INAUGURAL ADDRESS

BY PROFESSOR G. M. HUMPHRY, M.D., F.R.S.,

PRESIDENT OF THE CONGRESS.

OUR presence here this evening, by invitation from the Lord Provost and Town Council of Glasgow, for which I beg leave to return hearty thanks on behalf of the Institute, is an evidence that the importance of the work in which we are engaged is recognised in this great focus of commercial and engineering activity, and may, I hope, also be regarded as an indication that the manner in which we do our work is regarded as satisfactory.

The importance of the work can scarcely be over-estimated; and, without fear of acquiring the attribute of egotistical assumption, we may safely assert that of all the many Congresses taking place at this time of year there is none in which the subject matter is of more vital interest to the community than that of the Sanitary Institute. This indeed might be stated if our work could be regarded as ministering to the improvement of the physical condition only of man with all the greater amount of comfort and happiness attendant thereon. But when we bear in mind the close connection between the mental, the moral, and the physical, and reflect that the mental and the moral qualities are to a large extent the outcome of the physical, and vary with it, and that therefore a deterioration or an improvement of it are necessarily associated with a deterioration or an improvement of them, then the value of sanitary work assumes vastly greater proportion and we learn more fully to appreciate the feeling which, even in long past ages, esteemed the laws that relate to the sanitary condition of a people as supreme.

So close indeed, further, is the interdependence of the physical, the mental, and the moral in man that an improvement or a deterioration in any one is certain to be attended by an

improvement or a deterioration in the other two. If, from indifferent sanitary arrangements or other cause, the physical be allowed to sink, the mental and the moral forces, which as just stated are dependent upon it, must soon be weakened. So also good sound education and that mental training which gives strength to thought and judgment, and which can only be carried out in the healthful body, will react beneficially upon the body as well as upon the moral tone, and will add to that uprightness and honour and that vigorous bearing which make the man. Still more true is it that moral delinquency ravages both body and mind, throws its dark shadow over coming generations, and infallibly leads to the degradation of the species. It does this, mainly, by its direct and indirect influence upon the body, by the infecting stain there which, like that upon the character, lurks and leavens the whole and bears on the father's sin to distant generations—"out, damned spot! out, I say." "Who would have thought the old man to have so much blood in him." "All the perfumes of Arabia will not sweeten this little hand. Oh! oh! oh!" Now what is so important, and what we want our legislators to feel, especially at the present particular juncture, is this, that in proportion as this stain is allowed to exist and to propagate itself and, by its hydra-headed maladies, to damage the bodies and lower the physical status of the people, so much the greater will be the deterioration of character and the tendency to moral obliquities of various kinds. This is one, and a potent one, among the ways in which vice sows the seed of future noxious weeds and fertilizes the soil for their growth. The moral delinquencies damage the body; and the so damaged body is the more prone to the moral delinquencies. The action and reaction is direct and swift. One way, therefore, to limit and arrest moral disease and to increase the healthy moral tone of a community is to limit and arrest bodily disease and to labour in every possible manner to improve the sanitary condition of the body. No sentimental fancies, no overdrawn apprehensions of interference with the liberties and rights and free action of citizens should be allowed to hinder the enforcement of those principles and laws which are requisite for the prevention and mitigation of disease, whether they be in the form of factory acts, of educational codes, of contagious diseases acts, or of provisions for the careful and humane conduct of experimentation upon animals. Let the *salus populi*, simply and sensibly and at the same time scientifically considered, be really and practically the *suprema lex*. Thus shall we best promote strength of mind, with attendant wise judgment and discretion, as well as sound morality, with attendant high-mindedness and honourable feeling, in our people.

How largely does experience show us that the body is not merely the inlet to the mental and the moral chambers and the agent of the forces emanating thence, but that it is also, and to some extent consequentially, the type of them? How much, that is to say, of them can be inferred from it? What do we not learn of the largeness and strength and vigour of them from the corresponding evidences in it? How rarely is a strong and vigorous mind associated with a feeble and inert body? What kind of character do we judge to be the accompaniment of the upright frame, the open face, and the straightforward step? I admit that there are many exceptions. It must be that the complex machinery that makes up the mental, the moral, and the physical fabric of man is liable to many variations which warn us against too hasty judgment in individual cases. But let the many exceptions *probe* or try, not as often wrongly said *prove*, the rule. Perhaps nowhere is the rule more markedly evinced than in this northern part of our Island in which we now find ourselves. My remarks, let it be observed, have relation to peoples; and I always feel, what I think is by many admitted, that the Scotch are the finest people on the earth's surface, that the grandest combination of the physical, the mental, and the moral is produced here, the sturdiest, halest bodies with the largest brains, the strongest minds and the best morale—the qualities best calculated to thrive in every quarter of the globe. I always maintain that the quality, and it is a good one, of the English breed is not a little due to the flow of northern blood which, happily in a steady stream, is drawn southward by our somewhat more genial clime and by the other attractions associated with it. Long may Scotland thus prove England's best friend by being a prolific father and a nursing mother of her people and by contributing its annual quota towards the maintenance of her stalwart, upright, talented race.

