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# SESSIONAL PAPERS.

VOL. XXXIV.—PART VI.

FIFTH SESSION, NINTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO

SESSION 1902.

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*T O R O N T O .*



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- No. 3.. Report of the Commissioner of Crown Lands, for the year 1901. Presented to the Legislature, 17th February, 1902. *Printed.*
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- No. 6.. Report of the Commissioners for the Queen Victoria Niagara Falls Park, for the year 1901. Presented to the Legislature, 28th January, 1902. *Printed.*
- No. 7.. Report of the Commissioner of Public Works for the year 1901 Presented to the Legislature, 11th February, 1902. *Printed.*
- No. 8.. Report of the Inspectors of Factories, for the year 1901. Presented to the Legislature, 4th March, 1902. *Printed.*
- No. 9.. Report upon the Registration of Births, Marriages and Deaths in the Province for the year 1901. Presented to the Legislature, 21st February, 1902. *Printed.*

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- No. 11.. Financial Statements made by Building Societies, Loan Companies, Loaning Land Companies and Trust Companies for the year 1901. Presented to the Legislature, 5th March, 1902. *Printed.*

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- No. 12.. Report of the Minister of Education—Parts I and II—for the year 1901, with the Statistics for the year 1900. Presented to the Legislature, 13th January, 1902. *Printed.*
- No. 13.. Report of the University of Toronto, Auditors Report on Capital and Income Accounts for the year ending 30th June, 1901. Presented to the Legislature, 9th January, 1902. *Printed.*
- No. 14.. Report of the Ontario Agricultural College and Experimental Farm, for the year 1901. Presented to the Legislature, 18th February, 1902. *Printed.*
- No. 15. Report of the Agricultural and Experimental Union of Ontario, for the year 1901. Presented to the Legislature, 4th March 1902. *Printed.*
- No. 16.. Report of the Fruit Growers Association for the year 1901. Presented to the Legislature, 4th March 1902. *Printed.*
- No 17.. Report of the Fruit Experiment Stations of Ontario, for the year 1901. Presented to the Legislature, 11th February, 1902. *Printed.*
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No. 18.. Report of the Inspector of Fumigation Appliances in Ontario, for the year 1901. Presented to the Legislature, 14th February, 1902 *Printed.*

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- No. 19.. Report of the Entomological Society for the year 1901. Presented to the Legislature, 4th March, 1902. *Printed.*
- No. 20.. Report of the Bee-Keepers Association for the year 1901. Presented to the Legislature, 5th March, 1902. *Printed.*
- No. 21.. Report of the Poultry Association for the year 1901. Presented to the Legislature, 27th February, 1902. *Printed.*
- No. 22 . Report of the Dairymen's Association for the year 1901. Presented to the Legislature, 4th March, 1902. *Printed.*
- No. 23.. Report of the Live Stock Breeders' Association for the year 1901. Presented to the Legislature, 22nd February, 1902. *Printed.*
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No. 28.. Report of the Bureau of Industries for the year 1901. Presented to the Legislature, 4th March, 1902. *Printed.*

No. 29.. Report of the Bureau of Labour for the year 1901. Presented to the Legislature, 27th February, 1902. *Printed.*

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No. 39. Report upon the Common Gaols, Prisons and Reformatories of the Province for the year ending 30th September, 1901. Presented to the Legislature, 14th February, 1902. *Printed.*

No. 40.. Report upon the Hospitals, Refuges, etc., of the Province for the year ending 30th September, 1901. Presented to the Legislature, 5th March, 1902. *Printed.*

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- No. 43.. Report upon the work under the Children's Protection Act for the year 1901. Presented to the Legislature, 27th February, 1902. *Printed.*
- No. 44.. Report of the Inspector of Liquor Licenses for the year 1901. Presented to the Legislature, 9th January, 1902. *Printed.*
- No. 45.. Report of the Provincial Municipal Auditor for the year 1901. Presented to the Legislature, 9th January, 1902. *Printed.*
- No. 46.. Return from the Records of the several elections to the Legislative Assembly in the Electoral Districts of South Perth, North Waterloo, London, East Kent and West Huron, since the General Election of March 1st, 1898, shewing:—(1) The number of Votes polled for each Candidate in the Electoral District in which there was a contest. (2) The majority whereby each successful Candidate was returned. (3) The total number of Votes polled in each District. (4) The number of names on the Voters' Lists in each District. (5) The population of each District as shewn by the last Census. Presented to the Legislature, 9th January, 1902. *Printed.*
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- No. 49.. Copy of Order in Council and Report of Committee *re* Compilation of the Imperial Statutes in force in the Province, under the provisions of Chapter 111, R.S.O., 1897, and now contained in Vol. III. R.S.O. Presented to the Legislature, 9th January, 1902. *Printed for Sessional Papers only.*
- No. 50.. Account of the Official Guardian *ad litem* for the year 1901. Presented to the Legislature, 13th January, 1902. *Not Printed.*
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- No. 52.. Copy of Order in Council respecting payment to His Honour B. L. Doyle, Junior Judge of the County of Huron, of the surplus Surrogate fees of the County. Presented to the Legislature, 15th January, 1902. *Not Printed.*
- No. 53.. Return to an Order of the House, for a Return shewing:—(1) In what municipalities and unorganized districts has smallpox appeared in Ontario since January 1st, 1900. (2) What has been the source of the outbreak in each case. (3) What action was taken by the Government of the Province in the different outbreaks to prevent the spread of the disease. (4) To what extent was vaccination employed in the different outbreaks to limit the spread of the disease. (5) In how many places do Isolation Hospitals exist. (6) And whether (a) temporary or (b) permanent. (7) In how many centres in (a) organized districts, and (b) unorganized. Presented to the Legislature, 15th January, 1902. *Mr. Smith. Not Printed.*



- No. 54. Report of Inspector of San José Scale for the year 1901. Presented to the Legislature, 25th February, 1902. *Printed.*
- No. 55. Return to an Order of the House for a Return, shewing what amount, if any, has been received from private parties towards the support of their relatives or otherwise, in the respective Insane Asylums of the Province during the year 1901. Presented to the Legislature 24th January, 1902. Mr. Hoyle. *Not Printed.*
- No. 56. The Birds of Ontario in relation to Agriculture. Presented to the Legislature, 29th January, 1902. *Printed for distribution only.*
- No. 57. Return to an Order of the House for a Return, shewing the number of fruit trees infested by the San José Scale, condemned to be destroyed by the Inspector or Inspectors in the County of Lincoln, the number actually destroyed; the number condemned but not destroyed; the names and residence of the owners of those not destroyed and the reason why not destroyed. Presented to the Legislature, 30th January, 1902. Mr. Jessop. *Not Printed.*
- No. 58. Return to an Order of the House for a Return, shewing:—(1) The amount of bonuses or subsidies voted to Railways by this Legislature, each year during 1898, 1899, 1900 and 1901. (2) The names of each railway receiving the same and the amount voted to each during that time. (3) The amount paid to each railway during each of such years, and the condition or conditions upon which such payments were made. Presented to the Legislature, 6th February, 1902. Mr. Joynt. *Not Printed.*
- No. 59. Also—Return to an Order of the House for a Return, shewing the number of persons confined in the different Gaols of the Province on January 14th, 1902, as indigent persons unable to support themselves, and the length of time each person had been confined. Also, shewing the number of insane persons confined in the different Gaols of the Province on January 14th, 1902; the length of time so confined, and the reason therefor. Presented to the Legislature, 6th February, 1902. Mr. Burr. *Not Printed.*
- No. 60. Return to an Order of the House for a Return, shewing:—(1) Who are the appointees under the Fisheries Department over the Rideau waters. (2) The name and the amount of salary of each overseer and sub overseer between Kingston and Ottawa. (3) The local jurisdiction of each overseer and sub-overseer, separately, as to limit of waters. (4) The number of licenses which have been granted during 1900 and 1901. (5) The name of each licensee and the amount paid for license individually. (6) The other sources of revenue under the Fisheries Department from fishing and otherwise for Ontario, from the Rideau waters. (7) The total revenue and expenditure in connection with the said waters under the Department. Presented to the Legislature, 7th February, 1902. Mr. Joynt. *Not Printed.*
- No. 61. Return to an Order of the House for a Return, giving the name of each License Commissioner in each License District in the Province and the amount of expenses allowed in each District, up to the 30th

April, 1901. The name and salary of each License Inspector in the Province up to the 30th April, 1901, the county for which he was appointed and the amount allowed each Inspector for expenses. Presented to the Legislature, 10th February, 1902. Mr. *Barr*. *Not Printed*.

- No. 62.. Report in the matter of the Scott Enquiry *re* timber. Presented to the Legislature, 13th February, 1902. *Not Printed*.
- No. 63.. Report on Sugar Beet Experiments in Ontario. Presented to the Legislature, 4th March, 1902. *Printed*.
- No. 64.. Agreement between His Majesty, represented by the Commissioner of Crown Lands, of the one part, and the Nepigon Pulp, Paper and Manufacturing Company, Limited, of the other part. Presented to the Legislature, 4th March, 1902. *Printed*.
- No. 65.. Return to an Address to His Honour the Lieutenant-Governor, praying that he will cause to be laid before this House, a Return of copies of all Orders-in-council, correspondence and telegrams between the Government, or any official thereof, and the McNab Lumbering Company, Peter Ryan, John Bell, John Drynan, and any other person or persons, interested in the company, relating to certain lumber stored at Ingoldsby Station, and the timber dues thereon. Presented to the Legislature, 18th February, 1902. Mr. *Fox*. *Not Printed*.
- No. 66.. Return to an Order of the House for a Return, of copies of all correspondence since January 1, 1901, between the Attorney-General, or any officer of his Department, and any other person or persons, relating to the export of gas from the Province under any lease; also, copy of such lease; also, copy of any instructions to, and any report made by Mr. Stiff on the subject since said date; also, copy of any injunction served on the Sheriff of the County of Essex forbidding him to interfere with the pipes of any Gas Company. Presented to the Legislature, 18th February, 1902. Mr. *Whitney*. *Not Printed*.
- No. 67.. Agreement between His Majesty, represented by the Commissioner of Crown Lands, of the one part, and the Sturgeon Falls Pulp Company, Limited, of the other part. Presented to the Legislature, 4th March, 1902. *Printed*.
- No. 68.. Agreement between His Majesty, represented by the Commissioner of Crown Lands, of the one part, and the Blanche River Pulp and Paper Company, Limited, of the other part. Presented to the Legislature, 4th March, 1902. *Printed*.
- No. 69.. Report of W. T. Jennings, Esquire, M.S.C.E., upon the cause of damage by high water and ice in the Grand River at Galt, Ontario. Presented to the Legislature, 25th February, 1902. *Not Printed*.
- No. 70.. Return to an Order of the House for a Return, shewing the number of Visiting Committees appointed under the provisions of the Act respecting Neglected and Dependent Children. Presented to the Legislature, 27th February, 1902. Mr. *Smith*. *Not Printed*.

- No. 71.. Agreement between His Majesty, represented by the Commissioner of Crown Lands, of the one part, and the Montreal River Pulp and Paper Company, of the other part. Presented to the Legislature, 5th March, 1902. *Printed.*
- No. 72.. Statement of distribution of Revised and Sessional Statutes, up to 31st December, 1901. Presented to the Legislature, 4th March, 1902. *Not Printed.*
- No. 73.. Return to an Order of the House, for a Return, shewing what number of Cold Storage Associations have been incorporated: where they are, and what amount was paid by the Province to each of the Associations formed under the Act of 1900, to provide for the incorporation of Co-operative Cold Storage Associations. Presented to the Legislature, 5th March 1902. *Mr. McLaughlin. Not Printed.*
- No. 74.. Return to an Order of the House for a Return, a copy of any Report, or other document, made to any Department of the Government by the engineer, or other officer or person, who surveyed the route of the proposed Temiskaming Railway. Presented to the Legislature, 7th March, 1902. *Mr. Beatty (Leeds.) Not Printed.*
- No. 75.. Return to an Order of the House for a Return, of copies of all correspondence between any person or persons resident in the Townships of Sunnidale, Flos or Vespra, and the Government or any member or official thereof, relating to the drowning of lands therein caused by the overflow of the Mad and Nottawasaga Rivers together with a copy of the Report of the Engineers upon the cause of such overflow or floods. Presented to the Legislature, 10th March, 1902. *Mr. Thompson. Not Printed.*
- No. 76.. Copy of an Order-in-Council commuting the fees of His Honour A. B. Klein, Junior Judge of the County Court of Bruce Presented to the Legislature, 15th March, 1902. *Not Printed.*
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REPORT  
OF THE  
FARMERS' INSTITUTES  
OF THE  
PROVINCE OF ONTARIO

1901.

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PART I.

*PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE.*

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1902.



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# EIGHTH ANNUAL REPORT

## OF THE

# FARMERS' INSTITUTES OF ONTARIO

FOR THE YEAR

1901.

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*To the Honorable, the Minister of Agriculture :*

SIR,—I have the honor to present herewith the Eighth Annual Report of the Superintendent of Farmers' Institutes.

### A SHORT HISTORY OF THE FARMERS' INSTITUTES IN THE PROVINCE OF ONTARIO.

This movement emanated from the Ontario Agricultural College at Guelph. The President of that institution, Dr. James Mills, realized that the Agricultural College was reaching not more than one per cent. of the farmers' sons of the Province of Ontario who were eligible for admission. In addition to these there were the ninety-nine per cent. and the older brothers and fathers who had scarcely any opportunity, except that of the public press, of receiving practical information in reference to their business.

#### THE BEGINNING.

In 1884 Dr. Mills matured his plans for launching in the Province of Ontario the organization now known as the Farmers' Institutes. The Hon. A. M. Ross was then Commissioner of Agriculture, and he adopted the suggestions of the President of the Agricultural College, and permitted of a change being made in the College vacation, so that the professors would have time during the month of January to devote to this new movement.

At first meetings were planned to occupy one and a half days each. Commencing at 1.30 p.m. the first day, an afternoon and an evening session were held; on the second day a morning and an afternoon session. The day sessions were to be devoted to methods pertaining to purely practical farming, while the evening sessions were to be more popular, and include such topics as would be interesting to the town and village folk. The wisdom of these two-day meetings has been proven in recent years, and while the one-day meeting now predominates, there is a tendency in some counties to revert to at least one two-day meeting each year at some central point, believing that where the delegates stay for a second day in the neighborhood they become better acquainted, the audience becomes more responsive, and time is allowed to discuss thoroughly one or more subjects that may have a peculiar interest in that particular neighborhood. As soon as the scheme of meetings was announced by Dr. Mills it was heartily received and more applications were sent in for meetings than could be complied with.

#### THE FIRST YEAR.

On January 2nd, 1885, the first delegation for regular Farmers' Institute work started out from the College. At the outset two difficulties had to be met and overcome. The first was, that, being under local Government patronage, there was a certain amount of political prejudice in the air. The second was that each of the gentlemen of the delega-

tion having the word "professor" prefixed to his name, indicated to many that he was thoroughly and purely a book man, and therefore not practical. This latter impression was quickly effaced. The audience soon found that both Dr. Mills and Prof. Pantou had been reared on farms and were accustomed to all kinds of farm work; that the education they had received after leaving the farm had only helped them to solve farm problems which they could never have done without that education.

As the years have gone by the political prejudice has been almost entirely overcome, and we find the members of both political parties vying with each other as to which shall make their local Farmers' Institute the greatest success. Institute officers everywhere are proud of their organization, and of the Agricultural College, from which it emanated.

#### THE SECOND YEAR.

The next year twenty-six Institutes were held. The third year forty Institutes were visited, and Dr. Mills found it necessary to engage the assistance of other than professors in order to supply all the meetings asked for. The late John McMillan, M.P., of Huron County, and the late John I. Hobson, of Wellington County, were added to the staff in that year.

#### THE FOURTH YEAR.

In 1888 fifty per cent. more Institutes were held, and the work began to assume considerable magnitude. Several of the leading farmers of the Province had to be called in to assist in carrying on the work. Mr. E. Jeffs, of Simcoe County, Mr. Simpson Rennie, of York, and Mr. John Dryden, of Ontario, all went out in the interest of the work.

#### THE SIXTH YEAR.

In 1890 the Province was divided into seven districts, embracing seventy-five Institutes, and to each meeting three delegates were sent—a professor, a leading farmer, and a leading fruit-grower. This was a decided step in advance, and the delegation was enabled to answer almost any questions that might arise in reference to farm work and farm products.

#### THE SEVENTH YEAR.

In 1891 there were ninety-five meetings, divided into eight divisions, so that the Province was now pretty well covered. A great improvement was noticed in the addresses delivered, papers read and the discussions carried on, and it was no longer necessary to emphasize the importance of belonging to a Farmers' Institute.

#### A SUPERINTENDENT APPOINTED.

In 1892, 1893 and 1894 the number of meetings continued to increase in about the same ratio, until Dr. Mills was compelled to call a halt, the work having now reached the stage where it required all of one person's time and attention. On the 1st of October, 1894 Mr. F. W. Hodson, of London, Ont., was appointed Superintendent of Farmers' Institutes for the Province of Ontario.

In the first report of the new Superintendent we find the following points mentioned:

"1. We find now, more than ever before, a great desire among our farmers to know more of the teaching of science as it bears on agriculture. They find science and practice go hand in hand where progress is made. The teacher of science is listened to with rapt attention as he unfolds some of the scientific principles that underlie the operations upon the farm.

"2. We find a greater readiness to discuss agricultural problems. In the early days of the Institute work it took great skill on the part of the delegates to get farmers to take part in any discussions. To-day, as soon as an address is over, many are ready with questions to draw out all that can be learned from the speaker. So marked is this that discussions have frequently to be cut short for want of time.

"3. We note a wonderful increase in the membership.

"4. Farmers are more alive than ever to the necessity of being educated, especially along the lines of agricultural science.

"5. While the professors have done much to simplify and make attractive the teachings of science, they have learned a great deal from the practical farmers at these meetings.

"6. The Institutes have developed a readiness to speak and an ability to express the results obtained from practice in farming.

"7. A higher ideal of farm life has been attained, and a halo of interest has been found to surround it, which can only be seen when men read, observe and study the teachings of science, as the great book of nature spread open before them constantly reveals such."

Since that time the Farmers' Institutes of the Province of Ontario have steadily grown in numbers and the value of the work done, until the report for 1901 shows the total membership to be 20,307. During the year 730 meetings were held, with a total attendance of 131,653 persons. At these meetings 3,262 papers were read and addresses delivered.

#### SPECIAL FEATURES OF THE WORK IN 1901.

##### *Women's Institutes.*

Two years ago we addressed a letter to the women of Ontario, asking their cooperation in the formation of Women's Institutes. We expected to start in a small way with one or two strong organizations, and from these be able to spread out to all parts of the Province. We were very agreeably surprised to find that, instead of two, there were twenty organized the first year, and we have now in active operation in the Province forty-four live organizations, with a total membership of 2,816 on May 31st, 1902.

The objects of each Women's Institute are :

"The dissemination of knowledge relating to domestic economy, including household architecture, with special attention to home sanitation; a better understanding of the economic and hygienic value of foods, clothing and fuels, and a more scientific care and training of children, with a view to raising the general standard of the health and morals of our people."

##### *Excursions to the Agricultural College.*

Each year during the month of June a number of the Farmers' Institutes have made arrangements to convey their members to the Agricultural College and Experimental Farm at Guelph. Last year there was an excursion each day between the 12th and 30th of June (Sundays excepted), and about 30,000 persons, including farmers and their families, visited the Institution. Our Institute speakers inform us from year to year that where they find a number in an audience who have visited the College they have no trouble in interesting them in scientific agriculture.

##### *Seed Fairs.*

A number of the Institutes have adopted the practice of holding a seed fair each spring before planting time, when they bring together samples of the best varieties of grain and grasses for their particular locality. These are exchanged at a uniform rate of 10 cents per bushel above the market price. In this way every farmer in the neighborhood is enabled to secure good, clean, home-grown seed at a reasonable figure.

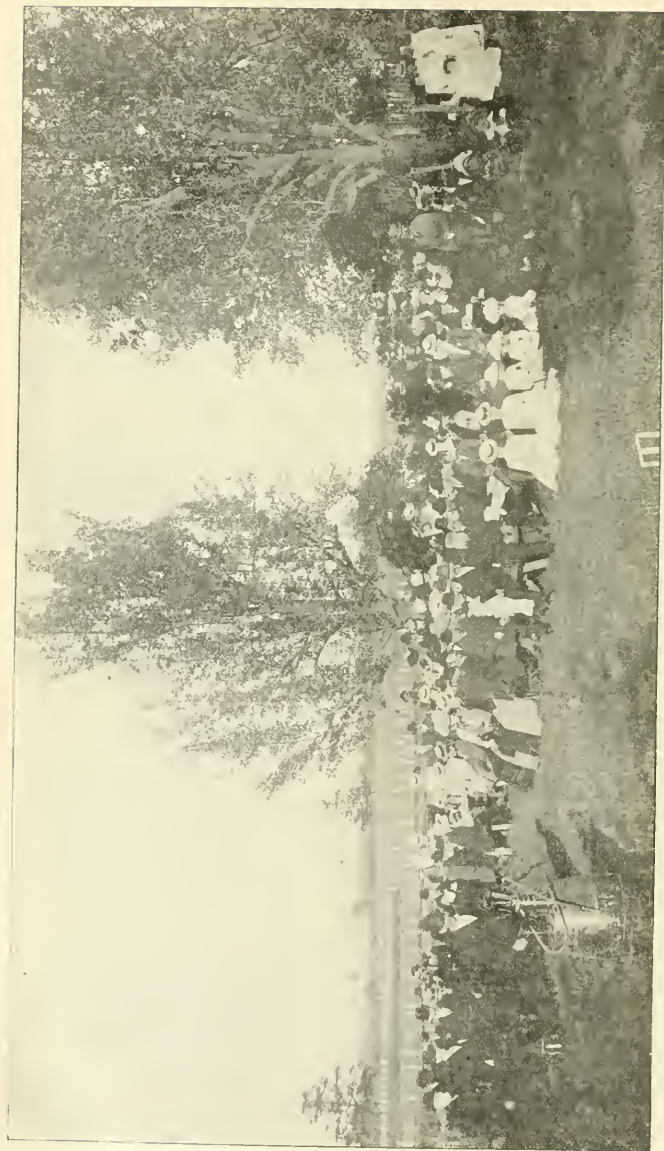
Generally speaking, the Institute movement is making a steady, upward growth. The membership is increasing at the rate of about 2,000 a year, and the demand for meetings is proportionately great.

I have the honor to be, Sir,

Your obedient servant,

G. C. CREELMAN,

Superintendent.



Annual Meeting of the East York Farmers' Institute and Women's Institute. An Orchard Spraying Demonstration and a Cooking Lesson were the principal features of the meeting.

# AGRICULTURE.

## MAKING CLOVER HAY.

To make hay of good quality involves a considerable outlay for improved machinery, especially if there is any considerable quantity of it to be cured. Mistakes are frequently made by undue haste in haymaking. It is as a rule preferable to coil it, leaving it in this condition for a period of twenty-four hours, rather than store it too soon. The matter of cutting clover when it is dry is important, as is also the storing of the hay without incorporating outside moisture, that is, moisture from dew or rain. There are those who think coiling involves too much labor—who prefer to cut one day and ted and haul the next. The best time to cut clover hay is when the first heads are in full bloom. However, if cutting is delayed until the first heads have turned slightly brown, the curing process will be much more simple, and there will be less danger of having musty hay. These points are brought out in the following letters from men who thoroughly understand the value of well-cured hay and the method of making it.

## CLOVER, AND HOW TO CURE IT.

By Henry Glendinning, Manilla.

The clover plant in many respects is the most important of the various plants grown by the farmer. As a gatherer of fertility from the atmosphere, it is the most valuable of all. As a forage plant it takes first place, whether in the green or cured state.

It is in regard to curing it into hay that we will first consider it. The best time to cut the plant for hay is when it is in full bloom, or when the blossoms contain the greatest amount of honey. Cut in the morning after the dew has dried off. That which is cut in the forenoon may be raked up immediately after the noon hour and put into cocks. The mower should not be run later than 4 p.m., and all that is cut should be put into cocks before the dew falls. This hay should be put into the barn next day and well tramped into the mows. This plan can be continued from day to day until all is stored in the barns. Three things we must bear in mind in curing hay by this method: 1. Do not cut in the morning until the grass is dry. 2. Do not allow the fresh cut hay to lie on the ground over night, exposed to dew or rain. 3. If any hay should get wet with rain, let it stand in the cocks until thoroughly dry before taking to the barn.

Q. How long have you followed this plan of saving hay?

A. Only one year.

Q. How much hay did you cure by this method?

A. Thirty-seven acres was treated in this way, except some two or three acres that got some rain; this was allowed to dry out in the cocks in the usual way before storing in the barn. There would be at least from seventy-five to eighty tons of dry hay.

Q. What was the condition of the hay when taken out of the mows?

A. The finest I ever saw. It was as green as when put into the barn, the leaves and blossoms were all attached to the stalks, and it appeared to have dried out without much heating, as all of the alsike blossoms were pink and the red clover blossoms were from a pink to a light amber color.

Q. Do you think there is danger from spontaneous combustion?

A. When hauling to the barn the men I had working at it predicted it would all heat and spoil, and that we would have to haul it all out for manure, or that it would burn the barns down. I kept a very close watch upon the mows, but could not discover any heat. I am of the opinion that there was but very little heat developed. If it had done so the blossoms and leaves would have been of a dark brown color.

Q. Did you use salt, lime or any kind of a preventive on the hay?

A. None whatever.

Q. Were there any signs of mould?

A. No signs of mould, and the freest from dust we ever had.

Q. Did you use a tedder?

A. No, but I think it would be an advantage to use one, as the hay could be made drier before putting it into cocks.

Q. What did your hay consist of?

A. Red and Alsike clover, with a little timothy.

Q. What size were your mows, and were they close?

A. Two of them are 22x25 feet, with an average depth of 30 feet of hay, with the exception of a granary in one mow, 19x22 feet, 8 feet high.

These mows are tight floored with double inch boards, over basement stables. Another mow, 24x36 ft., with an average depth of about 24 feet. The floor of this mow is on the ground. The outsides of all the mows are inch boards, without battens, with cracks between the boards which will average about 3-8 of an inch, just such as are usually found in the average barn. The sides of the mows next the drive-floor were open. The hay was equally good in all parts of the mow.

Q. Do you know of any other persons saving hay by this process?

A. I know of three men who have followed this plan for at least three years, with good success.

Q. What are the advantages of curing by this plan over the one usually followed?

A. The advantages of this plan are that the time between cutting and storing in the barn is very short. (A farmer can tell pretty well by the general appearance of the weather, consulting a good barometer and the weather probs. in the morning papers, whether he stands a chance of getting his hay in before showers come up.) Also all the leaves and blossoms, which are the most valuable portion of the plant, are left on the hay. By the old process a great many of these are left in the field. We found this hay cleaner and brighter than any we have had by the old way.

Q. Will you give the comparative food values of Red Clover hay with some of our other feeding stuffs?

A. If we take the digestible nutrients as found by analysis and apply the values laid down by Dr. Wolff, the German scientist, we will obtain the following results:

Red Clover hay.....	\$13.24 per ton.
Timothy hay.....	11.17 per ton.
Oat straw.....	8.54 per ton.
Wheat straw.....	7.15 per ton.
Wheat bran.....	18.97 per ton.
Wheat shorts.....	21.80 per ton.
Oats (grain).....	19.23 per ton.
Barley (grain).....	20.04 per ton.
Wheat (grain).....	21.97 per ton.
Corn (grain).....	21.76 per ton.

We must remember that these are only comparative values, and that the best results can only be obtained by feeding a properly balanced ration. Few of our feeding stuffs are properly balanced, but red clover is an exception, it being about the proper nutritive ratio for growing animals. All of the clovers contain a large amount of flesh or lean-meat-forming material.

Q. Will you tell us something about the fertilizing value of the clover plant?

A. All of the clovers belong to the leguminosae, or pulse family, the species of which have the power of extracting nitrogen from the atmosphere. This is the most valuable element of fertility for plant growth.

Q. How is nitrogen obtained by the clover plant?

A. By the action of certain species of bacteria in tubercles that are attached to the roots of the plant, these minute organisms have the power of extracting the free

nitrogen from the air and converting it into the form of nitrates, and in this way it is made available for plant food.

