

# The Municipal World

Published Monthly in the Interests of Every Department of the Municipal Institutions of Ontario—  
the Best in the World.

Vol. 4. No. 10.

ST. THOMAS, ONTARIO, OCTOBER, 1894.

Whole No. 46.

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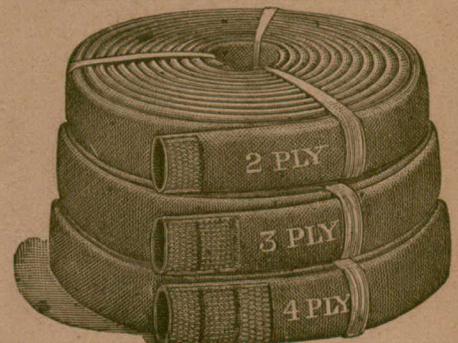
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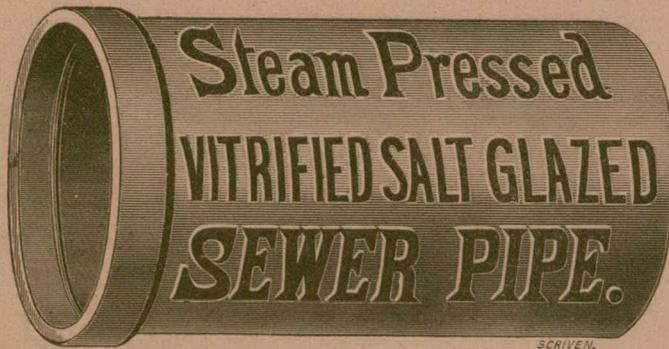
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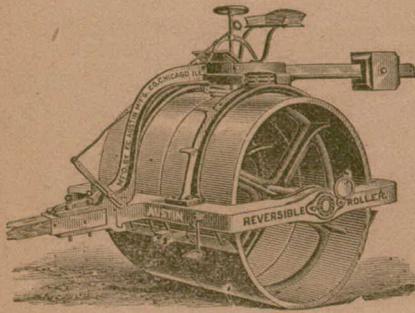
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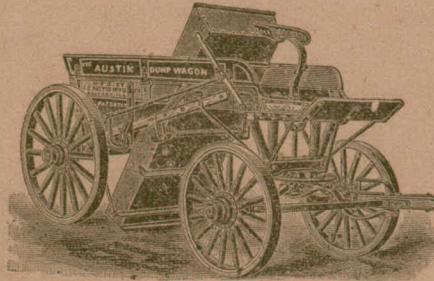
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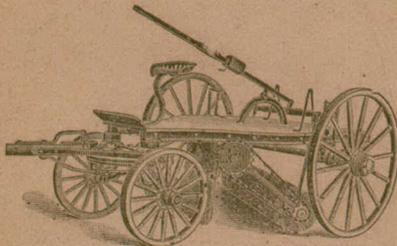
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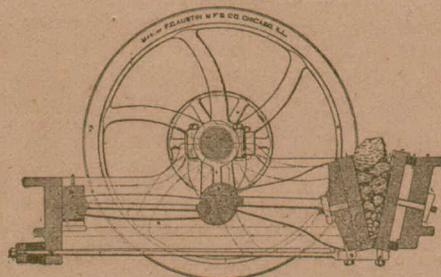
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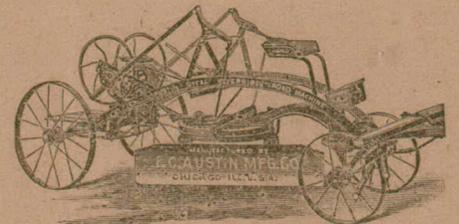
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# THE MUNICIPAL WORLD

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ST. THOMAS, ONTARIO, OCTOBER, 1894.

Whole No. 94

## CONTENTS.

	PAGE.
Editorial Notes.....	148
House of Industry, County of Oxford.....	149
Selection of Jurors.....	150
Collectors Duties.....	150
<b>ENGINEERING DEPARTMENT.</b>	
Roads and Roadmaking.....	151
Water Supply.....	152
Drainage.....	153
Vaccine.....	153
Sewers.....	154
Meeting of Directors of Good Roads Association.....	154
<b>LEGAL DEPARTMENT.</b>	
Municipal Councils—Their Powers and Jurisdiction—Arbitrations.....	155
Legal Decisions.....	
Wilson vs. Ingersoll.....	155
Re Merritt and Toronto.....	155
Re Chambers and Burford.....	155
Re Martin and Simcoe.....	155
Morgan vs. Maidstone.....	156
McPharlin vs. Maidstone.....	156
Local Boards of Health.....	156
Making his Point.....	156
Question Drawer.....	157
Gaol Rules and Regulations.....	157
Communication, special Audit, East Zorra.....	158
<b>ADVERTISEMENTS.</b>	
Any person replying to advertisements in this column will please mention THE MUNICIPAL WORLD	
Gutta Percha & Rubber M'fg Co., Toronto, Hose and Fire Department Supplies. . .	145
G. A. Stimson, Toronto, Municipal Debentures wanted.....	145
B. Baer & Co., Doon, Ont., Highway Bridges—Iron and Wood.....	145
A. W. Campbell, C. E., St. Thomas.....	145
Davis & VanBuskirk, Civil Engineers . . .	145
F. C. Austin M'fg Co., Chicago, Ill., Road-making Machinery.....	146
Hamilton and Toronto Sewer Pipe Co., Hamilton, Sewer, Culvert, and Water Pipe.	146
Planet Book making House, Chatham, Blank Books, etc.....	158
A. J. Clark, St. Thomas, Money to Loan... 158	158
Munn & Co., New York—Patents.....	158
Arthur C. Neff, Municipal Auditor.....	158
Hart & Riddell, Toronto—Treasurers' Cash Books.....	159
Dominion Bridge Co., Montreal, Highway Bridges—Iron and Steel.....	160
Copp Bros. Co., Limited, Hamilton—Champion Road Machines.....	160

## CALENDAR FOR OCTOBER AND NOVEMBER, 1894

### Legal, Educational, Municipal and Other Appointments.

#### OCTOBER.

1. Last day for returning Assessment Roll to Clerk, in Cities, Towns and Incorporated Villages, where Assessment is taken between 1st July and 30th September.—Assessment Act, section 52.  
Last day for delivery by Clerks of Municipality to Collectors of Collector's Rolls, unless some other day be prescribed by by-law of the local municipality.—Assessment Act, section 120.  
Notice by Trustees of Cities, Towns, Incorporated Villages and Township Boards to Municipal Clerk to hold Trustee elections on same day as Municipal Elections, due.—P. S. Act, section 103 (1).  
Night Schools open (Session 1894-95).
10. Selectors of Jurors meet in every Municipality.—Jurors' Act, section 18.
30. Last day for passing by-laws for holding first election in Junior Township after separation.—Municipal Act, section 91.

#### NOVEMBER.

1. Last day for transmission by local clerks to County Treasurer of taxes on lands of non-residents. Assessment Act, section 121.  
Last day for transmission of Tree Inspector's Report to Provincial Treasurer.—Tree Planting Act, section 6.
10. Last day for Collector to demand taxes on lands omitted from the roll.—Assessment Act, section 154.

**CONSOLIDATED:** The Drainage Act, 1894.  
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## Forms Required by Jurors' Act.

R. S. O., CHAP. 52.

Oath to be taken by Selectors, Section 21 20 Cents per Dozen.  
Report of Selectors, section 28, 1st, 2nd, 3rd and 4th Division, Schedule A, each per quire, 75 " "

### FOR MAKING REPORT, 1894

Half-dozen Forms of Oath and three sheets each 1st, 2nd, 3rd and 4th Division, Schedule A, 50 Cents.

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## For Collectors' Rolls

### Lytle's Rate Tables

This valuable little work is intended to assist clerks in entering taxes in the Collector's Roll. It gives rates by tenths of a mill from one to nine and nine-tenth mills. The author, a clerk of considerable experience, knowing what was wanted, issued the work, which should be in the office of every clerk. Price \$2.00.

Address,—THE MUNICIPAL WORLD,  
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## Blank Forms Required by the Ditches and Watercourses Act, 1894.

"It shall be the duty of the Municipality to keep printed copies of all the forms required by this Act."—Section 7, sub-section 2.

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Form D.—Agreement by Owners. (4 pp. F.Cap.)	50 " "
Form E.—Requisition for Examination by Engineer	25 " "
Form F.—Notice of Appointment for Examination by Engineer	20 " "
Form H.—Engineer's Certificates	25 " "

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# The Municipal World.

PUBLISHED MONTHLY

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COMMUNICATIONS. Contributions of value to the persons in whose interests this journal is published, are cordially invited. Those for next issue should reach the office of publication not later than the 20th of the month. Address all communications to

K. W. McKAY, EDITOR,

Box 1252, - - - St. Thomas, Ont.

ST. THOMAS, OCTOBER 1, 1894

It is a well known fact that the man who is most successful in the management of his private business, or whose interest in real estate gives him a large share of taxes to pay, does not take the active interest that he should in the work of municipal legislation and administration. While there are cases that might fairly be said to be explained, if not excused, by honest discouragement, it is evident in cities and towns that at least one other constraining cause not so innocent has to be considered. It is the habit of non-interference growing out of investment in, or their relation to business enterprises, particularly private corporations which depend for existence on municipal franchise or patronage or both.

When the number of private corporations dependent in various ways on municipal favor, is considered, the influence is seen to be enormous. Any of the men composing these private corporations will discuss municipal reform with interest and some of them are enthusiasts, all would resent the imputation that their relation to municipal politics is warped or biased by undue solicitude for their investments, while others are frank enough to say that they can make enough out of the municipality to more than make up their share of excessive taxation, the result of municipal mis-management. It is both apathy and inactivity caused by self-interest that form the greatest barriers to-day in the way of straight forward municipal administration.

