Prosperity or Pauperism?

Physical, Industrial & Technical Training

Edited by the Earl of Meath

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PHYSICAL, INDUSTRIAL, AND TECHNICAL TRAINING.

EDITED BY

THE EARL OF MEATH,

(LORD BRABAZON.)

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PREFACE.

As I believe that many of our social evils would, in a great measure, be removed, if an improvement were to be effected in our national system of education by the inclusion in the Government Code of physical, technical, and industrial training, I have thought that I might, perhaps, in some small degree hasten this much-to-be-desired reform by republishing in a cheap and popular shape some of the more recent expressions of opinion in support of this view. Hence the appearance of this book. I trust it may somewhat assist towards the formation of a public opinion which, within no distant period, shall insist upon alterations being made in the national code of education, so that our young men and maidens may start in life with healthy bodies, with a knowledge of *things* as well as of books, with the power of using their *hands* as well as their heads, and of making the most of small resources.

If some such reforms, as are advocated in these pages, were effected, the future generation, furnished with the means of leading industrious, prosperous, and happy lives, would find itself in a much superior position to the present, which, being nourished mainly on intellectual food, finds its body starved and its hands paralysed.

MEATH.

83 LANCASTER GATE, W : *January*, 1888.

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PHYSICAL, INDUSTRIAL, AND TECHNICAL TRAINING.

I. PHYSICAL AND INDUSTRIAL TRAINING.

HEALTH AND PHYSIQUE OF OUR CITY POPULATIONS.[1]

BY THE EARL OF MEATH.

THE self-complacency of John Bull is proverbial; it is extremely difficult to persuade him that there is any quality in which he is inferior to those born on other soils than that of Britain, and if there is one quality more than another upon which he prides himself, it is his physical superiority to the men of other nations. Has he not over and over again, it is said, given proofs of such superior excellence, from Cressy and Agincourt to Waterloo and Inkermann? Did not the strong right arms and unerring aim of British bowmen scatter the chivalry of France in those victories of the fourteenth and fifteenth centuries? and has not the same story been repeated under different forms throughout successive ages? Were not the finest cuirassiers of France driven like chaff before the wind when they came in contact with the superior weight and strength of the Life Guards at Waterloo? and is it not acknowledged that at Inkermann our little handful of men, overwhelmed by numbers, must have been swept into the sea had it not been for the individual dogged courage and physical strength of the British soldiery, who, with their usual obstinacy, knew not when they were beaten, and snatched a victory, when by all the recognised rules of war they ought to have been annihilated?

[1] Reprinted, by permission, from the *Nineteenth Century*, July 1881.

National pride within certain limits is useful. It produces self-confidence, which is as indispensable to a nation as it is to an army. A people which has lost faith in itself is doomed, but wise men, whilst fostering a healthy national self-respect, will see that it is founded on solid foundations; that the reputed superiority is real; that it is not a dream of the past, nor the vain imaginings of dwellers in a fool's paradise. It is well that all matters should be brought to the test of truth, the question of 'physique' not less than others of apparently greater importance, and indeed this is a question not unworthy of serious consideration. Let it not be thought that it is a matter of indifference whether the average breadth of chest or height of Englishmen varies an inch or so one way or the other. National physique depends upon national health, and health is as necessary to the happiness and prosperity of a nation as it is to an individual. *Mens sana in corpore sano* may be said of the aggregate as of the unit.

Is it then a fact that we English are physically stronger than our neighbours? and if so, are the conditions of life of the mass of our population such as will conduce to the maintenance of this superiority?

Injured patriotism will assuredly ask whether the records of athletic sports do not plainly show that not only is the Anglo-Saxon race pre-eminent in the achievement of feats of agility and strength, but that even our own ancestors were unable to reach the pitch of perfection in athletic sports which has been since attained by their sons. It will be asked whether it was not left to the men and even to the women of the nineteenth century, and mainly to those of English race, to overcome the difficulties of ice and snow, crag and precipice, and to scale those virgin mountain heights previously untrodden by the foot of man. We shall be told that to raise such a question when a Whymper has but just returned from his victorious campaigns amongst the giants of the Andes, a man to whom it was but an ordinary morning's task 'to wipe off,' as he himself most unreverentially expresses it, some mountain Titan which never before, since the foundation of the world, had been forced to acknowledge the supremacy of man; at such a moment of all others to come forward and express a doubt on the physical

capabilities of Englishmen, argues an ignorance of facts which, to say the least, is unpardonable. The sailor might with justice take up the parable and point to the glorious victories of British pluck and endurance in the icy regions of the North, where cold, darkness, hunger, and disease are the daily portions of those adventurous spirits who, for the sake of carrying the British flag further north than that of any other nation, have cheerfully undergone these hardships, and consider it an honour to be allowed the privilege of partaking in them. Are these men, it may be argued, in any way inferior to their predecessors? Would not Drake, Anson, or Nelson be proud to command such men? and would they not consider them quite equal, if not superior, to those brave sea-dogs who, in their days, caused the name of England to be feared throughout the four quarters of the globe? Nor need the traveller be silent. The names of Livingstone, Burton, Speke, Cameron, Stuart, Warburton, and many others, speak to the enterprise and daring of men of English blood. They have performed feats of endurance under tropical skies which ofttimes have proved beyond the physical powers of their native followers, men born and bred in the countries they traversed, inured to their climates, and who had never been exposed to the alleged deleterious influences of civilisation and of city life. All this is indeed true, and many more instances of strength of body and of undaunted courage may be brought forward to controvert any rash theory of national physical deterioration. Almost all Englishmen are naturally fond of country pursuits and of athletic sports. The number of the well-to-do has vastly increased since the commencement of this century; means of rapid locomotion permit of large classes living in the country which formerly were forced to reside permanently in towns; and thus it happens that athletic pursuits engage the attention of a much larger number of well-to-do persons amongst the mercantile and commercial classes than used formerly to be the case. Never were there so many packs of hounds and so well attended as there are at present. So much so is this the case, that the railway companies find it worth their while to run, for the convenience of members of the mercantile and professional classes residing in our largest towns, special trains during the hunting season, to

and from the principal meets of foxhounds. It is hardly possible to take a stroll of a Saturday afternoon in the well-to-do outskirts of a populous town without seeing a game, and it may be several games, of football in winter, and of cricket in summer, being engaged in by a large number of young men who, during the rest of the week, have been occupied in business pursuits. Our rivers are crowded with craft manned by the young men of our commercial classes. During the autumn the mountainous parts of our own island and that country which is called 'the playground of Europe' teem with visitors whose means would formerly not have permitted them to enjoy this healthy exercise and relaxation of mind. These greater facilities for getting into the country have certainly improved the physique of our better-class townsmen. The effeminate shop-clerk, against whom *Punch*, at the time of the Crimean war, used never to be weary of levelling the shafts of his ridicule, has developed into the stalwart volunteer, the oarsman, or the bicyclist. It is, indeed, unnecessary to multiply instances to prove the presence amongst us of large numbers endowed with physical powers, and inspired by a lion-hearted courage, worthy of the best days of our ancestors. Perhaps it would be impossible for any country to produce as fine a body of young athletes belonging to the well-to-do classes as are to be found at our Public Schools and Universities. Nay, more; taking into consideration the increase of comfort and of population, the England of to-day could probably, under a system of universal military conscription, produce a greater number of fine regiments as regards height and breadth of chest than the England of 1800. But does this admission, or do all these instances of a high standard of physical strength and courage amongst certain classes of the population, prove that other classes, even now the most numerous, and which under the present order of civilisation must inevitably increase, and that at no slight rate; do these instances, I say, in any way prove that these less favoured classes are even now not degenerating in health and strength? As cities increase, will not the physical powers of their inhabitants assuredly decrease, unless steps are taken, and that soon, to counteract the evil effects of the crowding together of masses of human beings within extremely limited areas? Is it not a fact that the population of these islands is annually becoming more and more a town one, crowded together without light, without air, without the means of obtaining proper exercise, and in the case of many without wholesome, or even necessary food, warmth, and clothing? If we do not as yet discover signs of national deterioration in health, may it not be because the average is maintained by the high state of the physical condition of more favoured portions of the community? Do our athletes, our sportsmen, our travellers, our mountaineers, issue from the crowded lanes of overgrown cities? Are not their homes to be found rather amongst the pleasant places of the earth, in rural manor-houses, in retired parsonages, in country villas, or in the healthy portions of well-to-do towns, in the midst of comfort and of plenty, with every means of exercising the healthy bodies which they have inherited from healthy and well-to-do progenitors? Are not our navvies, our merchant seamen, our iron-workers, our gamekeepers, our gillies, and all who require physical strength in the exercise of their employment, obtained as a rule from the country and small town population? It may be said that our soldiers are recruited in towns. Although it is true that the mass of our recruits are enlisted in towns, it does not follow that they have been brought up in them, though no doubt many and perhaps the majority are. Many a country-bred lad walks into the neighbouring large town for the purpose of enlisting. We have no record of the number of town-bred recruits rejected by the inspecting surgeon for physical defects. None but those likely to develop under the influences of good food and healthy exercise are accepted. Even these we do not see in the ranks until they have been withdrawn for some months from hurtful influences, and have been carefully trained with a view to the increase of their physical powers under conditions of life most favourable to their development.

What are the conclusions to which we are naturally led by the above considerations? That the robust and athletic are to be found amongst the well-fed, the well-clothed, the well-housed; that good food and clothing, fresh air and exercise, are necessary to the healthy development of the human frame; and that, where these health-requirements are wanting, physical qualities may be expected to degenerate.

The police records attest that the finest men physically and intellectually come as a rule from the small country towns, and it is precisely in the small country towns that life amongst the lower class presents its easiest aspect.

Now that almost all who have any pretension to the name of well-to-do can get away, for at all events some short portion of the year, from the smoky and grimy city, there is a real danger lest the health-requirements of those left behind, and they the least influential of the community, should be neglected. Formerly it was the interest of the rich as well as of the poor citizen to secure open spaces and means of recreation, but if even the superior artisan can now afford to live away in a healthy suburb, who is left whose interest will induce him to raise his voice on behalf of the poor against the constant invasions of brick and mortar? Let the reader walk through the wretched streets of one of our large manufacturing towns, or through those of the eastern and southern districts of London. If he returns satisfied with the results of his investigations, he must indeed be gifted with a very sanguine temperament. Should he be of average height, he will find himself a head taller than those around him; he will see on all sides pale faces, stunted figures, debilitated forms, narrow chests, and all the outward signs of a low vital power. Surely this ought not to be. We are not Turks, to cry out 'Kismet!' and then turn on the other side, satisfied that what is is good, and cannot be avoided. If the exigencies of civilisation and the limited size of our island home require that millions shall pass their lives under the unnatural conditions consequent on city life, it is surely incumbent on the nation to see that every assistance is given these unfortunates to enable them to bring up their children in as high a degree of health as the unfavourable circumstances of their lives will admit. Cities must exist, and will continue to increase. We should therefore turn our attention seriously to the question how to bring health within the reach of our poorer city populations. Had Victor Hugo passed his life within reach of the noxious vapours of a Widnes, in the heart of a Newcastle, on the banks of the odoriferous Clyde, or within the purlieus of a Whitechapel court, it may be doubted whether, as on a certain recent occasion, he would have been eloquent in the praise of

cities, and have styled them 'divine.' Places which at the beginning of this century were small hamlets are now large manufacturing towns, teeming with people huddled together under conditions adverse to health and to the development of a robust population. What similarity to their present appearance did Glasgow, Dundee, Newcastle, Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bradford, and a hundred other places, present at the commencement of this century? How long will it take before the manufacturing towns and villages with which Lancashire is studded shall have joined one another, and that county become one vast hive of human industry? When will the modern Babylon cease to add town to town, and what will be the limit of its extension? Can we look with complacency on the fact that the population of these islands is annually becoming more and more a town one; that annually more and more human beings are engulfed by the advancing tide of buildings, and become absorbed in endless streets and courts and alleys; that fresh air and the means of wholesome exercise are daily being withdrawn from larger and larger numbers of people; that crowded streets and ill-ventilated dwellings produce vitiated air; that the want of a proper supply of oxygen and of means of obtaining healthy exercise weakens the human system; and that daily and hourly a larger number of men and women, conscious of impaired vitality, resort to the spendthrift habit of drawing upon capital to replace income by permanently injuring their constitutions for the sake of the transitory stimulus which is obtained through the use of alcoholic liquors? Vain are the efforts of temperance societies and reformers as long as they leave untouched the condition of things which engenders the mad craving for drink. Are men and women brought up under such circumstances likely to be the parents of healthy children? Nature is stern—she has no compassion—as men sow, in like manner shall they reap. Certain well-known laws have been laid down by Providence for the guidance of man, and if he in his obstinate blindness deliberately chooses to violate them, he must abide the consequences. Wholesome and sufficient food, warm clothing, fresh air and exercise, are necessary, at all events in childhood, to the healthy development of the human frame. How many of these

