

have already learned. The simple axiomatic truths applicable to arithmetical operations should be introduced and applied. Questions combining all four operations should be given and brackets used (thus paving the way for algebra), and as many different ways of working the questions employed as is expedient.

The idea of the H. C. F. and L. C. M. of number may now be developed, and the knowledge applied in the solution of practical problems.

The idea of a fraction and of the terms of a fraction being developed and the similarity between the expression of a fraction and that of division being observed, the teacher may now proceed to teach operations upon fractions through and by virtue of the principles and axioms learned. If this plan be carried out earnestly, it will be a pleasure for the class to learn fractions, and for the teacher to teach them. How to carry out this plan we can each think out for ourselves. As a school-boy there existed in my imagination a deep gulf between *fractions* and *decimals*. This, doubtless, is the experience of many. Children should see the *non-necessity* of vulgar fractions, decimal fractions and so-called decimals. There is no practical use that I can see of both the terms *decimals* and decimal fractions. The latter term is sufficient; the former, superfluous and apt to give an erroneous idea if not guarded against by the teacher.

In teaching all of the foregoing operations, practical problems should be given, and a good part of the time given to mental arithmetic. Reduction, compound operations, and practice, simply involve the principles of numeration, notation, reduction, etc., already learned; and, though proper questioning, the pupils will see how to apply the principles so as to perform these operations. The rest of business arithmetic may be worked by the unitary method which is based on the principles and axioms with which the pupils are already familiar, and which is fully treated in one of the texts.

In closing, I would say: accept no work slovenly executed. Let the children do the thinking, strive to bring out principles, "make haste slowly," rivet the work with review tests that test the thinking ability of the child.

J. A. E.

### How Teachers are Made.

Since it has come to be a recognized fact that in this age of competition an individual must have some push in him in order to make his way in the world, and moreover that at least a fair education is necessary to success, parents are becoming increasingly anxious that their children shall avail themselves of all the privileges which a common school can afford. And when the parents have done their part in thus keeping their children at school until they have reached years of discretion it often happens that the young people themselves take the matter into their own hands and determine that they will work their way through the higher institutions of learning.

As a means to this end, a considerable proportion of them engage in the occupation of teaching; this, together with the growing desire of girls to be independent, accounts for the steady increase of student teachers at the Normal School. But when we remember that to boys teaching is as a rule but a stepping stone to a profession or more lucrative employment, and to girls not necessarily a life occupation, we are better able to understand why it is that the market does not become over-stocked, and to solve to a great extent the oft-probanded problem of "what becomes of all the teachers."

Perhaps in no occupation in life are there such frequent changes as in teaching; but the fact that no matter how short a time a person may wish to remain in the profession, he must undergo the same training as if he intended to make a life work of it, renders this constant change less of a drawback than it might otherwise prove.

The would-be teacher must first of all attack the entrance examination papers, and with many sighs and inward quakings work his passage through them into the Normal School. Should he be fortunate enough to do this he finds that he has taken but the first step toward the accomplishment of his desire. It would never do for him to rest on his oars then, but henceforward with his scribbler under his arm and his eye firmly fixed on his prospective license, he must pursue his way from one class-room to another, imbibing the knowledge which is to fit him for his occupation as an instructor of the young.

He must learn to turn his attention from the study of atoms and molecules, to the study of precocious children at a moment's notice; to drop his problem in mathematics at the first sound of the signal, and turn with becoming zeal to the occupation of singing scales and enunciating vowel sounds. Profound investigation into the anatomy of the human body must give place to investigations in language according to Meiklejohn, while the young lady students may be called from any of these occupations, to learn how to adjust a patch properly, or to acquire skill in the art of house-keeping.

In routine similar to this the days glide on; but there are breaks in the monotony. When his turn comes he must betake himself to the Model Schools, and there put into practice all the theories he has acquired since his arrival. On such occasions he is liable to have his first enthusiasm somewhat dampened, as when for instance he goes down, armed with apples nicely divided into parts, to present a lesson on fractions objectively, and having distributed them, finds the children surreptitiously taking bites from them behind his back. On first thought he is apt to conclude there is something wrong with the objective method, but a little reflection will convince him that the method is all right, the fault lies in the illustrations and the next time he presents fractions objectively, he will either impress upon the children the fatal consequences of apple eating in the case of Eve, or else supply something less palatable.

The next great break in the monotony is the examination. During a nine months' term he is to look forward to four of these oases in the desert, not counting the final. When he has been at school some six or seven weeks, some one scents an exam in the air and immediately confides his suspicions of such a catastrophe to his fellow students. He is asked to produce his evidence, which he proceeds to do:—Some one has seen a light burning in the library in the evening—an ominous sign! Some one else has seen the faculty comparing notes and looking very important, while a third affirms that invitations have been issued in one of the churches for a social and that invariably precedes an exam. Altogether it is a very clear case, and thenceforward there is no rest for the expectant students.