NUMERICAL PROBLEMS IN CHEMISTRY.

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I require that stoichio-chemical problems shall be solved in this way:

1. Equation.
2. Known and unknown quantity.
3. Combining weights or volumes (two only).
4. Proportion.

I try to impress the fact that these are types of real problems. After working on a few in the text, I require that pupils shall state and solve their own. Work is assigned like this:

Using any (given) equation,

1. State and solve a problem involving weights:
 - (a) Known and unknown in first member.
 - (b) Known and unknown in second member.
 - (c) Known in first, unknown in second.
 - (d) Known in second, unknown in first.
2. State and solve a problem involving weight and volume:
 - (a) Volume unknown.
 - (b) Volume known.
3. State and solve a problem involving volumes only.
4. Similarly for Boyle's and Charles's Law:

I teach the use of logarithms and encourage their use in the solution of Boyle's and Charles's Law problems. In the other kinds of problems, I encourage the children to estimate the answer.

QUICKSILVER PRODUCTION IN FIRST HALF OF 1918.

The production of quicksilver in the United States during the first half of 1918 was 17,576 flasks, according to F. L. Ransome, of the United States Geological Survey, Department of the Interior. The total production in 1917 was 35,954 flasks. With the enlargement of our Army the demand for quicksilver is likely to be considerably greater in 1919 than in 1918, and the perfection of satisfactory detonators for high explosives that shall contain little or no mercury is one of the urgent problems of chemistry as applied to war.

The decline in production during the first half of 1918 was due chiefly to the shortage and the increased cost of labor and to the exhaustion or depletion of known ore bodies under the stimulus of high prices for the metal. The practice at some of the larger mines has been to devote nearly all energy to getting out ore and to postpone the underground exploration and development that are necessary to insure long-continued steady production.

Quicksilver mining is full of uncertainties, and capitalists are slow to invest extensively in an undertaking whose future can be so little foreseen. There is opportunity here for patriotism to cast the deciding vote where the cold doctrine of chances might turn the investor to industries offering greater assurance of reward.

One of the notable achievements in the industry during the year has been the successful adaptation of the rotary cement kiln to quicksilver metallurgy. Eight of these furnaces are now or will soon be in operation in California, and they are expected to make an increase in production that may more than offset the falling off during the first half of the year.