By this providential, or natural, law of the association of the physical with the other qualities is worked out the predominance of the best. In the great struggles of nations the best win because goodness is the associate of strength and healthfulness; and the maintenance of the sanitary condition of a people is a necessity to the maintenance of a high position among others. This becomes yearly more and more the case as increasing civilization makes us increasingly dependent upon sanitary regulations and determines more clearly what those regulations should be. It is thus that civilization meets and counteracts her own evils. The clustering of peoples in masses together promotes, in various ways, the liability to disease, while growing intelligence and advancing science point out the means of preventing and arresting it; and as prevention is better than cure, so the

science which promotes the former is better than that which attempts the latter. To this the members of my profession are fully alive and willingly assent; and though their pecuniary gains are won by their efforts to cure disease, it is their constant and unselfish aim to trace out and stamp out the sources of disease; and it is their desire and practice to take an active part in every movement which has for its object the improvement of the sanitary condition of our people. Well will it be for our country when increased opportunity is given to them, in Parliament and out of Parliament, of making a deeper impression on the convictions of the country. One result, that we might anticipate from such an influence, would ere long be the institution of a Sanitary Department in our legislature, distinct from the Local Government Board, and under the direction of a Minister of Sanitary affairs, and I can scarcely conceive anything more likely than this to promote the well-being of our people and their success in everything they undertake whether it be literary, scientific, commercial or military. Such an office extending its administration to the sanitary condition of cattle would do much to reinstate the interests of agriculture, and to reduce the price and improve the quality of animal food; and it would find a further scope for action in considering and checking the diseases to which our various food-producing plants become more liable as they are more highly cultivated; and which, in many parts of the globe, are producing great devastation and pecuniary loss with accompanying distress and injury to the peoples. Under such a Sanitary office the department of the Registrar-General would properly be placed; the Ordnance and Geological Surveys and the Meteorological Office should be in connection with it; and this Institute would be a valuable handmaid in carrying on that which is perhaps its most important work, the conducting the examination of Surveyors and Inspectors. The greater extension of this work is sorely needed. A certain amount of suitable education, tested by examination, should be required of all candidates for these responsible offices; and it is obvious that a satisfactory fulfilment of the duties of surveyors and inspectors, and a respect for their opinions cannot be expected unless there is some security for the possession by them of a knowledge of the elements of sanitary science. The University of Cambridge has undertaken, and for some years carried on, an examination of medical men for certificates in sanitary science. Such certificates should be a necessary qualification for medical officers of health; and a subject of so great scientific interest, demanding so wide a range of knowledge, and fraught with such far-reaching benefits to mankind, ought certainly to be

included in the area of University teaching. The funds at the disposal of the University of Cambridge are not at present sufficient to accomplish this, or likely to be so for some time; and I do not know that a wiser and more beneficent direction could be given to the liberal aspirations of those who are indebted for ample means to the bone and sinew of the people than the foundation of a Professorship of Sanitary Science in the University, so giving the subject a definite place in the studies at that ancient seat of learning.

Among other benefits which would be likely to follow the formation of a separate governmental department, giving its full and undivided attention to sanitary matters, is the re-distribution and greater equalisation of the sanitary districts, together with a provision for their harmonious co-operation—the bringing, that is, of all into closer relation with one another and with the central department, so that the events which are taking place in one district might be speedily communicated, telegraphed if necessary, to others, and timely preventive measures against the spread, or transmission, of disease be taken.

Moreover, the higher and more definite relation with the Government of a separate sanitary department would tend to promote that official sympathy which is now much wanting, and would encourage a proper attention to, and recognition of, the services of those men who devote their time and abilities to sanitary science. It also would lead to a due consideration by Parliament of the pressing sanitary needs of the people: matters of far more importance to the nation than “agricultural holdings,” “criminal procedures,” and the greater number of those subjects upon which so much of the preceding sessions have been spent.

Good sanitary legislation must ere long be recognised as one of the first necessities for a prosperous people; and the Government of England ought not to lag behind, as it has a tendency to do, in its efforts to provide this great boon for the nation. It should take more active cognisance of the fact that a people must be preserved from the effects of their own imprudence; and it should not leave the carrying out of hygienic works, so much as it does, to parochial administrations and local authorities. It should be borne in mind that to be great a people must be healthy and vigorous, and that one of the causes to which the fall of the Roman empire has been attributed is “the pestilences which swept off the adult male population, and left the then proud mistress of the world an easy prey to the barbarians.”*

The Government of the United States has shown its con-

* *Essays, “Public Health,”* p. 5.

sciousness of responsibility to take action in this direction by a resolution of Congress, introduced at the suggestion of the National Board of Health, requesting the President to call an International Sanitary Conference, with a view to consider and improve the condition of the ports under the jurisdiction of the several Powers, as well as of the vessels departing from them. That Congress was well attended by delegates from Europe and other parts; several questions were seriously and carefully discussed, and important propositions were made. What is perhaps even more to the point, each one of the United States, with few exceptions, has its "State Entomologist;" and they all publish full annual reports upon the damage done to food-plants by various insects, and suggest means of prevention. Why should not something of that sort be done here? In most of the European States there is some recognition of duty in this respect; and much has been done in England through the Board of Health, the Local Government Board, and various legislative enactments. Still there is ample room for England to concentrate and improve her national sanitary organisation in such a manner that it may be an example to others.

