

for scientific and technical study has been created in early youth, they have never been taught to become prominent members of society in their own line of trade, and consequently feel indisposed to make the initiatory movement for their own benefit, and have left it for others to do so in no way connected with the trade and industries of the country; the consequence has been that, the control of the Institutes, to a great extent, has passed out of the mechanics' hands, and the benefit of a library and reading-room is more enjoyed by those in no way connected with the trades and manufactories than by the mechanics themselves.

It is time that this state of things should draw to a close, and that Canadian mechanics come forward voluntarily to assist in the formation of an organization for the promotion of their own benefit. Any communications to this effect will receive all attention if addressed to the editor, F. N. BOXER, P. O. Box 197, Montreal.

TO THE EDITOR OF THE *Scientific Canadian*.—Dear Sir.—I have been thinking of late that the mechanics of the Dominion ought to have an association, and the more thought I give the subject the more necessary does it appear. If there was a society of mechanics of all trades, formed in every city, town, and village, in the Dominion, which could meet together every week, every second week, or every month, as they might agree upon, these meetings could be made interesting and instructive, by members of the society giving lectures, reading essays, and discussing scientific subjects. These essays, lectures, etc., could be forwarded to the *Scientific Canadian*, or whatever paper the [whole] "Dominion of Canada Mechanics Association" might adopt as their representative journal. It will be seen at once that such a large, varied, and well organized source of news supply would necessitate the enlargement of your journal, (if it should be chosen as their journal,) or better still, make it a weekly instead of a monthly edition. Such a course would bring every mechanic in the Dominion into intimate relationship with each other, and would certainly be the promoter of much good throughout our vast Dominion.

Of course, it would be necessary to have a general meeting at least once a year, such meetings to be composed of representatives of the various subordinate societies; it might also be found necessary to employ a lecturer to go from town to town and organize societies; but I will leave the filling up of details to some more competent person. I sincerely hope that the mechanics of the Dominion will take up this question and carry it out to a successful issue. Let us be up and doing, that we may have everything in working order so that we can offer "the *Scientific Canadian*," some substantial inducements to come out as a weekly journal after Jan. 1st. 1881.

I will undertake to say for the Province of Manitoba that we can and will do our share towards the enterprise, and I have no doubt but that British Columbia will do the same. So much for the West, what says the East.

With thanks for the valuable space you have allowed me,

I remain etc.,

A CANADIAN MECHANIC.
Portage La Prairie, Man., Feb. 6th., 1880.

THE FINAL COLLAPSE OF AMERICAN COMPETITION.

We ventured some months ago to say that "American competition had been the saviour of English manufacturing supremacy." For this statement we were soundly rated by many of the American papers. We bore the scolding with equanimity, and though they are still very cross with us we cannot forbear quoting a letter just received from a valued correspondent. He says: "Thanks for your quotation for American Locks, the prices have advanced so much since our customer last bought that we think he will use English in preference."

English manufacturers have had a scare we cannot but admit. Inflated by prosperity they "waxed fat and kicked," but when they found how matters really stood they buckled to with all their old energy and soon reduced to its proper dimensions the competition of a protected industry.—*Martineau and Smith's Hardware Trade Journal.*

THE TAY BRIDGE DISASTER.

To the Editor of the *SCIENTIFIC CANADIAN*, Montreal.

On the 14th ultimo, I received, from a friend in England, the *London Daily Telegraph*, of the 30th of December last, giving some details of the Tay Bridge disaster. I penned a letter to its editor, giving my opinion of the cause of the accident which I herein embody. The letter alluded to I placed aside, trusting others nearer the scene of the catastrophe, or some professional engineer, would have advanced sounder views than I have yet met with, and entered upon theoretical arguments as to that which led to the destruction of the bridge and train. At present we have little beyond surmises and some crude notions; and, on this side the Atlantic, only odd scraps of intelligence so unconnected, as to render it no easy task to attempt a solution upon such meagre details. Various are the opinions I see advanced, none of which appear to me to have any force. I will allude to one. Dr. Talmage, in a sermon delivered in New York, shortly after the accident, observed, that "It will not be known till the last great day whether the whirlwind had removed the spans of the bridge, before the train reached them." I select this to show that we need scarcely despair of facts being brought to light ere long to settle this point; or we can consult common sense, to solve the doubt. If the wreck of the train overlays the debris of the superstructure of the bridge, the spans ahead of the train had been removed by the hurricane, and those in rear fell subsequently, almost instantaneously; but I am of opinion that the bridge had, up to the time of the disappearance of the train, withstood the force of the storm, and that the train was the cause of the accident, at a time and position when two opposing forces carried death and destruction before their mighty power, and what has taken place was inevitable. I am opposed to the idea that the train was forced off the rail by the wind, and that it collided with the lattice work of the bridge, for we have almost direct evidence to the contrary; the men, Barclay and Watt, and the gentleman and his grand-daughter, saw that which satisfies me on this point. The two men say, they saw the tail light disappear, but make no mention of what the others noticed, viz., a commingling of the side lights, and then a shower of sparks, this is all important; if they are correct it is direct proof there was no chasm before the train reached the fatal spot, had there been it would have plunged headlong into the open space, and the engine tender, and heavily freighted carriages would underlie the rear and lighter carriages, they would follow one after the other, there would not have been any commingling of side lights. My belief is the train and span fell simultaneously, and that the train, when the rails and their supports gave way, was doubled up as it were, the heavier portions falling first divided it into two unequal sections. Neither of the parties could have seen, under such circumstances more or less than recorded, if my supposition is correct. Had the train collided they could not have noticed what they did; Barclay and Watt saw no sparks, nor commingling of side lights; the gentleman and his grand-daughter no tail lights. There is another circumstance or two, which tend to show the train was doubled up, for we are informed the first-class carriage is uppermost, and that the mail bags, and the body of a female were washed ashore shortly after the accident. This proves that the first-class carriage, and the mail bags, and the woman,