

HAVE AN EYE UPON THE FOUNDATION.

IN a recent examination of candidates for admission to a high school, 142 were examined, and 118 of them admitted.

The examination in arithmetic fell under my own supervision. The paper comprised twenty questions and problems, the first of which was this; in the number 8,421, the 4 expresses how many times as much as the 2? Twenty-eight gave the correct answer, twenty times as much. Some of them gave it directly from inspection; but most of them obtained the answer by dividing, in a formal manner, 100 by 20. Two others obtained an approximately correct answer by dividing 100 by 21, the error, probably resulting from heedlessness. Thirty-two others gave for an answer, ten times as much, discriminating correctly in regard to the places of the figures, without regarding the difference in the figures themselves. Of the remaining eighty answers, not one indicated any knowledge of the fundamental law of numeration. The answers were various, and absurd as can be imagined. Thus; 2, 4, 200, 400, 380, 398, $\frac{1}{2}$, $\frac{1}{4}$, .2, .02, etc., many attempting no answer whatever.

The age of these candidates averages perhaps a very little short of fifteen years. Many of those who failed of admission will not return to school again. And many of those who were admitted, will drop out of school before they reach the last year of the course, to which alone arithmetic is assigned.

Who have no reason to suppose that this examination is peculiar. Other examinations may reveal facts equally startling. Here, then, is a large class of young men, who have finished their school education, ignorant of the very rudiments of arithmetic! Have they received from our schools all they are entitled to? Is it necessary that so many young men shall enter upon the practical duties of life so poorly qualified? Shall the boasted improvements in education always exhibit such disgraceful failures?

There is much said in these times about the disproportion of time spent upon arithmetic. That must give place, it is said, to one and another of the new subjects that are crowding into our schools.

In view of these facts, it becomes teachers, and all interested in education, to consider whether such results are satisfactory, or all that ought to be expected. If they are not sufficient, and not all that could be reasonably looked for or demanded, then the cause of the deficiency should be sought, and the remedy applied.

If the cause be found in defective methods of teaching, the remedy is obviously in the improving of those methods. If it be in the lack of time, then it becomes necessary to consider the relative importance of arithmetic, and those new studies which have been allowed to divide the time with arithmetic. If the cause be in the nature of the subject and of the youthful mind, then a majority of our scholars may as well despair of a competent knowledge of arithmetic, and devote their time to something that promise better results.

This question, doubtless, affords room for difference of opinion. But it is decided, I believe, by competent judges, among whom may be reckoned the late lamented principal of the Boston English High School, than whom no one would demand a better judge on this subject. In his lecture delivered before the American Institute of Instruction, in 1834, he says: the power of reasoning is an essential attribute of man, and if there be any department of human science attainable by all, it must be mathematics, since there is no other kind of reasoning, in which the data are so well defined, the steps of the process so short and ultimately connected, and the result so perfectly satisfactory.

The authorities are ample, that though all minds are not equally adapted to mathematical reasoning, yet they are sufficiently well adapted to secure, with rational teaching and zealous learning, on the part of a great majority of those who graduate from our grammar schools, far better results than are shown in the examination here described.

Before it be determined that insufficient time is now allowed for arithmetic, it would be well for teachers to look well to their methods. It may be that their theory is faulty. It may be that they overlook something in the very foundation, or assume, contrary to fact, that the foundation, is all right; and thus it is, that the superstructure falls at the time of trial.

I was once sitting by a distinguished teacher, while he was conducting a recitation on the laws for scanning Latin poetry. As a scholar was repeating a rule in which the word *penult* occurred, I suggested to the teacher a doubt, whether the scholar knew the meaning of that word. Of course he does, answered the teacher. But on trial, it was proved that he and several others in the class were not possessed of that knowledge. The teacher was astonished; and doubtless has ever since looked more carefully to the foundation he was building upon. Had the teachers of those candidates been more careful to know that their pupils were well grounded on the laws of numeration, before permitting them to proceed blindly in the application of those laws in complicated processes, how much of the disappointment and mortification of both teachers and scholars might have been spared, and how different might be the future of many of those scholars.