requisites ordinarily fall to the lot of the children of the poorer classes in our large towns? Let those who go in and out amongst them answer. Ask the Board school teachers in the poorer districts of London whether children are not sometimes sent to school without having tasted food; whether they do not occasionally fall off the benches from sheer physical exhaustion; whether the teachers, from motives of humanity which do them credit, do not often supply out of their own slender resources the more pressing necessities of these wretched starvelings. Let the district visitors answer whether the children, with just sufficient clothing on their half-starved frames to satisfy the demands of decency, but not sufficient to promote warmth, do not often in the depth of winter return to homes where it is the exception rather than the rule to find a fire burning on the hearth. Ask the medical officer what is the sanitary condition of these houses, and whether it is possible for these children ever to breathe air which is not more or less contaminated. Ask the police constable how far off is the nearest public park or open space where the children now rolling in the neighbouring gutter might enjoy their games free from the dirt and contamination of the present scene of their sports. It is much to be feared he would stare in astonishment at the remark, and would answer that such a paradise was not within the reach of such as these. The truth is that our eyes are blinded to the evil effects of overcrowding by reason of the continued stream of fresh blood which is ever flowing from the more healthy districts into our towns, thus hindering and delaying the natural physical decay of the constitutions of the inhabitants of the latter, which would otherwise be more rapid and consequently more apparent. If we could establish a thoroughly efficient blockade of our large cities, and allow no further immigration into them from the country, it would not be many years before the mortality in our centres of population, as compared with that in healthier districts, would be so marked, and the physical deterioration in our city populations would become so apparent, that we should be forced to take immediate steps to prevent their utter annihilation. But it may be said, 'This is an old story, and may have been true before public attention had been called to the overcrowded state of the back slums of our large cities, but since the passing of

the Artisans' Dwellings Act, and the establishment of working men's dwellings companies, all this has been altered, and the working classes are now housed as well as their incomes will permit.' Would that this were the case! Alas! the efforts of these companies, great as they have been, are but as a drop in the ocean, and the difficulties which are met with in working Mr. (now Lord) Cross's Act have sadly limited its operation. What then can be done? If Acts of Parliament and companies whose capital is counted by millions avail but little, what hope is there of a better future? Probably neither private efforts nor indeed public measures, unless of a much more arbitrary character than in the present state of public opinion are likely to be adopted, would altogether avert the deleterious influences of prolonged existence for several generations in crowded cities; but surely something might be done, if not for the adults, at all events for the children, of our city populations, to strengthen their growing frames, and thus give them some chance of contending with success against the hurtful influences which surround them. We said that wholesome and sufficient food, warm clothing, fresh air and exercise, were necessary to the healthy development of the human body in time of youth. Is it quite impossible for this rich country to see that the children educated at its Board schools shall be provided at all events with some of these requisites? Amongst not the least of the benefits which the children of the poor have derived from the Education Act of 1870, there are two not to be overlooked: firstly, that if a child be ill-clad or starved, the fact must in time be known to the teachers, and through them to the outside world; and, secondly, that during a considerable portion of the day, that child, instead of shivering in a cold garret, must of necessity be seated in a warm room. Here we have, therefore, warmth provided by the School Board, not a bad substitute for warm clothing. Would it greatly shock the nerves of our political economists if we were to suggest that the School Board, having provided warmth for the children attending their schools, might still further benefit them by furnishing two classes of dinners, to be cooked, if possible, by the scholars themselves—the first composed of the cheapest food which could be provided, such dinners to be supplied gratis to the most destitute children

attending the school; the second, a more attractive and substantial meal, to be sold to the more well-to-do scholars, and consumed by them on the spot? By good management it might be possible to make the latter class of dinners pay for the former; and if the dinners were well cooked, it is probable that the parents might find it worth their while to purchase for themselves the meals which their own children had cooked. A profit might thus accrue to the school, whilst the children would have practical experience in the class of cookery which would be of most use to them in after life. We have already said that many School Board teachers are in the habit of providing meals for the more destitute scholars at their own expense. It is not right that a class who as a rule are not too highly paid, or over-favoured by fortune, should be called upon either to shut their eyes and harden their hearts, if they can, against the sight of children suffering from the effects of hunger, or else to draw upon their own scanty incomes for the means of affording them relief. If the pill above suggested should be too large a one for the contracted gullets of our economists (though it may, *en passant*, be mentioned that dinners at nominal prices are provided for the children in the national schools of Germany), philanthropists might surely be invited to look upon the subject as one not unworthy of their consideration. Money might be worse spent than in providing cheap dinners, at all events during the winter months, for the destitute children attending our Board schools. If this were done, not only would the School Board officers find the list of truant children rapidly diminish, and the school gain favour with the most obdurate of parents, but we should be sure that every child in a Board school (which ought to mean every child in a large city) was provided with at all events one good meal a day, and that its body was warmed for a certain number of hours during the twenty-four. Now as to fresh air and exercise, the other requisites for health. The Rev. S. A. Barnett, Vicar of Whitechapel, has for some time been in the habit of boarding out during the summer months the children of his poorer parishioners in the country and at the seaside. The Leicester Charity Organisation Society has also been instrumental in carrying out a similar scheme, and the London Charity Organisation Society, encouraged by the success which has attended these efforts, has

referred the question of boarding out to a special committee, which has reported favourably on the subject. It is to be hoped, therefore, that before long some general organisation will be established, by means of which city-bred children, whether convalescent or not, may from time to time be enabled to breathe true country air, refresh their minds and eyes and ears by the sights and sounds of country life, and lay in a stock of health against the hour of their return to town. Most Board schools possess a small yard attached to the school, within which the children are allowed to amuse themselves, and sometimes have the opportunity given them of exercising their limbs in running round a 'giant's stride.' This is good as far as it goes, but it is a poor substitute for the games which country children enjoy. Would it not be possible, in the absence of a park or open space, to encourage children to do something better than loiter about, or bully one another, or 'talk bad,' as it is called, when congregated in knots? Might not the 'giant's stride' be supplemented by a couple of fives courts, a cat's gallows, or a circular running path? Prizes might be given to successful competitors in these healthy exercises in the open air, and provision might be made for proper exercise on wet days by suspending a few ropes, rope-ladders, and a trapeze or two to the ceiling of the schoolroom. These might be so arranged as to be drawn up to the ceiling by means of a pulley during the lesson hours, and thus not interfere with the ordinary work of tuition. The above plan, in the absence of a proper gymnasium, has been most successfully carried out in a school with which the writer is acquainted. In Germany and Switzerland gymnastics are made as much a part of the system of education as reading and writing. If Germans and Swiss, who mostly live in country districts or in small towns, where ample means of exercise are to be found, consider it essential for the maintenance of national health that their children should be taught gymnastics, surely it is of some importance that our city-bred English children, who never have any opportunity of using their limbs, should be supplied with these artificial means of strengthening their bodies and of fortifying their nerves. There is no reason why a certain knowledge of gymnastics should not be required of every School Board master, so that he might be able to superintend these exercises

during the hours which are now nominally given up to play, but which are really often passed in a manner neither conducive to morality nor to health. The teachers, who perhaps suffer from want of exercise more than the scholars, would welcome the establishment of good gymnasia and fives courts, and would find themselves clearer in head and brighter in mind after an hour's bout at the one or the other, whilst their scholars might possibly perceive in them a greater equanimity of temper. Each School Board district in London is provided with a spacious room, now used for meetings of managers, and for other similar purposes connected with the business of the schools. These might with very small expense be easily fitted up as gymnasia, without in the least interfering with the objects for which they were built, and here might be held advanced classes in gymnastics under properly qualified instructors. In addition to these classes, is there any reason why these rooms should not be thrown open, under proper supervision, on week-day evenings, subject to a small annual payment or entrance fee, to former School Board scholars, or, indeed, to any young lads between the ages of thirteen and twenty, who chose to spend their evenings in healthy exercise, rather than in the dissipation of the gin palace, the music hall, or the cheap gaff? Prison statistics inform us that men rarely take to a life of crime after twenty-one years of age, and that the criminal classes are as a rule recruited from young men between the ages of fifteen and twenty, who not infrequently are induced to desert honest industry, and to enter upon a life of crime, by associating of an evening with bad characters in low places of resort. A young man after hard work or close confinement all day must have society and recreation of some sort. Where at present can he find this out of the gin palace or music hall? English towns, as compared with Continental ones, are lamentably deficient in places where of an evening a young man can find innocent and wholesome recreation. Surely the establishment of gymnasia for the use of the youth of our towns would not be foreign to the educational purposes for which School Boards exist. Physical and intellectual education should go hand in hand. The London School Board has so far acknowledged this principle as to allow prizes to be given to their scholars for swimming and drilling, and have encouraged

them to become proficients in both exercises. If gymnasia were fitted up, and occasionally thrown open, as suggested, and made attractive to the young men of the neighbourhood, no doubt these establishments would shortly become a source of income to the Board.

The object of this paper will have been fulfilled if it induces some School Board authorities to devote greater attention to the question of improving and of promoting the physique of the city-bred children assigned to their care. The ideas thrown out do not profess to meet all the difficulties of the question of the health of our city populations. The writer is well aware that he has but touched the fringe of the subject; that a radical reform can never be effected until much bolder and more important measures than he has proposed, or would venture to suggest, have approved themselves to our parliamentary and municipal authorities. He has therefore confined himself to considering the best means of improving the health of our city children, leaving to abler hands the wider question of how to deal with the adults. If some improvement, even though slight, may reasonably be expected to accrue to the health of the rising generation in cities by the adoption of the above suggestions, surely it would be worth an effort to endeavour to bring them into practice. *Salus populi suprema est lex.*

OPEN SPACES AND PHYSICAL EDUCATION.[1]

By the Earl of Meath.

Of late years a marked increase has taken place in the number of urban parks, gardens, and playgrounds of the United Kingdom which are accessible to the public. This activity on the part of municipal authorities, and of philanthropic societies and individuals, is largely owing to the growth of a public opinion favourable to the creation of pleasant oases, refreshing to the mind and body, wherever the undue extension of bricks and mortar has banished man from the humanising influences of nature, and has

[1] Reprinted, by permission, from the *National Review*, December 1886.

turned the soil into a stony wilderness. The credit of giving the impulse which set this public opinion in motion is due, in a great measure, to Miss Octavia Hill. She it was who, in season and out of season, was never weary of preaching, often to deaf ears, the importance of preserving open spaces for the benefit of the poor, and especially of their children. She it was who first put into practice the principles she preached, and turned a fetid London court into an 'open-air drawing-room.' Her example has been largely followed. Within the short space of three years the Metropolitan Public Gardens Association, through the generosity of the public, has alone been enabled to throw open to the people of London four playgrounds and seventeen gardens, and, of these, one of the former and one of the latter have been permanently transferred to the care of the local municipal authorities. This transference of open spaces from the care of an association supported by voluntary subscriptions to that of a public body like a local vestry or district board, means, of course, an increase (though an infinitesimal increase) of the rates, and there are those who, from not thoroughly appreciating the important issues involved in the matter, question the justice or the propriety of a public authority increasing the burdens of the people, for what they consider to be a luxury rather than a necessity. Such a doctrine will find no support at my hands, even supposing these open spaces could be regarded as luxuries. I believe that there are luxuries of a public character, such as museums, art galleries, &c., which the Government of a rich and prosperous nation is justified in providing for the benefit, refinement, and enjoyment of the people committed to its charge; but the question will arise, Can parks, gardens, and playgrounds, means for the preservation of the public health, be considered luxuries? Should they not much more justly be ranked amongst public necessities? Health is one of the first of these, and in my opinion no expense should be spared, and no opportunity neglected, to increase the average standard of the nation's health and strength. If a people's average standard of vitality be lowered, that people will assuredly be handicapped in the race of nations by as much as that standard has been lessened. The health of the mind is largely dependent on the health of the body, and although, occasionally, a powerful and healthy brain may be found in a diseased body, as a rule the mind and the body act and react one upon the other, so that a nation (and it should be remembered that a nation is nothing more than the aggregate of the men and women composing it) will only have as much muscular power and brain force as may be the sum total of these qualities possessed by the men and women of which it is formed. A simple reference to the last census returns will show that this country is increasing at the rate of 340,000 a year, and that these 340,000 are not added to the country population, but are absorbed by the large overgrown cities of Great Britain and Ireland. Now it is a well-known and universally recognised axiom of hygienic science, that, other things being equal, the health of a population is in inverse ratio to its density; in other words, that the more the people are congregated together, the more unhealthy do they become. This being the case, it will be readily seen that *unless steps are taken to counteract the operation of this natural law, the inhabitants of our towns must degenerate in health*, which is as much as to say that this is the destined fate of two-thirds of our population; for at this moment there are in Great Britain two men living in towns for every one living in the country.

Now what are the most obvious steps to be taken to counteract this natural tendency of disease to dog the steps of men when crowded together? Why, to open out the population as much as possible, or, if this cannot be done, at all events to break up these dense masses of humanity by intersecting them, wherever and whenever possible, with open spaces. If this be the first remedy, then surely it is the duty of those who are the guardians of the public health to provide such open spaces; for individuals cannot be expected to buy them for the general good, and in no way, in my opinion, could public money be more legitimately spent than in thus preserving and improving the health of the community. I trust that I have clearly shown that the providing of public gardens and open spaces in large towns is no question of ornamental luxury, but one very closely connected with the health of the people, and as such should be considered a most legitimate object for the expenditure of public money.