Although it is often suggested there is no reason for the statement, that the municipal representatives of to day are inferior in character and ability to the average of their predecessors; but it is the case that the spread of education, and the general elevation of public opinion have made the public very observant and sensible to the defects in local administration. There is a demand for honest local government, and it will be well indeed if it results in the elimination of politics from our municipal elections. This would be a great help towards the attainment of politics as it should be.

It is of the greatest consequence that the pupils of our public and high schools

should have a knowledge of local institutions. The questions of transcendent importance in government are not the tariff or the banking system. The difference in the effect of free trade, and the most extreme form of protective tariff would be less to the average citizen than the difference between extravagance, corruption or incompetency in local government, and a thoroughly honest and intelligent management of local or county affairs. If the greatest attention is given to local government, information and interest will be increased where it is most needed. It is in local affairs that the progressive citizen will find the greatest opportunity of exerting a wholesome influence, especially if his understanding of local government is clear and thorough.

\* \* \*

In every township you can find statute labor divisions in which the work is very poorly done, and in fact, it would be better in many instances if it were not done at all. How to remedy this is the first question to be considered in advocating road reform. The Municipal and Assessment Acts, authorize councils to pass by-laws providing for compulsory commutation for the whole or any part of a township. In divisions where the work is not now employed in a profitable manner, the council should pass by-laws to provide for compulsory commutation in the future.

In many instances where a section of a township has been divided into village lots and forms an unincorporated village, compulsory commutation should be the rule. In this way sidewalks and other street improvements required in these small communities would be provided for. By thus introducing this system of compulsory commutation, its good results would be noticed, and but a short time elapse before it would be the rule instead of the exception as at present.

\* \* \*

Collectors should be prompt and insist on the payment of taxes during office days. We have yet to learn of a municipality in which the council ever increased the collector's salary when they extended the time for the return of the collectors' roll. The only way for the average collector to make reasonable wages is to enforce the collection of taxes, and return his roll if possible on the 15th December, and in any event not later than the 31st December. There is no reason for the careless manner in which collectors rolls are handled in some municipalities. We have heard of cases where a collector had two or more rolls on his hands at one time; the auditors had no opportunity of making a report thereon, and a subsequent loss to the municipality was the result.

Councillors should advocate the payment of taxes promptly, and see that the collector pays over all moneys collected as required by the Assessment Amendment Act, 1894.

The question of Municipal Insurance is one that will be brought prominently before the legislature at the next session. A number of cities have signified their intention of co operating with Toronto for an Act empowering them to pass by-laws to provide for a department of municipal insurance.

In this they should have the active support of every municipality. The question is one that is more likely to be best understood by the rate-payers of townships in which Mutual Fire Insurance Companies are at present in operation. No one acquainted with the work of these companies will say that they could not be as efficiently managed by the municipal council, and their officers as they are at present, without in any way interfering with the efficiency of the Municipal administration. Those who performed the work would of course require to be remunerated, but we venture to say that a reasonable increase in the salaries of the clerks, and other officers who would do the extra work, would result in an efficient discharge of the duties, and a considerable saving compared to the management of private companies as at present.

\* \* \*

The magnitude of the question of municipal insurance is such that but few care to discuss it, owing to the lack of data or reliable information on which to base their calculations. In the last issue of the WORLD we based our calculation on the estimate prepared by the Guelph board of trade in reference to that municipality. In Toronto it is claimed that one-half the present premiums paid would pay all fire losses, keep up the fire department, and save \$75,000.00. We extended these estimates to the whole of the Province, and showed that a saving equal to six-sevenths of the taxes in city, town and village corporations would result.

It would cost but a very small amount for the council of any town or other municipality to pay their assessor to go through a ward and ascertain from the residents the amount of insurance premiums paid, and other particulars in reference to fire losses. It would then be possible to make an estimate for the municipality that would be reasonably correct, and if it is found that any considerable benefit would result from the establishment of an insurance bureau to be conducted on business principles, every effort should be made to assist those municipalities that have already decided to obtain legislation necessary to put the system in operation.

It is to be expected when an organized movement for this purpose is instituted, that considerable opposition will be offered by the insurance companies whose interests would no doubt be seriously affected; every municipality should at once endeavor to ascertain the extent to which they would be interested, and govern themselves accordingly.

House of Industry, County of Oxford.

This institution is beautifully located on high ground adjoining the town of Woodstock, and was opened on the 13th of March, 1893. As shown by the accompanying illustrations, the building presents a fine appearance. The arrangement of the rooms is such as will be recommended to all as the best in the province, especially the sleeping rooms, none of which are made to hold more than six beds. This provides for a complete classification of the inmates and is very beneficial.

The building is heated throughout by steam and lighted by electricity. Iron stairways for fire escape are provided at either end of building and are accessible from the main hall. The sleeping rooms are provided with a good quality of iron bedsteads with woven wire mattress and pillow; these are manufactured at the Central Prison and cost the county \$9.00, and are the best we have seen in institutions of this kind. The basement of the building is devoted

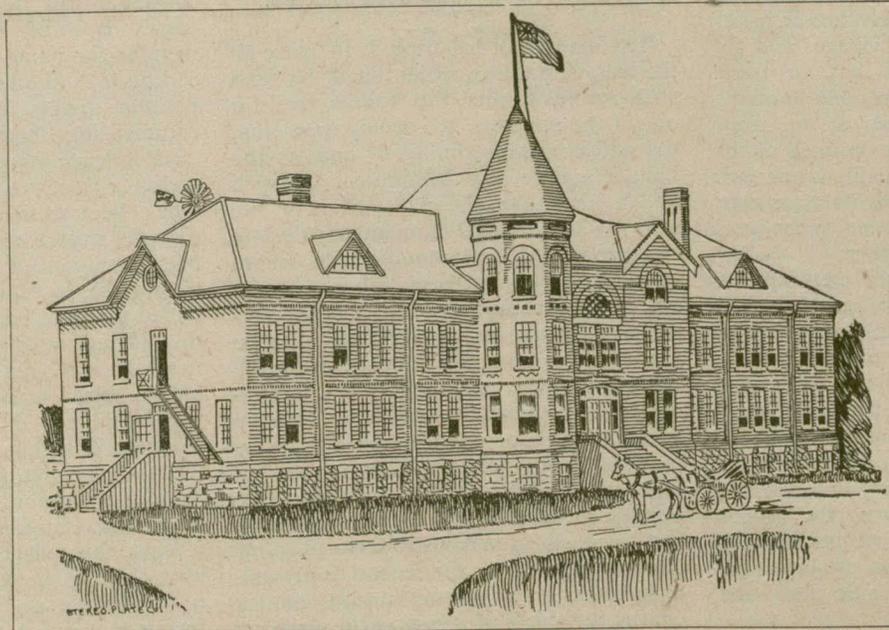
to the inspector's first report in January last, the average cost per week, per inmate during 1893, was \$2.72. The number of inmates committed during the year was 30. At the time we visited the institution in June last the number of inmates was

day, 1/2 pound to each inmate, and alternate with soup, potatoes and vegetables, bread and tea, and meat pie always once a week. For supper, butter, bread, cake once a week, rice once a week, bread and milk once a week and tea always.

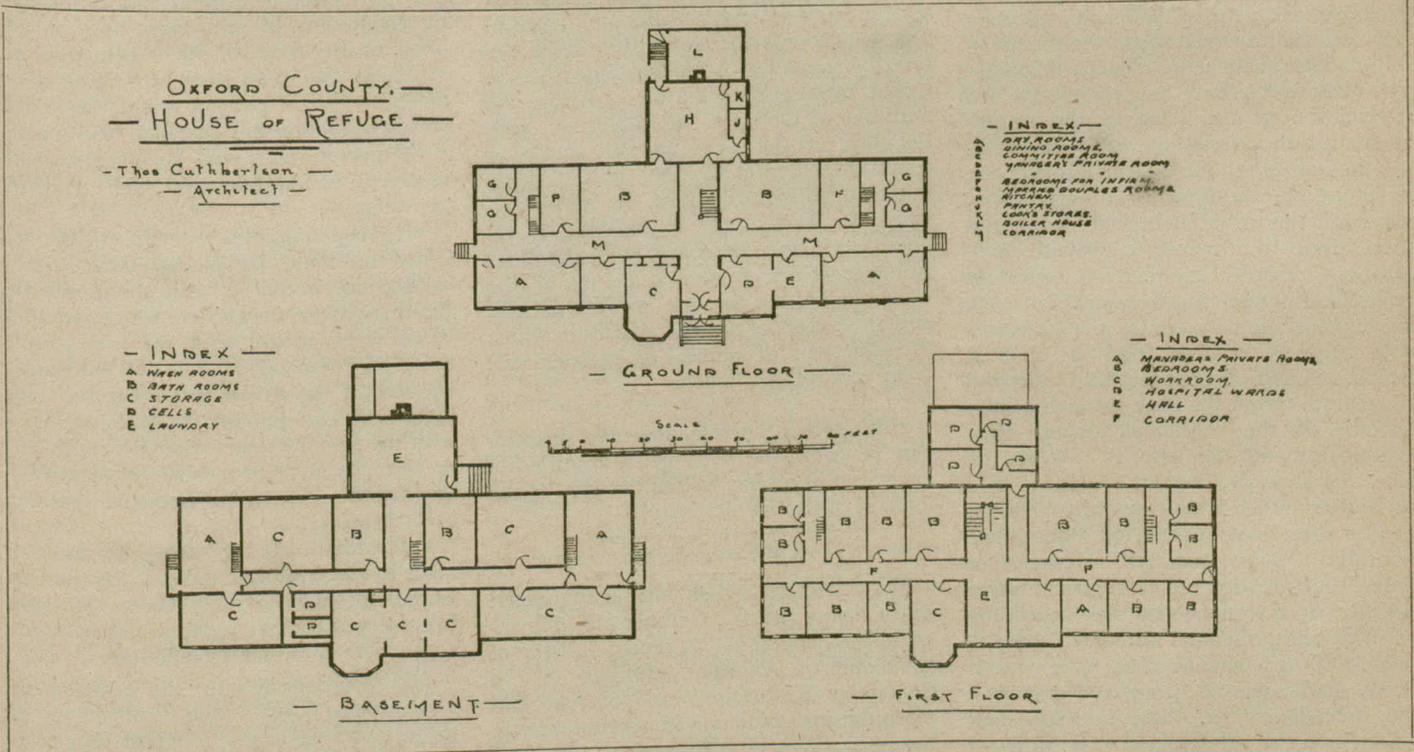
In addition to the above the old people are given eggs once a week, and in season oftener, and also fruit once a week, and during the summer sometimes as often as three and four times. For Sunday dinner the following is enjoyed: cold meat, pie, bread, tea and pickles, and for tea there are eggs, cake, bread, butter and tea, and very often cold meat is served for supper during the week.

