AN ADDRESS ON HEALTH.

Delivered at the Social Science Congress,

By SIR RUTHERFORD ALCOCK, F.R.C.S., K.C.B.,
President of the Health Department.

THE department over which I have been requested to preside on this occasion is described in one word—health. And I doubt if there be in the whole range of language another single word so certainly, and at the same time so universally, conveying a meaning of deepest interest to every individual member of the human race. “*Mens sana in corpore sano*” may not be so absolutely conditional as entirely to preclude the exercise of sound mental powers, despite the ravages of disease, and all the enervating influences of protracted suffering and physical deterioration. Many illustrious examples of this triumph of mind over matter, and the spirit over the body, are furnished by history. But they are the exceptions, and chiefly remarkable because they run counter to the common experience of mankind. This tells us that a healthy mind in a healthy body, so often associated together, if not inseparable, are at least essential conditions of activity and enjoyment of life. It is certain that life is often much embittered by minor ailments, apart from the diseases which run a fatal course. As the bodily organs unquestionably do influence the mind, and may enfeeble or distort the judgment, whatever tends to maintain a fair standard of health adds essentially to the sum of human happiness and good judgment.

There has lately passed away a very distinguished man, who died at eighty-three, after a life of incessant labour. Dr. Pusey was an example of the intimate connection between mental vigour and physical vitality. Mind, spirit, and body are indissolubly united, and subject to the same laws, the violation of which entails a penalty on all the three. We hear so much of vital organs, and the fatal effects of any injury to them, that we are in some danger of regarding as unimportant all minor deviations from health. Yet from these often spring the first beginnings of graver maladies, and whatever enfeebles the vital powers is a source of danger, by rendering the body less able to resist an attack. The public health cannot fail to be of paramount importance to every community. Yet few precious things are so persistently neglected, so rashly imperilled, or so wantonly thrown away. And, as regards whole nations or communities, few objects of public interest meet with so little attention. Efforts at sanitation are either passively discouraged, or active resistance is offered. The association has undoubtedly done much good in this direction, but much more remains to be effected for the education of the popular mind, before the nation will take the necessary steps to secure the greatest attainable immunity from disease, and the lowest rate of mortality. The antagonistic forces to be met are not difficult to define, and they may be ranged under a few heads. Putting aside, as insignificant in number and influence, the small section of dissidents known by the police reports chiefly as the “*Peculiar People*,” and the more active combination of anti-vaccinators who do their best to prevent the adoption of the most certain means of security against the ravages of small-pox and the spread of infection, we may reduce the ranks of the opposing force to those who object to the sanitary legislation required either on the ground of a distrust in the power to affect any material change in the average mortality, which they believe is regulated by laws beyond man’s control, as is the proportion of the sexes born—and subject to conditions and influences beyond the scope of human intelligence, or on the ground that any compulsory legislation would be an undue interference with the personal liberty of the subject, or the rights of property and vested interests. I will only say here in reference to the latter plea, that there is no evil, danger, or abuse the law has ever sought to put an end to, in which this stalking-horse of the liberty of the subject has not been brought to the front. But we all know that the very foundations of society and liberty, as distinct from the license to injure others, is the relinquishment of many individual rights for the common benefit. So long as the health or life of one individual is alone concerned, as in diseases which are neither infectious nor contagious, each one may claim some large discretionary right to decide whether either the one or the other be worth preserving, and refuse to the State or to others any power of deciding. But it is a wholly different matter when a person is attacked by an infectious and death-spreading disease, endangering the health and lives of others, and the interests as well as the safety of a whole community.

The adoption of compulsory measures of isolation and disinfection

becomes, then, an act of self-preservation and public policy. Mr. Edwin Chadwick, who speaks with authority on such a subject, has recently told us that he always found in his local inquiries that the seats of epidemic disease—the results of bad sanitary conditions—are the seats of irritation, of disturbance, and of crime. Epidemics are no respecters of persons, attacking alike the rich and the poor, and regardless of age or sex. Let us turn to another point of view—the economic—and trace a few of the financial results of epidemic visitations. Mr. Chadwick, in his paper on “*Sanitary Progress*,” read at the meeting of the Association in Dublin last year, has so admirably dealt with this aspect of the question that I need only refer to it for the most complete demonstration.

