

American industry had been successfully operated for so many years, this club raised a sufficient amount of money to prepare and distribute 1,360,000 tariff documents, in sections where it was thought they would do the most good. Members of the club did very effective personal service in reconciling differences among protectionists, in assisting in the collection of campaign funds, and in addressing meetings; while the general membership of the club contributed with great liberality to necessary expenses.

The only really effective organization in Canada having a distinct political object in view, similar to those in the United States to which I have alluded, is the Canadian Manufacturers' Association. It is clearly in the interests of its members that the Government should be kept fully informed on all matters wherein they are affected by the tariff, and it is within the scope, as it is the duty, of this Association to promptly put itself in communication with the Government whenever these interests require it. Communication with the Government by individuals regarding matters in which they are only personally interested cannot possibly be as effective or have as much weight as it would have if had by a large and influential association, the members of which were engaged in many different industries, but having a common interest in the matter under consideration. One's individual interest might warp his judgment, but the unanimous judgment of many, arrived at after viewing a subject from many different standpoints, is entitled to much weight. Before any suggestions are ever made to the Government touching tariff matters, they should be fully weighed and considered by the representatives of the many interests which might be affected by any tariff changes which might be made in consequence thereof. Interested individuals cannot give this unprejudiced consideration; and separate organizations of individual trades cannot give it, simply because they could not fully comprehend the far reaching effects of the changes which they might desire. The Tariff Committee of this Association is composed of men engaged in the manufacture of many different lines of products, and under the methods observed by this Association no recommendations for tariff changes can be forwarded to the Government until they have been fully considered by this Committee and have its unqualified endorsement.

There was a great deal of informal discussion on topics suggested by the proceedings on questions affecting Canadian manufacturing industries, and the greatest good feeling and enthusiasm prevailed.

It is understood that the Tariff Committee will hold one or more important meetings in the near future for the consideration of such business as may be brought before it.

NICKEL STEEL

THE recent armor tests made at Indian Head, Maryland, by the United States Government, possess considerable interest to Canada, in that it was decided that the nickel-steel plates which were experimented upon were undoubtedly the best armor plates ever subjected to such tests. These tests were applied to six plates, three of which were furnished by the

Bethlehem Iron Company and three by Carnegie, Phipps & Co. The Board of Armor Tests, appointed by the Secretary of the Navy, under whose supervision the tests were made, after careful consideration of the results upon the firing upon the six plates, decided that they be placed in the following order of merit, viz:—

1. The high-carbon nickel steel Harvey plate, furnished by the Bethlehem Iron Company.
2. The high-carbon nickel steel plate, furnished by the Bethlehem Iron Company.
3. The high-carbon nickel steel plate, furnished by Carnegie, Phipps & Co.
4. The low-carbon nickel steel Harvey plate, furnished by Carnegie, Phipps & Co.
5. The low-carbon nickel steel plate, furnished by Carnegie, Phipps & Co.
6. The low-carbon steel Harvey plate, furnished by the Bethlehem Iron Company.

It will be observed that of these six plates, five of them were composed in part of nickel, and that the one which stands lowest on the list contained no nickel.

The right side of plate No. 1 showed very remarkable qualities. The two projectiles which struck that side penetrated not more than 7 inches, the head remaining in the plate, completely filling the hole, and with the appearance of having been welded to the surrounding metal, while the body was shattered into many fragments. No cracks were made on that side of the plate, while the back of the plate showed no disturbance, except a hardly noticeable swelling on the surface. All of the armor plates were more or less cracked through, but only two. Nos. 3 and 6 badly, and these two plates alone showed cracking before the fifth shot. Plates Nos. 1, 2 and 3 kept out all the projectiles; No. 4 was perforated by one, and Nos. 5 and 6 by two projectiles each.

Comparing the plates of this trial with the Creusot steel and the Creusot nickel steel plates of the Annapolis trials of September, 1890, the board in their report were of the unanimous opinion that:

No. 1, the high-carbon nickel steel Harvey plate furnished by the Bethlehem Iron Company, and No. 2, the high-carbon nickel steel plate furnished by the same company, are superior to the Creusot steel and nickel steel plates of last year.

The Secretary of the Navy has given a written opinion of these tests, and those portions of it which are of the most interest to Canada we summarize as follows:

By far the most momentous question which the Department has had to consider in connection with the construction of the new navy is that of armor: 1, to secure a supply of American manufacture, and 2, to determine what kind of armor should be adopted, having reference both to its composition and mode of treatment.

The experiment made last year at Annapolis, described in the annual report for 1890, consisted of a test of the two principal foreign types of armor, the English compound plate and the French all-steel plate, and an entirely new plate, also made in France upon the special order of the Department, of nickel steel. The result of the trial showed that the compound plate was decidedly inferior, and that as between nickel steel and all steel the former had distinct and positive advantages, the all-steel plate being broken into four pieces while the nickel plate remained absolutely uncracked.

A series of tests made during the following spring and