

accuracy, independence of thought, and that clear, logical analysis which is so desirable and useful an acquisition.

It educates the pupil in the exact use of language; and the habitual concentration of the mind upon a subject requiring close, accurate analysis develops in the pupil those habits of self-control and self-reliance, which are no insignificant part of a good education.

It has the advantages, also, of being a useful or practical study. In the ordinary affairs of life there is nothing except reading and writing that will be of more practical use to the pupil than readiness and skill in solving arithmetical problems mentally.

But shall we separate mental and written arithmetic and teach them independently? This need not be done. A separate textbook seems to be necessary, but the same subject may be taken up in each, and thereby each will assist the other.

Let it be remembered that it is not enough that teachers approve of this study; pupils must really do the work, must daily practice the analysis of examples, besides any oral work given to the school at large.—C. P. Cary, Hamlin, Kan., in *N. E. Journal of Education*.

SIX PRINCIPLES OF PEDAGOGY.

1. Education should proceed from the known to the unknown, both in the choice of subject and in the method of instruction. Lessons should start in the concrete and end in the abstract. Instruction should rise from particulars to generals.

2. As the blood is the life of the body, so memory is the life of the mind. It should be assisted by all possible means, and its worst abuse is to require pupils to memorize what they do not understand.

3. All mental development is an advance from vague conceptions to definite knowledge. Definite knowledge implies familiarity with the subject, and this familiarity comes of much repetition.

4. The chief office of instruction is not to impart knowledge, but to teach the pupil how to obtain it for himself. Books are supplementary. The process of self-development must be encouraged to the utmost.

5. Study must be made interesting either in its subject or its results. All subjects may be made interesting by emulation.

6. Order is a vital element of instruction, because it enables the teacher to concentrate all the educative agencies of the school without embarrassment or interruption.—E. S. Clark.

THE BOAT THE GNATS BUILD—Did you ever hear about the wonderful boats the gnats build? They lay their eggs in the water, and the eggs float until it is time for them to hatch. You can see these little egg rafts on almost any pool in Summer.

The eggs are so heavy that one alone would sink. The cunning mother fastens them all together until they form a hollow boat. It will not upset, even if it is filled with water. The upper end of these eggs is pointed, and looks very much like a pocket flask.

One egg is glued to another, pointed end up, until the boat is finished. And how many eggs do you think it takes? From two hundred and fifty to three hundred. When the young are hatched they always come from the under side, leaving the empty boat afloat.

These eggs are very, very small. First they are white, then green, then a dark gray. They swim just like little fishes, and hatch in two days. Then they change again into a kind of sheath. In another week this sheath bursts open and lets out a winged mosquito. It is all ready for work. There are so many of them born in a Summer, that, were it not for the birds and larger insects, we should be "eaten up alive."—Our Little Ones.

One of the clearest evidences of the increasing favor with which co-education is received is found in the failure of so many female academies. A contemporary says it could name a dozen or more in Ohio and Indiana, where the appointments and a commodiousness were very complete, but have ceased to exist, and their buildings have been converted into hotels, asylums, or factories. There was a rage twenty, thirty, and forty years ago to build high schools and colleges for young ladies, but lately every new enterprise in those States aims at co-education.—*New Eng. and Jour. of Education*.

Notes and News.

ONTARIO.

The closing exercises of the Toronto Normal School were held in the theatre on the evening of Jan. 31st. Principal Davies presided with his usual felicity. The graduating students gave quite a rich treat to the audience in the form of well rendered music, under Mr. E. H. Preston as conductor, and a series of readings and recitations which were all creditable and some of first-rate quality. Misses Alexander and P. C. Scott especially distinguished themselves by the grace, purity of utterance, refined taste, and fidelity to character with which they rendered some delightful passages from Shakespeare. Miss Henderson, and Messrs. Fry, O'Donnell, Chapple and McDowell also acquitted themselves in a manner which gave practical demonstration of the value of the training they had just undergone. Miss Lewis, the well-known elocutionist, gave an admirable recitation, near the close, which won her the hearty thanks of all present. Dr. J. A. McLellan in a short address referred to the spirit of discontent and ceaseless fault-finding abroad among teachers. He pointed to the proceedings of the last Provincial Association as a good illustration, and put the young teachers on their guard against the spirit of petty, earning criticism. He went on to show the immense progress made in educational affairs during the last thirty years, and claimed for the Ontario system in all matters of vital importance, a place in advance of any other system among the English-speaking peoples. He recommended the students to hold no mean opinion of our system which was furnishing a model to New England school authorities. The Doctor next directed attention to the educative power contained in literature and cautioned them against the supreme absurdity of turning the study of literature into "grammatical hair-splitting," the uses of "buts and as-es," and a round of mechanical analysis of sentences, placing the *disjecta membra* of the mangled sentence in the rectangular schemes prepared for them. He was in favor of rational analysis, but said that these schemes were of no educational value, but quite the reverse, for the pupil must understand the *real* analysis before he could make any use of these mechanical and useless schemes. In the course of his remarks he gave some amusing glimpses of his own early life, and closed with a fine illustration of the imperial power of sympathy and a telling appeal to those who were just stepping out into the great educational vineyard, to carry with them pure hearts and the magic of human kindness and sympathy. Dr. S. P. May also addressed the graduating class with special reference to the study of art in connection with the Mechanics' Institutes, and intimated that the Minister had under consideration a scheme for bringing these institutions to a higher state of efficiency through the medium of teachers trained at the School of Art. It was hoped in this way to benefit the teachers both aesthetically and financially. There were two things which would have given greater *clat* to the proceedings, the presence of the Minister of Education whose duties in the House prevented him from attending these exercises, and the presence of a larger audience, such as would gladly have attended had the proper publicity been given to the event. We hope this will be remedied on future occasions. The class just graduating has left a red line under its name by kindling a literary society within the sombre walls and cloister-like solemnity of the Normal School. It is to be hoped that their successors will keep the sacred light well trimmed and never allow it to die out.

STRATHROY HIGH SCHOOL—The attendance at the Strathroy High School this week is 171, being the highest number ever recorded. The rooms are now overcrowded, and the trustees at their next meeting will have to arrange for the putting in of more seats, or enlarge the school building. The amount of fees already collected from pupils is about \$500. The excellent teaching staff engaged has had a tendency to bring pupils from far and near to the High School, and from present appearances we believe that both teachers and pupils will give a good account of themselves.—*"Strathroy Age," Jan. 17th, 1884.*

The Principal of the Listowel Public Schools, Mr. Rothwell, is now a veteran teacher. He has served in Listowel about 20 years, and was never more popular.

With a view to making courses at the Normal Schools identical, Mr. McEul and Mr. Whale will, we understand, prepare a detailed plan of the work to be done by the students during each session.