The total loss to the wage-earning class by the loss of work through sickness, he told us, has been estimated by Dr. John Watts, who had had great experience in friendly societies, at £13,000,000 in the course of a working man’s life. The diminution of pain and misery, and the saving of the expense of curative and other services, not excluding the cost of burial, otherwise to be incurred by increased mortality, all would go in addition to the credit of sanitary preventive measures. He refers to the report of the Local Government Board for 1880-81, in which it is stated that the death-rate of England and Wales had fallen during the last decade by nearly four and a half per cent., showing by a rough estimate that about a quarter of a million of persons were saved from death, who would have died if the death-rate had been the same as in the previous thirty years. Thus, if twelve cases of serious but non-fatal cases be reckoned for every death—and the early estimate was greater—it follows that about three million persons, or over one-ninth of the population, had been saved from a sick bed by some influence at work in the past decade, which had not been in operation previously. “*More than three-quarters of this reduction of deaths*,” the registrar’s report states, “*comes under the head of the seven zymotic diseases, that is to say, of the diseases which are the most influenced by sanitary improvements.*”

As regards our navy and army, of which the money cost more directly comes, perhaps, home to many, as constituting charges on the consolidated fund, and a large expenditure annually—about one-third of the whole revenue raised by taxation—it has been estimated that every soldier sent to India costs the State £100. But I believe every soldier with a three years’ training—taking the cost of his maintenance, etc.—represents a much larger sum. The loss by death or sickness of every soldier, if it incapacitate him for further service, is the loss, therefore, of so much money, however cheaply we may rate the value of a man’s life *per se*. From this point of view army statistics give startling results. It may be matter of surprise to many that the loss by the sword, and all the death dealing instruments and engines of modern warfare, is small in comparison with the deaths from sickness.

This comes out most remarkably in those periods distinguished by the greatest battles, and the storming of the strongest fortresses, as I proved by a critical examination many years ago of the War Office returns of our losses in the Peninsular war. The total loss by the sword during our twenty-two years’ war consequent on the French Revolution, including Waterloo and Trafalgar, appears by the War Office returns to have been under 20,000; but the loss by disease, Mr. Chadwick asserts, I believe on good evidence, was more than three to one, and of sickness at least ten times as many more cases must have existed, with loss of their services temporary or permanent. The deduction to be drawn from these military statistics should be a great encouragement to a general when once in the field to prosecute his operations vigorously, convinced that he will lose fewer men in the most bloody battles or sieges, if successful, than by sickness, if his operations are delayed and hang fire, with troops massed in camps or temporary quarters where sanitary measures can with difficulty be enforced under the most favourable circumstances, and are often either impossible or wholly neglected. Sufficient care has never been taken at the opening or at the close of a campaign to provide—and not only provide, but have available on the spot—the supplies required to secure the men from the most obvious causes of sickness: want of warm clothing, blankets, good food, and the adoption of certain sanitary and preventive measures of the most elementary kind for their maintenance in health. I cannot think it need always be so, or that the governing powers will in the future, as in the past, be more easily led to incur a vast additional expense in raising new levies, never as good as the men already in the field, than to bestow proper care and forethought in taking care of the men they have. Even the economic results of blunders and neglect, counting millions sterling, sink into insignificance by comparison with the disastrous effects which a diminished and sickly force may have on the issue of a campaign and the policy of the country.

