up to the requirements of the Board. Public vaccinators must do their work properly and efficiently, or they must give up their office. For the reasons he had given, he repeated that the Local Government Board had no shortcomings to confess. As to animal vaccination, he wished it to be understood that Government was not in the same position as those who composed the present meeting, for it had serious responsibilities. Before it could accept or adopt any other method of vaccination than that which was now adopted, it must be satisfied that equally good results would follow from its use. It must first be satisfied on the scientific aspects of the case; next as to the administrative practicability of the adoption of animal vaccination. The first question it asked, for instance, was whether the adoption of vaccination in the heifer would give equal or greater protection, or greater permanence, than the humanised vaccination now in use. On that point, the Government at present was not satisfied. Dr. Seaton's inquiry was some years ago reported in the Fourth Report of the new series of the medical officer of the Local Government Board; but, last year, Dr. Seaton was again on the continent, and the results of his inquiry there were not so satisfactory as to lead the Government to think that equal or greater protection would be given by animal as by humanised vaccination lymph. He made inquiries at Amsterdam, the Hague, Rotterdam, and Berlin. He would mention some of these results obtained with fresh calf-lymph. At Amsterdam, complete success at all insertions was obtained in only 34 per cent. of the children vaccinated; at Rotterdam, it was 54 per cent.; and at Berlin, 21 per cent. At Surrey Chapel station, where fresh arm-to-arm vaccination was employed, the success was 97.8 per cent. It could scarcely be said then that animal vaccination, as far as knowledge had come to the Government office, was so satisfactory as arm-to-arm vaccination practised by an experienced operator like Dr. Cory. Then, as to complete failure, at the Hague, it occurred in 2.2 per cent.; at Rotterdam, the percentage of failures was not stated; but, at Berlin, they were 7.1 per cent. At

Surrey Chapel, out of 1,000 children vaccinated with human lymphs the complete failures were simply none. As to insertion success, the calculation of what was attained at Amsterdam was 700 or fewer vesicles out of 1,000 insertions with animal lymph. At Rotterdam, the number was not stated. At Berlin, it was 678. But, at Surrey Chapel, with humanised lymph, it was 978. It was remarkable that the numbers 678 at Berlin, and 700 at Amsterdam, were so much alike; it did not appear as if any imperfection arose from the mode of operation. The success, therefore, as far as the knowledge of the department went of animal vaccination did not appear to be so good as to warrant them to recommend a preference for it over humanised vaccination. Administratively, were certain difficulties in practice in establishing animal vaccination in the first instance. Moreover, they wanted to know more about the preservability of the lymph. Dr. Warlomont had said something about it, and he thoroughly welcomed Dr. Warlomont's speech. Then came the general question, the practicability of the proposals of Dr. Cameron's Bill, one of which was really to give parents an option with respect to animal or humanised lymph. That, he was afraid, would be found very difficult in practice to carry out. The Board considered that such an optional arrangement was quite inapplicable under the circumstances of our population. It might do very well for such a place as Belgium; but think of the population of England, Wales, Scotland, and Ireland—how many heifers, and experienced vaccinators by the new method would be necessary to meet the option of such a population? He thought the meeting would see the difficulties which crowded round the Government with such a proposal. The Board had no objection to animal vaccination in itself, or to vaccinators employing animal lymph. It might be had in England. Only within the last day or two, a colleague of his said a vaccinator had used animal lymph; and, at West Bromwich, a friend of his had done the same. So far from the Board having any objection, they were very glad those vaccinators had improved their stock. No objection was raised, or likely to be raised. What the Board objected to was being required at once, and before it had sufficiently matured its arrangements, to adopt a system of animal vaccination. For several years, it had been working at, and inquiring into, the subject. Dr. Seaton, several years ago, went on to the continent for the purpose, and made a report which was unfavourable. He went again; and, at the present time, Dr. Klein was engaged in a series of inquiries to settle, if possible, the relation between cow-pox and small-pox, which was in dispute. The Board was patiently and steadily continuing its inquiries; and he could not see what more could at present be wanted. It seemed to him to be perfectly unreasonable to expect that the Board, with its responsibilities, should be forced, as it were, into a line of action which it was not yet prepared to take. The efforts of the Board were to do the very best it possibly could to improve the vaccination of the country; and, if animal vaccination were the best method for obtaining that result, he had not a question in his mind that animal vaccination would, if practicable, be adopted by the Board. He was not saying the Board would do it, but that it was so anxious to do the best it could, that the public might depend upon it it would adopt what was best. One word for his chief. Dr. Seaton being ill, he felt bound to say a word on his behalf. Judging from certain statements which had appeared in print, and especially from the terms in which he had been alluded to, an impression had gone abroad that Dr. Seaton was bigoted. Of all people in the world, he really thought that Dr. Seaton was as free from bigotry or anything like it as anyone could be. He was the prime mover in the work of vaccination in this country; he had done more than any man in this country to promote the completeness of vaccination; and a debt of gratitude was due to him, and had yet to be paid to him, for it. Very much more would no doubt have been done if he had not been taken ill. Things had been standing where the public might have expected them to be moving; but he did not think that was to be put down to the failure of Dr. Seaton, who was not prejudiced, but had a complete honesty of purpose; and following, as he did, the most cautious administrator that was to be found—Mr. Simon—he thought Dr. Seaton had acted wisely in not pushing on anything in the line of experiment in connection with the public service of the country.

