



THE JOURNAL OF EDUCATION

Devoted to Education, Literature, Science, and the Arts.

Volume XX.

Quebec, Province of Quebec, July, 1876.

No. 7.

TABLE OF CONTENTS.

On the Practical Teaching of Experimental Physics in Schools.....	101	EDITORIAL :	
SCHOOL EXAMINATIONS :		Report of the Honorable Minister of Public Instruction (Continued).....	109
Conferring of Degrees to Successful Competitors at William Molson Hall, 8 June.....	106	MISCELLANY :	
Villa Maria Convent School..	107	Little Kindnesses.....	115
McGill University Intelligence	108	Fun at Home.....	115
OFFICIAL NOTICES :		Useful Information.....	115
Appointments—School commissioners—Erection of School Municipality.....	108	In case of Burns.....	115
POETRY.....	109	Light and animal Organism	115
		Oil as Fuel.....	116
		Cheery People.....	116
		Great Cyclopedias of the World.....	116
		Advertisement.....	116

On the Practical Teaching of Experimental Physics in Schools. (1)

In recent times so many important additions have been made to our knowledge of Heat and Electricity, that a new impulse has been given to the study of Physics, to original research in it, and to the old controversy how far and in what manner the teaching of Experimental Physics can or should be made an inseparable portion of a system of National Education. Those who take a professional interest in any branch of Physics, and make its pursuit or its teaching the business of their lives, urge the claims of Physics to be placed on an equal footing with Writing, Reading, and Arithmetic, as an educational subject, principally upon two grounds. First, they maintain that Physics holds the foremost position as a means of developing the various functions of the human intellect; in other words, of best furthering the ultimate aims of general education. Attention, memory, judgment, imagination, are alike roused, brightened, and sharpened by an early individual acquaintance with natural phenomena. In proof of this, they point to the history of philosophy and the literature of all civilised nations. On every page which preserves the teaching of the ancient Greek philosophers, and of the great thinkers of succeeding times, we find physical phenomena taken as starting

(1) Paper read by B. Loewy, Esquire, before the College of Preceptors.

points, or used as illustrations of profound metaphysical doctrines; and the very downfall of philosophical systems coincides exactly with the times when the onward progress of physical sciences showed the Physics of the ancients to be either altogether wrong, or their facts wrongly interpreted. But the greatest support for this recommendation of Physics is derived from the fact, that no kind of human knowledge is so intimately connected with our earliest experiences. The very growth of the faculties of a child depends on physical phenomena. As soon as its eyes are opened it is a physical observer, and soon although unconsciously, becomes a physical experimenter, the range of its experiments constantly extending as the child grows. Each moment in the very earliest life adds to the clearness of the primary conceptions, which are at first confused and incorrect. The child soon learns to distinguish between solid and liquid, between hot and cold bodies, between light and darkness. The ear at the same time lays in a store of experiences on sound. The years of boyhood enrich the amount of physical knowledge immensely, and by a thousand instances, each of which is nothing else but a physical experiment, the boy becomes acquainted with a vast range of physical facts. He experiments on the weight, hardness, rigidity of bodies; on the rebound of a marble or a cricket-ball, on the motion of bodies projected in different ways; he learns music, or is delighted with the echo of the mountains or forest; he makes experiments on reflection and refraction of light; observes colours, studies the effect of a burning glass, plays with small magnets, and rubs sealing-wax on other bodies to observe electrical attraction. These experiences possess, of course, no inherent connection: the boy sees merely, he does not think, or think erroneously, but there is stored up in this manner a vast material, even in the dullest mind, on which to work, so as to bring out our highest faculties. In not one of the sciences which have the study of a natural phenomena for its object, stands the teacher upon so well prepared a ground for the purpose of education—a ground which only requires conscientious labour to bring forth the best and most valuable of fruits.

But it is also urged upon another ground, of a more