

school, and that was all that we remembered of natural philosophy. At that very age most of us, if not all, were curious about air and water, the motions of the earth and the moon, the light of the stars, the curious manifestations of frost, fire, and electricity and magnetism. I remember how glibly we recited portions of natural philosophy where the author forgot his grim mood for a moment, his triangles and square roots, and explained in a simple manner why the rising moon appeared so large between the small branches of a wood, and why fog came up the bay when the sun went down. When we succeeded in getting the right answer to a problem we were elated and began to think that natural philosophy was not so difficult to study after all; but these moods of elation were too often succeeded by those of blackest night and incendiary desires. In looking back, the thought comes to us that there must have been something radically wrong in such teaching; for the subject of the laws of the physical universe has such infinite possibilities and contains so much that can stimulate the imagination of even young children, that any method which represses, or does not encourage a child's desire to know the reason of things, must be radically wrong.

It must not be supposed, however, that the picture we have presented has not its bright side: there are always teachers who are especially interested in physical science, and who excite an interest in the subject among their pupils. The hour of the lecture on physics is looked forward to by the pupils of some schools with great relish, and some date their interest from the school exercises in this branch. Generally speaking, however, most men who have more than the ordinary knowledge of science have had their enthusiasm awakened out of school, and by actually working with appara-

tus, or handling specimens, have taught themselves.

The opponents of the study of physics in the secondary schools generally regard it as of less importance than the mathematical or grammatical studies, and class it among what they regard as superfluous subjects, the number of which has very much increased of late years. Not a few of these remember the manner in which they were taught, and have no desire that their children should repeat their experience. It is very natural also that the teacher whose training has been exclusively literary should be indisposed to teach a subject like physics, which requires a certain facility with apparatus and some inventiveness which a purely literary training has the effect of obscuring and even crushing out. Who has not seen an excellent teacher in the languages or even in mathematics fail completely before a class of boys and girls in showing some simple experiment? It is very natural that he should fail, for this facility and inventiveness of which we have spoken come, except to the few, only by practice and from an early habit of observation. More time also is consumed in getting ready for one lecture or exercise in physics than in six recitations in the straightforward subjects of language and mathematics. A refractory piece of brass, a wire wanting here and there, a shrunken bit of bladder, a broken glass tube, may involve hours' labour for one who is generally hard-worked in other ways. It is easy to theorize on the subject of teaching science, especially physical science, in the second grade of schools, but one should not forget the wearing nature of routine work which is apt to deaden one's enthusiasm. One cannot expect a teacher to hold weekly talks with his pupils on force, or to rely upon treatises which are merely descriptive, or to be patient with apparatus which, by frequent use, seems almost