We notice that in the hospital and yards adjoining the institution, no provision has been made for isolation or separation of the sexes. This is a

matter that—judging from the experience of the management of similar institutions should not be overlooked; all the out-buildings, etc., should be located with that end in view. The total cost of the farm, buildings and furnishings was \$30,-



to the inspector's first report in January last, the average cost per week, per inmate during 1893, was \$2.72. The number of inmates committed during the year was 30. At the time we visited the institution in June last the number of inmates was



entirely to storerooms, carpenter shop, wash rooms for the inmates and furnace room. There is also a lockup in which disorderly inmates are confined.

A good barn with basement was on the farm at the time of purchase and also a

36. The dietry consists of for breakfast, one pint of milk each, porridge, dish of molasses (good pure syrup—no black strap), a cup of tea and all the bread that each can eat. For dinner the inmates have soup three times a week, meat every

368. The full government grant of \$4,000 has been received.

The inmates of English prisons are employed in picking oakum, making coal bags for the navy and mail bags for the general post office.

### Selection of Jurors.

The mayor, reeve, the city, town, village or township clerk, and the assessor or assessors, if there be more than one of the respective towns, villages or townships in Ontario, are *ex-officio* the selectors of jurors for every township and village, and for each ward of every such city or town. They are required to assemble annually on the 10th day of October at the place where the meetings of the council of the municipality are usually held, or at such other place within the municipality as may, for that purpose, be appointed by the head of such municipal corporation.

Before entering upon the performance of their duties, the selectors are required to make and subscribe before a justice of the peace an oath or affirmation, as follows: I, A. B., do swear (or affirm as the case may be), that I will truly, faithfully and impartially, without fear, favor or affection, and to the best of my knowledge and ability, perform the duty of a selector of jurors, and will select from the proper lists, the requisite number of the most fit and proper persons to serve as jurors for the year of our Lord 18 ; So help me God.

The manner of the selection is as follows: First, to write down on one or more sheets of paper twice as many names of persons appearing by the voter's list or assessment roll to be possessed of the requisite property qualifications or otherwise duly qualified to serve on juries, as have been required by the county selectors to be selected and returned from the township, village or wards of the municipality. The clerk is required to produce for the information of the selectors, the proper voter's list and assessment roll. In selecting the names for the list mentioned, the selectors are required to proceed from letter to letter in alphabetical order, and write down the names consecutively of all those persons qualified to serve on juries, and not exempt by law, and at each subsequent annual meeting the selectors shall begin at the letter next to that at which they left off the preceding year, and so on until they have gone through all the letters of the alphabet, when they again begin with the letter A. When the selectors have obtained the names of a sufficient number of duly qualified persons, before they have exhausted the entire number of those qualified in any other letter, they are required at the next annual selection to commence at the beginning of such letter, but shall not select from the names of any persons that were written down and selected from, and returned the preceding year. The selectors shall select from the list at least two thirds of the persons whose names they have so written down, who, in their opinion, are best qualified to serve as juries and shall place a number opposite each name of the said two-third so selected, and shall then prepare a set of ballots of uniform and convenient size, such ballot shall be

numbered to correspond with the numbers opposite the names of the two-thirds selected, and the selectors shall then proceed to ballot for jurors until the number required for every such municipality by the county selectors has been selected.

The manner of balloting, is to place all the ballots in a box, which shall be then shaken so as to mix the ballots, and for one of the selectors to openly draw from the said box indiscriminately one of the ballots, and declare the number of such ballot, whereupon the clerk or one of the selectors present shall immediately declare the name of the person opposite whose name the corresponding number is on the list, and the name and addition of the person whose name is so selected shall be written down on a piece of paper provided for that purpose, and the selectors are required to continue until the necessary number has been completed. After having made such selections by ballot, the selectors shall distribute the names of the persons so balloted into four divisions, the first to consist of persons to serve as grand jurors in high court, the second, of persons to serve as grand jurors in the inferior courts, the third, of persons to serve as petit jurors in high court, and the fourth of persons to serve as petit jurors in the inferior courts, and shall make such distributions according to the best of their judgement.

The selectors are then required to make a duplicate report, under their hands and seal, of their selection, ballot and distribution, which report is required to be in the form of schedule A of the Jurors' Act. One of the reports shall, on or before the 25th day of October, be deposited with the clerk of the peace for the county in which the municipality lies, and the other duplicate with the clerk of the municipality. The clerk of the municipality is required to keep a book and enter the dates of the meetings of such selectors of the municipality, the persons present thereat, and the letters of the alphabet from which the selections of names of persons are, from year to year, made.

For making the selection and distribution of jurors, the selectors are entitled to such sum of money as is authorized by the council of the municipality.

### Collectors' Duties

The collectors' roll should be completed on or before the 1st. October and delivered to the collector.— A recent decision of the Court of Appeals published in the September No. of the World, decided that the provision contained in section 120 of the Assessment Act R. S. O. Chap. 193, requiring the clerk to deliver to the collector the roll certified under his hand, though possibly a direction as to the time, it is imperative as to the certificate, and a roll, unsigned by the clerk, is not sufficient authority to entitle the collector to distrain, and he and his sureties are not liable,

under their bond, for the amount of uncollected taxes, All that appears to be necessary to comply with this decision is for the clerk to attach a brief statement to the collectors' roll, certifying it to be the collectors roll for the municipality for 1894. It would not be out of place to mention the name of the collector in the certificate, and attach the seal of the corporation thereto. Collectors should before commencing their duties, file with the clerk a declaration of office as required by section 271 of the Con. Mun. Act, 1892. The collector's first duty should be to prepare the written or printed notices specifying the amount of taxes. These notices should give in detail the information contained in the collector's roll in reference to the different rates levied. In cities and towns he is required to call at least once on the person taxed, or at the place of his usual residence, or domicile, or place of business, if within the municipality, and demand payment of the taxes. This may be done by leaving the notice at either of the places referred to. In townships and villages, the collector is required to call at least once on the person taxed, or at the place of his usual domicile or place of business, if within the local municipality, and demand payment of the taxes payable by such person, or if so empowered by by-law of the municipality, passed in accordance with section 123, Con. Assessment Act, sub-section 2, he shall leave with the person taxed, or at his residence or domicile, the written or printed notices specifying the amount of such taxes, and in all cases, at the time of such demands or notice, as the case may be, immediately thereafter, he is required to enter the date on his collection roll, opposite the name of the person taxed, and such entry shall be *prima facie* evidence of such demand or notice.

It is very important that the by-law referred to should be passed as the only valid notice would be, that mentioned in the first part of the section, which requires the collector to call once on the person taxed and demand payment of the taxes, whereas, if the by-law is passed, he may either call and demand the taxes, or leave with the person taxed, or at his residence or domicile or place of business, a written or printed notice, specifying the amount of such taxes.

Collectors have no authority to levy taxes by distress and sale, if the person who neglects to pay his taxes has only been served with a notice, which was not authorized by by-law as sufficient.

In accordance with the Assessment Amendment Act, 1894, collectors of towns and villages are required to pay to the treasurer once every week until the final return of the roll, the total amount collected during the preceding week. In townships, the collector is required to make his payments to the treasurer every two weeks. The penalty for neglect to perform this as well as other duties required of collectors under the act is \$200.

## ENGINEERING DEPARTMENT.

A. W. CAMPBELL,  
O.L.S., C.E., A.M.C.S., C.E.  
EDITOR.

## Roads and Roadmaking.

In the construction of roads a minimum of expense is, of course, highly desirable, but the road which is truly cheapest is not the one which has cost the least money but the one which makes the most profitable returns in proportion to the amount which has been expended upon it. To lessen the cost of the construction of a road while striving to attain the attributes which we have found to be desirable, we should endeavor to avoid the necessity of making high embankments or deep excavations or any rock cuttings; the cuttings through the hills should just suffice to fill up the valleys crossed; the line of the road should be carried over firm ground and such as will form a good surface. If no artificial covering is used, or if it is not to be macadamized, it should pass near some locality of good stone, and it should be so located as to require but few and small mechanical structures, such as bridges, culverts, retaining walls, etc.

The more nearly, however, the road is made to approximate towards what it ought to be, the more difficult it will be to satisfy the demands of economy. Some medium between these extremes must therefore be adopted, and the choice of it may be determined by the amount and character of the traffic on the road which it is proposed to make or improve. For this purpose an accurate estimate is to be made of the cost of the proposed improvement and also of the annual saving of labor in the carriage of goods and passengers which its adoption will produce. If the latter exceed the interest of the former at whatever per centage money for the investment can be obtained, then the proposed road will be what it ought to be as to its cost. From these considerations it will appear that it may be truly cheaper to expend ten thousand dollars per mile upon a road which is an important thoroughfare than one thousand upon another road in a different locality.

Let us suppose that it is proposed to improve a road in any way, whether by macadamizing its surface, or by shortening or carrying it around a hill which it now goes over. The first point to be ascertained is the quality and nature of the traffic which already passes over the line. The cost of conveying this amount of traffic is next to be calculated. To simplify the question we will neglect the gain in speed and consider only the saving in heavy transportation. Assume that over a road, 30 miles in length, 50,000 tons of freight are annually carried and that the average friction of its surface, as determined by a dynamometer, is 1-20 of the weight. The annual force of draught required is therefore 2,500 tons, or 5,000,000 pounds. If the average power of

draught of a horse at three miles an hour for ten hours a day be taken at 100 pounds, there would be required  $\frac{5,000,000}{100} = 50,000$  horses working three miles per hour. At this rate they would traverse the road in ten hours, or a working day, and the total amount of labor would be equal to 50,000 days' work of a horse, or \$37,500, taking 75 cents for the value of one day's work.

