

CANADIAN ELECTRICAL ASSOCIATION.

The fourteenth annual convention of the Canadian Electrical Association was held in the Royal Hotel, Hamilton, on Wednesday, Thursday and Friday, June 15th, 16th and 17th, the president J. J. Wright, of Toronto, in the chair.

The following registered attendance: From Toronto: J. J. Wright, C. H. Mortimer, A. B. Smith, T. R. Price, J. M. Leamy, W. A. Bucke, R. G. Black, E. Irving, W. W. Bogart, E. B. Merrill, R. H. Fraser, K. L. Aitken, F. Rose, J. W. Campbell, W. V. Warren, E. D. McCormack, Acton Burrows, Frank T. Dryden, W. H. Dudley, John W. Watts, W. H. Fiske, W. D. Wilgar, P. E. Hart, H. O. Edwards, H. G. Nicholls, Walter Nicholls, E. B. Walker, Frederic Nicholls, G. W. Hill, D. H. McDougall, A. C. Larkin, A. E. Esling, F. C. Smallpiece, J. P. Thompson, A. M. Wickens, G. F. Perry, W. R. Scadding, J. Herbert Hall, C. H. Wright, R. T. MacKeen, H. J. Surtees, Roderick T. Parke, A. B. Lambe, W. M. McKay, W. McCaffery, J. F. H. Wipse, E. W. Davies, James Bannon. From Montreal: Henry D. Bayne, A. McLean, Edward F. Sise, A. E. Wilson, J. A. Fletcher, J. M. Wright, W. H. Reynolds, T. J. Mullen, L. Rousseau, G. C. Rough, R. A. Stinson, Paul Size, C. W. Henderson, T. R. Fulton, Cecil Dautre, Alfred Collyer, W. C. Brown, H. W. Weller, W. A. Duff, Fred Thompson, G. F. Olney, D. W. McLaren. From Hamilton: Gordon Henderson, C. K. Green, J. A. Kammerer, H. W. McPhie, Geo. Black, D. S. Henderson, W. C. Hawkins, N. S. Braden, John Patterson, John Knox, John Knox, Jr., H. M. Bostwick, H. P. Douglas, T. F. Niven. From Ottawa: John Murphy, J. Johnston, T. Hilliard, O. Higman, A. A. Dion. Also the following: B. F. Reesor, Lindsay; C. B. Hunt, London; John Yule, Guelph; H. O. Fisk, Peterboro'; R. J. Smith, Perth; W. E. Reesor, Lindsay; W. Williams, Sarnia; J. G. Archibald, Woodstock, Ont.; J. W. Crawford, Durham; C. H. Abbott, St. John, N.B.; H. N. Dignum, Bowmanville; C. B. Roulet, New York, N.Y.; T. H. Bibber, Boston, Mass.; K. Hadin, London, Eng.; T. D. Loneragan, Quebec; R. M. Saxby, Whitby; C. T. Starr, Halifax, N.S.; C. H. Clark, Boston, Mass.; A. F. McBean, St. Catharines; F. C. Whatmough, Stratford; F. Chowen, Stratford; W. H. Wiggs, Quebec; W. L. McFarlane, Cornwall; A. T. Duncan, R. R. Wiley, and R. B. Hamilton, St. Catharines; Louis W. Pratt, Brantford; R. B. Smith, Boston, Mass.; H. Webster, Norwich; W. J. Ingram, Kincardine; Arthur Doddridge, Quebec; L. R. Grimshaw, St. Catharines; A. H. Oesterreich and C. W. Schneidel, Waterloo, Ont.; Chas. L. Farrar, Lakefield, Ont.; Simon Plewes, Creemore, Ont.; J. A. Culverwell, Peterboro'; F. B. Utley and Jas. Buchanan, Galt; G. U. G. Holman, Levis, Que.; J. D. Lachapelle, Sorel, Que.; V. B. Coleman, Port Hope; F. W. Martin, St. Catharines; E. Craig, Niagara Falls, Ont.; T. Beecroft, W. A. Boys and T. H. Bennett, Barrie; J. W. Crosby, Halifax; J. M. Deagle, E. F. Terman, Cataract, Ont.; T. E. Gayfer, Ingersoll; Fred Deagle, Eugenia Falls; P. S. Coote, Chatham; P. M. Lincoln, Pittsburg, Pa.; L. B. Hastings, Pittsfield, Mass.; A. H. Skene, Bracebridge; S. T. Kelley, Barrie; A. Walker, Bracebridge; W. Langford, Quebec; W. R. Reynolds, Mitchell.

