

AN ADDRESS

ON THE NORMA OF SANITATION IN THE  
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Mr. EDWIN CHADWICK delivered the following Address at the Anerley Schools:—

At our last International Sanitary Congress, held at Brussels, it was agreed that the best immediate direction of the efforts of Sanitarians will be for the reduction of infantile mortality;—because the evils of unsanitary conditions are the most severe with children; because with them those evils are to a very great extent removable by administration;—because those evils may be the most readily acted upon, in the school stages of infantine life; and because the strongest popular sympathy may be evoked to aid our efforts—for men and women of the lowest class, when they understand the matter, will aid in doing for children what they are heedless in doing for themselves. We have to deal with conditions in populous districts, in which half of all who are born are dead within five years. In London, which, by those who have yet to be largely instructed as to Sanitary power and principle, is boasted of as the healthiest city in the world, there are districts in which about half of all born of the lower class are in their graves by their sixth year. On an examination, a few years since, it appeared that the excess of deaths in the school stages of life throughout England and Wales amounted to upwards of fifty thousand annually. Now we have to deal specially with the causes of such deadly excess. Epidemics in the school stages of life, generally occur when children with filthy skins and filthy clothes are massed together and kept together in sedentary constraint during long hours. This institution supplies a normal example, happily not the only one, of the results generally obtainable by the removal of these conditions. This may be elucidated by reference to past conditions, and to the progressive application of principles with the elaboration of which I have had much to do.

Immediately after the formation of the first Poor-Law Board, there fell to our direct control three large establishments for the maintenance of children by contractors for parishes too small to keep up, without disproportionate expense, establishments of their own. In two of them we were confronted with the task of dealing with frightful epidemics. There were as many as one-third of the children down with fever at one time, and a dreadful mortality, both of which properly excited public attention. One of the establishments (Mr. Aubin's, at Norwood) might be said to be, from the benefits derived from its subsequent treatment, the predecessor of such separate establishments as the present. Mr. Aubin at once frankly offered to carry out implicitly all the instructions he received; and he eventually derived great benefit from his practice in doing so. The general opinion of scientists—of curative science—was that the children must have been insufficiently fed, and an augmented dietary was the sole preventive which was recommended to us from that source, and such recommendation was in accordance with popular opinion. We sent Dr. Neill Arnott, who had some perceptions of rudimentary Sanitary Science, and he reported that the great cause was foul air from the conditions in which the children were massed together; and an improved ventilation was the main remedy he prescribed, which was adopted. Then there followed the improved air-cleanliness by drainage and ventilation, skin-cleanliness by head to foot ablutions, not with cold but with tepid water; and, further, by clothes-cleanliness. As to clothes-cleanliness, Mr. Aubin being questioned as to whether clean pinafores every day for the girls was not a luxury, answered that in a family a soiled pinafore or two might not be of any moment, but that several hundred soiled pinafores brought together made an appreciable difference in the purity of the atmosphere, which was to be taken into account. Ophthalmia, which is rife in the low neighbourhoods, was the most difficult disease to keep out and eradicate, but this at last is accomplished by extreme vigilance and cleanliness on admission.

I must here claim credit for the introduction of the half-school time principle, which I got introduced into the Factory Acts, by which all the evils common to the long-time schools are reduced in the same ratio, which is one-half. The prominent evils in those schools are enervation, by the reduction of the natural amount of bodily exercise, and inaptitude for manual labour; distorted spines with girls, injured eyes and near-sightedness, and aggravation of congenital weaknesses in both sexes. These are the common evils of