Suppose now that the road is to be macadamized or planked, or in any way to have its friction reduced 1-50. The total force of draught will then be  $\frac{50,000 \times 2,000}{50} = 2,000,000$  pounds = 20,000 horse power at three miles per hour for 30 miles, or 10 hours, equals 20,000 days' work for a horse. This is a saving from the former amount of 30,000. Taking the value of the day's work at 75 cents, \$22,000 would be the actual saving of labor in each year by the improvement proposed, which amount the teamsters could afford to pay for the diminished expenditure on horses. If money were borrowed at 6 per cent., \$375,000 would be the amount which could be expended in making the improvement, supposing the data to be correctly assumed. If the improvement can be made for any amount less than this the difference will be that much clear gain.

Next, suppose that the improvement is only shortening the road a mile by a new location of part of it. One-thirtieth of the original distance and therefore labor is saved, or  $\frac{5,000,000}{30} = 1,667$  days' work of a horse, equals \$1,250, equals interest of \$20,833. Add to this amount which the construction of this extra mile would have cost and if the proposed improvement can be made for the sum of the two or even a little more it should be at once carried into effect; for, besides the saving in the original cost and in the annual labor there is also that of time and of the former cost of repairs of the extra mile which is now dispensed with.

If the improvement be avoiding a hill, the resistance of gravity is to be compared with that of friction. Suppose that a certain road ascends a hill which is a mile long and has an inclination of one in ten, and descends the other side which has the same slope and that a level route can be obtained by making the road a mile longer. It is demanded how much may be expended for this purpose. Suppose that the friction of this road is one-fortieth, and that 50,000 tons, as before, pass over it annually. On the original road of two miles the force of draught required to overcome friction is  $\frac{50,000 \times 2,000}{40 \times 100} = 25,000$  horse power at three miles per hour, or  $\frac{25,000 \times 2}{3} = 16,667$  hours for the two miles, equals 1,667 days' work for a horse. To overcome the gravity of the loads on the inclination of one in ten requires  $\frac{50,000 \times 2,000}{10} = 10,000,000$  pounds for one mile, equals 333,333 loss for 30 miles, equals 3,333 days' work of a horse. The descent of a mile on the other side of the hill is not a

compensation. For a horse will have no more to take down the descent than he had dragged up the ascent. The total annual labor to overcome both friction and gravity on these two miles is therefore 1,667 plus 3,333, equals 5,000 days' work of a horse. Upon the new road proposed there is no inclination to overcome but an extra mile of length. The force of draught upon it due to friction is  $\frac{50,000 \times 2,000}{40} = 2,500,000$  pounds for three miles, equals 250,000 pounds for 30 miles, equals 2,500 days' work for a horse. The saving of labor is therefore 5,000 - 2,500, = 2,500 days' work of a horse, equals \$1,875, equals interest of \$31,250, which amount, deducting cost of repairs of the extra mile, may be expended on making the new road.

These calculations have been made for extreme cases in order to make the principal more striking, but the advantages deducted from them have fallen short of the truth, since only the original amount of traffic has been considered while all experience shows that this is very greatly increased by any improvement in the means of transport particularly by the increased speed which is an incidental advantage which we have not taken into account. This increase of traffic cannot, however, be determined in advance by mathematical calculation, though we can readily see from how wide a belt of country the inhabitants might profitably avail themselves of the improved road and will do so eventually; but how many of them will at once profit by it depends on considerations of taste, feeling and prejudice which are beyond the power of numbers.

A cynical writer has produced a book on the vagaries of sanitary science which contains a number of wholesome truths. In endeavoring to impress on the public the importance of keeping disease at a distance and avoiding contagion, some writers have over-stepped the mark and have made suggestions which would bring the whole subject into ridicule. Again, many ideas are good but they cannot be carried out because the public does not recognize their importance. One State Board of Health advises against kissing because of the danger of contagion; another proposes to do away with the communion cup and to use individual vessels. These measures may have some element of reform in them, but they are extreme. There are plenty of simple and important suggestions which can always be brought to the attention of the public, but extreme views should not be pushed forward lest the whole subject of sanitary reformation become an object of ridicule.

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In France the public schools are supplied with sterilized water for the scholars and the floors are cleansed with a moist cloth and not with dry dusters and brooms, as was the custom heretofore.

## Water Supply.

In the construction and management of a system of waterworks the question of pressure and distribution is of great importance. A constant figure of head or pressure is easily maintained in a distributing reservoir or standpipe where a reserve exists above the daily requirements of draught incident to the system. As daily consumption increases, the reserve force or power is reduced proportionately. Loss of head due to draught is determined by the pressure of time taken to accomplish it. The greater the length of the measures of time taken to discharge a given quantity of water, the greater the efficiency of the pressure during the length of time.

The philosophy of a system of distribution is to preserve its dynamic energy, rather than to permit its abuse. This element of power is constantly under the influences that in themselves seek to impair the efficiency and durability of all waterworks plans of distribution. The initial efficiency of a system of distribution is no evidence of its durability. There is no safety in simply being able to supply a system. The plant should in its original conception provide a reserve sufficient to compensate for the legitimate use of the dynamic energy of the plant as the daily demand and consumption of water increases. The trunk mains, leading from distribution reservoir or standpipe and under a constant head or pressure due to a constant height of water in either reservoir or standpipe, is the full measure of the efficiency of the plant. The system of distribution connected to the trunk mains, together with the service pipes leading into dwellings, factories, warehouses, stables, etc., are the influences which operate and seek to deteriorate the efficiency. These influences, according to their collective ability and opportunity, determine the velocities and accelerations of them in the water mains of the several districts of distribution. As the system of distribution is lengthened and more services are daily added to it, the reserve in the form of constant head is attacked, pressure is impaired and water ceases to flow in the higher latitudes of the system of distribution.

This is simply an illustration of the history of waterworks in Canadian cities. The remedy need not here be alluded to, which of necessity must be adopted, viz., construction of larger works in forms of new reservoirs, new pumps, new trunk mains with all the accessories. The term of durability and efficiency of a waterworks is determined by the methods of its administration regarding the details and consummation of distribution in the essential and vital features of space, time and velocity. Space refers to area of cross section of tap driven into the water main, which of course determines the velocity of discharge and the time it takes. A line of discrimination may be established with reference

to size of taps which can in safety be determined according to pressure on the several variable plans of delivery. The throttling of gates controlling lines of distribution on low levels is not a safe practice in the event of fire service being needed.

The restriction in size of tap is better; it simply prolongs the time of delivery or discharge of water. The impairment of fire service is largely due to the excessive draught occasioned by a too liberal consideration of the size of taps permitted for house services. In a well matured plan of distribution, the following characteristics appear in the calculation: First, a constant pressure due to depth of water in distributing reservoir, standpipe and direct pumping system; Second, a trunk main or mains equal in cross-section of area to the aggregate cross-section of branches leading from them into the system of general distribution; Third, that the size of taps be kept down to the lowest possible cross-section of area consistent with a reasonable discharging capacity, extending over a reasonable length of time. In no respect does the small tap driven into the main diminish the quantity of water used and wasted, but the time of delivery being extended the energy of the pressure is consumed and manifested in the fact that a greater number of small taps can be served under the same pressure than a less number of large ones, the aggregate cross-section of area being the same in both instances, for the obvious reason that the differences in velocity has lengthened the time of delivery in the case of small taps compared with time of delivery in the larger ones.

A supply of water in its features of general distribution, evolves an experience similar to a domestic house supply. The outlets of discharge in the low levels of the house frequently absorb the entire pressure and no water flows into high levels until the discharge ceases at the low levels. If the pressure be sufficient to discharge water at the high levels, it is apparent that a proper consideration of the area of cross-section of branch pipes on the several levels, proportionate to the pressure at these points, will permit the water to discharge on all of the levels simultaneously.

The abuses and consequences attending systems of distribution, has led some engineers to advocate high pressure systems in place of low pressure in order to overcome the difficulties apparent in low pressure. Experience, however, proves that even under more than moderate head or pressure the trouble is just as likely to occur. The equalization of pressure in a system of distribution cannot be well attained where it is daily increasing its delivering capacity at different parts or portions of its territory, and in the nature of the topography of the city greater or less pressure may exist. Yet the fact is not to be lost sight of, that distinctive

features of the figures of velocity in distributing pipes of various sizes and under varied pressures frequently found in one system, have perhaps been overlooked or have not been utilized to the extent that they might have been if careful study had been given it.

An intelligent consideration of this question simply enlarges the view of possible and probable difficulties that are liable in the administration of many systems of distribution, which in their original plan never contemplated the results that ensue from defective methods of reinforcement. It is however possible in several ways to overcome defective pressures provided it is demonstrated that there is more than enough in one district and a deficiency in another district, it can be balanced by reinforcement and without detriment to either.

In a comparatively level system of distribution a decided advantage is apparent compared with a hilly or undulating one. A wider range of variable pressures obtains in the last mentioned.

A system of gauging pressures on trunk mains and on leading lines of distribution at the highest and lowest points and in districts using large quantities of water will furnish data of pressure at all hours of the day, and from these records one may be able to work out the actual loss of head due to draught and determine if the same be excessive or otherwise. The importance of possessing the information cannot be overestimated, and it would seem as if not to have it or care anything about it, is the best possible evidence that the superintendent is a "back number" and his official associates are of no later edition.

## One Good Board of Health.

Visitor—You must have a remarkably efficient board of health in this town.

Shrewd native (one of many)—You are right about that I can tell you.

'Composed of scientists I presume.'

'No, sir, scientists are too theoretical.'

'Physicians, perhaps?'

'Not much. We can't allow doctors on our board of health—no, sir—nor undertakers either.'