Q. Has timothy, and such grains as wheat, barley and oats, the power of extracting free nitrogen from the air?

A. No, these plants take their nitrogen only from the soil, where it has been deposited by rainfall, from decomposed animal and vegetable matter, and from the products of the oxidation of nitrogen through electrical action and combustion.

Q. Is there any danger of exhausting the supply of free nitrogen in the atmosphere by growing too much clover?

A. It has been estimated that the air contains about 77 per cent. of free nitrogen by weight. That being the case, we need not trouble ourselves about the supply running short.

Q. About what weight of the clover plant is left in the field after the crop is cut?

A. Sir J. B. Lawes, of Rothamsted, England, found that in the autumn, after the last crop of clover was cut, that remaining above ground and to the depth of 72 inches was examined, and found to contain 6,152 pounds of dry matter per acre.

Q. Will you give the comparative fertilizing value of red clover hay with some of our other common feeding stuffs?

A. Taking the analysis of a few of our grains and feeding stuffs, and computing the value of nitrogen, phosphoric acid and potash at the prices set by the Inland Revenue Department of Canada in the valuation of commercial fertilizers, viz.: Nitrogen at 13 cents per pound, phosphoric acid and potash each at six cents per pound, according to these values, we would have the following results:

Red clover hay.....	\$8.47 per ton.
Timothy hay.....	4.99 per ton.
Wheat straw.....	2.29 per ton.
Oat straw.....	3.34 per ton.
Wheat bran (spring).....	12.34 per ton.
Wheat shorts.....	9.66 per ton.
Oats (grain).....	7.08 per ton.
Barley (grain).....	5.45 per ton.
Wheat (winter).....	7.93 per ton.
Peas (winter).....	10.18 per ton.

If we consider the feeding and fertilizing value of red clover combined, it is very evident that the farmer makes a great mistake in selling clover hay at the usual market prices obtained, which is frequently less than the fertilizing value alone. This hay should be fed to stock for the production of good horses, beef, mutton or dairy products, so that when sold it will make the maximum profit with the minimum fertility removed from the farm.

Q. What loss of fertility is there in feeding clover to animals, compared with plowing the same under?

A. Harris, in his talks on manures, says: "I prefer to make the clover into hay and feed the animals, as they seldom assimilate more than from five to ten per cent. of all the nitrogen furnished in the food and less still of mineral matter.

Q. Do you advise plowing clover under for manure or feeding the hay to animals and applying the manure afterwards to the land?

A. Prof. W. J. Beal, of Michigan Agricultural College, says: "If the stubble and roots contain more than half of the manurial value of red clover, and if live stock appropriates only five to ten per cent. of the nitrogen, and the other ninety to ninety-five per cent. goes back to the field or dung heap, it certainly must be the best practice, as a rule, to feed red clover instead of plowing under." If we are to obtain results such as these the manure must be properly taken care of, either applying it to the land when fresh made, or kept in a shed, where it is well tramped down, until it is hauled to the fields.

## SOME PRINCIPLES TO BE OBSERVED IN CURING CLOVER HAY.

By Richard Gibson, Delaware.

We have no rule for hay-making; it varies with conditions. There are certain principles that must be observed, however, such as cutting when free from atmospheric moisture, as dews and rains; then partially curing in swath and finally in cocks. There are some seasons in which most any one may have good hay, especially if the crop is light. Again, there are wet seasons that baffle the most shrewd and set all rules at defiance; for example: one season I had over four hundred acres of grass to cure. The weather was very catchy, raining most of the time. I cut all through the rain, until I had over seventy acres cut; a break in the clouds let forth the sun, four tedders were put to work, and every available man, with a fork, was turning the clover swaths. The result was 145 loads of splendid hay, all in the barns before the rains again came down. My neighbors, who waited for the weather to clear up, got caught, for we had another week of rain when we were cutting, and their hay was much of it entirely spoiled. Grass is not hurt with rain, but made hay will yield up its strength, even as tea does in the teapot; this is merely to show how circumstances vary the application of any rule—not to advise cutting grass in rain.

Our usual practice is to cut as soon as clover is sufficiently matured; heads fully in bloom and the early ones turning brown. If the sun is very scorching the swaths are turned by hand, so as to expose the green under part to the dew, and preserve the leaf of that wilted. This operation may be delayed until next afternoon, but it is nearly always considered necessary if a first-class article is desired. With our heavy crops the under side of the swathe would remain green for days, unless exposed to the sun, while the upper would be so dry and brittle that neither head nor leaf would be preserved. We study the weather and get into cock earlier than we like if threatening, but we aim to get it all nicely wilted before cocking, with none of it so dry as to break. Of one thing young beginners need not fear, that is putting in too green; let there be no atmospheric moisture, and if sweated in the cock it may be stacked very green.

## CURING CLOVER FOR SHEEP.

By John Campbell, Woodville.

I will endeavor to give our method of curing clover, and the ideal condition we aim to secure. The crop is cut when in full bloom, and before the heads begin to turn brown. If possible, cutting is done when the ground is dry, and when the crop is free from dew and rain. When very heavy the swaths are turned, when the upper side is wilted, but not so dry as to have the leaves fall off. The rake is started when the hay is about half made, and if the weather is favorable it remains in the windrows a short time to allow further evaporation of moisture, when it is carefully coiled, pains being taken to put it up so as to shed rain, should it be caught by unexpected showers. With good weather we have opened out the coils the following afternoon, and after a few hours' exposure to sun and air, hauled it in the same evening. But we prefer allowing it stand a day or two, and, if sufficiently dry, haul it directly without spreading. The less exposure to the hot sun, dew or rain, the more of the nutriment and aroma are preserved. While we aim to prevent having the hay so dry and crisp as to lose much of the leaf and fine parts in handling, we try to have it only partly sweated in the coils, so that when stored in the mows there will be further fermentation, but not sufficient to cause mould. When stored in the proper condition it will retain considerable of its natural moisture, and when fed out the hay will be tough and soft, brown in color, and have that fragrance and appetizing aroma which you mention.

If clover is left uncut, as many do, until the bloom turns brown, the stem becomes woody, much of the finer and most valuable parts are lost in the curing and handling,



and, should it be caught out in heavy rains, it is really of comparatively little value. When cut in the early stages of bloom, rain does but little harm, if tedded soon after a shower and put up before it gets too dry.

Of course the ideal weather for clover haymaking would have neither dew, nor rain, nor much hot sun, but the air sufficiently dry to cause rapid evaporation. Then it would be difficult to spoil the crop, if cut in time; but with the uncertainties of weather it requires constant watchfulness to guard against, the loss of nutriment in saving clover, which is one of the most valuable products on the stock farm.

#### CLOVER HAY IS BETTER TOO GREEN THAN TOO RIPE.

By John Jackson, Abingdon.

To make first-class clover hay, and there is no other hay its equal, it should be cut when in full flower. When there is a large quantity to handle, begin several days earlier—(better too green than too ripe)—and especially if the weather is favorable for curing.

Cut late in the day, to be put up on the following day—or it may be cut in the morning, as soon as the dew is off, to be put up the same day. When a little wilted, shake it up well; this is best done with the tedder, late in the afternoon. When the heat of the day is past, rake and put up in small cocks, which should be turned bottom up every evening till sufficiently cured to put into the mow. In bad weather caps would be a great advantage. It is hardly possible to make the best clover hay and preserve the leaves, without curing in the cock. Much depends on just the right sort of weather.

#### SHOULD BE COILED UP GREEN.

By Arthur Johnston, Greenwood.

We count on cutting our clover when in full bloom, and we begin when the clover is quite dry. I mean in the forenoon. If the day is fine we put the hay tedder on after dinner, and if the day is still fine we put it in coils (moderate-sized coils) about 3 o'clock or a little later. We never put it in coils when there is the slightest dew or rain on it. We frequently take it into the barn next day if the weather remains fine. I think it would be better longer in coil if the weather were settled. I do not like putting in the barn sooner than a day after being coiled. Clover only needs to be free from all dampness to be put in coils, even if very green. I am certain any kind of hay is better of being coiled, even timothy, when it is raked up dry and put into the barn, you have dry grass, but not made hay.

#### CUT ONE DAY AND HAUL IN THE NEXT.

By R. S. Munson, Glencoe.

My plan is this:—Commence to cut as soon as the dew is dried off the grass. As soon as we get an acre or so cut we start the tedder. We are anxious to have the hay tedded before noon. Immediately after dinner we commence to rake and cock. The next morning, if the weather is fine, we turn out these cocks to expose them to the air and sun for a short time, then commence to draw the hay in. We have never put any in stacks. We put away about forty tons in this way last haying, with good results. In fact, this has been our plan for some years, and our hay is very much better than when cured in the old way. I had a sack of my hay on exhibition at the Glencoe Institute meeting, and the farmers were delighted with it. I do not think there is the least danger of spontaneous combustion, and as for musting, it will have to be put away very much greener than ours if that happens.

IN A DRY SPELL IT IS PERFECTLY SAFE TO CUT AND HAUL IN THE SAME DAY.

By W. C. McGregor, Tilbury.

The system of curing clover hay green has been given special attention on this farm for the past six or seven years, with the result that it has been a success in every particular. The most favorable weather for this method of curing is very hot and dry. When the clover is well matured, the blossoms are dry and the largest number in full bloom, the hay may be cut. In case of a very heavy crop it is well to ted it so that the sun may get at all the hay. When it has dried three or four hours, rake it up and haul it into the barn or stack; the larger the mows the better. However, if the weather previous to the cutting of the hay has been wet, or if the weather at time of mowing be of a damp rather than drying nature, more time should be given for drying.

In case the hay gets wet with rain, it should be thoroughly dried before drawing. Again, if the hay is cut greener than has been previously stated, it will require more drying.

The mower should be used every day, and cut only what can be hauled in one day. The hay should not be allowed to get so ripe that it will become hard and brown, and will not be relished by stock.

The advantages of this system of curing clover are: 1. Quicker curing, lessening the danger of damage by rain. 2. Avoiding the loss of leaves and blossoms, which is the important part of the plant. 3. A better color and quality of hay throughout, some of the hay being nearly as green as when cut.

In my experience I do not know of any fire caused by the heating of the hay. My experience has been exclusively with red clover, except odd bunches of alsike, which will occasionally occur in any hay. However, these bunches were equally good hay, and I have no reason to believe that the same plan would not work well with alsike clover.

Although I have given this as a system, no cast-iron rule can be made, and judgment must be used in all cases. There is no more danger from foreign dampness, such as rain or dew, than from the greenness of the hay, but care should be taken in all cases, and probably the first hay cut in the season might be given one day to dry.

If this system of curing clover hay has any disadvantages I have not yet discovered them.

#### AMERICAN OPINIONS.

In order to secure opinions and experiences from as many reliable sources as possible, a circular letter was addressed to each of the Directors of Agricultural Experiment Stations in the United States.

We submit a copy of that letter, and also the replies received. It will be noticed that here again authorities differ, but we submit the whole discussion, with the hope that out of this free expression of ideas our Institute members may receive much useful information:

Dear Sir,—Will you kindly give me all the information you have in regard to the plan of putting clover hay into barns or stacks in a partially green condition, instead of allowing it to cure in the cocks in the usual way. What are the advantages or disadvantages of the system? Do you think there would be danger of spontaneous combustion, or of heating or spoiling in the mow or stack?

A number of our Canadian farmers have reported good success in curing clover almost green, but before recommending the system I should like to have the results of your experience.

G. C. CREELMAN, TORONTO.

## STORED IN LESS THAN TWENTY-FOUR HOURS AFTER CUTTING.

By A. D. Shamel, Professor of Agriculture, University of Illinois.

I will say that our farmers have followed the practice of putting up clover hay green for the past five years, with universal success. The clover is usually cut down in the evening, allowed to wilt the next morning, and stored in the mow in the afternoon. This process prevents the loss of leaves after the ordinary process of curing, and places the hay in the very best possible condition for future use. When this hay is taken out of the mow it comes as fresh and green as the day it was put in, without any dust or mould. The only precaution that seems necessary is to keep the mow as tightly closed as possible for a few days after the hay has been stored in the barn, and until the heat from the processes of fermentation has disappeared. There have been some cases of spontaneous combustion reported, but these are usually the results of storing partially green hay in stacks, rather than the green hay directly from the field.

## CUT, CURE AND MOW AWAY THE SAME DAY.

By Prof. Frank E. Emery, M.S., University of Wyoming.

It has been reported many times that not only clover, but hay of mixed grasses, has been cured very satisfactorily by mowing after the dew is off, raking as soon as dry enough to gather up readily, and mowing away immediately. Hay cured in this way by me several times has come out in fine condition. There is likely to be less waste from this method, less work and more expedition, which in the curing of hay are very desirable considerations.

## ALFALFA COILED IMMEDIATELY AFTER CUTTING.

By Luther Foster, M.S.A., President, New Mexico College of Agriculture.

While connected with the Utah Experiment Station as Director, this method was tried with alfalfa, but in every instance the hay was darkened in color and became very dusty, so much so that it was not safe to feed it to horses. Cattle seemed to eat it as well, if not better, than that properly cured. No analysis was made of the hay in its changed condition, so I am not able to say what the composition was in comparison with that not so treated. I followed a system of curing alfalfa in Utah, and later in Wyoming, that proved very satisfactory, but perhaps would not be suitable for your climate. By this method the alfalfa was bunched immediately after it was cut, even before wilting. These bunches were left standing in the field five or six days to cure. They were made rather small, so they could be thrown on a wagon in a single forkful when cured. By this method the leaves were nearly all retained, and the hay neither bleached nor sunburned.

## NO DANGER FROM SPONTANEOUS COMBUSTION.

By Wm. Stubbs, Ph.D., Director State Experiment Station, Louisiana.

We have not had much experience in putting up clover, as we grow only about an acre of this crop each year, but have had considerable experience in curing alfalfa, cow peas, etc. If, in this climate, the alfalfa is cut early in the morning, after the dew is off the ground, kicked once or twice during the day with a tedder, raked late in the afternoon, and packed away in a perfectly tight barn, the doors and windows carefully closed, alfalfa can be cured in a beautifully green condition. We have had no success in curing

it green in the stacks; while the interior will be green, the exterior will be exceedingly dark. Nor can we recommend this method to those who have open barns. I do not think there is the least danger from spontaneous combustion. In fact, by this process, with its moisture below 20 per cent.—(with us it is as low as 20 per cent.)—and with a small access of air, being packed down almost in the closed barn, there will be no danger whatever from spontaneous combustion, heating or spoiling in the mow or stack.

#### TAKES THREE DAYS TO CURE CLOVER HAY.

By Dana H. Morse, Hillside Farm, Randolph, Vermont.

I raise quite a large quantity of hay, a considerable portion of it being northern red clover. I cut it early and put it into a close-made barn, in large, deep, compact bays, in somewhat of a green condition, but never wet. I do my haying quickly, and fill a bent from bottom to top in a short time, giving no opportunity for sweating until the bay or lent is filled. I rarely get in clover hay until the third day from cutting—mowing all my grass late in the afternoon, when both ground and grass are dry. I handle clover as little as possible, and hence suffer little loss of leaves. Rake in small windrows about noon the next day, after mowing, if weather is fair. Put it in small cocks just before dew falls. Next day about 10 o'clock open in small forkfuls and cart to mow in afternoon. If the weather is good it will be well cured, but not dried and leafless.

If packed solidly in a tight barn, with doors opened only when putting in hay, it will come out of mow green and nutritious. The top of the mow to a depth of six or eight inches will be black and smoky, but the balance I find to be the best feed I can produce for stock, especially for the dairy cow. The nearer your place for storing hay approximates the silo, the greener you can cure your hay.

If green clover be put into loose barns, allowing each layer to get to sweating before more is put in, poor food will be the result, if not spontaneous combustion. In other words, conditions make the difference between good and poor food. I could not advise putting in green clover hay unless the above conditions were carefully observed and adhered to.

#### TWIST A HANDFUL OF HAY; IF NO SAP RUNS IT IS READY TO HAUL IN.

By W. F. Massey, Horticulturist, North Carolina College of Agriculture.

The storing of clover and pea vine hay in a partially wilted condition has been practised by me for over twenty years, with perfect success. I have heard talk about spontaneous combustion, but my impression is that where there have been genuine instances of this they resulted not from the green hay itself. I have never known anything like combustion in green hay, and I have had barns of it in a very hot condition. With clover and any other legume the hay is much better if the leaves are preserved, and the hay is cured with as little exposure to the sun as possible. I cut clover in the morning as soon as the dew is about dried off, and start the tedder after the mowers, so as to wilt the hay as rapidly as possible. Stop cutting at 2 p.m. and get all cut that day into winrows in the afternoon. Next day open up the winrows to dry off and put into cocks as soon as dried. The next day haul into the barn as soon as the tops of the cocks are dry, and pack away closely. My test is the old one of twisting a handful of the hay, and if no sap runs to the twist it is ready to go in. I treat our cow pea hay in the same way, except that it should stay a little longer in the cocks, and is not damaged by rain as clover is. I cure cow pea hay in this way every year, and always have good hay.

## MAY BE CURED GREEN IF STORED IN LARGE QUANTITIES.

By Wm. P. Brooks, Professor of Agriculture, Massachusetts Agricultural College.

Our barn has very deep bays, the hay being put in from an upper floor in the barn. The distance from that floor to the lower floor is 23 feet. We often fill 8 or 10 feet above the upper floor, making a mow some 30 feet in depth. These bays have a ground plan 23 by 13 feet. In putting in hay it is our usual plan to fill continuously and rapidly into one bay. We not infrequently put in 15 to 20 tons daily. It has frequently happened that we have put in hay, mixed grass and clover, very much undercured. I find that this hay comes out in splendid condition for feeding. It is dark brown in color, has little luster, feels moist or greasy to the touch, is entirely free from dust or mildew, and has the fragrance of old honeycomb. This is, I suppose, what the Germans know as "brown hay." It is only at the middle of the mow that the hay comes out in this condition. Near the outsides it is of the ordinary character. We have many times tried this brown hay, in comparison with hay of similar quality, cured in the ordinary way, placing both kinds before animals together. Under these circumstances they never fail to greedily pick out the brown hay first. A chemical analysis which I had made showed the brown hay to contain a higher percentage of the more valuable nutrients than the hay cured in the ordinary manner. It is more pliable and softer in texture than the ordinary hay, and, it would seem, must be equally or more digestible. We have not, however, any comparative tests as to the digestibility.

The advantages of putting in hay but partially cured are, in the case of clover, a saving of the leaves and blossoms, which crumble, and, in the case of any kind of hay, great reduction in the danger of damage from bad weather. I should never hesitate with impending bad weather to put in a lot of half to two-thirds made (in the ordinary sense) hay, provided it could be stored in large bulk, so that it will be settled by its own weight and exclude the air to a large extent.

I do not feel equal confidence in such material keeping well in a stack, for the air could not be as perfectly excluded, and where the air is not excluded it seems to me the hay is likely to become mouldy and dusty.

Hay put in green will, of course, heat in the mow, but I have seen no good evidence that such treating leads to spontaneous combustion.

## CURING OF ALFALFA.

By John Fields, Director of Experiment Station, Oklahoma.

I am unable to give you the results of experience in putting up clover hay in a partially green condition. This plan is, however, followed with success in the growing of alfalfa. The general practice is to rake the alfalfa into winrows very soon after mowing, and later to place it in small piles before it has become brittle. It is allowed to sweat in the piles and is put into stacks while still somewhat tough, but not juicy. In this way the leaves are saved, and the resulting hay is bright and much better than if allowed to dry completely in the sun.

## WOULD ADD SALT.

By I. P. Roberts, Director, Agricultural Experiment Station, Itaca, N.Y.

Some years since we put quite an amount of clover hay in the barn when about half cured. It got extremely hot, and I was fearful that spontaneous combustion would take place. To prevent this we cut holes about three feet square in the mow, down to the mow boards. This afforded opportunity for the hay to cool down, but notwithstanding it was quite mouldy. I suppose some would say that the hay should have been left to

cure without the holes. However, I think I did right, for since that time I have put clover hay in the mow when quite green, and invariably three or four inches at the top of the mow rotted. In other words, it was little better than silage. True, one can put clover hay in the mow quite green, provided it is put in hot and is salted heavily. The salt arrests the heating and tends to prevent moulding and gives more time for moisture to escape, that is, it prevents the heating from going on too rapidly. So much for our own experience.

At State College (Agricultural), Pa., they put second cutting of clover, greenish, in the mow, and it resulted in spontaneous combustion. There is not the slightest question but that the hay was set on fire by heat generated from decomposition. I need not go into further details of this case. The barn was saved, however, by knocking out one side of it, removing the hay, and while doing so pouring a heavy stream of water into the mow. We have a sample of this hay, and have all the details, so that we feel there can be no mistake about it.

The mowing of half-cured clover hay is no new thing. The system springs up every little while and dies out. Occasionally it is successful. More often it is a failure. Those who recommend this practice always recommend also that the material be put in a tight bay, where it is not so likely to mold as where it is piled loosely in a barn full of cracks.

I think it all comes to this, that it is a method of dry ensilaging clover, which, under rare circumstances, may be entirely successful. Moreover, I cannot recommend it, or, if I did, I would make an air-tight silo and have done with it.

#### THINKS IT A FOOLISH PRACTICE TO STORE HAY GREEN.

By W. H. Jordan, Director, New York Agricultural Experiment Station, Geneva, N.Y.

If this system has any advantages, it consists only, so far as I can see, in removing the danger of loss of the leaves when thoroughly dried in the field, and diminishes the chances somewhat of injuring the hay by rain. There is, of course, less handling in the field, but that is fully offset by the handling of a much greater weight when the partially green material is put in the mows. The inevitable fermentation which must ensue when partially green material is put in mows results in a serious loss. Such fermentation is maintained by the actual combustion of dry substances of the hay, which otherwise would serve nutritive purposes. This fermentation does not secure any compensating results, because the fermented material is probably less digestible than the well-cured hay, and the material which is digestible certainly can have no value superior to that digested from the well-dried material. In characterizing the curing of green clover in mows as a foolish practice I express my own convictions.

#### WOULD NOT WORK IN SOUTH CAROLINA.

By J. S. Newman, Vice-Director, S. Carolina Experiment Station, Clemson College.

Much depends upon the stage of maturity at which the clover is cut, but in this climate the plan you suggest will invariably result in the rotting or moulding of the hay. Conditions in Canada are so different from ours that my experience is not of value to the Canadian farmer.

#### TOO MUCH LABOR IN HANDLING GREEN HAY.

By G. C. Watson, Professor of Agriculture, Pennsylvania State College.

We aim to cure our hay quite well before storing it. While we had a fire a few years ago which was supposed to have been caused by spontaneous combustion, yet of course one cannot be quite sure until spontaneous combustion has been proven experimentally

with hay. The conditions so far as known tended to confirm this belief. The mow of hay was found to be on fire before a blaze was started. Students and workmen pitched the mow of hay out of the barn, and the barn was saved, although the hay was practically a total loss. The insurance company paid for twenty-three tons, at \$11 per ton. I estimated that the mow contained about twenty-nine tons.

Situated as we are, we could not, under ordinary conditions, find it profitable to store clover in a green condition, on account of the extra labor in handling the green material. I am aware that some of the farmers are practicing storing clover in a green condition and tightly closing the barn. These conditions somewhat nearly approach those of the silo, and it is claimed that fermentation does not progress very far.

#### AFRAID OF SPONTANEOUS COMBUSTION.

By E. A. Burnett, Director, Agricultural Experiment Station, University of Nebraska.

In our section of the country it is not safe to put clover into barns in a very green condition, as I have known of two instances this year where alfalfa, which is similar in its nature, has charred to such an extent as to greatly reduce the value of the hay, and to make the danger from combustion exceeding great. I think this is a matter of detail that can never be entirely settled by advice, as it is impossible to describe exactly any particular condition of the hay as indicative of the degree to which it is cured.

#### MUST BE FREE FROM EXTERNAL MOISTURE, AND EVEN THEN IT WILL SOMETIMES SPOIL.

By C. D. Smith, Professor of Agriculture, Agricultural College, Michigan.

I have no definite statement on file in my office as to the plan of putting clover hay into barns in a partly green condition. In a tight barn, with the mows small, so that in the rapid drawing of the hay we fill the bents some 15 or 20 feet in a day, I have had excellent success. In every such case I have taken pains to have the clover dry as far as external moisture is concerned, and the juice quite largely evaporated, but with the clover stems still tough. In all such cases the barn has been practically air tight. Following this system I have had the clover hay come out in the spring beautifully clean and perfectly sweet. Following this system, too, but making some mistake which I could not define, I have had the hay come out mouldy, dusty, and in bad condition for the stock. Where everything goes right the system works well, but it admits of no latitude for error. Otherwise there would be no danger of spontaneous combustion, and there is always danger in a mow or stack. On my farm, when I am absent, I require the man to dry the clover hay very thoroughly and never to haul it when there is either dew or the slightest amount of water from rain upon it.

#### MUST BE WELL CURED IN THE COIL.

By S. Fortier, Director, Experiment Station, Montana.

There is much more alfalfa raised in this State than clover hay, and the custom with the former is to cut, permit it to lie at least half a day, then rake it when green into windrows and bunch it. It is then permitted to cure in the bunch. Occasionally these are turned over. By following this method the leaves, which are the most valuable part, are retained on the stems. We treat our mammoth and red clover in very much the same way.

## SPONTANEOUS COMBUSTION.

By J. T. Willard, Director, Kansas State Agricultural College, Manhattan, Kansas.

A number of farmers in this State experienced very disastrous results in the spontaneous combustion of alfalfa last year, and they attribute it to having stacked it too green. The spring was unusually wet and the alfalfa more succulent than usual. Spontaneous combustion occurred in some eight or ten instances, I think, in this vicinity, and no case of it had ever been known before.

## CATTLE EAT EVEN MUSTY, BAD-SMELLING HAY THAT WAS PUT IN GREEN.

By Frank D. Gardner, Porto Rico Experiment Station.

I have always had the best results by allowing the hay to cure in the cock. While at the University of Illinois we filled a large barn with a mixture of clover and timothy hay which was not thoroughly cured. It became very much heated, and a few days after the mow was completely filled, the barn took fire and was completely burned. It was thought at the time that most probably the fire was caused by spontaneous combustion, due to the heating of the hay. There was no doubt that the fire broke out in the mow, but there was a bare possibility that it might have been caused by a shaft from a windmill which was used for grinding feed in the barn, and which had been in use a short time before the fire broke out. Clover hay put in the mow or stack in the partially green condition has always come out with more or less mould, and the greener it was the more mouldy it became. We once made a stack of green clover, taking it from the field as soon as cut, so that it had time to wilt only a very little. The stack settled in a remarkable way and became very hard. Thermometers placed in the stack three or more feet from the edge showed a remarkably high temperature, going up, as I remember it, to about 170 degrees. Several months later, when the stack was opened, for about two feet in from the edges the material was almost white with mold, but all the central part was of a dark brown in color, and musty to the smell. In taking it from the stack it pulled off in large thin layers, showing the great pressure to which it had been subjected, owing to the enormous weight of the material, having been put into the stack in the green condition. Notwithstanding its very bad smell and musty appearance, cattle ate it ravenously and almost entirely.

## CLOVER.

By T. H. Mason, Straffordville.

The value of the clover crop to the farmers of Ontario is very generally recognized by all of us.

As a Stock Food. The plant, being rich in nitrogenous or flesh-forming material, is especially well adapted for forming part of the bulky portion of the ration, and in this way is very valuable for feeding along with corn in any form, as the corn plant is deficient in these important constituents.

As Manure. As a soil renovator, clover plays a special part in Ontario agriculture. It possesses in an especial manner the power of converting the free nitrogen of the air into soluble nitrates suitable for plant food, and for storing them up in tissues of the plant. Being a deep-rooted plant, the roots penetrate deeply into the subsoil, opening it and rendering it more porous and drawing stores of fertility to the surface for the use of shallow-rooted plants. The necessity of having a crop of this character to keep the soil in proper mechanical condition and to add humus to the soil, thereby increasing its actual fertility and its water-holding power, is admitted by nearly all of us. Our leading agricul-



tural authorities all tell us to sow more clover, and we believe this advice to be scientifically correct, but if they would only tell us how to make it grow after we have sown it, they would be conferring a great favor to many in Southern Ontario.

