intelligence, skill, tact and kindness made the school a model of good order. A single case, I am well aware, proves little, but the instance I have related is only a fair illustration of a multitude that have come under my observation. Great care of course must be taken in the selection of teachers. Unless they are competent, the artificial taken in the selection of teachers. experiment will be likely to fail."

2. HOURS OF TEACHING.

A very remarkable pamphlet has recently made its appearance in England, containing statements of facts that ought to command the attention of the civilized world. The pamphlet is written by E. Chadwick, Esq., C.B., and published pursuant to an address of the House of Lords. The subject of this pamphlet is education, and it is devoted to the discussion of three matters-the organization of schools, the hours of study, and physical training. Our attention has been arrested by Mr. Chadwick's statements of facts in connection with the second of these three subjects-the hours of Struck by the frightful disproportion between the powers study. of childish attention and the length of school hours, he has directed questions to many distinguished teachers. Mr. Donaldson, head master of the Training College of Glasgow, states that the limits of voluntary and intelligent attention are—with children from 5 to 8 years of age, about 15 minutes; from 7 to 10 years of age, about 20 minutes; from 10 to 12 years of age, about 80 minutes; and continues: "I have repeatedly obtained a bright, voluntary attention from each of these classes, for 5, or 10, or 15 minutes more, but I observed it was at the expense of the succeeding lesson.

dren, in three hours a day, as much as they can by possibility receive; and I hold it to be an axiom in education, that no lesson has been given till it has been received ; as soon, therefore, as the receiving power of children is exhausted, any thing given is useless -nay, injurious, inasmuch as you thereby weaken, instead of strengthen, the receiving power. This ought to be a first principle in education. I think it is seldom acted on."

3. DECLAMATION IN PRIMARY SCHOOLS.

BY REV. A. D. LORD.

The declamation of selected pieces has long been a regular exercise in our higher schools and seminaries ; and though, like composition-writing, it is attended with difficulties, and often fails to accomplish the most satisfactory results, it has its uses. We believe that it should receive more of attention than is usually given to it, and that teachers should be prepared to make it much more beneficial to their pupils than it has generally been.

To secure all the benefits which may be derived from the practice, it should be commenced in the primary school, and the youngest scholars in our district schools should engage in it, as soon as they can count twenty, or commit simple rhymes. Both girls and boys should practise it, the boys going forward to a stage or to the front The selections should be very short, and such as they can under-stand. Four, six, or eight lines of poetry, or a single paragraph of prose, would be far better for the purpose than anything of four times that length.

The objects to be arrived at in these early exercises are, first, to form the habit of committing to memory readily; and, second, to secure such self-possession as will enable them to utter, clearly and without embarrassment, what they have learned, when others are looking at them.

Stanzas of hymns, the words of the school-songs, or short, spirited sentences of any kind, may be used. Even a line or two of the multiplication table or one of the tables of denominate numbers might be repeated, or a scholar required to count or number from one to thirty, rather than have him fail to take any part in the exercise. -Ohio Educational Monthly.

4. OBJECT TEACHING—PETRIFACTIONS.

Perhaps few natural subjects have been less understood by the pupils of our common schools than the transformations which we occasionally observe in both vegetable and animal substances,--and. yet, there are few objects in the various forms of matter that are more curious.

A teacher in Pennsylvania, who, with his pupils, has been indus-triously employed in collecting a cabinet of minerals, a short time since produced before his class in mineralogy, the following specimens, viz :- Several portions of petrified clams : a land tortoise, perfect in every part but one of the feet ; several pieces of wood, of different kinds, in which not only the bark, but the grain of the has contributed to the advancement of science has been the encour-

wood, could be readily distinguished, so as to enable the beholder to identify the different species. In addition to these there was a hone, which bore the distinct marks of dressing, as a block of wood, showing that, to some extent at least, the change must have been

Holding up a piece of the petrified wood, claiming the attention of the class, and submitting all parts of the object to examination, and at the same time, identifying it with some pieces of the un-changed wood,—he queried with them "what could have been the process by which the change had been effected ?" Contrary to expectation, he discovered that no one of the class had any theory on the subject, --- though all appeared to have some vague idea of substances being changed to stone.

One of the first suggestions that occurred to the teacher was, to exemplify to his class the fact that even water, apparently the most pure, holds in solution various earthy or calcareous substances. Thus, the water dripping through limestone, forms stalactites depending from the roof of a cave, or stalagmites on its floor,-by deposits from the water, in each case; and thus water in filtering through calcareous or silicious earth, embodies a part of the incumbent substance.

One condition only is wanting in this, for the petrifaction process to commence. This is, the gradual decomposition of the substances on which the water (holding earthy matter in solution,) may chance to fall, so that, as the particles are gradually displaced, in the decay going on, the former space may be occupied and the figure retain the same form as the original substance. Thus the grains of wood and the colored bark give the peculiarity of its external form to the stony substance. In confirmation of this view, pieces of wood were exhibited in which the change had been but partially effected :--as, for instance, they were composed partly of wood, combining therewith the real silicious portion.

"The twig found in the spring, imbedded in pure sand, has often been seen completely enveloped with the silex, and no cavity perceptible but the small space occupied by the pith. In process of In process of time this space also, will be closed, and nothing but its form remain, indicating the heart of the wood; and further inspection, by break-ing the stone limb, has displayed the growths to which allusion has been made." * * * * * * * *

wood submitted to the influences to which I have referred,same changes have been wrought. This is the silicious petrifaction so useful in the form of the best whet-stones."

The above was somewhat like the history given to the class, of the petrifaction of vegetable substances. Such changes are sometimes effected, on a very small scale, as in that mentioned of sticks found in the spring. In others, petrified logs of considerable size are familiar objects in many parts of the country. In these, not only the growths are often distinctly marked, but the bark and knots are given with all their peculiarities of form and openings. Besides these, plants, shrubs and trees of the most marked characteristics, have been shown in museums, and are often found in the cabinet of the curious.

But the most remarkable field of wonders of this kind is spoken of by travelers, as having been witnessed in the Petrified Forest near Cairo, in Egypt. Of this it has been remarked : "There is, perhaps, scarcely a spectacle on the surface of the globe more wonderful, either in a geological or picturesque point of view."

Of the animal substances in a state of petrifaction, their history was but another edition of that given in relation to the vegetable changes. How the tortoise was arrested in his progress and turned into stone, must remain a secret to all coming time. Perhaps the losing of one foot might have contributed to his misfortune. As to the clams, I presume they might have been taken from a large quarry, in tide-water on the Delaware river. I have known them to be taken from one of these localities by the cart load. In all these cases, the shell has been found completely decomposed, and the space within representing the bed of the clam, is occupied with a kind of ferruginous sand, firmly connected together.—*Pennsyl*vania School Journal.

V. Lapers on Natural History and Science.

1. OUR NORTHERN FAUNA.

Mr. Wm. Couper thus writes to the Quebec Mercury :- The following is copied from the American Journal of Science and Arts, March, 1863. It is given as an addenda to my correspondence in your paper of the 24th instant :-

"Recent Explorations encouraged by the Smithsonian Institution." Those who have paid attention to the reports of the Smithsonian Institution are aware that one method by which that establishment