

holds that it is proved on practical evidence of officers engaged in the drill :—

1. That military and naval drill are more effectively and permanently taught in the infantile and juvenile stages than in the adolescent or adult stages.

2. That at school it may be taught most economically, as not interfering with productive labor, and that 30 or 40 boys may be taught naval and military drill at 1½d per week, per head, or as cheaply as one man is now taught; that the whole juvenile population may be drilled completely in the juvenile stage, as economically as the small part of it is now taught imperfectly on recruiting or in the adult stage; and that, for teaching the drill, the services of retired drill sergeants, and naval as well as military officers and pensioners, may be had economically in every part of the country.

3. That the middle and higher class schools should have, in addition to the foot drill, the cavalry drill, which the parents of that class of pupils may afford.

4. The drill when made generally prevalent (without superseding), will eventually accomplish, in a wider and better manner, the objects of volunteer corps and of yeomanry, which, as interrupting productive occupations, now becoming more absorbing, is highly expensive, rendering all volunteer forces dependent on fitful zeal, and eventually comparatively ineffective; that the juvenile drill, if made general, will accomplish better the object even of the militia; that the juvenile drill will abate diffidence in military efficiency, and will spread a wide pre-disposition to a better order of recruiting for the public service, will tend to the improvement of the ranks of the regular force, whether naval or military, and will produce an immensely stronger and cheaper defensive force than by the means at present in use or in public view.

And, finally, that the means of producing this defensive force, instead of being an expense, will be a gain to the productive power and value of the labor of the country.

*Influence on the Discipline of Schools.*—We have not noticed, hitherto, the influence of the new system upon the morale and discipline of schools. On this head there is a singular unanimity among the masters of the schools where the experiment has been tried. They all consider the drill as an invaluable help to them in enforcing the ordinary school discipline. And they ascribe the usefulness of drill in this particular to the habits of order, punctuality, of prompt, unquestioning obedience and of respect for their superiors which the boys necessarily acquire during their lesson in drill. Indeed several instances are adduced by Mr. Chadwick's witnesses, where the military drill having been, from one cause or another, discontinued in a school, the spirit of insubordination became such that the unhappy master was compelled to reestablish the drill in order to restore the discipline of the school. It would be difficult to find a better practical commentary on the moral value of the new system.

Sir Francis Bond Head gives his opinion on the moral value of drill in very characteristic and forcible language. "The dull sound, but magic little words of command—'Eyes right!' 'Eyes left!' and 'Stand at ease!' 'Attention!' &c., instil into the minds of a lot of little boys, the elements, not of war, but of peace. Instead of making them ferocious—to use Mr. Rarey's expression—these words, 'gentle' them. By learning to be subservient not to their own will, but to the will of others, they become fit in every possible department to serve their country.

*Military drill more effectually taught in Youth.*—That military drill can be taught to boys at school more effectively and economically than afterwards, is a proposition which few probably will be disposed to dispute. Many, however, may feel inclined to ridicule the idea of "naval drill" in inland schools. On this point one of Her Majesty's School Inspectors, Mr. Tuffnell, cites the opinion of the late Recorder of Doncaster—Dr. Hall :—

"When I first saw," wrote Dr. Hall, "the contrivance (a ship rigged with masts and ropes at a school) at Mettray, in France, I could not refrain from intimating a doubt as to its practical utility. But I found that I was quite mistaken. In France the experiment was tried at the suggestion of the Minister of the Marine himself, and the youths so exercised are received on board ship as sailors, not as lads. At Ruysselade the success is still more striking. In the course of last year, the second of the experiment, no fewer than sixty-four colonists (youths educated at the institution) entered the mercantile marine and the military marine, and their conduct has been so superior that the

establishment is overwhelmed with applications from ship-owners." (1) The success of the naval drill, wherever it has been tried in English schools, has, as might have been expected, been quite as satisfactory as in France.