If it be right that the people inhabiting our large towns

should be provided at the public expense with parks, gardens, and playgrounds, for similar reasons I think many will agree with me that, where possible, gymnasia should be attached to elementary schools, and that systematic instruction should be given to the children in gymnastics and calisthenics. The body should be trained as well as the brain. At present our system is entirely a one-sided one. We starve the body and overwork the brain, and the former takes its revenge on us by refusing to nourish the latter; the brain, unable to bear a strain, which would be no strain if the body were properly cared for, frequently breaks down, and broken health ensues, followed sometimes by insanity, and even death. Germany, Switzerland, as well as Norway and Sweden, have for long been alive to the necessity of caring for the body in order to get the best work out of the brain: and although the inhabitants of these states, being mostly country bred, are not in such urgent need of physical training as are the populations of our crowded towns, the sums expended by the Governments of these nations on the compulsory gymnastic training of the young would appear incredible to the educational authorities of this country. Whilst I have been writing, the physical aspect of the education of women has occupied the attention of the British Medical Association, and its President, Dr. Withers Moore, has been giving the following strong expression to a belief that women are suffering through over-pressure in brain-work whilst at school and college :—

'From the eagerness of woman's nature,' says Dr. Withers Moore, 'competitive brain-work among gifted girls can hardly but be excessive, especially if the competition be against the superior brain-weight and brain-strength of man. They require,' he asserts, 'to be protected from their own willingness to study.' And how, we may add, can they be better protected than by being encouraged to turn some of their energies towards the improvement of their physical natures by means of calisthenic and gymnastic exercises, or by healthy open-air games suitable to their sex? In a pamphlet which has lately appeared, Mr. Alexander, Director of the Liverpool Gymnasium, discusses the provision in England for physical education, points out its inadequacy in every respect, and states what are the nature and

extent of the required reforms. He maintains that there are many teachers in charge of existing gymnasia who would be glad to have their services utilised in the daytime; that the obstacle to physical training is the eagerness with which result fees are looked after, so that the teachers cannot spare the school children during the day. Surely the remedy for this is to include gymnastics in the school course, and to grant fees for successful physical as well as mental training, say, in accordance with the school-average width of chest.

Mr. Alexander says:

'Let there be a central training-school where certificates will be granted to those who pass an examination of proficiency; let there be a code of exercises decided upon of a light, recreative, and popular character, with plenty of mental stimulus about them, as there should be about all exercises. Let the exercises be useful, such as swimming drill, by which children can be thoroughly practised in the movements before they enter the water, thus facilitating their swimming lesson. If the Education Department will not give the necessary half-hour per diem for this, then at least give it directly after school hours, and watch the beneficial result that will surely take place. One or two professional instructors could visit the schools in each town in order to keep up the standard of efficiency, and inspections could take place at convenient periods. *The experiment, to have a fair chance, should share in the result fees.*'

To show that it would be an easy matter to calculate the result fees to be given for average increase in circumference of chest in consequence of gymnastic training, I annex a form prepared by Dr. W. P. Brookes, of Much Wenlock, who for many years has taken a deep interest in the question of physical training, and by which it will be seen that from statistics taken in the Much Wenlock National school for six months, from August 21, 1871, to February 21, 1872, in the case of six boys who went through a course of drill and gymnastic training consisting of the use of Indian clubs, the vaulting-horse, horizontal and parallel bars, the average increase in chest circumference was $1\frac{5}{6}$ inch; whilst in the case of six other boys who went through a course of instruction in drill alone, it was but $\frac{11}{24}$ of an inch. I shall produce one more witness to the necessity for

physical training, namely, Dr. George Fletcher, who has had large experience as a medical officer. In a paper on 'The Management of Athletics in Public Schools,' read before the medical officers of schools in January last, Dr. Fletcher insists that a large amount of exercise in pure air is required to keep lads in bodily health, and he contends that all games and physical exercises in schools should be regulated, and be under supervision. The experience I have gained as Chairman of the Metropolitan Public Gardens Association has shown me the wisdom of this remark. Ordinary town lads are unacquainted with the games in which English school-boys of a higher social grade delight. Their ways are rough, they are unaccustomed to discipline, and, if turned loose into a playground without supervision, are unable to avail themselves of the advantages offered them. Their sport degenerates into bullying or horseplay, with no good physical result. Gymnastic apparatus, under these circumstances, becomes a positive danger, and broken heads, arms, and legs are certain to be the result if the lads are allowed to use them without supervision or instruction; but under a good teacher they soon learn discipline, enjoy themselves, and become as keen followers of organised games as any school-boy at Eton or Harrow. Dr. Fletcher's words are:—

'It should be remembered that, as regards compulsion in games, bodily exercise should be as carefully supervised by the masters as mental exercise; for it is not wise that boys should be left to manage these physical matters entirely by themselves, thinking that you can trust nature, and all will come right, and that the boy for whom exercise is desirable will be prompted by nature to take just the amount required for his health. No such thing. In the general routine of lessons a boy is compelled to conform to certain rules for the education of his mind; this is not here left to nature nor to the boy's disposition, for, if it were, there would, in most instances, be a miserable deficiency of brain exercises, or, in a few rare cases, a mischievous excess. If a boy does not like his Virgil or his Euclid his masters do not leave him to take what he likes of those subjects; he is compelled to enter into them, and to get through a certain amount, and often will soon excel in some branch of study from judicious compulsion; so with games—do not allow the boy to play only when

he chooses; at any rate, you are improving his bodily vigour, and he has had every chance of excelling in some branch of athletics. Let it be fairly instilled into the minds of parents by masters, that the education of the *body* is not far behind the education of the *mind* in importance, and the *amount* and *kind* of exercise both of mind and body should be always considered together.'

Englishmen, as a rule, do not look to the Government to introduce reforms unless these reforms are first demanded by a large section of the community. This characteristic of the national temperament has its strong and also its weak side. If, on the one hand, it makes the people self-reliant, on the other it is a distinct discouragement to the spirit of amendment in governing bodies, who, instead of being continually on the alert to discover and put into practice improvements in the management of their different departments, as a rule consider it rather the duty of an official to throw cold water on all suggested innovations which threaten to alter the orthodox routine of work. The result of this customary apathy on the part of our officials makes it necessary for reformers to acquire popular support before bringing the question of any reform to the notice of governing bodies, and in order to obtain this support the public must be educated, and urged to action, by the subject requiring reform being constantly presented to their attention. Bearing these facts in mind, those of us who believe that in order to preserve the national health and physique at the proper standard, reforms in our system of education and in the management of our towns are imperatively demanded, should not be disheartened because so little apparent progress would appear to be made in the popularisation of national hygiene and of physical training, but should lose no opportunity of promulgating their views, on the platform, through the press, and by all those means of spreading information and of influencing public opinion which modern civilisation affords. Action has already been taken in this direction by the Manchester Open Spaces Committee and by the Metropolitan Public Gardens Association. The former has obtained the signatures of the following influential and eminent persons to a petition urging the appointment of a Royal Commission to consider the question of physical

training:—H.R.H. the Princess Louise, H.R.H. the Duke of Cambridge, His Grace the Lord Archbishop of York, His Grace the Duke of Westminster, the Rt. Rev. Bishop of Bedford, Bishop Suffragan for East London, the Very Rev. the Dean of St. Paul's, London, the Very Rev. the Dean of Manchester, the Ven. Archdeacon Farrar, the Rt. Hon. the Earl of Carnarvon, the Rt. Hon. the Earl of Meath, the Rt. Hon. Lord Wolseley, the Rt. Hon. Lord Aberdare, the Rt. Hon. Lord Tennyson, His Honour Judge Hughes, Maj.-Gen. E. G. Bulwer, C.B., Edwin Chadwick, C.B., Sir Andrew Clark, Bart., M.D., Sir T. S. Wells, Bart., F.R.C.S., Sir James Paget, Bart., Sir Henry E. Roscoe, LL.D., M.P., Sir William Roberts, M.D., Sir Henry Thompson, F.R.C.S., Rev. E. A. Abbott, D.D., City of London School, Rev. E. C. Wickham, M.A., Head Master of Wellington College, Rev. J. M. Wilson, M.A., Head Master of Clifton College, Bristol, Rev. Samuel A. Barnett, St. Jude's, Whitechapel, Rev. C. H. Spurgeon, Matthew Arnold, M.A., LL.D., D.C.L., Robert Browning, D.C.L., Professor Tyndall, Professor Huxley, Professor J. G. Greenwood, Principal of Owens College, Manchester, Rt. Hon. A. J. Balfour, M.P., William Abraham, M.P., Joseph Arch, M.P., Thomas Burt, M.P., E. N. Buxton, M.P., William Crawford, M.P., B. W. Foster, M.P., Albert Grey, M.P., W. H. Houldsworth, M.P., George Howell, M.P., S. Morley, M.P., John Wilson, M.P., J. E. Morgan, M.D., Professor of Medicine, Victoria University, Manchester, Jno. Tatham, B.A., M.B., Medical Officer of Health, Salford, Ernest Hart, Esq., F.R.C.S., Charles Roberts, Esq., F.R.C.S., Walter Besant, Esq., John Ruskin, Esq. Sympathy and general approval, without signature of the form sent, have been expressed by: The Rt. Hon. the Earl of Derby, the Rt. Hon. G. J. Goschen, M.P., Sir John Lubbock, Bart., John Tomlinson Hibbert, M.P.

The Metropolitan Public Gardens Association has sent the following Memorial on the subject to the Education Commission, and a somewhat similar one to the School Board of London:—

To the Rt. Hon. Sir Richard Assheton Cross, M.P., G.C.B. (Chairman), and the Members of the Royal Commission on Education.

The Memorial of the members of the Metropolitan Public Garden Association, respectfully showeth,—

That your memorialists are of opinion that increased facilities for the physical training of the young of both sexes, and further provision for their wholesome recreation, are much needed in all the larger towns of the United Kingdom; and feeling that this is a subject which is within the lawful scope of the inquiry of the members of the Royal Commission on Education, they humbly beg to urge its consideration.

They base their belief upon the following grounds:—

1. That physical training is not at present one of the obligatory subjects for the ensurance of a Government grant in elementary schools.

2. That several teachers in Board or Voluntary schools are unable to give instruction in gymnastics or calisthenics either in the playgrounds or the rooms of the schools.

3. That there is a want of some fund from which the maintenance, out of school hours, of existing playgrounds can be defrayed.

4. That there is great difficulty in obtaining, in densely populated districts, adequate open spaces for public recreation.

5. That there is a marked difference in bodily health and vigour, and in a predisposition to disease and immorality between the young in the country and those in towns.

They believe that these difficulties might be overcome in the following ways:—

1. By the alteration of the Code of Education, so that physical training should be included among the obligatory subjects, and in this way necessarily introduced into each department of every elementary school.

2. By assistance given towards the introduction of instruction in physical training into the curriculum of all training colleges.

3. By the enforcement of a regulation that all playgrounds in connection with public elementary schools should be kept open, *under supervision*, for the use of the children and young people of the neighbourhood between and after school hours.

4. By a grant of further powers to local public bodies for the

purchase of land for opened or covered gymnasia, and for suitable recreation grounds for the use of the general public.

They believe that if these suggestions were carried out, the following results would ensue to the rising generation :—

1. A decrease in juvenile mortality, a better physical development, and a greater amount of bodily health.
2. An increase in the mental powers.
3. A decrease in crime, drunkenness, and immorality.

It is therefore the earnest desire of your memorialists that the members of the Royal Commission on Education should take this matter into their serious consideration, and consent to hear evidence upon the need of better means for physical training and increased facilities for wholesome recreation in all towns.

And your memorialists will ever pray, &c.

A National Physical Recreation Society has lately been established for the promotion of the physical education of the working classes, under the presidency of Mr. Herbert Gladstone, M.P., supported by the Hon. A. F. Kinnaird, Colonel G. M. Onslow (Inspector of Military Gymnasia), Lord Charles Beresford, M.P., the Hon. T. H. W. Pelham, and Mr. T. C. Edwardes-Moss, M.P., of athletic fame, with Mr. A. Alexander, F.R.G.S. (Director of the Liverpool Gymnasium), as Honorary Secretary. An association with such influential leaders should be able to work wonders in the improvement of the physical education of the people, and in the confident hope that at no distant period the bodies of the poorer children of this country will be as well cared for as their brains, I ask those who read this paper to assist in forming a public opinion favourable to the maintenance, by municipal authorities, of open spaces, playgrounds, and gymnasia in towns, and to such alterations in the Education Code as will bring up a generation of English men and women, physically capable of bearing the burden of the high civilisation and extended empire they have inherited from their forefathers. *Civium vires, civitatis vis.*

APPENDIX.

Statistics of the Drill and Gymnastic Training given to Twelve Boys in the Much Wenlock National School, from Aug. 21, 1871, *to Feb.* 21, 1872.

DRILL AND GYMNASTICS.

Increase, after Six months, in the Circumference—

Boy	Of Chest	Of Upper Arm	Of Fore Arm
	Inches Inches		
1	From $27\frac{1}{2}$ to $28\frac{3}{4} = 1\frac{1}{4}$ inch	$\frac{1}{4}$ inch	Nil
2	„ 28 „ $29\frac{3}{4} = 1\frac{3}{4}$ „	$\frac{1}{2}$ „	$\frac{1}{4}$ inch
3	„ 30 „ $31\frac{1}{4} = 1\frac{1}{4}$ „	$\frac{1}{4}$ „	Nil
4	„ $27\frac{1}{2}$ „ 29 $= 1\frac{1}{2}$ „	$\frac{1}{4}$ „	Nil
5	„ $28\frac{1}{4}$ „ $30\frac{1}{4} = 2$ inches	$\frac{1}{2}$ „	Nil
6	„ $27\frac{1}{2}$ „ $30\frac{1}{4} = 2\frac{3}{4}$ „	$\frac{3}{4}$ „	$\frac{1}{2}$ inch

Average increase in circumference of chest $= 1\frac{5}{6}$ inch, *i.e.* nearly 2 inches.
Exercises :—Indian Club, Vaulting Horse, Horizontal and Parallel Bars.

DRILL ALONE.

