

The Monetary Times

AND TRADE REVIEW,

With which has been incorporated the "International Journal of Commerce" of Montreal, the "Trade Review" of the same city in 1870, and "The Toronto Journal of Commerce."

ISSUED EVERY FRIDAY MORNING.

SUBSCRIPTION—POSTAGE PREPAID.

Canadian Subscribers.....\$4 a year.
British ".....10s. 6d. ster. a year
American ".....\$2.50 U.S. Currency
Single Copies10 Cents.

Represented in Great Britain by Mr. Jas. L. Foulds,
11 Bothwell St., Central Bldg., Glasgow, Scotland.

BOOK AND JOB PRINTING A SPECIALITY

Office—Nos. 64 & 66 Church St., Toronto, Ont.

EDWD. TROUT, MANAGER.

TORONTO, CAN., FRIDAY, JAN. 18 1884

PROGRESS IN ELECTRICITY.

When such remarkable strides are being made of late in electric communication and electric lighting; when the telegraph and telephone are daily being put to more extended uses; when the electric motor is being steadily perfected and made available for various mechanical purposes, it is fitting that we should devote some space to describing the prominent achievements in the wide and important field of electrical discovery and application.

Electrical engineering, indeed, has become almost at once a science, for whose professors there is great and increasing demand. There is in France an International Electrical Society. A number of colleges, including Yale and Harvard and Cornell University, have established departments for a thorough course of electro-technical instruction, while a chair of "Dynamo Engineering" has been established at Washington University, St. Louis, and the Massachusetts Institute of Technology has established a four-year course in electrical engineering. Buffalo, too, inaugurated an "Electrical Society" during the year just past.

The demands of the public for telephone exchanges and electric light installations are so constant that the facilities for providing them are everywhere taxed to the utmost. The former appears to be drifting, in America at least, under the control of one or two large corporations. It is estimated that the aggregate capital employed by the telephone companies on this continent alone amounts to one hundred millions of dollars. The claims of Bell to the invention of the instrument have been contested by Drawbaugh & Dolbear. In the United States courts, a decision of Judge Gray, at Boston, settled the claims of Bell to the invention of the telephone as against the claims of Dolbear. The long-pending "Telephone Interference Case" has also been practically settled by the Patent Office. Of eleven specified cases of interference, the claims of Bell were sustained in eight, those of Edison in two, and those of McDonough in one.

The growth in the use of this modern convenience of commerce has not been so rapid abroad as at home, but has been greater than was expected. A recent calculation gives 161 cities in Europe where telephones are in use, having a total of 30,066 subscribers. In Asia there are seven cities with 420 subscribers, in Africa four with 240, and in Australia four with 897 subscribers. The average of

subscribers in America for every town is said to be 378, against 187 in European cities.

Telegraph wires continue, in spite of all this, to be extended enormously. The gigantic Western Union Company in the United States acquired during last year 1,400 miles of wire in Michigan, and its system now includes 432,000 miles of wire and 12,917 offices. The statement is made that it has handled during the past year 40,000,000 messages, at an average cost to the public of 38 cents per message; and with errors standing only as 1 to 5,000.

In Canada, considerable additions have been made to the pole and wire mileage during 1883, new lines having been constructed between Quebec and Montreal, 170 miles, and extensions elsewhere in various directions to the extent of several hundred miles. Great Britain is experimenting with six-penny telegrams and appears content to submit to the reduced revenues occasioned by the trial, involving a loss of nearly a million sterling a year. Her system had at the close of the fiscal year 1883, offices numbering 5,742. From the Postmaster General's report it is learned that the net revenue of the telegraphic service was £235,000, against £264,000 in 1883. 32,000,000 messages were sent during the year. The length of wire on the continent of Europe, given in kilometres—one kilometre being equal to five-eighths of a mile is: Germany, 260,636 kilometres, of which 37,604 are underground; France, 211,607 (11,656 underground); Russia, 223,538, 250 underground; Austria, 92,572 (571 underground); Italy, 89,150; Switzerland, 16,155 (327 underground); Hungary, 54,852; Belgium, 27,922 (232 underground); Sweden, 29,879; Netherlands, 14,133 (591 underground); Spain, 40,742; Denmark, 8,450 (79 underground); Norway, 15,601. Thus we see that only six per cent. of the telegraph wires in all these European countries, are underground; the problem of subterranean insulation being still far from a proper solution, desirable though it be, after years of experiment.

