

ELECTRICAL INDUCTION IN UNDERGROUND CONDUCTORS.

At the meeting of the Royal Society at Ottawa on Wednesday, Mr. F. N. Gisborne, Supt. of the Government Telegraph Service, read a paper on Electrical Induction in Underground and Aerial Conductors, a subject which is invested with considerable interest at the present time. A committee of the legislature of New York to investigate and report upon the practicability of placing all electric wires underground is now in session at Albany, N. Y., and declarations have been made before this committee to the effect that all of the many and various means so far introduced with a view to eliminating the evil effects of induction experienced in parallel circuits have proved inefficient and unsatisfactory. Mr. Gisborne's paper described a new system devised by himself to obviate the trouble referred to. A number of diagrams were presented illustrating the conditions obtaining in neighboring circuits, and two or more circuits arranged as ordinarily, and arranged according to his method were compared. The advantages of the latter arrangement were clearly set forth, and proofs of its efficiency were presented in a tabulated statement of experiments made with a section of cable constructed under his direction and laid underground, between two of the Departmental Buildings here. The cables are over 3,000 feet in length and contains twenty insulated conductors or wires, in all over 27 miles of insulated wire which are divided into pairs, two conductors being twisted together in each case; each pair constitutes a metallic circuit, that is one conductor is used as a "return," instead of earthplates being utilized for this purpose as is usually done. The peculiarity of Mr. Gisborne's invention consists in the twisting of these metallic circuit conductors, as both wires are thus made to occupy an equi-distant relationship with respect to any other conductor or pair of conductors in their vicinity. Strictly speaking, Mr. Gisborne's system is one in which induced currents are not created, rather than one by which the evil effects of induced currents are neutralized. In the discussion which followed the reading of the paper it transpired that if a conductor were inclosed and insulated within another conductor (such, for instance, as a gutta percha covered wire drawn through a metal tube, and both conductors were connected with earthplates, or other conductors, at either end, so as to form two independent closed circuits, the enclosed conductor might be employed to convey electrical currents without any inductive effect being perceived in a circuit extending parallel with, or in the neighborhood of; the outside conductor (which in this case cannot be used as a medium for communication) intercepts the induced currents on all of the inducing circuit, and in its closed circuit absorbs them. As in a system of this kind the outside conductors could not be utilized in the formation of circuits for purposes of communication, it is admitted that, apart from the bulkiness necessarily attending it, the first cost of a series of electrical circuits constructed upon that plan renders the system comparatively impractical; whereas, in the system advanced by Mr. Gisborne the construction is much cheaper and all of the conductors form an integral part of the communicating circuits so that space is economized to the fullest extent.

A great deal of interest has just now been manifested in this latter invention, although it has been a subject of investigation by Mr. Gisborne for some years past, the cable referred to in the paper having been ordered by the Dominion Government during the summer of 1882.

THE FASTEST TRAIN IN THE WORLD—We were going West and the night was chilly for the latter end of May. "Hi! porter," said the commercial man in the bank overhead; "can't you give us another blanket? It's deuced cold to-night." "Ain't got another blanket boss." "Well, just see what you can do for a fellow," said the c. m., putting his hand through the curtains with a quarter in it. "Dunno, boss, but I'll do what I kin." There was scarcely a perceptible pause in the porter's measured tread as he passed our section fifteen minutes later, but the curtains parted and a blanket went through the opening as if it had been shot out of a cannon. "Thought I felt somebody carrying off part of my bed-clothes last night," said a passenger in the further end of the car, as he worked himself into his boots in the morning. "Dunno, boss, went mighty fast last night, making up time; probably run from under 'um."—*Detroit Free Press*

BIG DIVIDENDS.—The largest dividend paid by any bank is 33½ per cent. by the Whitehaven Joint Stock Bank, founded in 1829, and having a capital of £45,000 and a reserve fund of £50,000. Two banks distribute 25 per cent. to their shareholders, the Lancaster Banking Company, the oldest joint stock bank in England, founded in 1826, and the Commercial Banking Company, of Sydney, the reserves of each of these institutions equaling their paid-up capital. The London and County Bank, having a capital of £2,000,000 and a reserve of £1,000,000, pays its shareholders 22 per cent., while several other English banks pay from 15 to 20 per cent.

