

fully through the ordeal of some written examination on the work of the School course, it is not to be expected that teachers will give any attention to a kind of instruction, however useful it may be, that will not count on the day of examination.

In the United States, Natural Sciences are taught to a greater extent than with us. Physics, Chemistry, Mineralogy, Geology, Physiology, Zoology and Botany find a place in nearly all American school curricula, and text books upon all these branches of study are graded to the varying capacities of the pupils. In Ontario, our school work is characterized by the almost total absence of Science teaching. Not only is the instruction given very limited in amount, but the kind is not what it should be. Ontario Schools are immeasurably behind those of the United States, not only in the extent, but also in the nature of the scientific teaching.

At the Saratoga meeting of the "American Association for the advancement of Science," a Committee was appointed to enquire into and report upon the Science teaching of the Public Schools of America, and the results of this investigation were embodied in a paper which was read last year at the meeting held in Boston. "The time has fully come," says the report, "when the system of public instruction must be measured by the standards of Science and approved or condemned by the degree of its conformity to what these standards require. Science has become in modern times the great agency of human amelioration, the triumphs of which are seen on every hand; it has advanced by the promotion of original investigation, which depends upon men prepared for the work. To the Schools is given the task of moulding the youthful mind of the country. Do the schools of the country, by their method of scientific study, favour or hinder this object? Do they

foster the early mental tendencies that lead to original thought, or do they thwart and repress them? So far as Ontario Schools are concerned, the results of the intermediate and first-class examinations obtained during the past few years compel us to say that our system of school examinations tends to repress originality of thought. "To awaken the spirit of enquiry, to cultivate the habit of investigation, and to rouse independent thought, are the grand ends to be secured in a true education." Science is an outgrowth of common knowledge, and the Scientific method is but the development of the ordinary processes of thought, that are employed by everybody. "The common knowledge of the people is imperfect, because their observations are vague and loose, their reasonings hasty and careless, their minds warped by prejudice and deadened by credulity."

"The scientific method is simply a *systematic* exercise in truth-seeking, and is the only mode of using the human mind when it is desired to attain the most accurate and perfect form of knowledge. It is applicable to all subjects whatever, that involve constancy of relations, cause and effects, and conforms to the operation of law. In our Public Schools little use is made of this method in the work of mental cultivation; the pupil learns the facts and principles of science from books and from teachers, much as he learns Geography and history; thus treated the Sciences have but little value in education. The Sciences should be made the means of cultivating the observing powers, of stimulating enquiry, of exercising the judgment in weighing evidence and of forming original and independent habits of thought. As remarked by Agassiz, "The pupil studies nature in the school-room, and when he goes out of doors he cannot find her." Judicious oral assistance, as given in the physical,