connected elevator equipments installed by Malloch & Co., of London. The electric motors and controllers of which were furnished by the Electrical Construction Co., of London, Ltd., who also installed two motors direct belted to fans, which are used to exhaust the air from the entire building. The fan motors are of the bi-polar type, and have a speed controller. The smooth running of the engines, and the steadiness of the voltage of the electric plant, have called forth high compliments from the many visitors to the new institution. The engineer and mechanical superintendent is Samuel S. Glass.

THE ENGINEERS' CLUB, TORONTO.

The annual dinner of the Engineers' Club of Toronto, took place at the Rossin House, Toronto, February 8th, and the following gentlemen were elected to the various offices for the ensuing year: President, Kivas Tully, vice-president, Prof. Jno. Galbraith; directors, C. H. Rust, representing the civil engineers; R. W. King, the mechanical engineers, and T. R Rosebrugh, the electrical engineers, treasurer, T. B. Speight, secretary, Wilhs Chipman. Among the members who participated in the annual dinner at the close of the business meeting were the following: Kivas Tully, C. M. Canniff, C. E. Cooper, — Brodie, W. A. Clement, Henry F. Duck, Jno. A. Duff, Fred. G. Durnford, J. A. Ellis, W. A. Johnson, Henry A. Gray, — Gordon, Jno. Galbraith, G. H. Hanning, R. W. King, E. H. Keating, Geo. R. Mickle, J. G. Maybee, E. Phillip, Rod. J. Parke, Jno. G. Ridout, C. H. Rust, T. S. Scott, T. B. Speight, R. T. Tate, Geo. White Fraser, Jno. Williams, C. H. Wright and P. M. Wickens. The usual toasts, with music, concluded a very successful entertainment.

CANADIAN ASSOCIATION OF STATIONARY ENGINEERS.

PRODUCTS OF COAL.

The monthly open meeting of the Hamilton Branch of Stationary Engineers was held February 20th. The principal feature of the evening was an address by J. M. Williams of J. Wmer & Co., on the subject of products that could be obtained from coal. The address was illustrated throughout by means of blackboard drawings, and specimens of the various substances named were on exhibition for the inspection of the members present. It was demonstrated that after the first product, which was heat, the next two of greatest importance were gas and coke. From the coke we obtain electric light carbons, and carbide of calcium used in the production of acetylene gas Coal tar was the next production, and as the substances obtained from the distillation of this tar are practically innumerable, the principal products only were touched on.

We first obtain from coal tar a substance called benzol, which, combined with nitric acid, forms nitro-benzol, which is used extensively in the making of perfume. Next we procure carbolic acid, then creosote, a substance used for preserving railway ties, wharves, etc. Then follows naphthaline, used in the manufacture of camphor balls; in exceptionally cold temperatures this substance sometimes blocks up the gas pipes. We then obtain solid paraffins, principally in the form of waxes. The last product obtained through this distilling process of coal tar is pitch.

It was then shown how the articles and productions mentioned were applied to the manufacture of modern commodities of everyday use. The explosives used in modern warfare are composed largely of materials obtained from coal, such as carbolic acid, etc.; naphthaline goes into some of them, and is used in some of the cartridges of the present day. The speaker then exhibited samples of cordite and other explosives, and explained how smokeless powder differed from ordinary gunpowder. It was shown how natural articles of commerce were being imitated by productions from coal tar, such as oil of wintergreen, obtained from carbolic acid, musk, saccharine, which is 500 times sweeter than common sugar, and also artificial perfume resembling flower of lilac. In some diseases saccharine can be used where sugar could not. Gum-benzoic, naturally obtained from the sap of a tree grown in eastern countries, a substance which has been used from earliest times in making incense, and in all probability utilized in the preservation of mummies, is now artificially made in the form of benzoic acid. Mr. Williams had on exhibition a piece of gum-benzoic, which was over two hundred years old. A substance is also obtained from coal tar, which is used for much the same purposes as quinine in medicine.

