

*Disbursements.*

Expenses of Convention at Toronto	
Lunches at Cliff House.....	\$27 50
Dinner on "Chicora".....	27 00
J. A. Kammerer, expenses incurred for Association .....	4 35
	<hr/> 58 85
Reporting proceedings of Convention .....	26 80
Grant to Secretary .....	25 00
Postage.....	27 00
Printing and stationery.....	65 00
Receipt book .....	25
Exchange on cheques .....	75
Refund to W. A. Green for dinners at Cliff House	1 50
	<hr/> 205 15
	<hr/> \$273 48
June 1st, 1894	
Cash on hand .....	\$ 23 30
Cash in Merchants' Bank.....	250 18
	<hr/> 273 48
Total cash on hand, June 1st, 1894.....	\$273 48
Receipts since June 1st, 1894	
7 active members' fees .....	\$ 35 00
3 associate members fees.....	6 00
Capt Carter .....	2 50
D. Robertson .....	1 00
	<hr/> \$44 50
Expenditure since June 1st, 1894 .....	17 04
	<hr/> 27 46
Total cash on hand, Sept 18th, 1894 .....	\$300 94

The report was adopted

Ten active members and five associate members were elected

John J. York, president of the Canadian Association of Stationary Engineers, accompanied by G. Hunt, past-president, A. M. Wickens, and J. Robertson, was then introduced, and on behalf of that association read an address of welcome to the convention. He congratulated the association on the remarkable advances which have been made and still continue to be made in electrical science, and pointed out the close and fraternal relations of the electrical and the stationary engineer, and the mutual help they were affording each other.

Mr. York's address was received with applause, and the president thanked him in the name of the association for their kindly welcome to Montreal. He also extended a warm welcome to any members of the C.A.S.E. who wished to take part in the discussions.

On the suggestion of K. J. Dunstan, T. D. Lockwood, of Boston, advisory electrician of the American Bell Telephone Co., and S. F. Francisco, president of the National Electric Light Association of the U.S., were elected honorary members. They were the first gentlemen to enjoy that distinction.

K. J. Dunstan moved, seconded by A. B. Smith, that the constitution be so amended as to reduce the fee for active membership from \$5 to \$3.

On amendment by E. Carl Breithaupt, seconded by J. A. Kammerer, Messrs. Smith, Dunstan and McFarlane were appointed a committee to consider the question.

It was moved by A. B. Smith, seconded by J. A. Kammerer, that all existing committees be dispensed with, and that committees be nominated by the president on Legislation, Statistics, and Constitution and By-laws. Carried.

The president read a communication from Mr. Paige, manager of the Packard Lamp Co., inviting the Association to visit the Queen's theatre that evening (19th).

At the afternoon session the president nominated the following to serve on the various committees:

On Statistics—E. Carl Breithaupt, Berlin; John Langton, Toronto; John Galt, Toronto.

On By-Laws and Constitution—J. J. Wright, J. A. Kammerer, A. M. Wickens, A. B. Smith, and K. J. Dunstan, all of Toronto.

On Legislation—C. Berkeley Powell, Ottawa; L. B. McFarlane, Montreal; John Yule, Guelph.

These nominations met the approval of the meeting, and were adopted.

A paper by W. B. Shaw, on the "Application of electricity for medical and kindred purposes, from light and power circuits," was then read, and will be referred to in another issue.

J. A. Baylis, of Toronto, then read a paper on "Electrolysis," which will be found in another part of this issue.

In the course of the discussion on the paper, Mr. Black, of Hamilton, said there was a good deal of talk of damage in Hamil-

ton from electrolysis, and the city engineer had a pile of pipes in his office as samples of the effects, but this was in the days when they used the old strap rail and the bonds were broken. Those familiar with the position of Hamilton would remember that the main return circuit ran down James street. The single track ran to the power house and York street, King street, Barton street branched off. The whole current had to be returned to this one set of strap rails, and when the strap rails were worn the bonds broke, and the current would get off some other way. Since they have laid the new rails and made their bonding there has been no complaint. All the pipestaken out were in the neighborhood of, and not very far from, the power house. They were not found injured in any other place than in the neighborhood of the power house. The city engineer had gathered quite a mass of information, and he intended calling on him to see if he could give us anything on the subject for this meeting, but did not see him. Mr. Black understood the railway company have now connected the main water pipe with their ground wire at the power house, and that reduces the chances of further trouble.

Mr. Shaw said if electrolysis were occasioned by the polarization of gases, that would cause an even wearing away of the pipes right along, but there is not an even wear.

Mr. Keeley found that wherever there was a marked effect on the cable, the ground would be very moist at that point. Here was a piece taken from the vicinity of the power house in Hamilton and it looked as if it had the small-pox. It had evidently been in water. Possibly the water may have passed through a limestone formation.

Mr. Lockwood said the subject of this paper was important to the telephone man, and important to the railroad man, because he naturally does not want to interfere with other people's belongings any more than he can or must. There seems to be one thing that paper might have mentioned, and that is, that a great deal of this electrolytic corrosion of underground cables is dependent on the amount of electricity that is pumped into the earth within a given area of space. The most noticeable instance of this kind occurred in Boston, which had the largest installation of electric street railway in the world, and there the largest currents were brought back to the dynamo through the earth. He was a little surprised in learning from the paper that the first remedy tried was grounding the positive pole at the dynamo and putting the negative pole to line. He believed that the dynamos of that company ordinarily had their negative pole to line, and that it was not until their attention was called to the fact that they changed it and put the positive pole to line. With the negative pole to line, so large is that system and so enormous are the amounts of electricity delivered to the earth after passing through the trolleys and the motors, that the electrolytic corrosion of pipes and cable tubes was in all quarters. In fact, it spread nearly all over the city, and it was as a suggested remedy that the present method was adopted, in which the positive pole of the dynamo is to line. It does restrict the trouble to a small area immediately around the power station, and when it is restricted to such a small area it is much more easily handled than a corrosion distributed around a large city. In addition, extremely large copper cables are used. In Boston copper cables of more than one inch in diameter have been employed to aid the rails in returning the trolley current, and the trouble is very largely minimized. Personally, he did not think that in small installations of electric railroad serious trouble need be expected, but in large cities it is to be expected. The bonding of the rails is no doubt one of the principal things that is required. He did not think that the electric welded rails have, to any great extent, gone into use yet, and the unwieldiness of handling them will be an insuperable objection. But with the best conductors that are made, we have still to remember that the old doctrine that used to be promulgated, that electricity would choose only the best path, must be discarded, not only from our lips, but also from our thoughts, and remember that electricity avails itself of all paths in proportion to their respective resistances; and when we think of that, we cannot help but see, no matter how perfectly our roads are constructed, we should make the return conductor as perfect as it can be, and it is still the best thing to have the positive pole of the dynamo to line, and to aid the rail in the vicinity of the dynamo and of the power house by very large copper conductors.

Mr. Baylis said: "That remedy was tried in Marseilles, in France, and it was strongly recommended there. They grounded the positive pole and had the dangerous area distributed over a large portion of the town, and they were experiencing no trouble, and this was commented on in an editorial in the London *Electrician*. It was stated, however, that it was not a true remedy."

Mr. Medbury observed that in Ottawa he had some experience with the engineer of the Bell Telephone Company in taking some