Some curious and but little considered economic results are closely interwoven with the whole question of sanitary preventive measures on which I have already touched, as regards the loss in wages to the sufferers of sickness, and to the nation in the product of their labour. But the subject may be more thoroughly worked out by reference to a report published annually by the authority of the Registrar-General of Births, Deaths, and Marriages in London and nineteen other large towns, making up a population about equal in number. There is to be found within its seventy-four pages, condensed in tabular form, a record full of instruction and of absorbing interest, giving the sum of all the "ills to which the flesh is heir" from diseases or violence. Of the first class, at the head, stand endemic diseases, or those peculiar forms of disease which arise spontaneously, as it is termed, in a country or particular locality. However such diseases may be mitigated, or their worst effects arrested, medical science has no preventive power for them, so long as the local conditions remain. But sanitary science can materially alter these, and so effect what medicine cannot. Then we pass on to hereditary and constitutional diseases—gout, insanity, consumption, and other forms, which are susceptible of being transmitted from generation to generation—and a long array of constitutional and local diseases, for which curative medicine is the chief resource. But placed at the head of all the specified causes of death, we find a class designated under the term *zymotic*; that is, diseases which prevail among a large number of the people of a country, rage for a certain time, and then gradually diminish and disappear, to return again at periods more or less remote.

Now, of these epidemic enemies to the human race, which come like the sudden invasion of an armed force, to devastate and destroy wherever they find weak powers of resistance, or an ill conditioned population, and then more slowly disappear, are enemies which, if met at the gates, may be arrested in their course, and in brief period put to flight by sanitary measures, if vigorously supported by the community. Taking, then, the whole range of diseases tabulated in these returns or causes of death, we have this important conclusion for our guidance, that from one-fifth to one-sixth, on an average, of the total mortality is due to diseases of a preventable kind; which it is in our power, by the adoption of proper sanitative measures, to eliminate nearly—so far, at least, as to prevent their ever taking an epidemic form ranging over large and populous areas. How far the most infectious of this class of diseases are preventable by proper measures is hardly matter of dispute at the present day. If it were, the evidence of all the most competent witnesses, professional and non-professional, to the number of nearly one hundred, who appeared before the Royal Commission which has recently been sitting, would suffice to satisfy the most sceptical. Although their report has not yet appeared, I think, without any grave indiscretion, I may refer to what will so soon be laid before Parliament and published.

In speaking of sanitary measures, it is necessary to distinguish between the power of preventing a first outbreak of any of the *zymotic* diseases—and that of arresting their spread in a neighbourhood, and its propagation in more distant places by infection. It is this last which may with certainty be effected. Perhaps nothing could more strikingly convey to the popular mind this fact than the evidence given by Mrs. Johnstone, the energetic secretary of the Hastings Sanitary Aid Association. Upon this cardinal point of the power of isolation to arrest the spread of infection, the evidence received was absolutely unanimous, showing that such isolation almost invariably answered its purpose. The Commission could, therefore, hardly come to any other conclusion, but that on the outbreak of an infectious disease the first imperative necessity is to isolate every case immediately and effectually as it arises. When this is neglected, and due care is not taken to disinfect the house and linen, and in the case of small-pox the re-vaccination of the neighbours, the most fatal results constantly follow. [The speaker here quoted from the evidence of Dr. Thorne, a Medical Inspector of the Local Government Board, and continued:] To prevent all this danger and sickness with destruction of life from preventable disease is, I hold, to be imperative, even at a considerable cost of individual liberty and convenience. What sacrifices of this kind may be required for the general protection will probably be left to Parliament to determine after due inquiry. But whatever these may be, the compulsory notification and isolation of those infected must form essential provisions of any effective legislation. As to the objections still maintained in many quarters, Mr. Hastings, our President of Congress this year, who has taken such active and beneficial interest in promoting efficient sanitary legislation, was entirely justified last year when this question was under discussion at the Dublin meeting, in saying that precisely the same arguments as were now used in reference to the notification of infectious diseases, were urged against the registration of deaths; and no medical man now would come forward and say