Of the electric light, and the display made of its various forms and uses, we have already had something to say in articles on the Vienna Exposition. It is steadily growing in favor, for use in factories, printing offices, ware-rooms, and private houses. A good deal of nonsense has been talked and written concerning the danger to life and property from electric light wires. It reminds one of the ignorant farmer who sat on his door-step and watched to see the birds, which lit on the wires "killed by the lightning a-passin'", but watched in vain. If some of these loud-spoken Philistines would inform themselves what an electric circuit is and how electric energy is transmitted, it would be more comfortable for themselves and the public whom they frighten unduly by their wailings. A month or two ago the aldermen of New York passed an ordinance which compels all the electric light companies to put their wires underground in two years, dating from next May. A Congress man of the Empire State, too, has introduced a Bill at Albany providing that electric light wires in that State shall be "undergrounded" by November 1st 1885. Meanwhile it is the boast of the Philadelphia Record that it possesses the strongest single light in the country, a per-

fect blaze of 10,000 candle power suspended 95 feet above the pavement.

A word or two as to cables, and we close this sketch, many of the facts in which we have obtained from an interesting review of the year in the *Electrical World* of New York. The new MacKay-Bennett cable, to which we have referred, is being made by Siemens Bros. at Woolwich, England. Nearly a thousand miles of it is ready, and it will pretty certainly be laid next summer between Dover Bay and some point in Ireland. During the year the "American, British and Continental Cable (called the A. B. C.) Company" has issued a prospectus for two Atlantic cables—one, the northern route, from Glasgow, Scotland, to Belle Isle, N. F., and the other, the southern route, from Penzance, England, to Sable Island, N. S., both extending thence to New York. This company professes to have control of apparatus which will enable fifty words per minute to be transmitted, and intends, as some others did, to begin operations at a shilling a word. It appears that the idea first advanced by Sir Travers Twiss, at Berne, and elaborated by the Electrical Congress at Paris, to protect telegraph cables in war-time, has taken root. On December 28, a despatch from Berlin stated that a revised draft of an International Treaty for the protection of submarine cables has been laid before the powers concerned, who are to accept or reject it within three months.

Nor should we omit to mention the electric railway as a probable future means of carriage. At the railway exhibition in Chicago last May, and also at Louisville, such a road was shown in operation. And among the electric roads still in successful operation are one in Ireland, from Portrush to Bushmills; one in Germany between Frankfurt-on-the-Main and Offenbach, a distance of eight miles; two in England, one at Brighton, a quarter of a mile long, and one at Wimbledon, a mile in length. An electric street car has also been run at Kew Bridge, London.

MINERAL INTERESTS.

Expressions of impatience are sometimes heard at the dilatoriness or lack of enterprise of Canadians in developing their undeniably extensive mineral deposits. Among those now known or prospected are iron, lead, copper, silver, gold, coal, manganese, apatite, mica, asbestos, gypsum, petroleum. Too much in this direction, cannot be expected of a young country our impatient friends should recollect; for mining needs ample capital, and capital is not always plentiful in new countries. But at any rate the Dominion has done well in developing coal.

The last two or three years have witnessed a decided increase in the production of coal in Canada. Not only has the home consumption been fed more largely, but the quantity exported grew from 249,536 tons in 1881, to 421,311 tons in the fiscal year 1882. The produce of the coal mines of Nova Scotia during the first three quarters of 1883, amounted to 1,078,996 tons, an increase over the same period of the previous year of 97,463 tons. Sales during the same period