**Obtaining a Catch.** We find in many sections of this Province that, owing to local conditions, such as reduced rainfall, soils deficient in fertility and water-holding power, here is a constantly increasing difficulty in obtaining a catch of clover. This is especially true of the belt of country lying along Lake Erie and the Niagara Peninsula. While there has not been much difficulty experienced on rich, deep loams in getting a catch by following ordinary methods, yet in sandy, gravelly and heavy, hard clays it has been almost impossible (during the last four years) to get a catch. Our rainfall during the growing months of June, July and August has been under three inches, and one year under two, so it may be understood what conditions we have had to face. A synopsis of the numerous conditions that have come to my knowledge may prove of some service to the country.

**Preparation of the Land.** As to previous conditions of cultivation, the best general success has been obtained on land that has been ploughed out of sod, manured, and planted with corn or root crops, kept extremely well cultivated and not ploughed that fall, but cultivated in the spring thoroughly, and not more than two inches deep, and a grain crop sown very sparingly, using not more than one bushel of seed per acre. After the seed is sown, if the land is in good shape, roll, and then go over it with the harrow or weeder, to make the surface fine and prevent evaporation. By this plan the largest possible amount of humus from the rotting sod and manure is rendered available. The soil, by the previous thorough cultivation made thoroughly compact, capillary attraction with the subsoil moisture well established, and then by the shallow cultivation given in the spring, broken off near the surface, rendering the moisture available to the young plants while they are yet small, is a plan that has given very fair satisfaction, although not always successful.

**In Case of Failure.** When we meet with failure, as we sometimes do, then the most satisfactory plan to be adopted is as follows: As soon as the harvest is taken off, plow with the common plow, or gang plow, very lightly, not more than three inches deep, rolling and harrowing each day's work before leaving the field at night, to prevent loss of moisture. Usually late in August there will be late showers, and by watching chances and sowing clover and timothy alone, excellent catches are secured. Our experience of this plan has been so satisfactory that many of our farmers are not sowing in the spring at all, but prefer to take their chances in the fall. Sowing in this way should not be done later than September 10th, so that the clover plants may get a good strong start before winter sets in. Sowing in the stubble and harrowing in after a partial failure is sometimes resorted to, but unless the season is exceptionally favorable, it is not usually successful. We find it better to plough up and reseed the whole field.

**With Fall Wheat or Rye.** Some farmers have been quite successful (on light soils) in sowing clover in the autumn with fall wheat or rye. In order to succeed, the land should be in a good state of cultivation, and the seed should be sown not later than the first week of September, preferably a good deal earlier. Better results are given when a light seeding of grain is used.

**Without a Nurse Crop.** Where none of the above methods have succeeded, owing to poverty and dryness of soil, such as on sandy and gravel ridges, or run-down fields, then sowing in the spring on well-prepared, firm land, without crop of any kind, and with a top dressing of barnyard manure, will almost always succeed.

#### DISCUSSION.

Q. What is the cause of clover getting musty in the mow ?

A. Andrew Elliott, Galt : The most common cause of mustiness is external moisture, either dew or rain. The coils will also absorb moisture from the ground, and ought to be turned over an hour before drawing.

- Q. Do you put clover in coils to cure ?
- A. Yes.
- Q. How long do you leave it ?
- A. Draw as soon as possible ; take no chances.
- Q. How much seed to the acre ?
- A. Nine lbs. red and 1 lb. alsike.
- Q. How long do you leave a field to clover ?
- A. Clover is a biennial. It requires one year to start ; the second it is cut as hay and turned under in the fall.
- Q. At what stage do you begin cutting clover ?
- A. When one-third of the blossoms are out. We often begin just when we ought to finish.
- Q. Why is it we get such dirty and weedy seeds—clover and timothy particularly ?
- A. As a rule, farmers follow the practice of buying cheap seed, which in most cases is cheap and dirty. Buy only from reliable seedsmen, and insist on having the best, and that absolutely clean, and be willing to pay a price so that you will get it.
- Q. Is clover hay as good for horses as timothy ?
- A. W. S. Fraser, Bradford : Yes, if properly cured and not fed in large quantities.
- Q. When should clover be cut ?
- A. Cut in the forenoon, after the dew has dried off. Put in coils in the afternoon, and after two or three days open and expose to sun for an hour or two, when it will be fit for the barn.
- Q. Does it pay to grow timothy hay ?
- A. Not when we can grow clover. I do not see why farmers persist in growing timothy.
- Q. Does it pay to feed timothy hay to cattle ?
- A. It is poor food. For sheep it is an expensive way of starving them.
- Q. Will clover grow from year to year if the land is properly drained ?
- A. Red clover is a biennial, and we cannot expect it to continue from year to year. It should be plowed up the first autumn after the crop is removed. Have another field sown with clover.
- Q. Do you feed clover hay to horses ?
- A. Andrew Elliott, Galt : Yes, but do not overfeed. It is so rich a food that there is danger of over-feeding.
- Q. How do you secure a catch of clover ?
- A. 1. Have the surface soil rich.  
2. The whole soil mellow and compact.  
3. Sow 9 pounds of red clover and 1 of alsike per acre.  
4. If spring crop, sow grain thin—one bushel per acre. Harrow in seed.  
5. If on wheat, sow early in March in order that the spring rains and frosts may cover the seed.  
6. Sow 50 pounds of plaster of Paris per acre.  
7. Do not pasture in fall unless very rank.
- Q. Relate briefly how you manage your hay ?
- A. 1. Begin cutting when half of heads are out in bloom.  
2. Cut after dew is gone.  
3. Use the tedder.  
4. Rake when clover is just wilted, not crisp.  
5. Put in well-built coils and draw at the earliest possible moment.  
6. Pack solid in mow. The most destructive agent is dew or rain. Therefore, do not draw in when damp with dew, or with the bottom of coils damp from contact with the ground. Properly saved, clover should have all the fine leaves, blossoms and stalks intact—not crisp and breaking off.
- Q. Will not clover cut so early yield little hay and be hard to cure ?
- A. By cutting early less weight is obtained, but it is of much better quality, and the increased aftermath is so much more that the whole for the season is greater.

Q. Do you believe in the old proverb, "Make hay while the sun shines" ?

A. No. Keep your fine clover in the shade. Wilt, rather than dry it.

Q. Why is clover hard to grow ?

A. Myron A. Gee, Fisherville : Lack of humus or vegetable matter in soil. Top dressing makes a catch pretty sure.

Q. Should clover be pastured the first year sown ?

A. Never ; it needs all its strength to stand winter.

Q. Which is the best clover for all soils ?

A. Common red clover. If soil is deficient in humus, plow down the aftermath, instead of pasturing or cutting for seed. I know a man who grew Mammoth Red for seed. He grew one crop of seed (pasturing till June) ; plowed the sod for oats, and the next year followed with wheat, then seeded down again. He grew good crops of each, and the farm did well under the treatment.

### LUCERNE OR ALFALFA.

By F. C. Elford, Holmesville.

There are probably very good reasons why lucerne should be attracting so much attention and gaining in popularity as it is at present. Not the least of these is the fact



\* Single plant of lucerne, showing the large number of stems from one strong tap-root.

that, in spite of the exceedingly dry seasons which we have, it will grow and produce a splendid crop of valuable fodder or pasture. Lucerne is frequently spoken of as a comparatively new plant, while, as a matter of fact, it is a very old plant, having been cultivated by the Greeks and Romans long before the Christian Era. Later it was introduced into South America, gradually travelling northward through New Mexico, Southern, Western and Northern States, and lastly into Canada, where the more it is known the better it is liked.

\* This illustration is taken from O.A.C. Bulletin No. 111 (Lucerne or Alfalfa), published by the Ontario Department of Agriculture, Toronto.

**Why It Is Not More Favorably Known.** I think the chief objections to lucerne have been raised by persons, who, not knowing it, have tried it once or twice and failed. Those who have been growing it for years are its strongest advocates. In our experience of fifteen or sixteen years, the best results have been obtained by following a hoed crop, using as a nurse crop about one bushel of barley or oats per acre. We sow at least twenty pounds of good seed per acre. We put the seeder in front of the drill, thereby getting a deeper covering for the seed. Too much care can not be taken in the preparation of the seed bed. Twenty pounds is little enough; some sow thirty.

**The Critical Period.** The first winter and spring is the critical period of its history, and in order to get it safely past this danger point, it is better not to pasture after the nurse crop is taken off, but to allow the young clover to grow and form a mulch so as to protect its roots from the frost. The next season, though it may not look very promising at first, it will produce two or three crops of hay or fodder, and the stand will become thicker with each successive cutting. Considerable of the lack of success in growing lucerne has been the failure to comply with one or two minor, yet all important rules, viz., lack of sufficient previous preparation of the soil, too shallow covering of the seed, and close pasturing the first fall.

**Time to Cut for Hay.** Probably the most important consideration with lucerne is the time of cutting. It must be cut early. If it is not, instead of a palatable, nutritious hay, we have an indigestible fodder.

**Should not be Grown with other Clovers.** The practice of mixing lucerne seed with red clover and timothy has not been followed with success. By the time the red clover and timothy are ready to cut, the lucerne has passed its cutting stage, and the hay is of poor quality. For this reason lucerne has rather a bad reputation. Prof. R. Harcourt of the Agricultural College, Guelph, issued in 1900 a bulletin (No. 111) on the composition and digestibility of lucerne. His very valuable experiments showed that, to obtain the greatest proportion of digestible matter, the hay should be cut when not more than one-third of it is in bloom. I think it is better to cut a few days before this time than as many days after it.

**Cutting and Curing.** In cutting, our practice has been to avoid, as far as possible, leaving the hay in the swath over night. Start the mower going when the dew is off in the morning, and rake early in the afternoon, when it is still tough, and put it into small coils before night. Much of the quality as well as quantity is lost by allowing it to remain in the swath too long. Cure it in the coil. Hay cut at this age and cured after this manner makes an exceedingly palatable and nutritious ration. All stock, from hens to horses, like it, and will fatten upon it. Chemists claim that for feeding purposes a ton of it is equal to a ton of bran. Those who have fed it extensively say that for working horses it is as good as timothy hay and oats. It makes an excellent pasture for all kinds of stock, especially hogs, but there is danger of pasturing it too closely and killing it.

**A Great Fodder Crop.** As a fodder crop lucerne excels. It can be cut early in May and thereafter every five or six weeks throughout the season. An acre of it will often produce as much green fodder as an acre of corn. As a soiling crop for milch cows it has no equal. Soiling is certainly more economical than a bare pasture, with cattle tormented with flies, scorching in a hot sun. Lucerne is pre-eminently a dry weather plant. It does not burn out when young, like the red clover, and no summer is so dry that it will not produce a crop. Its roots go deep and are able to get from the subsoil all the moisture required. Like other clovers, it has the power of taking nitrogen from the atmosphere.

**A Dry Weather Crop.** It is not an uncommon thing to see a field of lucerne growing green and rank, while the next field of red clover or timothy may be burned almost to the ground. Though some people claim that it will grow on any soil short of bare

rock, the nature of the plant is not adapted to wet soils, nor is it fitted for a short rotation. Since we have to combat dry, hot seasons, farmers would do well to have at least one or two fields seeded to lucerne. This would supplement the pastures and guarantee a certain amount of valuable hay for the winter feeding.

#### DISCUSSION.

Q. How much lucerne do you sow per acre ?

A. F. C. Elford, Holmesville : Twenty pounds or more of first-class seed.

Q. How many crops can be cut per year in Ontario ?

A. Three, and sometimes four, depending on the soil and the season.

Q. How many tons can you grow per acre ?

A. From ten to twenty of green fodder and from two to six tons of cured hay.

Q. In what kinds of soil will it grow ?

A. In any kind of soil that is well under-drained.

Q. How long will it last ?

A. Some say forever. I do not know.

Q. Is it a good dry-weather plant ?

A. It will stand more drought than any plant I know of. The roots going down 12 or 15 feet, penetrate to permanent moisture and pump the water from the subsoil.

Rev. W. W. Shepherd, Superintendent of Indian Farm, near London : Our method of seeding for alfalfa is as follows : When we have finished cultivating our corn for the last time we go up and down the rows and sow alfalfa by hand (or red clover if we wish to seed with this), following the seeding immediately with an A-shaped harrow, covering the seed lightly. The seed germinates at once, and when we take off our corn for the silo we have a splendid growth of plants, which are well protected in winter by the corn stubble, and make a rapid growth early next spring. I regard alfalfa thus sown as one of our most valuable farm crops.

Q. Have you any experience with lucerne ?

A. G. W. Clemons, St. George : I sowed two acres with 53 lbs. of seed, and with a nurse crop of oats, one-half bushel per acre. Did not pasture the first year, but let the aftergrowth act as a mulch. Last season I cut 11 tons of hay in three cuttings.

#### GREEN AND BARNYARD MANURES, AND THEIR APPLICATION.

By F. M. Lewis, Burford.

The question of manure is one that concerns every tiller of the soil. Every farmer realizes that he could raise abundant crops if he had plenty of manure to apply, but the farmer that gives any serious thought as to how to increase the quantity or improve the quality of his produce is the exception and not the rule.

We find that the practise of plowing down green crops for improving our soil conditions is as old as agriculture. Every farmer has realized the value of doing so to some extent. As to what constitutes the value has not been given much consideration.

Soil Humus. The most important question the farmer has to deal with to-day regarding the maintenance or restoring fertility of the soil is, "Soil Humus." At the annual meeting of the Experimental Union in 1900, Prof. I. P. Roberts, of Cornell University, stated that the soils of our continent contained sufficient plant food for the production of from 300 to 500 crops, yet to-day we find our farms already becoming less productive simply because this fertility is an unavailable or locked-up condition, and the successful farmer is the one that is finding the key for working the best combination. The time has been when most every farmer who prided himself on doing proper work piled his manure in the yard at least once, and often more. The more it heated the better work he thought he was doing, when in reality all the good he did was to kill the weed seeds, and it was a wonderfully expensive method. Every day that his manure heap steamed he was losing the very best fertility it contained, and that was only part of the

less, for it has been ascertained that the rotting of the vegetable matter in the soil is the great secret of unlocking the plant food, and especially that which is the most difficult to unlock, "the mineral plant food," so he not only lost fertility by fermenting in the heap, but also lost the power to unlock what is in the soil.

**Increases Moisture.** This is not the only advantage of putting plenty of vegetable matter in our soils, as it has a wonderful effect upon the water-holding capacity of our soils. A piece of land, part of which had been cropped for years, until it was about exhausted of its humus content, was tested for moisture. Another part of the same soil which had only two crops taken from it was sampled for moisture. The atmospheric conditions of each was the same, yet that which was rich in humus contained  $1\frac{1}{2}$  quarts of water per cubic foot more than the other. These same soils, when wet to the same extent and exposed to the sun for ten hours, the one rich in humus contained a quart more moisture per cubic foot. We see by this that the amount of humus in our soils plays a very important part as to its water-holding capacity. When we remember that all plant food in the soil must become soluble in water, and that such food is taken into the plant only through the moisture that is in the soil, we realize the importance of anything in our soils that will increase its water-holding content.

**Plowing Under Green Crops.** Any of our ordinary sandy or clay soils will be benefited by the plowing under of green crops. The amount of benefit derived will depend upon the crop, as some are of so much more value than others. Nitrogen is the most expensive element to buy in a commercial way, and as our clovers, peas, beans, vetches, lupines, etc., have the power of taking free nitrogen from the soil, they are of more value than any other class of plants for green manuring. An acre of alfalfa upon which there was 90 lbs. of nitrogen applied in three years, contained in the crop that was taken off 912 lbs. As to whether it is going to pay best to plow a crop under or gather it for feed, returning the manure to the soil, will depend upon circumstances. If our soil is impoverished and much robbed of its humus, then it must have an abundance of vegetable matter before first-class results can be obtained from the application of fertilizers. This is not encouraging to the farmer who is cropping his farm, and expecting some day to make it profitable by applying commercial fertilizers.

**Value of Manure.** The value of our manures depends largely upon three things: The care which we take of it, the age of the animal consuming the food, and the kind of food we give it. The ideal condition for our manures is to keep it under a shed, tramped sufficiently to prevent heating, and kept moist enough so if it should warm up a little it will not fire-fang. Fire-fanged manure is not very valuable. The following table will give the reader some idea of the value of keeping manure in the yard in a compact form, rather than scattered. Bear in mind that manure loses only by fermentation and washing, and not by drying.

Manure in heap in the open yard.	Manure spread in open yard.
Total weight of manure.	Total weight of manure.
Nov. 3, 2,000 lbs. Nitrogen . . . . 12.9	Nov. 3, 2,000 lbs. Nitrogen . . . . 12.9
April 30, 1,428 lbs. Nitrogen . . . . 12.8 "	April 20, 1,730 lbs. Nitrogen . . . . 9.2 "
April 23, 1,405 lbs. Nitrogen . . . . 9.3 "	Aug. 23, 1,226 lbs. Nitrogen . . . . 5.0 "
Nov. 15, 1,391 lbs. Nitrogen . . . . 9.2 "	Nov. 15, 1,150 lbs. Nitrogen . . . . 4.5 "

Many barnyards seem to be selected with the purpose of having them wash out all they can. The probability is that when manure remains in such yards over the summer that a great deal of the value is lost by washing out and entering the ground at some point where it does not do any good.

Young growing stock gives manure of less value than stock that has come to maturity. What food the latter consume more than is needed for support is given off in the dairy cow as milk, and in the beef animal, stored as fat, and in our working animals is used up as energy, replacing the tissue which are constantly wearing away. The young growing stock give off in solid and liquid excrement from 50 to 65 per cent. of the fertilizing value of food consumed. Dairy cows, 75 per cent., and fat cattle, or animals at rest, 90 per cent. You will conclude then that if you are going to buy stock

for feeding that you will buy mature animals, as their manure is of so much more value. There is something else to consider. The lighter growing animals are the cheaper; they will put on a pound of gain. Take, for example, hogs. This table gives the amount of meal necessary for an animal at various weights to produce one pound of gain.

From 54 to 82 lbs.... 3.10 lbs. meal      From 115 to 148 lbs.... 4.38 lbs. meal  
From 82 to 115 lbs.... 3.75 lbs. meal      From 146 to 170 lbs.... 4.55 lbs. meal

Several experiments by private individuals, as well as experiment stations, bear out the correctness of this statement. This is not only true of hogs, but of other stock as well.

Fertilizing Value of Foods. The next thing to consider is the fertilizing value of food consumed, and we should keep this in mind in purchasing food for our live stock.

All of our farm produce contains two elements, or combinations of elements, known as proteins and carbohydrates. In foods rich in protein we get the elements the animals require for building the bony and muscular structure, and the material our dairy cow uses for milk production. The carbohydrates furnish the material to supply the animal with fat, heat and energy. Some of our foods are rich in one form and some in the other. Bear in mind when buying that foods rich in protein are the most expensive. We have not time here to consider carefully this question of feeding, but the proper proportion in which to feed for the proper nourishment of the animal body is about one of protein to six of carbohydrates. This will be somewhat varied according to what we wish to accomplish by our feeding. By a careful study of the following table we will be able by comparison, to find out the feeding, as well as the manurial value, of some of our more common crops. Nature has dealt kindly with us, for we find that those which are of most feeding value, or most costly to buy, yield us the most value as fertilizers.

## NUTRITIVE RATIO.

	Protein to	Carbohy- drates.	Fertilizing value.
			Per ton.
Wheat .....	1	9.9	\$6 99
Corn .....	1	12.	4 95
Rye .....	1	11.	5 42
Barley .....	1	9.3	4 72
Oats .....	1	5.8	6 22
Peas .....	1	2.8	9 04
Buckwheat .....	1	6.8	4 02
Soy and Sajo Bean .....	1	1.9	16 10
Cow peas .....	1	3.1	11 32
Wheat bran .....	1	3.8	10 33
Wheat mid .....	1	4.8	7 70
Buckwheat mid .....	1	2.1	14 03
Linseed meal .....	1	1.6	16 73
Cotton seed meal .....	1	1.2	19 87
Clover hay .....	1	6 0	7 47
Alsike .....	1	5.5	7 71
Alfalfa .....	1	4.1	7 34
Timothy .....	1	16.2	4 35
Cow peas .....	1	3.8	6 62
Soy bean .....	1	3.9	7 10
	Nutritive ratio.		
Wheat straw .....	1 : 65.		2 02
Barley .....	1 : 61.		5 46
Peas .....	1 : 8.		5 84
Soy or Soja bean .....	1 : 18.		4 74
Corn stover .....	1 : 17.4		4 13
Corn ensilage .....	1 : 16 5		1 13

You will see by this that the less carbohydrates to one of protein, the more it costs you in the market, and the higher value it is as a manure. Let us as farmers seek to produce more of this class of crops and reap the double advantage. When buying we

must take stock of what we already have, as to its feeding value, and then buy something to mix with it to get a balanced ration. Sometimes we might sell and buy something of more value to us.

At another point we have lost a great deal. How common it has been to find in our stables a row of holes in the floor behind our stock to let the liquid get away. We saved the solids and lost the liquids. Take notice of the following table and see where the money went :

Horses solid \$1.36.....	Liquid \$8.62	Sheep solid 1.59.....	Liquid 11.31
Cattle solid .86.....	Liquid 3.14	Hogs solid 1.79.....	Liquid 3.06

Cut straw, leaves, dried muck and sawdust in limited quantities should be used as an absorbent, and not let one bit of liquid get away. Cement floors are of great value to us as farmers.

Clover is such an important crop that anything regarding its use to best advantage is of value to us. Fertilizing value for plowing down of clover at different stages of development.

	Per Acre.
Plants, 5 to 7 inches high.....	\$21.94
Plants, 12 to 14 inches high.....	34.64
Plants, blooming.....	37.06
Plants, matured.....	43.96

All information the writer has been able to gather points to the correctness of the table. A man cut a field of clover for hay. One side of it was pastured by sheep the balance of the season ; a second crop of hay was taken from the other side. The following season he noticed his grain crop was decidedly better on the part that had the two crops of hay taken off it. The following season he cut a field for hay ; from the first half of the field he took the second crop of hay off ; the other side he let mature. He found that between the time of taking off the second crop of hay and the maturing of the other side that the root extent of clover had doubled on the growing crop, and that the increase of nitrogen was as eight to five. The most which the maturing crop of clover loses is the sap, which is only water, and it gains a great deal in root, which makes humus, and also gathers a large amount of nitrogen.

The greater part of our successful farmers are putting manure direct from the stables upon the land during the winter season, and report better results than where drawn out and spread later in the season. There is one class of men that object to this method, and they are the men on heavy clay soils that are not underdrained, and no man can get the best results out of a clay farm until it is underdrained.

The roots which feed on this manure are near the surface, the deeper roots feeding more on the mineral elements, and we want to make it as easy for our plants to feed as possible.

#### DISCUSSION.

Q. Would you put manure out on hilly land in the winter ?

A. I have frequently met men on hilly farms who report having splendid results. It will depend largely upon the nature of the soil. Try it for your own satisfaction. You can afford to lose a little for the advantage gained in getting it out early

Q. Would you not as soon plow down rape as clover ?

A. No ; you can get everything in the clover the rape could possibly give, and the clover gathers nitrogen and seems to impart a tilth to the soil which few other crops give.

Q. Do you think plowing clover under of more value than to feed it ?

A. It certainly does most good plowed down, for then you get all there is in it.

Q. Is coarse manure the best for all soils ?

A. Short manures will probably do best on very light soils, and a very coarse manure is often best for underdrained clays, greatly improving the tilth.



Q. Why is barley straw of more value as manure than wheat ?

A. Barley straw is exceedingly rich in potash.

Q. Do you think clover hay better for working horses than timothy ?

A. Yes; the clover is rich in the material for repairing the muscular waste which the working horse necessarily incurs.

Q. I have rye, barley, oats, corn, and some timothy hay. How can I feed them to get the best results ?

A. You cannot make a balanced ration out of this lot, but peas, bran, linseed meal, cottonseed meal or gluten meal would be of value to you to help balance up what you have. You might be able to sell something you have and purchase to advantage, not forgetting to consider feeding value, fertilizing value, and select something your particular class of stock will relish.

Q. Will it pay to feed my dairy cows concentrated feeds in winter ?

A. If you have good cows it certainly will. If they won't pay to feed there is no profit to be got out of them.

Q. What crop per acre will give the largest amount of hog feed ?

A. Mangels or turnips. Eight pounds of roots are equal to one pound of grain, and four pounds of grain will give one pound gain in live weight in hogs. Figuring upon this basis, an acre of roots, yielding 800 bushels, will give 1,500 pounds of live weight. An acre of barley yielding 42 bushels, 504 pounds live weight. The value of barley straw should be considered.

Q. What is that soy bean you speak of ?

A. It is a Japanese bean, which is as yet only in its experimental stage, but promises well and is worth watching, and some care in cultivation.

Q. What are cow peas ?

A. The cow peas are really a bean of great value in southern countries, but as yet are only experimental in the north.

Q. Considerable is heard now-a-days about small tubercles, or nodules, on the roots of clover and peas, and of their power in taking nitrogen from the atmosphere. Does this apply to corn ?

A. John Parton, Weston : No; there are no tubercles on the roots of corn. The question as to the formation and use of tubercles is a much debated one. They are found, as far as we know, only upon the roots of leguminous plants, such as clover, peas, vetches, etc. Careful experiments conducted by our best scientific men have shown that these nodules or enlargements upon the roots of plants are caused by the action of bacilli on the roots of plants. The plant grows the nodule, and thus affords a lodging place for the bacilli, and in return the bacilli extract nitrogen from the free air in the soil and store it in the root of the plant. This process is scientifically known as symbiosis, which might be simply defined as a beneficial partnership for both, the plant providing the bacillus a home, and the bacillus in return furnishing fertilizing material for the plant. It is for this reason that clover and other leguminous plants are so valuable in a rotation of farm crops, besides simply drawing on the fertility of the soil they have the additional power of extracting fertilizing material from the atmosphere. In this way they are storers of plant food, rather than exhausters of it. This explains why we are able to cut from two or three tons of clover hay per acre from land, and the following year grow with success almost any farm crop.

Q. Which has the greater manurial value, green or well-rotted manure ?

A. There is less loss in putting manure on land green than in rotting it before it is applied. Besides this, there is a special advantage that in putting the manure on in the winter time it is done at less expense. In rotting the manure under the most favorable conditions chemists tell us that it loses 50 per cent. However, when it is on the land in the green condition and the fermentation allowed to take place in the soil, as soon as any plant food is liberated it is in the place where it is most readily taken up. Besides this, the decay of manure in fermenting has a beneficial effect in warming up the

soil. Experiments carefully conducted at Guelph, as to applying manure fresh and rotted, proved that the ordinary way of leaving manure exposed to the weather was wasteful; when protected from rain it was still subject to loss, and when put on fresh the best results were obtained.

Q. Are peas a satisfactory crop for manure?

A. Yes; they would be to plow in green. If clover can be grown, however, there would be no need to plow in peas. The same work that peas would accomplish could be done much cheaper by clover.

Q. Myron A. Gee, Fisherville: Do you approve of drawing manure in winter?

A. Yes, draw and spread on soils to be top-dressed and plowed down for peas or hoed crops, but I would not put it on deep snow on rolling lands. Manure can be drawn out just as spring is breaking, on frosty mornings, with a good shod sleigh or large stone-boat.

Q. Is liquid or solid manure the more valuable?

A. Weight for weight, liquid manure.

Q. Can we continue to grow corn and other grain crops without the use of commercial fertilizers?

A. Major Sheppard, Queenston: I think so, for many years to come, at least, by making the most of the manure we have. By growing clover and other plants of that nature we can grow good crops without the aid of artificial manure. What the future may bring forth we cannot say.

Q. Is it well to plow in manure?

A. Chas. S. Moore, Stanbridge, Que.: Not as a rule, unless the manure contains so much straw that it cannot be worked in with a harrow.

Q. What do you think of manure sheds?

A. J. W. Clark, Onondaga: They are a splendid thing, as you can keep the manure from being exposed to the snow and rain, and retain all the liquid part, which is far the most valuable.

Q. What do you use to absorb the liquid part?

A. I find it pays to cut straw for bedding, as it is much more easily handled, and can be spread on fall-plowed land, and worked in with the cultivator without any difficulty. In this way you have the manure mixed with the soil where the plants can make the best use of it, and it acts as a mulch in dry weather. I have never seen a failure of a catch of clover when the manure was applied in this way.

Q. Would you lose much by plowing down manure 6 or 7 inches?

A. I think you would to a considerable extent, especially if we happened to have much rain, as the liquid soaks down, and can only be reached by the deep-rooted plants, such as clover.

