

quickly the flood waters of the river or to prevent ice from forming thereon, the currents in the present harbor will be stronger than they are now. In order to reduce these as much as possible and also to improve the entrance to the canal it may be necessary to dredge away Navy Island and the adjacent shoal in part or even altogether.

Summary

The matters advocated in this article are as follows:—

1. The abandonment of the attempt to dredge a channel through Oromocto Shoals. That plan has been tried and found wanting for 40 years. The adoption of the scheme outlined in this paper, unless something better can be devised, so that a 15' waterway may be obtained all the way to Fredericton. Later this depth may be increased several feet, if the extra expense seems warranted.

2. The initiation of a policy of reclamation for the waste lands of New Brunswick, by reforestation, by drainage or in whatever way the special circumstances render most suitable. Such a policy if carefully developed and wisely and efficiently administered can add an enormous amount to the wealth of the province.

3. The preparation of plans for flood control along the lines suggested in this paper.

4. The formation of a New Brunswick hydro-electric commission to take charge of the water powers of the province and develop them as fast as the public interest will warrant. (Since writing the above, information has been received that a beginning has been made in this matter and that the next session of the New Brunswick Legislature will likely create a commission for the province similar to the Ontario Hydro-Electric.) Proposals 2, 3 and 4 of this summary are very closely related and depend for their complete success upon the adoption of a broad general policy covering a long period of time. To subject any of them to the violent reversals of policy likely to occur under our system of party government would be to seriously jeopardize their success and it therefore would probably be better to place all these matters under one commission and keep them entirely outside of politics.

5. That the port of St. John be put in the hands of a commission of the ablest men that can be secured, so that a modern and comprehensive plan of development may be worked out, and it is suggested that the scheme for the utilization for harbor purposes of the large, nearly tideless area of deep water in the lower reaches of the St. John River is worthy of very serious consideration.

CORRECTION

IN the November 21st issue of *The Canadian Engineer* it was erroneously stated that the firm of DuCane, Dutcher & Co., consulting engineers, of Vancouver, B.C., had changed the name of their firm to the General Engineering Company. H. K. Dutcher advises us that the name of DuCane, Dutcher & Co. remains unchanged, although they are forming another company for certain fields of work, particulars of which will be announced later.

The Chicago office of the Electro Bleaching Gas Company, of New York, which has been temporarily closed on account of the war, is to reopen, and will be in charge of G. R. Ellis as formerly. It will be located at 11 La Salle Street as heretofore.

RIVERSIDE DRIVE SEWER, CLEVELAND

THERE is now being completed in Lakewood, a suburb of Cleveland, a \$90,000 main sewer on beautiful Riverside Drive. This sewer is 7,000 ft. long and consists of two lines, one directly above the other. At the outlet, the lower line is 24-in. vitrified clay pipe and the upper, 27 in. Where connection is made with the existing sewer system, this lower line is 18 in. and the upper, 24 in.

The trench is 3 ft. wide by 15 ft. deep. Starting at the lower end—the outlet—the top $1\frac{1}{2}$ ft. is hard, baked clay and the underlying $13\frac{1}{2}$ ft., solid shale, which required three blasts of dynamite to condition for digging. At the upper end, there was 9 ft. of clay and 6 ft. of shale.

To cut this trench, the contractors used a steam shovel equipped with a 30-ft. dipper stick. Working 5 hours daily, this shovel averaged 50 lineal feet, or 83 cubic yards. The contractors figure it replaces 30 laborers, as they calculate that a man in this material, and under the existing conditions, would do well to dig $2\frac{1}{2}$ cubic yards in a half a day.

Pipe is laid by sections; that is, the shovel digs a certain amount of trench, then the layers follow with the pipe. The shovel back-fills the trench (see illustration) with dirt taken from the front. In other words, 50 lineal feet of this double sewer is completed in a 5-hour day. But for the fact that the shovel both digs and back-fills the trench and is handicapped by the pipe-laying operations, it would deliver even greater yardage. The length of the dipper stick permitted casting the surplus excavation over the river bank.



Gas-producing companies, distributing companies and gas consumers from urban and rural municipalities were represented at meetings held last week at Chatham, Ont., pursuant to a call issued by the Ontario Government for a meeting at which names might be suggested for membership in the new Natural Gas Commission, which will advise with the government as to future legislation concerning the production and distribution of natural gas in Ontario. E. R. Gray, city engineer of Hamilton, Ont., is one of the three nominees for urban representative.

Speaking last week at the meeting of the Hydro-Electric Railway Association of Ontario, Sir Adam Beck, chairman of the Hydro-Electric Power Commission, issued a public warning to manufacturers of electrical machinery that "if they do not keep within bounds, they will meet with competition," intimating that the Commission may go into the business of manufacturing supplies and equipment. He did not charge the manufacturers with having formed a combine, but hinted at a "gentleman's understanding." Before the war, he declared, there was as much as 25 per cent. difference in tenders, but not now. When tenders were opened recently on a \$26,000 contract, he said, the difference between the highest and lowest of five tenders was only \$8.60.