Above all, in the case of the Army, and also of the Navy, it is a most urgent need that the sanitary service should be rendered more efficient, and placed upon a definite footing as a separate part of the medical staff, so that it has its distinct training, duties, responsibilities and powers. This cannot be too strongly impressed upon the authorities at the War Office and the Admiralty. It is not too much to say that next in importance to good generalship, for the success of a campaign, is good sanitary arrangement. Of what use are the best soldiers unless they are well handled and kept in good health. The prevalence of disease brings not only fatality but dispiriting and disorganisation. The massing together of troops in any place is certain, after a short time, to be productive of disease, unless the precautions taken against it are most careful and most rigid; and sad experience tells that the ranks of a stationary army are liable to be quickly decimated. To this are to be added the contingencies of climate, exposure, sudden variations in marches and in food, and the many liabilities of a soldier's life, to say nothing of the inflictions of a soldier's dress and accoutrements. Still, it ought not to be said that in our provisions against these sources of malady we are inferior to the Roman generals and the great captain of the Macedonian army, who owed their successes, not a little, to the endeavours they made to keep their soldiers in good health; and the records indicating an amount of unhealthiness in the British armies, exceeding that of the French and some others, ought to stimulate to some change in our arrangements. It has been computed

that in ordinary warfare the victims of disease are three times as many as those of the sword, with which, I take it, are included the fearful adjuncts to that weapon made by modern science. This startling announcement ought surely to arouse the attention and stimulate the efforts of the authorities. Yet it appears that little advance has been made since the disastrous period of the Crimea. It is appalling to contemplate what would probably have been the consequences of a prolonged campaign in Egypt. The one thing we have to regret in the easy victory of Tel-el-Kebir, with the consequent quick termination of hostilities, is the prolongation of indifference as to sanitary precautions, and the postponement of the lesson we should there have had, till, possibly, some severer penalty compels a reform. Why should we wait for disaster to enforce the dictates of reason and common sense? The insufficiency of the provisions for the medical-staff in Egypt, of which we heard so much—I do not mean of the medical-staff itself, but of the provisions for its operations—are bad enough; but the want of a thorough sanitary organisation, under the direction of well instructed and able men, is a far graver source of danger. Upon the lowest ground, as a mere matter of economy, this subject demands serious and urgent attention. The brave British soldier and sailor, bound and willing to face the battle and the breeze, are costly as well as valuable articles, and ought not to be at the risk of exposures to sources of disease, which science and wisdom would have foreseen and provided against. Squander money on big guns and other destructives of the foe, if you please, but grudge not the means requisite for the preservation of the men on whom you rely to fight your cause. What is more sad than to see our fine soldiers quit our shores, and feel that there is no adequate provision against their pining and wasting on a foreign soil without perhaps ever having the opportunity of seeking reputation at the cannon's mouth?

Under the most favourable circumstances, and in spite of the good influence of drill and discipline upon the physical and mental qualities of the men, a standing army is, to some extent, necessarily a deteriorator of national physique, inasmuch as by the selecting influence of recruiting regulations the best specimens are withdrawn from the community just when they are entering upon the vigorous period of manhood; and they are subjected to a high rate of mortality, from the peculiarities of their barrack-life, as well from exposures of various kinds to which I have alluded. The augmentation of an army, therefore, directly debilitates a nation and lessens its fighting power by the drain it makes upon the best bone and blood of the land. This is fully as serious, as the drain which it

makes upon gold, even if we take into account the diminution of gold-producing power consequent on the abstraction from the labour market of so many men in the prime of life; and it is less easily repaired. Every effort, therefore, should be made to reduce the drain to the minimum by the adoption of those precautions which sanitary science and experience show to be most calculated to prolong life and give health to the soldier.

Let our Institute play its part in upholding the British name by not resting till proper measures have been taken to render the sanitary staff a more organised, efficient, independent, and potent factor in the British army and navy—one which may exert its influence in peace as well as in war, in our foreign stations as well as at home, and which may make itself acquainted, as far as possible, with the sanitary conditions of various parts of the world in regard to military occupation.

The honourable and responsible task of presiding in this Congress and addressing you this evening has been assigned to me, I conceive, because the greater part of my life has been spent in the active duties of the medical profession and, therefore, necessarily, in an observation of the causes which lead to disease and early death, as well as of those which prevent the full development of the human body. On that ground alone can I venture to take my stand in addressing you. I cannot think of vying with our former Presidents who have devoted so much attention and ability to sanitary science—with Dr. Richardson, Lord Fortescue, and Captain Galton, and with him who, after fifty years of continuous labour in this direction, may pass on into his rest with the comforting assurance that he has saved more lives and done more to promote the physical and moral welfare of his countrymen than any man of our generation. I need scarcely say that I mean Edwin Chadwick. The exhaustive and admirable address given at Newcastle by the learned officer in whose steps I am called upon to tread, may well suffice for a couple of years. I have neither the time nor the ability for such a work; and I trust you will allow the mantle of its excellence to cover the deficiencies of this more humble effort.

