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IN SCHOOLS**

BY

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Physician and Lecturer on Forensic Medicine
at St. Bartholomew's Hospital.

Medical Officers of Schools Association



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ON PHYSICAL TRAINING IN SCHOOLS.*

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WHEN you applied to the National Service League for someone to open a discussion on physical training in schools, we were a little in doubt as to what you wanted. The main object of the League is to advocate universal military training for adults as the only means of rendering the Empire secure, but we understood that you did not wish to hear about the military needs of the country so much as about the physical education of boys and girls. This we also advocate both as a matter of public health and as a preparation for the citizen army of the future. For this reason the League deputed an expert in physical education, Mr. Horsfall, and a physician—myself—rather than a soldier to address you.

The chief methods of physical education are :—(1) Games ; (2) Athletic Sports, Swimming, and such other exercises as are pursued for pleasure ; (3) Physical Drill and Gymnastics ; (4) Military Drill and Rifle Practice.

I propose to discuss the effect of each of these classes separately.

(1) GAMES.—These are the distinctive feature of English school life, and ought always to hold the foremost place. Pleasure is an enormous advantage to any sort of education, and no other physical training gives anything like

* An Address delivered before the Medical Officers of Schools Association, February 15, 1906.

so much pleasure as games. They are the natural exercise for children, and they are played in the open air.

They have a very good effect upon the body. They train the limbs more than the chest or trunk, but they produce a quickness of eye and of hand which no other exercise can give. In physiological language, they improve the nervous reflexes.

They have also an excellent effect upon character. In playing games, boys learn physical courage, honour, self-reliance, and a certain amount of public spirit. They also learn to obey the law. Mr. Dowding¹ gives a delicious example from a small boys' game—"Please, Sir, need I go out? The umpire called wide and then gave me out leg-before." This must be familiar to all who have played village cricket. I do not think many cricketers would be found among passive resisters; they would rather say, with the Archbishop of Canterbury, that our first duty is to obey the law, and then to get it altered if necessary.

I think it is a pity that so many prizes and cups are given, and that such a premium is put on skill in games. It rather destroys their natural character and tends to make boys think that games are better than learning, and that the morality of games is the highest they need aim at. But parents are more to be blamed for this than boys, and, after all, it is a small defect compared to the immense good they do.

I really do not think I need say much more in their behalf. Both France and Germany have recognised their importance, and are beginning to copy our system by introducing them.

They have, of course, some defects. I have already mentioned one—that they do not develop all parts of the body alike. It is sometimes said that they are dangerous; but I believe this is entirely untrue so far as boys are concerned. I have seen a boy break his leg at football, but far more accidents happen when boys are not playing games than when they are.

I do not take an exaggerated view of their moral effect. It is quite possible to be a good player and a great blackguard. Indeed, I think Mr. Benson² is quite right in saying that the adulation which a very good player excites brings with it certain temptations and certain facilities for evil. But, as he and everyone else allows, the greatest danger of all is

¹ Parl. Pap. Spec. Reports, 1900, Vol. XXII., Pt. II., p. 343.

² *Ibid.*, p. 475.

loafing, and games are the best safeguard against loafing which schoolmasters possess.

One point more. Boys who are hard at work want recreation in the strict sense of the word, something to refresh them and remove the fatigue of intellectual effort. A hard game is itself exhausting, and does not make a boy immediately ready for another hour's work. But ten minutes' fooling with a small football for boys, or with a skipping-rope or battledore and shuttlecock for girls, is nothing but refreshing, and intervals of this sort of play ought always to be inserted between lessons. An hour is too long for any lesson. The last quarter is pure waste, and had much better be given to recreation. But neither physical drill nor any other form of exercise than sheer play can give it.

(2) ATHLETIC SPORTS.—Races and jumping enter so little into the ordinary life of boys that they need not be discussed at length. They form a centre of interest for a few during a short time of the year, and that is all. I do not think at all highly of their effects, and I think that long races are rather harmful than otherwise. Similarly, school runs ought to be strictly graduated. The late Mr. Almond used to turn his boys out in sweater and flannels on a wet day when they could not play games, and make them take an hour's exercise of mixed running and walking. The same system is adopted now in other schools—at Winchester, for instance. This seems to me an excellent plan.

Swimming ought to be taught to every boy, but much more for its use than for its physical effect. It is very hard work; but, speaking as a good swimmer myself, I am sure that it is not very good as exercise. It is very tiring, without being at all refreshing. Bicycling is simply an amusement.

(3) PHYSICAL DRILL.—By this is meant a set of exercises, performed to order, either with no apparatus at all or with movable things like dumb-bells and Indian clubs, and not with any fixed apparatus like bars, horses, ladders, or ropes.

There are any number of such courses set out in textbooks. The London School Board uses Mr. Chesterton's, the Birmingham School Board uses Messrs. Carter and Bott's,²

¹ Chesterton: "Manual of Drill and Physical Exercises." (Gale & Polden, London. 1904. 8vo., pp. 160.)

² Carter and Bott: "A Text-Book of Physical Exercises." (Macmillan & Co., London. 1896. 8vo., pp. 168.)