long-time detention in the common schools, and though they would be largely reduced by the several Sanitary factors—air-cleanliness, ventilation, skin-cleanliness and clothes-cleanliness, yet if even clean children were a long time massed together in the open air, they would still be subjected to some aerial impurity from their own atmosphere, and to the evils of excessive bodily constraint. The saving of time from excessive sedentary desk-work facilitated the introduction of physical exercises, of which the military drill and naval exercises were the most convenient. These introductions have been supplemented and relieved by various exercises for boys, by swimming, by manual industrial occupations; and appropriate exercises have been provided, with agreeable variations, for girls and also for infants:—such as are the conditions of healthful education which it is the chief object of this visit to display to the members of the Congress. One arrangement to be observed, in passing over the building, is that a separate bed is provided for each child, instead of putting two in a bed as is the common practice. Important Sanitary results have been obtained by this arrangement. The results of the progressive application of the Sanitary factors—air-cleanliness, skin-cleanliness, varied sedentary constraint, increased and improved bodily exercises, of a varied improved dormitory accommodation and improved dietaries—have been gradual reductions of the sickness and death-rates. These were a few years ago reduced to about one-half the sickness and death-rates prevalent amongst the children of the school-ages, but of every class and degree, included in the Registrar-General's returns: that is to say, the improvement was gained with children of the lowest type, a large proportion of whom are brought in with congenital defects and disease upon them. In this institution—taking the mean of the first five years, since 1871, and of the last five years—the mean death-rate for the first five years was 5.8 only; and the mean of the last five years, the years which include, with other improvements, greater care in probationary wards, the mean death-rate has only been 3.4 per 1000, little more than three per 1000! To give an idea of the point attained in this norma of sanitation, I may mention that a gentleman who had visited a number of boarded-out children stated what he considered to be a most conclusive and satisfactory fact, that the death-rate amongst them very little exceeded 2 per cent.; that is to say, did not exceed twenty per 1000, for what must be presumed to be to some extent selected children lodged in selected cottages! The mean of the cases of sickness in the infirmary of the institution, for the

first five years, was 180 per 1000; and for the last five years only 43·8 per 1000, or little more than 4 per cent., which includes very slight cases indeed, such as would pass with little regard in the common schools. I have had normal instances of Sanitation in institutions for children of a superior type where even better results than these have been obtained.

These great Sanitary results, affirmed in other and varied instances, are not of the distant future and the hypothetical, but of the immediate and realized; while their practical application may be generally extended in ways to be shown hereafter, for the prevention of the greater part of the diseases which afflict and destroy life in childhood.

I can only advert shortly to one great topic, of the moral progress which accompanies correct Sanitary and physical progress. It has yet to be understood how much of disorder, of rebellion, of moral depravity, and of crime has its root in physical disorder and depravity. The fever nests and seats of physical depravity from which the regenerated children of the Institution mostly come, are also the seats of moral depravity, disorder, and crime with which the police have the most to do. An example of the disorder arising from physical causes in the common training of children, may be presented from a temporary interruption of progress in this Institution. From such ignorance of principle as is common amongst those bodies to whom the working of scientific factors is confided, without aid or correction—a former managing committee agreed that the military drill—the chief available mode of physical training—was unnecessary, and they dismissed the drill-master. The immediate result of the deficiency of bodily exercise was bodily irritability, and thence uncontrollable mental irritability on the part of the boys;—there were tumults and bolstering in the dormitories, breaking of windows, of chamber utensils, and all sorts of riot and disorder ensued. In less than a fortnight, as was stated to me, damage was done to the amount of more than two hundred pounds—more than three years' salary of the drill-master. The chaplain exhorted and prayed; the masters flogged, and flogged, and flogged; but without effect, as flogging did not touch the seat of the depravity—irritation from the deficiency of physical exercise. At last, the chaplain and the manager besought the restoration of the drill-master and the physical exercise he directed. This was done. The demands of physiology were satisfied, there was quiet sleep in the dormitories; and so it has gone on. Now, wheresoever

we hear of any disorder and rebellion in schools—wheresoever there has been extensive truancy, we may be sure that it is the system or the managers that are in the wrong. At this Institution, at the beginning, there was frequent truancy, but as improvement proceeded, as excessive sedentary constraint was reduced, as the improvements took place in the physical and other exercises, truancy has diminished, and it is now reckoned only in units where it was formerly reckoned in tens.

