

the trade which feeds them, should not do their best to injure a journal which is bound to defend that trade, if it does what duty demands of it.

What a wonderful change it makes in a person to have a boot on the other foot. One of these men was about the first to compliment us on our crusade against "Darkest Toronto." With many encouraging words he advised us to go on with the good work and show up the rotten condition of the printing trade in Toronto. Our straightforward remarks at that time met with his approval, as well as with the approval of every printer in the Dominion who was trying to pay his accounts in full, but now that we have spoken out in the same straightforward and honest way on another subject, we have stepped on the favorite corn of this same gentleman. He is, seemingly, the one who is most hurt by our article on the ruling price of "news."

We are not running this journal for the good of a few small advertisers, or should-be advertisers, but for the good of the printing and publishing trade of the Dominion, and for the benefit of our own health. We know that we will always have the hearty support of the large and small broad-minded advertisers as long as we maintain our honest, independent and outspoken stand. Such a stand means strong support from every printer and publisher in Canada: also a large subscription list. So long as we have a large subscription list, there are plenty of broad-minded advertisers ready to recognize it. We cannot serve two masters, but we intend serving the one faithfully, honestly and without fear, till gathered in to our fathers or by the sheriff.

#### GERMAN METHODS OF TESTING PAPER.

PRINTERS and publishers will be equally interested in the following information concerning German tests for paper. The durability of the paper used in a great deal of work is necessarily a first consideration, so that the product will preserve well for the number of years that it may be kept. Canadians are also progressive enough to want to know exactly how science is affecting business knowledge, and hence business power.

An English correspondent of The Export Journal writes on this matter, and the substance of it is as follows:

No one buys paper without ascertaining, as well as he can, whether it will answer his purpose: and an expert can, by simple tests and the aid of his experience, give a very sound judgment as to the quality of any given specimen of paper. But his judgment is not controllable by any definite standard: still less does it admit of a precise comparison of different sorts of paper. Besides, all paper buyers are not experts, a fact which is particularly true of public bodies, who are, nevertheless, large consumers of paper. A perception of this fact led the Prussian Government, in 1885, to add a paper-testing department to the Technical Experimental Station, already existing in Charlottenburg. The basis of scientific paper testing had, indeed, been already laid by the work done by Dr. Hartig in the Polytechnicum, Dresden, and by Dr. Hoyer in the Technical High School, Munich. Prussia, however, was the first to erect an official testing establishment. The example has been followed by Vienna, and other towns, Copenhagen, Stockholm, Stuttgart, etc., were contemplating a similar step at the time the article was written.

The first matter of importance in connection with testing is

the fixing of the standards. Those adopted by the Prussian Government, and generally recognized, are as follows:

#### A. MATERIAL.

- Class I. Paper made exclusively of rags, with not more than 2 per cent. ash.
- II. Paper made from rags, with the addition of cellulose, straw stuff, or esparto, but free from wood, and with not more than 5 per cent. ash.
- III. Paper made from any materials, but free from wood, and with less than 15 per cent. ash.
- IV. Paper with any material, and with unlimited ash.

#### B. TOUGHNESS.

CLASS	1	2	3	4	5	6	Standard of Resistance to Crumpling.
Average tearing length metres, at least . . . . .	6000	5000	4000	3000	2000	1000	(0) Extremely little.
Average stretching in percentages of the original length, at least . . . . .	4.5	4	3	2.5	2	1.5	(1) Very little.
Resistance to crumpling . . . . .	6	6	5	3	3	1	(2) Little.
							(3) Moderate.
							(4) Fair.
							(5) Great.
							(6) Very great.
							(7) Extremely great.

All paper must also be well sized and without free acid.

A paper whose qualities do not fall in the same vertical column of the foregoing table is estimated according to the lowest class in which any one of its qualities falls. It is desirable, but not imperative, that a paper should show the degree of resistance to crumpling shown under each class.

The uses to which papers of the various classes are adapted are shown in Table C.

#### C. APPLICATION OF PAPERS.

	Toughness Class.	Material Class.
(1) Documents of especial importance, required to last a long time . . . . .	1	I.
(2) Documents, civic registers, account books, etc.: (a) First-class . . . . .	2	I.
(b) Second-class . . . . .	3	II.
(3) Papers intended for permanent preservation: (a) Report, letter-paper, etc. . . . .	3	II.
(b) Draught-paper . . . . .	4	II.
(4) Paper for ordinary use, to be preserved only for a few years: (a) Report and letter-paper . . . . .	3	III.
(b) Draught-paper . . . . .	4	III.
(5) Envelopes, packing-paper, etc.: (a) First-class . . . . .	3	II.
(b) Second-class . . . . .	5	III.
(6) Summons, memoranda, and similar formulae, only required for temporary use . . . . .	Any.	IV.

From the foregoing tables it appears that the principal tests of paper will be: as regards material, its freedom from wood, its percentage of ash, the presence of grass, straw, etc.; as regards