Dr. ALFRED CARPENTER (Croydon), said that it was quite evident to him that, if Dr. Ballard were not in the trammels of office, he would himself be promoting the measure they had met to discuss. The few observations which fell from him towards the end of his very interesting speech satisfied him (Dr. Carpenter) that, at any rate, he had strong feelings in favour of the course that the conveners of the meeting had thought proper to take. He (Dr. Carpenter) was about to mention a circumstance which occurred to him in early life, which convinced him that it was possible there could be deterioration of lymph. The circumstance could not perhaps arise now, under the more perfect knowledge we had; but it did arise then, and he had very little doubt it would help

to increase the mortality from small-pox. When he was a young man, there was an epidemic of small-pox, and a great call for vaccination, both of adults and children. The adults had been previously vaccinated, and, when revaccinated, they had very fine arms, from which he took vaccine lymph and used it extensively. Two years afterwards, there was again an epidemic of small-pox in the same district; and several of those persons whom he had vaccinated with the lymph taken from the revaccinated adults had small-pox. They were not protected by that lymph as they were by the lymph taken from children. It was possible that, at the present time, a large number of adults were under the impression that they had been vaccinated with satisfactory lymph when they were not protected at all. Under the department superintended by Dr. Ballard and Dr. Stevens, adult lymph should not be taken; but he believed it was taken, because occasionally vaccinated adults had very fine arms. He never could understand why there should be deterioration, until he looked more particularly into the character of the matters which produced this disease, and then he could see an explanation. The disease was of a vegetable origin, and the germs (as Professor Cornwell had published to the world) were liable to have a sort of hybrid production. When hybrids became crossed, as they saw in France, they were not protected in the same way as the pure lymph which was taken from the cow. He was satisfied that it was necessary occasionally to have the lymph from the animal taken afresh, so that they might go back to the old stock and keep it among the people. That vaccination would never be protective against small-pox was self-evident, because small-pox would not protect entirely. The very worst case of small-pox he ever saw was in a man who, twenty years before, had had a severe attack, and at the time of his second seizure was pitted extensively. He died of small-pox in a very few days. We should never be able to remove it entirely; but, by going to the cow and having the lymph from the fountain-head, they were much more likely to keep up the protective influence that Jenner saw vaccination had. The question of communicating syphilis by vaccination would be brought into this discussion. It had happened to him to see once a case where syphilis had arisen in a vaccinated arm; but the origin of that case was very clear. The nurse with whom the child had been sleeping had syphilis; and there could be no shadow of doubt that the syphilitic matter had gone from the nurse into the arm of the child after the vesicle had risen, and there was an abrasion. That was manifest; and it was the only case in his long experience and connection with vaccination that he had seen, where there had been the remotest possibility of anything like syphilitic infection being present; and it was an unfortunate thing that this subject had been mooted, because from this meeting it would be spread broadcast that medical men had the opinion that it was possible to take syphilitic matter from a child born of syphilitic parents and vaccinated to another by means of lymph. He did not believe it possible, or that any one could bring forward a single proof of such a thing. There would be no evidence to show such a possibility. There was no more reason for shutting the door against vaccination on that account, than for closing a druggist's shop in the country because, by possibility, the dispenser might mix some poison with the medicine he was dispensing. He thought it a great mistake that that had been introduced, because there were a number of persons, of honest good intention, who were under the impression that they might receive infection by vaccination. He knew of several who would have their children vaccinated with lymph taken from the cow, and those persons should have the power to exercise an option. There was one thing he would like to see introduced into Dr. Cameron's Bill, that, when a person was brought before a magistrate for refusing to have his child vaccinated, instead of being condemned in a fine and costs, the magistrate should have the power to order the child to be taken out and vaccinated. Fines were a mistake. If the individual sent to the public vaccinator insisted on having vaccine from the cow, he would have the power to insist upon it if Dr. Cameron's Bill became law.

Mr. CEELY said they would not be able to annihilate small-pox, and he defied any one to show that he had claimed such a result. From the experience he had had, no such thing could or ever would happen. He had no prejudice in favour of the lymph. His object was to ascertain a pathological fact: whether it was true, or likely to be true, that variola and vaccine had any affinity? His opinion was that vaccine, in the spontaneous disease of man, was modified by the cow. He had proved it, and Mr. Badcock had done it more frequently than any man in this kingdom. Animal vaccination was now in operation at Brighton. They had produced first from one cow. The operations that had failed in Lyons had been simply the insertion of small-pox matter by Dr. Chauveau into a little pouch. It had been taken out again unaltered, and transferred into the arms of children. He must say that the manner in which he and others had been spoken of as propagating disease was perfectly ridiculous. If he had time, he could show the

natural disease of the cow and the disease created by his and others' operations; but he was afraid it would take too much time. With regard to animal vaccine, he was in favour of it for this reason, that he thought it was an advantage now to recur to the natural disease of the cow. He liked to see good arms, and, when the lymph was not satisfactory to him, he liked to have recourse to the cow. When arms were not so good as he desired, he preferred to do them again. Very few people asked him for the animal lymph, but they were mostly private persons. In his district, they could not now find cases of natural cow-pox, but, forty years ago, dairies were full of it. He was very fond of animal lymph, because it gave such good results. He thought, when a vaccinator could not select his humanised lymph, or found it in any way failing in perfect results, he ought to have recourse to the cow. He did not think he and other like advocates were chargeable with disseminating small-pox among the people by taking the inoculated lymph from the cow.