Increase, after Six Months, in the Circumference—

Boy	Of Chest	Of Upper Arm	Of Fore Arm
	Inches Inches		
7	From $24\frac{1}{2}$ to $24\frac{3}{4} = \frac{1}{4}$ inch	$\frac{1}{4}$ inch	Nil
8	„ $27\frac{1}{4}$ „ $27\frac{3}{4} = \frac{1}{2}$ „	$\frac{1}{4}$ „	$\frac{1}{2}$ inch
9	„ $29\frac{1}{2}$ „ 30 $= \frac{1}{2}$ „	$\frac{1}{4}$ „	$\frac{1}{4}$ „
10	„ $26\frac{1}{4}$ „ $26\frac{3}{4} = \frac{1}{2}$ „	$\frac{1}{4}$ „	Nil „
11	„ $25\frac{1}{4}$ „ 26 $= \frac{3}{4}$ „	$\frac{1}{4}$ „	$\frac{1}{4}$ inch
12	„ $25\frac{1}{4}$ „ $25\frac{3}{4} = \frac{1}{2}$ „	$\frac{1}{4}$ „	Nil

Average increase in circumference of chest $= \frac{11}{24}$ inch, *i.e.* nearly $\frac{1}{2}$ inch.

W. P. BROOKES, *Trustee.*
EDWARD STROUD, *Schoolmaster.*

National Review, December, 1886.

THE HALF-TIME SYSTEM OF PHYSICAL AND INDUSTRIAL TRAINING.

BY EDWIN CHADWICK, ESQ., C.B.

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SIR PHILIP MAGNUS, in an article on manual training in school education in the *Contemporary Review* for October, quotes Mr. Swire Smith, a member of the late Commission on Technical Instruction, who states that 'the half-time children of the town of

Keighley, numbering from 1,500 to 2,000, although they receive less than fourteen hours of instruction per week, and are required to attend the factory for twenty-eight hours in addition, yet obtain at the examinations a higher percentage of passes than the average of children throughout the whole country receiving double the amount of schooling.' Similar experiences may be cited from Ireland. In the district schools, where they receive orphans who have been trained in the Board schools, they always find their mental training below that of the half-time children. Sir Philip presents the experience as new—as it doubtless is to him—but he might have found that the like experiences had been developed at the Central District school of the City of London itself a quarter of a century ago, and was displayed in evidence before the Commission of Elementary Education in 1861, and in repeated demonstrations that the long-time system and the omission of physical training are in violation of the laws of physiology. The recently awakened attention to the subject may, however, be welcomed.[1]

[1] Complaints are made, by head teachers of the half-time schools, that the subject of physical and industrial training and the interests of the poor in it have been excluded from the recently appointed Commission of Inquiry into elementary teaching, and that this has been done apparently in the interests of the Educational Department, in the maintenance of its Code, and of its long-time system. The question of the extension of physical and industrial training upon the half-time system will, however, require very distinct examination and treatment, especially in its economical aspect. As to the long-time system under the Code, the great body of the school teachers are very unanimous in its condemnation. Mr. W. J. Pope, President of the Metropolitan Board Teachers' Association, at a crowded meeting of that body held the other day, said:—'I contend that not one-half the real educational work is being done that might be done. I contend that, as one of your former presidents said, we ought not to be engaged for 75 per cent. of our time in urging on, worrying, and overpressing 10 per cent. of our scholars. I contend that teachers are not happy in their work, and I make bold to say that the British taxpayer does not get full value, nor anything like it, for his money. . . . Summing up against our present system, I charge against the Education Code that it cramps—in fact, prevents—education. I charge against it that it is responsible for the fact that only 4 per cent. of those who leave our schools continue their education in night schools. I charge against it that in crushing out the individuality of the teacher it is responsible for one-half the truancy which goes on. I charge against it that owing to it one-half of the education vote is practically wasted; and, far above all, I charge against it that it tempts the teacher to do wrong. To some of us it is known that, under its percentage and reporting influence, many of our weaker brethren often fall. The Code makes it to their advantage to refuse admission to the backward, to work out those who become backward, and to do a hundred and one other things which the uninitiated know not of. The Code, in fact, is a temptation to do evil, and through it the honest teacher is placed at a great disadvantage.' Turning to the subject of discipline, Mr. Pope remarked: 'To such a pass was juvenile rowdyism then come—four years ago—that, as your President, I felt compelled to say that the time was fast coming when the discipline of schools would concern other than teachers. . . . Since then, the London rough has had his amusement with the West-end shops and clubs, and the "Board Teacher" has shown that the majority of the rowdies had been brought up under the sentimental influence of the Code and School Boards. Obedience to the law,' continued Mr. Pope, 'lies at the foundation of all good character and all true prosperity, and if it be not required in the schoolroom we cannot expect our children to become good citizens. I am of opinion that the majority of our scholars may be guided by love and reason.' This address was received by the meeting with loud acclamations of approval.

This system was introduced by myself and my colleagues under our Commission of 1833 on the Employment of Young Persons in Factories, to prevent over-work and also to prevent under-education, by requiring three hours' attendance in school. It was devised chiefly for the protection of children against over bodily work, and also to serve for protection against over, as well as under, mental work, in which it has been, when properly administered, eminently successful, as well as in maintaining juvenile earnings. It is now made the basis of the education in the Army and Navy schools, and in district poor-law schools, and industrial and reformatory schools, comprising upwards of fifty thousand schools in which there is physical training. It is in the course of extension in France and in Germany. In his recent report on the elementary education on the Continent, Mr. Matthew Arnold states that 'there are now 2,989 half-day schools in Prussia in which all the children have but half a day's schooling.' 'It is found that the rural population greatly preferred the half-day school, as it is called, for all the children, because they had thus the elder children at their disposal for half the day,' *i.e.* for remunerative employments. But Mr. Arnold appears not to have been informed that, notwithstanding the excellence of the long-time elementary teaching there, it fails to reduce the amount of crime, which is much greater in Germany and Berlin than in this country, and the same fails also here;—but that the physical and industrial training here, which augments the capability of the immediate earning of good

wages, reduces crime everywhere effectively, and is the only system of elementary training of which I have heard that does so. An arrangement may be made for the same method of teaching for the Roman Catholic children of Ireland as they have in England. The results obtained in the reformatory and industrial schools in Ireland, as reported by Sir John Lentaigne, are in satisfactory analogy with those obtained in some institutions in England. The educational change required may be admired solely on the grounds of the economy of the work. In the organisation of schools on a large scale there is a gain of educational power from better classification for some simultaneous class teaching, with a better paid and more highly qualified staff, and more speedy results at a lower cost. In the average small school of 100, with a master and mistress at 100*l.* per annum, the instruction can only be given at an annual cost of 1*l.* 10*s.* per head, or at a total cost for six years of 9*l.* per head; whilst in a larger school of 700, with a staff of teachers and a female teacher at 240*l.*, the cost of the teaching power is reduced to 1*l.* per head, and the work is accomplished in from three to four years at a total cost of 4*l.* per head. In the large half-time schools the same buildings, with the same staff, may be made to accommodate double sets of half-timers on the same day. In the larger district schools the cost of the physical and industrial training, as well as the mental training power, is from 1*l.* 5*s.* to 1*l.* 10*s.* per head of the pupils as against 2*l.* 5*s.* per head of the common long-time Board schools. It is the opinion of the most experienced of the teachers in these schools that the half-time principle must become generally prevalent. Sir John Lentaigne, in his report for 1842, declares that the statistics for those of Ireland 'show how completely the character of a *nation* can be changed by judicious legislation applied to the proper training and treatment of the young.' This independent opinion is in accordance with my conclusions enunciated some years ago from the independent experience of England of the power of mixed physical and mental training for early changing the character of a nation.

PHYSICAL TRAINING IN ELEMENTARY SCHOOLS.[1]

By Charles F. Bearsley, M.A.

No one who has visited one of the newest and most efficient of our Board schools can fail to have been impressed by the thoroughness of the arrangements and the completeness of the educational machinery, so far as it goes. At the same time, it would not be strange if one came away with the feeling that there is a onesidedness about the whole system. This imposing building, with its ingenious apparatus and skilled staff, is devoted entirely to the training of the mental faculties. As a rule, the physical development of the scholars is left to take care of itself. Reading, writing, arithmetic, history, geography, grammar, in some cases the elements of science, even languages, as well as drawing, sewing, and cookery, are taught after the most approved methods. In nearly every time-table systematic physical training is conspicuous only by its absence.

But the high pressure caused by this multitude of subjects, while it increases the danger of physical education being neglected, at the same time makes it all the more necessary.

In higher class schools the need is not so clamant. Taking as their model the two great English Universities, which the Frenchman with unconscious satire described as great schools where the English youth resort to learn rowing, our secondary schools cannot be broadly accused of neglecting physical exercise. Even in such schools, however, the boys who most need developing on the physical side often derive least benefit from athletics. Usually it is the naturally robust who are the greatest devotees of cricket, football, and boating. During some years' experience in a better-class boarding-school, I noticed some cases of boys who, though constitutionally weak and awkward, braved the ridicule of their schoolfellows, and became more or less of experts; but in too many cases the weakly or diffident avoided altogether the exercises in which they were unable to excel. So that something more than the mere opportunity is required. And what of our girls' schools? How few of them make adequate provision for regular exercise!

[1] Reprinted, by permission, from the *Sanitary Record*, December 15, 1886.

It is in elementary schools, though, that the need is greatest. In large towns the children of the Board school have little chance of indulging in the invigorating games in which their more fortunate fellows revel. The playground is necessarily of very limited area, generally enclosed by buildings, and frequently paved or asphalted. Though serving well enough as a drill-ground, it is neither large enough nor suitable otherwise for miscellaneous games. In some schools with playgrounds of this sort the boys learn military drill, and the girls are taught calisthenics, with very good results. This is in the right direction; but what is wanted is something more general and, if possible, more systematic. Instead of being regarded as an extra, physical training should have a place in the ordinary daily routine.

It has little chance of becoming more general and systematic till it is officially recognised in grant-earning schools as a part of the curriculum, and is paid for as such. I have no desire to see a further extension of the payment-by-results system, and I certainly do not advocate individual examination in athletics. I should regret if the annual inspection were to add to the doubts and fears that already beset our youngsters as the annual ordeal approaches. Ought little Polly, who is queen of her class in arithmetic, to have her days made dismal by the thought that, after all, she is rather a poor hand with the 'stirrups'? Or should poor Tommy, whose reading is good and whose spelling is faultless, be disturbed in his slumbers by dreaming that he has 'failed' on the trapeze? By no means. But, if physical exercise is really of importance, why not teach it and pay for it as a 'class subject'? The recognised class subjects in the English Code are English, drawing, geography, elementary science, history, and (for girls) needlework. Each of these may earn a grant of two shillings for every scholar in average attendance; and, important as these are, it is surely not too much to seek to place physical training on the same level. It is useless to ignore the fact that, under our present commercial system of national education, which assesses a half-knowledge of arithmetic at three shillings, and rewards a passable smattering of French with four, the likelihood of a subject being taught depends almost entirely on how much money can be earned in a given amount of time devoted to it per day or per

week. The subject that brings in no money, or that is unfairly handicapped in the race for grants, will be nowhere. At present the only encouragement given by the Code to physical training is the permission to teach military drill during school hours; but, although this usually entails extra expense for an instructor, not a halfpenny of grant is paid for the time so spent. If physical exercise is to be generally introduced into our elementary schools, it must be put on an equal footing with other subjects. Then teachers may devote a fair amount of time and attention to it without being harassed by the thought that for the time thus employed they will be able to show no pecuniary result.

If physical training were to be thus endowed as a source of school revenue, it might be considered necessary to have, as a guarantee that some definite work would be done therefor, a syllabus of exercises for each year. A suitable scheme could easily be arranged. Probably much might be learned from a study of the German and Swedish systems of gymnastics. It might, however, be better at first to leave the scheme of exercises to be arranged by the teachers, subject to the approval of the school inspector. I do not at present propose to offer many detailed suggestions, but shall confine myself to a few general principles that should be kept in view.

In the first place the exercises, while tending to the healthy development of all the bodily organs, should be, as much as possible, of a recreative character. In the younger classes they must be very largely so, just as the Kindergarten system seeks to educate the senses and the intellect by attractive exercises in form, colour, and number. Some actual pastimes might be occasionally introduced, and the charm of combined rhythmic movement should not be forgotten. It is generally understood that exercise taken for its own sake is not so beneficial as when it is incidental to some pleasant occupation or the attainment of some engaging end. Of course there must be a good deal of routine work in any practicable scheme. Even though it were found unavoidable that the course should consist entirely of gymnastic drill, it might still be expected to be attended with solid benefit. A great part of the intellectual training of children has to be conducted on the 'drill' principle. Drill

there must be; but the regular change from mental to physical drill would do much to refresh the jaded powers of both scholar and teacher. I say 'teacher' advisedly, for the teachers should share in all the exercises and in all the sports of the children. It is in fact almost as much in the interests of the teachers as of the scholars that I desire to see physical training made a regular part of our school system.

On this account I would strongly recommend that the exercises be taught not by visiting teachers but by the ordinary staff. There is another reason for this, well known to practical educationists. Visiting teachers are generally regarded as a kind of necessary evil. They have not the same hold of the children as those who have them constantly in hand; often, though perhaps eminent specialists, they are unskilful in teaching and dealing with children; and the arrangements necessary for them to meet the scholars in suitable detachments often interfere seriously with the organisation of a school. A system of physical training which necessitates such aid is bound to break down. To insure its success it must be workable by the ordinary staff. Gymnastics and calisthenics, which are not at present entirely neglected in our training colleges, would then become subjects in which proficiency would be desirable; and there is no question that in a short time teachers thoroughly qualified for the work would be turned out.

