

of his works, thus increasing the vast pile of unread books which commerce has placed upon its shelves. In some respects they are not to be blamed. Commerce is very exacting in its demands, and the exigencies of trade have created a fungus aristocracy, which attaches infinitely more importance to a well-furnished house than to a well-furnished mind. The frivolities and inanities of society are more attractive to the uncultured mind of the trader than all the intellectual grandeur of Dante or Milton. If Archdeacon Farrar's visit helps to remedy the existing evils it will have accomplished a great deal.

The *Montreal Star*, *Quebec Chronicle*, and other papers of less note, have suddenly discovered an amazing lack of cordiality between the French and English of the Dominion; both papers deplore the existence of such a state of things, and the *Chronicle* sees in it an element which directly endangers Confederation. Between the French and English residing within the Province of Quebec there is—so far as personal intercourse extends—much friendly feeling, and it would be a matter of great regret to see it disturbed. Unfortunately, however, the aspirations of the French are carrying them forward in a direction which must prove eminently distasteful to the English-speaking people of the Dominion, and eventually lead to the disruption of Confederation. To show how deep-seated the feeling of antagonism has become, it may be mentioned that a day or so before the French war ships left the port of Quebec the band of one of the vessels played on the Dufferin Terrace. There was a very large gathering of French citizens present on the occasion, including the Hon. Mr. Langevin, M.P., Mayor of Quebec. When the band played a French national air the enthusiasm was most unbounded, but it unfortunately subsided into dead silence the moment "God Save the Queen" was played; not a French hat was raised, and not the least mark of respect shown save by the few English that were present. Nobody asks for French loyalty, but it would be cruel to the progressive interests of the Dominion to keep them hampered by adhering to an utterly profitless and unsympathetic French alliance.

NEMO.

TECHNICAL EDUCATION IN AMERICA.

MR. WILLIAM MATHER, an engineer and manufacturer of Manchester, visited America last year as Royal Commissioner to examine the methods of technical instruction in the United States and Canada. His report, brief but bristling with interesting fact, proves on every page that its writer is an acute and impartial observer. In the course of a visit extending beyond five months, Mr. Mather investigated the systems of every technical school and college of consequence from New York to California. While he found these institutions fewer than in Germany, where technical education is most widespread, he recognizes their superiority in practicalness in their actual preparation of a student for engineering or manufacturing work. In the Worcester Free School, which he specially commends, skilled workmen are employed, and the pupils work on machines in course of construction for sale. At the Cooper Institute, the classes in drawing, modelling and engraving earned during 1882 no less a sum than \$40,000, a substantial aid to them financially, and good proof of the thorough practicalness of the instruction. At the Workingmen's School, conducted by Prof. Felix Adler, New York, Mr. Mather saw children, ten years old, who were proficient in drawing, modelling in clay, and the use of the lathe. Throughout the Union the importance of manual training has forced itself upon public-spirited men interested in sound education. In cities as distant from one another as St. Louis, Cleveland, Lafayette, Ind., Providence, and Hampton, Va., excellent schools have within recent years sprung up for the education of the eyes and hands of their scholars, as well as their memories.

Mr. Mather deplores the tendency of the American school system, which, even more decidedly than that of Great Britain, unduly lifts literary culture among its aims, overcrowds the "genteel" walks of life, and inspires a dislike of downright hard work. All this, too, when the plain effect of trained dexterity is to increase intelligence, and when competition is ever reducing the proportion of men required for commerce. This literary and theoretical tendency he found haunting some technical departments in great universities, the traditions which would put words above things evidently dying hard. Mr. Mather says "the native-born American hates drudgery; and all the mechanical arts, when pursued without some knowledge of science to employ and interest the mind while the hands are active, are more or less drudgery. The American boy, with his in-born ambition and natural ingenuity, would cease to regard manual labour as drudgery if his hand and mind together were industrially trained through the school period. He would then be led into industrial employments by choice, as the readiest means to climb to a higher position in life."

