

traffic. He says that from 1,000 to 1,500 cars, loaded with grain, have stood for weeks in the Montreal yards, unable to go forward. But whatever happens, nothing will satisfy the people of Canada but an eastern terminus in Canada, and that it shall be a road for the accommodation of the people of the country, that is, that traffic originating in Canada shall be given the preference. The public aid to be given will probably take the form of a guarantee of interest on the bonds.

The best solution of the problem of transcontinental transportation is complete Government ownership of all roads hereafter built, but as the Canadian public is not educated up to this point, the next best solution is a generous arrangement with the Grand Trunk, whereby we shall have an all-Canadian route from ocean to ocean, that will secure to the country the service which the Canadian Pacific Railway alone cannot give for the growing west, and that will develop wide stretches of territory, which must otherwise lie fallow or, if colonized, be cramped for railway facilities. Such a cross-continent line is not a prospective need, it is an immediate necessity, and the Grand Trunk alone can supply this need almost off-hand.

In saying this, we should not throw cold water on the Trans-Canada scheme. If built far enough apart from the other trunk lines, it will create business for itself in the colonization it will bring with it, but this will, of course, take time to develop. It will follow the Grand Trunk Pacific line as the Grand Trunk Pacific follows the Canadian Pacific. But the pressing need of the moment is a second avenue from the Pacific Ocean to the Atlantic, and the Grand Trunk plans provide this in such a way as to develop vast reaches of new territory, incidentally as the scheme is carried out.

It is said that photographs have been made in an absolutely dark room, by rays from the human body. The possibilities from this discovery are enormous. It is suggested that physico-radiographs of the rays from individuals may serve to show the physical condition of the subject. The cause of hypnotism may be revealed. Perhaps thought photographs may ultimately be made.

The Bell Telephone case came again before the Grand Jury, at the criminal assizes at Toronto, last month, and resulted in no bill. The ground for this finding, which is contrary to that at the March sessions, was that the agreement between the Bell Co. and the C.P.R., which was charged as being a violation of section 520 of the criminal code, was made in Montreal, and the case must be tried where the offence was committed.

There is reason to fear that the recent accident on the Intercolonial Railway, near Windsor, by which four train-men lost their lives, was the result of drunkenness on the part of some of the crew. Copeland, the engineer of the passenger train which disobeyed orders and ran past the semaphore, has been in the employ of the road for thirty years, and had not a bad mark against him. He had been on duty only three or four hours before the collision. His explanation was that he must have lost his senses, but there is reason to suspect that he was asleep on his engine. If the cause is as stated, too stern an example cannot be made, for railway hands entrusted with human life should be sober, above all things.

While much has been said about the great Assouan dam, recently completed in Egypt, that ancient land boasts of many engineering works of enormous magnitude, all of which are over 4,000 years old. It is not likely that we shall again see a building with 7,000,000 tons of stone in it, as has the pyramid of Gizeh, and it will be long before we have an irrigation reservoir of greater capacity than Lake Moeris, which, accepting the figures of Major Brown, R. E., held 11,800,000,000 cubic metres (tons) of water, between high and low water marks. What the Labyrinth was like we do not really know, but Herodotus classed it as a greater wonder than the pyramids, although lesser than Lake Moeris. Then there is a tradition that at one time the Nile flowed at the foot of the Libyan hills, and that it was diverted by artificial means to its present bed. If that be true, the work must have far exceeded in magnitude the Assouan dam. But after all, there was not so much science in ancient engineering. The engineers of those old days excelled in the manipulation of heavy weights, which was accomplished by the slow and laborious work of great armies of slaves. Among the chief examples of such work are the columns of the Temple of Karnak. To cut a block of stone in a distant quarry, to work it to a cylinder 12 feet in diameter, float it down the Nile, land it, and place it on the top of a column of similar stones, making a total height of 60 feet, was no small enterprise. A still more difficult undertaking was the great obelisk now standing beside the Church of St. John Lateran, in Rome, with a height of a 108 feet, and a weight of 450 tons. But the crowning example of Egyptian engineering was the colossal statue of Rameses II., at Thebes. Before it was broken it was a single block of red granite 60 feet in height, computed to weigh 887 tons. But even with simple instruments, such as ropes, wedges, levers and pulleys, such as the Egyptians used, great weights can be handled without much difficulty, provided time is no object.

LIGHT, POWER, PHONE AND TELEGRAPH ON ONE CIRCUIT.

Another stage in the history of electrical development has been reached, in the invention by Alexander McMartin Stark, late superintendent of the Bell Telephone Company, in Toronto, of a new system of distribution, which will enable electric light, power, telegraph and telephone service to be supplied on the same circuit.

It is well known that modern telephone practice has made a great advance by centralizing the electric energy needed by subscribers for talking and ringing. By bringing about this centralization many desirable results are attained. The idle capital represented by the subscribers' local batteries and the calling generators is done away with. The labor of visiting or inspecting the subscribers' apparatus is greatly reduced; that necessary to repair and renew batteries, together with the expense of material for such renewal, being rendered nil. The subscribers' instruments are made neater and more compact. The electrical efficiency of the plant is greatly increased by having a few large units in operation practically all of the time, instead of a great number of small units in operation but a small portion of the time. All these advantages were achieved by the introduction of the common battery or central energy system, whereby the whole of the current necessary to operate a large telephone system is generated at the central office. The nature of the circuits employed, coupled with the fact that current employed for this purpose is of too low a voltage to enable it to be used for any other purpose than telephoning, has, however, hitherto limited these systems to telephone working only.

Mr. Stark has long been impressed with the idea that it would be a source of great economy if a central energy system could be devised, which would enable a current of sufficient voltage to be delivered at the telephone subscriber's