In the next place, when a new subject is introduced into a curriculum, the standard set up should not be too high. The new drawing schedule for elementary schools is a case in point. Instead of giving a stimulus throughout the country to the teaching of drawing, this schedule, through its being pitched rather above the present capabilities of elementary schools, is likely, in many districts, to fairly stamp out art-teaching in school. Too ambitious a programme of physical training would be equally unsuccessful. In fact, the grant should be paid rather for the time spent in the exercises, and for the hearty enjoyment and smooth discipline with which the children go through them, than for the performance of actual gymnastic feats. Some aptitude for the latter may fairly be looked for; but, if the inspector is satisfied that reasonable time is devoted to physical training, that it is taught in accordance with sound physiological

and hygienic principles, and that it is benefiting the children, payment of the grant should be recommended. There should, moreover, be only one scale of payment. Were there, as in the case of the present class subjects, a higher and a lower grant, according to the degree of excellence, a loophole might be left for 'over-pressure' to creep in. For the same reason physical exercise should not be additional to the three class subjects which are at present allowable in any one school, but alternative to them. Would it be too much to make it an imperative subject?

With respect to time, some minimum, perhaps two hours per week, as in the case of drawing, should be required to be devoted to physical training. This time should be judiciously distributed between the lessons. This is very important. An hour a day would not seem too much; but that would necessitate a higher grant. About 1*l.* per head is a good annual school grant; and about twenty-five hours is the average school week, exclusive of religious teaching, which earns no grant. We may, therefore, say roughly that every two hours and a half per week should earn about two shillings per head of annual grant. This is the full grant for a class subject. If, therefore, five hours a week were required, it would probably be necessary to pay a grant of four shillings. This might be too much to hope for. Merely to make physical training an alternative to the present class subjects would not, it should be observed, entail any addition to the education estimates. On the other hand, to demand for it much more time than for the other class subjects, and at the same time to pay no higher grant, would be to kill the scheme at its birth.

Lastly, as to apparatus, rooms, &c. A good many invigorating exercises require no apparatus. For a good many others apparatus could easily be fitted up in the ordinary class-rooms. Many exercises on the parallel and horizontal bars, as well as vaulting and leaping, could be performed by a class in rapid succession. On a row of rings or stirrups, suspended along the free space of a class-room, the pupils could exercise themselves in detachments. Any additional outlay on appliances of this sort should be regarded as a part of educational expenditure as necessary as the cost of a desk and seat for each scholar. A

regular gymnasium would, no doubt, be a great acquisition to every school; but it is by no means indispensable. Even where there is one, part of the exercises should be performed in the class-rooms; and it would be desirable to have a considerable portion of the training given in the open air.

Of the feasibility of the scheme suggested I have, as a practical teacher, no doubt whatever. It is quite as workable as the present elaborate sewing schedule, and much more so than the teaching of cookery in elementary schools. The essential feature of the plan is its inclusion in the Code as a grant-earning subject, and this, I have shown, need cause no extra demand on the national purse. Combined with the general adoption of school dinners, it would go far to eradicate over-pressure, and to make our educational system complete. Besides the importance of mere muscular superiority as a factor of national greatness, how much does the power of excelling, both in intellectual effort and in industrial work, depend on sound physical stamina? It is admitted, too, that a tendency to intemperance is fostered by the depression due to a weakly organism; and thus physical education would be one practical remedy against our greatest national curse. In a word, if physical training were made general, our people would be more robust, society would be the gainer, Britain would be the stronger.

GYMNASTIC INSTRUCTION IN BOARD SCHOOL PLAYGROUNDS.[1]

TO THE EDITOR OF THE 'DAILY CHRONICLE.'

SIR,—The Metropolitan Public Gardens Association, of which I have the honour to be chairman, recently petitioned the School Board of London and the Royal Commission on Education to take into their most serious consideration the low physical condition of the children attending the Board schools of our large towns, and urged upon these bodies the necessity of paying attention to the improvement of the health and strength of the rising generation.

In most civilised countries the physical education of children

[1] From the *Daily Chronicle* of December 30, 1886.

is now as carefully considered as the mental. England stands almost alone in its neglect. In order to gauge the opinions of the school managers in London 1,142 letters have been addressed to them, asking them for suggestions in regard to the best way of utilising the playgrounds with a view to the increased health of the children. Amongst the numerous suggestions given, some have replied advocating the systematic instruction of the children in gymnastics, and lamenting that a Government grant is not given for training in gymnastics and calisthenics. The enclosed letter from Mr. W. Bousfield, the chairman of the Works Committee of the School Board of London, is, you will perceive, in support of this view, and I trust that its publication may lead not only to attention being paid to the important suggestions contained in his letter, but to the inclusion of physical and technical training in the list of subjects in the Education Code for which a Government grant can be obtained.

I am, Sir, yours faithfully,

BRABAZON,

Chairman of the Metropolitan Public Gardens Association.

December 29.

[COPY.]

33 Stanhope Gardens, Queen's Gate, W.: December 11.

DEAR LORD BRABAZON,—I have read the packet of letters from London School Board local managers on the use of playgrounds which you kindly lent me. I now return them, and am glad to see that nearly all of the writers are impressed with the importance of providing physical instruction for the children, and are willing to give such help as they can to promote it in their schools.

The School Board has already placed certain gymnastic appliances in its playgrounds, but there is at present no systematic instruction in their use, and the teachers do not generally take an interest in teaching their boys to take advantage of them, although there are exceptions to this rule. Some such instruction and even organisation of games of play appears necessary, as the poor children attending the schools have not the hereditary habit of amusing themselves healthily out of doors possessed by English boys of a higher class.

While I think the School Board would be glad to give facilities for physical training in the playgrounds, I believe there would be objections felt to incurring additional expense in providing teachers.

If, however, the Association of which you are chairman were able in certain schools to give gymnastic instruction, and made an application to the Board with that object, I believe the playgrounds would be put at your disposal on certain fixed times, such as Saturdays and on summer evenings, on the understanding that your Association would be completely responsible for providing proper supervision of the children during the time of their use.[1] The school-keepers, who are now responsible for this supervision, have their time so much engaged, that it would be undesirable to add to their labours in this matter, even if they were additionally paid for it. Probably the Board would be more willing to agree to such an arrangement if a trial were made first in a few schools only. I will send you a list of some playgrounds, which seem specially adapted to your purpose, when I have talked the matter over with the Board's architect. Very likely many teachers and managers would give their help to your Association in this work; but it would be unadvisable to rely entirely on voluntary supervision of the children, as any breakdown in the essential maintenance of order would necessarily lead to the discontinuance of the arrangement.

Since my conversation with you on Friday, I have read with much interest your article in the 'National Review' of this month, and entirely agree with the views you there express. To carry them out, public opinion must be educated and brought to bear on the action of the Education Department and of the Government. There can be no doubt that a recognition in the Educational Code of physical training, and a small additional payment of Government grant to schools where due attention is paid to the physical improvement of the children, would do more to make such training universal than anything else. I believe that in the first European war in which England is engaged our lamentable experience of the staying powers of many of our urban recruits will, of a certainty, oblige the nation to insist, as a simple matter of safety, on more careful attention being paid to the physical strength of the mass of the population. Why should we wait for bitter experience to force us to do what reason and public spirit sufficiently show now to be necessary?

This is a cognate subject, also vital to the interests of the

[1] The Metropolitan Public Gardens Association, of 83 Lancaster Gate, has undertaken to give gymnastic instruction and to maintain order on Saturdays in five Board School playgrounds, individual members having made themselves responsible for the annual cost of a playground, viz. 14*l*. Offers to maintain additional playgrounds, open for instruction on Saturdays, will be thankfully received.

country, on which it is urgently necessary that pressure should be put on the Education Department. A small tentative beginning of teaching the use of tools to boys in order to give them a liking for handicraft work, and to modify to some extent the unpractical and purely literary education given them and the consequent impulse towards sedentary and clerklike occupation, has recently been made by the School Board; but I regret to say that the Government auditor has surcharged the expenditure incurred, and the Board will therefore be prohibited in future, unless the Government veto be withdrawn in consequence of its remonstrances, from any further essays of the kind. You will feel what a blow this action is to those who are anxious that vast sums of public money now spent on our elementary education should be made fruitful to the nation to the utmost extent.

If your Association should think fit to approach the Government and urge recognition of the national importance of physical and technical training in our elementary schools, I would suggest that the School Board should be asked by deputation to concur in your petition.

I cannot, of course, say with any certainty what course the Board would take, but I believe it would sympathise with and support your efforts to increase our national strength by helping our London children to lead useful, happy, and healthy lives.

I am, dear Lord Brabazon, very truly yours,

(Signed) WILLIAM BOUSFIELD.

MANUAL INSTRUCTION.

BY SIR JOHN LUBBOCK, BART., M.P.

MR. MUNDELLA, in an interesting address which he delivered at the Polytechnic last year, took us Londoners somewhat severely to task because more is not done in the metropolis to provide for the intellectual wants of our people. Certainly, I must admit, as a Londoner, that we are far from being as advanced as we could wish. I would, however, point out two reasons. In the first place, the areas of government in London are for many purposes too small. I have no desire to speak disrespectfully of vestries or vestrymen. But take the case of free libraries: London is reproached for having so few, but would Birmingham

have had its magnificent library if it was governed by the vestries of the separate parishes? One reason which has defeated the efforts to establish free libraries in London has been that the parishioners have been told that, while the expense would fall on them, readers could come in from other parishes. A bill should be proposed next session to remedy this by amending the Free Libraries Act in the metropolitan district by making the area that of the union instead of the parish. Again, why have we in our educational institutions so few members and students belonging to the great shopkeeping community? It is on account of the excessively long hours in London shops. This again is to a great extent owing to the difficulty in such immense communities of obtaining and securing common action. I hope that next session we may do something to mitigate this great evil. Free libraries and shorter hours in shops are two of the most pressing wants in London. Still, I cannot help thinking that Mr. Mundella was rather too severe on us. Can any provincial city show a nobler work than that carried on by Mr. Quentin Hogg at the old Polytechnic Institution? The members and students now, I understand, number nearly ten thousand, and not only does Mr. Quentin Hogg devote an immense amount of time to the work, but the annual cost to him cannot be much below 10,000*l.* a year. If it had been in one of our provincial cities we should probably have heard more of it. Londoners are, perhaps, too modest. Our London School Board has done its work efficiently, and is generally blamed for spending too much rather than too little. Again, the stimulus which has been recently given to the cause of technical education in England has no doubt been very greatly due to the City and Guilds of London Technical Institute, so ably directed by Sir Philip Magnus. The Commissioners on Technical Instruction, in their interesting report on technical education, have given endless cases showing the great importance of technical instruction, and I cannot help thinking that much more technical education might be introduced even into elementary schools. Something of the kind indeed is done in the case of girls by the instruction in needlework and cookery, which latter, I am happy to see, is showing satisfactory results. Why should not something of the same kind be done in the case of boys? There are some

indeed who seem to think that our educational system is as good as possible, and that the only remaining points of importance are the number of schools and scholars, the question of fees, the relation of Voluntary and Board schools, &c. 'No doubt,' says Mr. Symonds, in his 'Sketches in Italy and Greece,' 'there are many who think that when we not only advocate education but discuss the best system, we are simply beating the air; that our population is as happy and cultivated as can be, and that no substantial advance is really possible. Mr. Galton, however, has expressed the opinion, and most of those who have written on the social condition of Athens seem to agree with him, that the population of Athens, taken as a whole, was as superior to us as we are to Australian savages.'

That there is some truth in this probably no student of Greek history will deny. Why, then, should this be so? I cannot but think that our system of education is partly responsible.

Technical teaching need not in any way interfere with instruction in other subjects. Though so much has been said about the importance of science and the value of technical instruction, or of hand-training, as I should prefer to call it, it is unfortunately true that in our system of education, from the highest school downwards, both of them are sadly neglected, and the study of language reigns supreme.

This is no new complaint. Ascham, in 'The Schoolmaster,' long ago lamented it, and Milton, in his letter to Mr. Samuel Hartlib, complained 'that our children are forced to stick unreasonably in these grammatick flats and shallows;' and observes that, 'Though a linguist should pride himself to have all the tongues Babel cleft the world into, yet, if he have not studied the solid things in them as well as the words and lexicons, he were nothing so much to be esteemed a learned man as any yeoman or tradesman competently wise in his mother dialect only;' and Locke said that 'Schools fit us for the university rather than for the world.' Commission after commission, committee after committee, have reiterated the same complaint. How then do we stand now?

I see it indeed constantly stated that, even if the improvement is not so rapid as could be desired, still we are making considerable

progress in this direction. But what are the facts? Are we really making progress?

On the contrary, the present rules made by the Education Department are crushing out elementary science. There are two heads Elementary Science may be taken under, which are known as 'class subjects' or 'specific subjects.' Under the Code there are four so-called class subjects, only two of which may be taken. One of them must be English, which I am afraid in a great many cases practically means grammar. Consequently, if either history or geography were selected for the second, elementary science must be omitted. It has been pointed out over and over again that the tendency must be to shut out elementary science, because the great bulk of the schools are sure to take history or geography. The last report shows how grievously this has proved to be the case. The President and Vice-President of the Council, in the report just issued, say that elementary science 'does not appear to be taken advantage of to any great extent at present.' This is a very mild way of putting it. Mr. Colt Williams says, more correctly, that 'specific subjects are virtually dead.' Mr. Balmer observes that 'specific subjects have been knocked on the head.' In fact, out of the 4,500,000 children in our schools, less than 25,000 were examined last year in any branch of science as a specific subject. Take, for instance, the laws of health and animal physiology. Only 14,000 children were presented in this subject. Yet how important to our happiness and utility. Neither Mr. Bright nor Mr. Gladstone, I believe, ever learnt any English grammar, and as regards the latter it has been recently stated, by one who knows him intimately, that the splendid health he enjoys is greatly due to his having early learnt one simple physiological lesson.

