

not reciprocate to O.L.S. Mr. A. Niven voiced the opinion of many of those present that under the law as it stands many farmers in the newer townships of the province were unable to afford the expensive method that now obtains of having their lines located. Several changes were made to the amendments as amended.

It was moved by Mr. P. S. Gibson, seconded by Mr. John Davis, and resolved that the draft bill respecting land surveyors and the survey of lands as presented by the committee on Legislation and amended by resolutions passed by the Association, be and is hereby approved and adopted, and that the committee on Legislation be instructed to present the draft bill to the Commissioner of Crown Lands, and that they request that the proposed amendments be brought before the House at its present session.

A valuable paper on "Evidence" by Mr. J. L. Morris, Pembroke, was presented.

The report of the committee on Land Surveying with question drawer, by Mr. J. L. Morris, chairman, Pembroke, was read by Mr. A. Niven, who moved its adoption, seconded by Mr. Gibson, and carried. One object sought, that of having a fixed fee for making use of plans in registry offices, has been provided for in the Consolidated Act. Some discussion arose over a clause suggesting that the expense of locating side lines be distributed over those interested, in proportion to acreage, and in the event of any not paying the charges, to levy the same on the municipality, as is done under the Ditches and Water-courses Act. This, it was pointed out, could not be done, as the locating of the line was in no way a public work. It was generally agreed, however, that some method ought to be put in practice to compel each person benefited to pay their fair share.

A paper entitled "Disputed Posts, Limits or Monuments" by Mr. Henry Carre, C. E., Belleville, was read by the secretary.

A paper on "Hints on Surveying and Instruments," by Mr. Sherman Malcolm, of Blenheim was read.

It was moved by Mr. H. DeQ. Sewell, seconded by Mr. Johnston, and resolved, that the section of the act prescribing the method of subdividing sections of townships surveyed on the Manitoba system be referred to Mr. P. S. Gibson to report to the secretary at his earliest convenience.

At 5.45 p.m. the meeting adjourned.

THIRD DAY.

On Thursday, at 10 a.m., the meeting resumed. Vice-President T. H. Jones in the chair.

The following report of the Committee on Engineering, Mr. Joseph De Gurse, chairman, was read by Mr. Campbell:

REPORT OF THE ENGINEERING COMMITTEE.

MR. PRESIDENT.—Engineering work has for several years been quite inactive, and while your committee cannot find that the prospects indicate any revolutionary change, the outlook promises a healthy development in lines which will require the services of the engineering profession. This is especially the case in municipal branches. The present tendency is for the towns and cities to increase in population more rapidly than the country districts. This, together with an awakening knowledge on the part of the public of the value of waterworks and sewers, is gradually producing a condition in which all towns of any pretensions will demand these public works. The installation of municipal electric systems is a feature which promises to develop. A better class of pavements and improved streets is a branch which will add to the opportunity of the municipal engineer. While the tendency in the past has been to employ the services of the engineer for the first construction of these works, it is further beginning to be felt that a salaried and permanent town official is necessary to look after their proper maintenance.

Mining engineering, in view of the gold discoveries in Rossland, B. C., and in the Rainy River District of Ontario, will create a demand for expert services; while if mining operations become profitable, of which there is every probability, it is likely that a number of railway extensions and spurs will be required.

Various electric railways have been completed during the past year, while others are projected. The Hamilton and Dundas Street Railway will soon be operated by electricity. The track is now laid with 65-lb. steel rails, and will be trolleyed early in the spring. From Hamilton to Dundas is the first stage of a line which, in the near future, is to be pushed out to Galt—only fourteen miles, and here the existing Galt, Preston and Hespeler road will be utilized to make the missing link to Berlin from Preston, a distance of 8 miles, so that 22 miles of electric road will complete this chain, uniting Hamilton with a large number of villages. It is quite possible that this will be accomplished, and, perhaps, even Guelph be reached before the end of 1897.

What is believed to be the largest ditch in America has recently been completed. This drain serves the townships of Raleigh, Harwich and Tilbury, and was constructed at a cost of \$40,000, the work occupying two years. It is over ten miles in length, is 90 feet wide at the outlet, and tapers to 45 feet and 9 feet deep. This class of work, which was commenced under the Drainage Act in 1893, is a field which will afford constant and increasing employment.