The brief remaining time at our disposal will probably be turned to best account if I content myself by dwelling upon some of those points and thoughts which professional experience has impressed upon me; and I will take, first, and chiefly, those which relate to early life, forasmuch as they are the most important.

Small matters have often great import, especially at the

beginning of life; and this may be truly said of those mischievous two yards of calico or flannel which, wound round the middle of so many infants on their introduction into the world, as a sort of baptism to the numerous evils of fashion in dress to which they are admitted, constrict and hinder the expansion of that very region of the body where heart and lungs, stomach and liver, organs of no mean importance, are struggling for room to grow and do their work, and where natural mechanical conditions throw some difficulty in the way of full development. The expansion of the lower part of the chest, which is so pronounced a feature in the well-formed human figure, is attained chiefly in the higher animals, and, like most of such higher prerogatives, is the result of more than ordinary effort, and is, proportionately, liable to suffer from interference. The chief effort to accomplish it is made, soon after birth, when breathing and food-taking, and the various changes incidental upon them begin; and at this very juncture the opportunity is taken by meddling hands to hinder the expansion of the region where these new processes, upon which the well-being of the whole fabric depends, have to be initiated and carried out. A more pernicious device can scarcely be conceived than this relic of antiquated nursedom; and it is impossible to estimate the number of deformed, or pigeon-chests, of hampered stomachs, livers, lungs, and hearts, with their varied attendant life-enduring infirmities, and curtailment of life, that must result from the use of these "swathers," as they are called, for which there is not the slightest necessity. The oft-condemned tight waist-banding, and lacing of after years, which affects only the small fashionable section of one-half of the community, is not, even in those who are subjected to it, so mischievous as this concealed semi-strangling process which is diligently carried out in the case of a large proportion of infants of all classes. Of the three demands of the infantile period—liberty of movement, fresh air, and good food—it seems strange that the first two should be limited by smothering bed-clothes, swathers, long petticoats, and other dress-devices, together with imperfect ventilation of rooms, while the last is liable to be supplied sometimes in insufficient quantity and bad quality, but often, whether good or bad, in superabundance. How many poor helpless children are condemned into spasms, diarrhoea, convulsions, and death, which are complacently attributed to teething, that never failing cover for the multitude of the sins of the feeder. No other infant has, altogether, so bad a time of it as the human. None pays such penalties to the caprices, the fancies, the theories, and, above all, the immoralities of its parents.

A host of maladies, with a corresponding death-rate, are ignorantly regarded as its rightful heritage; and, as a sort of excuse for this many headed monster in the form of maltreatment, it is urged that, after all, the effect is that the weak are weeded out while the stronger survive, so as to result in the production of a healthier average manhood, and the maintainance of a finer stock. It is said that if, by better sanitary arrangements, we keep alive the weaker members, the effect will be that the physical status of the whole family will be lowered. A little consideration will, however, show that this is not only an inhuman but also a partial view; and we shall find here no exception to the rule that that which is most right is most politic. The same better methods which preserve some in life who would otherwise have passed out of it give better condition to all those who survive. All are, as it were, raised a step on the physical ladder, and the status of the whole is improved.

The mention of one part of the human frame which labours under developmental difficulties, and which is sorely hindered by impediments, reminds of another part which is even worse circumstanced. The well-formed human foot may be regarded as nature's last and hardest, and not least beautiful, work. It is the most characteristic feature of the human body, that to which man owes his erectness and firmness of gait and his ability to use the hand as the minister of his will. Even under favourable circumstances it attains perfection only in the higher groups of the human family; and in them it fails to do so more often than any other part of the body. The compact well-formed arch, the slightly spreading and gracefully curving supple toes, which give firmness together with spring and elasticity to the step, are comparatively rarely attained; and what atrocious impediments are thrown in the way of their acquiring and maintaining their proper form! The foot confers, as I have said, much upon the hand, and ill deserves the return made to it. How pretty is the infant foot, graceful in outline, supple, free, and varied in its movements. It has the hard task before it of being the unaided weight-bearer and propeller of the body reared erect and at right angles upon it; a task which it alone in the animal world attempts, and for which an exquisite mechanism is required and provided. Accordingly, it is forthwith hindered in its proper growth, crippled, deformed, stunted and weakened by bad-fitting unyielding cases constructed with an ill-advised view to economy or in accordance with a bad and meretricious taste. Never has this been more exemplified than in the odious combination of high heel and compressed pointed toe which transforms beauty to ugliness, curtails the play of the foot, shortens the step and spoils the

gait. We regard the Chinese foot as the *ne plus ultra* of barbarism in fashion, and we think of it with wonder and horror. But, be it remembered, that foot is not intended to do work. It is unfitted for duty and it is relieved from it. The Chinese lady is not to be subjected, like common folk, to the undignified trouble of walking about; and her feet are therefore superfluous. The Chinese must regard our fashion as even more absurd which cramps the feet and yet expects them to do their work, which takes away the straw and yet requires the tale of bricks. Still fashion will have its sway, and will bring its penalties in flat feet, crooked toes, and corns; and these, besides the direct suffering and trouble they induce, by interfering with natural exercise and movement, weaken the whole body, and lead to a variety of secondary ailments. Indeed, swathers and tight shoes may well be regarded as among the insidious and fertile sources of disease, and therefore worthy of the consideration of a Sanitary Congress.