Mr. Mather noticed in America, what has struck every observer from beyond the sea, the spur to ambition among the people, due to the vast natural resources of the country and democratic institutions. This leads to a greater self-respect than is found among other workmen, and one notable proof of this is the general sobriety of the people. Their surprising ingenuity and versatility he takes to be due to necessity, nearly every country youth being required to be "handy" about the house, on the farm, in the store, in repairing or making rakes or ploughs, or the threshing or other machines in universal use.

One adverse piece of criticism this candid observer has had to give: Since the majority of American manufactures are conducted by joint-stock companies the employers evince less interest in the welfare of their men than in Europe. Reading-rooms, schools, public baths and parks for their use are rare.

Mr. Mather also considers ten hours, the ordinary length of a day's toil in America, too long. Coming from an employer of many hundred men the remark has force. Citizen of Manchester that he is, our Royal Commissioner is a staunch free-trader; he believes that protection in the United States must go, and then England will have a new and most formidable competitor in manufactures. For that inevitable event he would prepare her people by a thorough system of technical education.

Since the ambition of Canada is to be a manufacturing country, it is evidently her first task to afford her youth the means of sound technical instruction, such as our American neighbours exemplify in Boston at the Institute of Technology. Mr. Mather suggests that the appliances for industrial training be added to the School of Practical Science, connected with the University of Toronto, which will then become an excellent technological school. He speaks in similar terms of the engineering, surveying and chemical classes of McGill University in Montreal. X.

THE GOLD REGION OF THE DOMINION.

SECOND CROSSING, C. P. R., COLUMBIA.

THE construction of the Canadian Pacific Railway has opened up and made accessible a rich mineral belt lying in the heart of the Rocky Mountain district, and containing gold and silver ore in very large though as yet unascertained quantities. That the wealth is there is certain; the extent of it remains yet to be shown; and, the means of access being furnished by the railway, ere long the whole region will be thoroughly examined, trails cut on various lines, and the positions of the rich deposits mapped out. Only as recently as April of last year there were no means of getting west of the summit of the Rocky Mountains except by a pony-trail of very meagre construction and often dangerous character. The passes now traversed by the railway were quite uninhabited and but little visited by man. The trail in question had been made years ago, and kept open by the infrequent visits of some chance traveller, some engineer's party, or an occasional band of Plain Indians going through to buy—or steal—horses from the Kootenay Indians of the West. Such a trail as this, that had to be followed some hundreds of miles from the plains before any mineral deposits could be reached, was quite insufficient to bring in supplies for the working of mines, even had they been discovered. Early in April, 1884, the construction of the waggon road that preceded the railway was begun at the summit of the Rocky Mountains, and during the year was pushed through the Kicking Horse Pass, down the Columbia Valley, and across the Selkirk Range to the Second Crossing of the Columbia River, a total distance of one hundred and forty miles. At the Second Crossing this waggon road met and joined with another which had been constructed to that point from the west during the autumn of last year; so that, for the first time in the history of Canada, communication by road was established across the continent.

During the season of 1884 the railway was built from the summit of the Rocky Mountains down the Kicking Horse Pass to where it enters the Columbia Valley (forty-five miles), thence northwards down the Columbia Valley for thirty miles to the mouth of the Beaver River, a stream flowing into the Columbia from the Selkirk Range lying to the west; and the rails were laid to this point by the end of last December, a total distance of seventy-five miles from the Rocky Mountain summit. In order to cross the Selkirks, the railway turns sharply westwards at the mouth of the Beaver, ascends the Beaver Valley to the summit of the Selkirks, and thence descends by the Illecillewaet Pass to the Second Crossing of the Columbia, a distance of sixty-five miles from the mouth of the Beaver. Construction was carried on during last winter, and at present the rails have reached within a few miles of the Selkirk summit. The Second Crossing of the Columbia will probably be reached early in October, the junction with the rails from the Pacific Coast effected, and the line completed by November of the present year.

The geographical features of the country under consideration may be briefly described as follow: The general direction of the Columbia Valley at the point where the railway enters it is north and south, and its width about eight miles. The river flows north. This valley divides the true Rocky Mountain Range, lying on its eastern side, from the Selkirk Range on the west. As before mentioned, the railway follows the river for about thirty miles, until the Beaver Pass is reached; here the line turns west