During the past year an exceedingly important link in the trans-continental system was completed—the Ottawa, Arnprior and Parry Sound Railway. This connects at Parry Sound with the lake grain route from the west. The road is practically an extension of the Canada Atlantic Railway. At present freight is carried through to Boston, but by the building of 90 miles additional, chiefly in the province of Quebec, Quebec city will be made the port of shipment. When completed, the route from Duluth to Liverpool will be 800 miles shorter than by the lakes, Buffalo and New York.

A road is projected from Irondale Junction to Brockville, known as the Irondale, Bancroft and Ottawa Railway. This, by an international bridge across the St. Lawrence, will connect with the New York Central Railway. When completed it will open up an important mineral and timber district in the northern portion of Hastings and Addington. Thirty-five miles of this road easterly from Irondale Junction have been completed, and about \$20,000 has been spent on pier work at Brockville.

Two important roads are advocated, known as the Nipissing & James Bay and the Toronto & James Bay railroads, each with a view to opening up mining and timber districts in the northern part of the province, and creating a port on Hudson Bay for grain transportation.

A feature of the past year was the successful issue of the effort to harness the power of the Niagara river, whereby power is now furnished the city of Buffalo from that source. The question of long distance transmission of electric power in an economical manner remains still to be solved, but should this be accomplished, the possibility of utilizing the water power at the Niagara has been demonstrated.

Your committee of 1896 recommended the consideration of enlarging the scope of the As-

sociation. A special committee on legislation was appointed to deal with this matter, thereby relieving your committee of such work. Your present committee desire, however, to place themselves on record as in favor of extending the scope of the Association on lines laid down by your committee of 1896.

A. W. CAMPBELL, Chairman pro tem.

On motion of Mr. Campbell, seconded by Capt. Van Buskirk, the report was adopted.

A paper on "Sewage Disposal" was presented by Capt. W. F. Van-Buskirk, of Stratford. A lengthened discussion on this paper took place.

It was moved by Mr. Campbell, seconded by Mr. Wiggins, and resolved, that the Association of Ontario Land Surveyors heartily endorse the action of the Committee on Polar Research in its endeavor to promote the exploration of our "Northern Heritage," and that a copy of this resolution, together with a copy of the report of the committee, be sent to Ottawa in the hands of a deputation from this Association, who shall present the matter as forcibly as possible to the Minister of the Interior.

A highly interesting paper on "Macadam Streets in Towns," was presented by Mr. A. W. Campbell, of Toronto, which appears in verbatim on another page. This paper evoked much discussion, and the writer was tendered a vote of thanks for the valuable information it contained.

It was moved by Mr. A. Niven, seconded by Mr. R. Davis, and resolved, that the following clause be added as a sub-section to section 52 of the Survey Act:

"Provided that in the following townships, viz: All townships in Muskoka and Parry Sound districts, and in the district of Nipissing south of the Mattawa River and Trout Lake, all townships of the provisional county of Haliburton, the townships of Dalton, Digby and Lutterworth, in the county of Victoria, together with townships in the unsettled portions of the counties of Renfrew, Frontenac, &c., the lines between all lots shall be run on the astronomic course given on the original plans and field notes of the said townships on record in the Department of Crown Lands."

At 12.50 p.m. the meeting adjourned for lunch.

Reassembling at 2 p.m., President Willis Chipman occupied the chair.

REPORT OF SECRETARY-TREASURER.

The annual statement of the secretary-treasurer, Mr. Van Nostrand, made reference to the literature published during the year, and stated that the exchange of reports for members was continued with the engineering society of the School of Practical Science and the Michigan, Illinois, Iowa and Ohio societies, reports from all these societies having been sent to all the members not in arrears of dues. Some valuable additions to the library had been received, and members of the Association had contributed maps, charts, books, etc. The cash in the savings account was given as \$779.04, and that in current account \$543.05.

The report of the Auditors was presented by A. P. Walker.

The report of the Council of