ing that every Mathematical proposition could on occassions be objectively verified, and it is no doubt desirable that so many spatial relations should be available in the abstract form to which they have been reduced by the patient labor of generations of Mathematicians, but as dealing with abstractions the Mathematician has only been trained to reason correctly from premises to conclusion. In the ideal world in which the Mathematician moves he has not been trained to observe a constant relation among a number of varying particulars. He has accepted, not arrived at his general principles. It is owing to this characteristic defect of an exclusively Mathematical training that the most logical reasoner is often the honest observer and the readiest to leap to unverified generalizations. It has even been said that the mere Mathematician is usually the most credulous of men. Mathematics we are ready to admit has its own educational value. Its tendency is no doubt towards accuracy and close thinking, but so far from being all that is desired as a means of education, Mathematics has only dealt with the relation of externality of one object to another; and at the stage of Mathematical knowledge our conception of the world is the conception of an aggregate of objects related spatially. It is only in the inductive Sciences endeavoring as they do, to lead order and harmony into the changing Phenomena of nature that the correction can be found for a one-sided Mathematical training. It is as the complement of Mathematics in a complete Educational course that the teaching of Science is to be justified. Herbert Spencer divides the human activities into five great classes :

1. Activities which tend directly to self-preservation.
2. " " " indirectly.
3. Duties as a parent.
4. " " " citizen.
5. " " " man of leisure.

And he goes into an elaborate defence of Science as supplying the information most serviceable in the different spheres of action. Spencer indeed like the Mohommedans with the pig, contrives by one pretext or another to include the whole sphere of knowledge within the meaning of the term. All our old favorites are still taught, and he does speak of a certain disciplinary effect from them, but these disciplinary effects are always sub ordinate to the different modes of activity for which the man is to be prepared. I consider Spencer's fundamental mistake to be the idea that Education is a special technical training for the business of life, rather than the harmonious unfolding of the highest powers of the child, postponding the training for the special business until the faculties had to some extent been developed. If the object of teaching Science be the purely practical one which Spencer sets before himself it must be admitted that our schools are wonderfully deficient in that department. But Spencer's theory is absurd. On his own showing the ramifications of Science are so numerous that to attempt to teach more than the rudiments of three or four of them, to say nothing of the others, would be impossible within the brief compass of a school life. Spencer tries to show from the example of Physiology the benefit that would result from a more general study of Science, and he further says that many unprofitable business undertakings would have been prevented by a knowledge of Science. I am afraid that the little school knowledge of Science might rather prove a dangerous thing. The amount of Science that can be taught from the time a pupil enters school till he leaves it is very valueless, considered solely with reference to what he can remember and make ideas of. To teach Science for any practical purpose our whole Educational system would need to be changed. We would have to establish Schools for this and that Science, and since a lengthened period of apprenticeship is necessary it would burden the parent with the enormous responsibility, of determining before hand, the business his child was to follow. Briefly then if the object of Education be merely practical, and if Science is taught because it is at the bottom of all the processes of production and distribution, and to teach it is to fit a man for the business of life in that narrow sense, then, I say that our Science teaching is a failure. It is simply impossible in the limited time at our disposal, to teach Science sufficient to be of any practical use. On the other hand, if the object of Education, as conducted in school, be rather to develop the faculties which lie dormant, to produce active, intelligent and observant men, then, I say that the school can make a most valuable use of one or more departments of Physical Science. Mathematical training as I have tried to show, is abstract. Its teaching is towards logical and close thinking, but the Mathematician is never brought close to nature and is apt to regard the world as a Mathematic total, an arbitrary collection of individual objects. The Scientist on the other hand starts with no general principles. Of course every generalization where properly established becomes a general principle, but the relations with which the Chemist, the Physicist, or the Botanist deals are not so universal, and are much more intricate than those with which Mathematicians deal. That is to say every real thing has size and shape, but every real thing is not an acid. Any Chemical law, for example, that Sulphuric acid and Zinc produce a certain re-action may be considered a general principle, and we can proceed deductively and say in any particular case of Sulphuric acid acting on Zinc that a certain result will follow, but the laws of Science are so numerous that the deductive method is not so effective as it is in a Science dealing with the wider relations of space.

In Science therefore, we are always working towards general principles. The method of Science is inductive. The method of seeking the one in the many. It is in Scientific investigation that we are led to see that :

"The very law that moulds a tear,
And bids it trickle from its course ;