'Hum! What sort of men have you chosen then?'

'Life insurance agents.'—New York Weekly.

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A consulting engineer in New Jersey has come to the conclusion that half the money to be spent in improving the roads would have to be used in relocating some and reducing the grades of others. The original roadbuilders seemed to prefer to go to the summits of high hills, making grades of twelve or sixteen feet to the hundred, while there were close at hand valleys that seemed to have been created for roads.

### Drainage.

In the July number of this paper in discussing the effects of drainage, we endeavored to show that it deepened the soil, assisted pulverization, prevented surface washing, lengthened the season for labor, and prevented freezing out or winter killing, made the land lighter to work, and now we will endeavor to further show its benefits.

Whether it is good farming to feed our mowing fields at any time is a question upon which farmers have a right to differ. Without discussing the question, it is enough for our purpose that most farmers feed their fields late in the fall. Whether we approve of it or not when the pastures are bare and burnt up and the second crop in the home field is so rich and tempting, and the cows are not giving much milk we usually bow to the necessity of the time and turn them in. The great injury of fall feeding is not usually so much the loss of the grass covering from the field, as the destruction of the roots by treading. A hard upland field is much less injured by feeding, than a low meadow and the latter less in a dry than in a wet season. By drainage, the surplus water is taken from the field. None can stand upon its surface for a day after the rain ceases. The soil is compact and the hoofs of cattle make little impression upon it, and the second or third crop may be fed off with comparatively little damage.

If a weed be dug or pulled up from land that is wet and sticky it is likely to strike root and grow again because earth adheres to its root whereas a stroke of the hoe entirely separates the weeds in friable soil from the earth and they die at once. Every farmer knows the different effects of hoeing or of cultivating with the horse-hoe or harrow in a rain storm and in dry weather. In one case the weeds are rather refreshed by the stirring, and in the other they are destroyed. The difference between the surface of drained and water soaked land is much the same as that between land in dry weather under good cultivation and land just saturated with rain.

Again there are many noxious weeds, such as wild grasses which thrive only on wet land, and which are difficult to exterminate, and which give no trouble after the land is lightened by drainage. Among the effects of drainage, mainly of a chemical nature on the soil are the following :

The atmosphere bears upon its bosom not only the oxygen essential to the vitality of plants, not only water in the form of vapor, to quench their thirst in summer droughts, but also various substances which rise in exhalations from the sea, from decomposing animals and vegetables from the breathing of all living creatures, from combustion and a thousand other causes. These would be sufficient to corrupt the very air and render it unfit for respiration did not nature provide for its purification. It has been already stated

how the atmosphere returns to the hills in clouds and vapors condensed at last to rain all the water which the rivers carry to the sea ; and how the well drained soil derives moisture in severest time of need from its contact with the vapor-loaded air. But the rain and dew do not return their waters to the earth without treasures of fertility. Ammonia which is one of the most valuable substances found in farm yard manures, and which is a constant result of decomposition, is absorbed in almost incredible quantities by water. About 780 times its own bulk of ammonia is readily absorbed by water at the common temperature and pressure of the atmosphere ; and freighted thus with the treasures for the fields the moisture of the atmosphere descends upon the earth. The rain cleanses the air of its impurities and convey them to the plants. The vapors of the marshes and of the exposed manure heaps of the thriftless farmer are gently wafted to the well-drained fields of his neighbor and there amid the roots of the well tilled crops, deposit at the same time their moisture and fertilizing wealth.

Of the wonderful power of the soil to absorb moisture both from the air and the earth itself—by the deposition of dew as well as by attraction—we shall treat of more fully in a subsequent issue as it is so intimately connected with the present topic.

Plants, if they do not breathe like animals, require for their life almost the same constant supply of air. All plants die in soils and waters destitute of oxygen ; absence of air acts exactly in the same manner as an excess of carbonic acid. Stagnant water on a marshy soil excludes air, but a renewal of water has the same effect as a renewal of air, because water contains it in solution. When the water is withdrawn from a marsh, free access is given to the air and the marsh is changed into a fruitful meadow. Animal and vegetable matters do not die or decompose so as to furnish food for plants unless freely supplied with oxygen which they must obtain from air. A slight quantity of air however is sufficient for putrefaction which is a powerful deoxygenizing process that extracts oxygen even from the roots of plants.

It has been stated on high authority that drainage raises the temperature of the soil often as much as 15 degrees F. Indian corn vegetables at about 55 degrees. At 45 degrees the seed would rot in the ground without vegetating. Winter rye, no doubt, makes considerable growth under snow. Cultivated plants in general, however, do not grow at all unless the soil is raised above 45 degrees. The sun has great power to warm dry soils and it is said will often raise their temperature to 90 or 100 degrees when the air in the shade is only 60 or 70 degrees. But the sun has no such power to warm wet soils.

If the water cannot pass through the land by drainage either natural or artificial it must escape, if at all, at the surface by

evaporation. Now it is a fact well known that the heat disappears or becomes latent by the conversion of water into vapor. Every child knows this practically at least who in winter has washed his hands and gone out without drying them. The same evaporation which thus effects the hands renders the lands cold when filled with water, every gallon of which thus carried off requires, and actually carries off as much heat as would raise five and one half gallons of water from a freezing to a boiling point. If therefore your soil is saturated with water, the heat of the sun in spring cannot warm it and your plowing and planting must be late and your crop a failure.

The Provincial Board of Health of Ontario, complying with the resolution adopted by the Council of the College of Physicians and Surgeons of Ontario, at its last meeting, has prepared the following statement of methods adopted by Dr. Alexander Stewart, Palmerston, in the preparation of vaccine at the Ontario Vaccine Farm :

1. The vaccine is prepared wholly from selected calves of from six months to a year old.
2. The part vaccinated is first cleanly shaved and subsequently well washed with hot soap and water and then scarified and inoculated with bovine virus from a previous vacciner. As taking the virus directly from one calf to another in a series slowly develops a virulence in the lymph, it is necessary from time to time to start afresh from a modified lymph.
3. The inoculated points gradually develop into vaccine vesicles, whose normal characters are readily recognized by the experienced eye. The vesicle when mature (which is usually from the fifth to the sixth day) commonly bursts, immediately upon which the lymph is taken on the prepared ivory points previously well sterilized by boiling.
4. The points thus charged are left a few minutes in the air to dry and are then coated with fresh albumen.
5. Having dried, they are at once packed in sealed jars and placed in the refrigerator.
6. When ordered, they are packed in tissue paper and wrapped in rubber film and transmitted by mail or express.

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It has been suggested in England to appoint a minister of physical education and that gymnasiums receive substantial aid from the government on the ground that the proper physical culture of the people is a matter of the greatest national importance.

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A stranger stepped up to a farmer recently and said : "What price do you put on that red cow of your's?" The farmer looked at the man a moment and then inquired, "See here, mister, are you an assessor or has she been run over by the cars."

## Sewers.

Formerly it was the practice generally in towns, as it is now in many places, to throw the slops and liquid refuse produced in the houses out on the surface of the ground or into the streets; to retain the faecal matter in cess pits sunk deep in the subsoil under the privies within or near the houses, and to remove the putrid accumulations occasionally by bucketing them out and carting them away. By this process, which lasted for centuries, the slops and waste water contaminated the surface; the liquid filth oozed from the cess pits, saturated the subsoil and polluted the wells and springs from whence water was drawn for drinking and cooking, and the obnoxious vapors which exhaled from the decomposing filth in the cess pits poisoned the air breathed by the people. Doubtless this state of things produced or aggravated those terrible diseases and pestilences which periodically ravaged and destroyed thousands of the people who were thus unconsciously the cause of their own affliction and death.

But in the course of time sewers were laid down from the watercourses or rivers along the streets for carrying off the surface water, as well as the liquid refuse produced in the houses, which as hereinbefore was poured down the gutters and gullies, the houses being still unprovided with drains; and as the districts were extended, sewers were continued into them from the old sewers or from the nearest watercourses and ultimately the streams or rivulets into which the sewers discharged themselves were converted into covered sewers and arched over. It should be noted that during this time each house had its cess pit for storing the faecal matter which was not permitted to enter the sewers, and as the oldest parts of the town were usually seated high on the sides of ridges or hills rising directly from the streams or rivers or from the flat ground near them, and the rain falling upon the houses and streets and the waste water thrown into the streets descended quickly and passed away without requiring sewers to remove the rain and refuse water. But, as the base of the slopes and the flat grounds near them were built upon sewers were carried into the streams or rivers through these grounds and up the slopes to prevent the descending waters from flooding the lower surfaces. Generally these sewers were laid without much attention being paid to their direction, shape, fall, or capacity, and in consequence most of them were inadequate for future extension and the use they were subsequently put to.

This system of drainage prevailed for a very long time until the springs and wells became insufficient in quantity for the increased population, and so bad in quality from being tainted with the percolations from the cess pit as to be unfit for domestic uses, particularly for drinking and cooking. When water was brought from purer

sources from a distance and delivered by pipes into barrels or cisterns placed in or about the house to receive it, sinks were fixed in the kitchens, sculleries and wash houses with drains leading from them into the sewers in the streets, and into these drains the rainwater from the roofs, yards and areas were conducted. Thus were provided street sewers with gullies for removing the rainfall from the surface, and house drains with sinks for removing the waste water from the houses. While this system was in vogue the drains and sewers as well as the streams into which they discharged themselves were comparatively innocuous because the cess pits containing the faecal matter were not allowed to be connected with them. It was thought that if this matter was admitted into the drains and sewers it would deposit therein and become a worse nuisance than in the cess pits owing to the small quantity of waste water discharged with it being incapable for carrying it away. But as water was now supplied by pipes to cisterns in the houses, water-closet contrivances were put over the cess pits with pipes laid from the cisterns into the pans to keep them clear. And then, as the subsoil became clogged or unable to absorb the increased quantity of water discharged from the pans, the cess pits overflowed and were obliged to be connected with the drains communicating with the sewers. Thus was completed the system of combined drainage which is now generally in operation and which is the result as we have seen of chance and necessity and not of deliberate consideration as to the best method of removing and disposing of the rainfall and sewage.

