the influence of nervous systems in the production and methods of organic diseases. I have had no such design against any reasonable belief of the kind; I have long held, and often declared, belief in the trophic influence of nerve-force. An alteration in the nervous force in a part can surely alter its method of nutrition, even without altering the condition of its blood-vessels, as much as an alteration of its temperature; and, to cite no others, the facts which Brown-Séquard and Hutchinson brought before us yesterday, tested as they have been, are beyond refutation. Only, let us learn from a pathology more nearly elemental than that which we can study in ourselves, that many processes of disease, even the most various, may occur when there is no nervous system; and that there are many processes of degeneracy, and of repair, and of disease, of which the essential features are alike whether in the presence or in the absence of a nervous system. The study of such processes in plants, and even in crystals, may help us towards learning the real relation between the nervous force and the processes of organic disease. A certain normal condition of nervous force abiding in each part accessible to it may be deemed a necessary condition of the healthy life of that part; as a certain normal temperature is a necessary condition, and perhaps even a certain electric state. But we are bound to recognise the distinctions between the conditions of life and the essential properties of living things; and, as I proposed when beginning, so now I hope I may have succeeded in showing that it will be very useful if you will study pathology in bodies less complex than our own, especially in such as are not subject to those conditions of our own elemental organic life, which are of all the most difficult to estimate—the conditions, namely, of a nervous system and a quickly circulating and quickly changing blood.

And now let me, only for a minute, claim the position of a senior in our profession, that I may tell how the study may be useful for something more than the direct advancement of knowledge.

I hold it to be very desirable that every one of us should, all his life long, study some science in a scientific manner. There seems to be no equally good method for maintaining the temper and the habits which, by making us always good students, will make us as good practitioners as we can be. There is no method so good for maintaining a constant habit of inquiry, with accuracy and perseverance in research, the power of weighing evidence, of calmly judging, and of accurately speaking; none better for cultivating the love of truth, the contempt for fallacies, whether others' or our own, the gentleness and courtesy which are appropriate to the consciousness of the imperfection of our knowledge.

You may say that we can study science in the practice of our profession. So we may: at least, some of those among us may, who, before getting into practice, spent many years in scientific pursuits, and acquired habits which it is very hard to lose; but, even for these, the study of science in their practice is too much like that which, I suppose, an astronomer may pursue in some stormy night on a railway-journey. For really scientific study, we need repeated observations in unchanged conditions, the right to watch deliberately the course of natural events, sometimes to change that course when and how we please, to set down our descriptions of the objects of our study, even while we watch them, sometimes to have them at home and readily at hand for revision and refreshment of memory. These and many other conditions for scientific study cannot be had in our practice, in which our first and never-ceasing duty must be to do, as soon as we can, all the good we can, though in doing it we may lose or spoil all the best opportunities of acquiring fresh knowledge.

If, then, I am thus far right, that we all are always bound to study a science in a scientific manner, and that it is very hard to do this in our practice, let me again commend to you this elemental pathology. In any fragment of it, studied in those fragments of time which we are all too apt to waste, you may find ample opportunities for observation and experiment, for recording, collecting, and comparing facts, for generalising, for imagining and testing; thus you may gain the happiness and reputation of discovery; and, without ever leaving the paths of duty, you may refresh and strengthen your minds in the study of stores of beauty, wonder, and utility, such as, in all ages, have attracted the wisest and the best of men.

BEQUESTS, ETC., TO MEDICAL CHARITIES.—Mr. John Skirrow Wright, M.P. for Nottingham, bequeathed £200 each to the General Hospital, and the Queen's Hospital, Birmingham.—The Hitchin Infirmary has become entitled to £50 under the will of Mr. Thomas Veasey of Baldock, and £300 further after death of his widow.—Mr. George Checkland of Hawkswick, bequeathed £100 to the Leicester Infirmary, and £50 to the Leicester Dispensary.—The Marchioness of Westminster has given £30 additional to the Royal Hospital for Women and Children.—The Great Northern Hospital has received £100 from "T. A."