The half-school-time-principle of instruction, which when properly conducted involves simultaneous class-teaching, is to be credited with a large reduction of school irritation, from the reduced school time. In the common national and other small schools, the single master has at least six classes in as many distinct conditions to deal with, and he can only give effectual tuition to one class at a time. Meanwhile, the others are kept waiting in a state of constraint and irritability. Go into one of the schools, and you soon hear the master's denunciations of disorder, and "namings" and threatenings. In a properly organized half-time school, with simultaneous class-teaching, in which each class has its separate teacher, who attends to that class and no other, the child has no waiting, has no time to think of anything but of the work before him, from the time he enters till the time he leaves the school. By this continuous direct teaching his powers of mental receptivity are exhausted, within the reduced hours, though with an increased interest in the work—if the teaching be good. It is due, however, to sanitation to state, that the half-time teaching being much the same, the later Sanitary improvements have been attended by a reduction of the sickness and death-rates; while the manager states that now "a striking moral aspect has presented itself in connection with our Sanitary improvements; 'the children are far better in temper and disposition than they used to be.'" These calisthenics, this music for their guidance, which to the common eye are expensive and misbefitting luxuries, are in the experiences of Sanitary Science, "formatives" necessary to impart mobility to all parts of the frame, to get rid of clumsiness and to augment health and productive force;—the objects of an economical administration. Now what are the moral and economical results of this mixed mental and physical training on the half-time principle? Formerly, in the era of parochial administration, in the small long-time schools, there was scarcely one out of three of those who had left the parish workhouse schools found in self-supporting occupations. They were found in large proportions amongst the prison populations.

The children of these half-time drilled institutions are found in prison in such proportions no longer: and strictly speaking, they are not found there at all. Allowance being made for cases of irretrievably bad bodily and mental conditions approaching to idiocy,—all but a very small proportion are found in good places of self-supporting industry. With them hereditary pauperism, mendicity, and criminality are extinguished. But what is the cost of this teaching and training power; what the results of the training by the series of school teachers, drill-masters, and bodily trainers? As to the scholastic results, the gain is in years of life, as well as in hours of days made available for productive industry. Including the infant-school teaching, the children on the half-time system attain, by the tenth or eleventh year, results nearly if not quite as good as those attained in the common national or voluntary, or long-time schools, while the cost is little more than one pound per head per annum of the children taught, or less than one-half the cost of the London School Board. Including good teaching in the infant school stage, the three R's are imparted in the five years, at little more than £1 per head, including the physical training, as against more than £2 per head for seven years, without the physical training; gaining two years of time for secondary instruction, with further physical and industrial training; while the long-time National and Board-schools, exclude from advanced secondary education the great bulk of the population who cannot usually afford to keep their children at school beyond their thirteenth year. Thus 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 three on the long-school-time principle for productive occupations.

To conclude for this occasion. It has been accepted as a general proposition, that disease is generated by massing large numbers together; that is to say, massing them in ordinary conditions; and in those conditions the proposition is doubtless true. By the working of this Institution, and of others on the half-time principle, with the light of Sanitary Science, "massing numbers together" is proved to be a great preventive of epidemics, and a means of reducing sickness and mortality to the lowest point of which we have known examples. In education it is held that "massing children together in large numbers" is detrimental to them morally; and that teaching—meaning popular elementary teaching—in small schools is the best. And this is commonly so where large numbers are massed together, and kept together during long hours of

sedentary constraint, in violation of the laws of physiology, under exactions of mental tasks beyond the children's power of mental receptivity. But where the half-time principle is properly understood and applied as it has been in this Institution, in combination with simultaneous class-teaching, the highest results are produced in morals and intelligence for productive occupation, as tested by the outcome.

To avoid the influence of the Union-house, in which two-thirds of the orphan children chargeable on the poor-rates,—in contravention of the original principle of classification in separate houses,—are brought up in small numbers in contact with adult paupers, arrangements have been made in some instances on a plan under which some twelve or sixteen children are to be brought up in what are called cottage homes, under one master, whose influence is intended to stand in the place of home influence. The scholastic work on this small scale, can only be made equally good at an excessively disproportionate expense, whilst the plan omits all the high and varied physical training which is carried out on the large scale on the half-time principle, and which produces the highest result, mentally as well as physically. Intending to strengthen the mind, which they fail largely to do, the common long-time small schools certainly weaken the body, and reduce the aptitude for productive service. In efficient half-time institutions it is demonstrated that a course of effective teaching need not be a course of misery and repulsive operations with the subject-matter taught, and that the highest results are obtainable in a course of playful and pleasurable interest. I repeat, as it is essential to be kept in view—for economical reforms in the fore—that "barracking" children, like barracking adults, in insanitary conditions, is productive of physical and mental and moral disorder. Whilst "barracking" them, in sanitary conditions, as here, is productive of the highest result of any yet achieved, demonstrated by superior outcomes.