About thirty years ago inquiry was made into the working of this system. It was found that generally the drains and sewers were flat bottomed and excessively large, that the liquids discharged into them were, in consequence, powerless to remove the faecal matter which continually accumulated and was periodically removed by lifting it to the surface and carting it away the occupation of the nightman being thus transferred from the cess pit to the sewers, and that from the exposed area of the deposit in the sewers, which averaged four times that in the cess pit, noxious gases constantly emanated and flowed up the drains into the houses and streets producing fevers and epidemics to a large extent. Then as a remedy for this evil, various improvements were introduced, such as flushing the sewer instead of cleansing them by hand labor and cartage, putting down egg-shaped sewers with curved junctions in place of flat bottomed sewers with square junctions; laying house drains and small sewers of impermeable stoneware in lieu of porous brick and stone and substituting water closets for cess pits which were abolished.

That this method of draining and sewerage carried out and carefully attended to is better than any that has preceded it, is

fully proved by the immunity of the populations from those dreadful diseases which formerly attacked them and by the death rates as a rule being much lower than they were. So far this is satisfactory, but the question may be asked, does this system perform all the duties imposed on it thoroughly and efficiently? In other words, is the rainfall removed from the surface by the drains and sewers into the streams and rivers as free from contamination as it might be; is the water which percolates into the subsoil carried off by the drains and sewers so as to keep the house free from damp? And is the sewage removed from the houses and other buildings by the drains and sewers without in any way soaking into and contaminating the subsoil, poisoning the air of the houses and streets and polluting the streams and rivers? These questions involve a consideration in detail of the subjects mentioned which we will latter on discuss.

## For Reform in Roads.

DIRECTORS OF THE GOOD ROADS ASSOCIATION MEET AT TORONTO.—WORK FOR THE COMING WINTER.

Toronto, Sept. 14.—A meeting of the directors of the Ontario Good Roads Association was held here last evening, Mr. A. Pattullo, of Woodstock, President of the association, presiding. There was a good attendance. Mr. K. W. McKay, of St. Thomas, the secretary, reported favorably on the progress of the association during the summer months.

The object of the meeting chiefly related to the work of the coming winter. The association was formed too late to reach the annual meetings of most of the agricultural bodies of the province, but the friends of good roads have not been idle. Though the public mind was engrossed in the provincial elections during the early part of the year, considerable interest has been manifested in the work of the Association.

Through the department of agriculture about 20,000 copies of the proceedings of the annual meeting have been distributed, while much information on the subject of good roads has been disseminated in other ways.

It was resolved to carry on a campaign of education at the meetings of farmers' institutes and other like bodies. Another provincial convention of the Good Roads Association will be held at Toronto in February next, to which every municipal and agricultural body in the province will be invited to send delegates.

The members of the board of directors say that the question of road reform is taking a deeper hold on the farming community than ever before. Farmers are becoming more and more impressed with the necessity of having better roads.

## LEGAL DEPARTMENT.

H. F. JELL, SOLICITOR,  
EDITOR.

## Municipal Corporations.

THEIR POWERS AND JURISDICTION.—  
ARBITRATIONS.

Section 385 and following sections of the Consolidated Municipal Act, 1892, make provision for the settlement of disputes of a municipal character by arbitration. The mode of appointing arbitrators and the method of procedure when they have been appointed is fully set out in the said sections. A resort to this means of arranging the difficulties of municipalities will often be found, comparatively speaking, inexpensive. Section 385 provides that the appointment of all arbitrators shall be in writing under the hand of the parties appointing them, or in the case of a corporation, under the corporate seal, and authenticated in like manner as a by-law. In this connection a practical hint may not be out of place. Decided cases show the great difficulty which either party may often have in obtaining the possession of the appointment of his opponent's arbitrator when he wishes to make the submission a rule of court in order to facilitate its enforcement, and the delay, expense and inconvenience to which this difficulty may subject him. A method, it is suggested, may be found to remedy this difficulty. If each party took the precaution, at the time of the reference, of requesting the other party to make the appointment of his arbitrator in duplicate, and if they mutually agree to furnish each other with one of the duplicate parts, and not a mere copy, there seems no reason why, on producing the appointment of his own arbitrator and the duplicate original of his opponent's arbitrator, and properly verifying both of them, the object of either party to make the submission a rule of court may not be accomplished. There should in strictness be a by-law authorizing the appointment of the arbitrator for the corporation, or the affixing of the seal to the appointment or a by-law leaving the appointment to the head of the council. The appointment when properly authorized should not only be under the seal of the corporation, but be signed by the head of the corporation and by the clerk of the corporation. Such is the mode of authenticating a by-law as laid down in section 288 of the said act. Section 386, provides that the head of a municipal corporation may appoint the arbitrator on behalf of his corporation, if authorized by a by-law of the council thereof, so to do. As a rule, an arbitrator, to represent a municipal council, must be appointed by that council; the exception is when the council, by by-law deposes that power to the head of the council. In cases where an arbitration is directed by the Con. Mun. Act, either

party may appoint an arbitrator, and give notice thereof in writing to the other party, calling upon such party to appoint an arbitrator on behalf of the party to whom such notice is given. A notice to a corporation must be given to the head of the corporation. The notice referred to must be in writing. It should state the object of the arbitration, name the arbitrator appointed by the party giving the notice, and call upon the other party to name his arbitrator. It should be express and absolute. In a case where a party had given notice to a railway company that it was his intention to appoint a certain other party as arbitrator, and that, if they failed for 14 days to appoint one, he would appoint him to act for both parties, and such other party did so act, the court refused to enforce the award. Within seven days from the appointment of the last named of the two arbitrators, the two arbitrators appointed by or for the parties, shall appoint in writing a third arbitrator. It is a common error to look upon a third arbitrator as an umpire; the difference between a third arbitrator and an umpire, is that the former is appointed before the arbitration proceeds, and the latter after the arbitrators have entered upon the reference, and are unable to agree. By way of illustration: A by-law to close up and grant to a company a portion of a street which provided for arbitration by the mayor and by two persons, one appointed by the company and one by the applicant, was held invalid.

## Legal Decisions.

## WILSON VS. CORPORATION OF INGERSOLL.

A by-law to regulate the proceedings of a town council required that every by-law should receive three readings, but that no by-law for raising money or which had a tendency to increase the burdens of the people should be finally passed on the day, on which it was introduced, except by a two-thirds vote of the whole council. A by-law to fix the number of tavern licenses and which therefore required such two-thirds vote, was read three times on the same day and declared passed, but did not receive the required two-thirds vote. A special meeting was then called for the following evening, when the by-law was merely read a third time, when it received the required two-thirds vote.

It was held that the by-law was bad, for having been defeated when first introduced by reason of not having received a two-thirds vote, it was not validated by merely reading it a third time at the subsequent meeting. The by-law did not show, as required by the Liquor License Act, the year to which it was to be applicable.

## RE MERRITT AND THE CORPORATION OF TORONTO.

In this case it was held that section 495, sub-section 2, of the Municipal Act, R. S. O., Chap. 184, which empowers any city,

etc., to pass by-laws for the licensing, regulating and governing of auctioneers and other persons, selling or putting up for sale goods, wares, and effects for public auction, and for fixing the sum for every such license, and the time which it shall be in force, is only for the purpose of raising a revenue, and does not confer any right of prohibition so long as the applicant is willing to pay the sum fixed for the license, where, therefore, the city refused to license the plaintiff as an auctioneer on the ground that he was a person of a notoriously bad character and ill-repute, a mandamus was granted, compelling them to issue to him such license.

## RE CHAMBERS AND THE CORPORATION OF BURFORD.

A by-law recites that certain land thereafter described had been used as a public road for thirty years, and on which public money had been expended and statute labor performed, and was a continuation of a public road, and that it was in the interest of the public, that the same should be clearly established by by-law. The by-law then enacted that the land, describing it as commencing at the north-east angle of lot number 7, in the 11th concession of the township of Burford, where a stone has been planted; then south 16 degrees 10 minutes; East 34 chains and 4 links to a stake; then north 78 degrees 10 minutes; west, 34 chains 4 links to the north-west angle of lot number 6 in the said 11th concession; then westerly in a straight line 1 chain to the place of beginning, containing 3 2-5 of an acre, is established as a common and public highway.

It was held that there was no uncertainty in the description of the land taken. One of the courses was given as 24 chains and 4 links; but as a parallel course was correctly given and the error appeared so obvious as not to be calculated to mislead, it was held not to be a ground of objection. Where there was no weekly paper published in the township but only one bi-monthly the statute does not render it obligatory to use such paper for publication of the by-law.

## IN RE MARTIN AND COUNTY OF SIMCOE.

Public Schools—54 V., C. 55, 55, 82, 96—Boundaries of School Sections—Action of Township Council—Appeal—Time—County Council—Jurisdiction By-Law—Appointment of Arbitrators—Award—Confirmation—Waiver—Evidence of.

In the absence of satisfactory evidence of waiver of the objection by all persons interested, a county council has no jurisdiction under sub-section 3 of section 82 of the Public Schools Act, 54 Vic., chap. 55, to appoint arbitrators to hear an appeal from the action or refusal to act of a township council, and to determine or alter the boundaries of school sections, unless a notice of appeal has been duly given within the time mentioned in sub-section 1.

Where a by-law of the county council, appointing arbitrators, was passed pursuant to a notice of appeal, in the form of a

petition, filed with the county clerk, after such time had expired, there was no waiver:

Held, that the authority of the arbitrators to enter upon the enquiry being affected by want of jurisdiction of the council to pass the by-law, their award could not be confirmed by section 96 of the Public Schools Act, and the by-law was quashed.

The application to quash was made by a ratepayer of the school section whose boundaries were in question, acting at the request of the trustees of the section, and the solicitors acting for him were also retained by the trustees, whose secretary-treasurer appeared before the committee of the county council, before the by-law was passed and before the arbitrators, and did not make objections to the jurisdiction of either body.

