CONFIDENCE IN THE FUTURE.

In connection with the Finance Minister's Budget Speech of this year there is one thing to be noted, of great importance to manufacturers generally. It is made clear to all concerned that the Government is determined, not merely to maintain the general principle of protection to home production upon which the tariff of 1879 was framed, but also to strengthen and to extend it in detail from year to year, as further experience may suggest. The maintenance of the original principle was pretty strongly affirmed in the budget speeches of 1880 and 1881, but now it is made to appear more clearly and more strongly than ever before. All the changes made are in the direction of promoting home interests as opposed to foreign interests. The duties on tea and coffee, articles which we cannot produce at all in Canada, are abolished. Some raw materials, or materials partly manufactured, which are raw material to Canadian factories, are either placed on the free list or at lower duties. On other articles, again, which it has been shown can be made here, the duties have been raised. All these changes constitute a further carrying out of the protective system established three years ago; they show that the original policy is being not merely maintained but extended It is in course of being improved as more enlarged experience dictates, but always upon the same general principle as at first laid down; and year by year it is becoming stronger and more coherent.

This firm adherence to the original principle is producing effects of vast importance. The valuable element of certainty with regard to the future, as far as our national trade policy is concerned, is being more and more substituted for the uncertainty which before prevailed; a fact the importance of which can scarcely be over-estimated. As things go, business men have quite enough of uncertainties to deal with, without having uncertainty with regard to commercial legislation added to the number. The numberless contingencies of the market, arising out of causes which Canadian legislation, at all events, cannot control, are sufficiently troublesome without uncertainty as to that coming in, to make business more hazardous still To remove all business hazards and uncertainties is beyond our power; but it is a very great and beneficial work done to remove as far as possible uncertainties connected with our own tariff policy. This is a work which it is within our power to do, and to the extent that we do it we are benefitting Canada. The result so far is seen in such a diffusion of confidence with regard to manufacturing enterprises as has never been witnessed in these Provinces before. The starting of new establishments and the extension of old ones is now going on at a rapid rate; the growth and diffusion of confidence among men of means and enterprise never was so conspicuous before as it is to-day. In some branches, chief of all in that of iron production, we still lag behind; we have not yet been able to see our way to a thorough, consistent, and comprehensive re-adjustment of the iron duties, at once practical and systematic. But that, there is every reason to believe, will come before long. Meantime the eagerness with which every available opening for a new manufacture in Canada is seized upon testifies to the diffusion of confidence in the future among men of business. Confidence is a plant of slow growth, so it is said; but under the genial sun of the National Policy it is certainly growing up amongst us with commendable rapidity; and the value to the country of this particular growth is beyond all ordinary estimate.

COAL v. WOOD AS FUEL.

In many sections of the country where wood was almost the only fuel used by manufacturers, it has recently become so scarce and so dear that many are using coal instead, and it is an interesting question to determine at what relative prices coal and wood are of equal value as fuel.

A boiler furnace, arranged for wood burning, is not adapted for the proper combustion of coal, and any attempts to use coal, without making the necessary changes in the furnace, would only lead to unsatisfactory and disappointing results.

The object aimed at in the consumption of the fuel is, of course, the conversion of the water inside the boiler into steam.

To compare one boiler fed with water at 60° temperature, and supplying steam of 60 lbs. pressure, with another boiler fed with water of 40° temperature, and supplying steam of 80 lbs. pressure, would be manifestly unfair.

The amount of heat required for the production of steam depends upon the temperature of the feed water, and the temperature or pressure of the steam into which it is to be made, and to make a fair comparison between the performances of two boilers, or of two kinds of fuel, there must be some uniform standard of measure both for the water temperature and the steam pressure.

It is usual among engineers to consider the weight of water in pounds, at 212° temp., converted into steam of the atmospheric pressure as the standard to be used for this purpose, and it is spoken of as so many "pounds of water evaporated from and at 212° temp." per pound of fuel used. American coal varies very much in quality for steam-making purposes, but may be divided into three classes: these were a number of years ago very carefully analyzed and tested at Washington for the United States Navy Department, with the following results:

Anthracite coal contained on an average 3.97 per cent. volatile matter, 86.[illegible] per cent. fixed carbon, and 6.28 per cent. of ash.

Free-burning bituminous coals contained on an average 15.11 per cent. volatile matter, 73.21 per cent. fixed carbon, and 10.27 per cent. ash.

Bituminous coking coals contained on an average 29.43 per cent. volatile matter, 58.29 per cent. fixed carbon, and 10.9 per cent. ash.

Although the volatile gas in coal, when actually consumed, gives off a great amount of heat, yet in actual practice the difficulty of consuming it is so great that most of it escapes up the chimney, and the steam-making capacity of coal is almost in direct proportion to the amount of fixed carbon contained in each kind

The composition of the different kinds of wood used as fuel is so nearly the same that, when equally dry, the same weight of pine, tamarack or maple will yield the same quantity of heat, and produce the same quantity of steam. Wood, when newly cut and green, contains about 45 per cent. of moisture,