Q. How would you handle manure?

A. T. G. Raynor, Rose Hall: I should handle it to prevent as much waste as possible, by saving with the solid all the liquid. To do this satisfactorily it must be either kept in sheds and prevented from heating by tramping, or applied fresh to the soil.

Q. What is the best time to draw out manure?

A. If one can, I would say, as fast as it is made. Otherwise, in the early spring, before the sleighing is done, if possible. Next in order would be on planting ground after seeding.

Q. Would you plow manure under?

A. No, not if I could work it satisfactorily in the surface soil. If not, I would plow in as lightly as possible.

Q. How much loss is incurred by leaving manure in the yard all summer?

A. I would say, fully half or two-thirds of both bulk and plant food.

Q. Is the quality of the manure affected by the feed?

A. Most assuredly. The foods richest in protein or flesh-forming elements will make the richest manure. Care must be taken to save the liquid as well as the solid.

Q. Will manure waste much when spread in winter ?

A. No, except when applied on ice, and a freshet might follow. It suffers nothing from evaporation.

Q. Would you recommend putting manure on a steep hillside in winter ?

A. Duncan Anderson, Rugby : No; on steep hillsides and low, flat fields that are covered with water in the spring. I would not advise spreading the manure on snow. On moderately level fields winter spreading of manure gives good results.

Q. Do you approve of buying artificial fertilizers ?

A. A. Elliott, Galt : Not until we care for and properly apply our barnyard manures.

Q. How about bone dust ?

A. Bone dust or broken bone is not an artificial fertilizer. I refer to mineral or rock fertilizers.

Q. Do these fertilizers contain plant food necessary to plants ?

A. They do, but evidently it is not available.

Q. What is the most necessary element in the soil ?

A. Humus.

Q. Why.

A. 1. The presence of humus in the soil in sufficient quantities renders available inert plant food in the soil.

2. Humus increases the capacity of the soil to retain moisture.

3. It renders heavy soils more friable and makes light soils more compact.

4. Soil rich in humus, being dark in color, is warmer during the growing season.

Q. What is humus ?

A. Decaying vegetable matter in the soil.

Q. Do you advise the use of salt as a manure ?

A. Myron A. Gee, Fisherville : No; it acts like a physic. It helps to elaborate plant food, but is only direct food to mangels. With an application of 200 to 300 pounds per acre it seems to pay.

Q. Would you use plaster ?

A. Yes. I believe plaster has its place. One place I believe it would pay to use 100 or 150 pounds per acre, is when we are seeding down with grass seeds. We don't always see the benefits in its use. It tells more in a dry season than in a wet one.

Q. Does the soil lose ammonia from the decay of manure in the soil ?

A. John Barton, Weston : No; ammonia exists in manure in its free form in very small quantities. The elements of ammonia are found in urine in a substance known as urea. It is found also in the nitrogenous waste of solid food and animal fertilizers, such as blood, bones, etc. Ammonia is liberated from urea in the soil by being acted upon by various acids, such as sulphuric, phosphoric, and nitric. The final products of these acids are much more stable than the original substance urea, and are not given off by evaporation, but may become dissolved and taken up by the roots of plants.

Q. Is land plaster, or gypsum, of value to growing corn ?

A. Yes. Plaster is gypsum, or calcium sulphate. It has very little direct manurial value, because the calcium, or lime, is not a fertilizing element in plants. However, it has an indirect advantage, in that some unstable forms of ammonia, such as ammonium carbonate, are broken down by it, and are turned into forms which will not evaporate from the soil, but are used up by being dissolved in the soil moisture. Gypsum would have a greater advantage on soils deficient in lime, such as light, sandy loams, but would probably not be of any great advantage on soils with limestone bottom. With corn it should be put between the rows and worked in with the cultivator.

### CORN.

The following paragraphs have been taken from the last report of the Agricultural and Experimental Union, and the information should prove useful to those who grow corn for the silo, for seed or for table use :

**Fodder Corn.** The Mastodon Dent has been found to be one of the best silage corns for the early soils in Southern Ontario. The Wisconsin Earliest White Dent has given excellent satisfaction as a silage corn in Central Ontario, and the North Star Yellow Dent variety appears to be very well suited as a silage corn for many districts of Northern Ontario. Although there was a considerable amount of difference in the average yield per acre in the tests of the three varieties of corn, it will be seen that the three varieties were about equal in popularity.

**Corn for Grain.** In each of the past two years different varieties of corn have been distributed and tested throughout Ontario from the standpoint of grain production. Each experimenter was asked to weigh the total crop of each variety and then to husk, drv, thresh, and weigh separately the grain produced by each kind of corn. Two varieties of flint and one variety of early dent were distributed in each of the two years. The North Star Yellow Dent corn made a very high record in the average results of each year's co-operative tests, producing an average of 59.9 bushels of grain per acre in 1900, and 48.3 bushels per acre in 1901. The North Star Yellow Dent variety produced an average yield of corn which was 11.4 bushels per acre greater than that of the Compton's Early in 1900, and which was 4.7 bushels per acre more than Compton's Early in 1901. Combining the two year's experiments, we find that the varieties stand in the following order in their yield of grain per acre: 1. North Star Yellow Dent. 2. King Phillip. 3. Saizer's North Dakota. 4. Compton's Early.

**Sweet Corn.** All three varieties of sweet corn were quite popular among the experimenters. The Kendel's Early Giant proved to be slightly the earliest, the Country Gentleman gave the largest number of ears, and the Mammoth White Cory was the most popular of the three varieties. These are all good varieties for the production of green corn for table use.

**Planting Corn in Rows and in Squares.** An experiment has now been conducted over Ontario for three years in succession, in which corn has been planted in rows three inches apart, and, in comparison with this corn, has been planted in squares or hills three inches apart both ways. Exactly the same amount of corn was used for each method. Flat cultivation was used throughout, and the same amount of cultivation was given to each method of sowing. The corn which was planted in squares, or "hills," surpassed the corn which was planted in rows, or drills, in total yield per acre by 1.2 tons in 1899, 1.6 tons in 1900, and 1.1 tons in 1901. In yield of ears per acre, the squares surpassed the rows by  $\frac{1}{2}$  ton per acre in 1899, and  $\frac{1}{5}$  ton per acre in 1900, but the results were equal in this respect in the average tests for 1901. These results throughout are in favor of planting corn in the hills as compared with drills.

## THE CULTIVATION OF CORN.

By Edward Curts, Nashville.

In the cultivation of corn we find it is better to prepare the ground in the fall. Select a field that has had a crop on it, gang plow it first and work it down fine, and leave it until fall. Then plow it again and leave until spring, when it should be cultivated and harrowed. In winter haul out manure and spread it, putting on the ground about ten or fifteen tons to the acre. It may now be plowed and made ready for planting. We find that the best time to plant is from the 24th of May till the end of the first week in June. The method we adopt for planting is plowing in shallow in every third row. This does not give the crows a chance to work on it, and leaves room for the use of the scuffer.

The kind of corn used in this locality with the best results is the Yellow Dent, which, if left a little later in the fall to ripen, makes splendid hog feed as well as fodder for the stock. Last year a small splot of this kind yielded about 100 bushels of ears, while the stalks were just as good for feed. This kind of corn comes to maturity comparatively early, so that the frost seldom affects it.

## DISCUSSION.

Q. What is the best kind of silo to build ?

A. G. C. Caston, Craighurst : No doubt the cement silo would be the most durable. It is much more expensive, but if well built it should last for generations, and would be the cheapest in the end. The cheapest silo is the wooden one, known as the tub or round silo, that is as to first cost. Where lumber is not too dear this kind may be built very cheaply.

Q. What do you think of the octagon silo, built with scantling and lined with dressed lumber inside ?

A. It means a lot of work for nothing, and extra expense. It will not keep the silage any better, nor as well, as the well-made tub silo. No matter what kind of material I used, whether wood, concrete or stone, I would make the silo round. You don't want any corners in a silo. No matter what material is used, the points to be remembered are to have the silo round, deep (never less than 20 feet; 25 or 30 feet is better), smooth and perpendicular inside, and air tight. You could not have anything better than a big round hole in the ground, plastered with cement, if it was not for the trouble in getting the silage out of it.

Q. How would a stone silo do ? Would you advise building one of stone and lime ?

A. Well, my own is partially built of stone and lime. It is built round and plastered smooth on inside, and the staves are set up so as to come flush with the plastered wall inside.

Q. Have you seen any built entirely of stone ?

A. Yes. Joseph Watson of Clifford, Wellington County, has one, and reports it as giving entire satisfaction, and there are many others. No doubt, where stone is plentiful, and the silo is well built, and on a solid foundation, and the inside plastered smoothly, a round silo is all right.

Q. Would a round one be stronger than a square one ?

A. Certainly.

Q. What size should the wall be ?

A. I should say 24 or 30 inches for the first 8 feet, and then gradually taper to about 15 inches at the top, but keep inside of wall perpendicular.

Q. What is the best corn to grow for the silo ?

A. The variety that will always mature in your locality before the frost.

Q. At what stage of maturity should it be cut to make the best silage ?

A. At the glazing or dough stage; that is, just past the milk stage, when the milk in the grain has begun to stiffen to the consistency of thin dough.

Q. What is the cause of mouldy spots here and there through the silage ?

A. That is caused by letting the corn get too dry before putting it in the silo, also improper mixing. Too many dry leaves in one spot causes it to get fire-fanged in spots. Corn should be put right in as it is cut. If corn gets frosted and the leaves are dry, they must be wet. Use plenty of water. It is a good plan to pour several barrels of water on it after the silo is full. If the corn is at the right stage of maturity you won't hurt the corn by having it wet. If it gets a shower of rain and goes in wringing wet it will be all the better. However, if corn escapes frost and is put in at the right stage of maturity, and not allowed to become wilted, but put right in silo as it is cut, there will be enough moisture in it to make it keep all right, providing the walls are air tight.

Q. Do you tramp it ?

A. Yes; I regard that as important. It should be well mixed. Stalks, leaves, and cobs should be well mixed up, especially around the sides, and well tramped down. Never put a lazy man in the silo.

Q. What will silage cost per ton ?

A. About \$1.50 per ton.

Q. Can corn be grown and put in the silo for \$1.50 per ton ?

A. Yes, if you manage it right you can do it for that. There is a great deal in the way you manage the cultivation. I sow in drills 42 inches apart. The rows should

always run north and south. The corn and the weeds come up about the same time. A thorough harrowing with a light smoothing harrow or a weeder at this time, if the weather is dry and sunny, will work wonders, make the corn grow fast, and destroy most of the weeds. A regular use of the scuffler after will ensure a good crop, even in our driest summers.

Q. Would you recommend an early-maturing corn to one that would give a larger yield, but was later and would not mature so well ?

A. Yes, certainly. The difference in quantity is more than made up by the better quality. That is my experience.

Q. Do you believe in early sowing of corn for grain or silage ?

A. Andrew Elliott, Galt: I would rather give my land ten days' cultivation than ten days' planting.

Q. Why ?

A. By cultivation you kill weeds and heat up the soil, promoting a rapid, clean growth, which will bring the crop rapidly forward, giving an early maturity, with abundance of grain.

Q. Do you plant in hills or rows ?

A. I prefer hills. By cultivation both ways the field is kept clean at the least possible cost.

Q. How far apart ?

A. Forty inches.

Q. At what stage do you cut your corn for the silo ?

A. T. H. Mason, Straffordville: Have it just about as ripe as if you were cutting for grain and wanted your stalks in the best possible condition.

Q. Do you let your corn wilt before putting in silo ?

A. No; when mature enough it would damage it to wilt before filling. I do not care to have very much cut ahead of the teams. Even a heavy dew makes disagreeable handling, besides picking up dirt on the leaves and knocking the edge off the knives.

Q. What is the thickness of cement in the bottom of silo ?

A. From three to four inches. Its principal use would be to exclude vermin, and, on some soils, water.

Q. Do you think you could get more corn in the silo if you put three or four men in to tramp it ?

A. You might get a little more in, but it would not pay. One good man to keep it mixed is all that is necessary. Its own weight will pack it enough.

Q. Does ensilage affect the flavor of the milk ?

A. Well-matured ensilage does not affect quality of either milk or butter.

Q. Can cows be fed on turnips and not taint the milk ?

A. Small quantities of turnips may be fed by a skilful feeder along with other foods, and not perceptibly taint the milk. The taint might develop later in cheese and butter. The practice should not be encouraged, especially when the land that will grow turnips will grow better food.

Mr. Beaumont, Bracebridge, made the following statement :

I have grown Compton's Early and White Cap Dent, both very satisfactorily. Think Compton's the best, as it matures earlier. The White Cap Dent gives a very heavy yield. I have no silo yet, but shall build one. Corn-growing has passed the experimental stage in this district, and when properly cultivated and manured gives a very large yield of valuable fodder.

Mr. Hollingworth, Beatrice, Muskoka, also said :

I have made corn-growing a success, and consider it a valuable aid to dairying. I have a silo.

Q. What quantity of corn should be used to the acre ?

A. T. H. Mason, Straffordville: From 6 to 8 quarts per acre ? Too thick seeding is a great mistake. You do not get the same feeding quality or cash value to the acre.

Q. What do you think of shredded corn ?

A. Mr. Hawkins, Brownsville : I have tried it this year, and wish I had not. My cows show plainly what they think of it. I have not yet found a man who thinks well of it.

Josiah Smith, Corinth : I have tried it this year, and find my cattle do well upon it. My corn was a little damp. I did not tramp it, but let it lie as loose as possible. It heated and formed a mouldy crust about six inches thick. Under that crust the feed was all right.

Q. Have you any knowledge of the benefits of a shredder for filling the silo ?

A. A. J. Reynolds, Scarboro' Junction : After one year's experience I find a shredder is very satisfactory. The ensilage is reduced very fine, and the corn is removed from the cob, which is also broken up. More ensilage can thus be packed in smaller space. It also keeps perfectly.

Q. Should a silo be protected from the frost ?

A. It is not necessary to have a silo frost-proof. If the silage is frozen it should be thawed before being fed, which is very inconvenient. The colder the ensilage is kept, without being frozen, the fresher it will be.

Q. How much ensilage should be fed to each cow daily ?

A. About 30 to 35 pounds, which should be mixed with cut hay, straw or pulped roots.

Q. Is not corn more easily grown than in former years ?

A. Major Sheppard, Queenston : Either from better varieties being introduced or from some climatic conditions, corn can now be grown successfully much farther north than it could 15 or 20 years ago. In fact, twenty years ago, there was no dent corn grown in Ontario, except in the Counties of Essex and Kent, and even then it was not considered safe to depend on the dent variety.

## SOIL CULTIVATION.

By Myron A. Gee, Fisherville.

The four great sources of national wealth are the productions of the soil, forests, mines, and fisheries. The ore taken from the mines can never be replaced, the forests require centuries to grow another crop, the fisheries under modern methods are being depleted, but the soil, if intelligently tilled, a proper rotation of crops grown, and a good selection of seeds sown, will produce year after year, for an indefinite period, good paying crops.

The three main principles of soil cultivation are, first, drainage; second, manuring; third, tillage. Drainage is first to be considered, as no crop will yield satisfactorily if there is a surplus of surface water.

Drainage. Lands are drained by surface drainage and tile drains. Sandy lands generally have natural drainage, needing neither ditches nor tile. Land that is well drained can be worked earlier in spring and early sowing always increases the crop. It is also more easily worked than undrained land. Drainage also prevents the loss of plant food by its being absorbed into the soil, instead of running off.

Manuring. All stock should as far as possible be fed on the farm, and the manure taken good care of, if the fertility of the farm is to be maintained. Have the barn-yard small, so that it can be deeply bedded all over. Draw the manure directly from the stable to the field, or pile it in a compact heap, mixing all kinds together to prevent fire-fanging. Farm-yard manure both fertilizes the ground and supplies humus. The humus improves the mechanical texture of the land and prevents leaching. It holds moisture from the sun, and by making the land dark in color it absorbs more heat from the sun. This makes the land warmer, causes a quicker and more vigorous germination of grains sown, and is a considerable factor in growing a heavy crop. The vegetable matter of manure in decomposing acts mechanically on the mineral elements in the soil, and makes the phosphates and potash available for the growing plants. Humus, or veg-

etable matter (which is mostly nitrogenous), is the element lacking in nearly all impoverished fields, and can be returned to the land by plowing down clover and green catch crops, and growing lots of peas.

Tillage. The preparing of a seed bed is very important. It matters not how rich a field may be, if the roots of the plants are not able to range through it and take the fertility out, a partial crop will be the result. Land, especially clay, should not be touched when too wet. Soils need stirring to allow heat and air to get into them and to aid in preparing plant food. By having a fine mulch of dry soil on the surface of the land it prevents moisture being taken from it by sun and wind, arresting it just where the growing plants need it. Tramping land by stock when wet, and pasturing too heavily on the catches of clover, are two reasons why farms are not more productive than they are at present. Ontario must soon come to the day when intensive farming will be the practice, rather than the extensive farming which is so much followed to-day.

Q. How would you drain lands that are too heavy to tile ?

A. Myron A. Gee, Fisherville : Plow in narrow ridges of from 12 to 20 feet in width, and set it up well, having no hollow places in the ridge. Run cross-furrows through the lower levels, and scrape out the main ditches to three feet wide and one foot deep, with sloping sides. This ditch carries lots of water, and machinery runs across easily.

Q. How should a rotation be arranged ?

A. Have a light-feeding crop follow a heavy-feeding one, as wheat after peas, or oats on clover sod. Deep and shallow rooted crops should alternate.

Q. Do you plow pea stubble, or root or corn stubble ?

A. No ; we cultivate pea stubble for fall wheat, top-dressing knolls and seeding down. Root or corn stubble should be furrowed out in the fall and ditched well. Sow oats or barley on it in the spring.

Q. What about grass peas ?

A. Grass peas do well on clay soils, are bug proof, the straw is good, and the yield fair. Sow about  $1\frac{1}{4}$  bushels of seed per acre, and no more. If sown too thick all grow to straw ?

Q. How do they compare with others for feed ?

A. Seem stronger and need to be diluted more with lighter grain.

Q. Do you grow mixed crops for feeding ?

A. We grow a mixture for horses and pigs, sowing oats 3 bushels, goose wheat 1 bushel per acre, and it is splendid. Also oats, grass peas, and goose wheat do well. Sow the mixture thicker than you would either grain alone.

Q. How much alfalfa do you sow per acre.

A. Twenty to twenty-five pounds. It must be sown liberally to get a thick stand, which prevents too much coarseness in the hay.

Q. Have you any experience in growing speltz ?

A. No, but I have heard a good deal, and fair to splendid yields have been obtained ; as high as 45 bushels per acre. It appears to be a crop suitable to poor soils. When cut green, straw is like hay.

Q. Have you any experience in cow peas ?

A. It is not a crop suitable for growing in Ontario. It is a southern crop, not suitable to our short seasons.

Q. Have you noticed much sorghum grown for feed ?

A. Not very much. Some claim it to be a good feed in the fall.

Q. Have you had experience with mammoth clover ?

A. No, but it is similar to the common red. It is of ranker growth, but does not give so good an aftermath. It is good for pasture, or to sow in the spring for plowing down in the fall.

Q. How would plowing in of clover compare with manure ?

A. I have no figures to give the money value, but I know it is a first-class practice to plow in the second growth of clover, as it improves the soil, both chemically and physically. It adds humus and plant food as nitrogen.

Q. Do you consider alfalfa better than red clover for fertilizing the land ?



A. The red clover is the kind to use in a rotation. Lucerne is only recommended for a permanent crop.

Q. Do you know anything about a weeder ?

A. Yes, I have one and like it well on potatoes, corn and the grain crops.

Q. Have you any idea of the comparative value of alfalfa and red clover as hay ?

A. Yes, we arrive at that from their nutritive ratio and manurial value. In feeding value alfalfa excels, as its nutritive ratio is 1:3.8. and red clover is 1:5.8., according to Prof. Henry's work on "Feeds and Feeding." In manurial value they are about the same.

Q. What size should the tile be for a main drain ?

A. A. W. Peart, Burlington : That depends upon the quantity of water to be removed, and one must use his judgment. I have found a three-inch tile to answer very well for my purpose. Sometimes a four-inch or an eight-inch tile may be necessary. In a general way, the less the fall the larger the tile should be.

Q. What fall should a drain have ?

A. I consider an inch to the rod a fine fall, but have drained on an inch to 50 feet, and if necessary would drain on even less, using large tile.

Q. How far apart should branch drains be ?

A. That depends on the nature of the soil and the subsoil. In porous land we lay them from 30 to 35 feet apart, and in clays 20 to 25 feet.

Q. Should tile be laid below the frost ?

A. Not necessarily. In my experience, I have never known frost to break tiles, as long as the water was running freely through them. Of course, if the water were dammed up and frozen solid, then the tile would burst. We lay our drains about three feet deep.

Q. Should anything be laid over the joints before the earth is filled in ?

A. Yes, inverted sods or straw several inches deep.

Q. How does water get into tile ?

A. Chiefly through the joints, but partly through the tile itself.

Q. Would it pay to drain land that has a reasonably good natural drainage ?

A. I think not for ordinary farming purposes, but where lands are low and wet there is no better way to invest a little money. Such lands when drained are the best on the farm.

Q. Do you believe in plowing much.

A. In a general way I think that heavy clays should be plowed oftener than lighter soils, as they get very stubborn and compact. Where fields are weedy the plow is the radical and effective way to make a clean seed bed. I believe, too, in fall plowing for spring crops.

Q. How can we keep moisture in the soil ?

A. By keeping plenty of vegetable matter in the land, and by frequent surface cultivation.

Q. How can you tell the depth of surface soil ?

A. It is usually darker in color than the subsoil.

Q. How deep do you plow ?

A. That depends. If the soil be deep, and plowed in the fall, I plow about 6½ to 7 inches deep for ordinary spring grains. If plowed in the spring, an inch or two lighter. If the surface soil is shallow I plow lighter.

Q. What is the best time to plow a field to kill the Canada thistle ?

A. August.

Q. How would you kill couch grass ?

A. Either with a hoe crop or by summer fallow.

Q. How much salt do you use to the acre ?

A. One hundred and fifty to two hundred lbs., sown broadcast after field is plowed, and before it is cultivated for crop.

Q. Would you use salt on a clay field ?

A. No, nor on a wet one. I use it on the lighter soils, chiefly for roots.

Q. Are soft wood ashes as valuable as hard wood ?

A. Four-fifths as valuable. I would not use ashes on clay soils. It would be a waste of the potash. They are used more on sandy and gravelly loams.

Q. Are special or artificial fertilizers of any use ?

A. They are valuable in their place, especially in growing fruits.

Q. What principle should we aim at in the rotation of crops ?

A. To have, as far as practicable, a nitrogen-gathering crop precede a nitrogen-consuming one, e.g., clover, peas or vetches preceding wheat, barley or corn.

Q. Why do you lay so much stress on clover ?

A. Because it is the life of the farm, the secret of the bank account, and the "Eureka" of the progressive farmer.

Q. Can soils be inoculated with nitrogenous germs to make them more fertile ?

A. Yes, according to recent experiments in Germany and the United States. As yet, though, this seems impracticable in agriculture.

Q. Would you prefer plowing root and corn land in the fall ?

A. T. G. Raynor, Rose Hall: No. As good and often better results are obtained from the spring preparation of the corn or root stubble with the disc harrow or spring-

tooth cultivator to prevent a hard crust forming in the spring. tooth cultivator. It is wise on clay ground to work the surface in the fall with a spring-  
the ground is rich, a less quantity will do, and if poor larger quantities of see

A. As early as possible, although it may be sown at different times with good results. It may be sown broadcast, with oats or barley, in the spring, or it may be sown in drills, as in the case of turnips.

Q. Is frozen rape injurious to the stock, and of what nourishment is it to the soil ?

A. Frozen rape is injurious to feed while it is frozen, but not when the frost is drawn out. It would be a good crop to plow down, but it is better to feed off and return the manure from stock as the result of feeding it.

Q. Have you found a remedy for the pea bug, or a substitute for the grain ?

A. Yes; one way would be to stop growing peas for two years, except the weavily-proof variety (viz., grass peas).

Q. Have you any experience in sowing mixed grains ?

A. Yes, and I like the practice very much. Peas, oats and goose wheat make a good mixture, sowing about two bushels of the mixture per acre.

Q. How about the ripening of the mixture for threshing ?

A. Varieties may be selected which ripen quite evenly, and I would cut it on the green side.

Q. How deep would you work your seed bed in spring ?

A. That would depend to some extent on the variety of grain to be sown. Speaking in a general way, from two inches to four inches.

Q. What is the best time to sow clover seed ?

A. If on fall sown grain I would say very early in the spring, while the ground is still honeycombed with frost. If sown with spring nurse crops, as early in spring as possible. If sown in the fall, as a number are now doing, I would sow it early in September.

Q. How much grain do you sow to get a good stand of clover ?

A. I aim to sow the nurse crop sparingly, about one-third less grain than I would ordinarily sow, and cut it at harvest time on the green side.

Q. How much clover seed do you sow per acre ?

A. That will depend upon the richness of the land; from 5 to 12 pounds per acre. If the ground is rich a less quantity will do, and if poor larger quantities of seed will be required.

Q. Do you sow grass seed before or behind the drill ?

A. Duncan Anderson, Rugby: Always in front of the drill.

Q. Is it advisable to summer fallow ?

A. A. J. Reynolds, Scarboro' Junction: Not at all. We can grow a crop of corn, and by proper cultivation can secure the very best preparation for fall wheat. Do not plow the land after the corn is removed. The corn stubble and roots serve a double purpose of holding the snow on the land and of preventing heaving by frost.

Q. What amount of oats should be sown per acre?

A. The amount of seed will depend on the quality and condition of the soil. By sowing comparatively thin we can secure a better quality of grain. I would sow about  $1\frac{3}{4}$  bushels to the acre. By drilling the grain less seed should be sown.

Q. Is the Canada thistle as common as it was a few years ago?

A. No. By thorough cultivation and more hoe crops we have greatly checked the growth of this thistle.

Q. Is corn not hard on the soil?

A. Andrew Elliott, Galt: Corn is a gross feeder, and any plant that produces as large an amount of food must consume a good deal of plant food in growing, but I have found that better crops can be grown after corn than after roots. I also find that corn is the best crop to follow with clover that I know of. Rarely will you miss a catch of clover following corn. Therefore it cannot be very hard on the soil.

Q. Is it not best to sow corn quite thick when one has not a silo?

A. Get a silo and sow thin. Cultivate well, feed properly, and you will wonder how you got along in the old way.

Q. What is the best crop to precede corn?

A. Clover.

Q. How do you prepare it?

A. During winter draw out and spread the raw manure as made. About the middle of May plow five inches deep. Thoroughly pulverize and continue cultivation until May 24th or June 1st, then plant.

Q. Is not this too shallow plowing?

A. I do not think so. The natural fertilization is on the surface. I aim to have the first four or five inches of my soil rich, rather than have that fertility spread through eight or ten, so that the fertility may be quickly and abundantly available for the young plants.

Q. Have you followed surface manuring and shallow cultivation for any length of time?

A. Yes, and the longer I practise it the better I like it.

Q. How many loads of manure to the acre?

A. Ten or twelve. Manure light and often.

Q. Will not shallow cultivation leave the soil so solid that roots will not penetrate a sufficient depth?

A. In most soils the roots of clover and other deep-rooted plants keep the subsoil sufficiently open. A grubber or subsoiler may be run over to loosen the soil, but not bring it to the surface.

Q. You speak of the middle of the day being the best time for cultivating. Does not the soil dry out too much in stirring it up at that time?

A. John Barton, Weston: No. When the soil is stirred the heated air at 85 or 90 degrees F. enters it, and the soil being cooler three or four inches beneath the surface than it is at the top, the warm air is condensed, and is forced to give up its moisture, which enters the soil, and is thus assimilated by the roots of plants.

# HORTICULTURE.

## FRUIT NOTES.

By A. W. Peart, B.A., Burlington.

Apples are the most important fruit grown in the Province, different varieties being adapted to a wide range of soils and climate.

In planting an orchard in a given district I think it is always well to ascertain, as far as possible, what varieties do the best in that district, and then plant accordingly. In the Burlington locality, for instance, the Duchess for summer, the Ribston and Blenheim for fall, and the Baldwin, Spy, and Greening for winter, appear to take the lead. The same principle applies to other sections in the adaptability of varieties. I think that in the past the mistake has been very generally made of planting trees too closely together. Instead of 25 and 30 feet apart, 35 to 40 feet would be better, according to the nature of the soil. To do their best, trees, like men, should have plenty of room.