Peculiarly is it the case in this island with regard to the foot. For if I mistake not, our countrymen, well cared for by nature in this respect, are, with regard to it, the greatest offenders against nature; and these offences in the matter of the foot are among the most prejudicial of their kind. The tattooings and the nose and lip-borings of various Indian tribes, and the head-flattening of others, which we stigmatise as barbarous, are not so damaging as the foot-spoiling so common among ourselves, and especially among our agricultural poor. The straight firm great toe, the high plantar arch, the well developed calf—three specialities of man, without which he cannot walk and run as he ought to do—are too commonly made, during childhood, to degenerate into the obliquely slanting toe, the flat foot and the puny calf, and the hobbling hesitating gait is substituted for the firm bold step. We must proportionately suffer in the race of life, and shall infallibly find out the disadvantage to our cost, whenever we come to be matched in the military march against a better shod and therefore better footed people.

To pass on to another subject which greatly concerns the well-being of the young, and therefore of the whole community, and which does so more especially at the present time, when it is being extended to the masses of our population, viz, Education. Will this extension advance the sanitary and moral condition of the people and therefore prove a boon to them, or will it not? This is a serious question; and the answer to it depends upon the quality and quantity of the education given. Education which strengthens as well as informs the mind, which increases the powers of reasoning as well as provides the material upon which to reason, will, we may be certain, improve

the physical as well as give tone to the moral qualities of man. All experience proves this. Knowledge, con-joined with the power to wield it, brings all nature under our sway. It not only reveals to us the best paths to health and strength of mind and body, but it also enables us to follow them. Sanitarians are therefore necessarily educationists; and their work is to ascertain and point out the kind of education which will be thus improving, to show that all which passes under the name of education does not deserve the name, that much, indeed, which is so called is calculated to produce the very opposite effects to those which are intended, being likely to lower instead of elevate the mental and moral standard. This it assuredly will do if it is so conducted or so pressed, as in any degree to weaken or damage the physical status.

It is for us to point out and strongly impress upon those who are engaged in education, that that education, and that only, is good which stores the mind without injuring the body. We cannot too often, or too forcibly, reiterate the statement that the mental and moral qualities are largely dependent upon the physical, and will rise or fall with it, and especially in these days, when, in the growing struggle for existence, teachers are being ranged against teachers, and pupils against pupils, in competition for certificates, prizes, and places. The temptation to over-strain, and be over-strained, is great; and the ill results upon mind and body are becoming more and more apparent. Every mental effort is attended by brain-wear. The greater and more prolonged the effort the greater the wear; and, unless sufficient time be allowed for repair, exhaustion ensues, and the brain is rendered less capable of renewed effort. Let it be remembered, especially, that this is true of attention. The teacher is apt to think attention an easy matter, and to punish quickly for inattention, whereas in reality it is almost the whole matter. It is the concentration of the mental batteries under the influence of the will. To effect it well requires a considerable effort of the will, which can be maintained, in children especially, only for a short time—for a few minutes in little children; and the attempt to enforce it longer, if unfortunately successful, leads to exhaustion of the power to make the effort, in short, creates inattention, and the frequent repetition of the process renders the inattention habitual. The more intense the effort at attention the more true is this. Yet the cultivation of the habit of quick fixed attention, which implies the restraint of wandering thought, constitutes the most essential feature of good education. Upon it briskness of apprehension, memory and mental power, in great measure, depend. It may indeed be regarded as the corner stone of the intellectual

building. We may endeavour to pile up any amount of material ; but unless it is laid upon this foundation it will prove a crumbling and useless heap. Good bodily vigour is necessary for it. When weak, languid, or tired we cannot apply our minds effectively, that is, we cannot closely attend to anything ; and we have greatest difficulty in doing so with regard to the subjects which interest us least.

Much has been written, by Chadwick and others, on the evil done by the length of time during which children are kept in schools and expected to bend their minds to subjects which, uninteresting in their nature, are rendered still more so by the manner in which they are taught ; and of the truth of the allegation there can be little doubt. It is, on the face of it, absurd, or worse than absurd, that children should be pent up in ill-ventilated rooms for the space of two and a half or three hours at a stretch over dull lessons. Such treatment necessarily prevents the acquisition of the habit of attention, induces idleness, carelessness, apathy, and dulness, enervates both body and mind, and brings large numbers to the condition of having learned one thing only thoroughly, and that is to hate learning. Better results may be expected from an extension of the "half-time system," and the employment of the hours wrested from books in mechanical preparation for various trades, in military exercises, athletics, and so forth, as well as in acquiring some knowledge of music, of plants, of the habits of animals, and other subjects which will excite interest, command observation, and add pleasure to life.

Much has also been written, and with a good deal of truth, on the evils resulting from the high-pressure system in education, which is deemed requisite to prepare students for examinations, and to enable them to contend for the many prizes offered for competition at an early period of life. The stimulus of gain and ambition is resorted to, to counteract the dislike of learning, to which I have referred, and leads, no doubt, in many instances, to further evils.