THE DUTIES OF MEDICAL OFFICERS OF HEALTH IN RELATION TO THE PREVENTION OF DISEASE.

Being Abstract of an Introductory Address delivered before the Society of Medical Officers of Health.

By JOHN S. BRISTOWE, M.D., F.R.C.P.,

Physician to St. Thomas's Hospital; President of the Society.

ANY intelligent layman, on becoming impressed with the fact that the mortality of a certain district was exceptionally high, would remark that the sanitary authority had neglected its duties, or its efforts had been paralysed by those on whom it devolved to carry his recommendations into effect. If it were shown to him that the deaths were due to diseases over which the medical officer of health had no direct control, he would probably acquiesce under protest, and take his final stand on the deaths from infectious diseases. Here, at any rate, he might say, How is it that the authorities have permitted so many deaths from small-pox, so many deaths from scarlet fever, cholera, diphtheria, enteric fever, measles, and whooping-cough? Here, surely, is evidence of neglect. I fear it would not be very easy to convince him that he was in error; and if he were convinced, he would say, I convict you of incompetence to deal with the essential matters of which sanitary science professes to take cognizance. I do not agree with his argument or conclusion.

I think it will be considered that sanitary science has done much to diminish the prevalence and mortality of at least three of these diseases. I mean small-pox, cholera, and enteric fever.

The practice of vaccination has reduced the mortality of small-pox, and the horror with which it was formerly regarded, to a degree which, at the present time, it is almost impossible to appreciate; and these benefits are maintained, even though weak-kneed politicians not only hesitate to make vaccination strictly compulsory, but actually seem to contemplate, in deference to ignorant and unreasoning prejudice, the granting (as Sir William Jenner puts it) of licences to contract and propagate the disease. But, much as vaccination effects for the prevention of small-pox, one cannot but deplore how utterly inefficient it is, as at present practised, to accomplish what was expected of it. As the law now stands, we have power to enforce a single effectual vaccination upon every infant, and nothing more; yet even this obligation may be evaded by any parent who chooses to pay a fine or undergo imprisonment. But all sanitary authorities are now agreed that, powerfully protective as one efficient vaccination is, there is a tendency for the protective influence to die out in course of years. It is essential for the maintenance of safety, that the operation be repeated at the age of puberty; and again, long experience has shown that even a second vaccination is not in all instances absolutely protective; and that, if it be required to check the disease effectually in a household of whom one is already suffering from it, the only effectual remedy is to revaccinate all those who are exposed to contagion. We have all witnessed how often, when small-pox appears in a crowded household, the disease spreads even to some of those who have been vaccinated; and yet it is a fact which is beyond dispute that, at the Small-pox Hospital, which has been established for nearly one hundred years, not one of the nurses has ever contracted the disease, because every nurse has to submit to vaccination at the time of her appointment. It is certain that, if infantile vaccination were made absolutely compulsory; if it were made absolutely compulsory that revaccination should take place not later than early puberty; and if, further, whenever small-pox has broken out in a house, revaccination were made compulsory on the members of the household, or with exceptions to be determined only by some competent authority, it is certain, I say, that such disappointing epidemics of small-pox as we have recently been battling with, would either never arise, or would be strangled in their birth. The carrying out of the Vaccination Act does not rest with us, and I do not pretend that we should administer this more effectually than it is done under the direction of boards of guardians; but it is, at any rate, disheartening that we, the officials on whom the public chiefly rely to prevent the outbreak and extension of epidemic disease, have no legal power whatever, when small-pox is raging, to enforce the only measure for its arrest which has any real efficacy.