Leeds has one of her own, the Army and Navy have each one, and so on.

The basis of all is the Swedish principle. The pupils are not taught to perform feats of strength, but are put through certain movements in order to develop their bodies.

There are breathing exercises to make them breathe through the nose and expand the chest, which are given separately and in combination with others. There are head movements, to strengthen the neck muscles, arm movements, trunk movements, leg movements, movements combining the trunk and arms, and the legs and arms, balance movements, and others. A certain amount of marching, turning, and forming of lines goes with them to get the children into position. The whole is excellently adapted to develop every portion of the body. This is sometimes called "Military Drill," or "Physical Drill of a military character." There is, however, nothing military about it, except that, since it is an excellent method of physical training, it is used in the Services.

These certainly supply a want, even when games are played. Games develop the legs, but they have little effect on the arms, chest, or trunk. Yet these parts are as valuable as the legs; and accordingly, when, as in the Army and Navy, the aim is to get general strength and development, this physical drill is regularly and systematically employed.

There are hardly any statistics of the effect upon children of physical drill. The work is so little that not much change is to be expected, and the natural growth at that age is so rapid as to vitiate statistics. What few there are¹ tell distinctly in its favour even so. The following were put in by Mr. Chesterton:—

40 GARRISON SCHOOL BOYS. 6 months. 2 hours weekly. Averages.

	Age.	Weight.	Chest Girth.
Begins	11 $\frac{3}{4}$	73 $\frac{1}{2}$ lbs.	26 $\frac{1}{2}$ ins.
Ends	12 $\frac{1}{4}$	79 "	27 $\frac{1}{8}$ "

33 UNION SCHOOL BOYS. 6 months. 2 $\frac{1}{2}$ hours weekly. Averages.

	Age.	Chest Girth.
Begins	12 $\frac{1}{4}$	26 $\frac{3}{8}$ ins.
Ends	12 $\frac{3}{8}$	28 $\frac{1}{8}$ "

In the Navy and Army there are regular records of recruits of 17 and 18 years of age. In a group of thirty-two Naval recruits, whose figures I have before me, two classes,

¹ Royal Comm. on Phys. Training, Vol. I., App. pp. 39 to 44 and 59.

of sixteen each, the course lasting three and a half months, the averages are :—

			Age.	Weight.	Chest Girth.
Begins	17.11	125½ lbs.	32.8 ins.
Ends	18.2	131 „	34.5 „

Four out of the thirty-two lost weight, the rest all gained. Only one did not gain in chest girth.

I think all boys and girls ought to go through these exercises, and ought to be taught that it is their proper ambition to develop their bodies and to be as well grown and strong as they can. Almond used to speak of it as a religious duty, and of loafing and bad hygiene as physical sin. Where, as in elementary schools, games are little played, physical drill is still more necessary. It ought always to take place in the open air if possible.

If it is to have a full effect it must be properly taught and properly done. The exercises can be easily performed in such a way as to be of no real benefit. The teachers must, therefore, understand the principles of it themselves, and must see that it is carried out accurately.

Also, it ought to take place every day, and for a certain time. In the Report of the Royal Commission on Physical Training (Scotland) the teachers and inspectors were quite unanimous in its favour. They said it improved discipline, and developed the children's bodies. But they nearly all of them said that they could not give more than half an hour a week to it, because of the multiplicity of the subjects the children had to learn. Leeds, again, gives only half an hour a week,¹ and I daresay this is the rule in England as well as in Scotland. That amount of time is simply ridiculous. Birmingham² gives an hour and forty minutes, which is better, though still insufficient.

Before the same Commission Mr. Wickham, Headmaster of Twyford, said that he gave about two hours a week to it, and was prevented from giving more by the educational requirements of the Public Schools. The evil lies in these. The number of subjects which they require boys to know is simply dissipating, and though if I may judge from Mr. Benson's remarks³ the bad effect is to some extent recognised, yet there is no doubt that a great deal remains to be done to simplify education.

¹ Parl. Pap. Spec. Reports, 1898, Vol. XXIV., p. 218.

² *Ibid.*, p. 207.

³ *Loc. cit.*

When boys get older, and have a real wish to develop themselves, there is nothing equal to Sandow's system. He teaches very slow, even, and strong movements against the resistance either of the opposing muscles or of apparatus. It is very hard work, and on that account unsuitable for children; but it is excellent exercise, producing a feeling of vigour and good health, and its results are really surprising. The following are the measurements of a young man aged 20 before and after twenty-three lessons.

Date.	Neck. ins.	Chest.		R.	R.	Waist. ins.	R.	R.	Weight. st. lbs.
		Contract.	Expand.	Arm. ins.	Forearm. ins.		Thigh. ins.	Calf. ins.	
29/10/03	14 $\frac{3}{4}$	36 $\frac{1}{4}$	39	12 $\frac{1}{2}$	10 $\frac{7}{8}$	29 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{4}$	11 11
10/12/03	14 $\frac{3}{4}$	38	42 $\frac{1}{2}$	15	11 $\frac{1}{2}$	30	23 $\frac{1}{2}$	13 $\frac{1}{2}$	11 11

The great fault about physical drill is that it is uninteresting. It is a lighter lesson than the others, and better liked. But still it is a lesson and no recreation. Griesbach and Wagner¹ found with the æsthesiometer that it did not perceptibly improve the cutaneous sensation which greatly deteriorates with intellectual fatigue, and Kemsies found with the ergograph that an hour's physical drill was as exhausting as an hour's mathematics.