It becomes those teachers who think the shortest way to get

their pupils into the High School, is to teach them the forms of knowledge only, spending little or no time upon the principles which underlie those forms, to consider whether they are consulting the best interests of those pupils, even if they should succeed in entering them to the High School. Scholars who enter the High School with barely sufficient rank to admit them, and that obtained chiefly from other studies than arithmetic, commence the study of algebra at a great disadvantage. The course of studies is arranged on the presumption, that the scholars, on entering, have sufficiently completed the grammar school course. What then shall be done with those scholars, who have not sufficient arithmetic to ground algebra upon? Shall the deficiency be ignored, and they be required "to deliver their tale" of algebra, and be charged with "idleness" or stupidity, if they complain of their hardship? Surely "they are in evil case," as many a teacher might testify. Or shall a teacher ignore the course of study, and, looking well to the foundation, teach algebra by beginning with the necessary principles of arithmetic? Will not the later course conduce, not only to the success of the teacher, but also to the success and happiness of the scholar.

A course of study, running through several grades of schools, fails of its object, unless the scholars pursuing it shall, to a certain degree, complete the several studies in their order. A deficiency here and there will be sure to cause disturbance in the succeeding parts of the course, especially when one study depends upon another, as in the mathematics. There is a duty devolving upon each individual teacher, to see that all is right in his part of the course. But no teacher should ignore the deficiencies of a subordinate teacher, and present the absurdity of attempting to build upon an insufficient foundation.

J. S. R.

COMMENCEMENT AT ACADIA.

A constantly increasing interest attaches to the public exercises which on the first day of each September mark the commencement of another college year. If there are none who hail with greater delight the coming of the much needed rest of a vacation than the hard working college student and professor, there are few who come back with greater pleasure to their appropriate labor. The return to a locality in whose splendid scenery nature has displayed so much of her matchless power to elevate and refine, the renewal of old associations, the welcoming of those who come in to take the vows of learning and fill the places left vacant by a year's progress, the presentation of prizes, and the annual oration, are matters possessing a pleasing interest to all, and which must hereafter form the subject of many welcome reminiscences to both student and teacher.

THE COLLEGE

commences this year with a larger number of students than it has had heretofore. We look upon this as a promise of that increased prosperity for which we so eagerly strive. Let us fully estimate the value of our College to us as a Christian body; let us realize the duty of sustaining it—the privilege of being engaged in a work which must be productive of such lasting benefits; let us be united throughout these three Provinces, feeling that Acadia belongs no more to Nova Scotia than to New Brunswick, to neither of these more than to Prince Edward Island, and we shall soon have within our walls double the number of students now in attendance.

There is one class of persons to whom especially the present time offers golden opportunities—our young men. More perfect communication, more general appreciation of the value of education, and especially the vast improvement in our Common School system, afford to those who have yet their lives before them advantages, the worth of which can hardly be overestimated. With youth and health, and the blessing of God which always attends worthy endeavor, any one who wills it may secure for himself that liberal culture which fits men for the higher positions of usefulness—always open to those who are prepared to fill them.

THE ANNUAL ADDRESS

was delivered by Dr. Crawley. Its subject—"Freedom of Thought"—was well calculated to exhibit the power which the reverend gentlemen possesses, not only of understanding the many-sidedness of truth, but of helping others to appreciate it, and the nice discrimination and thorough mastery of his subject which enable him to free the name of so important a characteristic of manliness from the reproach brought upon it by misuse. It was an eloquent plea for intellectual independence, outspoken and honest, and at the same time reverent and teachable. The higher education deserves the name of liberal culture, because it stimulates the mind to that open investigation which is necessary to the fullest acceptance of truth. If we are to do battle successfully against the skepticism which takes the name of science, we must be prepared to oppose it with proof instead of dogmatism. The same is true of religious speculations. While there are many who receive the