that it is better for young minds to make their own classification, even though they group things according to superficial resemblances. Their classification may not be scientific, but to them it is real—it repr · nts the present state of their knowledge. The accurate scientific classification may require for its real comprehension several years of study.

The same line of thought applies to definitions. To be worth anything to the young student of science they must be a natural outcome of his own observation and thought, guided more or less by a teacher or a book. There is a text-book of elementary chemistry which has passed through numerous editions, and has been received for more than twenty years as the best extant treatise on the elements of chemistry. The first sentence in the Introduction is as follows: "By chemical action we signify that which occurs when two or more substances so act upon one another as to produce a third substance differing altogether from the original ones in properties, etc." The average student beginning the subject does not even understand the sense in which the word "substances" is used. The examples which follow may make this clear, but they are not likely to make the strongest impression on a mind preoccupied with the definition. The examples should come first.

Those generalizations which are often called laws of nature are too generally misused. It is quite clear that to an immature mind the statement of such laws can have a significance commensurate only with knowledge of instances. It is otherwise with minds well-stored and accustomed to pass from the general to the particular. This leads me to emphasize the fact that I am discussing the methods of presenting *elementary* science. I do not perhaps need to remind you that in every subject the method must become more and more elliptical as the powers of the student increase; and that at some stage it may be real economy of time and energy to reverse the order and give the general before the particular.

It is very hard to decide when to introduce theories in teaching a science. One is tempted to bring them in with the minimum of preparation. They seem to smooth away so many difficulties in the presentation of the subject. But I am of the opinion that it is only seeming. A theory can surely form no substantial basis upon which to build the elements of a science. It belongs rather to the later stages—the finishing touches. A theory is an explanation. But the necessity for an explanation must surely first be forced upon the mind. In many cases the explanation is introduced before the student has anything to be explained. Theories hardly belong to elementary science.

Hoping that I have made sufficiently clear the principles upon which the criticism is to be based, I shall now examine shortly the courses of study in physics and chemistry as laid down in the Departmental Regulations for High Schools and Collegiate Institutes. (See Circular 2, p. 6.) But I must first express the satisfaction it gives me as a Canadian to observe two things: (1) That the compilers of these regulations expect a great deal from our Canadian boys and girls; and (2) That these regulations have put to such a successful test the ability of Canadians to write good text-books of elementary science.

Having some years ago had a little experience in teaching the elements of physics, I may venture an opinion upon the High School course of study in that subject. Experimental physics covers such a wide range of experiment and observation that it is a matter of very considerable difficulty