At conclusion of the address a hearty vote of thanks was tendered Mr. Williams for his trouble in preparing such an interesting and exhaustive address on the subject. L. B. Mann, of Boston, a well known stationary engineer, addressed the meeting before it closed, and announced that he would be present at some meeting in the near future and address the members at some length. H. J. Wickens, of Toronto, made a few remarks, and a paper from him on electricity is looked for in the near future.

DOMINION ESTIMATES.

Railways and Canals.—The amount to be voted is $4,570,902, as against the current vote of $4,855,472. Of this the Intercolonial Railway is to receive $1,545,902, being $95,216 of a decrease. The Prince Edward Island Railway receives $713,500, as against $268,000 for the current year. Canals receive $2,311,500, as against $2,944,454 for the current year. The canal items are:

Soulanges canal, *construction*, $350,000; Sault Ste. Marie canal, construction, $40,000; Lachine canal, construction of lock, $500,000: Lachine canal, dredging between locks 2 and 3 and basin, $21,000; Lachine canal, building slope walls, $11,000: Lachine canal, build a quadrant pontoon gate, $20,000; Lachine canal, installation of electric light, $40,000; Lake St. Louis, forming channel, $14,000: Grenville canal enlargement, $5,000; Lake St. Francis, removing shoals, $5,000; Cornwall canal, enlargement, $60,000; Farran's Point canal, enlargement, $69,500; Galops canal, enlargement, $441,000; North Channel, forming $200,000; Galops Rapids, forming channel, $100,000; St. Lawrence River and Reaches, surveying, buoying, etc., $15,000; Trent canal, construction, $320,000; Welland canal, improvements to Port Colborne entrance, $100,000; total, $2,311,500.

In addition to the above which are chargeable to capital, there is $245,927 to be voted chargeable to income. Of this $9,000 is for Lake St. Francis; $17,000 for the Lachine canal, including $3,000 for new steel rollers for Wellington street bridge; $10,000 for St. Ours locks; $31,700 for the Carillon and Grenville canals.

Public Works, Capital.—The amount to be voted is $476,000, being an increase over the current vote of $24,000. Of this $433,000 is for the St. Lawrence ship canal, being the same as the current vote.

Public Works Income.—The amount to be voted is $1,995,423, as against $2,224,576 for the current year. The following appropriations are for Quebec:

Dominion public buildings, $12,000: Grosse Isle quarantine station, $10,000: Montreal public buildings, $5,000; Quebec Citadel, Governor General's quarters, $2,000; Quebec custom house and examining warehouse, $2,000: Quebec immigration buildings on Louise embankment and breakwater, and Queen's wharf buildings, $5,000.

Harbors and Rivers.—Anse aux Gascons (Port Daniel East), breakwater, $1,300; Baie St. Paul (Cap aux Corbeaux), extension and repairs to wharf, $2,000; Beauport, wharf, $4,500: Berthier (en bas), repairs and open shed, $1,000, Carleton, extension of landing pier, $1,000; Grosse Isle, repairs to wharf, $1,500; general repairs and improvements to harbor, river and bridge works, $10,000; Lanoraie, repairs to wharf, and construction of ice breaker, $2,500; Longueuil wharf, reconstruction and repairs, $2,500; Lower St. Lawrence, *removal of rocks*, $1,500: Magdalen Islands breakwater, $10,000; Matane, extension of training pier southwardly, $4,000; New Carlisle, repairs to wharf, $500; Newport breakwater, $7,000; Perce (North Cove), wharf, $10,000; Rimouski wharf repairs, $3,000: Riviere Cap de Chatte, pier, $600: Riviere a la Pipe, wharf on Lake St. John, near mouth of river, $1,000: River St. Maurice, channel between Grandes Piles and La Tuque, dredging, $6,300; St. Alexis, Baie des Ha! Ha! pier, $4,000; St. Alphonse (Bagotville), landing pier, repairs and shed, $500: Ste. Anne de Sorel, ice piers, $2,000: St. Fulgence, pier and improvements, $1,500; St. Jerome (Lake St. John), wharf, $2,500: St. Laurent, repairs to wharf, $700.