

THURSDAY, OCTOBER 17, 1872

CANON KINGSLEY ON PHYSIOLOGICAL TRAINING

THE recent address of Canon Kingsley, as President of the Birmingham and Midland Institute, has struck a key-note which has been widely responded to. Not that he has said anything new; but truths are none the less true for being world-old. It is something to find a man of Mr. Kingsley's popularity and influence insisting on the need of physical and scientific culture; it is more that the utterance should be made to a crowded audience at one of our great centres of industry; it is still more that our daily and weekly papers should at length discern the importance of that which a select few have long been preaching in vain. We can, however, only refer to some of the more important points on which the lecturer touched, referring our readers to the report *in extenso*, in the *Birmingham Daily Post*.

The following admirable advice was given to the younger students among the assembly:—

“Let me warn you that none of you will profit by any lectures, unless you study at home the text-books recommended by the lecturer. You will be otherwise little wiser than a man who should purpose to learn arithmetic by listening to talk about the proportion of numbers without doing sums himself. You will not teach yourselves even the attitude necessary for your subject—the attitude of mind, by which the facts were discovered, by which they must be understood, by which they must be turned to use. You will not acquire, by mere lecture-hearing, the inductive habit of mind which arranges and judges of facts. Still less, therefore, will you acquire the deductive habit of mind which makes use of facts practically after they have been arranged and judged; and the lecturer will be to you but a sort of singer, a player upon a fiddle, who makes for you pleasant and interesting noises for a while, producing mere impressions which never sink into the intellect, but merely touch the emotions, to run off them at the first distraction, like water off a duck's back. Therefore, remember this for yourselves in this age of periodical literature and literature made easy: we are all too apt to forget that what we did you must do, if you wish to be as good men as we, *viz.*, work for yourselves, as we did; that good lectures, like good reviews, are not meant to see for you, but to teach you to use your own eyes; and those you must use at home in hard study, personal study, continuous study—and study, too, rather of one subject than of many subjects, in order that, by learning how to learn one thing thoroughly, you may learn how to learn anything and everything else in its turn.”

After referring to the evils of war in producing the exactly opposite results to those brought about by the process of Natural Selection, by the Destruction of the Fittest, the lecturer thus proceeds:—

“Peace, prosperous, civilised, humane, such as we enjoy now, is fraught with the very same dangers. In the first place tens of thousands—who knows it not?—lead sedentary lives, stooping, asphyxiated, employing as small a fraction of their bodies as of their minds; and that such a life must tell upon their offspring—it may be for generations to come—what medical man does not know full well? And all this in dwellings, workshops, mines, and what not, where the influences, the very atmosphere of which tend to unhealth, and not to health; to drunkenness as a solace under the feeling of unhealth and all

unhealth's depressing influences. But now—and this is one of the most fearful problems with which modern civilisation has to deal—we interfere with natural selection from conscientious care of life just as much as war itself does. War kills the most fit to live. We spend vast energies in saving alive those who, looking at them from a merely physical point of view, are most fit to die. Everything which tends to make it more easy to live—every sanitary reform, prevention of pestilence, medical discovery, amelioration of climate, drainage of soil, improvement in dwelling-houses, workhouses, prisons, every reformatory school, every hospital, every cure of drunkenness, every influence, in short, which has (so I am told) increased the average length of life in these islands since the first establishment of life insurance offices, 150 years ago, by nearly one-third—every influence of this kind, I say, saves persons alive who would otherwise have died; and the great majority of these persons, even in surgical cases and cases of zymotic disease, will be those of the least resisting power, the weaker; thus preserved to produce, in their turn, a weaker progeny. And what will you do with it? Do I say that we ought not to save them if we can? God forbid! The weaker, the diseased—whether infant or adult—is there on earth a British citizen! no more responsible for its own weakness than for its own existence. Society—that is, in plain English, you and I and our ancestors—are responsible for both; and we must fulfil the duty, and keep the weaker person in life, and if we can, heal, strengthen, develop to the utmost, and make the best of that which ‘Fate and our own deservings’ have given us to deal with.”

The practical application of this teaching was then pointed out:—

“And so as to the laws of personal health;—enough, and more than enough, is known already to be applied safely and easily by any adult, however unlearned, to the preservation, not only of his own health, but of that of his children; the value of healthy habitations, of personal cleanliness, of pure air, pure water, of various kinds of food, as tending to make bone, fat, or muscle, provided only that the food be unadulterated—and you might stop the adulteration in Birmingham in a month or week if you chose. . . . Have you not here, ready made to your hands, an engine for extending sound knowledge of the laws of health? In a great manufacturing district, which specially needs those laws to be known and obeyed, you have this Institution always teaching physical science. It would not, therefore, go beyond its province in teaching the physical science of health. It teaches, happily, a people specially intelligent, specially accustomed by their businesses to the application of scientific laws. To them, therefore, the application of any fresh physical laws would have nothing strange in it. They have already, I doubt not, that inductive habit of mind which is the groundwork of all rational understanding or action. They would not turn the deaf or contemptuous ear with which the stupid, the savage, the superstitious, receive the revelations of Nature's mysteries. Surely, with such a people to work upon, it were well worth your while to expand your classes of physiology, and give one or more of them a practical turn in the direction of practical health. Your Animal Physiology Class is, I doubt not, a sound and useful one. It cannot well be otherwise, while its text-book is Prof. Huxley's *Elementary Lessons*; and I am glad to see that your learned lecturer is about to confine himself, for the present at least, to the physiology of the animal most abundant in, and most important to, Birmingham, namely, man. Twenty lectures are announced in your programme dealing with the tissues of the body, their structure and uses, circulation of the blood, respiration, chemical changes in air respired, amount breathed, digestion, nature of food, absorption, secretion, functions of the nervous system. Now, this is as it should be. It is admirable. Teaching of