Mr. Sharples² says that the institution of football competitions for elementary schools, which is entirely owing to the school teachers—I believe there are no more devoted people in the country—has done more for the boys than all the drills and calisthenics put together. I think he is perfectly right. Mr. Wickham says practically the same thing.

But no one would compare physical drill for a moment to games. It is a necessary supplement to games, and it is the more necessary the fewer games there are. It cannot possibly take their place.

(4) GYMNASTICS in which bars, ropes, horses, and other fixed apparatus are employed, should not be taught seriously to children under 14. Their muscles are not strong enough, and they strain themselves. But there is nothing they enjoy more than fooling about with a few ropes and swings, and this, which Mr. Wickham³ calls the monkey-house use of the gymnasium, is a first-rate form of play.

When seriously taught, gymnastics produce great precision of movement, develop the shoulders well, and give

¹ Parez on the Measurement of Mental Fatigue in Germany. Parl. Pap. Spec. Reports, 1902, Vol. XXVII., p. 528.

² Parl. Pap., 1898, Vol. XXIV., p. 159.

³ Parl. Pap., 1900, Vol. XXII., p. 327.

men a good deal of pluck. A striking instance is given by Sir Ian Hamilton.¹ The cadets at Potsdam are, he says, much better trained than ours at Sandhurst. One of their exercises is to go up on a platform 15 or 18 feet high, stand on their heads on the edge of it, and throw themselves off it backwards on to some soft earth beneath. That is a special exercise to teach them pluck, and there is no question about the pluck required to do it.

Gymnastics are interesting, and boys like them. At Winchester every boy is put through two terms of gymnasium and has to pass a certain standard. This is really physical drill with a few gymnastics added. A certain number of boys, Mr. Furley tells me, take the gymnasium as their regular form of exercise, preferring it to games. When he and I were in College together there was no gymnasium, and no physical drill. When we were not playing games, we could loaf, or go and "grub" at the school tuckshop without let or hindrance. But things are very different now. My House Physician, Mr. Slade, who is an old Wykehamist, tells me that in his house boys used to have to keep a regular record of their exercise, and, if they did not take enough, had to make it up in "runs." This shows the advance that has been made in well-organised and progressive schools.

(5) Lastly comes MILITARY DRILL (by which I mean movements necessary for war) and RIFLE PRACTICE. These we advocate for all schoolboys after the age of 16 as a preparation for the adult military training that we wish to make universal. I do not think it has any special merit different from other exercises in developing the body, but shooting is good training for the eye and is interesting in itself, while camping is healthy and delightful. But it supplies a great want in our present education. We do not teach boys their obligations as citizens half enough. Military drill develops patriotism, and gives them a sense that they have a duty to the country which is not completed by payment of rates and taxes.

Having thus said what each form of training can effect, let me put it another way, and say what physical training I should give a boy or girl so long as I had charge of his or her education. My fellow parents will agree with me that after the child reaches a certain age, it is he who takes charge, and it is the parents who get the education.

¹ Royal Comm. on Phys. Training, 1903, Vol. II., p. 509.

Up to 6 or 7 childish games are all they want, except that they should be taught to breathe properly. From 7 to 14 they ought to have all the organised games they can with children of their own size, and regular systematic physical drill for twenty minutes a day at first, gradually increased to nearly an hour by the time they reach 14, and monkey-house work as part of their play. At 14 add gymnastics under proper instruction. I should not carry these to any great length, unless a boy chose it for himself. At 16 I should give him a course of Sandow, and, when he has learnt the system, should encourage him to spend ten minutes over it morning and evening. And at the same age I should teach him the use of the rifle. But games always and throughout. The same for girls, except that I should not give them Sandow or hard gymnastics, and should let them play hockey instead of football.

I would, however, make this difference between physical drill and games. I would compel every child after medical examination, which should be universal when compulsion is in force, to go through the physical lessons; and I would compel every boy to play games who could not show a reason against it. But for the few boys who have strong interests in other directions, such as natural history, or workshop work, I would always reserve the power of dispensation. The great feature of games is pleasure, and when a boy does not get the pleasure, and will take healthy exercise elsewhere, I would let him follow his bent.

Education and the War Office are the two things about which we are all agreed. We all think they are as bad as they can be, and that we could put them to rights if we had a proper opportunity. This much I think we ought to do. We ought to impress upon the authorities the folly of overloading the intellectual, and undervaluing the physical side of education; to do all that lies in our power to get proper playgrounds and proper play for poor children; and to bring before the Elementary, the Public, and the Preparatory Schools the need of supplementing games by regular Physical Drill.