

the language of fractions. If we were to adopt a different notation, their mode of statement would have to be materially changed, and some of them would probably drop away entirely.

For practical purposes in life these rules are perhaps what they should be, giving us, as they do, directions as to how to obtain a result, without reasoning with things, by means of a trick with figures. But in education, where the primary motive is to develop thought, and where the proper object of thought is the thing itself, and not the symbol which denotes it, they are, to say the least, of very little value. They are so widely abused by injudicious teachers that they do positive harm in many schools. After children have been thoroughly taught fractions concretely, so that they can illustrate any process readily with objects, then these rules could be given to them as devices by which results can be reached without thinking of things. But as long as children must think in things (which means, as long as they do not understand fractions thoroughly), such devices, based on the mere language of fractions, stand in the way of thought-development. They prevent a large number of children today in our schools from getting a clear, thorough knowledge of fractions, and produce in them a dislike for arithmetic.

Experience has shown that children can learn fractions just as early, and with as much ease and facility, as

whole numbers. As soon as they know two and three they can be taught halves and thirds. There is no reason why the teaching of fractions should be postponed as long as is assumed in some of our text-books on arithmetic. Nearly all the difficulties that teachers meet with in teaching fractions do not properly pertain to fractions as such, but grow out of the language of fractions, and are greatly enhanced by the fact that teachers often attempt to begin the teaching of fractions by teaching the language in which they are expressed before they teach the fractions themselves.

In nearly all the schools objects are used to illustrate the idea of a fraction, and the meaning of the terms numerator and denominator, but not to teach the processes of addition, subtraction, multiplication, division, and reduction. The consequence is that the processes are performed, for the most part, mechanically, "according to rule." The popular notion that fractions are more difficult to understand than whole numbers, and that children must study whole numbers for a year or two before their minds are sufficiently mature to understand fractions—a notion that has crept into many of our text-books on arithmetic—shows to how great an extent, by common confession, it is practically admitted that the language of fractions, and the rules based on it, stand in the way of the children's thinking.

HOW TO PRONOUNCE

The following rules are taken from *How Should I Pronounce?*

General Rules

1. Learn to distinguish the elementary sounds so as to easily recognize them when heard.
2. Practice upon each elementary sound until it can be easily produced.
3. Practice upon the more difficult combinations of sounds.
4. Practice upon words difficult of articulation.

5. Learn to spell words by sound or phonetically.

6. Become thoroughly acquainted with the diacritical marks in the dictionary that you are in the habit of using.

7. Form the habit of consulting the dictionary in all cases of doubt.

8. Carefully study some manual upon the subject.

9. Habitually observe the pronunciation of others.