In this age of increasing nervousness, which means susceptibility to impressions or sensibility, the effects of overtension, or overstrain, of the nervous system are peculiarly to be dreaded. They are very insidious, often attributed to laziness, are slow to be recovered from, and are a very frequent cause of break-down in the student's career. Many, from this cause, fail to reach the examination goal. Many, having reached it, had better never have sought it. Some require long periods of repose to regain the elasticity which heavy pressure has weakened, and to refit them for further work. Some never do regain it, and live on to disappoint the hopes which early dis-

tion had raised. It has been my lot to watch many instances of these results, and, I hope, in many cases, to prevent them by strong remonstrances against the seducing but enervating *nocturna lucerna*, and by urgent advice to transfer some hours from work to rest and play, and by instilling the most wholesome maxim: *otiare quo labores*. Happily the play-ground and the river come more and more to the fore as the compensations for the schoolroom and the examination-hall; and the ambitions of parents are set almost as much upon successes in the former as in the latter. Their instincts tell them, rightly, that it is not by learned feebleness that the race of life is to be won, that the strong, well-knit, and elastic frame is best to be trusted as the home and agent of the sound and effective mind. As I have watched with interest the quickly-growing tendency to increased education of women, and the desire in women to match themselves in the mental arena against men, together with the rise and successful progress of Girton and Newnham Colleges, in connection with my own University, it has not been without apprehension that the associated strain and excitement might act prejudicially upon the sensitive fabric and the finely-strung nerves of the woman. I could not but feel that the consequences to her, and to those who are to come after her, of any deterioration of her physique would be ill repaid by any results that education could bring; and I certainly think that the less of mental competition she has the better it will be for her. At the same time it is satisfactory to mark that the movement has been attended by a corresponding enlargement of the range and amount of bodily exercise. The gymnasium and the lawn-tennis ground are the antidotes, and therefore the corollaries, to the study; and we may have good hope that the increased and well-balanced exercise of mind and body will lead to a better development and greater strength of both.

A few words on the subject of ventilation. Good fresh air and light are the first requisites for health. Our gardens tell the necessity of them, even for plants, and show that the more the plants are shut up from them the more liable they become to blights and disease, and to imperfect development of colour and form. Fresh air means air in motion. We are quickly conscious of the difference to our powers of work, of attention, or of exercise in a closed room and in one open to the air, on a still day and in a brisk wind, in a screened wooded valley, and on a hill top; and we know that still air is peculiarly favourable to the development of the various organisms which give rise to putrescence and communicate disease. The ventilation and lighting of his house is, to some extent, in the power of each man and is commonly far too little attended to, especially in the

bedrooms. These are generally stuffy, with closed and curtained windows, and are replete with emanations from beds, clothes-boxes and various accumulations under the beds, and dusty corners. The admission of air, scanty during the day, is permitted at night only through the chimney; and often there is not even that sooty channel. Our open fires, needlessly wasteful and therefore costly though they be, are no doubt, a very salutary influence; and they make the contrast between English and foreign houses, which latter are for the most part heated by stoves, much in favour of the English. Still the English houses admit of great improvement, which can be easily made. The air which passes up the chimney from the fire must be supplied through some inlets. Hence, when windows and doors are closed, it comes through crevices in the boards, carpets, &c., bringing with it various impurities; and too often demands are made upon the water-closets and sink-traps. The ill-fitting of the doors and window-sashes of the houses of the poor, serves the good purpose of providing ventilators. But the better houses have not this safeguard; and, as dire experience in high quarters tells us, their inmates too often pay serious penalty for good carpentry added to that apprehension of draughts which is maintained by an ignorance, or an ignoring, of the fact that fresh air is one of the best preservatives against cold and rheumatism, as well as against fevers and debility.

People go to the seaside and bathe themselves all day long in air, and then wonder that, on returning to their pent up houses, they feel unwell, perhaps more so than if they had not left them. The amount of three thousand cubic feet per head, per hour, which has been computed to be necessary for the maintenance of the normal purity of the air, cannot of course usually be supplied; but care should be taken in every house that a ready supply of air is provided from the exterior, and that, night and day, summer and winter, some window, in the chief passages at least, remains open. In many houses there is a fanlight over the entrance. This should be made to open, which it easily can be, though it very rarely is; and it should be kept open, with very few exceptions, throughout the year. This change would make a great improvement in the sanitary condition of our houses. In the country cottages and houses the windows, especially in the upper storeys, are too small and too much closed; and it is distressing to notice how often the dwellings are closely beset or overhung by trees, which shut out both air and light. It were a wholesome rule that no tree should be allowed to stand so close to a house that it would touch it if it fell. But trees are too commonly planted without consideration of the space they will occupy, and the shade they will throw, when

they grow up ; and when they have grown up there is a health-disregarding reluctance to cut them down. The courtyards and alleys in towns do not easily admit of rectification. The only effectual plan appears to be that of clearing them away and erecting buildings with better sanitary arrangements on their site, by which, as experience has shown, the mortality of the residents may be diminished without reducing their number. In the rural districts, however, the sanitary state of habitations might be easily and greatly improved by a little attention to the points I have mentioned, and at small expense. The freer admission of air and light obtainable by cutting down overhanging and closely-adjoining trees, by enlarging and opening windows, by removing curtains, useless furniture and old clothes, by clearing out dusty corners and cupboards, and by filling up stagnant ditches and ponds, would do much to render our agricultural population healthier and stronger, and more vigorous and active in mind and body than they are, and would lessen consumption, rickets, scrofula, fevers, ague, and other maladies, as well as the poor-rates. In short, the small sums thus expended would be well invested, for they would bring a rich return, in the form of abler bodies, with attendant mental and moral improvement, to the land-holder and the farmer, and would enable them better to contend with the foreign producer and the vicissitudes of our home climate.