Dr. DRYSDALE inquired how often Mr. Ceely had vaccinated the cow with the cow.

Mr. CEELY said twice only; once by dry means and once by liquid.

Dr. CAMERON asked how often Dr. Badcock thought it necessary to pass it through the cow.

Dr. CEELY replied that once was enough.

Mr. CEELY said that he did not approve animal vaccination as an exclusive system. It was impossible. He liked to see good arms; and, when he found good arms, he took the lymph from them.

The CHAIRMAN; You like a supply of animal lymph to produce stock for subsequent arm-to-arm vaccination.

Mr. CEELY: Yes; it should be kept up by all means for that purpose, and be always at hand.

The CHAIRMAN said he was sure the meeting would have heard with great interest an explanation of Mr. Ceely's beautiful drawings; but Mr. Ceely had evidently felt, as he himself had felt, that they had better be discussed on a future occasion.

Dr. CORY, said the death-rate from small-pox was much greater after bad vaccination than after good. After good vaccination, it was almost infinitesimal. If by having animal vaccination they were running the danger of a larger death-rate, they should be very cautious before adopting it. Facts and experiments were, therefore, needed. Dr. Ballard said there were two things not mentioned in the epidemic statistics. The proportion of attacks in ordinary epidemics of small-pox among the unvaccinated was 35 per cent.; but the proportional deaths in the great epidemic was 77, which showed the virulence of the epidemic. In vaccinated people in hospitals, it was only 6 per cent. Another thing also to be noted was, that with that epidemic the deaths occurred in people over 15, which included people who had been vaccinated prior to the vaccination laws being improved. As to deterioration of lymph, he had been vaccinating three or four years at Surrey Chapel, and he had seen no deterioration whatever. Besides that, the lymph had been used there since 1866; it had been passed through every week, child by child; and the characters, as far as one could judge, were precisely now what they were then. He did not think, where they had a sufficient number of cases to select from, that they got any deterioration, however many arms it passed through, if they selected their cases well. Dr. Carpenter mentioned one of the proofs of deterioration of lymph, which he (Dr. Cory) did not think to the point; for they knew the spurious results which were not from vaccine vesicles at all, but from secondary lymph, where there was a hard crust—places produced by irritation from the matter put in. Mr. Ceely had been asked why it was more easy to propagate calf-lymph by inoculation from calf to calf than to inoculate the cow with the small-pox matter. There was a reason, probably, for that. When they took the lymph from small-pox cases, it was taken from the general eruption on the body, and not from the mother-vesicle.

Professor SIMONDS said he might first observe that, in entering the room, it did not occur to him that he should be called upon to make any observations. Having been asked to do so by the Chairman, however, he should be glad to contribute his opinion on the subject. The first question he would ask with reference to this matter was, What was the origin of cow-pox? All who were acquainted with the subject were well aware that there were some erroneous views originally held by Jenner with respect to the conveyance of that particular disease from one animal to another—from the horse to the cow; and it was in consequence of that conveyance that the cow became affected with a disease that he called cow-pox. In the present day, perhaps, it was unnecessary for him to say that among veterinary surgeons, who were acquainted with the lower animals, that opinion had always been negated. He was of opinion that Jenner saw the disease of the animal, and that it was of a repetitive nature, which, by his own observations, he was well aware, did not possess

