

nature, and for more practical purposes; too much of our public instruction is left to the option or caprice of the teacher. The programme should be of a more definite, explicit and permanent character; and scholars intending to pursue any particular profession or trade, should receive an education in the particular subject relating thereto. Let us take the curriculum of a Massachusetts student, intending to become a civil engineer, presuming that he has finished in a high school the courses required of all:

	Hours per week.
SECOND YEAR.	
Analytic geometry	3
Calculus	3
Descriptive geometry	3
Mechanical drawing	4
Surveying	2
Topographical and plan drawing	4
Physics (lectures)	3
French finished, German begun	3
Rhetoric and English literature, or descriptive astronomy	2
English literature, or physical geography	2
Military science	1
THIRD YEAR.	
Survey and location of roads	6
Construction of roads	6
Water supply, drainage, &c	6
Field practice	3
Stereotomy	4
Bridge and roof construction	4
Calculus	3
Applied mechanics	3
German	3
Physical laboratory	2
Outlines of zoology, or history	2
General geology, or political economy	2
FOURTH YEAR.	
Stability of structures	6
Strength of materials	6
Structures of stones	6
" wood	6
" metal	6
Topography (field practice)	6
Physical hydrography	6
Structure drawing	6
Building materials	3
Water power and water wheels	4
Metallurgy of iron	2
Applied physics	2
German	3
Philosophy of science	3

This is perhaps a too extensive syllabus for many, but if carried out efficiently, could not fail to produce accomplished civil engineers. What we particularly want is more free institutions, with professors of first class ability, and possessing sufficient apparatus for illustrating the fundamental principles of science and mechanics, and possessing libraries of the best works of reference published.

There can be no doubt but that greater results will be obtained by Canada from the Centennial Exposition, than from any of the previous Expositions that have taken place. This one has been brought home as it were to her door, and it is one in which her own people have largely participated. It has come within the reach of many of her mechanics, and therefore has been—in the face of hard times—extensively visited by Canadians, who doubtless will reap, in time to come, a rich harvest from the new ideas and knowledge gained by their inspection of this great exhibit of the industry and genius of the principal nations of the earth.

What another century may bring forth it will be hard to

prophecy. Kingdoms have crumbled away in less time than 100 years, but seldom so, where civilization, the product of human effort and time, leads the van; and if we may dare to foreshadow future events, we venture to predict that long 'ere another century has passed away, the whole of this great Continent of North America will be the territory of two great powers, whose interests will be blended in one common weal.

We cannot close these remarks without paying a most deserving tribute to the excellent arrangements of the Commission for the comfort and protection of the colossal crowds which at times filled the building, there being at one time no less than 205,000 gathered within the grounds on one day—and yet not a single accident, or a single case of lawlessness occurred. Every one seemed imbued with a feeling of good humour and general courtesy; nor can we too much admire the admirable efficiency of the railroad officials when we can state, on authority, that out of eight millions of people transported to Philadelphia, from every portion of a vast country, but one casualty occurred in which a life was lost. We believe in no other country could such another event have taken place and where so much good order, good feeling, good management and national enthusiasm was exhibited as that which crowned the Centennial Exposition with such marked success. In concluding this article we desire to express, also, our grateful thanks to the Secretary of our own commission, J. S. Stevenson, Esq., for his courteous letter of introduction which was a passport that carried us over many little difficulties at the last moment.

TO OUR READERS.

In wishing our readers a Happy New Year, we at the same time desire to acknowledge, with grateful thanks, the support we have received from them during the past year—a year which has been one unusually trying to mechanics—but at the same time we must most urgently solicit, from all interested in the mechanical industries of the country, a more extended subscription to meet the heavy expenses of publishing an illustrated scientific paper.

We desire, at the commencement of a new volume, particularly to call their attention to the remarks which will be found on our first page, on the late Centennial Exposition of the United States; and to impress upon every Canadian the established fact that the high position the United States has obtained among nations, has been owing, principally, to the great encouragement her Government (and her people mutually among themselves) have given to their Commerce and Industry. If we continue to patronize foreign publications and foreign industries in preference to our own, because they possess a little more excellence, which has been gained from long experience obtained from the advantages of possessing a market for the sale of their productions twenty times greater than Canada, how can we ever expect to arrive at the same excellence and perfection, when the encouragement we should receive, both morally and pecuniarily and in a national spirit, from our own people for the support of our own manufactures, and for retaining talent and genius in the country, is given so often to strangers? When our own industrial productions are thrown into the scale with foreigners, it will be no wonder if, in our competitions hereafter for excellence and perfection, we are found wanting.