the qualitative result through the quantitative means is self-evident. Similar illustrations might be cited for almost the entire list of experiments.

The inquiry is perhaps pertinent: Are teachers who complain of "requirements" not objecting to fetters forged by themselves which they are at liberty to cast off when it suits their convenience?

DIVISION IN ARITHMETIC.

By S. A. COURTIS, DETROIT, MICH.

Believing that it was possible to give first grade children experience with the situations which call for operations with number in the later grades, a first grade teacher proceeded as follows:

Addition was called "combination." Two groups of objects were counted separately, *added*, by being placed in one group, and the sum found by counting the single group thus formed.

Subtraction was called "separation." The children, asked to subtract five stones from a group of seven stones, separated the seven stones into two groups, making one five stones, and counting the other to determine the size of the remainder.

Multiplication, in the same way, was carried out by the "combination of equal groups"; division by the separation of a group into equal parts.

An upper grade teacher approved of the work until it came to the division. To divide by two, the first grade teacher had permitted the children to separate a group of six dots *by two's* into three groups of two each, thus:

Undivided
Partially divided
Completely divided

The upper grade teacher insisted that this was dividing by three, and contended that dividing by two meant the separation of the group of six into two equal parts, thus:

Undivided
Divided

To support her position the first grade teacher brought forward the problem of "how many stamps at two cents each can be bought for six cents?" where the idea was plainly the separation of the six cents into groups of two cents each. The upper grade teacher came back with: "Six cents is divided equally among two children. How many cents did each one have?" in which the idea was plainly the separation of the six cents into two groups of three cents each. An outsider suggested that both were right, but this the teachers could not accept for what one called division by two, the other called division by three, and neither was willing to have the children taught that dividing by two was also dividing by three.

Who can straighten out the tangle and show the reasons for teaching the children one method, or the other, as a concrete representation of division by two? Also, who can suggest a reference to a book on number that would cover the point?