any particular quality. Jenner saw variolous diseases in the cow, one only of which was of the genuine kind. To his (Professor Simonds's) mind, it had always been a question of doubt as to whether the cow herself was to be regarded as the animal only liable to her own variola. He was not there to say she was not; but he was there to say that, after an experience of something like forty years, frequently as he had seen eruptive diseases in the skin of the cow, he had never been able to recognise any of these as variola. He was, therefore, inclined to think that the cows which Jenner originally saw were cows not with generated disease, as it were simply *sui generis*, but that they had become accidentally infected with small-pox matter in consequence of the great prevalence of small-pox at that particular time. If they looked to what was then being done, they would see that inoculation was practised throughout the length and breadth of the land, and that Jenner week by week inoculated children to protect them against natural small-pox. They saw then the prevalence of small-pox in the country, and they knew full well that small-pox inoculation was practised, and there came a great diffusion of disease and greater malignancy. Then, again, they looked to Jenner's own statements, that it was not one particular dairy or two dairies that were affected, but many cows in that district. The disease was easily communicated from one to another, and from the cows to the human subject. In this way they were dealing with a disease which was continuous; but they had not seen such cases lately or at all. They had looked for the disease year by year, and had failed to detect a natural small-pox. Therefore, he was of opinion that it was a kind of accidental conveyance from the human subject to the cow, the cow being susceptible of it when the exposure to small-pox variola was so great; and, that being so, they saw, to a certain extent, how they had succeeded since then by the inoculation of the cow with small-pox matter. Mr. Ceely and Mr. Badcock had told them that there was new lymph introduced which had one origin—the origin by inoculation of the cow with small-pox matter; and if these gentlemen of experience could detect no difference between the lymph which was introduced by Jenner and this lymph, he thought they now saw identically the two things. Then they came to the peculiarities of variola in other animals, which led to a question whether they had a genuine variola in the cow and doubtful in the other animals. He could best answer that question by saying that, with the exception of the sheep, he knew of no other animal that was affected with variola. There was an equine variola which was produced from the cow, but he had never seen variola in the horse. He knew it had been stated of late that cases of that disease had occurred in France, but all he said was that our observations had been extensive and minute, and they had seen nothing approaching to it in a horse or a dog, or any other animal except the sheep. Variolous eruption he had seen in the sheep. The peculiarity with regard to the eruption in the sheep was so marked that he thought Mr. Ceely would remember that, as far back as 1847, when small-pox was prevalent for three or four years, the late Dr. Gregory of the Small-pox Hospital said at the Veterinary Hospital some sheep that were affected. In his mind's eye, he could see Mr. Ceely now examining it, and he said, "If ever I saw small-pox in my life, I see it there". Mr. Ceely would bear him out now, that, as to the period of incubation of the disease in the sheep and the manner in which the inoculation of the sheep comported itself, it agreed exactly with the disease of small-pox of the human subject. With reference to the probability of the disease being one which was communicated accidentally to the cow, and that the cow had no variola of her own, some few years ago, he had the opportunity of speaking with Mr. Simon; and, in talking the matter over with him, he asked him if it were not strange, if the cow were the subject of a variolous disease herself, they never saw anything of it in the male, and never heard of bull-pox? How were they to account for a variolous disease which only affected one of the sexes? They would be hooted down in the streets if they were to talk of bulls and steers being affected. No; it was nothing but the poor unfortunate cow alone. With respect to animal vaccination, it appeared to him that they could only use lymph of that kind to supplement the current lymph of the day; and he quite agreed with the remarks of Dr. Ballard that, if the Government saw its way to that lymph being obtained with full facility, they would be the first to introduce it. It might be that there had been some such cases occurring in the cow, which had been referred to, which were called natural cases, and that they were conveyed to the calf, and that the lymph was being used in that way. He was, however, strongly inclined to think that they would find there was inoculation of the bovine animals with small-pox matter. With regard to the susceptibility of bovine animals to infection with small-pox matter, there was a grave difficulty in producing the disease at the present time by simple inoculation. Although Mr. Mason and himself inoculated many cows, they did not succeed at all. Mr. Ceely succeeded two or three times. Mr. Badcock succeeded

several times, but he had had something like one hundred cows to inoculate, and he did it with six or seven punctures each. Nevertheless, he only succeeded five times, which showed the insusceptibility of the cow to take that disease. But one case was quite sufficient to show how it was communicated by one to the other. If they were to look to these things more closely than they had, they would see the series of calf-lymph had precisely the same origin and the same qualities as that of Jenner; and there were a great many practical difficulties in the way of carrying this new proposition out, for supplying lymph for the protection of the country against small-pox. He believed there would be no more protection than at present. He repudiated altogether the idea of syphilis being carried from one individual to another by lymph which was used. There might not be sufficient care in selection. Dr. Carpenter had alluded to lymph being taken from revaccinated persons, and had explained that it had failed because a spurious disease was communicated, the person not being so susceptible at that time. It was an important question; and if he could in any way promote the objects of this conference, of getting a supply of lymph from the calf, he should be exceedingly happy to do so. At the same time, his view was that they would not succeed in obtaining better lymph in many respects than that which was now current; but if it were only a means to supplement the present supply, and to meet an emergency like an epidemic of small-pox, that would be something to attain.

Dr. CRISP moved the adjournment of the debate. Those who advocated the system of animal vaccination knew nothing about it. They were special pleaders. He had conclusions to disprove what the Chairman had written in the report printed in the BRITISH MEDICAL JOURNAL; and on that account he was anxious that the discussion should be deferred, as he had much to say about the calf and its purity. They were told they must come to the calf for protection—the poor and humble calf. Now, they knew that the calf was anything but humble, for he would give a man a kick, and laugh at him afterwards. It was perfect nonsense and conceit. He would be glad if the meeting would give others an opportunity of exposing some of the errors which men in high authority had endeavoured to propagate.

Mr. BAKER said so much had been learned during the last two meetings, that there was evidently a great deal more to learn. He seconded the proposal for adjournment.

