

### Science in the Public Schools.

Supervisor McKay, of the Halifax schools, in his presidential address before the Nova Scotia Institute of Science, makes the astonishing statement that the study of science "may be fairly well done in five per cent. of the schools; with very varying degrees of success in 60 per cent., and scarcely attempted in the remainder."

Mr. McKay has excellent opportunities for procuring data on which to base such a statement, and one is inclined to accept his conclusions as correct. In New Brunswick it is doubtful if any better results can be shown. The same opportunity for testing the work done by examination does not exist, though the individual efforts of a teacher like Mr. Brittain, in the Normal school, have undoubtedly accomplished much in stimulating and directing such instruction in schools throughout the province. In Prince Edward Island schools there is nothing to indicate that natural science work has made any marked progress, except in a few sections and by a few teachers. And yet, no doubt, there is a distinct advance in these provinces, both in the desire to teach this branch successfully, and an honest attempt on the part of an increasing number of teachers to lead their pupils to habits of observation, and to acquire for themselves laboratory methods of instruction. As long as the teachers depend on the text-book, and have but little knowledge and less interest in the subjects of nature study, there will be dismal failure, strengthening the impression that is abroad among parents, especially in the country districts, that the teacher is frittering away time, and wasting the energies of pupils, if he gives attention to natural science subjects. And, let us confess it, such an impression is not without some practical common sense to support it. Who could expect that a teacher who has spent many years in acquiring even an elementary knowledge of English and other branches could be expected to train pupils in subjects in which he himself has received no adequate training?

Mr. McKay thinks that—

"The majority of teachers would do better science work if they could, but they have never seen it done; they cannot learn how from books; and they have not the pecuniary or moral support that comes from a general intelligent appreciation of the material, intellectual and moral benefits resulting from scientific training."

"Provincial examinations show that experimental work is almost wholly neglected. The mental confusion and crudity of conception apparent in a large proportion of the answers received would tend to show that much of the science teaching is simply a mechanical memorizing of the text book."

"More or less successful attempts are being made in some of the colleges to teach science. But, divided and scattered as they are, five degree-conferring institutions in a small prov-

ince of scarcely half a million inhabitants, with no preparatory schools capable of giving a proper preliminary science training, it is small wonder that they take little interest in the teaching of new subjects which require expensive apparatus and hard work."

Mr. McKay, after comparing our lack of scientific and technical instruction with the excellent work that is being done in European countries, recommends the following means to secure for science the place which it should have in the actual work of the schools and colleges.

(a) Make it an imperative subject in the college matriculation examination for B. A.

Until the colleges takes this step in advance science will not be well taught in the schools, and until science is well taught in the schools the colleges will not have students capable of doing the best science work.

(b) The present grade "A" work in the academies should be discontinued and its place should be taken by a more thorough practical science course for grade "B."

(c) The professional training of academic teachers and of the principals of the larger schools should be part of a college course. Their professional training should be a post graduate course at least in part. If our larger colleges cannot provide pedagogical training for the few grade "A" teachers that we need, we will have in the meantime no difficulty in obtaining it abroad; but wherever it is obtained, let it be as thorough as the post graduate training required in the other professions.

(d) Examinations in science, whether by the colleges or by the education department, should be so modified as to take into account the pupil's laboratory work throughout the term and his present ability to perform and interpret experiments and also to examine and classify mineral, plant and animal specimens. A certified copy of his note book of experiments should be taken as evidence of his work. In order to have some reasonable certainty that this work was honestly reported, it would be necessary for some qualified person to inspect the laboratories and see the students at work twice every year.

A written examination does not adequately test a student's science acquirements. If the provincial grade "A" scientific examinations are to be continued they should be conducted at the Normal school, and every candidate should have to do a certain amount of laboratory work in the presence of the examiner.

In a recent number of the *New England Journal of Education* reference is made to the naming of a new school building in Cambridge, Mass., after the senior schoolmaster of that city. The *Journal* says: "The greatest monument that can be reared to a teacher is a school building bearing his name. It is every way appropriate, and is due a man like Mr. Roberts, who has educated more boys and girls than any other teacher in the city, a man more than eighty years of age, who has taught in the city for more than fifty years. In these days, when it is easier to hustle an old man out of the profession than to honor him in it, we are rejoiced to see a step taken in the right direction."