CANADIAN VS. FOREIGN CEMENT.

Editor CANADIAN ENGINEER

In your last (November) issue, a complaint is made because the Government did not contract for Canadian Portland cement to the extent of 11,000 bbls., to be used, presumably, within the next one or two years

While no one would be more delighted than myself were the Canadian cements to drive all others from our markets it does not seem at all probable for some time yet to come The reasons for this are to be found

(1) In a lack of uniformity in grinding.

(2) In a lack of uniformity in burning.

(3) In the limited output.

Now all of these defects can be remedied, and my reason for writing this is not to defend the Government which would be unecessary and presumptuous, but to urge on the manufacturers of this very important article the necessity for great and unceasing care in the producing of an *unvarying* article of *uniform* fineness and strength, which will answer severe specifications

When they have convinced the engineering public that they can supply Portland cement that will comply with specifications at *all* tests, and not vary with every sample or burning, then, and not till then, will their sales be so rapidly advanced that the question of increased output will solve itself

I have tested five Canadian cements sent by manufacturers, which gave the following results:

	Time of Setting		Spec	Residue on			Tensile Strength per Square Inch (Neat).						Blowing Test.
	Incipient	Full	Gravity	50 Sieve	80 Sieve	120 Sieve.	3 days	1 week.	4 wks.	2 mos	3 mos	4 mos.	6 mos.	115° for 24 hours
(1) Portland	4°30	6°00	3 12	0 9	6 4	13 2	438	584	671	.....	.....	.....	.....	good.
(2) Portland	1°00	5°00	3.09	0.6	5 5	13 2	278	399	459	.....	.....	.....	.....	good
(3) Portland	0°37	3°10	3 12	0 8	2 7	6 7	335	388	505	.....	.....	.....	.....	good
(4) Portland	5°00	20°00	3.12	1 1	14.2	31 2	125	210	356	.....	.....	.....	.....	good.
(5) Natural	0°45	2°45	2 96	2 9	11 7	21.4	99	150	268	377	448	478	492	good.

These show good results, except No 4, which is a poor Portland, but would rank as a strong natural cement. The 1st, 2nd and 3rd are all slow setting, and, as tested, were in every sense high-class cements, being far above ordinary requirements for fineness But what is wanted is not an occasional snap-verdict, but a *continual* convincing proof by these manufacturers that the engineers who use it can depend on what they are getting day by day.

I have tested three other samples of No 1 brand as given above, with the following results, the samples being, in these cases, obtained not from the manufacturer, but from dealers, taken from the article as placed on the market —

	Time of Setting		Specific Gravity	Residue on			Tensile strength		
	Incipient	Full.		50 Sieve	80 Sieve	120 Sieve	3 days	1 week.	1 mo
1st Sample*	2°00	6°30		3 0	13 6	29 7	312	531	To Test
2nd Sample*				2.3	27.0	40 7		300	307
3rd Sample*				31 4	52 2	61 2		261	268

Blowing Test * Very good * Good * Very bad, checked and warped

That such a tremendous variation should exist is enough to cripple the industry until this is remedied

It is very probable, nay, almost certain, that some of our manufacturers have changed all this, and are turning out a good uniform product, but the civil engineers of this country do not, as a body, believe it yet

There is a determined rush towards Portland cements, good natural cements, such as are made at Thorold and Quebec, are given the go-by, because the reign of the testing machine is supreme So that those who produce the article must follow the fashion, but, naturally, it will take some time to perfect the methods of making the artificial product, and much more time to convince users that it is an accomplished fact In the meantime, the combined output of Portland cement in Canada will probably not exceed 200 barrels per day, or 60,000 barrels per year, which will by no means supply the demand

What is needed by manufacturers is something like this Let them make arrangements by which responsible parties, residing near their works, should select samples from the daily output, say, once per month for the next two or three years, and send these to impartial laboratories to be tested. The published results, if satisfactory, would gradually convince engineers that their cements were uniform in quality and to be depended on Then there will be no difficulty in driving out foreign competing brands

Yours sincerely, CECIL B SMITH.

Technical Building, McGill College,

Montreal, Nov 22, 1894

CANADIAN SOCIETY OF CIVIL ENGINEERS.

A meeting of the society took place in Montreal, on Thursday, the 8th ult., President Peterson occupying the chair

The discussion on the unprofessional conduct of some civil engineers in tendering plans, etc., without being remunerated, was resumed

A letter on the subject from Mr Alan Macdougall was read, in which the writer asked for a further adjournment, in order to allow members at a distance to express an opinion. He cited another case, similar to the one at St Lambert, which had come under his notice. Part of the blame, he thought, should be attached not only to the small municipalities which invited such tenders, but to the large corporations, such as bridge companies, etc, who sent in their tenders on the chance of their being accepted, without being paid for the work.

Mr Irwin did not altogether agree with the writer's remarks. The bridge companies, he said, merely furnished a sketch of their proposed plan. If they spent money in preparing larger plans and they did not get the contract, it was their own fault.

Mr Walbank agreed with Mr Irwin, and thought that the society was not in a position to stop the practice, though it might proclaim the fact that it did not countenance such a thing.

Mr. Peterson said it would be a good thing to bring the matter up at the next annual meeting Whether the society could bring in a by-law to dismiss any member found guilty of such unprofessional conduct, was a question that would have to be discussed more fully

It was resolved that the matter should be referred to the annual meeting for full discussion

Mr. D A Stewart's paper on "Building Railways across Pea Bogs or Swamps" was then discussed further.

Short letters from Mr. Stewart himself and from Mr. Macpherson were read in connection with the paper

In the latter was given the writer's personal experience on the C.P.R in 1881 Work was being carried on across a certain swamp four miles long, with a creek passing through the centre, and the soil of which was peaty, and it was thought that when the trestles had been constructed it would bear satisfactorily. However, not long afterwards, sink-pools formed, and, though the ground looked firm, it was soon covered with water. He corroborated the theories advanced in Mr Stewart's valuable paper.

Mr Kirkpatrick gave some of his experiences on the Quebec Central Railway While at work in that district he observed four different classes of bogs, some with thin crusts, and going down fifteen to thirty feet, others going down a hundred feet or more, and so on Some trestle work on a shallow bog about 8 feet deep had failed after about eighteen months. The place had been filled up with cinders, and had been all right ever since.

Prof Macleod understood that in portions of this track the road-bed had had to be raised

Mr Kirkpatrick replied that in certain portions four years ago there was some very rough riding In order to overcome this, section-men were appointed near every telegraph pole to see what could be done It was found that in certain spots the weight of the engine caused a depression to be made These places were noted, therefore, and were afterwards levelled up above the rest of the road, so that when an engine passed over the raised portions, the latter became weighted down to the level of the rest of the road. Another trouble was the creeping of the track, and he did not think a 12-foot tie (the adoption of which was recommended by Mr Stewart) much improved the matter, as its life would be so short

Mr Cyril Smith observed that on a certain line in the States some one had introduced a method of preventing creeping by means of fixed ties joined to the rails in two-mile lengths, the spikes being loose and projecting half an inch

Mr. T. C. Keefer, who had just come in, was asked to give particulars of what he had seen on the portion of line lying between Winnipeg and Duluth, but stated that he had obtained all the information he possessed on the subject from the superintendent of the line.