Dr. CAMERON said, with reference to Mr. Simonds' observation as to the origin of cow-pox and of small-pox, that gentleman seemed to have overlooked the experiments made by the Lyons Commission, which operated on a very large number of cows in two or three Government establishments. They would have fallen into precisely the same error as Mr. Simonds, had it not been for a mere accident. In the course of their experiments, they inoculated some animals with small-pox and they got no results. The animals were put aside, and, in the course of further experiments, they did it with vaccine matter. They had observed on one of these animals a slight eruption. They gave M. Chauveau information, and he did it to others and got some eruption. Taking the lymph contained in the pouches, he inoculated human beings and cows, and he found in human beings a vesicle in no wise different from the vaccine vesicle. Then Mr. Badcock said, how could it be said it was not the true thing? If they read Chauveau's book, they would know more about it. Chauveau vaccinated back from this vesicle to the cow, and he got the papule. He then got a vaccine eruption, which was a totally different thing. In that way, they had a very simple means of testing to what extent there was variola. Let them go to the innocent cow and revaccinate her, and say in what percentage they got a vaccine eruption and a variolous eruption. Professor McCall, having occasion to make experiments of that sort, said he got no results during a prevalence, which looked as if that matter was variolous matter. He did not want to dogmatise, but to know the fact. Dr. Ballard had told them what the Local Government Board had done; but, notwithstanding they seemed to have done everything, they had not reduced the death-rate of small-pox. The death-rate had not diminished in anything like the proportion of the vaccinations. The death-rate in cases of small-pox occurring in vaccinated persons was a point to which attention had not been directed. He found by Mr. Simon's book that in the original days the deaths were *nil*. Coming down to the first statistics, from 1830 to 1840, the death-rate was only one per cent. in vaccinated persons. Dr. Ballard, while denying the possibility of deterioration of vaccine lymph which had been transmitted in an unnatural soil for so many years, supported the opposite proposition of increased inactivity in small-pox matter occurring in an unvaccinated population; and, as he remarked, it was fed on blood. The small-pox epidemic of 1872 originated in a badly drained district, and fed on blood. It came on and was extremely fatal. On what ground could he support the extreme activity of small-pox where it was fed on blood and where it was fed on water? Dr. Ballard had told them he recommended public vaccinators to im-

prove their stock of lymph from the animal. A very curious example occurred in Glasgow. A vaccinator there, getting a point of animal lymph, used it and improved his stock. He had no theory on the matter; but he had since got a fresh supply, there being some little hitch in the pedigree of the cases previously. There was a passage in Dr. Seaton's report as to the failures of animal lymph, but Dr. Seaton directly contradicted the reports of the persons engaged. He said that in Amsterdam there were ten punctures made. Did it not stand to reason that there would be some failures? The French Academy went into the matter, and they came to the conclusion that animal vaccine was not in the least behind the humanised vaccine. The commission reported that, taking the proportion of vesicles and punctures, the success of animal lymph was fully equal to that of humanised lymph. Dr. Warlomont's report claimed for the calf a higher percentage of success than was got in this country. If they looked at the Berlin report, it claimed success in every case with animal lymph. He did not say which of the results was right and which wrong, but he quite agreed with Dr. Seaton's report on the subject. It was all very well to say Dr. Seaton was not prejudiced: he did not wish to say he was, but he made equally positive assertions opposed to those for animal vaccination in the report of 1868, and these would be proved to be fallacious. Every one of Dr. Seaton's arguments would be overruled and shown to be incorrect; and the result of the matter was, that now he objected to calf-vaccination. In consequence of the great number of non-successes, the vaccinators after ten years claimed perfect equality in the matter of success; and, so far as security was concerned, they claimed in many cases a great deal more. The deterioration of humanised lymph was one of the reasons which induced the Belgian Government to institute calf-lymph. On the strength of six months' transmission and retransmission alternately between the calf and the human subject, the opinion of the Belgian Government was arrived at, and a commission was instituted. He expressed regret if he had said anything with regard to variolous lymph which had given offence to Mr. Ceely. No one could have had less intention of wishing to depreciate Mr. Ceely's labours in advance of the science of vaccination. With respect to Dr. Seaton's book, they must remember that it was possible to look at a subject from two sides.

The meeting was then adjourned till next Wednesday, at 4 o'clock, at the same place.

OUR TROOPS IN CABUL.

OUR correspondent at Cabul writes: Every exertion is being made by the authorities to provide shelter in the cantonment of Shahpur from the severe weather which is rapidly approaching. With the exception of the sick of the Divisional Field Hospital and some of the native sick, the troops are still in tents; and, as the nights are cold, with thick ice on any water about camp, the ink in the bottles in the tents being also frozen, it is time all should be under cover.

On November 11th, there was a moderate fall of snow, preceded by a dust-storm and a bitterly cold wind, giving us a taste of what we may expect. The mornings up to this have been simply perfection, and the day-time warm and genial; the thermometer in the shade rising to 65°, 70°, and 75°, which, to those liable to ague, is very trying, the difference of temperature between day and night being so great. Shahpur cantonment is a long range of one-storey mud buildings, forming three sides of an oblong, the fourth side being enclosed by the hills of Bemarie. These mud buildings form a running line of one mile and three-quarters, intersected at certain intervals by large gateways, with numerous rooms at either side which have been detailed for the regimental and staff officers. The rooms for the soldiers are protected on one side (the inside) by a wide verandah; on the outside, or that facing Cabul, by a wide ditch and thick wall. The rooms measure 15 feet wide, 20 feet high, and vary from 15 to 90 feet long, with good fireplaces, doors, and glazed windows; the latter constructed since taking over the buildings. The whole of the Europeans will be thus accommodated, and some native troops. At the base of the Bemarie hills, inside the enclosure, the 5th Ghoorkhas and 23rd Pioneers, whose duty it is to defend these hills, are constructing mud huts, and are making rapid progress towards completion.

The houses in Bala Hissa are rapidly being dismantled of timber, doors, windows, and everything likely to be useful in the construction of barracks and huts, and, when we have taken all we require, there will be very little left intact of the Ameer's palace or other buildings, where treachery and villany of all descriptions have been concocted. A more filthy den than the Bala Hissa cannot well be imagined—rooms literally full of human excreta, apparently collections of years; no attempt whatever at sanitation. It is fortunate, therefore, that it has not been occupied by our troops, where disease must have arisen by the very stirring up of such pollution.

