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SOME OBSERVATIONS ON THE TEACHING OF ARITHMETIC.

Abstract of an Address delivered before the Pedagogy Club, Winnipeg,
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INTRODUCTORY.

Suppose we take a problem such as this:—

At what time will John Brown, who was born Sept. 3, 1897, be as old as his father now is, if his father was born June 17, 1854? There may be three difficulties to a pupil who attempts a solution, and these are typical of the difficulties to be found in all arithmetical problems.

I. THE DIFFICULTY OF CALCULATION. The pupil may not be able to make the necessary additions or subtractions. It is a long step from that first counting by ones to the ready and accurate calculation which seems to be mechanical and automatic.

II. THE DIFFICULTY OF LANGUAGE. The pupil may be unable to gather the thought of the problem—that is, may be unable to read. This is a very common failure. Some teachers say "My pupils cannot think." They should say "My pupils cannot read or picture."

III. THE DIFFICULTY OF THOUGHT. The pupil may be unable to make the relations that determine the calculations to be performed.

We shall now consider the principles or rules that should guide us in assisting pupils to overcome these difficulties.

CALCULATION.

1. *In the life-experience of every pupil a non-systematic study of number precedes the systematic study.* The actual knowledge possessed by pupils when they reach us, is not the same in any two cases. Home life, with its division of candies into portions numerically or quantitatively equal, its separation of buttons, beads and blocks into groups of the same number or size, its fights over counters in "crokinole" and "cuckoo," has put the pupil in possession of a number of truths of number and quantity that should be the starting-point for what is sometimes termed scientific school-room study. Recently a class was working to get a scientific knowledge of the number two, by solving such ques-