Turning again to the class subjects, last year elementary science was only taken in 45 schools out of 20,000. This, however, was not because it was unpopular, but simply on account of the rules laid down in the Code. According to Mr. Williams, grammar—which, under compulsion, was taken in over 19,000 schools—was not a popular subject, and if only the Code permitted it, it would be dropped in half his schools. One of her Majesty's inspectors, in the last report, seemed to regard it as

an advantage of grammar that 'its processes require no instruments, no museums, no laboratories.' This, on the contrary, is one of its drawbacks. It fails to bring the children into any contact with nature. Indeed, Helmholtz is probably correct in his view that the rules of grammar, followed as they are by long strings of exceptions, weaken the power of realising natural laws. Again, it is surely undesirable to attach so much importance to the minutiæ of spelling. Dr. Gladstone has shown that the irregularities of English spelling cause, on an average, the loss of more than one thousand hours in the school life of each child. 'A thousand hours in the most precious seed-time of life of millions of children spent in learning that *i* must follow *e* in "conceive" and precede it in "believe"; that two *e*'s must, no one knew why, come together in "proceed" and "exceed," and be separated in "precede" and "accede"; that "uncle" must be spelt with a *c* but "ankle" with a *k*, and numberless other and equally profitless conventions! And this while lessons in health and thrift, sewing and cooking, which should make the life of the poor tolerable, and elementary singing and drawing, which should make it pleasant and push out lower and degrading amusements, are in many cases almost vainly trying to obtain admission.' At present we really seem to follow the example of Democritus, who is said to have put out his eyes in order that he might reason better. It was a truer instinct which identified the 'seer' and the 'prophet.' It seems very undesirable that our rules should be so stringent as to lay down 'a flattening iron' over schools, but if the choice of subjects were dictated at all, why, of all subjects in the world, should grammar, with its dry and bewildering technicalities, be especially favoured? I do not, however, wish to disparage grammar; all I desire is that it should not block the way; that elementary science should have a fair chance. The three objections which are sometimes heard, especially at School Board elections, are over-pressure, over-expense, and over-education. That there is really no general over-pressure Mr. Fitch and Mr. Sydney Buxton have satisfied most impartial judges. Still the relief afforded by a change from literature to science, from books to nature, from taxes on memory to the stimulus of observation, is no doubt of the most grateful character.

Mr. Matthew Arnold, in his recent 'Report on certain Points connected with Elementary Education in Germany, Switzerland, and France,' points out that in German elementary schools there is a 'fuller programme' and a 'higher state of instruction' than in ours. He takes Hamburg as a good typical case, and he tells us that 'the weekly number of hours for a Hamburg child between the ages of ten and fourteen is, as I have said, 32; with us, under the Code, for a child of that age, it is 20.' And then, or I should rather say, 'but then,' 'the Hamburg children have as the obligatory matters of their instruction, Religion, German, English, History, Geography, Natural History, Natural Philosophy, Arithmetic and Algebra, Geometry, Writing, Drawing, Singing, and Gymnastics, thirteen matters in all.' In one of our schools under the Code the obligatory subjects are 'three —English, Writing, and Arithmetic. Of the optional matters they generally take, in fact, four, Singing and Geography . . . and as specific subjects, say, Algebra and Physiology, or French and Physiology. This makes in all, for their school week of twenty hours, seven matters of instruction.' As a matter of fact I have shown that comparatively few children are presented in any specific subject. But even if two are taken, this would only bring up the subjects to half those included in the ordinary German course. Mr. Arnold 'often asked himself' why, with such long hours and so many subjects, the children had 'so little look of exhaustion or fatigue, and the answer I could not help making to myself was, that the cause lay in the children being taught less mechanically and more naturally than with us, and *being more interested*.'

I feel sure there is a great deal in this; variety in mental food is as important as in bodily food, and our children are often tired simply because they are bored.

As to expense, it is really ignorance and not education which is expensive.

But then we hear a great deal about over-education. We need not fear over-education; but I do think we suffer much from misdirected education. Our schoolmasters too often seem to act as if all children were going to be schoolmasters themselves.

It is true that more attention is now given to drawing in

some schools; and this is certainly a matter of very great importance, but some changes must be made in the Code before that development can be made which we should all wish to see. Manual work in boys' schools seems to be exactly parallel with, and in every way analogous to, that of needlework in girls' schools, and I am inclined to agree with Sir P. Magnus that the value of the one kind of teaching should be as fully recognised and assisted by the State as that of the other. Why could they not introduce carpentering or something of that sort which would exercise the hands of the boys as well as their heads? I have myself tried an experiment in a small way in the matter of cobblery, and although the boys did not make such progress as to be able to make their own boots, they no doubt learned enough to be able to mend them.

The introduction of manual work into our schools is important, not merely from the advantage which would result to health, not merely from the training of the hand as an instrument, but also from its effect on the mind itself.

I do not indeed suppose that, except in some special districts, we can introduce what is known as the 'half-time' system, in the sense that the children will do ordinary work for wages, though Mr. Arnold tells us in his 'Report on certain Points connected with Elementary Education in Germany, Switzerland, and France,' that in Prussia 'the rural population greatly prefer the half-day school, as it is called, for all the children, because they have the elder children at their disposal for half the day.'

I do not, I confess, see why a system so popular in Germany should be impossible in England; but what seems more immediately feasible is that our boys should be trained to use their hands as well as their heads. The absence of any such instruction is one of the great defects in our present system.

Such teaching need not in any way interfere with instruction in other subjects. Mr. Chadwick has given strong reasons for his opinion, 'That the general result of the combined mental and bodily training on the half-school time principle is to give to two of such children the efficiency of the three on the long school time principle for productive occupations.'

Again, the Commissioners on Technical Instruction, speaking of schools in the Keighley district, say, 'The most remarkable

fact connected with these schools is the success of the half-timers. The Keighley district is essentially a factory district, there being a thousand factory half-timers attending the schools. Although these children receive less than fourteen hours of instruction per week, and are required to attend the factory for twenty-eight hours in addition, their percentage of passes at the examination is higher than the average of passes of children receiving double the amount of schooling throughout the country.'

In our infant schools we have generally object lessons or some more or less imperfect substitute of that kind for the very young children. But after this, with some rare exceptions, our teaching is all book-learning, the boy has no 'handwork' whatever. He sits some hours at a desk, his muscles have insufficient exercise, he loses the love and habit of work. Hence to some extent our school system really tends to unfit boys for the occupations of after life, instead of training the hand and the eye to work together; far from invigorating the child in what M. Sluys well terms, 'le bain refraichissant du travail manuel,' it tends to tear his associations from all industrial occupations, which, on the other hand, subsequently revenge themselves, when their turn comes, by finally distracting the man from all the associations and interests of school life.

This principle of manual instruction has been elaborately worked out in Sweden, where it is known as the 'Slöjd' system, by Mr. Abrahamson and Mr. Solomon, and has been already adopted in over six hundred schools. It has recently been the subject of a very interesting memoir by M. Sluys,[1] who was deputed by the Belgian Minister of Education to visit Mr. Abrahamson and report upon it. The importance of manual practice as an integral part of all education was long ago realised by the genius of Rousseau, and first worked out practically and as regards young children by Froebel. Basedon indeed, in 1774, introduced manual instruction as a counterpoise to mental work; but Finland seems to be the country where the value of manual instruction as an integral part of education was first realised, when, thanks to the efforts of Uno Cygnæus, the Government

[1] *L'Enseignement des Travaux Manuels dans les Ecoles primaires de garçons en Suède.* Rapport prés. à M. Le Min. de l'Inst. Publique par M. A Sluys, et conclusion de MM. A. Sluys et H. Vankalken. Bruxelles, 1881.

enacted in 1866 that it should be an obligatory subject in all primary and normal schools. The system of Basedon appears to have been less successful than might have been expected, probably in great measure because the instruction was confided to artisans, whereas it seems to be of great importance not to separate the direction of the manual from that of the mental training.

There have been indeed two very different points of view from which manual instruction has been recommended. The first looks at the problem from a specially economical point of view. The school is arranged so as to elicit the special aptitudes of the pupils; to prepare and develop the children as quickly and as completely as possible for some definite trade or handicraft, so as to, if possible, assure them, when leaving school, the material requisite of existence. In this way it is maintained that the wealth and comfort of the nation can be best promoted.

The second theory regards the manual instruction as a form of education; the object is to give to the hand, not so much a special as a general aptitude, suitable to the varied circumstances of practical life, and calculated to develop a healthy love of labour, to exercise the faculties of attention, perception, and intuition. The one treats the school as subordinate to the workshop, the other takes the workshop and makes it a part of the school. The one seeks to make a workman, the other to train up a man. In short, the Swedish system is no preparation for a particular occupation, but is intended as a means of general development. The time devoted to manual instruction is there from four to six hours a week.

Of all handiworks carpentering has been found most suitable. The work of the smith strengthens the arm, but it does not train the hand—tends rather indeed to make it too heavy. Moreover, the work is rather hard for children. In basket-work the fingers alone are exercised; few tools are required or mastered, the younger children cannot finish off a basket, and it is an additional disadvantage that the work is done sitting. Bookbinding is too limited and too difficult, moreover it does not afford sufficient opportunities of progressive difficulty. Work with cardboard is in many respects very suitable, but it trains the fingers rather than the hand, and does not sufficiently develop the

bodily vigour. On the whole, then, working in wood is recommended, and it is remarkable that it was long ago suggested by Rousseau.

Tout bien considéré, le métier que j'aimerais le mieux qui fût du goût de mon élève est celui de menuisier. Il est propre, il est utile, il peut s'exercer dans la maison, il tient suffisamment le corps en haleine ; il exige dans l'ouvrier de l'adresse et de l'industrie, et dans la forme des ouvrages que l'utilité détermine, l'élégance et le goût ne sont pas exclus.

Abrahamson has prepared a hundred models, which the children are successively taught to make, commencing with a very easy form, and passing on to others more and more difficult. The series begins with a simple wooden peg, and the series includes a paper-knife, spoon, shovel, axe-handle, flower-stand, mallet, bootjack, a cubic décimètre, a mason's level, chair, butter-mould, and ends with a milkpail.

When the model is finished it is inspected. If unsatisfactory, it is destroyed; yet if it passes muster the child is allowed to take it home. It is all his own work; no one has helped. It is indeed found important that the children should make something which they can carry away, and much stress is laid on the condition that they should make it entirely themselves, from the beginning to the end. If one does one part and one another, if one begins and another finishes it, neither practically takes much interest in it.

The objects made are all useful. At first some were selected which were playthings, or merely ornamental, but the parents took little interest in articles of this character; they were regarded as mere waste of time, and have gradually been discarded.

The different objects must be gradually more difficult. When the child is able to make any model satisfactorily he passes on to the next. He must never be kept doing the same thing over and over again. Useless repetition is almost sure to disgust. The man has to do the same thing over and over again, but the child works to learn, not to live.

Lastly I may mention that the objects selected are such as not to require any expensive outlay in the matter of tools.

The result, we are assured, gives much satisfaction to the parents and great pleasure to the children.

A weak point in our present educational system is that it does not awaken interest sufficiently to enable children generally to continue their education after leaving school. Yet in addition to all other advantages a wise education ought greatly to brighten life. Browning speaks of the wild joy of living; but that is not the sense in which life is ordinarily spoken of by the poets. They generally allude to it in a very different sense, as when Pope spoke of it as 'Life's poor play,' observing in another passage—

> These build as fast as knowledge can destroy,
> In folly's cup still laughs the bubble joy ;

while Lytton said—

> With each year's decay,
> Fades, year by year, the heart's young bloom away.

A well-known hymn lays it down as an incontrovertible proposition—

> Brief life is here our portion,
> Brief sorrow, short-lived care.

But this is to a great extent our own fault. Too often we fritter away life, and La Bruyère truly observes that many men employ much of their time in making the rest miserable. Few of us feel this as we ought, some not at all. We see so clearly, feel so keenly the misery and wretchedness around us that we fail to realise the blessings lavished upon us. Yet the path of life is paved with enjoyments. There is room for all at the great table of Nature. She provides without stint the main requisites of human happiness. To watch the corn grow, or the blossoms set; to draw hard breath over the ploughshare; or to read, to think, to love, to hope, to pray: 'these,' said Ruskin, 'were the things that made men happy.'

Some years ago I paid a visit to the principal lake villages of Switzerland in company with a distinguished archæologist, M. Morlot. To my surprise I found that his whole income was £100 a year, part of which, moreover, he spent in making a small museum. I asked him whether he contemplated accepting any post or office, but he said, Certainly not. He valued his leisure and opportunities as priceless possessions far more than

silver or gold, and would not waste any of his time in making money. Just think of our advantage here in London. We have access to the whole literature of the world; we may see in our National Gallery the most beautiful productions of former generations, and in the Royal Academy and other galleries the works of the greatest living artists. Perhaps there is no one who has ever found time to see the British Museum thoroughly. Yet consider what it contains; or rather, what does it not contain? The most gigantic of living and extinct animals, the marvellous monsters of geological ages, the most beautiful birds, and shells, and minerals, the most interesting antiquities, curious and fantastic specimens illustrating different races of men; exquisite gems, coins, glass, and china; the Elgin marbles, the remains of the mausoleum of the temple of Diana of Ephesus; ancient monuments of Egypt and Assyria; the rude implements of our predecessors in England who were coeval with the hippopotamus and rhinoceros, the musk-ox, and the mammoth; and the most beautiful specimens of Greek and Roman art. In London we may unavoidably suffer, but no one has any excuse for being dull. And yet some people *are* dull. They talk of a better world to come, while whatever dullness there may be here is all their own. Sir Arthur Helps has well said, 'What! dull, when you do not know what gives its loveliness of form to the lily, its depth of colour to the violet, its fragrance to the rose; when you do not know in what consists the venom of the adder, any more than you can imitate the glad movements of the dove. What! dull, when earth, air, and water are all alike mysterious to you, and when as you stretch out your hand you do not touch anything the properties of which you have mastered; while all the time Nature is inviting you to talk earnestly with her, to understand her, to subdue her, and to be blessed by her! Go away, man; learn something, do something, understand something, and let me hear no more of your dullness.'