At Shahpur, the water-supply at first appeared a great difficulty, as it came from the Cabul river, which passes through part of the city; but some excellent springs and wells have been discovered, and every care is observed in their preservation by walls being built round them and the establishment of "water-police". The sanitary arrangements of the cantonment are strictly observed; latrines outside for day use, and inside for night, on the dry-earth system. The Divisional Field Hospital is working most satisfactorily, and the sick are to be shifted into a portion of the barracks almost immediately, where the wards and offices have been constructed, plastered, and lime-washed with remarkable rapidity. This is one great point with Sir Frederick Roberts—first care of the sick and wounded, for whom he grants anything in reason recommended by his Principal Medical Officer.

Our communications with Peshawar are now open. Generals Gough and McPherson having shaken hands a few days ago, our letters from England reach us in one month, which is, to say the least of it, quick despatch. Though well supplied with all the necessaries of life, still a few of the luxuries will not be unacceptable; and, now that the road is open, we are in hopes of being able to obtain specially warm clothing, liquor, tobacco, and other articles. Mittens, Balaklava caps, socks, gloves, and such-like, would be most acceptable, to say nothing of Cardigan jackets. A convoy of sick and wounded left for Peshawar on the 14th November, among the number being Surgeon Duncan of the 23rd Pioneers, who was severely wounded in the chest at the action of Char-Asia on the 6th of October.

Since the last campaign in Afghanistan, so recently terminated, Surgeon-General Innes, Principal Medical Officer British Forces, has induced the Indian Government to make several concessions, which will be of great benefit to the sick and wounded and the service in general, as well as the comfort of medical officers.

The sick-carriage has been placed at the disposal and directly under the orders of the Principal Medical Officer.

The position of the Divisional Field Hospital, or section of it, on the line of march, is to be in the immediate rear of the column, in advance of all baggage.

One non-commissioned officer of Native Army per hundred doolie-bearers, placed under the charge of the European transport-sergeant, is to superintend the sick transport and relieve medical officers of the physical labour and worry they experienced during the late campaign. This is a most important concession, and one for which all concerned will be grateful.

An allowance of thirty rupees *per mensem* has been granted to surgeons not entitled to charges for the keep of a horse, and twelve rupees *per mensem* to medical subordinates for the keep of a pony. How this grant has been refused so long is surprising, considering that, in a climate like this, medical officers and subordinates could not be expected to do their duty after a long march, when their hard work really begins, in looking after the sick.

A sanitary officer and secretary in one has been granted the Principal Medical Officer of each Division, which will allow the administrative officer time to consult with the officer commanding, answer the numerous personal questions from executive officers, and consider the many applications for supplies, etc.; heretofore, the Principal Medical Officer has had no assistance, and his labours never ceased.

Surgeon-Major R. Lewer, 9th Lancers, has been appointed Secretary to Deputy Surgeon-General Porter, Principal Medical Officer Cabul Field Force.

THE WAR IN ZULULAND.

The Transvaal Force.—Utrecht.—The Natal Sores.—Lessons from the Zulu Campaign.

SINCE I wrote last, the forts along the line of communication to Ulundi from the frontier have been abandoned; the sick and wounded they contained being sent to the base hospital at Ladysmith. Latterly, there has been an increase of sickness amongst the troops, consequent on the reaction after the excitement of the campaign, and on the advent of wet weather. There are a considerable number of invalids still for England, and the arrival of the transports is eagerly awaited. The Boers are still threatening; and it is deemed necessary to keep a military force in the Transvaal for a year or two.

The Transvaal force consists of three infantry regiments, one battery of artillery, one regiment of cavalry, and one company of engineers. The 94th and artillery are now marching, under Colonel Baker Russell, against Sekukuni. The field hospital with this force is in charge of Surgeon-Major Hector, whilst Surgeon Wallace has charge of the 94th. There is also a civil surgeon for duty with the artillery. Surgeon-Major Johnstone is senior medical officer at Prætoria. At Standerton, a small station on the main road to, and one hundred and twenty miles from,

Prætoria, a field hospital is established for the troops there, consisting of the head-quarters and right wing of the 21st Regiment, one troop of cavalry, and a half battery of artillery. Surgeon-Major P. Smith is in charge, with Surgeon-Major Townshend for the 21st Regiment, and Surgeon Bushe for the artillery. This latter force will move to Prætoria immediately. At Wakkerstroom, seventy miles from Standerton down country, and on the main road to Sydenburg, a large camp is pitched for the King's Dragoon Guards, 80th Regiment, the left wing of the 21st Regiment, a half-battery of Royal Artillery, and one company of Royal Engineers, with Surgeon-Major Stafford as senior medical officer, Surgeon-Major N. Jennings, and two civil surgeons, Glanville and Boomer, for duty with the regiments. At Utrecht, which, being still unhealthy, is to be abolished as a station for troops, Surgeon-Major Comerford is in charge; and at Newcastle, still lower down the road, is Surgeon-Major Skene. This enumeration, with Surgeon-Major Cahir as senior medical officer of the whole, comprises all the surgeons employed with the Transvaal field force. A Stafford house surgeon is with Colonel Villiers near Luneburg.