Held, that, in the absence of proof of the authority of the secretary-treasurer to represent the trustees, it could not be said that they had waived their right to object to the proceedings, nor that the rights of the applicant were entirely gone and merged in those of the trustees.

#### Important Drainage Decisions.

(Amherstburg Echo)

Judge McHugh of Essex has given judgment as follows in the following cases:—

"Morgan vs. Township of Maidstone—This action is brought to recover damages for alleged negligence in the repairing of a ditch, the specific acts complained of being the dumping of earth and rubbish upon the plaintiff's lands. By the specifications under which the repairs were made, "all the fallen timber and rubbish shall be cleared out of the channel, and 20 feet on each side of the drain and be burned to ashes; the earth shall be cast 10 feet from the edge of the ditch and spread over a space of ten feet in a good workmanlike manner." The evidence was somewhat conflicting as to the manner in which the earth was spread and also as to whether the timber and rubbish within the prescribed limits had been burned. At the hearing of the case, with the consent of the parties, I decided to visit the work, which I accordingly did. I was accompanied by the plaintiff and the Reeve of the Municipality. I find on the evidence, and from my personal observations, that the earth in many places was dumped in heaps and not spread as provided for by the specifications. I also find that the timber and rubbish within the 20 feet limit were not burned, but in many instances were hauled into the woods, flung around or left near the edge of the ditch. I find that the plaintiff's evidence regarding the hauling of timber and rubbish into the woods is substantially correct. The work in the matter complained of was negligently and improperly done, and should not have been accepted. The water to some extent has

levelled the earth and my attention was directed to the fact that the ditch has already filled up to a considerable extent with sand and earth. It is claimed by the plaintiff that this is due to the depositing of the earth in heaps. This was not made a ground of complaint at the trial, and no evidence was directed to such damages. I cannot therefore take this matter into account. As the timber and rubbish have been hauled upon timbered lands I think it will entail a great expense to reduce them to ashes when the land is being cleared; and the water will in time level the heights and ridges complained of. Under all the circumstances, I think a verdict for \$45 will cover the damages complained of.

McPharlin vs. Maidstone—This action is brought to recover damages consequent upon the neglect of the municipality to maintain and keep in repair the Puce drain which runs through the lands of the plaintiff. It is admitted it was the duty of the defendant to keep the ditch in repair. The evidence produced on behalf of the plaintiff, clearly establishes that the drain in question through and to the north of the plaintiff's lands had not been kept in a reasonable or proper state of repair for several years. The defence practically admits this, but alleges that the plaintiff sustained no damage and if he did that his remedy was by arbitration. The evidence as to the amount of damages sustained is not very satisfactory, but such damages as have been sustained are attributable to the want of repair. Before the recent repairs to the ditch, the lands remained flooded for a considerable time at each freshet, but afterwards the high water subsided and left the lands dry in a few hours without occasioning any perceptible damage. I think the plaintiff has sustained damages to the amount of forty dollars from the defendant's neglect to maintain and repair the ditch in question, and I accordingly give judgement for that amount with costs.

#### About Local Boards of Health.

Another fallacy, closely related to the last, is the idea that a local board of health should be a passive rather than an active organization. That of its own volition it should never take cognizance of any unsanitary conditions. That a town board should occupy the dignified position of a court of appeal, and take no action, whatever may endanger the public health, until the threatened danger is brought to its attention by other parties. Such a conception of the true functions of a health board is not in conformity with the practical sentiment of the times.

In order to accomplish the purposes of its existence it should be just the reverse of passive. Every member of the board, or at the least its executive officers, should make it a first duty to acquire a familiar personal acquaintance with every part of his town with regard to its sanitary con-

ditions. He should observe and note what influences, if any, affect public health, what parts were most unhealthy, and what may be needed to improve the conditions. Immediately when an intelligent and competent officer begins such observations he always finds enough material to make it interesting.—*Bul. Ct. St. Bd. of Health.*

#### Making His Point.

(From the Detroit Free Press.)

When the court on an extremely Western circuit was convened and the business was about to begin, it was discovered that there were neither pens, ink nor paper for the use of the Bench or the Bar.

"How is this Mr. Clerk?" inquired the Judge.

"There is no money allowed for it by the county, sir, and we can't get the articles without money."

The judge made several remarks not at all complimentary to the county.

"I've been in a good many courts," put in a pompous and pedantic lawyer from the East temporarily to try a case, "but this is the worst I ever saw."

The Judge jumped him on the spot.

"You are fined \$10 for contempt, sir," he thundered. "Hand the fine to the clerk, sir."

Mr. Lawyer kicked, but he had to hand over the money or go to jail, and the Judge wouldn't have it any other way.

"Mr. Clerk," said the Judge, when the fine had been handed him, "go out and get all the pens, ink and paper necessary for the use of this court and give the gentleman back his change," and the clerk did as he was ordered and the visiting attorney maintained a discreet silence.

Attorney—I insist on an answer to my question. You have not told me all the conversation. Reluctant Witness—I've told you everything of any consequence. "You have told me that you said to him, 'Jones, this case will get into the courts some day.' Now I want to know what he said in reply." Well, he said, "Brown, there isn't anything in this business that I'm ashamed of, and if any snoopin, little yee-hawin', four-by-six, gimlet-eyed shyster lawyer, with half a pound of brains and sixteen pounds of jaw, ever wants to know what I've been talking to you about, you can tell him the whole story."

Mrs. Brown—I won't submit to it, madam! You have purposely declared me exempt from the income tax in order to create an impression that I have no money. You know, yourself, it costs me \$10,000 a year to support my establishment.

Mrs. Jones (income tax official)—Madam, I have investigated your case thoroughly. You are spending money just to keep up appearances. Don't try to put on airs to me, I know all about you!—*Puck*

QUESTION DRAWER.

SUBSCRIBERS only are entitled to opinions through the paper on all questions submitted if they pertain to municipal matters. Write each question on a separate paper on one side only. When submitting questions state as briefly as possible all the facts, as many received do not contain sufficient information to enable us to give a satisfactory answer.—Ed.

F. J. C.—I want to call your attention to section 5, Municipal Amendment Act 1894.

The public or high school boards are required to submit estimates as required by the Public or High School Acts.

Should these estimates be submitted in detail or in a lump sum? If in a lump sum, how is the council to determine whether or not more than \$500.00 is included in the estimates for permanent improvements under section No. 32, High School Act?

2. Under sub-section 3, moneys raised for current expenditures of public or high schools are to be paid over in monthly instalments "on the requisition of the school corporation concerned."

Now the school corporation having put in their annual requisitions as mentioned in sub-section 2, is it necessary that their monthly requisitions should be submitted to, and passed by the council before being paid, or can a cheque issue to them upon the filing of such requisition with the clerk or treasurer before having passed the council.

1. We think it very advisable that the estimates referred to by our correspondent, should be submitted in detail to the council. If this be not done, the council has a right to make enquiries of the board as to how the amount is arrived at; the writer belongs to a high school board which always submits these estimates in detail.

2. We are of opinion that the monthly requisitions should be submitted to and passed by the council.

R. Y.—A poundkeeper receives a horse into his pound, and the party impounding gives a written statement of the amount of damages. The owner of the horse disputes the amount of damages, and the fence viewers are called on, to determine the amount in accordance with the act. The fence-viewers decided that the fence in question was not a lawful one. Have they any authority to determine amount of damage incurred?

See section 20 and 21 of the act, or where the fence was not a lawful one, can damages be claimed; (township by-law same as statute.)

If the fence was found by the fence-viewers not to be a lawful one and they so certified, we are of opinion that the fence-viewers have no power or authority to deal with the question of damages.

J. McN.—Have the council of a township the power to sell the half width of a concession, leaving it open only 33 feet wide? It is travelled very little.

We see no legal reason why the portion of the road referred to by our correspondent should not be closed up and disposed of. But the preliminary proceedings set forth in section 546 of the Con. Mun. Act should be first taken, and the permission of the council of the county in which your municipality is situate should be obtained as mentioned in section 545 of said act.

COUNTY CLERK—Is it the duty of each county council to appoint an engineer under the "Ditches and Watercourses Act 1894"? See section 4.

The section pointed out by our correspondent seems to refer to all municipalities, including a county, we think, however, it was not the intention to include county

municipalities. Their view seems to be born out by the wording of the form of by-law appointing an engineer, given in schedule A to the act.

NEUTRAL—A certain property is assessed, say \$500.00 on real estate and \$1000.00 personality; just before the return of the roll the building burned, two-thirds of the stock also destroyed. The party appeals to the court of revision, and state that he had \$5000.00 in stock when burned out. He saved \$1800.00 in stock, got \$2500.00 insurance. Should the court of revision reduce his assessment to the value of the real property left, and a proportion on the stock saved, that it bore to the stock in hand at the time of the fire, or would the stock saved be assessable at the rate other stock is assessed at? Also would the insurance money be assessable?

The assessment should be the value of the real property left, and a fair assessment of the personality would be the proportion the stock saved, and the insurance, bears to the stock in hand at the time of the fire.

T. T.—Would you tell us through the MUNICIPAL WORLD what powers township councils have in the matter of traction engines destroying the small bridges? Can they compel, by by-law, owners of such engines to carry plank to run on, or over any bridge?

Chapter 200 of the revised statutes of Ontario, regulates this matter. Section 10 of said act provides that: Before it shall be lawful to run such engines over any highway whereon no tolls are levied, it shall be the duty of the person or persons proposing to run the same, to strengthen, at his or their own expense, all bridges and culverts to be crossed by such engines and to keep the same in repair, so long as the highway is so used; and sub-section 2 of said section provides that the cost of such repairs shall be borne by the owners of different engines in proportion to the number of engines run over such bridges or culverts. If the road is a toll road, see sections 11 to 15 of the said act.

J. M.—Can a municipal council sell debentures on the first day of August, 1894, and have them payable on February 1st, 95, 96, 97, etc.? If so, is the following correct for borrowing the sum of \$434.00, payable within five years with interest at rate of 5 per cent per annum?