With regard to enteric fever, again, sanitary science has made discoveries which are of great practical importance: that the poison of the disease is contained mainly in the alvine discharges of the patients who are ill of it; and that it is by the pollution of drinking-water and food by these poisonous evacuations that the disease is propagated. It

is largely for this reason that our present system of sewerage is superior to cesspools and middens; that the water of the water-companies is safer than that of superficial wells. These improvements have involved a diminution of enteric fever in London; and that enteric fever is the one disease in regard to which medical officers of health are directly serviceable, is beyond dispute. It is one that can be kept in abeyance by careful attention to sanitary conditions. I need scarcely call attention to the frequency with which enteric fever has been traced to adulteration of milk with impure water. In matters of this kind, the work which we accomplish is likely to be of great sanitary benefit.

The prevention of cholera constitutes one of the greatest sanitary triumphs; the fact that, when cholera has lately come amongst us, it has been strictly localised, is undoubtedly due to the sanitary measures that have been taken. I refer, of course, as regards London, to the almost complete abolition of superficial wells, and to the presence of a purer water-supply than that with which we had formerly to content ourselves. But what can be done for the limitation of cholera when it appears among us? No doubt, we can trace it to its source, and rectify that; and I doubt not, many would add, carry out the measures which have always been adopted, with reputed success, of establishing dispensaries for the treatment of premonitory diarrhoea. But I can see no reason whatever for believing that the progress of a case of cholera can be arrested by any form of medical treatment; the belief that cholera can be arrested in its early stage is a legacy of a former generation.

I do not think that we have any special proof that the contagion of diphtheria resides in the emanations from sewers. And, though we admit that typhus is largely fostered by overcrowding, and relapsing fever by starvation, there is nothing as yet to show in what way overcrowding or famine acts in these cases; and, at any rate, the preventive measures to be adopted when typhus or relapsing fever prevails, are only those that we should endeavour to enforce in the prevention of any other serious epidemic.

We have various powers of disinfecting the house and clothing, and of punishing the infectious person for the wilful exposure of himself in a public place. These powers we all put constantly in force, with much benefit to the public; but, unfortunately, owing to defects in the Acts, and to the apathy and antagonism of those whose duty it is to aid, our efforts are counteracted at every step. In the great majority of cases, no information, except in the case of death, reaches us; doctors and the family prefer to hush the matter up. But here, again, if the doctor at the proper time would only use the power given to him, of certifying that a house, or part of one, required disinfection, it would be the duty of the sanitary officer to see that it was carried out.

Passing from the subject of infectious fevers, I will briefly touch upon our relations to diseases of other kinds. Among diseases which kill, are inflammatory diseases of various kinds. What influences can we exercise upon the prevention of these? All the powers we possess are given us by the Local Management, Nuisance Removal, and some supplementary Acts. They comprise the effectual draining of houses and privies; the providing properly trapped and water-supplied closets; the securing (within certain limits) a sufficient and wholesome water-supply and apparatus; the providing of dustbins, and the periodical removal of the contents; the seeing that houses are in wholesome cleanliness and repair, and are properly ventilated. I am certain that damp rooms tend to cause rheumatism and inflammatory affections, and that the removal of dampness tends to improve the health of inmates in this respect. I am certain that foul walls and ceilings are injurious in many ways. But what, after all, is the influence of damp rooms, compared with that of daily exposure to cold and dirt and draughts on the doorstep and in the gutter? I might easily run through the list of nuisances, and show how, in nearly every instance, the beneficial effects which might be expected to follow from their abatement are neutralised or destroyed by the action, neglect, or habits of those in whose interest we are acting.

I take a very different view from that which most of my friends take with regard to the meaning of mortality-tables and the fluctuations of the death-rate. It is not that I undervalue the returns made to us by the registrars. I look upon them as invaluable guides to us in the performance of our duties; they yield us important information upon the distribution of diseases and the time of their occurrence; they give us early intimation with respect to epidemic outbreaks. But I regard them also as a tangled web of complex problems. It is easy, of course, to flatter ourselves, in the presence of a falling death-rate, that here is the proof of the beneficial influence of the sanitary labours we have been carrying on concurrently with it. I need scarcely remind you of the difficulties which attend the determination of the death-rate, especially in relation to a small area and district. It is necessary, in

the first place, to form an estimate of the mean population for the year. Now, this can be fairly well ascertained for large populations like that of London, in which the fluctuations of one district are corrected by the fluctuations of another district; but the same rules do not apply to small places.