ARMY TELEGRAPH CLERKS.—A corps of fifty telegraph clerks is to be forthwith formed from the English Post-office volunteers for service with the regular army. They are to enlist for six years as first-class Army Reserve men. They already possess as volunteers a fair military training, and some knowledge of camp duties; and as they will continue to be employed at the Post Office until actually called out for service, they will be always fully acquainted with the latest improvements in telegraphy. The plan of incorporating specialists who are already fairly good soldiers with the regular forces for the discharge of special duties and is one that seems capable of considerable extension.

THE STOCK MARKET.

The following table shows the highest and lowest prices of stocks on the Montreal Stock Exchange on each day of the week ended 12th June, 1884, and the number of shares reported as sold during the week.

STOCKS IN MONTREAL.	Share.	Capital Paid up.	Rest.	Fri.		Sat.		Mon.		Tues.		Wed.		Thurs.		Total Trans.
				L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	
Bank of Montreal	100	\$12,000,000	\$6,000,000	189½	191	.....	.....	187½	188½	187½	188½	187½	188	187	187½	1 67
Merchants Bank	100	5,721,426	1,150,000	107½	107½	.....	.....	.....	.....	107½	107½	107½	108	107	107½	51
Canadian B't of Com.	50	6,000,000	1,000,000	.....	.....	.....	.....	.....	.....	121	121½	121	121	.....	117	51
Bank of Toronto	100	2,000,000	1,000,000	.....	173	.....	.....	.....	.....	172½	173	.....	.....	.....	170	160
Ontario Bank	100	1,500,000	335,000	.....	103½	.....	.....	.....	103	.....	103½	.....	.....	.....	.....	100
Banque du Peuple	50	1,000,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Bank British North	250	1,800,000	981,120 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Molson's Bank	50	2,000,000	500,000	.....	.....	.....	.....	.....	.....	110	.....	.....	110½	.....	.....	40
Dominion Bank	50	1,488,185	630,000	.....	.....	.....	.....	.....	.....	119½	120	118½	119½	.....	11½	275
Federal Bank	100	2,000,000	1,500,000	.....	122	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Imperial Bank of C.	100	1,500,000	650,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Banque J. & C. Currier	25	500,000	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quebec Bank	100	2,500,000	320,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Banque Nationale	50	2,000,000	30,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eastern Townships	50	1,416,142	375,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11½	5
Union Bank	100	2,000,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Exchange Bank	100	500,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maritime Bank	100	637,800	.....	.....	.....	.....	.....	.....	113	.....	.....	.....	113	.....	.....	35
Montreal Tel. Co.	40	2,000,000	.....	.....	.....	.....	.....	.....	57	57½	55½	56½	.....	55	.....	30
Rich. & Ont. Nav. Co.	100	1,500,000	21,704	57½	57½	.....	.....	.....	12½	12½	.....	12½	.....	12½	.....	220
City Pass. Ry. Co.	50	600,000	.....	123½	123½	.....	.....	.....	175	175½	178½	179½	.....	174½	175½	1888
City Gas Co.	40	1,800,000	.....	178½	178½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Canada Cotton Co.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montreal Cotton Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dundas Cotton Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Can. N. W. Land Co.	.....	.....	s. d.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Can. Pac. L. G. Bonds	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Canadian Pacific Ry.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Paul M. & M. R. W'y	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100

MERCHANTS' BANK.

GENERAL STATEMENT AT THE CLOSE OF THE BOOKS 31ST

MAY, 1884.

Liabilities.

Notes in circulation	\$3,092,377 00
Deposits bearing interest (including interest accrued to date)	\$ 5,894,594 88
Deposits not bearing interest	2,270,928 48
	8,163,523 36
Balances due to Canadian banks keeping deposit accounts with the Merchants' Bank of Canada	250,672 83
Balances due to other C. banks in daily exchanges	66,893 38
Balances due to banks in Great Britain	194,302 13
Dividends unclaimed	5,057 52
Dividend No. 31, payable 2nd June	200,260 38
Total Liabilities to the public	\$11,975,086 60
Capital paid up	5,721,726 65
Rest	1,250,000 00
Contingent Fund	300,000 00
Balance carried forward to credit of Profit and Loss	9,501 36
Account of next year	\$19,256,314 61

Assets.

