

question box was urged. This feature is a great success in the National Electric Light Association; upwards of 250 questions appearing this year on their circular. The organization of local branches or clubs in the larger cities was suggested, who should hold monthly meetings during the winter of a social character, at which short papers might be read and discussed. These papers could be printed and distributed. Regret was expressed at the long-continued illness of J. J. Wright, of the Toronto Electric Light Co., an ex-president.

The secretary read a letter from the Mayor of St. Louis and the Business Men's League, inviting the C.E.A. to hold the next convention in St. Louis, during the Louisiana Purchase Exposition, as it was the intention to hold an international electrical convention at that time.

Prof. Owens said the authorities of the St. Louis Exposition were organizing an International Electrical Congress to be held in the first week of September in 1904; the American Institute of Electrical Engineers, the National Electric Light Association of the United States, and other societies would participate, and the management was anxious that the Canadian Electrical Association would also participate.

O. Higman, of Ottawa, in moving a vote of thanks for the invitation, said he had the privilege of being sent to the International Congress in Chicago in 1893 by the Canadian Government, and could speak as to the good that the electrical world derived from the deliberations of that congress. The absolute units, as we have them to-day, were adopted at that congress and legislation followed all over the world making them legal, so that we find to-day the nomenclature and the value of these units the same in all countries.

John Yule, of Guelph, presented the report of the Committee on Legislation. The committee had met and agreed upon a plan of campaign for defence of the Conmee Amendments, which were threatened by a bill introduced in the Legislature by Mr. Downey, M.P.P., for their total repeal, and the committee were pleased to report that they had been successful in opposing this bill. The committee asked for better financial support from those who were reaping the benefit of the work done, as by the efforts of this committee millions of dollars had been saved to the companies interested.

Mr. Higman said the Arc Light Rating Committee had no report to make. Owing to the transition stage in which arc lighting is at present, it would not be desirable to bring in a report recommending a standard for arc lighting. We moved from the old open arc light to the enclosed and the alternating, and now we have the Nernst lamp, as a distributing element, and it would be quite impossible to lay down hard and fast lines as to what shall constitute an arc light. The National Electric Light Association of the United States had made investigations with greater means than this Association had at its disposal, and we could assimilate the information it had gathered. His department at Ottawa had recommended that contracts should be made in terms of energy delivered at the lamp instead of candle power, and this was now becoming the custom.

C. B. Hunt said the contract in London got over the difficulty of candle power entirely. His company has to produce a lamp of a certain voltage and have the current at a certain amperage to produce 450 watts or over at the lamp. This is accepted by him as a 2,000 candle power lamp and is also the standard adopted by the National Electric Light Association.

Mr. Hunt reported that the Executive had appointed Mr. Dion and himself to take charge of the Question Box. The National Electric Light Association of the United States this year had a great many questions, nearly three hundred, put in during the year. The secretary sends out papers about every month with the questions that have been submitted and each member is asked to answer, if he can. The questions and answers made a book almost half an inch thick. Next year the Executive Committee might find it possible to publish these questions and answers in a similar way.

"Is it advisable to 'ground' secondaries at the transformer or in the building supplied?" Will some gentleman

now answer that? There was some difference of opinion at Chicago, some saying it was better not to ground them at all and others contending that it was.

H. O. Fisk, of Peterboro, said they were grounding all secondary work of late, especially the three-wire; ground the neutral and ground at the transformer, and so far they had not grounded anything in the building. It has worked very satisfactorily.

Mr. Dion asked what means were taken for grounding on the streets?

Mr. Fisk: Simply put a copper plate down in the ground about seven inches deep, about twelve inches square, nailed to the bottom of the pole, and a copper wire soldered to that.

The President thought good moist ground would be sufficient one way or the other.

Mr. Higman thought the most effective way was to ground it at the transformer. The plan adopted by Mr. Fisk was not an advisable one. Electrical action would soon wear out the connection, and there would be no ground. The only effective way was to string an iron wire of good size, and make the ground in the transformer in that way. The grounding of the secondary was quite a common practice in the Old Country.

Mr. Hunt understood the National Board of Underwriters objected to this grounding at the transformers. There had been trouble through having grounds there; and also to grounding inside of buildings where there are water and gas pipes. There have been more fires caused on that account, where the ground is crossed with water and gas pipes in the building.

Mr. Dion thought the question was as to whether we should ground the secondaries at the transformer or in the building. There seemed no choice in the matter because the National Board won't allow grounding, except outside the building.

The next question was: "Should meters be tested in places, or should they be returned to the station for that purpose?"

One answer from the Sherbrooke Power, Light & Heat Company, was: "In some cases in places; in others, taken to the station."

The other from Mr. Higman was: "Government regulations require that meters should be presented to the inspector for inspection. To test in situ is extremely inconvenient, and sometimes impossible. An extra fee of fifty cents is charged for meters so tested."

Mr. Fisk said his company brought in all meters for inspection. It was almost impossible to do anything to a meter on the premises, if found incorrect.

Mr. Higman said where the correctness of a meter was disputed the meter could be handed over to the inspector in the presence of the customer.

Mr. Purcell had in mind one meter which when tested in the shop ran all right, yet when put up, the meter had crept up 24 kilowatt hours in one month. There was vibration in the building in which it was put up. There was no vibration in the building in which it was tested. There are some instances in which you have to make tests on the premises. The Edison people of Detroit insist on all meters being tested on the third floor of their power house where there is a great deal of vibration. Originally they used to receive their Thomson meters from the General Electric Company that were tested on an air bag, so as to eliminate all vibration there might be. When the meters were received and put up for test they found that they were possibly anywhere from ten to twenty per cent. fast. They specified that these meters must not be tested on the air bag; they must be fastened to the wall or shaft, or anything convenient, so as to be liable to the vibration in the building—every day conditions—and that they do now; they test all their meters on the third floor of their power house, where there is vibration from the machinery, which is below, and they get every-day conditions, and as a result, they have very few objections.

Question No. 3 was: "What systems are mostly used and commendable to check up lamp manufacturers' guarantees as to life, efficiency, and c.p.?"