Not, of course, that happiness is the highest object of life, but if we endeavour to keep our bodies in health, our minds in use and in peace, and to promote the happiness of those around us, our own happiness will generally follow.

NOTES ON THE COST OF MANUAL TRAINING IN THE PUBLIC ELEMENTARY SCHOOLS OF LONDON.

By Edric Bayley.

There were, for the nine months ended Lady Day, 1887, on the rolls of efficient elementary schools in London, 615,335 children.[1] Of this number, 405,972 were in the Board Schools, and of these, 95,922, or rather less than one-fourth, (23·6) were above the age of eleven years, and about the same proportion (24·8) were in, or above the fourth standard.[2]

It is desirable that some manual training should be given to children in the elementary schools, and probably the age of eleven, or the fourth standard, would be a proper time for its commencement.

The appropriate training, for boys alone, might be working in wood; for boys and girls, modelling in clay; and for girls alone, cookery and laundry work.

Fixing the age of eleven years, or the fourth standard, as the time for the commencement of manual training, we arrive at the number of 150,000 children to be provided for.

We have to consider the cost of accommodation, tools, materials, and teachers.

In very few cases could accommodation be found in existing buildings; sufficient sheds might probably be erected in the larger playgrounds at no great expense, but to justify a loan for the cost of erection, the workshops must be substantially built. The cost of erection may be put at £256, the average building cost of the present cookery centres.

Mr. Henry H. S. Cunynghame estimates that a workshop to accommodate thirty pupils could be fitted up with the requisite benches and tools at a cost of £70. He states that the wear and tear of tools would be small, and that a standard of deal of good quality, costing about £12, would probably be sufficient

[1] Report of Bye Laws Committee of the School Board for London for the nine months ended Lady Day, 1887.

[2] Report of School Management Committee for the year ended March 25, 1887

for 300 boys for a year, and he puts the salary of a competent instructor at £2 a week, and of an assistant at £1 a week.[1]

Putting the yearly cost of repairs and painting of buildings at £5, the depreciation in benches and tools at £14, (or twenty per cent. on £70), the cost of materials at £9, and the cost of teachers at £3 a week for forty weeks, we arrive at a yearly cost of £148 for each workshop.

The cost of materials would probably be decreased by the sale to the boys of some of their own work.

Mr. Cunynghame estimates that the fitting up of a workshop of similar accommodation for modelling in clay would not cost more than £24. The yearly cost would be about £134.16*s*.

The cost of fitting up a cookery centre is about £53. The cost of materials is more than recouped by the sale of cooked food. The average price of teaching for each centre is £72. This added to £15.12*s*., for repairs, painting, and depreciation, comes to £87.12*s*. as the yearly cost.

The cost of fitting up a laundry centre ought not to be more than £50. The cost of material would be recouped by the price paid for articles washed. The teaching should not exceed £60 a year. The yearly cost may be put at £75.

The lessons in manual training should be of two hours' duration, and be given twice a week. To allow of the introduction of manual training, the school hours might properly be extended from twenty-seven and a half hours a week, as at present, to thirty hours a week. This would allow three classes a day, or fifteen classes a week of thirty each, or 450 a week; but as the lesson must be repeated during the week, each class-room would only suffice for 225 children.

The present rateable value of the metropolis is £30,715,485. A rate of a penny in the pound, after an allowance of ten per cent. for loss on collection, will give £115,000.

To provide accommodation for 150,000 children, 664 centres would be required; but, as sixty-six cookery centres already exist,

[1] *Technical Education.* Paper read before the International Congress at Bordeaux, Henry H. S. Cunynghame, Assistant Charity Commissioner.—*Uses, Objects, and Methods of Technical Education in Elementary Schools.* H. S. Cunynghame, *Journal of the Society of Arts*, Feb. 18, 1887.—Evidence of Mr. Cunynghame before the Special Committee of the School Board for London on the subjects and models of instruction in their schools.

only 598 new workshops need be erected, at a cost of £256 each, or £153,088, which would be equal to $1\frac{1}{3}$ (1·330) of a penny in the pound. This sum of £153,088 could be borrowed from the Metropolitan Board of Works in the usual way, and payment of principal and interest be spread over a term of fifty years. The yearly payments on this account would be about £6,506, which, added to the estimated yearly cost of maintenance, £78,023, would bring the total yearly cost to £84,529, or rather over two-thirds (0·725) of a penny in the pound.

A Government grant of 4*s*. a head on 149,400 children would be £29,880. The yearly cost of the existing cookery centres after allowing for the Government grant is estimated at £2,650.

These sums of £29,880, and £2,650, together £32,530, taken from £84,529, leave £51,999, or less than a halfpenny (0·452) in the pound as the increased yearly charge to the metropolis for the maintenance of the centres.

The initial cost of establishment would be £153,088 for building, and £32,396 for fittings and tools, together £185,484, or rather less than $1\frac{3}{5}$rds (1·612) of a penny in the pound; but as the first of these sums would be raised on loan, the actual payment in the first instance for these centres would be only £32,396, or less than a third (0·282) of a penny in the pound.

It must further be remembered that the supply of class-rooms for manual instruction will ease the pressure on the existing class-rooms, which could only have been relieved by more building; and that the additional teachers required for manual training will only be equivalent to the addition which would have been required to meet increased population.

The number of class-rooms, children under instruction, initial cost of buildings, fittings, and tools, and yearly cost of maintenance would be somewhat as follows:—

INITIAL COST.

	£ s.	£ s.
200 Centres for Wood-working for 225 Boys (=45,000)—		
For Building	256 0	
For Fittings and Tools . . .	70 0	
	326 0	= 65,200 0
200 Centres for Modelling for 225 Boys and Girls (=45,000)—		
For Building	256 0	
For Fittings and Tools . . .	24 0	
	280 0	= 56,000 0
132 Centres for Cookery for 225 Girls (=29,700)—		
For Building	256 0	
For Fittings and Tools . . .	53 0	
	309 0	= 40,788 0
132 Centres for Laundry for 225 Girls (=29,700)—		
For Building	256 0	
For Fittings and Tools . . .	50 0	
	306 0	= 40,392 0
664 Centres 149,400 Children		202,380 0
66 existing Centres at £256 each =		16,896 0
		185,484 0 (1·612 of £1)
598 at £256 to be raised by Loan, repayment to be spread over 50 years .		153,088 0 (1·330 of £1)
		32,396 0 (0·282 of £1)

ANNUAL COST.

	£ s.	£ s.
Repairing and Painting of Buildings	5 0	
Depreciation on Fittings and Tools (20 per cent on £70) .	14 0	
Materials	9 0	
One Teacher at £2 for 40 weeks	80 0	
One Assistant at £1 . . .	40 0	
	148 0	= 29,600 0
Repairing and Painting of Buildings	5 0	
Depreciation on Fittings and Tools (20 per cent. on £24) .	4 16	
Materials	5 0	
One Teacher at £2 for 40 weeks	80 0	
One Assistant at £1 . . .	40 0	
	134 16	= 26,960 0
Repairing and Painting of Buildings	5 0	
Depreciation on Fittings and Tools (20 per cent. on £53) .	10 12	
Materials		
Teachers	72 0	
	87 12	= 11,563 4
Repairing and Painting of Buildings	5 0	
Depreciation on Fittings and Tools (20 per cent. on £50) .	10 0	
Materials		
Teachers	60 0	
	75 0	= 9,900 0
		78,023 4
Payment of Materials and Interest of Loan		6,506 0
		84,529 4 (0·725 of £1)
Government Grant at 4s. per head on 149,400 Children	29,880 0	
Present Cost of Cookery Centres	2,650 0	
		32,530 0
		51,999 4 (0·452 of £1)

EDRIC BAYLEY.

ARE WE DECAYING?

From *The Scotsman* of September 24, 1887.

SOME years ago—so runs the tale—a party of Englishmen set to work to try on the old armour which formed part of the decorations of a nobleman's hall. The result was very striking. Not a man of them could get a suit of the armour on. Modern bone and muscle had evidently come to the front in the inevitable struggle for existence in which, the scientists tell us, high and low life alike engages. On some such groundwork as is formed by the incident just related, people have come to credit the belief that we of this nineteenth century are bigger and finer men than our forefathers of the twelfth or thirteenth. We shake hands with ourselves, and are contented to regard our race foremost in physique, as well as in science, art, and all the other things which make up the wondrously complex existence we live out to-day. Recently, however, those of us who read the medical and scientific journals have found reason to modify this sweeping assertion. Very plain hints have been given that our national physique is by no means all that could be desired. Scientists have been comparing figures, and statisticians have compiled tables; while social reformers, in their turn, have been bewailing the fact that, as regards the masses, their lives are tending towards degeneration and wholesale decay of the race. These are alarming statements enough. Let us see if the case of those who assert that we are degenerating as a race is built upon stable ground, and if, in the event of the tale proving true, there remains for us any hope of recovering the way we have lost in the healthy course of life's development. It was Mr. Cantlie, a London surgeon, who first sounded the note of alarm. The average Londoner, he told us, rarely exists for a generation-time. He comes of a short-lived stock to begin with; and the conditions under which he exists all tend towards shortening his days, by weakening his energies and enfeebling his physique. Man, it must be noted, is not exempt from the laws which proclaim the dependence of living things upon their surroundings. Want of fresh air and light, overcrowding, excess of work and

worry, lack of proper food as regards quantity or quality, or both, are conditions which as surely affect men as they mould and conform lower animals and plants. Then comes into play the great law of heredity—the infallible axiom of life, that 'like begets like.' A race of feeble folk in one generation beget the opposite of giants in the next. Mr. Simon long ago remarked how the gain of even a little extra health in one decade is multiplied trebly for all decades to come. So is it with disease and weakness. The effects of lowered physique now mean not only feebleness in the next generation, but perpetuated weakness; and this last leads to that degeneration of body which is the prelude to early death and to race decay. Looking at the masses of our city populations, 'cabin'd, cribb'd, and confined' as they are, it was not wonderful that Mr. Cantlie should have followed the ordinary lines of scientific logic in his declaration that Londoners are a short-lived race, and that they tend to die out rather than to run onwards towards the making of old families, and of persistent stocks. Lord Brabazon for years back has been reiterating the same opinion as a strong and practical argument in favour of open spaces for the recreation of the masses. London increases by nearly 350,000 souls each year. Large numbers of well-built country units are added annually to the city population; but this healthy stock, subjected to the unhealthy conditions of city life, soon goes the way of all the rest. Lord Brabazon uttered only a truth—ghastly enough in its way, but all-familiar to physiologists—when he said that if the city could be isolated and all intermarriage with the country prevented, the deterioration of the physique which would ensue would be such as 'to horrify the public,' and 'arouse a sense of national danger.' It is high time, therefore, that as a nation we awoke to the real meanings of the Cassandra-like warnings which science and sociology are dinning into our ears. The whole question is one of health, of better conditions of physical life, of extended opportunities for a more wholesome existence, as represented chiefly by pure air, good food, temperance, cleanliness, and means of healthful recreation. Not by any magical process can we grow in strength. The means are of the simplest character. Unfortunately, in the crush and crowd of modern life, it is

exactly these simple means of health which are hardest to procure.

The latest of the warnings which have reached the public ear comes from no less notable a source than the Director-General of the Army Medical Department himself. It recently fell to the lot of Sir Thomas Crawford, M.D., to deliver an address before the British Medical Association in conclave assembled in the Irish capital. In the course of that address the lecturer adduced certain very pertinent facts concerning the question of race decay. His figures were drawn from the records of army enlistment, and as these records originate in the skilled medical examination of recruits, the statistics he offers are of high value from their undoubted accuracy. In the period from 1860 to 1864 inclusive no fewer than 32,324 examinations of recruits were made by army surgeons. The number of men required averaged 6,465, this being a small one, and the fact therefore telling in favour of rigid tests being applied to ensure the efficiency of the material offered in the shape of fighting men. The rejections, from all causes, numbered 371·67 per 1,000. The next period, from 1882 to 1886, presents us with 132,563 men who offered themselves for enlistment. The rejections here amounted to 415·58 per 1,000. The increase in rejections was, therefore, of a most marked character. Sir Thomas Crawford can explain it in one way only. The masses from whom the army recruits are chiefly taken, he tells us, 'are of an inferior physique to what they were twenty-five years ago.' That is the plain unvarnished truth, and as such it is by no means of a palatable kind to those who regard the national welfare as a thing to be conserved and prized. Examined more closely, it is found that these statistics reveal certain additional facts of interest. Lord Brabazon and Sir Thomas Crawford are in complete agreement regarding the deteriorating effects of town life on the masses. Among city-bred lads the proportion of rejections is highest; while the exact causes of their dismissal are such as point to a plain inferiority of body in some of the most vital characters of the healthy man. The town-bred recruit is thus of lighter weight than his country neighbour. He has, in other words, not attained a full development of frame. Again, his chest is narrowed beyond natural limits, and with this item