**Soil for Apple Trees.** Apples will do well in a broad range of soils, a heavy clay being probably the least suitable. The land, however, must not be wet, otherwise the trees will soon perish. While planting, people are often in too big a hurry; the trees are not set deeply enough, and the result is that in a few years they either lean badly in the direction of the prevailing wind, or are eventually blown out altogether.

**Thinning Fruit.** A good deal is said and written about thinning out fruit by hand when small, so as to improve the size and quality of the remainder. In the case of apples, pears, and plums, at least, I think that this is impracticable, save to the amateur, who is not making his living by growing fruit, and that the practical, profitable, and economical way to thin fruit is by thinning out the branches; in other words, by pruning. If the apple-growers of Ontario wish to increase the profits of their orchards, it seems to me that two things must be done: First, to care for their trees, so as to improve the quality of the fruit, and, second, to so handle the fruit as to realize the greatest possible margin of profit. Under the first of these are involved pruning, spraying, cultivation, and feeding; under the second, careful picking, packing, and grading, whether in boxes or barrels, for the British, foreign or home markets.

**Pears.** Pears have not so wide a range in climate in this Province as apples. A soil very rich in humus, or a light, sandy soil and subsoil are not well adapted for pears. There is apt to be too much growth, and consequent blight, in the former, and a deficiency of potash in the latter. For profit probably Clapp's Favorite, Bartlett, Duchess d'Anjou, and Kieffer stand about first. The four latter are essentially export pears. Better and more reliable cold storage service will, however, have to be provided before growers will venture to stake much on exporting their Bartletts to Great Britain. If placed on the market there in good condition, they realize handsome prices. As with apples, they should be carefully graded and packed for shipping.

**Plums.** Plums are widely grown in the Province. As the demand for them is chiefly limited to our Canadian markets, it would appear that the acreage is about wide enough for profitable production. Of the domestic varieties, the Lombard, Glass Seedling (Quackenbos), Reine Claude, Imperial Gage, Bradshaw, Niagara, Saunders, and German Prune do well. The Lombard and Reine Claude trees begin to bear heavy crops very early, and consequently do not reach the size of the Quackenbos, Bradshaw, and Niagara. The Japan varieties, Abundance and Burbank, appear to have a distinct place in a commercial orchard. Most plum trees should be picked twice, the first time removing the ripest and best-colored specimens. This gives the others a better chance to mature.

**Grapes.** Grape growing seems to be about co-terminal in latitude with pears. In districts where the vines have to be removed from the trellis and laid down for the winter to protect the buds from cold, it is a question whether the extra expense involved would not wipe out the margin of profit. In sections at all favorable, grapes, one year

with another, acre for acre, probably net the grower as much money as any other variety of fruit. They are a reliable crop. For the best results they should be pruned severely every March. Different systems are used. I use the spur system; that is, cutting the new buds back to one or two buds from the base, and leaving about sixty buds in all on a vine over four years old. Summer pruning, or cutting back the new fruiting shoots to three or four leaves from the outer bunch, makes larger fruit and tends to lessen mildew. The Worden is perhaps the hardiest grape grown. The severe and prolonged frost of February, 1899, injured it very little. This variety, with the Concord for black, and the Delaware, Massassolt, and Lindsay for red, and the Niagara and Moore's Diamond for white, do the best here. Grapes as well as pears are heavy feeders on potash, and therefore, if they are grown on light soils, require liberal applications of this food, either in the form of wood ashes or muriate of potash. I have made several attempts to place at a profit the better class of grapes on the British market, but so far without any marked success. They seem to reach there with the berries shelled from the bunch, so that in the immediate future we will have to rely upon our own markets alone.

**Currants.** Currants do not like a light sandy soil, nor yet a heavy clay. A rich porous one, sandy or gravelly, or a light clay loam, seems to be their choice. Until last year their margin of profit was narrow, so much so, that many plantations were pulled up. The reaction has set in, however, and we may look for better prices during the next few years. Of the red varieties, the Wilder (a new sort), Cherry, Red Victoria, and North Star are good; in white, the Grape and Imperial; and in black, Collins' Prolific, Saunders and Naples take the lead. Both the North Star and Collins' Prolific are later varieties. Black currants are desirable, inasmuch as they are practically immune from all insects and diseases, while the white and red varieties are easy victims to the currant worm, unless it is promptly destroyed with Paris green. This fruit is a voracious feeder, but it quickly responds to careful cultivation and liberal manuring.

**Raspberries.** Raspberries do well on a rich, sandy, gravelly or light clay loam. Like strawberries and tomatoes, they should have a southerly slope or exposure, to accelerate ripening; and, like other fruits, they abhor wet soils. They should be pruned twice, the annual pruning in the spring and the other in summer. When the new canes reach three or four feet long they should be topped back so as to make them push out laterals and become more stocky. The Marlboro and Miller, early varieties, and the Cuthbert and London, later, are excellent commercial reds. For purples, the Columbian and Shaffer take the lead. In blacks, Smith's Giant, Kansas and Older rank first, while for a yellow the Golden Queen is pre-eminent. The tips of the Cuthbert are sometimes frozen in the winter, and for that reason it should not have its annual pruning until the spring. With a due regard to the nature of the soil, I feed my raspberries on nitrate of soda each spring (150 lbs. per acre). Some six or seven years is, however, the normal life of a profitable plantation.

**Blackberries.** Blackberries require a rich, damp, but not wet, soil. A sandy loam, based on a quicksand bottom, appears to be ideal feeding grounds for them. If the conditions be favorable, they are very heavy croppers. With them, as with other small fruits, frequent cultivation until maturity, by checking capillary evaporation, helps to retain moisture. Among the best varieties are Agawam, Erie, Kittatinny, Snyder and Western Triumph. If earlier sorts be desired, Early King and Early Harvest will fill the bill, although these and Kittatinny are somewhat tender in many sections of the Province. As with raspberries, they should have both the annual and summer pruning. Snyder and Western Triumph in particular should be pruned severely in the spring, as they overload with fruit.

Currants, raspberries and blackberries should be plowed towards the rows in the fall and cultivated from them in the spring and early summer. In a general way, I do not think it is well to cultivate the tree fruits and vineyards much later than the last of July, then sow some sort of seeds, clover, vetches, peas, or rye, as may seem best. These will use and store up the soluble foods in the soil, thus preventing their leaching, and at the same time furnishing a cover for the winter.

## STRAWBERRY CULTURE.

By F. A. Sheppard, Queenston.

The growing of strawberries is a question that should interest every man who has a farm or a garden. A few years ago the average farmer had the idea that strawberry growing was something of a specialty, and quite beyond the reach of the ordinary everyday farmer or stock raiser. This erroneous impression, I am pleased to say, is fast passing away, and a good many farmers are now growing their own berries. But still there are many who do not, and I claim that at the present time there is no excuse for a man who holds even a small bit of land in failing to provide a sufficient supply of fresh berries for his own table, and enough for preserving for the winter months.

The strawberry has many good points to recommend it. It is the first fruit to ripen in the spring, after a long winter without fresh fruit. It will produce more fruit per acre or for space planted than any other fruit we have. It comes to maturity and into full bearing in a shorter space of time than any other fruit, yielding a full crop about thirteen months from the time of setting out the bed.

It succeeds on almost all soils and under almost all conditions, and will grow and ripen over a wider rangel of territory, and under a greater variation of temperature than most fruits. On account of its creeping habit of growth, it is easily protected during the winter months in very cold climates by a covering of straw or other mulch.

I will briefly outline our way of planting and cultivating a strawberry bed, and while this is intended for field culture, still the same system is equally good for small patches or garden planting.

**Previous Cultivation.** In choosing a site for a strawberry bed I like a piece of land that has had some special cultivation during the past summer, and prefer a piece that has been in potatoes or roots, and has been well cultivated. The surface soil will then be in a fine condition and fairly free of weed seeds—an important point in the after cultivation of the patch. Now, I would not plow this land deep under any consideration, because by so doing you would turn down your clean, fine surface soil and turn up rough, lumpy soil from the bottom, which might be full of weed seeds. If the soil is sandy and is situated so that no water will lie on it, it will not be necessary to touch it at all in the fall, but if it is low land or a clay soil I would prefer to rib it up lightly in the fall with a shovel plow. To obtain the best results it is important to get to work on this land in the spring, just as soon as the ground is dry enough to work. This is for the purpose of establishing a soil mulch and preventing evaporation and consequent loss of moisture. Work the soil up fine to a depth of four or five inches, and keep the surface well stirred every few days with a harrow, until planting time. I usually plant about the tenth of May. Many growers plant earlier, but I think I can get my land in a better condition, and keep it clean a good deal easier with a harrow the first month than I can with hoe and cultivator later in the season.

**Method of Planting.** We plant in rows four feet apart, and set the plants two feet apart in the row; then when the runners start out we let them fill up between the plants and spread out sidewise until the rows are about fifteen inches wide.

We usually plant with a spade. After we have got the land in proper condition for planting we take a land roller and roll the surface down smooth. Then we have a marker made for the purpose, with the runners two feet apart, every other runner being on hinges, and we mark the ground both ways, first crosswise, with the runners all down, making the marks two feet apart, then go the other way, this time turning up the hinged runners and making the marks four feet apart, then put in a plant at every cross. We press the spade into the ground with the foot (about six inches deep), then by moving the handle back and forth you open a slot in the rolled surface. Then by giving the plant a whipping motion into the slot you will spread the roots out in a fan shape. Now put your feet down, one on each side of the plant, and you will press the earth

firmly against the roots of the plant, being careful always to have the crown of the plant level with the surface of the ground.

Before planting I always trim off any surplus leaves from the plants and nip out the fruit buds, as I do not wish them to bear any fruit the first year.

**Cultivation After Planting.** As soon as we are done planting I run the cultivator through to break up the crust formed by the roller and the tramping while setting out plants, and keep the cultivator running through them at least once a week all summer, and go through with the hoe as often as is necessary for keeping down all weeds.

**Pistillate and Bisexual Plants.** In planting a strawberry bed, there is one important point to remember, that strawberry plants are of two kinds—pistillate and bisexual. The bisexual plant has a perfect flower, and will produce fruit of its own accord, but the pistillate plant has an imperfect flower, and unless it becomes fertilized by the pollen from some of the strong staminate varieties, will not produce fruit. A great many failures have been experienced on account of people not being aware of this deficiency in some kinds of plants. Ten years ago all of our best varieties were of the pistillate sort, and we had to use them, but since then a lot of new varieties have been introduced, the majority of which are bisexual varieties, so that at the present time we have no need to plant pistillate varieties.

As to the varieties that will depend somewhat on your own local conditions and markets. The kind most popular in this section (Niagara) at present are Beder Wood, Clyde, Glen Mary, Williams, and Brandy Wine.

**Mulching in the Fall.** As soon as the ground is frozen hard enough in the fall to bear up a wagon we cover the bed lightly with straw or other mulch, to protect the plants from heaving during the freezing and thawing of the spring months. When all danger of heaving is over and the plants begin to start, we go through and rake the straw off of the rows of plants and tramp it down firmly between the rows. This serves the double purpose of helping to retain the moisture and of keeping the sand from splashing upon the berries during heavy showers of rain.

#### DISCUSSION.

Q. What variety of strawberry would you recommend for this section (Powassan, Parry Sound) ?

A. F. A. Sheppard, Queenston: I think Clyde and Williams would be very good.

Q. What is the cause of strawberries not bearing, when they blossom and appear thrifty, but bear no fruit ?

A. The chances are you had a pistillate variety, which has an imperfect flower, and would require to be planted alongside of some of the staminate varieties, that have perfect flowers, so that the pollen of the perfect ones could mix with the imperfect and fertilize them ?

Q. Are you troubled with mildew on strawberries in your section ?

A. No, our seasons are usually too dry for that.

Q. What do you do for worms on currant bushes ?

A. Spray with Paris green when the worms appear.

Q. Do you trim your currant bushes, and how much ?

A. Yes, cut back in spring about one half of last year's wood, and thin out the old wood.

Q. How can I get my tomatoes to ripen (Trout Creek) ?

A. The tomato must have age before it will ripen. Our plan is to sow seed last of February or early in March in green house or hot bed, and transplant into cold frames about first week in April, six inches apart each way ; remove to field or garden carefully, without knocking off any of the earth, after all danger of frost is over. You should have ripe tomatoes in about 6 to 8 weeks from time of going to field.

## PRUNING.

By A. McNeill, Walkerville.

Pruning, like every other farm operation, has its basis in a theory, and I hold that no man ought to cut off a limb or a twig unless he can give a reason for doing so. The theory of pruning is based on the general plan of plant life, and more particularly on the development of fruit spurs and fruit buds, as well as the ordinary wood growth. A careful study of fruit buds during a single season would do much to clear up the mystery that is supposed to surround the art of pruning. Apples, pears, plums, and cherries are borne on short, stubby branches, developed on wood two years old, and continue fruitful for a longer or shorter time.

The apple spur grows zig-zag on account of the new bud developing, not at the apex, but at the side of the spur. The plum, pear and cherry have fruit buds about the apex of the fruit spur. The apple spur is fruitful only for three or four years, and then drops off or bears only inferior fruit. The cherry and plum, as well as the pear, remain fruitful for a great many years; hence it is that the old wood, including the larger branches, are in these trees covered with fruit spurs. This difference in the life of the fruit spurs on the pear, plum and cherry, compared with the apple, makes a marked difference in the methods of pruning these trees. Since the old wood soon becomes unfruitful in the apple trees, it is necessary to provide new wood continually; but in the case of the pear, a tree which has once attained its full size and occupies all the space that can be allowed it, it may grow fruit for years with little or no addition of new wood. The peach tree does not develop fruit spurs, but has fruit buds on the one-year-old wood. Consequently, in all methods of treating the peach tree we must remember that we cannot expect fruit, except from last year's wood.

The raspberry and blackberry bear fruit only on wood of the current year's growth, which, having borne fruit, die with the stock upon which it has grown, and new wood springs from the root. Currant and gooseberry bushes, like apple trees, have fruit spurs on old wood which remain fruitful for three or four years, but, unlike the apple, the new wood of the currant and gooseberry bushes springs from the root, hence making a difference in the method of pruning. As the old wood becomes unfruitful, it is removed, and its place is taken by new wood springing from the roots.

We cannot have our developed fruit buds and fruit unless there is a good growth of wood, hence we endeavor in our methods of pruning to get a healthy wood growth first, which includes the development of stems and buds that will open up into healthy leaves. It may be put down as a maxim that nature provides many times as many buds as there is a chance to develop, and it is the work of the pruner to check this struggle for existence among the buds, and select such as will best give him the advantage of sun, light, air, and sap, so that leaves and fruit of the desired quality may be produced.

In the case of fruit buds, two and two do not always make four, for practical purposes. Indeed, the opposite rule more frequently applies, so that the fewer the buds the better the results obtained within certain limits, of course. One bud well nourished with sap, and plenty of light and air, will elaborate more material than four buds, having insufficient sap, light, and air; hence the pruner's art consists in selecting the best fruit buds and giving them the best chance in the struggle for existence.

The comparison that is often made between a tree and an animal does not hold good in the case of pruning. Cutting a limb off of an animal bears no sort of analogy to cutting the limb off of a tree, for in cutting away the old limbs and taking away some of the buds of a tree there is more nourishment for those left, and we may confidently expect a much better growth on the part of those remaining. How much we should cut away depends upon the balance between the root system, light, air, and plant food at our disposal. The wounds made by pruning, if properly protected from decay by paint or other material, are not at all harmful to the tree.

Reason would suggest that we occupy all the space about the trunk of the tree with leaves and fruit, endeavoring to utilize all our resources of sunlight and air. The



fruit-grower trains the tree so as to give it a proper form, and spread the leaves in all directions. Just how thick or how thin the limbs and twigs should be left is a matter that can only be determined by personal observation, as there is no royal road to the art of pruning. It is a matter of trial. A few suggestions, however, may not be out of place. Endeavor to have no vacant space within the circumference of the limbs. On the other hand, do not overcrowd so that some leaves will be seriously shaded. If the tree has been neglected for a number of years, it would be poor policy, indeed, to cut all the limbs away at once, that might be judiciously spared in the course of time. The limbs and trunk developed under conditions of dense shade, should not be deprived of this shade too suddenly, as there would be great danger of sun scald; speaking generally, the tendency is to leave too much wood, even where the pruning is done fairly well from the start.

What can be done to develop fruit buds? It is a matter of common observation that on a tree making excessive wood growth fruit spurs, or buds, are not developed in a corresponding degree. It has been observed also that anything that checks the wood growth will develop fruit spurs. This is the theory of root pruning, girdling and growing in sod. Diminish the vigor of the wood growth and nature makes an effort to perpetuate herself through the fruit. It is doubtful, however, whether any of these methods are to be recommended upon commercial grounds. Every species of a tree has its period of maturity. It is possible by some such methods as have been indicated to throw it into fruit before this period of maturity is reached, but only at the expense of the vitality of the tree. There is another method that has shown good results. If the terminal bud of a fast-growing shoot be cut off, the effect is to develop all the remaining buds to a greater or less degree. The upper buds will shoot forward with a wood growth. Those lower down will often develop fruit spurs. This work should be done about the middle of the growing season. Cutting away in the spring one-half or two-thirds of the previous year's growth is good practice where there is an excessive wood growth. It increases the tendency to develop fruit spurs, and brings the bearing wood nearer the stem of the tree. We do not expect a young apple tree or pear tree growing naturally to bear fruit for a number of years. During these years it is making a large wood growth, and pushing far out from the stem the wood upon which fruit spurs will be formed when the tree reaches maturity. By judicious cutting back of new growth each year while the tree is young there will be new wood formed, ready for fruit spurs when the time for bearing has arrived. This treatment will prevent long branches, bare of fruit spurs, so common in young and vigorous orchards.

Heavy pruning tends to promote wood growth, showing clearly that pruning is not detrimental to the health of the tree, but as wood is only desired inasmuch as we can make it produce fruit, we may sometimes be disappointed in not getting fruit the first year after pruning a neglected orchard, because the growth has gone to wood rather than to fruit spurs, but a balance will be produced soon, so that in the second or following year a crop will be produced which will amply reward the labors of the pruner.

It is sometimes said that we must prune in winter for wood and in summer for fruit. This is only partially true. Winter pruning should be the rule, as more work can be done in a given time. It is not so busy a season, and I have yet to learn of any serious damage resulting from pruning in the late winter. It is true, however, that summer pruning, or, rather, the stopping of fast-growing shoots during the month of June, has a marked tendency to develop fruit buds lower down the branch; but economic considerations must always prevent much of this work being done in the apple orchard, as the cost of doing the work will more than offset the benefit of it.

In the case of dwarf pears the question of the best time to prune is settled by the greater convenience of the months of March and April. In case water sprouts develop it would be well to rub these off at the beginning of the growing season; but the appearance of water sprouts is usually an indication that too much cutting has been done. It is just as well to leave one or two of these water sprouts to shade the naked limbs or trunk.

Provision should be made for removing old wood in an apple tree. In the normal condition of things, trees should make a growth at the tip of the limbs of at least one foot per year, which growth will soon bring the trees together, a condition of things which renders effective orchard work impossible. Before a limb is to be removed provision should be made for this space by leaving some vigorous water sprouts or new growth. By cutting this sprout back to within six inches of the main limb or trunk the following year new growths will appear from the upper buds, which should be again cut back. This process continued for a few years will give a short stout branch that will speedily take the place of one to be removed. There need not be any fear of cutting a large branch, provided the cutting is done close to the main branch or trunk, and directly in the line of the flow of sap from the root to the growing point, and provided also that the exposed surface is covered with paint or other substance that will protect it from decay.

#### DISCUSSION.

Q. Do you prefer the high head or the low head ?

A. I prefer the low head, starting at two and one-half or three feet, but would not advise it unless everything is in keeping. The advantages of the low head are: most of the work of pruning and picking is done on the ground, or with short ladders: the wind has less effect: spraying can be done better. The disadvantages are that you must have special extension tools for cultivation. But the slightly increased cost of cultivating the soil is more than offset by the advantages.

Q. What is the best material with which to cover wounds ?

A. Nothing is better than linseed-oil paint. Anything that will protect the wood from decay will do. Do not paint until the wood is dry.

Q. What tools do you recommend for pruning ?

A. A sharp, fine-tooth, stiff-backed saw, a long-handled saw, and long-handled clippers, with two cutting edges, if possible, and the ordinary hand-pruning shears.

Q. A few years ago my orchard had a great many large limbs taken from the trees ; these have not all grown over, and decay is setting in. How will I deal with them ?

A. If the wood is still solid, paint it and preserve it as it is. If it is so rotten that it can be easily taken out, take it out for a few inches, and fill with a mortar of sand and cement, two to one. New wood will grow over this as readily as over the old wood.

Q. How would you treat a wound made by "barking" a tree ?

A. During the growing season the orchardist should never be without a mixture of clay and old cow dung, half and half. Apply this mixture at once (in five minutes after the injury), after replacing the bark if it is not too much broken. Wind a piece of coarse cloth about it to keep all in place. Cover the wound at once with something to keep it moist. Clay from the nearest ditch bottom will do. In fact, if the piece of bark can be snugly replaced and held in position with several thicknesses of cloth bands, it will soon heal again. The essential thing is to cover the wound at once with something that will keep it moist.

Q. Major Sheppard, Queenston (at the meeting held in Queenston) : What system of grape trimming is preferred ?

A. The Kniffen system. (This was agreed to by the majority present).

Q. In planting out a new vineyard, would you use two or three wires ?

A. Seven spoke in favor of two wires, and three in favor of using three wires.

Q. How many believe in summer trimming ?

A. With one exception, the answers were in the affirmative.

Q. Can you give a recipe for grafting-wax ?

A. F. A. Sheppard, Queenston : Resin, 4 parts; bees' wax, 2 parts; tallow, 1 part; by weight. Melt together in a vessel over the fire. Turn into a pail of water, then pull until smooth, and lay away in small pieces until you need it. It will keep indefinitely.

Q. We are troubled with sun scald here. Have you a remedy ?

A. In this case the old saying, "prevention is better than cure," applies. There are several ways of protecting the trees. The damage is usually done in March, on warm days, when the sun shines bright. The sap starts up on the south and southwest side of the trees, then at night when the temperature falls quite low, the cells are frozen and burst and the bark dies. Anything that will protect the tree from the direct rays of the sun and prevent the rise of sap at that time will be beneficial. At home we often use a bunch of conestalks and tie it around the trunk of the tree. One of the best things I know of is to make a V-shaped trough of six-inch lumber and tie it to the trunk of the tree on the south and west sides. This trough may be taken away in the spring, after all danger is over. If laid away carefully they should last several years.

Q. Where trees have been killed in the trunk, but the roots are still alive and good, thrifty suckers are coming up, how would it do to bud them?

A. It would do all right, but they would still be liable to sunscald. I would prefer to let the suckers grow for a couple of years and then top-graft them in the limbs. I think good, strong seedlings produced right here in Muskoka will be less liable to sunscald than any trees brought in from outside points, and if properly grafted with marketable fruit would make very satisfactory trees.

Q. What time of year would it be best to prune apple trees in Muskoka?

A. I would say in summer, say the month of June. I notice in driving through this country that your apple trees bear very young, and from what I am told, very heavily. I think this is one cause of your trees dying after they have borne a crop or two. They are weakened by the heavy crop when so young, and are rendered much more liable to winter killing. The fruit should be thinned. You would have just as many bushels in the fall if half the fruit was picked off in the early part of the season, and what was left would be much larger. It would also be better for the tree, as it is not the production of the quantity of flesh of the apple, that exhausts the tree, but the seeds.

Q. When is the best time to prune fruit trees?

A. G. C. Caston, Craighurst: In June.

Q. Why?

A. Because pruning should always be done in the growing season. When you cut a limb at that time nature at once begins the healing process. The sap goes up through the pores of the wood, goes to the buds and leaves, but returns by the cambium (inside layer of bark). It is then ready to build up wood tissue, and it is at the cambium that the healing process begins. Before the growing season is over there is a ridge of new tissue formed all around, covering the cambium and protecting it. In the case of trees pruned in the fall and winter, the delicate cambium layer is exposed to the frost and becomes dry and shrivelled, so that the wound if at all large will not heal satisfactorily. It is then very apt to decay. I have tried all seasons, and my experience points to June as the best month for pruning. If you cannot get it done in June, do it as near that month as possible. Never prune in the winter, nor in cold weather, when the wood is frozen.

Q. What is the best form of tree, low-headed trees or high standards?

A. Well, I prefer a pretty high head, for the reason that you can cultivate closer to the tree with horses. For that reason I prefer to keep the heads pretty well up. They will always come down low enough when they come to bear heavy crops of fruit. The advantages in favor of the low head are that the trunk is shaded, which is an advantage where sunscald is prevalent; they are more easily reached in spraying and gathering of the fruit. There is some advantage in either form, but I prefer the high standard.

Q. What is the object to be aimed at in pruning?

A. First, the form and symmetry of the tree, then a free circulation of air and sunshine through the top. This should be accomplished by thinning out the small branches, mostly around the outer part of the top, not by cutting out the centre, until the tree looks like an inverted umbrella, as is too often the case. The latter kind of spruning results in scalding the upper surface of the limbs and a big growth of suckers. Another object should be to get an even distribution of the bearing wood (fruit spurs) all over the tree. It would be hard to estimate in dollars the amount of damage that is done by bad pruning

in this Province, but it is immense. Every man who owns an orchard should know how to prune, and should prune his own orchard, or see that it is properly done.

Q. Would you paint the wound or cover with wax?

A. Covering with wax is the best, but it should be renewed every year. Painting does very well to keep the wood sound until healed over. If limbs that have to be removed are cut out while they are small they will soon heal over in a vigorous tree. If it can be avoided, large limbs should never be cut off.

Q. Should the limbs be cut close?

A. Yes. The practice of leaving a stub on is a very bad one. It is ruinous to the tree. The cut should always be made at what is called the collar, and in a healthy tree the wound will heal quickly. A tree should have a little yearly pruning to keep it in proper shape, and then it will not be necessary at any time to remove large limbs. As a matter of fact there are a good many varieties of an open, spreading habit of growth that need very little pruning at all.

### APPLE GROWING IN ONTARIO.

By G. C. Caston, Craighurst.

There are two articles of produce for which Canada stands pre-eminent—cheese and apples. We have the soil and climatic conditions for the production of a high quality of both of these commodities. The other conditions are skill, care, and industry. With regard to our cheese, all the conditions have been applied by means of large grants to the dairy associations. The establishment of dairy schools, the appointment of travelling inspectors, the instituting of scientific experiments and research, has made the dairy industry flourish and added much to the wealth of the country. When we come to compare the export value of apples and cheese, the apples make rather a poor showing, but we must remember that the bulk of the cheese made in this country is exported, while in the case of apples, it is the very opposite. The greater bulk of apples is consumed at home. Take the statistics of the Bureau of Industries for Ontario, and note the number of acres in orchard, the number of trees of bearing age, and the average number of bushels produced, and you get a better idea of the total value of the apple crop than you would from the export figures. But while cheese has about reached its limit as far as export value is concerned, there is great room for expansion in the apple trade, both in the home and foreign markets.

While the soil and climatic conditions are favorable for the production of fruit of the best quality, yet the apple orchards of the Province have received, on the whole, very little care and very poor treatment. There is great need for educational work along this line. This is apparent to anyone who travels through this Province and keeps his eyes open, for the question then arises, how can this work be done to ensure the best results and the most lasting benefits? That will make for a better system of treatment.

Lectures at Institute meetings during the winter on fruit culture do not seem to have the desired effect. While much interest is manifested at the time, few seem to put in practice what they hear. Perhaps this may be partly explained by the fact that there are many other subjects on the programme, and just when the discussion has become interesting it has to be switched off and another subject introduced that is entirely different.

