

conclusions that may be drawn from them, and science in a broader and less technical sense as applied in all methods of scientific reasoning and investigation. Empirical science seeks to attain facts exactly and in sufficient number to serve as a foundation for a super-structure; then to group these correctly in appropriate classes, and finally to arrange the several classes into a harmonious system. In order to facilitate dealing with the mass of facts obtained, the uniformities observed in the various classes are summed up into general propositions, called laws. The relations of cause and effect are next sought, and thus arise hypotheses and theories. Again, science in the broader sense, or as Jevons expresses it in his *Principles of Science*, the "Scientific Method," "consists in the discovery of Identity amidst Diversity." To quote further from the introduction to this admirable work: "Nature is a spectacle continually exhibited to our senses, in which phenomena are mingled in combinations of endless variety and novelty. Wonder fixes the mind's attention; memory stores up a record of each distinct impression; the powers of association bring forth the record when the like is felt again. By the higher faculties of judgment and reasoning the mind compares the new with the old, recognizes essential identity, even when disguised by diverse circumstances, and expects to find again what was before experienced. It must be the ground of all reasoning and inference that what is true of one thing will be true of its equivalent, and that under carefully ascertained conditions nature repeats herself." Professor Huxley makes a still broader statement when he says, "To my mind whatever doctrine professes to be the result of the application of the accepted rules of inductive and deductive logic to its

subject-matter, and accepts, within the limits which it sets to itself, the supremacy of reason, is science. I conceive that ordinary geometry is science, by reason of its methods, and I also believe that its axioms, definitions and conclusions are all true." The study of the facts presented by nature is but one of the applications of the scientific method. We have the science of rhetoric, of history, of language, and in fact when any subject is pursued in the same spirit it is entitled to be called a science.

By the phraseology of the subject assigned me, I infer that more particular reference was had to the natural sciences. Perhaps it is not assuming too much to state that the relation of the natural sciences to our courses of instruction and the extent to which the distinctively scientific methods shall be applied in all branches are the leading educational questions of the day. The increased attention that is being paid to the natural sciences in our collegiate and public school courses has doubtless been marked by all. Intelligent people are rapidly awaking to the fact that an educated and cultured man, whose powers of observation have not been cultivated and who lacks the ability to make an accurate or truthful statement of facts, and is unable to draw logical conclusions from what he observes, is not educated at all, though he may be learned. How shall this be remedied? It is coming to be generally accepted that thorough instruction in the natural sciences and rigidly pursuing scientific methods in all instruction will bring about the needed reform. As years ago people realized that it was necessary to begin correct moral instruction as early as possible to produce the highest moral excellence, so now the correct instruction of young children is deemed of the highest importance.

Bain states that the powers of the