An address of welcome was delivered by Mayor Mordey, in which he referred to Hamilton's growing importance as a manufacturing and electrical centre. "Once Hamilton was called the Ambitious City; but there is a difference now. It then had an ambition to be great among the cities of Canada; now it is ambitious to be the greatest of them all." He referred to the fact that there were now in operation in Hamilton more than three hundred important industries.

The president then delivered his annual address, in which he referred to the meeting of the Association in Hamilton twelve years ago. This period covered practically the entire development of long-distance transmission of electricity. Hamilton had in that time attained the distinction she now enjoyed as the Electric City, and one of the first cities to minister to the needs of its manufacturers by transmitting electric power from a natural reservoir. Among

the important matters that should engage the attention of the convention would be the endorsement of the application to the Minister of Inland Revenue for the better utilization of the resources of the Inspection Bureau of the Government. The favorable hearing accorded a deputation a few weeks ago gave encouragement that a further application would secure increased facilities for protection, and also legislation that would still further protect the companies engaged in electrical enterprises. A committee had been appointed, he said, to confer with the underwriters as to protective devices to be used in the installation of electric appliances; "and it could do good work if it were to succeed in inducing the insurance companies to investigate thoroughly the cause of the many fires that are continually taking place." It had become the fashion now, he said, wherever there were wires in a building to blame all fires upon the electric wires where there was no other obvious reason. The chief of Hamilton Fire Department had estimated that 60 per cent. of all fires were incendiary, but the speaker thought this estimate too low. Gratification was expressed that the legislation requiring a municipality to purchase at a fair valuation the plant of a company with which it would otherwise go into competition still remained on the statute books. Municipal socialism was designated as a passing whim. Theoretically, a municipality should be equal to private enterprise, but practically it was impossible. In some isolated instances it had been accomplished in England with more or less success, but the difference in constitution of municipal bodies in England and in Canada was sufficient to account for the impossibility of such results here. The speaker expressed great satisfaction with the progress of the Association in the past twelve years, both in the matter of growth and in respect to accomplishments of the association as such.

The secretary-treasurer, C. H. Mortimer, then read his report, which announced the appointment of A. A. Dion as editor of the "Question Box," the first volume of which would be distributed at the present convention. A membership of 375 was reported, being an increase of 31 during the year.

On assembling for the afternoon session E. B. Walker was called on to read his paper on "The Origin and Development of Storage Batteries." The paper was as follows:

THE ORIGIN AND DEVELOPMENT OF STORAGE BATTERIES.

By E. B. WALKER.

In 1801 Gauthert first observed that if two metals—platinum and silver—were immersed in an electrolyte and a current passed through them, a secondary current could be obtained in the opposite direction by joining the two metals by a conductor.

In 1842 Grove observed that if two gases of strong chemical affinity were connected by pieces of metal through an electrolyte, a current would pass until the two gases were exhausted. In his experiment he used two test tubes inverted over strips of platinum foil in a vessel containing dilute sulphuric acid. The two tubes contained two volumes of hydrogen and one volume of oxygen respectively. On joining the platinum strips with a wire a current passed until the gases in both tubes disappeared. On sending a current through the platinum and acid from a primary battery, the gases were formed again by electrolysis, thus storing a small supply of electricity, represented by the volumes of the gases. About 830 cubic centimeters of hydrogen at a temperature of 0. degrees C. and 760 m.m. pressure, being equivalent to one ampere hour. Grove constructed a battery of fifty of these cells and managed to obtain a small arc light.

The year 1859 opens the era of the first storage battery of any practical value. Gaston Plante discovered that if a current were passed through two plates of lead immersed in dilute sulphuric acid a small current could be obtained for a short time, in the opposite direction to the charge, by joining the two plates with a conductor. This was due to