Wrong Methods of Orchard Treatment. In my opinion, better educational work can be done by means of Orchard Meetings, where no other subjects are introduced, and the teaching is by means of object lessons, as well as talks, on the details of the business. The basis of success in producing any article of commerce must always be—high quality of the product. Quality is everything—quality first, last, and all the time. We must get this high condition only by careful and proper treatment of our orchards. "Well, what is wrong with the orchards?" you ask. I answer that there are a good many

things wrong with them. Of course there are exceptions—there are some localities and some individual cases where good treatment has prevailed—but, speaking broadly, the wrongs may be summed up as follows: Trees planted too close; too many on an acre—this is a universal fault all over the Province. Then, very few are properly pruned. Thousands and tens of thousands of trees are being wrecked and ruined by a barbarous system of pruning. I think very few people are aware of the enormous amount of damage that is being done in this way. Then there are, in many cases, lack of cultivation, lack of spraying to deal with insects and fungous diseases, and lack of fertility. This last is a crying need in many cases. Thousands of trees are starving, and by their puny growth and pale foliage mutely appeal for food. What would our live stock be like if they were treated like many of our orchards are in the matter of feeding? Then, another wrong is, too many varieties. This is a great and common mistake.

It would be impossible to deal fully with all these matters in this paper, so I will have to summarize briefly: First, as to the planting too closely. We should make 22 to 35 feet the minimum distance apart in planting, and we will always get better results from 50 trees to an acre than from 75 to 100. Trees planted too close will not do well when they get to bearing age. The branches interlace and shut out the sunlight that should get in about them, and if you could see the roots, they are interlaced far worse than the branches. Then, it is impossible to spray such an orchard properly. Again, there is the pruning; this is one of the worst evils of all. Some people seem possessed of a mania for cutting and slashing trees, and here is where there is the greatest need for educational work. Some trees require very little pruning at all, while others need a good deal; but it should consist in thinning out the small limbs to give the tree symmetry and admit of a free circulation of air and sunlight, and, at the same time, an even distribution of the bearing wood or fruit spurs. But the itinerant pruner cuts out most of the branches from the centre of the tree, until it resembles an inverted umbrella, and then they strip the fruit spurs off those that are left, leaving nothing but a little tuft at the extremity. The first effect of this system is that the sun blisters and scalds the upper side of the exposed branches, when nature intended they should be shaded by the foliage, during the hottest part of the day. The second effect is a mass of suckers, or water-sprouts—nature endeavoring to heal the branch—and the tree is practically ruined.

**Spraying the Orchard.** This operation is often carelessly performed, and there is a great lack of knowledge of the subject among farmers and fruit growers. There is no way in which this can be better taught than by object lessons in the orchard.

**Cultivation.** We see many orchards growing grain and hay, just as if there were no trees growing there. People who practice this method need never expect much fruit. Hoe crops are all right, providing the fertility is kept up. The cultivation required for this is just what the trees require. Permanent sod is an injury and a sure way of stunting the trees, unless an annual heavy mulching is applied. But the climatic conditions of this climate, subject as we are to droughts in summer, indicate clearly the importance of cultivation as the best method.

**Fertility.** Where trees are growing on good, strong soil, and receive good cultivation, they will produce good crops of fruit for several years, perhaps without the application of very much in the way of fertilizer; but on light and loamy soils they very soon show lack of vigor and become stunted. There are many orchards to-day that are starving. When we consider that orchards are seldom planted on a virgin soil, but in nearly all cases on a soil that has been cropped to grain, and from which a large part of the potash and phosphoric acid has been exhausted, and that the tree requires material to build up wood tissue and an annual crop of foliage, and, later, of fruit, we see the necessity of providing food for the needs of the tree. Nitrogen is required for the wood growth, potash for fruit, and phosphoric acid for seed. The most economical way to supply these elements is by plowing in clover for nitrogen, and by supplying the other material by the application of hard wood ashes. Where the trees are large, sowing occasionally with rape and pasturing it off with sheep will help wonderfully in enriching the soil. Large trees will not be injured by sheep. When clover is grown for

fertilizing purposes, never cut it for hay, but plow it all in when about half in blossom, for you need humus in the orchard, and lots of it. Old chip yards and the cleanings from wood sheds made a good material for this purpose, and old rotten pea straw, or anything that will furnish a humus will be of benefit. Where ashes cannot be got, potash in some other form should be applied, and the phosphoric acid by means of ground bone, but these two elements are supplied most cheaply in the form of ashes. Good unleached, hard wood ashes are cheap for this purpose at from 15 cents to 20 cents per bushel. Forty bushels to an acre, once in two years, for bearing trees, with a crop of clover plowed in once in two years, would be far better treatment than the best of them are getting now, and will give on ordinary soils very good results. Stable manure is all right, providing you can get it, but as a rule the orchards get very little.

**Varieties.** Practically speaking, what were our best varieties twenty-five years ago are the best to-day. Five or six varieties are enough for a commercial orchard, and I would place the Spy first, then King, Baldwin, Greening, Ben Davis or Gano, and Ontario. I would top-work every one of them on hardy stocks, such as Tallman Sweet, Pewaukee Haas, etc. Wherever there is a locality adapted to apple-growing, this crop can be made one of the most profitable in the whole range of agricultural products. There is in this Province abundant evidence to show that, while on the whole orchards have been very badly treated, yet where they have been planted with proper varieties, and received good care and treatment, they have given larger returns, acre for acre, for the time and money spent on them, than any other product of the soil.

#### DISCUSSION.

Q. How far apart should apple trees be planted?

A. A. W. Peart, Burlington: From 35 to 40 feet, according to the richness of the soil and the vigor of the tree.

Q. Do top-grafted trees begin bearing sooner than others?

A. Yes.

Q. If a summer apple be top-grafted with a winter variety, will the latter ripen any sooner?

A. Yes, so far as my observation and experience go.

Q. Is it possible to vaccinate fruit trees so as to render them immune to fungous attacks?

A. I believe that future experiments will answer in the affirmative.

Q. What is the future for apples?

R. Good. With proper care, packing, and marketing, apples should be good property in the future.

Q. When should an apple be picked?

A. When it has gotten its full size, its color, and is still hard.

Q. Where should apples be kept?

A. In a dry, cold room, as near freezing point as possible.

Q. What about the Ben Davis apple?

A. In places where it does well, I think it is a profitable variety to plant. I think, on account of its keeping qualities, it will be a popular hotel variety in the Old Country.

Q. What is the future for pears?

A. I think that, when cold storage becomes reliable, export varieties may be grown with considerable profit.

Q. What are the leading export varieties?

A. At present, the Bartlett, Duchess d'Anjou, and Keiffer.

Q. What about plums?

A. I think that the acreage is wide enough in the Province at present. Prices are low, and we have only the home market for the demand.

Q. What about the export of tomatoes?

A. It is yet uncertain. I exported a few cases of Honor Bright to Glasgow last fall.

The first lot sold at six shillings per box (24 quarts), but the last lot arrived useless, and brought nothing.

Q. What are the chief needs of the Ontario farmer to-day?

A. (1) Better education; (2) better knowledge of the soil.

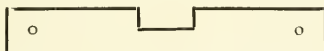
### PLANTING AND CARE OF AN ORCHARD.

By T. G. Raynor, Rose Hall.

Apple culture is becoming a foremost industry in this country. There are large markets opening up. Besides the English market, the Northwest market is a very promising one.

Location. I believe a slope to the north or northwest to be preferable in most places, even where the orchard is near a large body of water. In such a location vegetation is more backward in early spring, which lessens the danger from late spring frosts.

Preparation for Planting. The land prepared for the orchard should be well worked and manured, then it should be laid out so that the trees will be set straight in rows running in every direction. When the field is squared and the pins set where the trees are



to be planted, it is an easy matter to proceed. A board about three feet long, as per cut, may be used to get the tree to stand just where the pin was placed.

Drainage. Drainage should be arranged for on heavy soils. This may be done by loosening the soil quite deeply where the rows of trees are set. Afterwards a complete system should be provided.

Proper Stock for Planting. Every person setting out an orchard should decide on the proper varieties suited to his locality, and, if for a commercial orchard, they should be merchantable varieties. Good-keeping, red varieties seem to be in keenest demand nearly everywhere. A fine-looking apple, regardless of the quality, is always in demand. Too many varieties in an orchard is not desirable, but four or five of the right sort is all that is necessary for cross-fertilization. Buyers will, for reasons which are obvious, pay much better prices for a few varieties than for a great many. The stock should be purchased from a reliable nurseryman, and not too much dependence should be placed in agents, who are in the business for what they can get out of it. I would advise buying stock from a nursery nearest the planter, providing his stock is all right.

Time to Plant. Spring seems to be the most favorable time for planting. When the trees are delivered great care should be taken to prevent the exposure of the roots to sun or wind, and heeling in moist earth is advisable. In preparing the holes, they should be dug deeply enough that when the tree is set it will be just a little lower in the ground than where it stood in the nursery row. To plant well two persons are necessary, one man to set the trees and the other to dig the holes and fill in. The trees must be trimmed, topped back, and all broken and decayed roots should be cut off. In planting, the roots should be spread out well and the trees jarred gently as the fine earth is thrown in. This will bring the soil in close contact with all the fine roots. Then this should be tramped firmly and the hole filled to the surface and left loose on top. Care should be taken in shaping the head of the tree. To get a good strong head the three or four branches forming it should start irregularly from the stem, and no two limbs should grow opposite each other. In view of the necessity of spraying and having the fruit well colored, it is not advisable to plant closer than thirty feet each way, and for large growing varieties forty feet would be better.

Cultivation of the Orchard. It pays to cultivate the soil well anywhere, but particularly so in the orchard. As soon as the trees are planted a mulch of manure is good to hold the moisture and also furnish nourishment for the trees. The proper crop to grow

in an orchard while the trees are making growth is some kind of a hoe crop. If grain is sown in the orchard it is good policy to leave a space on each side of the rows of trees for cultivation. After the first plowing in the fall, or in the spring of the year, the after work should be done on the surface. Cultivation in an orchard should be to keep down weeds and to conserve moisture. In July, however, all cultivation should cease in order to allow the wood to ripen properly before winter. Unless this practice is followed in colder districts there will be more or less injury of freezing back.

After the orchard has come to bearing it is advisable to use cover crops for plowing down or for pasturing by hogs. The best cover crops are clover, buckwheat, peas or vetches. The old adage, "Prune when the knife is sharp," is a good one. It simply means that a little pruning every year will prevent superfluous branches and keep the trees open and symmetrical in form. Proper direction may be given the limbs by watching the tendency of the buds towards lateral or vertical growth, and trimming accordingly. Cross limbs which are chafing others should be removed, and all dead and decayed limbs taken off. Always cut limbs as closely as possible to the trunk, in no case leaving a stub. June is the best month in which to prune, but March or April seem to be more convenient for most farmers.

Manuring. In order to have a fruitful orchard it must be well fed. Farmyard manure is good orchard fertilizer, as is also wood ashes, but they should never be applied together. The occasional plowing down of green crops is also advisable.

Spraying. This is an important operation. Every fruit-grower should have his reports and bulletins handy for consultation, so that he may make no mistakes in this important matter. Spraying has been condemned by some growers because they did not know when to spray nor what they were spraying for.

Picking, Packing and Marketing. In this matter the farmers and dealers have much to learn. We should take a leaf from the book of the California shippers in this matter, and grade all our fruit and use the small packages. Keep all fruit of poor quality at home or sell to evaporators. The Fruit Marks Act will no doubt do much toward regulating the quality of fruit shipped in packages. What is needed in the fruit business is hearty co-operation on the part of all concerned to produce the best, sell the best, and pack it in the best possible way.

#### DISCUSSION.

Q. What varieties of apples would you plant ?

A. F. M. Lewis, Burford: Just enough fall fruit to supply your own table, and preferably the red for winter fruit. They sell a little better and are just as productive. I could not recommend any particular variety, as your section is different to mine. Plant something that does well in your own neighborhood.

Q. Will Bordeaux Mixture kill all sorts of insects ?

A. No, only those that eat the foliage. The ones that suck up the sap, such as the aphides, have to be killed by kerosene emulsion.

Q. How far apart would you set Northern Spy trees ?

A. I would not set Spys, but Talman Sweets, and graft the Spys upon them. You then have trees that bear much younger and that are also stronger. Set not less than 30 feet apart, but 35 feet is better.

Q. Would you cut a tree back when planting ?

A. Yes, but don't cut a piece off every limb. Rather take part of the limbs completely off, being careful to leave the limbs most desirable for top formation.

Q. What would you do with an orchard set twenty years ago, and not of desirable varieties.

A. If you do not understand top-grafting, get some intelligent man who does, to top-graft your trees, using some one desirable variety.

Q. How can you best keep the orchard from dying out ?



A. By intelligent cultivation, beginning early in the season, and continued until late in July. Then grow and apply an abundance of vegetable matter to be incorporated into the soil. Abundance of humus in our soil is the foundation of all successful farming and orcharding to-day.

Q. Do you think it will pay a man with a small farm or orchard to spray?

A. Yes, it will pay any man to do it intelligently. In addition, the pump is a splendid thing for whitewashing our stables. In spraying use lots of force. It saves material and does a better job.

### PROPER MANAGEMENT OF ORCHARDS.

By J. E. Orr, Fruitland.

One of the prolific causes of failure of crops, in orchards of all kinds, is the neglect of tillage, and in some cases the want of intelligent tillage. It should be unnecessary in the year of grace, 1902, after all that has been said and written on the subject, to insist that tillage is an essential. But what about intelligent tillage? To what extent is it carried on in our orchards? By intelligent tillage we mean work done at the proper season, with the object of assisting the tree to perform its different functions, with at least some knowledge of what those functions are, when they are performed, and how the surroundings of the tree may be controlled to assist them.

The Formation of Fruit Buds. During the early part of the season our trees are making their woody growth, increasing in size, and therefore in productive capacity, forming new buds to replace those which are removed by fruiting, and which will, by and by, if properly nourished, bear fruit themselves. Every bud is capable under favorable conditions of developing into a fruit bud. If it has not these favorable conditions it may remain dormant or produce only new twigs.

During the latter part of the season, say after the first or second week of July, trees which are going to fruit the following year are transforming buds (which were primarily leaf buds) into fruit buds. This process continues as long as the foliage remains on the trees. Consequently a long, fine autumn is favorable for a good set of fruit buds. But a careful orchardist does not trust altogether to nature to supply the favorable conditions for the formation of fruit buds. He wants a crop every year, and he is aware that, unassisted by his skill, nature cannot be depended upon for this. In some very favorable fall the poorly-managed tree will set an enormous crop of fruit buds, using up a great part of the available buds. We know that where a tree is overloaded it will not make sufficient wood growth to supply material for new fruit buds, and that these conditions are not favorable for the production of fruit buds for the next season; consequently we have off years. The work of the skilful orchardist is to so maintain the balance between the wood growth and fruit production that he may have fruit buds each year. If we are to have an annual crop it is evident that the tree should be handled in about the same manner each year. Manuring and pruning should be done annually, also spraying, whether the trees are bearing or not, for unless we protect the foliage and have it healthy and vigorous until late in the season we cannot depend upon a good set of fruit buds.

Cultivation. Cultivation is essential. It should start in the spring, in time to conserve the soil moisture, and should be followed up at least once a week, and oftener if necessary, until the first or second week in July. This is the period during which the new wood is formed, and the young fruit is growing, and the stirring of the soil assists this process. After that, cultivation should cease. We do not wish to excite any further wood growth, but rather to lessen the flow of root sap and get a better quality, that the conditions may be favorable for the setting of fruit buds.

Use of Cover Crops. After ceasing cultivation, it is a good plan to sow a cover crop. Legumes are preferable, but if it is too dry for them, as it usually is at that season, rape or some other plant will do. This cover crop is a cheap way of manuring the

orchard by plowing down each spring a large quantity of humus. Some of the other benefits of cover crops are that they maintain the balance of moisture in the soil, prevent erosion, retain the snow for the protection of the roots, and trap the leaves that fall from the trees. This last may appear a small thing, but it is the way in which nature has built up the fertility of our richest lands. It breaks up and utilizes insoluble plant foods, putting them in an available form, and also seizes upon any soluble plant foods which might leach out of the soil with the fall and spring rains. The best source of information on the subject is to study it direct from nature. Conditions vary widely with localities. Experiment, observe, and think. One pair of trained eyes are worth a dozen pair of untrained ones.

#### DISCUSSION.

Q. Are wood ashes useful in the orchard?

A. We use them in large quantities. Give an annual dressing of two to three pecks in the spring to full-grown trees, and you will be able to pick those trees out any time, or account for their rich, green, vigorous foliage. A healthy foliage means lots of well-prepared plant food, and therefore a good set of fruit buds. Farmers do not realize the value of hardwood ashes, or they would not take them off to the ash-gatherer for a cake of soap or a plug of tobacco. I once asked an old ash-gatherer how he could persuade farmers to part with their ashes. He said: "I can't, all of them, but I just drive along, and if I see a place with a good barn and everything well kept up, I do not bother going in, but if the fences are tumbled down, the barn door hanging by one hinge, etc., I am sure to get ashes there." It is too bad that thousands of bushels of ashes which are needed at home are annually exported to build up the worn-out farms of the United States.

Q. Are coal ashes of any use?

A. They contain only a trace of fertility. We apply what we have to a piece of heavy clay, to lighten it up and improve its mechanical texture.

Q. What is the best way to get rid of oyster-shell bark louse?

A. G. C. Caston. Craighurst: Wash the tree with an alkaline solution. Lye made from hardwood ashes is best.

Q. How strong would you make it?

A. Take lye that will float a potato, then add water until it sinks; that is for trees of bearing age. For young trees, dilute it a little more, and, after scraping off the rough bark, put it on with a mop. As the trees grow older the lice move out on the small branches and are often found in clusters out on the small twigs. In that case use a spray pump to get the lye on.

Q. When should it be applied?

A. If you watch closely, about the first week of warm weather, about the end of May or early in June usually, you will find the young lice moving out from the shell and spreading upward on the branches. That is the time to apply the lye and give them a good dose of it. Excellent results are reported from spraying with fresh lime white-wash, applied in March. It is claimed that the fresh lime loosens the scales, and the eggs of the lice perish. For this purpose two coats are applied. A second one as soon as the first has dried. When the spring and summer rains wash off the lime the trees are said to be almost, if not entirely, free and clean from all lice.

Q. What do you do to get rid of the little green lice on the leaves?

A. These are the aphids, or plant lice. One species is black. The black ones are found mostly on cherry trees. Whale oil soap (one pound to a gallon of water), or kerosene emulsion, will kill them. They are a sucking insect, and have to be killed by something that will kill them by contact with their bodies. The best time is just when the buds have swelled and are opening into leaf. If left until the leaves are full out the lice get on the under sides of the leaves, and then it is hard to reach them with the spray. One of my neighbors sprayed last year with Gillet's lye just at the right time, and it

killed the aphid. He used a can of the usual size to about seven gallons of water. This would have a good effect on the trees, as an alkaline solution always gives a healthy tone to the tree and gives the bark a smooth, healthy appearance.

Q. The codling moth is one of the most troublesome pests. What is the best treatment to keep it in check?

A. In the first place, spraying with Paris green just after the blossoms fall, but, instead of the usual formula of 4 oz. to 40 gallons, use 8 or 10 oz. Paris green. This can be applied along with the Bordeaux mixture, without injury to the foliage, providing plenty of lime is used. After the mixture is made up, apply the Ferro-Cyanide of Potassium test, and when the mixture shows enough lime, add a little more. An excess of lime is a benefit, rather than otherwise. Then later on in the season bandage the trees with canvas or burlap. Cut it into strips about 10 inches wide and long enough to go twice around the trees, and tie with a string to keep it in place. Those should be put on before the wormy apples begin to drop. The moths find these bandages a very suitable and convenient hiding place, and form their cocoons, from which they pass into the winged stage. These bandages should be examined two or three times during the season, while the apples are growing and maturing, and the moths destroyed. Then another help is to keep a number of hogs in the orchard to pick up the wormy apples. If every one followed these methods the moth would be pretty well exterminated. The second brood is the most destructive.

Q. What crop should be grown in an orchard?

A. "Cultivation is the best crop." Keep the orchard cultivated.

Q. Do not some orchards do well in sod?

A. Yes. I knew a man who lived for eighteen years with only one lung, and did pretty good work, too. But he would have done better if he had had the other. I have seen orchards do fairly well without cultivation, where they were heavily mulched every year. If you could get a mulch over the surface just like you find in the forest, with a thick carpet of leaves all over it, that would be an ideal condition. An orchard standing in the tough sod will not thrive.

## LIVE STOCK.

### HORSE BREEDING FOR PROFIT.

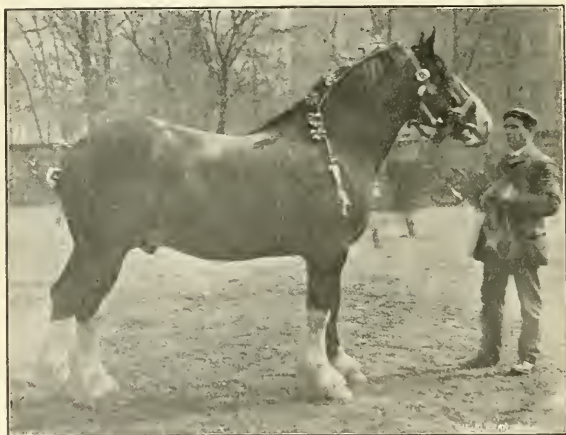
By John Gardhouse, Highfield.

Among the many different topics discussed at the Farmers' Institute meetings, perhaps none has received so little attention as that of breeding and raising horses for profit, and yet it is one of the very greatest importance. With the improvement in prices, it is necessary that increased attention should be given to the breeding of first-class horses. The present price of horses has brought us back to a time when it is profitable for the average farmer to raise them.

Kind of Horse to Raise. The most profitable kind to breed, in my opinion, is a first-class horse of whatever breed is in most demand. For the average farmer the heavy draught horse is undoubtedly the most profitable. In the first place, the heavy draught brood mare is more suitable for farm work than those of the lighter breeds, and can be more successfully worked on the farm. Young draught horses will also earn their keep at a younger age than any other class, and the heavy work on the farm is such as will give the young draught horse the best kind of training for his future usefulness when sold for heavy dray work.

Type. A great deal of the success in horse breeding depends on the selection of the mares that are used for this purpose. Examine your mares well; breed the very best; the best are none too good; study the mating, any deficiency in the mare should

be well made up by the sire. The sire should be a good type of the breed to which he belongs. As a rule, the best sires are found to be of medium size, evenly made and with plenty of quality. He should have a good constitution, good head, forehead broad and flat, eye bright, prominent, mild the jaw should be broad, and the throat clean cut. The neck nicely arched, muscular and well set into the body; breast deep and broad, with strong muscles; shoulders moderately sloping and well muscled, covering the blade thoroughly. The back should be short, straight and strongly coupled, ribs well sprung and deep. Loins strong, broad and well muscled, quarters long and powerful, tail well set in; thighs well muscled, strong and broad. Legs short and strong. Forearm large and strong, muscles extending well down the leg. Knee broad and flat, bone below the knee short, strong and flat, of good quality, and free from beefiness, nicely feathered, with straight, silky hair, pasterns not too long and nicely sloping. Feet of good size, well shaped and of good quality. Toes should not turn in or out. Hocks should be clean and



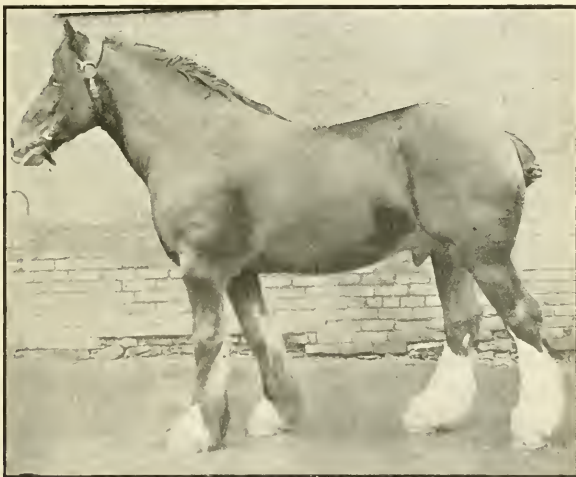
Strathcona (imp.) [3238]. First Prize three year old, and Champion Clydesdale Stallion, Horse Show, 1902. Shown by J. M. Gardhouse, Highfield, Ont.

broad, looking at them either from the front or side, and free from coarseness and puffiness. hind foot a little smaller than the front one. His general appearance should be attractive, his action free, firm and easy, all feet being brought forward in a straight line and firmly planted.

Care. Mares after being bred should not be worked for a few days, after which they may be worked right up to the day they foal, providing you have the right kind of work for them to do. They should not be hitched to any very heavy loads, or on to a tongue that will strike them in the side, and they should not be backed when heavy with foal. After fall plowing is done and you have no further work for them, do not tie them in the stable and let them stand without any exercise; that is too sudden a change. Let them out in the yard for exercise every afternoon, unless very stormy. A few weeks before foaling, feed a little flaxseed along with boiled oats and bran. The foal having the foal, getting it to nibble at it; in this way it will soon learn to eat. Never allow the foal to run after the mare when working. Always keep it in a loose box, well bedded, and with plenty of light, but no holes which it can get its head through. Always give

the foal a little feed when you take the mare out. Unless you are working a long distance from the barn, it will pay to take the mare in during the forenoon and afternoon, giving her a drink and a handful of oats, and let the foal suck, thus helping the mare and also the foal. When the foal is weaned, feed it often with good clover hay, chopped oats, and bran, and all the milk it will take. Winter well the first winter. Many foals are allowed to winter around straw stacks and on poor, dry feed, and are very little heavier in the spring than when weaned in the fall.

Always keep good fences around your pasture fields, so that the young horses will not learn to be breachy. If you have any bars or fences to take down, see that every rail is removed so that they will not have to jump over them. Commence to break in the foal when quite young by giving it careful and constant handling.



Lyon Stewart [3732]. First Prize Aged Clydesdale Stallion, Canadian Breed. Toronto Horse Show, 1902. Exhibited by H. G. Boag, Churchill, Ont.

#### DISCUSSION.

Q. What kind of a horse would you consider the most profitable for the average farmer to raise?

A. John Gardhouse. Highfield: A first-class, heavy-draught horse. The heavy-draught mare is more suitable to perform the work on the farm, and heavy colts can be broken in to do farm work at an earlier age than light horses, and the work on the farm is such as to fit him for future usefulness when sold for heavy-draught purposes in the cities and towns.

Q. Would you advise raising fall colts?

A. Yes. In many cases when mares are required to work hard during the summer, and there is no work for them to do in winter, they can suckle the foal through the winter. Then the foal, after being weaned in the spring, will have the green grass during the summer, and will often be as large in the fall as a colt six months older.

Q. If you had a large carriage, or smallish general purpose mare, would you breed her to a heavier or lighter horse than herself?

A. To a heavier horse.

Q. Would you advise breeding from a blemished mare ?

A. That depends on the nature of the blemish. If it is hereditary, I would not, but if the mare has been hurt it will be all right to breed from her.

Q. What is the best age at which to wean a foal ?

A. That depends on circumstances. If the mare is required to do hard work, and you have cows' milk for the foal, it may be weaned earlier than otherwise. From five to seven months is about the time for weaning.

Q. Is clover hay as good as timothy hay for horses ?

A. Yes, for farm horses and colts I would prefer clover hay, well cured and clean.

Q. Is two years old too young to break in a heavy colt ?

A. No. I would break in a heavy colt at two years, to light work. It would not be wise to have him do heavy work.

Q. Do you think it will pay a man with a one-hundred-acre farm to raise colts ?

A. Yes. I think every man with one hundred acres of land should raise one colt each year. He can do so with very little extra outlay, as a mare will do most kinds of farm work and raise a colt.

Q. Would you keep the foal in the stable after weaning it in the fall ?

A. Yes, at nights. If you have other young horses it is well to allow the foal to run with them during the day.

Q. Do you object to white face and feet in horses ?

A. No, not in heavy horses. I would prefer not to have the face and all the feet white, as there are some people who object. There is an old saying that "A good horse is never a bad color."

Q. Is it better to feed oats whole or chopped ?

A. For horses that can masticate them I would feed whole oats, but for young colts or old horses I would have it chopped.

Q. Do you feed clover hay to horses ?

A. Andrew Elliott, Galt : Yes, but do not over-feed. It is such a rich food that there is a danger of over-feeding.

Q. Would you grind grain for horses ?

A. Chas. S. Moore, Stanbridge, Que. : Young horses do as well on whole oats. Old horses do better when the grain is ground for them.

Q. What is the best remedy for spasmodic cholera in the horse ?

A. T. G. Raynor, Rose Hall : I find 2 oz. sweet spirits of nitre, and 2 oz. laudanum, in a pint of raw linseed oil, or water, a good remedy. Oil may be given after. Often when a horse shows the first symptoms one tablespoonful of soda in one pint of sweet milk will do the work.

