votes of thanks were tendered to the authorities of Berlin; to Mr. Wm. Oelschlager and the local committee; to the ladies of Berlin, and to the mechanical press. Brief speeches were made by the newly elected officers, which closed the business session.

In the afternoon the delegates drove to Waterloo, where they visited the Sleeman stables, the large button factory, and other industries.

THE BANQUET.

The programme announced a banquet at the Walper House in the evening. About seventy-five persons gathered around the tables in the spacious dining hall. Seated at the head table were Mr. Oelschlager, who acted as chairman; president Pettigrew; past-presidents Wickens, Phillips, Pettigrew and Chapman; vice-president Mooring; treasurer Moseley; conductor Baer; and Mr. Chas. Rogers, of the Queen City Oil Co., Toronto. There were also present Mr. G. B. Towers, of the Vacuum Oil Co., Toronto; Mr. J. H. Clappison, of the Clappison Pipe and Boiler Covering Co., Hamilton; Mr. T. J. Halsey, representing Fairbanks Company, Montreal; several of the town councillors and many prominent citizens of Berlin and Waterloo.

After the menu had received attention, the chairman made a brief address, and read letters of regret from Mayor Eden, Mr. J. J. York, Montreal, Mr. Wm. Sutton, Toronto, and the Goldie & McCulloch Co., Galt. Then the toast of "Our Queen" was royally honored, followed by the toast of "Canada Our Home," to which Mr. L. J. Breithaupt, M.P.P., was asked to respond. Mr. Briethaupt said he was pleased, as an employer of labor, to be present, and that he was in sympathy with such an association. The employer soon recognized the fact that an intelligent workman was saving him money. Employers could not get along without employees and vice-versa, therefore their interests were mutual. Referring more particularly to Canada, Mr. Breithaupt pointed out that there never was a time when the future of Canada was so appreciated and recognized as it is to-day. The exports to Great Britain were proportionately more in the last few years than ever before. Engineers, he thought, would be certain to derive some benefit from this prosperity. In conclusion Mr. Breithaupt referred to the activity in manufacturing in the town of Berlin, which he said was an example of the conditions prevailing all over the Dominion. Upon resuming his seat Mr. Briethaupt was heartily cheered.

The "Mayor and Council" followed, in which Dr. Bowlby, deputy reeve, councillors Rumpel and Hagen, and Mayor Deibel, of Waterloo, responded.

The chairman then called upon Mr. James Dixon for a song, he rendering in a most acceptable manner "And She Was Tired of Him," which, needless to remark, received a hearty encore.

Coupled with the toast of "The Executive Head" were the names of Messrs. Pettigrew, Mooring, Moseley, Wickens and Dixon. Mr. Pettigrew said that the association, with education for its corner stone and progress for its motto, had been the means of establishing technical schools throughout the country. It was organized only twelve years ago, but now extended from salt water to salt water. Speaking on legislation he said he failed to see why engineers were not as much entitled to protection as professional men. Mr. Mooring said that when he accepted office in the association it was with the intention of reaching the top, and this he hoped to do next year. Messrs. Moseley and Wickens spoke briefly, after which Mr. Dixon indulged in some humorous stories, one being of the small boy who, when asked by the professor what steam was, replied: "Steam is water in a terrific state of perspiration."

MR. ROGER'S SPEECH.

Then came the toast of "Our Manufacturing Interests," to which Mr. Samuel Rogers, president of the Queen City Oil Co., was the first respondent. Mr. Rogers said that as a result of his meeting with the engineers he would in future take a deeper interest in the prosperity of stationary engineers. Knowledge properly applied was what made the wheels of the world go round, and he was pleased that the stationary engineers association was for educational purposes. An employer greatly appreciated an honest, faithful employee, and the prosperity of engineers depended in a large measure upon the prosperity of employers. For the last ten years, he said, his firm had been shipping oil to Australia and New Zealand, and each succeeding year the quantity had doubled. Mr. Rogers then spoke at some length upon the manufacture of oil, giving a most interesting and instructive talk. He said in part:

"Crude oil is placed in the still, which ordinarily is charged with from 350 to 500 barrels. The still has a dome on the top, from which large pipes lead to the condenser, which is built in the shape of a flume. The flume is kept filled with cool water. Condenser pipes are joined with vapor pipes, which come direct from the still. As these condenser pipes are under water, the vapor from the still is condensed while passing through them, and comes out at the worm end in liquid form, but varying very much in quality in proportion to the length of time which the still has been running. The first vapors which come from the still are very light, and when condensed make a liquid of 90 gravity, which is called gasoline, being nearly ten degrees heavier than vapor. Formerly this product was all lost for want of knowledge and lack of capital to build up-to-date refineries. At present closed worm ends are used, so that even the gases which are uncondensable are secured and drawn back to feed the fire under the still. As the fire is continued the vapors grow heavier. Next to ninety gravity gasoline comes eighty-eight, then eighty-six gravity. All the above are used for making gas for lighting churches, mills, etc., by simply mixing air with the gasoline. After this comes stove naptha, ranging from seventy to seventy-four gravity, used for motor carriages, for summer cooking stoves and for plumbers' use. Then we get 62 to 64 gravity, used for benzine and naptha, from which varnish and other paints are made.

"After this we get down to the series from which refined burning oils are made. At this point it may be better to explain that crude oil is composed of molecules or little balls, which vary in size according to the gravity, and it is very important that a proper separation be made of all these different qualities. This is done by the stillman watching the worm end continually, and taking samples of the distillate at least every fifteen minutes, and as change takes place in the quality of the distillate, the stillman takes off the product of the still and runs it into different tanks, thereby making the first separation. After the refined series is passed, we get down to the heavier molecules from which gas oil, high fire test burning oil, high grade spindle and other oils are made. When the above point is reached, we get down to the heavier paraffine series, from which high grade engine and other machine oils are made, also wax candles and petroleum specialties.

"After all the above products have come from the still, in the form of vapor, passing through the condenser, and the different liquids separated at the worm end, there only remains in the still petroleum coke, which is used to make carbons for electric light plants, or for other heating purposes. The products thus far produced are all in a crude state, and require close and careful handling, having to be chemically treated. Many more separations are also made before the finished articles are ready for the market—there is not time to follow all these in detail. One million dollars has recently been spent in building a new refinery at Sarnia. Owing to this expenditure all grades of petroleum are now made in Canada equal in quality to anything produced in the United States. During the last three years wonderful advances have been made in manufacturing petroleum. Take for example one by-product, gas oil, which is a by-product from crude oil, a large quantity of which is used by gas companies for making gas (one company alone using 40,000 barrels per year). Roughly speaking, their method of using this oil is to build a high retort; this is filled in openly with fire brick, leaving an arch at the bottom in which a coal fire is kept burning, heating the fire brick red hot. A small stream of oil is then fed in the retort from the top. Live steam is also introduced into the retort, and all the oil is therefore converted into gas and smoke. As this is conveyed in vapor from the retort to the gas holder, it passes through a scrubber in which there is water. The water condenses the smoke into thick, heavy tar, mixed with water. The tar is afterwards taken to the varnish factory and put again into a still with a condenser attached. As the still is heated the vapor which comes from the tar is again condensed, and, strange to say, after the water has been all removed in vapor from the tar, there comes again a thin oil. This oil, which has once been made from crude oil and then made into gas oil and smoke, is again made into oil, which is used for making tar-paper by mixing with tar, or it can be burned as fuel for firing the still. The residue of the condensed smoke remaining in the still is made into pitch, electrical compound, Japan and many other articles. All of these products have been redeemed from the fire, while in the past many of them were lost, absolutely thrown away. The bringing into this country of new capital, coupled with the expenditure of millions of money in experiments and plant, has made Canadian oil equal to the best American, and if Canadians were only as loyal to their country as Americans are to theirs, no American oil would be bought so long as the Canadian supply held out. The Queen City Oil Company have from one hundred and seventy-five to two hundred employees engaged in the sale of this oil in Ontario. Every one of them are Canadians. The oil is equal to or better than the best imported, and the money received instead of going to the States is sent to Sarnia to buy Canadian crude oil, furnishing home work for thousands of Canadians and helping to build up a Canadian empire which is truly loyal to the British Crown, proud to live beneath the glorious flag of our beloved Queen."