*Gain to the Productive Energy.*—The gain to the productive energy of the country, resulting from the drill system, is a subject of which the importance cannot be overrated. In an opening address delivered by Mr. Chadwick before the British Association for the Advancement of Science, in 1862, he returns to this topic, and discusses it in considerable detail. In that address he shews conclusively the immensely superior efficiency of educated labor over uneducated labor, of those educated under his system over those brought up under the old routine. "On the practical testimony," he says, "of such men as the distinguished members of this association, large employers of labor, Mr. W. Fairbairn and Mr. Whitworth, it is established that for all ordinary civil labor, four partially trained or drilled men are as efficient as five who are undrilled. In other words, considering the educated child as an investment made by the State, for a trifling expense of about one pound per head, the productive power of that investment may, by physical training, be augmented by one-fifth for the whole period of working ability. Some distinguished authorities," he adds, "consider that he understates the gain of productive power when he put it down as one-fifth, and assert that it is practicable to give to three men by this system the working-power of five." Now, what does this mean? It means that we can, by a change of our mode of education, add as much to the productive energies of the nation as if we had added one-fifth, if not two-fifths, to the number of the working classes, and this "without the expense of educating the additional one-fifth, feeding, clothing, housing them or administering their public affairs."

*School Drill and Natural Defence : Upper Canada.*—We now proceed to say a very few words upon the last topic which we propose to discuss in connection with this subject, namely : the bearing of the half-time system with military drill on the question of our national defence.

From the Reports of the Chief Superintendent of Education for Upper Canada, it appears that the number of boys attending the Common Schools in that part of the Province was, in 1860, in round numbers, 172,000; in 1861, the number was 178,000; in 1862, 183,000; in 1863, 192,000; in 1864, 198,000; and in 1865, 204,000.

The number of boys attending the Common Schools in Lower Canada, for 1860, is not stated in the Report of the Superintendent for Lower Canada. The total number of pupils, however, is given, and assuming the proportion between boys and girls to be about the same as in Upper Canada, the number of boys attending schools that year may be put down at about 80,000. The total number of boys, therefore, in Upper and Lower Canada, attending school in 1860, would be about 250,000 or a quarter of a million. Assuming, however, one-fifth of this number to be, from physical or other causes, incapable of drill, and this is, doubtless, an over-estimate, there would still remain 200,000 boys undergoing drill in our common schools—if the system was universally carried out. At the end of ten or twelve years from the first inauguration of such a system in Canada we should have, probably, half a million of youths who had undergone a regular course of drill; a very large proportion of whom would be capable of bearing arms, and, should the emergency arise, could be readily converted into good and servicable soldiers. Our common schools would thus be made the nurseries of our militia.

*Our duty in this matter.*—It is not very long since the heart of our people was stirred at the near prospect of a struggle between the Mother Country and the States. That struggle has been for the

(1) In the number of *The Athenæum* for December 31st, 1864, there is an interesting account of the results of the "half-time" system in the children's establishment at Limehouse in England.—

"The school is conducted on what is called 'half-time,' a system much recommended, and found to work extremely well. Mr. Mosley, the intelligent and earnest superintendent, gave it as his decided testimony, that the children come to their lesson-books brighter and fresher and give more close and efficient attention when they are on half-time. The children are in school on alternate days, half of them being in the school, and the others employed in industrial occupations. The children are not occupied more than eighteen hours in the week in close book-instruction, the other portion of their time being employed in industrial training.

"The addition of physical training is a wonderful improvement in the system of education. The influence of the drill gives the boys self-respect, they become smart, active, clean-limbed, adroit, they acquire control over their own limbs. Systematized drill gives the boys early an initiation into the virtues of duty, order, obedience to command, self-restraint, punctuality, patience,—no small addition to the value of a man's heritage in himself! Cheerfulness and prompt obedience seemed the characteristics of the children, both boys and girls."

the boys of England, and was practised at many public schools. The last Act by which boys were required to be taught archery was passed in 1541.