Q. What is the best time of the year to have a mare foal ?

A. Dr. Henry G. Reed, Georgetown : In the months of May and June, when the grass is at its best. But if a farmer has a good mare, and he needs her in the summer to work, he could have her drop her colt in the late fall or early winter. Feed her crushed oats, some bran, well-saved clover hay, and a few roots. The mare would have plenty of milk to support her foal, the colt would be weaned in the spring and have grass all summer.

Q. What would you recommend to relieve a new-born foal that was constipated ?

A. Inject with a syringe an emulsion of soap suds, oil, and a little warm water. Four tablespoonfuls of castor oil will be enough to purge a colt. Remember that a light road horse requires as much medicine at a dose as a heavy horse.

Q. What would you do for worms in a colt ?

A. In the morning give him a dose of linseed oil (having given him no food the previous night), and two ounces of turpentine. This would be a dose for a colt 3 or 9 months old. Repeat this in two weeks. For pin-worms tobacco is about the best cure. (A dose would be about the bulk of a couple of chews.) Pare it down fine and mix with the food.

Q. What would you do for bog-spavin ?

- A. Blister repeatedly. The winter is the best season to do it. Biniodide of mercury, 1 to 6 of lard, rubbed in for half an hour, is one of the best blisters known.
- Q. What is the best cure for sweeny ?
- A. Give the horse a rest. Blister often. Blister for sweeny with about 1 to 3 parts of biniodide of mercury.
- Q. Would you consider it in-breeding to cross half-brother and sister ?
- A. Yes.
- Q. Is there any natural law by which you can control sex ?
- A. Not that I know of.
- Q. Would you place a good pedigree ahead of individual merit ?
- A. I would certainly try for both.
- Q. Do you consider it wise to have a mare raise a foal at three years old ?
- A. No, four years is young enough.
- Q. Would you advise crossing a small mare with a very big horse ?
- A. No, I would rather cross a large mare and a small horse.
- Q. Why would you not recommend crossing a Clyde mare with a thoroughbred ?
- A. Because the cross is too violent.
- Q. Do you not think that those imported bronchos may yet prove useful animals on the farm ?
- A. Most decidedly no.
- Q. At what age is it best to wean a foal ?
- A. About five months.
- Q. Does it hurt a brood mare to do light work during the winter ?
- A. No, it is good for her.
- Q. If the naval cords do not break at birth, is it best to cut them ?
- A. Yes, it is necessary to do so, but always tie a string around the cord before you cut it, to prevent bleeding.
- Q. I have a colt with what the veterinary calls "parrot mouth." Will it ever be any good ?
- A. Yes, but it will probably never do well on short grass, as it will not be able to bite closely ?
- Q. What breed of horses would you advise a farmer to raise in order to make a profit ?
- A. Any of the recognized breeds are always in demand, but always try and produce an animal of some well recognized breed, and not a mongrel.
- Q. What is the difference between a standard-bred and a thoroughbred ?
- A. A standard-bred is a trotting or pacing horse, and a thoroughbred is a running horse.
- Q. I have a brood mare badly foundered. Will her colts likely become foundered ?
- A. A foundered mare will not produce a foundered colt, but your mare probably had weak feet, which always predispose to founder, and her foal might have the same kind of feet.
- Q. Does the Government give you anything extra for abusing the broncho ?
- A. No, I do it cheerfully, without any extra pay.
- Q. In raising a foal with cow's milk, how should the milk be prepared ?
- A. Reduce one-third with water, and add a tablespoonful of sugar to every gallon of milk.
- Q. What do you consider the greatest fault with the general run of horses in this community ?
- A. They are nearly all too small ; too small even for road purposes ; have been bred too often from undersized road horses.
- Q. When weaning a foal, do you prefer crushed oats or whole oats ?
- A. Crushed oats ; but a colt will do very well on whole oats.
- Q. When a colt is not able to get up and suck when born, how often should it be helped to suck ?
- A. Every two hours, night and day, and even oftener.
- Q. How long should a farmer leave the shoes on his horses ?

A. No shoes should be left on a farm horse's feet longer than two months, and on a road horse not more than six weeks.

Q. For ordinary farm work, is a flat foot a bad one ?

A. Not usually, except it be very flat, but it would be a bad foot for road work.

Q. What makes the best poultice for a horse's foot ?

A. Linseed meal is perhaps the best, but almost any clean, warm, moist substance does very well—bran mash, boiled potatoes or turnips, but nothing dirty.

Q. I am thinking of buying an eight-year-old horse, with one foot much smaller than the others. Would you advise me to do so ?

A. No. The small foot is likely diseased.

Q. I have a horse with bad quarter-cracks. My smith has put bar shoes on him. Is that right ?

A. Yes, in most cases bar shoes are all right.

Q. Do you think it possible for a horse with a fairly good foot to do ordinary farm work without shoes ?

A. Yes, if he is kept without shoes all the time, but if he is shod during the winter his feet would be likely to break in the summer.

Q. Is it a good practice for horses in a livery barn to have their feet soaked in a bath tub every day during the hot, dry season ?

A. Yes.

Q. I run a livery barn. I know a splendid young horse which I can buy right, but he has quarter-cracks in his feet. Had I better buy him ?

A. No. He would not be likely to stand road work.

Q. Do you think it is possible to develop new breeds of stock ?

A. I suppose it might be done, but I think we had better devote our time to developing some of the present breeds.

Q. Speaking of the law of atavism, or reversion, do you think it possible for the progeny of any parents to resemble an ancestor three generations back ?

A. Yes.

Q. Do you think you have good grounds for saying that acquired characteristics are transmitted from parent to offspring ?

A. Yes.

#### DRAUGHT HORSE BREEDING.

By Alex. Innes, Clinton.

In considering the breeding of draught horses, a few words regarding their origin, as shown by horse history, may not be uninteresting. King John, about 1199, is credited with having done much to improve the horses of his time, by importing 100 Flemish stallions and using them on native mares, and from such blending as this sprang the English cart horse. Edward III. (1327), Henry VIII., and Queen Elizabeth kept up the good work, and in more recent years the efforts for the improvement and development of horses for heavy work resulted in a free exchange of animals between England and Scotland, to their mutual benefit. Lawrence Drew, who I think did more to improve the draught horse than any other man, credited James, Duke of Hamilton (1749) with importing a Flemish stallion for the free use of his tenantry, and, following that, large numbers of English mares were sent into Scotland for breeding purposes.

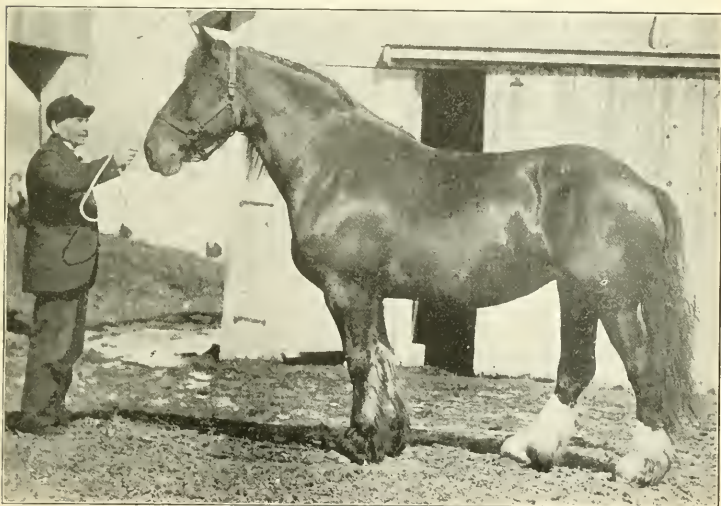
The Clydesdale. What was first known as the Clydesdale was a nice, clean-legged animal, with good action, first class as an agricultural horse, but deficient in bone and size for heavy work. Since the first issues of the Clydesdale Stud Book there is a marked distinction in what are really different types of a draught horse, although having about the same origin. The Scotch breeders found the American market so favorable to their ideas that for a time they monopolized the export trade. Of late years



the two types are getting nearer together, and I hope it will not be long till it will be hard to distinguish between them, as they are principally for one purpose, and I think it can be claimed that the best of both stallions and mares were those bred on the union of these two types thirty or thirty-five years ago. The breeders of Scotland and England had very little distinction between them, until the registration began.

**Avoid Pampering.** I am sorry to say we cannot find the number of good animals for heavy work we had ten or fifteen years ago. I think the reasons which contribute to this are high feeding, pampering, and inbreeding. When I began importing thirty years ago, such a thing as a horse not being a producer of some kind was scarcely known, but now they are all too common for the good of their owners or the country.

**Don't Use Cheap Sires.** Another reason—and the remedy lies in the hands of the breeders of our own country—is this—the want of judicious mating. Instead of encour-



A good type of mare to breed from.

aging and patronizing the best sires, which are usually at a nominal fee, say \$12 to \$15, they prefer to use any kind of a brute, at perhaps half; the old story, shilling wise and pound foolish. Such men are not only an injury to themselves, but to the district in which they live, as good and plentiful buyers always frequent the districts where they get good stuff. Another drawback at present is that a horse-owner has to be an insurance company also. If a patron loses a mare in foal, the poor horseman is expected to lose his fee, and if the foal dies he is supposed to lose half; but if an owner loses his stallion, his return benefit is simply sympathetic words. Under such conditions, how can importers be expected to import good and valuable horses? At the fountain head, Scotland and England, things are quite different; patrons use every means to encourage good

sires, they are selected by societies under guarantee of so much for their service, in shape of a premium, and half fees at end of season, the other half when mare proves in foal. There horsemen can afford to place before the public first-class animals, which are a source of profit to all concerned.

A motion was passed at the Horse Breeders' meeting at Toronto last winter, offering a bonus to newly-formed societies, provided the societies duplicated the amounts. I have not heard the results. It was at least a move in the right direction, but it may take time before the public can see the benefits of it. I do not think it would be wise for those who have registered what are called pure-bred Clydes or Shires to cross in the meantime. Comparatively speaking, these are very few compared with those where breeding is not up to the required standard for registration. But farmers who are not going in for pure-bred studs can make no mistake in crossing the now Clydes and Shires



A good yearling.

for good export, saleable horses. Let me emphasize the importance of building your structure on a good foundation, the main-stay of any horse. We are not a country of horseflesh-eaters, that can eat the carcass when the feet and legs give way. Avoid any constitutional unsoundness, or you will only be once sorry, but that will be as long as you remember the beast.

Finally, I may say, begin at the foundation, with good sound conformation and quality, with good size added, if possible, whether they are Clydes or Shires.

## SHEEP BREEDING AND FEEDING.

By Elgin F. Park, Burgessville.

To be successful in breeding sheep it is necessary to give them proper care and attention. They should not be left to pick their living by the road side. We live in one of the greatest sheep countries in the world, and yet, when we look around, how many flocks do we find? We ought to find a small flock on every farm, but many farmers have not a sheep on their places. Every farm ought to have sheep, if only to assist in tidying up the fence corners. This they will do if they are given half a chance, in that they will trim up grass and weeds in lanes, paddocks, and fence corners. Few weeds or plants will escape their notice. The weeds that one sheep will consume in the summer are about as many or more than the average farm boy can be persuaded to destroy in a single season. In a certain sense, therefore, a small band of sheep are wage-earners.

They ought to be kept to supply the farmers with meat during the warm months of the year. No more delicious meat can be furnished at such seasons, and none is more wholesome. The farmer can, in this way, get much of his meat supply in summer, and get it virtually without cost, since the pasture which makes the mutton would otherwise be lost, or, at least, a great part of it.

Ontario has a climate for sheep excelled by none. It is free from all contagious diseases so common in other countries, and this fact is a decided advantage for sheep-raising. I am glad to say that Ontario has within her borders some of the best sheepmen in the world. She has not only breeders of sheep, but also men who understand fitting them to compete against the world's best product.

At the recent International Fair at Chicago, which has perhaps been the greatest stock show that the world has seen, and at the Pan-American, the Canadian breeders swept all the best prizes in all classes exhibited. Since the World's Fair in 1893, American breeders have drawn almost entirely from the Canadian flocks for breeding purposes, and admit that Canada is the best and only country from which they can procure full-blooded sheep to keep up the quality of wool, and to build up a good-sized mutton sheep.

Every year there passes out of Ontario car load after car load of pure-bred sheep to the Western States, as well as to the North-West and Maritime Provinces, to build up large ranches.

The late fairs have had the effect of turning the attention of the world's best breeders to Ontario, and we trust that a good reputation in this respect will be lasting. At the Chicago Fair sheep that won at the Royal Show in England were not good enough to get third place. This will, no doubt, have the effect of convincing some of us that England is not the only country to produce pure-bred sheep.

Ewes before being bred in the fall should be kept on good pasture, so as to have them in a good strong physical condition. After housing for the winter the ram should always be taken away from the flock. Breeding ewes should not be fed turnips before lambing, as it causes lambs to come weak. After lambing turnips should be fed. Provision should always be made to keep up a good supply of succulent food during summer months. For this there is nothing better than rape, and for fall pasture rye is an excellent thing.

In fattening sheep it is necessary to keep up a continuous, steady growth, so as to avoid unevenness and bunchedness in the carcass. Sheep should not be closely housed, but should be given an open shed, so that they can take plenty of exercise, which is very essential for their well-being. The object in view during winter feeding of lambs is to promote growth. For this purpose you must feed plenty of good hay and occasionally pea straw, with some roots, and a little grain, which would be mostly bran and oats. While the pasture is good in summer, no additional food is necessary. Salt, water and shade should always be within reach of the animals. Care must be taken when the pasture is poor to supplement this with rape, vetches or other green crops. Beginning eight or ten weeks before the time of slaughter, a grain ration should be added. We

feed a mixture of oats, bran, oil cake, peas, increasing the feed and keeping the animals inside the latter part of the finishing period.

Now as to the lambs, we have the breeding ewes in good condition, when lambs are born, then feed the mothers liberally to promote milk production for the benefit of the lambs. We have a place arranged where the lambs may slip through and feed apart from the ewes. They soon learn to eat a mixture of oats and bran, with a little chop, pulped roots and clover. The lambs may be expected to fatten when pasture begins, but it is well to continue the extra ration for them when the flocks come into the barn at night. Again, any shrinkage should be guarded against when the pasture falls.

#### DISCUSSION.

Q. Would you advise the use of a shearling or aged ram on a flock in preference to a lamb?

A. Myron A. Gee, Fisherville: Yes, if the flock is over a dozen ewes. In a smaller flock a large, vigorous lamb may do.

Q. Do you breed ewe lambs first year?

A. No. Your flock would soon become too small in size to be profitable.

Q. Do you wash before shearing?

A. We generally do. The heat in spring is often oppressive before water is warm.

Q. You lose on the wool, then?

A. Yes, we get one-third less per pound, but have more pounds. We gain on the sheep doing better without fleeces.

Q. How do you get rid of ticks?

A. Dip the lambs about a week after the sheep are shorn, and again when they are put up for winter. We open wool every four inches and pour dip in on the skin.

Q. What will cure grub in the head?

A. There is no sure cure. Prevent the fly from laying its eggs by keeping the sheep's noses smeared with pine tar. A good way to do this is to split a log, lay it flat side down, bore two-inch holes on the upper side, two inches deep, and put salt in the holes and smear tar on the sides. The sheep in getting the salt get sufficient tar to keep the flies away.

Q. Should sheep be closely confined in winter?

A. No, an open shed facing south, free from draughts, and dry under foot, will answer very well. They will do better in a yard where they are not molested. Keep ewes tame.

Q. What should they be fed?

A. Let your sheep run on stubble, so they can come into winter quarters fat. This is the secret of raising good lambs, and of wintering sheep well. Feed good, bright pea straw, clover hay once a day, and a few roots. A few peas and oats mixed will be acceptable. Of course, it is necessary to keep salt convenient for them all the time, and water once or twice a day.

Q. How many lambs should a ewe raise?

A. Your flock should average a lamb and a half per ewe.

Q. Is a twin more apt to throw more lambs than a single?

A. I think it has something to do with it, but having breeding stock strong and vigorous at time of mating has more influence.

Q. We believe we have a good sheep district here (Parry Sound). How do you think our sheep compare with Southern Ontario?

A. T. H. Mason, Straffordville: Very favorably. When at the Pan-American in Buffalo last year I went out to East Buffalo Stock Yards. There were about 6,000 sheep and lambs in that day. The two best lots were from Ontario, one lot from near Woodstock, and the other from South River, Parry Sound District. They would average over 90 pounds. I was surprised to find your lambs on the market so early. I thought they would be two or three weeks later than southern Ontario, but I find your lambs mature quite as early as ours do.

## SHEEP RAISING.

By R. J. Hine, Dutton.

Why is it that so little interest is taken in the sheep industry by the average Canadian farmer? It must be that he does not think there is as much money in it as in some other lines, such as dairying, hog-raising, fattening steers, grain-raising, etc. How small a percentage of farmers give their main attention to that particular branch of farming! How few of us believe that it is the most profitable part of our business! There must be some good reason for this state of things. Is it the fault of the sheep or of the management?

I will not go into the labor and cost of dairying, hog-raising, etc., but if we gave one tithe of the care to our sheep that we give to growing special crops of fodder and grain to force the flow of milk of our cows, and to hastily fatten our hogs, what a different result there would be in the profit from our flocks. What attention do the ordinary mutton flocks of the country receive? Very little. They are either put on the road, to live the best they can, to be chased backwards and forwards by all the useless curs that may pass along, or they are turned into the poorest pasture on the farm, where nothing else would be expected to live and pay its way. When the lamb-buyer comes in the fall to look at the lambs, and finds some melancholy-looking specimens, perhaps covered with burrs, and some not castrated, for which he (on that account) will pay a poor price, the farmer comes to the conclusion that there is no money in sheep anyhow. By way of contrast, let us look at the flock of a good farmer on a hundred-acre farm, who takes an interest in his sheep. He has about twenty ewes, all good specimens of the breed he fancies, not pure-breds, but you can hardly tell them from pure-breds, for careful to use a pure-bred ram, retaining his best ewe lambs every year, and when it when he started his flock he just bought some common grade ewes, but he was always was necessary to purchase another ram, always getting one of the same breed, and the best specimen of the breed to be got, until now he has a flock that would equal in appearance a flock of pure-breds.

But some of you would say, I want to change my sheep every three or four years, because they will not do well any longer on the same land.

This man knows too much to listen to any such exploded theory as that. He knows when he selects from some good, pure-bred flock a strong, heavy-fleshed, low-set, broad-backed, well-covered ram, with a strong masculine, but not coarse head, a good type of the breed he fancies, that he is going to improve his flock. An acquaintance of mine (one out of four or five who were buying lambs this fall) told me he had sold 25 ram lambs to farmers for use in their flocks. I do not know how many the others will have sold, probably as many each. These lambs were of mixed breeding, which would mean that perhaps one hundred scrub rams in one township were used for breeding. What can these men expect from such management? What would they think of using a mongrel sire for their mares, cows or pigs? They would say it would be the greatest folly. The folly is just as great with regard to their carelessness in not selecting good sires for their flocks.

Do you suppose those wide-awake Yankees would be coming over here and taking our best pure-bred rams for their own use, at good long prices, unless there was money in it?

I know two Lincoln flocks in England that have been kept on the same farms by father and son down, for 125 years, until now they have arrived at such a state of perfection that the fact of a Lincoln sheep being bred by Dudding or Dean is a guarantee of its superiority. Sheep from these flocks took about all the prizes offered for that breed of sheep at the World's Fair. I think this fact should be sufficient answer to those who are continually changing their flock. I would say to such, change your management, not your sheep.

Another thing that probably would be done in preparation for these twenty ewes would be to give them as additional pasture a strip of turnips or mangels, a bushel and a half a day, few with good, clean pea straw twice a day, and an occasional feed of clover will take them along until within two or three weeks of lambing. Then a few oats would help to bring on a stronger lamb and put the ewe in a better condition to give a good flow of milk. Two or three acres of rye, to turn into early, would keep the flock going for five or six weeks, when the piece could be plowed down and rape sown. This would come in nicely for the lambs at weaning time, and would send them on ready for the market, and at very little cost. If you could have an acre or two of peas and oats to follow the rye you would need very little pasture, except for a change.

Another good plan for sheep pasture, where corn is grown, is to sow about a pound and a half of rape seed broadcast, the last time of cultivating. I did that one year, and our sheep nearly lived there until the 10th of February, when the first deep snow came. They used to come in every night, and I gave them a little oats in the morning before going out, just to keep them scouring.

I think, by a little extra care in growing some special crops, by using the best rams procurable, and by improving the quality of the lambs, we could get better prices, at a less cost of production. If one is not afraid to invest in pure breeds and make a bid for the American trade, there is still more money in it. One need not be afraid of glutting the market if he produces the right sort, for there is always room at the top.

### THE BACON HOG.

By W. S. Fraser, Bradford.

Much has been said and written of late on this subject, yet at Institute meetings it is still a live topic. From discussions we find, too, that many farmers are still following wrong lines.

The bacon hog is one with long body, medium shoulders, deep sides, ham remarkable for length, rather than thickness, back not wide, slightly arched, and carrying width evenly along, full over loin, no crest over the shoulder, sides straight, so that a straight edge will touch evenly from fore part of shoulder to rear of ham. From front of shoulder to point of nose should be tapering, with a slight bulge at jowl. This hog developed to the weight of 180 pounds, with about one and a half inches of fat, evenly distributed along the back, the sides reasonably thick with marbled meat, is an ideal bacon hog, and most suitable for making Wiltshire sides. For such hogs packers will pay 50 cents per hundred more than for any others, and their value sets the price for all others.

**How to Produce the Bacon Hog.** The breeds from which to get this type of hog are notably, the Yorkshire and Tamworth and their crosses. Either of these crossed with the Berkshire gives good results.

**Selection and Care of Dam.** Care should be taken when selecting a sow for breeding. What is wanted is a thrifty, well-proportioned animal, with long body, well set on good, strong legs. She should not be too coarse, and should have at least twelve teats, thus showing the capacity for good, large litters, with the accommodation for raising them.

Young sows should be liberally fed on flesh and bone-producing foods, such as ground oats and wheat bran. In summer they should have a run on clover, and in winter comfortable quarters, with access to a yard. It should never be forgotten that exercise is essential for breeding sows. Sows should not be mated before they are nine months old. At all times they should be kindly treated. A good brood sow is worth caring for, as she is more profitable than a brood mare. Her progeny mature more quickly, do not require such expensive stabling, are exposed to less risks, and a ready market is always obtainable for them.

In winter a ration of grain, roots and clover hay, with access to a yard for exercise, is an economical and suitable way of caring for brood sows. The farrowing pen should

be roomy and warm, with just a sufficiency of litter. In very cold weather it is a good plan to heat a couple of bricks and put them in a basket, cover with chaff, and then put the young pigs on this until all are farrowed, when they may be placed near the teats. For the first twenty-four hours after farrowing give the sow nothing but perhaps a drink of warm water, as food or slops may kill her. The act of a sow in eating her young is often the fault of the owner in feeding heat-producing food prior to farrowing, and giving little or no exercise.

Yorkshires and Tamworths make good mothers, and usually produce larger litters than most other breeds. I know a Yorkshire sow that gave birth to 22 pigs at one litter, and raised 14 of them. Ten or twelve well-nourished pigs are more profitable than a larger number insufficiently fed.

After farrowing the sow should be fed very moderately for a few days, as liberal feeding may produce milk fever. After arriving at her normal condition, feed her all she will eat up clean. As the pigs grow older, provide some way so that they can get at a small trough outside of the pen, where some ground oats or middlings are kept moistened with milk. This helps them wonderfully, and prepares them for doing for themselves. Castrate at about five weeks old. In case of ruptured pigs, when castrating make as small an incision as possible, push the bowels back carefully, and put in two or three stitches with a strong needle. Wean the pigs at seven or eight weeks old. In doing so have some consideration for the sow, and shut her out for, say, twelve hours, and then return her for a few minutes. Repeat this for a couple of times, as it relieves the sow very much and helps the young pigs along. The sow may again be mated about the fifth day after the first separation.

**Development of the Young Pigs.** Much of our success in hog raising, both as to economy of production and quality of product, depends on how we care for the young pigs after weaning. The old saying that "feed is half the breed" is true, if we include the methods of feeding. Feeding is largely on food that tends to produce fat, without sufficient exercise being given, will often change a little of Yorkshires into a thick, fat type, or may cause such a derangement of the digestive organs as to founder the young pigs. This is a most serious condition, and will render them profitless.

Indigestion may show itself by the pigs falling in flesh, loss of appetite, roughness of hair, scainess of skin, teeth becoming black, etc. The last condition is often thought to be the cause, rather than the effect. It is, together with the others, but an evidence of injudicious feeding. In some cases young pigs become so fat that they die from what is known as "thumps." In all these cases proper food and exercise will prevent, and, in a measure, remedy them. "Prevention is better than cure."

**Foods.** Shorts and skim milk is the ideal food for young pigs. Where milk is not to be had, shorts moistened with kitchen slops is good. In a month's time a mixture of oats and ground barley may be added. As the pigs grow older whole peas, steeped for twenty-four hours, may be fed. Roots in winter and clover pasture in summer will in all cases reduce the cost of production. Well-cured clover hay may be given in small quantities in winter, and will be relished and utilized to good advantage. Charcoal or hardwood ashes and salt should be within reach at all times. Prof. Henry gives the result of an experiment with bone meal, fed with corn. He found that 28 per cent. less grain was required to make 200 pounds of pork; hardwood ashes and salt had nearly the same effect. We learn from this that by the use of this condiment the cost is reduced by nearly one cent per pound.

**Wrong Impressions Concerning the Bacon Hog.** When the bacon hog was first introduced many farmers were shy of him, thinking that he would be hard to feed, but experiments that have been made with the different breeds to ascertain if possible which breeds give the best results for food consumed, go to show that no one breed can claim a superiority in this, as different breeds came out ahead at different times. Experiments show that as much depends on the individual as on the breed. Another wrong impression that prevailed was that by selling hogs at 160 to 180 pounds weight we were losing money, as it was thought that at that size the frame was grown and additional weight could be added at less cost per pound. Experiments time and again show that the

first fifty pounds cost less than the second, the second fifty pounds less than the third, and so on. (Feeds and Feeding, Prof. Henry.)

Exports. Last year we exported thirteen million dollars' worth of pork—ten millions from the Province of Ontario—and some millions more have been sold for local use. This means that farmers have received a large amount of money for hog products. Yet, from what packers say, we have not received all that we might have had for the same quantity, as only 40 per cent. of it was No. 1, 45 per cent. being thick, fat and lights, and 15 per cent. damaged. The latter is caused by abuse in marketing, partly by farmers, and the rest by drovers and their employees striking many blows when driving, loading, etc. This is a loss to the country and reverts on the farmer. Every means should be taken to prevent this loss.

When to Market. Packers are warning farmers against marketing hogs in the months of November and early December, for the reason that in six weeks from the time hogs reach the packing house they are laid down in the British markets, and hogs marketed at that time of the year come in conflict with game and poultry, etc., of the Christmas market, and consequently a lower price is usually obtained.

Farmers should keep one eye on the hog and the other on the markets, and keep well posted on the latest methods of feeding and marketing.

#### DISCUSSION.

Q. Is the present price of bacon likely to continue?

A. Major Sheppard, Queenston: For a year, or perhaps two years. Hogs are still scarce and high in the United States and Denmark, and the high price of coarse grain in Ontario will prevent the farmers from rushing into the hog business, as they did a few years ago. In fact, it will prevent them making hogs of themselves!

Q. Which do you consider the best bacon breed? Would a cross between Chester White and Tamworth be desirable?

A. I see no objection, provided the Chester White were of a good type, but I would rather depend on Berkshire, Yorkshire and Tamworth.

Q. What is the reason that sometimes we see hogs quoted at a higher price in Chicago than in Toronto, and at the same time Canadian bacon is much higher in London than American bacon.

A. The American market is a home one only. Only 25 per cent. of their hog products are exported, and consequently the home demand regulates the price. On the contrary, the Canadian market is an export one, only 25 per cent. of our output being consumed at home. The result of this is that American packers are able to control the trade, and when a shortage occurs boom up the price for a short time, but you will find, taking one month with another, that the price in Toronto is from 25 to 50 cents per hundred better than American prices.

Q. What is the reason hogs drop in price suddenly, when there is no change in the price of bacon?

A. When the packers, who keep posted, notice the killings the preceding week have risen above the average, they are likely to drop the price, expecting that the increased supply will be followed by lower prices and a weaker demand.