that any of the evils prophesied from such a duty being enforced upon medical men had been realised. In this sense the Bill brought in by Sir Trevor Lawrence and others last Session, and promoted by the Social Science Association, was framed, and I heartily trust it will ultimately be passed. The Hospitals Commission, to which I have referred, was chiefly appointed to consider the hospital accommodation in the metropolis for the treatment of infectious diseases. But the scope of the inquiry was much enlarged by the necessity of hearing evidence and reporting upon a variety of questions directly connected with the treatment of infectious epidemics, the best means of securing the public health, and the difficulties encountered in providing adequate hospital accommodation, more especially for small-pox cases. These difficulties, which had given rise to protracted litigation and the closing of two of the Asylum Board hospitals by injunctions in Chancery—obtained by owners of property and parish vestries—are mainly due to the active opposition of such parties, showing the necessity for compulsory powers. Notification, the isolation of the infected, and the acquisition of sites for hospitals where most required, are imperatively needed in the public interest. By such legislation only could proper provision be made; for, while the necessity for hospital accommodation is generally admitted, and the isolation of the infected of every district within reasonable distances a recognised necessity, all in turn are indisposed to allow the location of such hospital within their own boundaries; a broad line has been drawn between the danger attending the aggregation of cases of small-pox and of fevers. From the hospitals devoted to the treatment of the latter, under the regulations of the Metropolitan Asylums Board, there does not appear to have been any instance of the spread of infection to the neighbourhood; while, as regards small-pox, although the same immunity has not been secured, and may possibly be unattainable, there is such protection afforded by vaccination, that no adult need be exposed to danger, even from the closest contact, unless they voluntarily refuse this means of safety; nor need children be more exposed, save by the wilful neglect of their parents. The proof of this, I cannot but believe, is so clear that it may reasonably be hoped the time will come when small-pox will no longer exist in our midst as an epidemic, destroying its thousands in a year; and this despite all the anti-vaccinationists which prejudice and ignorance combined can possibly give birth to. The evidence of security to the vast majority that are properly vaccinated, and the effect of which is from time to time tested by revaccination, is too overwhelming for any perversity of error to prevail in the long run. And, this great scourge of the human race being thus eliminated, as it might well be even in this generation by the aid of vaccination, there would only remain the other infectious diseases, which can more safely be confined within a limited area of isolation for treatment, with comparatively little if any danger, under proper sanitary conditions, of spreading even in a populous neighbourhood. The difficulty of providing hospital accommodation for those in the metropolis, when this fact is generally known, will in a great degree disappear. The Asylum Board hospitals already built will, in a great measure, supply the necessary accommodation, with the addition, perhaps, of one or two more, in the localities most widely separated from the existing establishments. And for small-pox patients, all the convalescent and slighter cases which will admit of removal, without danger, to a considerable distance, could be transported by land or water outside the ring of inner London, leaving only the more serious cases for treatment near to the places, if not in the parishes where they actually occur, and in such diminished numbers as to lessen materially, if not entirely to obviate, any danger of infection extending to the surrounding neighbourhood. As to the average of mortality and the effect of a diminution of 1 or 2 per cent. even upon the whole population, few people, perhaps, fully realise what this means. The death-rate, as shown by the Registrar-General's report for 1880-81, in England and Wales had fallen during the last decade $4\frac{1}{2}$ per cent. It may, therefore, the report tells us, be roughly estimated that about a quarter of a million of persons were saved from death who would have died—if the death-rate had been the same as in the previous thirty years. We can all see that the saving of a quarter of a million of lives by improved sanitative and preventive measures is not a trifling game; and curative science does not make such rapid progress that we need doubt any reduced rate of deaths from disease in the last ten years must have been chiefly due to sanitative improvements, rather than medical science. And taking into account an average of twelve serious cases of sickness for every one that proves fatal—and earlier estimates note the average to be twenty and not twelve—the reduced rate of $4\frac{1}{2}$ per cent. really means that in this period some three millions in addition, or a ninth of the whole population, had been saved from sickness, its pain, and its misery. And more than three-quarters of this reduction of deaths, the report goes on to say, occurred under the head of the seven *zymotic*

diseases which take an epidemic form, and are the most influenced by sanitary improvements.