My last subject is the relation of medical officers of health to the vestries and district boards which employ them, or perhaps I should rather say, of sanitary officers to the bodies under whom they act and to the populations for whom they act. The wish has often been expressed, both privately and publicly, that the local authority which appoints should not have the power of dismissing the medical officers whom it appoints. I feel that, as regards the medical officers of rural combined districts, there is some justification for entertaining such views. There is no doubt that it is a very unfortunate thing, both for them and for the populations after whose sanitary welfare they are supposed to look, that the tenure of their office should be insecure, and that the duties they perform are thus rendered liable to interruption and neglect. But would matters be mended in the interests of the public, or even in our own, by making our appointments permanent? I think not. In the first place, if the salaries be not assured to us, we could as easily be got rid of, if it were thought necessary, by the diminution or discontinuance of our salaries as by direct dismissal; and, in the second place, when we consider how imperfect are the Sanitary Acts under which we work, and how specially difficult, therefore, it is to enforce this in the teeth of the active opposition of those who are in authority, and of the constituencies who place them there, it seems obvious that, with such opposition constantly in operation, our action might effectually be paralysed.

But I would ask my colleagues, How often have the vestries exercised their powers arbitrarily or unjustly in this respect? The truth is that, in the metropolis, the medical officer of health and the members of the vestry are brought into constant contact with each other; and it would be surprising, under these circumstances, if men of tact, of ability, of special knowledge, and having an honest determination to carry out the duties entrusted to them, did not, sooner or later, acquire confidence and respect.

As regards the general public, our duties are twofold. The one is to carry out the legal powers entrusted to us honestly, thoroughly, yet with discrimination; the other is to use such moral influence as we possess for the furtherance of the objects of the appointments we hold; and I am sure it will be admitted by all officers of health that much more can often be effected in this way, than by straining the legal powers vested in us to the utmost.

Our position in relation to the medical practitioners of our districts is a difficult one. To a considerable extent, they look with suspicion upon us; and, at any rate, very few cordially co-operate with us. It clearly behoves us not to do anything to justify any attitude of this kind; not to interfere in any way (as I admit has occasionally been done) with the due relations between them and their patients; to treat them and their opinions with proper respect, and never to do anything to injure the position they hold in relation to the public. But, on the other hand, I venture to think they often might—and in some instances I know they purposely do not—utilise the machinery provided by the vestry for the disinfection of houses, bedding, and linen, and the prevention of the spread of infectious disease. It may be contended that they should be remunerated for the information thus required of them. I confess I do not see it. They should utilise, not so much for the general good as for the benefit of their patients and in their own interests, the machinery which by law is at their disposal. I do not refer to the question of the compulsory registration of infectious diseases.

In conclusion, I have to reiterate what I have already asserted in other words: that the position which a medical officer of health holds in his district depends mainly on himself. It is not the law which he administers that gives him the chief power for good, but the moral influence he acquires amongst those with whom and for whom he acts. I need not look beyond my audience for conspicuous examples of the truth of my assertion.

SOUTH DURHAM AND CLEVELAND MEDICAL SOCIETY.—The annual meeting for the election of officers took place on Tuesday, October 12th, at the Stockton Hospital, when the following were chosen for the year 1886-87. *President:* R. W. Foss, M.D. *Vice-Presidents:* G. Middlemiss; W. J. Williams, M.D. *Committee:* J. R. Fothergill, M.D.; J. Farquharson; T. R. Pearson, M.D.; C. Young, M.D.; J. Rawlings; F. W. Eastwood, M.D.; J. E. Peacock; J. A. Malcolmson, M.D.; Robert Smith, M.D. *Honorary Secretary:* J. R. Morison, M.B.

The Norwich Guardians have increased the salary of Mr. Frederick C. Bailey, M.R.C.S.Eng., as medical officer to the workhouse, from £120 to £150 per annum.