

tube. The plaster of Paris of the stem was removed and the leading-in wires carefully insulated by filling the glass cone through which they enter with paraffin. Then on attaching these two wires to his coil the arrangement was complete. It should be remembered, however, that such a tube requires a long exposure, the longer the better.

It is hard to realize how great will be the effect of this wonderful discovery. Certainly it is another ether phenomenon, and will assuredly assist in either proving or disproving some of our current theories. The practical applications will also, in all probability, be many. To Dr. Crookes, who did not need this new advertisement to give him fame in matters scientific, this new revelation must be a great satisfaction, and he will probably read again with pleasure the concluding paragraph of his address to the Royal Institution, on April 4th, 1879, when he first publicly exhibited the result of his investigations. It is as follows:—⁴

“Of the practical applications that may arise out of these researches, it would now be premature to speak. It is rarely given to the discoverer of new facts to witness their immediate utilization. The ancients showed a perhaps unconscious sagacity when they selected the olive, one of the slowest growing trees, as the symbol of Minerva, the goddess of arts and industry.



MEDAL IN CASE, SECOND EXPOSURE.

Nevertheless, I hold that all careful, honest research will ultimately, even though in an indirect manner, draw after it, as Bacon said, 'whole troops of practical applications.'"

THE new discoveries in photography suggest a solution of business difficulties. We want a commercial agency which will "show what's in it" every time.

⁴ See *Nature*, Vol. xx., p. 228, 1879; Proc. Royal Inst., Vol. ix., p. 138, 1879-81.

THE CANADIAN PIG IRON INDUSTRY.

BY GEORGE E. DRUMMOND, MONTREAL.

Concluded from last Issue.

REMARKS.

The time is perhaps very opportune to draw the attention of the leaders of the contending political parties of this country to the fact that the interests of the industrial enterprises of Canada should be as sacred to the one party as to the other. The workmen employed in the respective enterprises are just as deeply interested in the ultimate success of the operations as the capitalists who have risked, and continue to risk, their money in establishing the work.

The iron industry has perhaps greater claims to the good-will and support of the statesmen and people of Canada than any other of the great industries of the country, because the raw material used is wholly Canadian, the product of Canadian labor. It is eminently an industry for which nature has fitted the country, and it is therefore well that it should be encouraged and developed, because it will afford a greater amount of employment to labor for the money invested than any other industry that the country is fitted to sustain.

The progress made should also now be sufficient to prove to capitalists and men of affairs generally, that the enterprise of iron making in Canada can be made a very decided success, affording a splendid field for safe investment. It is no longer in an experimental stage, and if many of the investors who are now putting their money into the silver mines of the west, not only of their own country, but of the adjoining Republic, would turn their attention to the production of the most useful of all metals, iron, right here at home, and for the home market, building up every kindred provincial interest, the future of Canada would be most promising. What is wanted now is sufficient capital invested in the various enterprises to enable the iron masters to keep abreast of the times in the matter of modern appliances and methods. Nature provides all the material; it remains for man to utilize them by the best and most economical methods.

The industry has naturally suffered from uncertainty with regard to the tariff question. Barred out, as the Canadian iron manufacturers are, from the American market by the Customs tariff of that country, and handicapped as all iron industries are in infancy, when a very heavy initial expenditure has to be made in construction of plant, prospecting, securing and development of mines, wood, land, quarries, shipping docks, etc., it is imperative that the Government of the country should give stability to the protective tariff, and thus give confidence to capitalists. Statistics prove that the present protection and bounty granted by the Government of Canada, if well maintained, will result in the development of the Canadian iron industry, but the history of the work done in the United States as well as the past history of England, proves that the encouragement granted is not by any means too much for the earlier years of the work. This has been well recognized by Sir Oliver Mowat, who, as the head of the Liberal Government in Ontario, recently carried through an Act by which his Government grants a bonus of \$1 per ton for all pig iron made in that province, the product of Ontario ores.

Speaking of the treatment extended to the iron industry by both political parties in this country, neither are quite free from criticism. Special attention is again