Utrecht, although situated more than two thousand feet above the sea, in the midst of the mountains, is an unhealthy spot. It is placed on a slope, at the bottom of which is a quagmire three miles long; both slope and quagmire being surrounded on three sides by a continuous chain of hills. It is, of course, a Dutch settlement, and the Dutch here have no knowledge of, or regard for, sanitation. There are some beautiful sites close to the number of straggling huts called Utrecht, and near the fine Buffalo River in the open, which would have answered for a settlement. The result is that Utrecht will be abandoned. Newcastle is a prosperous town, and very healthy. The camp at Wakkerstroom is pitched on rising ground, two miles from the "town", but there is a marsh intervening. The camp, however, is placed to windward of the marsh, and no baneful influence is experienced. Standerton consists of about one dozen of houses occupied, as is the case with the other villages described, by storekeepers, with supplies for the Dutch farmers around. Each village has a small post-office; a residence for a "Land-rôt", or local magistrate. There are also a few other houses occupied by contractors, the local doctor, and the missionaries; these, with one or two so-called hotels, comprise the entire place. But there is not a doctor for every village, although the Dutch farmers and their families are constantly ailing; and enterprising speculators taking caravans of patent and other medicines through the country, often realise one thousand per cent. of their original outlay. The Natal sore is of frequent occurrence, and is by no means confined to Natal. It occurs from poverty of the blood, and usually selects the extremities for its appearance. It has been known to attack the nose. It begins as a spot like a flea-bite, followed by a pimple, which bursts, and leaves a sore that becomes a corroding ulcer, extending from the centre, and amenable to no known local treatment, until the tone of the general health is so improved as to exert its influence on the sore. It is in reality a kind of plague-spot, without being contagious. It attacks every age alike, and is often seen as large as a crown-piece, surrounded by a reddish areola, gradually fading. When healing, it scabs over simultaneously, and, when the scab is detached, it is healed. Sometimes when the general health is slow to recover, the scab which has formed will remain adherent for a time, thus threatening a reopening of the sore from a failure of the vital powers to complete the healing process. Quinine is, of course, a most valuable remedy, conjoined with the administration of soups and wine. A wound or a mere scratch will degenerate into a Natal sore when the physical condition of body predisposes to such an issue; but, as may be expected, these latter forms are never so chronic as the idiopathic sores.

The Zulu campaign being now finished, the failings exhibited may be discussed. There is no doubt that, at the outset of the campaign, the *personnel* of the hospitals was insufficient for the number of troops despatched to the colony. It is stated that this was owing to there not really being enough men of the Army Hospital Corps to send out. If so, the blame rests with the military, and not the medical authorities at home; for it is well known that a proposed and necessary increase of the corps last year was negated by the military executive. In the field force regulations by Lord Chelmsford, it is laid down that regiments are to supply extra orderlies, thereby carrying us back to the *efete* mixed system, so opposed to all order and efficiency. The number of orderlies, one to every ten sick or wounded, might be sufficient in the abstract; but, in the case of a large field hospital, it is not so. There are the water-carts to be looked after, the custody of the patients' arms and kits, the rations to be drawn from the commissariat, the sanitary arrangements to be supervised, the washing to be done, the superintendence of the sick transport, the numerous clerical duties, the cooking for the hospital, the discipline of the men, and various other duties which are quite distinct from the actual attendance on, and ministrations to, the sick and

wounded, which those unacquainted with the routine of a large hospital in the field—military officers, for instance—could never understand. It is hoped that the scale of orderlies for field hospitals in future campaigns will be increased to ensure unity of medical attendance, and the avoidance of introducing amongst the Army Hospital Corps the usually ineffective set of worthless men for hospital duties usually sent from almost every line regiment as a matter of course.

The arrangements connected with the transport of the sick, and for the medical stores in the field, were made by the military authorities, and showed, as in many former instances, want of regard for the comfort of the sick and for the medical supplies. The ambulances were at first almost grudgingly given, and the animals could be taken at will by the transport department, provided they were not actually in use. The result was that, on every possible occasion, whenever transport oxen were wanted, the hospital ones were taken; and, when these were required again, the reply was, "There are none available for you". The drivers of the hospital transport were servants of the transport department; and this latter always declined either paying them, or, indeed, having anything to do with them, except remove their oxen from hospital employ, and themselves, also, whenever possible. The truth is, that the campaign suffered from a want of brains to guide it. The inspecting general of lines and communications was comfortably settled at Maritzburg, never once moving up the line, as Colonel Colleen did in Ashantee so effectively and regularly, to observe irregularities and investigate complaints. There were certainly assistant adjutants-general from engineer and other corps, raw hands to such duties as were entrusted to them. Whilst hundreds of oxen were starving and dying along the line, the military authorities were haggling at Maritzburg with conductors about rates of pay and other trifles—mere trifles under the then circumstances. What could it signify whether a conductor of wagons was paid ten shillings or twelve shillings a day for a few months, if by his presence up country he could save hundreds of oxen from neglect and starvation? It seemed that, at Maritzburg especially, the case of the square peg and the round hole was fully exemplified. There is scarcely a doubt that the purely military officer is totally unfit, from his training, for the purely administrative departments. The transport officers, nearly all combatant, commenced by suspecting the natives, and breaking faith with them as regards pay and period of engagement. All colonists will agree that no system could have been worse. Hundreds of transport-drivers have deserted, solely and purely because the transport officers were too lazy to draw out pay-lists for the men long in arrears. It was impossible not to feel surprise at such carelessness, and at hearing afterwards other and quasi-clever but unjust reasons, assigned for not paying the transport-drivers, which, together with the neglect of the transport animals from a deficiency of conductors and drivers, was the chief cause of the delay and of the enormous cost of the war to the taxpayers at home, who should be made acquainted with the facts. Of course the medical transport shared the consequences of such inefficiency, but only in a minor way, as Surgeon-General Dr. Woolfryes most ably coped with the difficulties; and the result is that not a single complaint has been made to the authorities of any instance of neglect of the sick belonging to the second division of Wood's column. Let the first, or the inactive column, answer for itself.