There is little prospect of these last becoming more favourable. Moreover, the temptations away from agricultural labour, offered by the higher wages and other attractions of town-life, are yearly increasing. The agricultural labourer is therefore becoming a more rare and valuable article ; and to improve his sanitary and general condition is the material interest, as well as the bounden duty, of those to whom the land is entrusted. Indeed, we must look to the application of sound sanitary principles to the land—to those, both men and animals who dwell upon it, and to the food-producing plants which grow out of it—as one of the most certain and obvious means of restoring to a prosperous condition that which is still the most important of all our commercial bases, the agricultural business of the country. Some of these sanitary principles, those more especially which relate to men and animals, are clear and ready to be applied at once. Others will require long investigation at the hands of persons who shall be assigned to it, and who shall devote themselves to it in the feeling that they are workers in a great science which must be fraught, more, perhaps, than any other science, with lasting benefit to the human race.

The important points of house sanitation, water supply, food,

engineering, and the great sewage question which it will take some generations satisfactorily to settle, will be discussed in the various sections and need no comment from me. The influence of climate, temperature and locality, including geological formation and elevation, upon health and diseases form subjects which the British Medical Association, through its Collective Investigation Committee, is already enquiring into, and hopes to pursue more fully. These are associated with the investigations into the **LIFE-HISTORIES** of individuals and families, which that Committee is about to prosecute. The Committee is, indeed, at the present time engaged in preparing a suitable album in which the medical and certain other records of the life of an individual may be made and preserved in the most convenient manner, so that the various phenomena bearing upon longevity and disease—such as hereditary predisposition, temperament, occupation, water-supply, locality, exposures, illnesses, &c.—may be noted and read off at once, and be available for determining diagnosis and treatment in illness, decision as to course of life, and other problems. The advantages of such a system to the individuals themselves primarily, and to the community at large, if it be at all generally adopted, is obvious; and the effect of it upon sanitary and medical science, if well carried out, can scarcely be over-estimated. Among other results, it may be anticipated that it will, in course of time, assist to determine the regions and surroundings most suitable to persons of particular temperaments and tendencies. Instead, for instance, as at present, of simply certifying that individuals are sound in body and mind, and therefore fitted for the Civil Service in India, and so drafting off those who are best fitted to remain in England, the medical or sanitary examiner should be asked to indicate those who would be better in India than in England, and, therefore, most likely to be advantaged by the change. Thus a benefit would be conferred both on England and on India, as well as on the persons more immediately concerned. The same applies to our other Colonies and possessions. In this way the vastness of the Empire, embracing every climatic and geographical variety, may be made a means of improving the sanitary condition of its numerous peoples; and some compensation may be made to the inhabitants of distant lands for the maladies and evils we have carried to them.

Of the cholera I will simply say that I trust the apprehension of it, whether it reaches our country or not, will be turned to good account in clearing away those foulnesses upon which it and other like maladies feed. If its presence be needed to effect this, then in spite of its being, as my slight experience of it told me it is, one of the most awful of maladies, its advent

may prove a blessing. Whatever may be the view about the cordon of quarantine there can be no doubt about the desirableness, in the *first* place, of paying more attention to the condition of vessels, their cargoes, passengers, and crews at the various ports of departure, it being well known that vessels often go to sea in a condition which greatly favours the development of infectious disease, and, *secondly*, of so setting our houses in order as best to modify its shock. To be forewarned in this case—and to have perhaps a year's forewarning—gives the blessed opportunity to be forearmed. Let not the opportunity be lost.

On one point I can safely rely upon your hearty agreement with me, viz., that in addresses of this sort the "half-time system" is peculiarly applicable.

I will conclude, therefore, by the expression, in which also you will agree with me, that this Institute has a great and most valuable future before it in the work to which it allots itself—the work of making man's body healthier, stronger, and better—a work in which He who had the greatest power over man and the greatest sympathy with man was largely pleased to exercise his power. In the prosecution of that work the Institute can scarcely adopt a surer and better method than by carrying out its provisions for the examination of surveyors and inspectors. I trust that these examinations may, each year, have a wider influence; and I beg to commend to the Institute the serious consideration of one of the points I have ventured more especially to bring before you this evening, viz., the importance of the formation of a separate and efficient department of the Government for the superintendence and improvement of the sanitary condition of our towns and villages, of our navy and army, of our ships and their cargoes, as well as of our cattle and of our food-bearing vegetables, and which should also take the necessary steps for a proper education, tested by examination of all who are appointed inspectors of nuisances, sanitary surveyors, and medical officers of health. This I feel to be the great desideratum of our time—the thing we should most strenuously strive to obtain. One means of effecting this, as I have already hinted, would be the promotion of a better representation in Parliament of the medical profession, and of those who have shown themselves to be interested in sanitary improvements. I think also it might be in the power of the Institute to do much good by the circulation, in a cheap form, of simple hints as to some of those sanitary improvements which may, without difficulty, be effected in our homes and their surroundings, in our dress and our food, and in the general management of our children and ourselves.

