

In teaching this subject I have found it a good plan to weigh out and have on the table about 100 g of the red oxide of mercury, 125 g corrosive sublimate, 8 g water, and a 5-gallon bottle or box to represent the 33.75 g of hydrochloric acid gas. Beside the red oxide may be placed the two tickets "Mercury 92.59" and "Oxygen 7.41" of page 21, and the meaning of the statement "100 g of the red oxide contain 92.59 g mercury and 7.41 g oxygen" explained at length. Similarly with the hydrochloric acid. The reason why 33.75 g acid were taken is then explained, the hydrogen and oxygen tickets moved over to the sample of water, and great emphasis laid on the fact that the mercury and chlorine left over are present in exactly the proportions in which they unite to form corrosive sublimate. The pupils should be asked how it might be shown that the sublimate is a chemical compound; for if it were a solution, or a mechanical mixture, the law of combination in reciprocal proportions would not amount to much. It is better when possible to use names like "red oxide," "sublimate," "water," instead of the modern chemical terms, which were made up after the law of reciprocal proportions was discovered, and might sometimes almost seem to beg the question.

Each pupil should make his own cards, five packs in all. If at the close of the instruction (which, of course, cannot possibly be crammed into one lesson) he can explain intelligently the reasons for the different numbers on the corresponding cards of the different packs, it is safe to assume that he understands the laws of combination and the use of formulæ.

Only one reaction has been discussed in the text, but a number of others should be used in teaching.