When Sir William Gull tells us that there are 20,000 deaths annually from typhoid fever, and that these form but a small part of the deaths caused by infectious fevers, we cannot doubt that the necessity for strenuous effort is very great, and that any failure on the part of the nation and the Government to adopt all such measures as may most effectually narrow the area of infection, would lay both open to the gravest reproach. Above all, it is essential that hospitals for the isolation of all infectious cases should be provided in all our towns.

A TROPICAL FEVER.

By G. SHERMAN-BIGG, Allahabad, India,
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THERE is a fever in the tropics (for want of a better name, I call it tropical fever) which possesses certain characteristics of its own. Akin to malarial fever, and also to enteric, it cannot correctly be designated by either name. It is certainly sporadic, and usually attacks adults. That it is not due to the germs of malaria there is every reason to conclude, as neither quinine, arsenic, nor any other antifebrifuges exert any influence on the course of the disease. The great weakness, the dry raw-beef appearance of the tongue, the expixaxis, the sordes on the mouth and lips, the persistent headache, the indomitable thirst, and the loss of appetite, at first lead one to suspect enteric fever; but the obstinate constipation throughout the disease, the absence of tympanites and of gurgling in the right iliac region, the want of any eruption, and the clear intellect the patient maintains throughout, upset the theory of suppurative. It cannot be classed as a fever of continued type, as there are decided remissions; nor can it be said to be relapsing fever, since it is not epidemic, and the attacks are irregular.

The disease runs its course in twenty-one days; and there is often a relapse, which resembles in severity and duration the primary attack. The temperature from the commencement of the illness resembles that of convalescence from true enteric fever, the difference between the morning and evening temperatures being as much as three, four, and even five degrees. It is usual for one of the internal organs to be principally affected. It may be the stomach, as shown by vomiting and nausea; or the lungs may be considerably congested, and in some cases pneumonia; or the liver may be enlarged and tender, accompanied occasionally with jaundice; or the spleen may be the seat of hyperæmia.

The disease is not usually fatal; but troublesome sequelæ generally result, the most common being thrombi, producing swelling, and oedema of one limb, with painful, tender, and enlarged iliac glands. The necropsy, when death has occurred in the early stage, shows congestion of the internal organ affected, with extensive congestion of the mucous membrane of the ileum. The jejunum and duodenum are also, though in a less degree, congested. In cases in which death has occurred later on in the disease, the special organ affected during life shows more marked evidence of congestion. For instance, the spleen may be enlarged to three or four times its natural size; it may be soft and friable, and of a dark red colour; or the liver may have a nutmeg appearance; or even the smallest bronchi may be considerably congested. The most important changes, however, take place in the small intestines; the congestion extends from the ileum to the lower part of the duodenum, and the mucous membrane is studded with patches of ulceration. The solitary glands and Peyer's patches are also the seats of ulceration; but they do not seem to be more especially selected than any other part of the lining membrane.

REMARKS.—Malaria is an important factor in the production of ague; but what part it plays in fevers of a continued and remittent type is a matter open to serious argument. It is true, that fevers of this latter class occur nearly exclusively in malarious districts; but may this not be a coincidence? People who have lived in the tropics must have noticed the carelessness, the want of thought and attention to the atmospheric changes. At one time, the weather may be warm and genial; and in half an hour's time, raw and damp. Anglo-Indians, indulge in violent exercise in thin and scanty attire, and then sit down in the open air, without thinking of changing or putting on a warmer covering. This sudden atmospheric change of temperature, acting on an overheated system, produces a severe chill; and, whereas in England we should have a severe influenza, here in India we have a fever, more or less severe, according to the health of our constitution. I see no reason why this chill should attack one organ in preference to another; and, just as in some cases it gives rise to congestion of the lungs, in others to hyperæmia of the liver or spleen, so I think there are fair grounds for supposing that, should the intestines be the weak point, the chill may produce a catarrhal inflammation, and so bring about the fever which, for want of a better name, I have termed tropical fever.