THE LORD PROVOST—I am sure you will permit me in your name to convey to Professor Humphry the very high regard we have for him for the able lecture which he has so kindly delivered to us. It will be out of the question for me to propose to review that very excellent address, far less to criticise it. I am sure if I attempted to do either the one or the other, I would not be doing that which you desire. We cannot but deplore with Professor Humphry the insanitary condition of the British army when in the field, and dread a repetition of what took place in the Crimea. I therefore do hope that our legislators may have their attention directed to the question brought before us by Professor Humphry with the view to a remedy, because we cannot tell the day when military sanitation may again be as important as it has recently been in Egypt. I dare say the present company will feel as gratified as I do at the compliment paid to the Scottish nation, but probably more was said than we would be inclined to endorse. There is, no doubt, a great influx of people from this part of the island to the south. But we have always been in the habit of regarding the south as a field to which we go, not so much to improve our neighbours as to better ourselves. I hope the very wholesome remarks regarding young life made by the Professor will have due weight in those quarters where such advice would be most useful. No one who has given any attention to sanitary matters at all but must know that in early life the seed is sown of a healthy or unhealthy manhood; and therefore it is of the highest consequence that great care be given to the human body in these early years. I have as much reason to regret the absence of our old friend Mr. Chadwick as Professor Humphry. I am quite of the same opinion as Mr. Chadwick, that the cap which Manchester puts on would in many respects also fit Glasgow. I wish that eminent sanitarian were here this evening to give us a warning. I am sure we would have taken it in good part. I trust that the suggestions Professor Humphry has thrown out will be considered by those to whom they were more particularly addressed—namely, the Government; and that in the future more than in the past our Legislature will attend to sanitary matters rather than to other matters which appear to them of great importance, but which to us sink into insignificance when compared with those which affect the health of the nation.

DR. A. CARPENTER—As chairman of the Council of the Sanitary Institute, I rise to second the proposal that has been made to you by the Lord Provost, that we present a hearty vote of thanks to Professor Humphry for his very able and conscientious address. I have some diffidence, after the observations that have been made by the Professor, as a Southern man in appearing before an audience like this, the more so, because as the professor went on I gathered that we had to come to the north not only for brains, but for those very fine feet that we have sometimes in the south, because as I came through your country I observed many persons without shoes at all. I could see the perfection of the form of foot to which the professor has alluded,

and I was satisfied that the discomfort they had without a shoe was given back to them in that beauty of foot and in that freedom from certain disturbances of health that do follow from the confinement in which the foot is kept by those extraordinary articles that are put on them by the shoemakers. But then I observed also that the Professor alluded to education, and I had some recollection that Scotland had taught us a lesson in respect to our schools, by teaching children in the open air, and had sent so many prime examples of great intellects to the south. Then he got on still further, and talked about the Parliamentary representation of the medical profession, and I recollected that Glasgow had done honour to our profession in sending a member of that profession to represent her in Parliament. I do hope that the experience we have gained of the good effects that follow from certain proceedings of the Scotch may have a beneficial influence upon the south, as much as we hope to have a beneficial influence upon you. I never listen to Professor Humphry without gaining some knowledge. I have sat at his feet for many years in various ways, and the address that he has just given has still further convinced me that he will always have something to tell us, something that is instructive, something that is certainly worth hearing. I am sorry that every member present to-night has not brought his wife or his lady-love with him that they might have heard the stirring words which have been addressed specially to the feminine portion of the population. I have great pleasure in seconding the proposal that the Lord Provost has made.

The motion was then put and carried with great applause.

Prof. HUMPHRY—I must return my hearty thanks for the kind manner in which you have listened to me, and still more for the very kind expression of your feelings which has been made by the Lord Provost, by Dr. Carpenter, and yourselves. It ill becomes me, perhaps, to find any fault at all with what falls from one who is so thoroughly and deservedly respected and esteemed by you all, but the Lord Provost did mention one word to which I must take exception. He said that I had paid a compliment to your nation: it was not a compliment, but a simple expression of the truth. Those of you who have in the newspapers lately read the report of the Anthropological Committee of the British Association have, doubtless, seen there that it was no compliment, but, as I have said, the truth, for you will observe that, according to the measurements of that committee, the Scotchman is a taller man and is a stronger man than any other in the empire. In saying that he is taller and stronger than any other in the empire means, I apprehend, that he is taller and stronger than any other in the world. We know that his brain weight is greater than that of any other, and I say also that we cannot help knowing that his brain force is greater too. It may be added the manner in which the Lord Provost has been good enough to express his approbation of the efforts of a Southron to address you this evening is no bad illustration of Scottish character.