Mr. Matthew Arnold has created a sensation, amongst rate-payers, by the statement that the cost of the long-time elementary education in France is about 18s. per head per annum of the pupils taught, and he leaves it to be inferred that the education given is the equivalent of the elementary instruction given in the Board schools and other long-time schools in England at more than a double cost. I might cite evidence to show that the condition of the great body of the elementary school teachers in France is a condition of extreme and dangerous poverty, which could not be endured in England, and can only be retrieved in France by an



organization of elementary teaching on the half-time principle with larger aggregations, such as the present, for simultaneous class teaching and training.

It is a grievous default in the administration of our educational system, that it cuts off from the observation of the Central Department the most important examples, such as those of this Institution, affecting the whole field of national education, by placing them under a distinct and independent authority. Had Mr. Arnold been in a position to be informed, he would have been aware of the fact I have stated, that at a cost little more than that in France—or, as stated, for little more than £1 per head, for teaching and training power—we impart, with a superior mental instruction, a superior physical training, such as I believe to be of the highest need for the population of France.

The half-time principle has been studied by *confères* of the Institute of France, who have approved of it. I got M. Jules Simon to see one of these Institutions, and during his term of office he took occasion to promote the introduction of physical exercises in the shape of military drill; but I am aware, from French officers of the Educational Department, that there is no class of schools there which has the equivalent of such physical training as that displayed in this and other district half-time schools. I am informed, however, that the half-time principle is now under high consideration in France for adoption as a means of overcoming the difficulty of extending elementary education there. That which Mr. Matthew Arnold refers to in France as the equivalent of the common long school-time elementary education in England is, however, the equivalent of only half—the inferior half of what is given here, and that may, *mutatis mutandis*, be given elsewhere at a vastly reduced charge for teaching and training power below that exacted for long-time teaching in the Board and National schools.

I solicited the Archbishop of Canterbury to examine this Institution. He did so carefully, and he has left the statement in the visitor's-book that he was much pleased with all he had seen.

For myself, I entertain the hope and the confident belief that there is not finality in any part even of what we have seen here. We have, however, I submit, seen enough to establish the conclusion, of which we must challenge examination and comparison, that further important improvement in the elementary education of the population must be under the guidance of Sanitary Science.

A vote of thanks was unanimously accorded to Mr. CHADWICK for his interesting Address.

On Saturday, the 26th of October, at the conclusion of the Sanitary Congress at Croydon, and previous to the delivery of Mr. Chadwick's Address, a party of the members, including Dr. Richardson, the President; Dr. Alfred Carpenter; Dr. de Chaumont, Dr. Lory Marsh, the Registrar of the Institute; and Major McCoy, the Secretary; made a thorough inspection of the North Surrey District Orphanage Institution, at Anerley, which contains between eight and nine hundred male and female children, collected from the different Poor law Unions within the district. The greater number of the children are from the lowest neighbourhoods, and their parents represent the lowest type in the metropolis—mentally, morally, and in physical condition. The visitors first went over the infants' department, where the condition of bright health and the cheerfulness of the infants were the chief subjects of observation. They were next shown exercises with wooden dumb-bells, performed by the boys to music. The girls have calisthenic exercises, directed by the music of an harmonium. Both girls and boys are taught swimming, and tepid baths are provided. The manager, Mr. Marsland, explained that such exercises might appear superfluous, but his experience taught him that variety in recreation or exercise was essential to cheerfulness and health. The children who are old enough are trained in industrial occupations: the girls in kitchen and laundry work; the boys in carpentry, tailoring, and shoemaking; all in the general work of the establishment. A large and well-appointed infirmary, being only about one-fifth full, was also inspected.