AN ADDRESS

ON THE

PAST, PRESENT, AND FUTURE OF MEDICINE.

Delivered at the Annual Meeting of the North of Ireland Branch of the British Medical Association.

By EDWARD C. THOMPSON, M.B.,

Surgeon to the County Tyrone Infirmary; President of the Branch.

GENTLEMEN,—I find it no easy matter, at this our annual gathering, to select for my address a subject of sufficient importance to engage your attention.

The various matters of interest to our profession have been so ably dealt with by my predecessors in office, and by many other eminent members of the British Medical Association, that it is with extreme diffidence and mistrust in my own powers I venture to address you to-day. Knowing, however, as I well do, the kind indulgence which you always extend to those who do their best, I will endeavour to fulfil the duty that devolves upon me, sincerely trusting that, in the treatment of the various matters relating to the profession of medicine, which I have selected for discussion, no word may fall from me likely to give offence to any one present or absent.

Gentlemen,—It is almost unnecessary to remind you of the antiquity of medicine. You are doubtless aware that it is the most ancient of all the sciences; and that, in the early ages, the practice of it was attributed to the gods. Æsculapius was the father of medicine; and, in the writings of Cicero, Homer, and many others, we find frequent mention made of the healing art. Herodotus tells us that the Chaldeans and Babylonians had no physicians, and that their sick were brought to the market-places for cure, where the passers-by interrogated them as to their symptoms. Again, we find that strange cures were recorded upon the walls of ancient Egyptian and Grecian sanctuaries—so that the temples, called after Æsculapius, served instead of hospitals for the study of disease. Galen tells us that medical instruction was first given at Rhodes, Cnidos, and Cos; and that the most celebrated physicians were educated at the latter seat of learning. Amongst the many sages who practised the art of medicine was Pythagoras, who travelled much in the East, and finally settled at Crotona, where he instructed his pupils in medicine. He does not appear to have dissected the human body; but comparative anatomy and dissection of the bodies of animals seem to have been his constant study. Herophilus, in the year B.C. 300, was probably the first real worker in the vast field of human anatomy; and the principal author, of any importance in medicine, was Acron of Agrigentum, whose services were of such importance during the prevalence of the great plague, which depopulated Athens nearly 2,200 years ago. It was, however, Hippocrates, one of the two celebrated sons of Cos, who first emancipated medicine from the trammels of superstition and corruption which disgraced it, and established it on something like a firm foundation. He seems to have watched, and recorded with great accuracy and closeness, the signs and symptoms of disease. So effectually did he perform this portion of his work, that we find Celsus stating that succeeding physicians, notwithstanding their improvements in the treatment of disease, owed their knowledge of its signs and symptoms to Hippocrates; indeed, so well did this wonderful physician appreciate the duties and responsibilities of his profession that, to this day, the celebrated Hippocratic oath should be inscribed in letters of gold upon the certificates of every student and practitioner of medicine. It is as follows: "I swear by Apollo, by Æsculapius, by Hygiea, and all the gods, that I will fulfil religiously, to the best of my power and judgment, the solemn promise and the written bond which I now make. I will honour my parents, the master who has taught me this art, and endeavour to minister to all his necessities; I will consider his children as my own brothers, and will teach them my profession, should they desire to follow it, without remuneration or bond. I will admit to my lessons my own sons, and those of my tutor, and those who have been inscribed as pupils and have taken the medical oath, but none else. I will prescribe such a course of regimen as may be suited to the condition of my patients, according to the best of my ability, power, and judgment, seeking to preserve them from anything that might prove injurious. No inducement shall ever lead me to administer poison, nor will I ever be the author of such advice; neither will I contribute to an abortion. I will maintain religiously the purity and integrity of my art. I will not cut any one for