

classics, yet even granting that the method mentioned by him is the best, does it necessarily follow that it is also the best method of teaching mathematics? Not at all. The object aimed at in one of these branches is totally different from that aimed at in the other. They serve to develop two distinct faculties of the intellect, both of which are essential to its complete cultivation. The great central purpose of classical study is to store the mental magazine with the treasures of the past, and to develop the powers of memory. Mathematics, on the other hand, train the reasoning faculties to make intelligent use of that which memory has in store. The one tends to the attentive accumulation of the facts of the past, the other to the practical use of those facts for the future. The multiplication table is learned by heart, as we say, merely because from its extremely useful nature it comes before the pupil while he is too young to reason extensively, but it is always better that the child, young as he may be, should know the meaning of what he says than that he should repeat it merely as an unmeaning succession of known sounds. To teach even the simplest of the mathematical branches successfully, it is necessary that the pupil should learn to make the mere wording of a rule secondary to the reasoning contained therein. In fact, I never encourage pupils in the learning of rules, but rather insist that they shall tell in their own words how and why they accomplish any desired process. I would rather that a scholar should be able only to demonstrate the first proposition of the first book of Euclid, with a thorough understanding of the same, than that he should be able to repeat six books as a parrot repeats the words taught him.

If the advanced rules are learned by children, it must be done in this parrot manner, without any understanding of the signification of the rules, and having them thus learned, there will be less desire to study out the reasons for them in later years, and the scholar will be too easily satisfied with superficially knowing *how*, without digging to the foundation and knowing *why*. If, however, he first enters the study with the idea of seeking for *reasons* and not for *rules*, he will by that very means acquire rules which depend not upon treacherous verbal memory, but rules which, even forgotten, can be reproduced with a slight effort of reason.

As to the means of carrying out good ideas, I quite agree with your previous correspondent; but may they never be applied to his proposed method of teaching the higher mathematics. N6, no. Let the mathematics accomplish their designed purpose, for while it is important that the memory receive its fair share of training, it must be balanced by equally well developed reasoning powers.

I enter my steed, then, Sir, trusting not to the skilful handling of an experienced jockey, but to his own tried powers, feeling confident that he will prove himself a veritable "Iroquois."

Yours respectfully,

GEO. H. HUBBARD.

Sherbrooke, P.Q., July 9, 1881.