this kind ought, and will in some more civilised society, be held as a necessary element in the school course of every child; just as important as reading, writing, and arithmetic; and is the most necessary and most important branch of technical education, namely, the act of keeping yourselves alive and well. But you can hardly stop short there. After you have taught the conditions of health, should you not teach also somewhat of the causes of disease—of those diseases, especially, which tend to lower wholesale the physical condition of dwellers in towns, exposed to the unhealthy influences of an artificial life? Should you not teach young men and women something of the causes of pestilence, of zymotic disease, and of scrofula, consumption, cerebral derangement, dipsomania, and such like? Should you not show them the value of pure air, pure water, unadulterated food, wholesome dwellings? We want set up in the centre of large towns—it will not come yet, but it will come some day—a statue to the goddess of purity. Is there one of them, man or woman, who would not be the safer himself and the more useful to his neighbours if he had acquired some sound notions about those questions of drainage on which their lives and the lives of their children may any day depend. I say women as well as men; ay, women even more than men. For it is the women who have the ordering of the household, the women who have the bringing up of the children. And if any say, as they have a right to say, 'But these are subjects which can hardly be taught to young women in public lectures,' I reply, 'Of course, unless they are taught by women—women, of course, duly educated and legally qualified.' Let them tell young women what every young woman ought to know, and what her parents will very properly object to her hearing from men, or in the company of men. This is one of the main reasons why I have for twenty years past, and shall as long as I live, advocated the training of ladies for the medical profession. And now, I am seeing the common sense of England, and, indeed, of every civilised nation, coming round to that which seemed to me, when I first conceived of it, a dream too chimerical to be cherished, save in secret; and I trust soon to see a supply of lady-doctors, sufficient to fulfil that old dream of mine, and to establish in every great town of these islands health classes for women.

"Now why should not your Institute, which has taken the initiative in so many useful enterprises, take the initiative in this too? It is already a school of many things. Why should it not be also a school of health—a school of sanitary science? Why should it not send forth year by year more and more young men and women, taught not only to take care of their own health and that of their families, but to exercise moral influence in the same direction over their fellow-citizens—to advocate as one simple, and yet most necessary and important, good deed, the teaching of the laws of health in every school, from the highest to the most elementary? Do that. Send forth healthy pupils yearly, champions in the battle against dirt and drunkenness, disease and death, and you will raise a yet prouder title to the gratitude of your fellow-countrymen than you have earned already by your scientific zeal and your noble liberality. There are those who may answer—or rather there would have been those who would certainly have answered, five and twenty years ago, before the so-called materialism of advanced science had taught us some practical wisdom about education—'And if it were so, what matter? Mind makes the man, not body. We do not want our children to be stupid giants and bravos, but clean, able, highly-educated, however delicately Providence or the laws of Nature may have been pleased to make them. Let them overstrain their brains a little, let them contract their chests, and injure their digestion and their eyes, by sitting at desks and poring over books. Intellect is what we want, and intellect makes money; intellect rules the world. I would

rather see my son a genius than an athlete.' And so would I. But what if for want of obeying the laws of Nature you got neither genius nor athlete, but generally an incapable, unhappy personage? Without healthy bodies you will not, in the long run, get healthy intellects. . . . Wherever you have a population generally weakly, stunted, scrofulous, you will find in them a corresponding type of brain which cannot be trusted to do good work. It may be very active, it may be very quick in catching up new and grand ideas—all the more quick on account of its own secret malaise and self-discontent; but will be spasmodic, irritable, hysterical. It will be apt to mistake capacity of talk for capacity of action, excitement for earnestness, virulence for force, and cruelty for justice. It will lose manful independence, individuality, originality, and when men act they will act from the consciousness of personal weakness, leaning against each other, swaying about in mobs and masses."

We sincerely hope that the publicity which has been given by the public press to this address by Canon Kingsley will be the means of awakening the minds of many to the vital importance of that scientific training which he, in common with every enlightened mind, advocates.

MARTIN ON MICROSCOPIC MOUNTING

A Manual of Microscopic Mounting. By J. H. Martin. (J. and A. Churchill.)

SCIENCE in this country is certainly under great obligations to *amateurs*, or *dilettanti* as they are more correctly called. The fact is there are in Great Britain but a very few men of science, that is to say, men professionally devoted to scientific careers, as compared with Germany and even France—we are very poor in this source of power. Germany has a host of universities and high-schools in each one of which there are more men whose lives are definitely told off to the cultivation of science, than there are in our greatest and richest seats of learning. Dilettantism is the fashion of some branches of science in this country, and under it they have thriven in a way of which we may be to some extent proud; but which seems likely enough to impede greatly their more systematic cultivation. Geology has perhaps more than any science benefited by the patronage of *dilettanti*; but it is not difficult to foresee the time when its problems will have become too arduous for any but trained and devoted specialists to make any way with them. The same is to a less extent true for the biological sciences, in which, besides the enthusiastic field-naturalists, the members of the medical profession have been conspicuous as *dilettanti* explorers. At the time when (some five and twenty years ago) the microscope was first brought to a state of efficiency in this country, a perfect army of amateurs entered the fields of animal and vegetable histology, equipped with the beautiful and costly instrument, and brought to light a considerable number of important facts bearing on the structure of tissues and the minuter forms of life. This was not the case on the Continent, the costliness of the instrument, in addition to the other causes which make Englishmen remarkable as scientific *dilettanti*, tending to limit the movement to this country. The taste for amusement with the microscope has by no means diminished of late years, the sales of instruments by English makers being something astonishing in point of