we must associate a diminished lung capacity and an inferior breathing power. Why is it, for instance, that consumption, as a rule, attacks the apices or tops of the lungs first of all, and why does that fell disorder find a natural starting-point in the upper region of the breathing organs? The answer is simple enough. Because these are the parts of the lungs which even in the ordinary chest are least used, and, according to the great law of use and disuse, disease always attacks inert organs before those which are naturally and healthily employed. Applying this fact to the narrow-chested person, we see how much more susceptible to the inroads of chest disease the lungs of such a person must be. The weakly chest, in truth, implies a body which is handicapped in the race for life, and which has lost its staying power in the contest for existence. Again, the town-bred recruit is undersized, just as he is light-weighted, when compared with the man from the fresh air and the fields. His teeth, too, are found to share the process of physical degeneracy; and this condition, in turn, militates against healthy digestion, which is the foundation of all physical strength and bodily weal. The eyesight suffers, too, among other phases of degenerate life. Overcrowding, bad air, and impure food affect the vision in a remarkable way. The rejections for defective sight and eye diseases amounted in Sir Thomas Crawford's experience to nearly 42 per 1,000; and this estimate does not include those cases whose defects of vision were of such obvious kind as to exclude them even from the recruiting sergeant's list. A peculiar form of ophthalmia or eye inflammation is found, as Sir Thomas Crawford remarks, wherever we discover bad ventilation and impure air. It is seen in the bazaars of Cairo; you meet with it in the cabins of Connemara; and it crops up in school and prison alike, where the fresh air of heaven is not made a free gift to man. Even animals exhibit this form of eye disease when their stables or pens are not properly ventilated. At the beginning of the century soldiers were witnessed, invalided on this account, groping their way, stick in hand, through the streets. Nowadays, with improved ventilation, this disease is unknown in the army. Yet in our courts and slums it is ever present, telling its own mournful story of the lack of at least one necessity of healthy life. The warnings

which are thus being showered upon us from one quarter or another should surely fall upon ears ready to hear and to obey the dictates of the science which teaches men how to attain to length of days. If as a race we have started on the way of physical backsliding, it is not too late to apply the break to the vehicle, and to arrest its rapidly cumulative progress on the downward path. There are plenty of agencies already at work in the interests of national health, which means national wealth and prosperity both. But we require these agencies to be increased in number and in power a thousandfold before we may congratulate ourselves that the tide has turned towards better days and longer life for us all. The opening of free recreation-grounds and breathing spaces for the people; the encouragement of physical exercises in the schools, especially the teaching of the plain laws of health, frugality, and temperance; the abolition of slums and the better housing of the masses—these are the principal means of reforming the tendency to race decay. The great statesman whose cry was *omnia sanitas* perchance saw with prophetic vision the prospect of better things in the way of health for the people than had been attained in his day. It remains for his successors to carry out a policy of national health-aid which shall make the people healthy, and because healthy, prosperous and happy.

PHYSICAL TRAINING.

(Address given by the Earl of Meath at the Liverpool Gymnasium, October 12, 1887.)

It may not be out of place on an occasion like this to point out how gymnastic training has confessedly exercised a not unimportant influence in the making of a nation; and I hope that I may be able to show, before I have finished my story, that it contains a moral which this country would do well in all seriousness to consider. The crushing defeat which the Prussians sustained in the battle of Jena at the hands of Napoleon in 1806 forced them to look to the causes of that defeat, and to take steps to re-establish their position in Europe. The world

is aware how, under the leadership of Prince Bismarck, Germany has risen to the very first rank amongst the nations of the world, but it is not so well known that the soldiers who won the battles of Sadowa and Sedan owe their success not merely to the skill of their officers or to their own bravery, but to the ability, forethought, and patriotism of men, many of whom had been in their graves for years when these battles were fought. Amongst these may be mentioned Johann Jahn and Adolph Spiess. Jahn recognised that the defeat of Jena could be traced to more causes than that of superior generalship. He was dissatisfied with the material of which the Prussian army was then composed. He detected in it moral and physical defects, and he thought he saw in it a flabbiness both of muscle and of moral fibre. The young men who filled the regiments of his country were, to his mind, wanting in hardihood, in physical strength, in activity, and in love of country, and he determined to devote his life to the improvement of the raw material from which the armies of his dear Fatherland would have to be recruited. It was not long before his idea assumed a practical shape. In 1811 he began to form the 'Turner-Vereine,' or gymnastic associations, which have played such an important part in the development of the German race. These associations gradually grew in number until there was hardly a village which could not boast of its gymnastic corps and of its open-air practising-ground. As it was Jahn's desire to foster a spirit of patriotism among the youth of his country, as well as to develop their bodies, he framed a code of rules to be observed by the members of the association when assembled in the field of exercise, some of which did not escape criticism, and which brought him into no little trouble. The benefits conferred by these associations on the German youth, however, gradually became apparent to the nation, and in 1840 Adolph Spiess was instrumental in introducing into German elementary schools a system of compulsory physical training. In Jahn's voluntary gymnastic associations only those youths who had a taste for active exercise were brought under physical training, whilst the weaklings and those who in all probability most needed physical development were neglected; but when every German lad had to pass through a compulsory course of gymnastic training, the march to Paris

may already be said to have commenced. Germany is not the only nation which has recognised the importance of training the body as well as the mind. Sweden and Switzerland have for some years laid great stress on gymnastic training, and France has lately followed in their footsteps. Although Sweden is a poor country, she spends large sums annually on the physical training of children of both sexes in her national schools. The German thinks that gymnastics makes a child 'frisch, frei, fröhlich, und fromm,' which may be freely translated as 'lively, lissom, light-hearted, and leal.' We do not seem to care much what the child is like in character or in body as long as we can stuff into its poor little brain a recognised quantity of mental food, which it does not assimilate, which is forgotten in a year or two after leaving school, and which from its unpractical character, even if remembered, is of little real advantage to it in after life.

It is of the first importance to every one to be possessed of a healthy and vigorous body. Why then do we neglect the training of the bodies of our children, as if it were a matter to be left to chance? If the mass of the children in Great Britain were country-bred there might be some excuse for such conduct, but the exact reverse is the case. There are two town-bred to every country-bred child in this country, and the proportion is annually growing in favour of the former. This is a very serious fact, for it means the certain degeneration of the race unless steps are taken to counteract the downward tendency.

From time to time notes of warning have been sounded in our ears. A quarter of a century ago Dr. Hayles Walsh delivered a lecture upon the degeneracy of town populations. Mr. Cantlie, a London surgeon, was one of the first to point out that the average Londoner rarely exists for a generation-time. From inquiries made at the London Hospital, out of 800 cockneys only four were to be found of the fourth generation. Sir Thomas Crawford, M.D., the Director-General of the Army Medical Department, lately told the British Medical Association that in twenty-five years the number of rejections for the army have increased from 371·67 per thousand for the years 1860–64 to 415·58 for the years 1882–86, showing an excess of 43·91 per thousand in favour of 1860–64. He says, 'There is evidence of

perceptible deterioration or degeneration of type in the lower order of the people. . . . In seeking for an explanation of this apparent deterioration I have been forcibly impressed with the fact that the recruits drawn from town-bred populations give by far the largest proportion of rejections, while the causes of rejections usually indicate a decidedly inferior physique. The inferiority is shown by the difference in weight between town and country recruits, as well as by the greater frequency of rejections for want of sufficient capacity of chest, loss and decay of teeth, and diminutive stature.'

Dr. Fothergill, in a paper read before the Anthropological Section of the British Association at Manchester on September last, and which has been republished in this month's 'National Review,' says, 'It has long been recognised that town populations have a tendency to deteriorate; . . . the facts have long been recognised and are notorious. Compare the people seen on market day at Carlisle, Wetherby, or Peterborough, with the population encountered at Shoreditch, Hammersmith Broadway, Marsh Lane, Leeds, and the towns of the great industrial hives of Lancashire and Yorkshire generally.'

Similar evidence has been given by Sir Crichton Brown in his report on the condition of children in some of the London Board schools. Mr. Charles Roberts, F.R.C.S., in an article published in this month's 'Fortnightly Review,' says that an examination of the statistics published by Sir Thomas Crawford in the report to which I have already alluded leads him (Mr. Roberts) to an exactly opposite conclusion to that arrived at by Sir Thomas. But Mr. Roberts himself acknowledges that the average stature of a native of London (a city which recruits its inhabitants from all parts of Great Britain and Ireland) is half an inch short of that of the whole kingdom; that 'Bristol, with a fairly mixed but local population, shows similar relation to the counties of Somerset and Gloucester;' and that at Sheffield, where the industrial class is much in excess of other classes, the stature is about an inch less and the weight about 10 lbs. less than that of the West Riding of Yorkshire. Mr. Roberts, though sanguine as to the future of our national physique, is not so enamoured of the present condition of things as not to desire that it should be improved. He says 'physique . . . and its variations

are dependent on and controlled by food, exercise, and sanitary surroundings. . . The taste for athletic exercises, gymnastics, boating, skating, and cycling, so enthusiastically practised by the educated classes, is extending to the masses; while the agitation for the introduction of physical training, technical education, and handicrafts into elementary schools promises well for the future of their children. Much, very much remains to be done to rescue our still underfed and overcrowded town population from the insanitary conditions that environ them; but beyond what is already being done, the chief thing to do now is to impress on all persons having charge of the education and management of children, from the Vice-President of the Council to the youngest pupil-teacher, that physical activity is the law which regulates the growth and development of the body, and lays the foundation of both a good physique and an active, intelligent, and teachable mind; and to secure this more time and more skill in teaching physical exercises in schools, and more open spaces and playgrounds, are absolutely necessary.' As one who has worked for several years to obtain these objects, I welcome the expression of this opinion; and its force is enhanced when we remember that the above words are from the pen of no pessimist, but are those of one who views the physical condition of the masses from an optimistic point of view. Dr. Roberts seems to be of opinion that *some* time and *some* skill are expended in our national schools in the teaching of physical exercises. I fear that the amount of time and skill thus expended is infinitesimal in quantity.

In London, owing to the generosity of private individuals, and of the Metropolitan Public Garden Association, Swedish drill is taught to the girls in a few of the schools; but although the chairman and majority of the Board are favourably inclined to the introduction of physical exercises into the school curriculum for both sexes, they are unable to carry out their desires, as school boards are not permitted by law to expend money for this purpose, nor is any Government grant given for proficiency in physical exercises. Until such exercises are made compulsory in all national schools, until the Board schools are empowered to build gymnasia and expend money in the payment of teachers, and until Government grants are given for improved physique, it

will be useless to expect any change in the health and strength of the children of our large towns.

Dr. Brookes, of Much Wenlock, who for years has advocated the introduction of physical exercises as a grant-bearing compulsory subject into the educational curriculum of our Board and national schools, has practically shown that by a system of chest and limb measurement it is possible to gauge progress in physical development made by a class of children, and to estimate the grant which should be given in accordance with a fixed scale of payment. The Government has promised to introduce next session into Parliament a Technical Education Bill. The friends of national physical education should endeavour to incorporate in that Bill a clause authorising Board schools to expend money on physical training, making it compulsory (except in cases where a medical certificate of exemption can be produced), and instructing the Education Department to include the subject amongst those mentioned in the code as capable of earning a Government grant. If this were done, and if Board school authorities were seriously to consider whether they could not with advantage follow the example set by some of the German and French national schools, where food is supplied to the scholars once a day at an exceedingly cheap rate, we should, I believe, within a few years notice a marked improvement in the physique of our city-bred young men and women. There are some persons who appear to think that strength of constitution and nerve are qualities of very little use in the nineteenth century. The very reverse is the case. Our ancestors lived quiet, peaceful, humdrum lives compared with ours. Time was of little consequence to them. It is the high pressure of life which tells upon the vital force of the present generation. We are always working against time. It is the man of strong constitution and of cast-iron digestive powers who will win in the long run. Look at our Parliamentary leaders; are they not all men with marvellous powers of withstanding fatigue? What sort of chance in the competition of life does a weakly barrister, solicitor, newspaper editor, physician, or a city clergyman possess? If in his youth he has not laid in a stock of health, and if from time to time he does not take care to replenish his store, he will be sure to break down, and be passed in the race by more physically capable

competitors who may be mentally his inferiors. It is the same in the lower ranks of life. The compositor, the printer, the engine-driver, the railway porter, the omnibus conductor, the factory hand, both male and female, the dressmaker, the seamstress, and indeed all workers of both sexes in the social hive, require for success to be possessed of strong and healthy bodies. Health and strength are priceless possessions to the individual, and no less so to the nation. Woe to that country whose sons and daughters are incapable of bearing fatigue! she will be successful neither in peace nor in war. In peace she will be driven by stronger nations out of the markets of the world, and in war neither money nor science will avail to replace the sturdy arms and the steady nerves which should have been forthcoming to defend her.

II. INDUSTRIAL AND TECHNICAL TRAINING.

THE INDUSTRIAL TRAINING OF DESTITUTE CHILDREN.[1]

By Samuel Smith, Esq., M.P.

I have tried on various occasions to bring before the country the pressing need of Social Reform. I have urged that the great danger to our country lay in the growth of a poor, miserable, and degraded proletariat, living in close proximity to the wealthiest aristocracy the world has ever seen. I have tried to sketch the horrible condition in which vast numbers of our countrymen lived, especially in London and the great seaport towns, and have attempted to show that the real hope of the future lay in rescuing the young from the wretched career to which their parents too often consigned them.

Since that time a flood of lurid light has been thrown upon the condition of 'outcast London.' The evidence taken on the dwellings of the poor, the disclosures of the supineness of the London Vestries, the half-starved condition of the children in many of our Board Schools—these and many other revelations have produced a painful impression of the rottenness of our social fabric.

It is no doubt quite possible to exaggerate the magnitude of the evil. I gladly admit that the bulk of the nation has made wonderful progress both morally and materially in the last forty years. Yet I fear it must also be granted that there remains a large deposit of human misery in our midst, wholly untouched by the progress of the nation—just as poor, as corrupt, and as hopeless of improvement as at any previous period of our history. I do not feel at all sure that this deposit

[1] Reprinted, by permission, from the *Contemporary Review* of January 1885.