Gold and silver coin on hand	\$ 663,031 05
Dominion notes on hand	587,617 00
Notes and cheques of other Canadian banks on hand	468,449 12
Balance due by other Canadian banks in daily exchanges	19,515 99
Balance due by agencies of the bank in the United States, and by United States National Banks	560,089 22
Total available assets	\$ 2,338,702 38
Loans, discounts, and advances on current accounts	\$15,795,151 24
Loans, discounts, and advances not specially secured	244,695 55
Loans, discounts, and advances secured	158,962 78
	\$16,198,809 57
Mortgages, bonds, and other securities	160,938 01
Real estate—productive	34,281 68
Real estate—unproductive	88,926 61
	\$ 123,207 29
Bank premises and furniture	416,921 04
Other assets not included under the foregoing heads	11,736 32
	\$19,256,314 61

A NEW \$5 NOTE.—The Bank of British North America, finding so many frauds had been from time to time perpetrated upon it, has issued a new \$5 bill which presents quite a novel appearance. It is made by Perkins, Bacon & Co., of London, England, and bears a vignette portrait of the Queen in its centre. The colors on its face are blue and white and on its back black and white. On either side of the vignette is the word "Five" in red letters on a red tinted ground. The edges of the bill are all rough, except that on the left hand end and it is of the same kind of paper as and similar in the style of printing to some of the Scotch notes.

THE WORLD'S DEBTS TO ENGLAND.

The debts held in Great Britain against its numerous colonies and dependencies, and the direct British investments in property existing in those colonies and dependencies, are carefully estimated in the *Economist* at \$3,100,000,000, reckoning the pound sterling at \$5, and the annual income received from them at \$153,000,000. Of these debts and investments in property, there are \$1,275,000 in India and Ceylon, \$1,000,000,000 in Australia, \$560,000,000 in the Dominion of Canada, and \$265,000,000 in the smaller colonies and dependencies.

The aggregate of \$3,100,000,000 consists of loans amounting to \$2,500,000,000, yielding an annual interest of \$124,300,000, and of investments in property amounting to \$600,000,000, and yielding an annual income of \$28,700,000 such as land companies as distinguished from mortgage companies, mines, tea, coffee, sugar, and other plantations, mercantile business, &c.

Of the loans, all are payable—principal and interest—in gold, or what is the same thing, in sterling money, except \$150,000,000 payable in Indian rupees, which reduces the annual gold interest to \$116,800,000.

The *Economist* divides the loans into three classes:—
\$1,310,000,000 of loans to the Governments of the colonies and dependencies.

\$815,000,000 of loans to the different provinces of the colonies (such as the provinces comprising the Canadian Dominion), to railways (of which \$500,000,000 are to railways in India, guaranteed by the Indian Government), to cities, and to gas and harbor improvement companies.

\$375,000,000 of loans made through land mortgage companies and banks, two-thirds of this item being set down to the account of Australia. In verification of this, the *Economist* cites a detailed list of loans amounting to \$225,000,000 made in Australia by Scottish mortgage companies alone, and also the fact that of the deposits in Australian banks bearing interest (generally at five per cent.) \$60,000,000 are made by persons resident in Great Britain, besides a large British ownership in Australian bank shares, which represent loans made in Australia.

The *Economist* believes that its estimate of the British holding of colonial debts is under, rather than over, the mark. It is susceptible of pretty accurate ascertainment, inasmuch as the government borrowings of the colonies are very few of them negotiated in their own home markets, and nearly all of them in the British market. But it is more difficult to fix the amount of the British holding of foreign debts, outside of the British colonies.

A STRANGE NEST-PLACE.—The famous equestrian statue of the Duke of Wellington, which has for so many years surmounted the arch at Hyde Park corner in London, was taken down a year or two ago and is to be removed to Aldershot. On an examination of the head and hat of the statue a bird's nest of twigs, evidently built by a starling, was discovered. The nest had been built on the crown of the Duke's head, and an entrance was effected from under the ends of the great plume at the point of the hat. The nest was allowed to remain. The dimensions of the hat are 4 feet long by 1½ feet high, the plume measuring 3 feet across, and the head and hat weighing about half a ton.

SOLD HIS HEAD.—Ten years ago a penniless man, with a peculiarly shaped head, made a bargain with a London professor of anatomy by which the latter was to have the head on payment of the man's funeral expenses. Meanwhile the man became wealthy, and when he died the other day his friends tried to avoid fulfilling the contract. But the professor insisted, and the matter is to be brought before the law courts. Pending the decision, the defunct gentleman has been buried with his head on his shoulders.

ABOUT AS MAD AS A MAN AS EVER CAME OUT OF AN OPERA HOUSE was the young fellow who had just started his first moustache. He got wrathful because some one in the audience shouted "Down in front!"