Interest on Feb. 1st:

Debentures	1895.	1896	1897	1898	1899
1st	\$ 87 01	2 18			
2nd	80 50	2 01	4 03		
3rd	84 53	2 11	4 23	4 23	
4th	88 76	2 22	4 44	4 44	4 44
5th	93 20	2 33	4 66	4 66	4 66
Total \$434.00	10 85	17 36	13 33	9 10	4 66
	87 01	80 50	84 53	88 76	93 20
	97 86	97 86	97 86	97 86	97 86

That is to issue five debentures of \$97.86 each without coupons. The object in figuring this way is to save the municipality the trouble of borrowing on notes, and also that the debentures will be payable at a suitable time as taxes are collected on February 1st.

We would call our correspondent's attention to section 414 of the Con. Mun. Act, 1892, which provides that no council shall give a note or debenture for less than \$100. In view of this, we are afraid we must pronounce your debentures void. The figuring we think is correct.

W. E.—I. A person has a ditch constructed under the Ditches and Watercourses Act, it being along a toll road. The engineer constructs a ditch that is dangerous and if an accident occurs, who is

responsible, the township, or the engineer, or the person given notice?

2. What power has a council to close a culvert, and how should they proceed?

3. If a council construct a drain in accordance with section 76 of the Drainage Act of 1894, have they to be notified the same as under section 16 of the said act?

1. We are of opinion that the township would be responsible for damages caused by the dangerous condition of the drain. See section 531 of the Con. Mun. Act, sub-section 3.

2. The council has a right to close a culvert at any time of their own motion, but they must be careful that their so doing does not cause any injury to adjoining owners. 3. Yes.

M. I.—In the township of Tossontoria, S. S. No. 4, is a union composed of parts of Tossontoria and Mulmur in the proportion of 6 to 1. The school house is situated in Tossontoria.

1. Should the council of Tossontoria levy \$100.00 of the money required from Tossontoria for said S. S. by general rate, or only 6-7 of \$100 and Mulmur the other 1-7?

2. If Tossontoria should levy \$100 by general rate, should Mulmur levy any general rate for said school?

In the case of union school sections the municipal council of each municipality should levy proportion of general public school rate.

See sub section 2 of section 109, Public School Act, 1891.

Rules and Regulations for the Government of Common Gaols.

PRISONERS.

If the accommodation and arrangement of the goal will permit of it, each of the following classes of prisoners of each sex shall have a separate and distinct ward, into which no member of any other class shall be admitted:

1. Adult prisoners awaiting trial.
2. Adult prisoners convicted and sentenced.
3. Juvenile prisoners, whether awaiting trial or under sentence.

4. Witnesses, persons committed for contempt of court or on other civil process and persons of unsound mind, unless for safety it is necessary to have the last-mentioned class in a corridor with prisoners who can best care for them.

In addition to the foregoing classification, a further separation shall be made if the accommodation of the gaol admits of it, as follows:

1. Adult prisoners awaiting trial upon a first charge.
2. Juvenile prisoners awaiting trial upon a first charge.
3. Hardened and degraded offenders, who have been convicted three or more times.

Every prisoner shall be provided with a separate cell, in which shall be placed a bedstead, a tick and pillow filled with clean straw, sheets for the bed, a sufficient supply of blankets, a piggin of water, a night pail, a towel, a comb, and a piece of soap.

No prisoner shall be compelled to see a clergyman professing a different creed from his own, and the officers of the gaol

shall endeavour, if practicable, to procure the services of any particular clergyman whom the prisoner may desire to see; but every Gaol officer is strictly forbidden to attempt to make proselytes among the prisoners.

Every prisoner has the right to complain to the gaoler, at his daily visits, or to the sheriff when he visits the gaol, or to the inspector during his inspections, of any act on the part of a gaol official or another prisoner affecting his rights and privileges under these rules and regulations, and to that end a copy of the rules and regulations shall be placed in each ward of the gaol for the perusal of prisoners.

Prisoners convicted of misdemeanours of a political character, or committed on civil process or for contempt of court, persons detained as witnesses, and persons of unsound mind, may procure, either by purchase or from friends outside, their own bedding and food, such bedding and food to be subject to examination, and such prisoners to be subject in all other respects to the rules and regulations of the gaol; if money is given therefor, such bedding and food may be purchased for such prisoners by the gaoler, who shall keep a strict account in respect of such purchases, and submit the same to the sheriff before any such prisoner leaves the gaol.

To be continued.

As a result of the meeting of executive committee of the Good Road Association held in Toronto on the 13th September, all clerks of townships throughout the province have been requested to furnish information in reference to statute labor, road mileage, etc. It is very desirable that these returns should be promptly made, as in no other way can accurate information be obtained on this subject.

During the past year, a great many different suggestions in reference to road improvement have been published, and we cannot think of anything, that would help the association more at the present, than that the representatives or clerks of those townships in which compulsory commutation has been tried, should favor us with the result of their experience during the past season. All who may have new ideas, the result of experience that will assist in advocating this important reform, cannot do better than to put their views in writing and send them to the editor of this paper, who is at present the acting secretary of the Good Roads Association.

A woman out west was elected mayor of a small town. Her husband immediately entered suit for divorce. While the suit was pending the husband was arrested and brought before the wife on a charge of assault and battery. As mayor, the wife imposed a fine on him which was sufficient to pay her lawyer's fees in the divorce suit. The husband is now trying to make up with her in order to keep the fine in the family. These women folk are "a caution!",

#### Communications.

Editor MUNICIPAL WORLD, St. Thomas:

SIR,—I see Mr. A. C. Neff's advt. in THE WORLD, and as he has been here and made a thorough examination of my books, as treasurer of East Zorra, and although his report is not altogether favorable to me, however, the most errors were found in my being too free in making payments without having orders from one of the councillors. Mr. Neff does his work in such a masterly and pleasant manner, that I cannot help but admire him as an accountant, and would like if you would give space to the enclosed recommendation, and oblige.

D. W. MCKAY,  
Township Clerk, E. Zorra.

Hickson, July 24, 1894.

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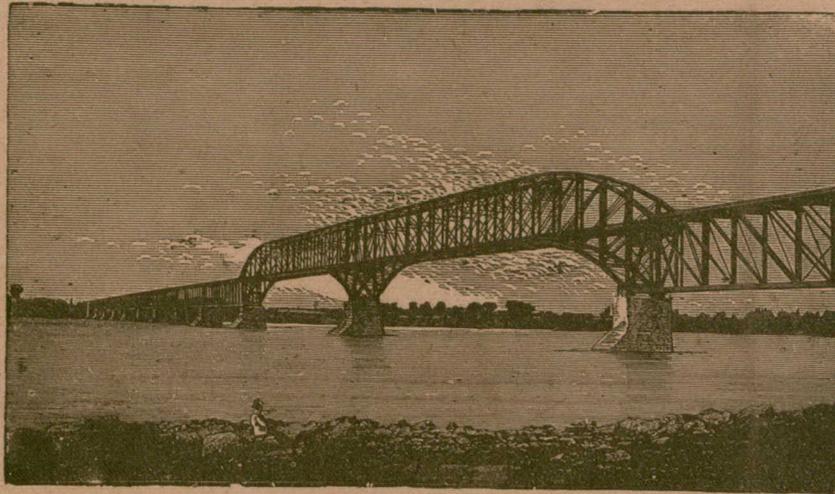
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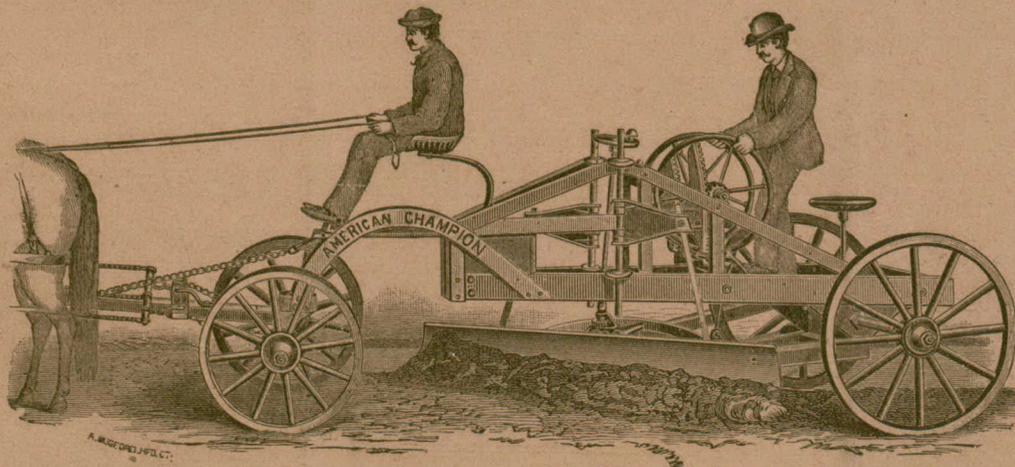
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Because it gives you better roads which will enhance the value of your property, and at same time save you money.

In the *Farmers' Advocate*, speaking of Road Machines, W. A. Hale says: "Doubtless there are various patterns of these machines, but the one that I have had several years' practical experience with is called the "American Champion," and, as it is now made in Ontario, can be bought at first cost, without the addition of duty, the price being \$250, and to say that the machine will, in any ordinary township, more than pay for itself in one year, is putting it very mildly. Some of our more enterprising municipalities have purchased one or more of these machines, and have taken upon themselves the principal part of the making and repairing of the municipal roads, giving the residents a chance, whenever possible, of working a part of their road tax in statute labor, and while the roads are uniformly very much improved the annual amount actually expended on them has fallen to from 75 even to 30 per cent. of what it used to cost to keep up an indifferent set of roads by the old method."



The above cut shows the machine at work. We send our machine on trial. Send for catalogue, testimonials, prices, etc. All correspondence promptly and cheerfully answered.

Address all communications to **Copp Bros. Company, Limited, Hamilton, late American Road Machine Co., F. L. Wright, Manager 124 York Street, Hamilton, Ont.**