The ordnance department, in so far as it should have furnished supplies to maintain full equipment for hospitals, was a failure. A great number of young officials represented it, and they were manifestly young to their duties. On the other hand, the commissariat department was very successful, and was of great assistance in providing for the wants of the sick and wounded. The medical supplies, medicines, instruments, etc., sent out from Whitehall Yard were abundant, and reflect great credit on the medical authorities there. Indeed, the recently acquired liberty of action by the medical department in these matters will go a long way to bring the department into a condition of complete efficiency and usefulness to the army, in spite of the vain efforts to reintroduce the regimental system. The crown of the edifice now so laboriously constructed by our esteemed, able, and persevering chief will be his obtaining of the principle of selection for the administrative appointments, a failure in which is the only danger that threatens the department, and so far it does.

DUNMOW RURAL DISTRICT.—The death-rate of this district during 1878 was satisfactorily low (14.6 per 1,000). Of the total number of 288 deaths, 143, or as nearly as possible a half, were in persons aged sixty years and upward. Zymotic diseases caused 23 deaths, 5 of these being from enteric fever, which is hardly reassuring. Ordinary sanitary work appears to be well carried out in the district, and the particulars given in a detailed survey show that it is well looked after. The water-supply of many of the villages requires improvement, however, and the dilapidated state of some of the cottages should receive early attention.

SPECIAL CORRESPONDENCE.

LIVERPOOL.

[FROM OUR OWN CORRESPONDENT.]

Infirmary for Children.—Medical Instruction.—Clinical Teaching at the Royal Infirmiry.—Death under Chloroform.

WITH regard to hospital appointments, there has latterly been a dearth of change; but there is now a vacancy at the Infirmiry for Children, owing to the resignation of Dr. Alfred Stephens, senior physician and founder of the institution. The well-merited promotion of Dr. James Armstrong, senior assistant medical officer, at the coming election, is practically assured, as no one contests his claims.

At the Medical Institution, the fortnightly meetings have been replete with interest since the reopening early in October. A well-selected series of cases and pathological specimens of unusual importance, with a long discussion on the "causes and prevention of puerperal mortality", have engaged the attention of members; while at the meeting on Thursday, December 4th, Mr. Rawdon, Surgeon to the Infirmiry for Children, presented some cases of cleft palate and hare-lip which had been closed most admirably and successfully by himself, and were briefly but ably referred to in a paper detailing the process which he has adopted (chiefly from the directions of Mr. Thomas Smith), and in which he has acquired a leading experience in Liverpool.

In the matter of ethics and politics, an attempt has been made at the Medical Institution to secure the support of that body in favour of provident dispensaries. That attempt has failed, as the Institution very properly withholds the *agis* of its protection or official countenance from schemes among which there may at any time be found organisations of unquestionable philanthropy and well-earned professional remuneration side by side with business ventures characterised by moral obliquity no less than by enterprise. The institution equally abstains from condemnation, which, while deservedly aimed at questionable undertakings, may improperly depreciate those of unsullied repute. It is obvious that the said "aloofness" is the only judicial and judicious course.

At the Royal Infirmiry, the clinical teaching is being pursued with great energy and success. During the past summer, the lecturers were Dr. Glynn (on Clinical Medicine and the Principles and Rudiments of Physical Diagnosis and of Therapeutics) and Mr. Reginald Harrison (who chose for his topic some of the diseases of the Urinary Tract), who met their classes weekly in the operating-theatre, and whose discourses were attended with great punctuality not only by the students, but by practitioners in the town. During the three months now drawing to a close, the weekly lectures have been conducted by Dr. Davidson (on Clinical Medicine) and by Mr. W. Mitchell Banks (on Clinical Surgery). The latter gentleman has followed the method of collecting every Wednesday a series of cases illustrating diagnosis and treatment both in major and in minor surgery; cases in progress, such as Listerian dressings, performed before the class; and every now and then a major operation, with an account of the case before and its probable future.

At the surgical clinical lecture on Wednesday, December 3rd, during the removal of a small piece of bone, a man died under chloroform. He had previously had this anæsthetic, and borne it well; while he had before that had ether, and submitted to it but badly—in fact, so badly and with the onset of such struggling and asphyxia as to lead to a preference for chloroform in the present instance. Almost invariably, however, ether is employed at the Royal Infirmiry, chloroform being but rarely substituted, except for reasons such as prevailed in the present case. This unfortunate event was the subject of an inquest on Saturday, December 6th, at which Mr. Clarke Aspinall, the borough coroner, presided, and at which the undoubtedly inevitable nature of the event was duly recognised and recorded by the jury. It is many years since a similar accident occurred at the Liverpool Royal Infirmiry.