a student to appreciate "the relations of the physical sciences to Biology," when he has no acquaintance with Biology? Surely the place for the discussion of such relations is at the end of somewhat extended courses in the sciences compared. There are three subjects which seem to me to be quite sufficient for this course in Form II.: (1) Chemical Change; (2) Elementary Composition of Matter; and (3) The Laws of Combination. To illustrate these, a few of the common elements and compounds may be studied experimentally; but all the work can be most profitably grouped around these three ideas. The introduction of the atomic theory at this stage is productive only of misconceptions and vagueness. To see that this result is inevitable, it is only necessary to remember the relation of the atomic theory to the laws of combination, and of both to the system of symbols and formulas. The atomic weights should convey to the minds of students not only the idea of the relative weights of the hypothetical atoms, but also that of combining proportions chosen systematically according to certain theories. When the atomic theory is introduced at an early stage the latter idea is almost always crowded out by the former—the theory completely hiding the experimental basis. This is so much the case that, when a question is asked about composition of compounds, etc., in nine cases out of ten the answer contains some irrelevant reference to atoms and molecules. I am of the opinion that it would be well to defer the introduction of the atomic theory until the University First Year. The subject can be developed sufficiently without any reference to the atomic theory. Let symbols represent in the first place combining proportions, and formulas merely the composition of compounds. It may be objected to this that there is in this case no systematic way of choosing the numbers. If the student is made to understand that the combining weights are chosen so as to give (1) simple formulas, and (2) similar formulas for similar compounds, he sees a reason for choosing, say, 80 for bromine when 35.4 is chosen for chlorine. But it is not necessary to stop here. The following is a quite safe method and one which involves a much simpler hypothesis, or rather convention, than those of the atomic theory. It is, besides, much less likely to distract the attention from the practical significance of symbols and formulas: The specific weights of gases are found to have a simple arithmetical relation to their combining weights, being proportional either to the combining weights or to simple multiples of them, so that if the same standard, viz., hydrogen be used for each set of numbers, the specific weight of any gas is either the same number as its combining weight or the latter is some simple multiple of the former. But specific weights are the ratios of the weights of equal volumes. On comparing then equal volumes of hydrogen, water (gas), hydrochloric acid, ammonia, etc., it is found that, taking, say, 1 grain of hydrogen as the standard volume, the same volume of the other gases mentioned weigh respectively, 9 grains, 18.2 grains, $8\frac{1}{2}$ grains, and contain respectively 1 grain, $\frac{1}{2}$ grain, and $1\frac{1}{2}$ grains, etc., of hydrogen. The combining weights of these gases, as determined by analysis, are simple multiples of these numbers, the multiples being a matter of choice. The simplest plan would be to take as the combining weight of a compound gas the weight of it which occupies the same space as one part by weight of hydrogen. But this involves the inconvenience of writing formulas with fractional parts of the combining weight of hydrogen. This incon-