

protoplasmic matter, differing so materially from that observable in similar organisms taken in a living condition in shallow water as to render it certain that the vegetable life ceases at a limit far short of that to which animal life has ever been shown to extend." This assertion may be too dogmatic to suit the actual condition of our knowledge; but if it should be found that there are regions in which, so to speak, every animal is his own vegetable, it will reveal to us fresh secrets pertaining to the great mysteries of organization and life.

A book like Dr. Wallich's would naturally command a large circle of readers, and we regret that its mode of publication will restrict it to a very few. Science is not so profitable that many of its votaries can afford fifteen shillings for a stout quarto pamphlet, offered as an instalment of the entire work. We can hardly imagine that the profundity of his researches appeared to so able an observer to necessitate a corresponding elevation of the price of the narrative in which they were enshrined, and we should like to know whether he has been a victim of the "Lords Commissioners of the Admiralty," under whose sanction the title-page informs us, the *North Atlantic Sea Bed* has been brought out, or whether his worthy publisher, who has done so much for zoological science, determined in this case to address himself exclusively to that very limited class whose pecuniary and cerebral developments go hand in hand. The less wealthy student to whom costly pamphlets are unattainable luxuries need not, however, lament his fate, as a concluding extract from Dr. Wallich will give him the cream of the whole matter, and show, for his economical edification, that:

1. "The conditions prevailing at great depths, although differing materially from those which prevail near the surface of the ocean, are not incompatible with the maintenance of life.

2. "Assuming the doctrine of single specific centres to be correct, the occurrence of the same species in shallow water and at great depths, proves that it must have undergone the transition from one set of conditions to the other with impunity.

3. "There is nothing in the nature of the conditions prevailing at great depths to render it impossible that creatures originally, or through acclimatization, adapted to live under them should become capable of living in shallow water, provided the transitions be sufficiently gradual, and hence it is possible that species now inhabiting shallow water may at more anterior periods have been inhabitants of great depths.

4. "On the one hand, the conditions prevailing near the surface of the ocean render it possible for organisms to subside after death to the greatest depths, provided every portion of their structure is freely pervious to fluid; on the other hand, the conditions prevailing at great depths render it impossible for organisms still constituted to live under them to rise to the surface, or for the remains of these organisms after death to make their appearance in shallow water.

5. "The discovery of even a single species living normally at great depths warrants the inference that the deep sea has its own special fauna, and that it has always had it in ages past; and hence that, many fossiliferous strata, heretofore regarded as having been deposited in comparatively shallow water, have been deposited at great depths."—*Intellectual Observer*.

## EDUCATION.

### Physical and Military Exercises in Public Schools.

(Concluded from our last.)

For the physical training of boys, I think the military drill has much to recommend it besides the military instruction it imparts. It will tend to give them a better command of their muscles, and impart a manly gait and bearing. It will also, if properly conducted, teach them self-control, and give them true ideas of order, discipline, and subordination, and whilst it will relieve them from the monotony of their ordinary studies will, by a grateful change, enable them to return to them with renewed interest.

We are entering upon the new experiment with caution, and have commenced by devoting an hour, twice a week, to the drill. We began in the school rooms, but found, after a few lessons, that the space there afforded was too small, and for the present shall use the large Gymnasium Hall. In summer, the grounds in connection with our school houses may be found well adapted for the purpose.

The boys, with scarcely an exception, manifest much interest in their drills, and receive the instruction much more readily than men. Two or three of our public spirited citizens, well qualified for instructors, have generously consented to devote the necessary time for drilling the boys, for the present winter, without compensation.

Some of our teachers are also disposed to qualify themselves for drill masters, and we are thus enabled to try the experiment without much expense.

I have had no communication with Gov. Washburn in relation to this subject, and was quite unaware of your interest in the matter. I however noticed the article in regard to it in the *Evening Post* of Nov. 8th, and was gratified with the important facts which it contained. I shall be glad to receive any further communication you may make to the public on this important subject, and should you wish, will be pleased to communicate to you the further progress of our experiments.

Yours respectfully,

ISAIAH STETSON, Mayor.

Edward L. Molineux, Esq., New York.

To establish thoroughly and economically this military culture, the Board of Education should appoint some competent person as *Chief of the Staff to organize and carry out a system of instruction and drill*; he to have under him two or three assistant instructors of experience, under whose guidance a *teacher, or teachers from each school*, should be fully instructed in the tactics, so as to be able to superintend the drill of the boys, which should always take place during school hours, and thereby form a recreation from mental study, and not encroach upon their play time. These are the only persons connected with the department beyond the scholars themselves, as it should be managed on the principle of obtaining *the whole working force of the military organization from among the pupils*.

The grammar department of each school should be formed into a company, or where the size of the school rendered it necessary, two companies: the officers to be selected from the most deserving and competent boys.

The officers thus selected to be instructed theoretically and practically by extra drills, in their respective duties. This would not occupy much time, and any boy objecting to devote this time would not be worthy of holding his position, and should be replaced by some one more deserving. Every school should possess within its limits space for a parade ground and for a few simple fixtures for gymnastic exercises. In stormy weather the exercises could be carried on indoors; for the drill possesses the advantage of affording exercise to a great number in a *small space* without disturbance and noise.

No uniform would be required, and the only expense would be the loan or purchase of 500 or 1000 short muskets, which could be used in turn at the different schools for drill or parade. A simple musket can be manufactured very cheaply, which will answer for all purposes.

The care and cleaning of the arms, the escorting and carrying them from school to school, or point to point, as required, should be the military duty of the pupils; thus expense will be saved, and the duty of prudent soldiers to take care of their equipments and do their own work inculcated.

These different school drills, always in charge of the teachers, should be visited in turn by the instructors, who would exercise a close and careful supervision over them.

Every ten companies or schools should be formed into a regiment, officered by those selected as the most capable, and who had passed the necessary examination.

Occasionally on Saturdays the regiments, in rotation, should be exercised by the instructors, in battalion movements, field manoeuvres, skirmish drills, camp duties, &c. These Saturday exercises should not be compulsory, but would be eagerly looked for by the boys as an amusement.

In the proper seasons they could be marched to the suburbs for their exercises, and thus a pleasant holiday, with healthy amusements, be given them under proper guidance. Any father will appreciate the advantages of such exercises and enjoyment to his boys.

In the summer season it should be found out which of the boys could not swim, and had no parents able to teach them. All such should be classed together, and means taken to instruct them in this most requisite art.

If found desirable to teach them to move together in *large masses*, (in which our militia are certainly deficient;) it can be accom-