Q. At what age do you like your sows to farrow first?

A. J. W. Clark, Onondaga: Not before one year old.

Q. What time in heat should a sow be served?

A. Don't know that that makes any difference, as long as she stands quiet. It is not wise to have them romping with other pigs after service.

Q. Do you think that excessive service of the sire produces runts?

A. It might have a tendency to, and more of them.

Q. What kind of a pen do you like for winter feeding?

A. I prefer a wooden building to a stone or cement one. A cement floor would probably be all right if you had a raised sleeping pen.



Q. What should be the age of pigs before they are turned off ?

A. From seven to eight months ; they are inclined to be soft if forced off too young.

Q. Do you like the pigs confined in winter ?

A. They should have exercise on fine days, but should not be allowed to run from one neighbor's place to another, or all over the farm. By so doing you would make athletes of them.

Q. What is the cheapest hog feed in winter ?

A. Cook pulped sugar beets or mangels and add finely-cut clover, well cured, mix chop or shorts and add a little salt to season. It is a mistake to feed this too sloppy. The roots, clover and chop make a cheap, bulky food. By putting the cut clover in the hot, cooked roots it softens it like green clover, and they relish it fine.

Q. Would you give water between meals in winter ?

A. Not with this feed. It is a mistake to give pigs too much water in winter.

Q. Do you think that a man can make more money by turning them off at 175 lbs. than by keeping them to 210 lbs.?

A. Our packers like them better at about 180 lbs., and we should try to suit them if we wish to have our markets in the Old Country improved. There has been a tendency among feeders to make hogs too heavy and fat to make ideal Wiltshire sides.

Q. Supposing a right type of hog was fed to over 200 lbs., would it be condemned ?

A. That depends largely on the markets. It is safe to sell at 160 to 200 lbs., rather than run the risk of going over 200 lbs.

Q. Which breeds do our packers like best ?

A. It is becoming universal among packers that the improved Yorkshire and Tamworth are best.

Q. Are not Yorkshires preferred to Tamworths ?

A. The Tamworth is deficient in the hams and thin in the belly.

Q. Does not the Tamworth excel in the head ?

A. They certainly do have a lighter jaw, but the head is of no use to make a Wiltshire side.

Q. Are the Berkshires condemned for bacon hogs ?

A. Not if you have the right type, but as a breed they have a tendency to heavy shoulders and thick fat on the back. We can select a right type from most of our breeds.

Q. Does not the Berkshire and Tamworth cross make a good bacon hog ?

A. They do if you have the right type of Berkshire, but if you do not you will have thick fats.

Q. What care should a brood sow have ?

A. They should have plenty of exercise and a feed of roots and grain each day. It is a mistake to think a sow carrying a litter of pigs should be fed roots and no grain. If you do you will have weakly pigs.

Q. Have you any trouble with sharp or black teeth ?

A. I do not think there is any harm from black teeth ; it is the sharp ones that cause the trouble.

Q. How would you treat them ?

A. When the pigs are two days old I take a flat file and file off the sharp ones. I find this much better than pulling or breaking them off.

Q. Would indigestion in the dam be the cause of black teeth in young pigs when farrowed ?

A. That would probably have a tendency to cause them, but I find most pigs have them.

Q. Have you any limit to the amount of skim milk you feed pigs ?

A. Yes, you get more value by feeding 3 lbs. milk to 1 of grain. If you double the quantity of milk you lessen it one-half in feeding value.

Q. Do you think it good policy to wean at six weeks ?

A. Yes, if you have accustomed your pigs to taking a little feed from a special trough

Q. Would you leave the runts still longer with the dam ?

A. If I had plenty of room. They would gain in about a week or ten days.

Q. How much litter do you give your sow when farrowing ?

A. That depends on the pen. If it is a warm one very little does. If it is a cold one in cold weather you need more. Chaff or cut straw is preferable to long straw.

Q. Does it pay to cook feed for pigs ?

A. That depends on what you are feeding and the pen you have. If a cold pen, I like to give them warm feed. Cooked food is more easily digested, and the young pigs do better on it.

Q. Why does the market take such a drop in the fall of the year ?

A. There are two reasons. One is caused by the English market dropping at the holiday season, as there is more poultry used at that time. Another reason is that in the fall most farmers have their spring litters to turn off, and for a time the market is flooded.

Q. Have you fed any ensilage ?

A. Mr. Nodwell, President of Centre Wellington Institute, is feeding two hundred hogs on corn ensilage. He sows the North Star Yellow Dent corn, cuts it quarter inch long, and puts in the silo. He mixes this ensilage with mixed chop, two-thirds ensilage and one-third meal ; gives roots at noon. As they get to weigh 125 pounds he increases the grain mixture with the ensilage to finish, and can produce hogs at less than 4c per pound on this feed in winter.

Q. Would you feed all the roots a pig will eat ?

A. Roots will not hurt a pig if fed in large quantities, if you do not give too much drink. If you are feeding many roots your pigs will not require any water, as the roots are 85 per cent. or 90 per cent. water themselves. You should always feed some grain with roots to balance the ration.

Q. What causes pigs to cripple in winter ?

A. There are many causes. Feeding too much fat and heat-forming foods, damp sleeping quarters and lack of exercise.

Q. How do you cure them ?

A. If bad give them 2 to 8 ounces of linseed oil in milk, according to size. Change feed; keep in warm pen where exercise can be taken. If bowels are kept right there is little danger of crippling.

Q. Is linseed meal good feed for pigs ?

A. Yes, if fed in limited quantities to growing pigs.

Q. Do pigs require salt ?

A. They seem to relish it, and it is better to give a little in the feed.

Q. Should a boar kept for service be kept thin ?

A. Not too thin. He should have plenty of exercise and be fed on roots and grain. A hog kept on roots alone won't produce strong litters.

Q. What causes stiffness in hogs ?

A. Myron A. Gee, Fisherville : Over-feeding and damp beds. Constipation and stiffness seem to go together. By letting them out for a run it can be avoided. Also have pens bright and dry.

Q. What medicine would you advise ?

A. Prevent it. As a medicine  $\frac{1}{2}$  saltpetre,  $\frac{1}{2}$  sulphur, one teaspoonfull to hogs weighing 100 pounds, is very good, but get them out doors.

Q. What is the cause of sows having no milk ?

A. Generally caused by feeding sow heavy or strong feed immediately after farrowing. Don't feed for twenty-four hours unless it be a very thin bran mash, with chill taken off it.

Q. Why do sows eat their young ?

A. Generally caused by too close confinement and too heating foods.

Q. At what age should pigs be taught to eat ?

A. We feed sow in trough 4 feet long, 12 inches wide, and 3 inches deep and let them eat as soon as they see fit.

Q. What do you feed at weaning ?

A. Skim milk and scalded shorts, also ground oats, with roots or other vegetables. They will eat clover hay well.

Q. How do you kill lice on hogs ?

A. If pigs are small dip them, if to large spray, using sheep dips. A little machine oil or lard rubbed behind the ears is a good thing.

Q. How many litters should a sow have a year ?

A. Two. When you get a good sow keep her and keep her at work. She should raise twenty pigs a year.

Q. Does it pay to feed hogs roots ?

A. W. S. Fraser, Bradford: Yes, a ration of mangels or sugar beets in addition, will develop the hog at less cost than feeding wholly on grain.

Q. Why feed charcoals to hogs ?

A. To keep their digestive organs in good condition.

Q. Why do pigs get foundered ?

A. Over-feeding on grain, with little exercise.

Q. Can we not profitably feed hogs to two hundred and fifty pounds weight ?

A. No; the heavier the pig the more it costs to add a pound weight. Better give the food to young pigs.

Q. What do you consider a good gain for a pig ?

A. J. W. Clark, Onondaga: One pound per day. I have had them gain at two pounds a day.

Q. How would you feed the brood sow ?

A. A few sugar beets, a little corn and plenty of exercise.

Q. Is it good for the small pig to eat with the sow, when very young ?

A. No, and they do not do it if the sow is a good milker.

Q. Can you do without skim milk ?

A. Yes, by mixing sugar beets, cooked with cut clover hay, and some oil meal mixed with it. Mix it stiff and allow it to sour a little.

Q. Do you approve of pure blood in both sow and boar ?

A. Yes, I like it better than a grade sow and pure bred sire.

## PROFITABLE HOG RAISING.

By Wm. Bunt, Kemble.

In bringing forth a few ideas in connection with the pork industry. I do not wish to pose as an authority on the subject, but rather to voice the views gleaned in a humble way from my own experience. I am always willing to learn and receive any suggestions which may be of benefit, to aid in dealing with the management or in the trade of this most useful and valuable article of consumption.

My topic it will be observed deals principally with the animal during the cold weather period while under confinement. I need only to add that for summer, a run of good clover pasture, access to orchards and grain fields, gleaning will be an advantage for the growing period.

In introducing the subject we might use an old trite saying, "A place for everything and everything in its place," this can be made applicable even in dealing with this animal—the hog. One of the first things necessary is to have a proper place to keep it. For a pig to be poking its nose into everything and shoving itself into many places it ought not to, often brings down on itself the wrath of the individual, who may to a large extent be responsible for the trouble. No animal on the farm is made a target of more than this one. It is the butt of a stone or a club or anything which comes first, and the sport of every man's dog, and too often we fear is left to shift for itself, and in conse-

quence has often very short ratfons. Its wants are but few and very reasonable, good food and drink, and a comfortable place to rest.

Like other animals it is susceptible of kind and generous treatment, and will soon repay with profit, the proper care and attention given.

**Kind of Hog.** In selecting the female for breeding, she should conform to the type and known as the long bacon hog, with plenty of places on her brest for the nursing of her young. It is desirable that she be kind in disposition, and inclined to be friendly. As to breed, I like the Yorkshire very well, crossed with either Tamworth or Berkshire. Unless you have warm and suitable quarters, April is soon enough for the young litter to make its appearance, as they are apt to get chilled, also to be crushed by the mother.

**Kind of Pen.** Without going into detail as to size of building, which should be roomy, it is important that it should be warm, dry, and clean. Keep out cold and have the floor made of lumber and free from draught. Cement is all right, but being cold to the skin, the sleeping apartment should be floored with lumber. Do not have an overabundance of bedding, but a moderate quantity of short matrial.

**Treatment Before Farrowing.** For some days previous to farrowing the sow should be introduced to her room to get acquainted with it, for to be shut into a strange place the moment before the birth of her litter, they sometimes are dissatisfied get restless and cross, and endanger the lives of many, if not all of their progeny. Just before farrowing do not feed too much cold raw food, or a surfeit of grain, but feed warm mash, bran, shorts, or a little oats or barley chop, some warm milk, or wholesome slop from the house, and a few roots. The same diet will apply after farrowing, but do not be in a hurry to feed for a few hours, nor intrude into her apartment with too much noise or bustle. It worries and excites her. There are liable to be great damages and loss incurred by the sudden rising to bid defiance to an unwelcome intruder.

It is very important beoth before and after birth, to see that there is not too much coarse bedding. It will be bunched by the mother, and the little ones will not be able to get around easily, and may get crushed by her. After a few days she may be let out alone. Too much confinement is not good, and being shut up with her young, she is liable to throw them around and hurt them.

**Care of the Young Pigs.** As the little fellows get older, they drag more heavily on the parent, who should now be fed liberally. When they show signs of picking for themselves, a few grains and sliced roots may be thrown to them on a clean floor, when the mother is out. Or have a room partitioned off, and an opening for them to creep through, where they can eat without molestation, or drink from a small trough. Do not give them too much food, or let it lie and become stale.

Feed the mother well, and this is a very good way of feeding them. They may be weaned any time after four weeks. Eight weeks old is a good time to wean them. In weaning them the sow should be let in with them at least twice, a day or two intervening. At this time they demand your most particular care and attention, as by exposure to cold and damp, over-feeding and under-feeding, it is possible your hopes may be blighted. Feed warm milk, slops from the kitchen thickened slightly at first with shorts, bran, and a little oat and barley meal. Feed grain sparingly for the first one hundred pounds of their weight. Give them all the roots they will eat, also a little clover, green or in hay, and an occasional feed of ashes, sulphur and salt. Oats, barley and peas, mixed and chopped make a good feed, but rather expensive. Give less of peas at first, and increase as nearing the finishing period. One of the best lots I ever had, was a spring litter fed on soaked peas, slop thickened with a little shorts, and finished on grass.

**The Growing Period.** A one-rule method of feeding may not be successful always, as conditions vary. It may be from the weather or something peculiar to the animals themselves. Some litters I have been able to feed heavily, and others only very carefully for fear of crippling them. By care and practice a person can find out a proper method, and should aim to carry it out systematically. I have found that grain with the milk

and slops from the house, fed morning and evening, with roots for the noon meal, is a very successful plan. The animals get lively and healthy. Running out of meal is a great mistake, and should be avoided. Running to the granary and taking the first thing that is handy, to satisfy the animals, is wasteful and unsatisfactory, and if indulged in to a great extent, will soon make them unthrifty, and it will be a serious loss to the owner. Some recommend to let them out for exercise once in a while, but I am inclined to think it makes them restless and uneasy. Dividing the room into two, I find a very good plan, if the space permits it, with a low fence for them to jump over in passing from one pen to the other. Do not keep too many in one pen unless the space is large, and has plenty of troughs. Troughs should be the proper height, with slats nailed across to prevent them from crowding each other from the trough, and this also keeps the food clean. The slats should be nailed to the outer edge of the trough, on an incline up to the wall. This prevents them from getting across or monopolizing more than their share, and keeps the stronger from rooting off the weaker ones.

Now feed regularly and carefully, increasing in strength and quantity, as your judgment sees fit. Your object should be, not fattening exclusively, as is too often the case, but growing and moderately fattening until they reach the desired weight of 160 to 200 lbs. The last few weeks they should be fed principally on grain. Again I would like to impress the importance of keeping them clean and dry. Remove the soiled and damp bedding often, and replace with a little dry straw. Clean wheat straw is preferable, as it does not keep damp, or pack and heat as quickly as the other.

While there is a great variety of material fed to pigs, we should remember it is the properly matured animal that has gained for Canada the place of honor, and we regret to state that often the man who produces the right material, too often fails to reap the reward and benefit to which he is entitled. Until the purchaser discriminates in favor of the best, we fear too many will fall into the temptation of producing the cheaper, but inferior article.

In spite of repeated warnings and advice, a large number of hogs are overdone, too thick, too fat, to meet the popular demand, as the enquiry is for the long lean animal. Our duty and aim should be to strive to reach that standard and go on with that object in view.

Do not brag that you fed your hogs on boiled turnips and other sloppy material, not costing you much, while your neighbor fed his largely grain. He is making an effort to produce a good article to the credit, not only of himself, but his country and its products as well, while you for a little personal gain, may not only create a prejudice against, but bring disaster to the trade in this most useful and valuable article of food. How often we hear of sloppy pork, the result of poor feeding. Too often is seen the improperly cleaned article, covered with perhaps a little pea straw or perhaps a horse blanket, exposed for sale, as an article of food from which people turn away in disgust. Under such conditions the price cannot be expected, as is expected by the individual who produces the right article, in clean, wholesome and an attractive form; but we regret we have to confess, that the person who is deserving of does not always get the credit and benefits to which he is entitled.

The pork industry has gone forward lately with strides and bounds and let us keep it up by producing the good article.

It has been said "It is harder to hold a trade or a position than to get it." Let us not only strive to get it, but hold it, we have the material and ability, let us make the best use of it.

We must all pull together to produce a good uniform material, therefore, it behoves us all to take a step forward in order to keep up prices and quality to meet requirements.

If we suit the trade of John Bull (which we can if we will) he will buy largely of us, he has lots of money, but he must have the very best article. If we can supply the British Market with the very best kind of bacon, there is no doubt that Canada can hold the balance of trade in this as well as in dairy products.

## DISCUSSION

Q. Have you ever compared the keeping of Yorkshire and Berkshire sows ?

A. J. W. Clark, Onondaga : I can keep five Berkshire sows as easily as three Yorkshires, or three cross breeds. A Berkshire sow can be kept cheaper. Often the pigs develop too fast, and get too thick and fat.

Q. What about black teeth in pigs ? Would they be better taken out ? If so at what age.

A. They are the result of bad nutrition, and are sometimes caused by the presence of wolf teeth, which should be filed down and taken out, when the trouble will be allayed.

Q. What difference would feed fed to a sow before having pigs have on the progeny ?

A. T. G. Raynor, Rose Hall : Foods that are deficient in bone and muscle-forming material fed to a brood sow would mean a weak and inferior litter of pigs. Feeding too many roots in winter and allowing sows too much succulent food, such as rape in fall, mean weakly pigs. A brood sow should have a variety of foods to do the best, especially bone and muscle-forming foods.

Q. Do you find it advisable to wean pigs at six weeks in winter time ?

A. No, as a rule I should favor leaving pigs on the sow two weeks longer.

Q. What age should rape be for hog feed ?

A. If sown broadcast pasture when eight or ten inches, but if in drills I would allow it to get more mature, or from one foot to two feet high.

Q. Would not the good results of feeding ensilage be on account of plenty of grain in it ?

A. Yes, there would be something in that, but it also gives succulency and hulk to the food, which all pigs require where they do best.

Q. Do you approve of feeding buckwheat ?

A. No, not alone. For finishing pigs a portion of the grain ration might be made of it.

Q. How do you feed oil cake to pigs ?

A. To young pigs after weaning I would mix oil cake with roots, shorts and clover hay, then steam or cook. Where milk or whey is scarce, oil meal in this way may be fed to take the place of skim milk. To older pigs it may be mixed with the grain in the ordinary way of feeding. The amount must be regulated to the size of the pigs and the influence it may have on the bowels.

Q. Does it pay to shell and grind corn for pigs ?

A. As corn should only be fed to bacon hogs in the finishing stages to any extent, I do not think it does pay to prepare the corn in the way proposed. If it is used for feeding to young pigs it should be used in small quantities and ground fine. Skim milk or whey should be fed with it.

Q. How much should a strong thrifty pig gain per day from birth to maturity ?

A. I am content if I can get a gain of one pound per day.

Q. How much oil cake can be fed to pigs per day ?

A. About one pound for every ten pigs.

Q. Does corn cause soft pork ?

A. Too much corn fed to young pigs especially, may cause soft pork, but even a large proportion at the finishing stage has no such effect. Feeding skim milk with corn will counteract the tendency of corn in producing soft pork ?

Q. Do you have concrete floors ?

A. Yes.

Q. Do you approve of raised sleeping pens ?

A. Yes, especially where you have concrete floors ; but care should be taken not to make the sleeping berth too large, as they will like to stay in it too much.

Q. Should we force our pigs up to to 200 pounds at 5 or 6 months, or let them go slower, say 7 or 8 months, and which would be the most profitable.

A. I believe if we are to hold our market in quality it is preferable to go slow and grow them longer, and I believe it is more profitable, provided we supply green foods for summer and winter.

Q. Do you think lucerne a good hog food ?

A. Unquestionably so. It is one of the best.

Q. Will clover or lucerne pasture affect the pork in producing softness ?

A. Not when fed with the by-products of the dairy, and the finishing of the last month or so is done with mixed grains.

Q. Which is the best breed of hogs, Tamworth of Yorkshire ?

A. Judged by the bacon requirements I believe the Yorkshire is preferable. The Danes (who are our strongest competitors in the English market) think so, and the majority of packers think the same. The Tamworth is a little deficient in the belly part, being too light.

Q. Does it pay to pasture hogs ? or cut food green and feed in pens ?

A. I prefer to pasture. Labor is too scarce and high-priced to cut and feed.

Q. Where hogs are raised largely on clover and grasses, what breed will give the best results ?

A. T. H. Mason, Straffordville : I believe that Berkshire is about as good a grazing hog as we have, and when grown in this way with a small amount of grain at finishing time, makes a very good bacon hog.

Q. Why do you advocate growing hogs here ; (Muskoka and Parry Sound District) this is not a grain growing section ?

A. While under present conditions it will not pay to go into hogs as extensively as we do in Southern Ontario, still I believe it would pay every farmer to keep a breeding sow, for all keep cows and make butter at home. Clover and grasses succeed admirably everywhere. Hogs, with a very small addition of grain, can be grown successfully on clover, grass and dairy by-products in summer. In winter substitute cut clover hay and roots.

Q. What do you think of elevated beds for pigs ?

A. They are giving good satisfaction. To winter hogs successfully it is absolutely necessary that they have dry beds.

Q. Have you any experience with cement floors ?

A. No. Mine are plank, but when they go I shall put in cement. I am satisfied they are all right where plenty of litter is used.

Q. Is it profitable to feed corn in the ear ?

A. Yes, of course. I could not feed corn alone to pigs. We always use shorts and other grains, and in fact feed very little corn to pigs under 100 pounds live weight. After that a percentage of corn may be safely used, say one-half of grain fed.

Q. How about cooking feed for pigs ?

A. We always cook or scald the shorts and meal for small pigs, up to about three months old. After that uncooked food will do. In cold weather always take the chill off food. Never give them cold, frozen food.

Q. What do you think about rushing the pigs up to 200 pounds at six months ?

A. We must consider the demands of the export trade in this matter. A little slower growth would produce more lean flesh ; hence I would prefer not to crowd too fast.

Q. Don't you think that pigs are often fed too much sloppy food ?

A. Yes, especially in cold weather. It is very easy to spoil a pig by loading the stomach with too much slop.

Q. Do you feed hogs dry meal or wet ?

A. We feed wet, although experiments show slightly in favor of dry feeding.

Q. How do you feed wood ashes ?

A. In taking the ashes off in the morning always wet the coals so as to preserve the charcoal. We throw it on the floor, although I suppose a box would be better. Never throw it in the trough.

Q. Do you think ground oats good for pigs ?

A. Yes, but at present prices I would prefer shorts.

Q. How about ground wheat for pigs ?

A. This along with other food makes an excellent finishing feed for them.

Q. Would you use rye for hog feed ?

A. It is dangerous for young pigs, but mixed with oats, bran, or shorts, is all right for older ones.

Q. What value has factory whey ?

A. The men who feed hogs in large numbers at the factories, pay from three to four cents per hundred for it. Of course it is worth more than that to them as they have to make a profit out of it. Some authorities say it is worth six to seven cents per hundred. I don't think the average whey that reaches farm pig pens is worth more than four cents per hundred lbs.

Q. What do you think of alfalfa as food for pigs ?

A. A very rich food, giving good results, not only for pigs but all classe of stock.

Q. You say that oil meal is valuable for young pigs, especially when fed with whey. How much would you give young pigs at weaning time, say eight weeks old ?

A. A good handful to a litter of 8 to 10 pigs.

Mr. Whaley, Mount Elgin : I mix 10 pounds of ground oil-cake to 100 pounds of mixed meal. That would be about a day's feed for 100 pigs of from 8 to 12 weeks old. I find it very useful, especially when feeding whey.

Q. What are artichokes anyway ?

A. F. C. Elford, Holmesville : They are plants that look something like sunflowers. Their chief feeding value is in the tubers which develop like potatoes.

Q. How do you plant artichokes ?

A. The same as you would potatoes ?

Q. How long will they stay in the ground ?

A. I do not know, perhaps forever.

Q. How do you harvest them ?

A. Let the pigs do it. They take all they can get, and there will still be enough left to re-seed the plot for the next year's crop.

Q. How much can you grow per acre ?

A. From 600 to 2000 bushels.

Q. How do you prepare the land for the next year's crop ?

A. Go over the land in the spring with spring-teeth cultivator, working it down level.

Q. Where can you buy the seed ?

A. From any reliable seedman ?

Q. Do the hogs like the artichoke ?

A. Yes, they are very fond of it and will do well upon it.

## ORDINARY DISEASES OF THE STOMACH OF THE OX.

By H. G. Reed, V. S., Georgetown.

As a rule I do not think it wise for a farmer to act as his own veterinary surgeon, but now that the feeding of cattle, both for dairy and beefing purposes is so generally practised through the country, I think every farmer should endeavor to know something of the diseases of the stomach of cattle, so that in case of emergency, he could be able to do something for the animal until professional help could be obtained.

When cattle are highly fed, the stomach has a very hard task to perform, and it is little wonder that it sometimes gets out of order. In order that we may more readily understand the diseases of the stomach, I shall briefly describe the arrangements of the organ and the process of rumination or chewing the cud. The ox is usually said to have a poor stomach, but that is not really the case. The organ is divided into four compartments, which for simplicity we shall call 1st, 2nd, 3rd, and 4th stomachs. The



gullet enters the 1st stomach, or paunch, the capacity of which is very great. The 2nd stomach opens from the first and is sometimes called the honeycomb from the appearance of its surface, then comes the 3rd stomach called manyplies from its resemblance to the leaves of a book. The first three stomachs prepare the food for the fourth, which is the true digestive stomach.

**The Process of Digestion :** We will now consider the normal or healthy process of digestion. When the food is taken into the stomach, it is but very imperfectly masticated and the greatest portion of it passes into the paunch. Some fluid or very fine portions may pass to the third or fourth stomach. While the food is being chewed in the mouth it is mixed with large quantities of saliva, a fluid thrown out from the salivary glands in the mouth. In the paunch it comes in contact with another digestive fluid secreted from the walls of that organ, and the whole mass is thoroughly mixed by the contracting walls of the stomach. After the animal has finished his meal the process of rumination begins. This act is performed by the contracting of the walls of the paunch forcing the food up against the gullet where an opening is provided, which grasps a portion of the partly digested food and by a regurgitating process is forced back to the mouth, where it is chewed again, much more thoroughly than the first time, and when swallowed the second time passes to the third stomach. Some coarse portions of food may pass to the paunch the second time to be further prepared for digestion. The final preparation of the food for the true digestive stomach takes place in the third sack, where it is drawn between the leaves of folds and reduced to a very fine state before passing to the fourth stomach.

In order that digestion may be properly performed, the muscular coats of the first and second sacks must be active and able to contract upon their contents as they collect. If from any cause those coats become inactive and the animal continues to eat, the contents will accumulate, the process of rumination will cease or the animal will have "lost its cud" as it is often expressed.

Now if this food be of a nature that will ferment easily, such as fresh clover, turnip tops, rape, or heavy meal, such as pea or corn meal, then we have a case of bloating shown by an enormous distention of the left side, which presents a more or less drum-like appearance. The animal will show signs of distress such as tramping about in the stall, slobbering at the mouth, tongue protruded, etc. When the above three symptoms are present treatment must be prompt, or fatal results will follow very quickly. In a milder form of bloating, a dose of purgative medicine, 1 or 2 pounds of epsom salts will usually effect a cure, being always careful not to let the animal have any more food until the bowels have been freely moved. In the next severe form of bloating we have to give relief by puncturing the stomach from the outside, a trocar and canula is the proper instrument to use, but as farmers do not usually have one, a knife may be used with safety. Make the opening on the left side about six inches downward from the hip bone. Keep the lips of the wound apart until the gas escapes, the animal will experience immediate relief, and, as a rule, will not be any the worse for the operation. Always follow up with a dose of purgative medicine and give no food until the bowels act freely.

When the stomach becomes over-loaded with food that does not easily ferment, we have what is called impact of the paunch. The stomach is not quite so full looking as in bloating and the same difficulty in breathing is not noticed, rumination ceases, and, as a rule, the patient is constipated. This trouble is usually overcome, if taken on the start, by giving a brisk physic, 1 to 2 pounds of Epsom salts and giving no food until the bowels move freely. Always let the patient have what water he wants in small quantities, and as often as he wants it. Sometimes an animal's stomach becomes so overloaded that medicines have no action whatever and an operation is necessary. An opening is made right into the paunch and the contents removed by the hand, but, of course, none but an expert could perform this operation. Impaction of the third stomach, or manyplies, is called fardel-bound, and consists of an impaction of the food between the leaves of the sack. The symptoms of this disease are not alarming, indeed are hardly noticeable for some days. The animal may be a little off her food for a day or two. If a milch cow she will fall off in her milk some and the nose will become dry. If taken in the first stages,

a good purgative dose, and no food for a meal or two, will generally effect a cure, but if allowed to run on for a week or so before treatment is adopted, the result is frequently fatal.

I wish to emphasize what I have said about feeding an animal that is a little off its food. If a well-fed animal does not want its food then take it all away and do not give any more until he does want it and give a dose of purgative medicine.

#### DISCUSSION.

Q. When a farmer finds a beefing steer a little off his feed, what had we better give him to eat and what treatment, if any, should we adopt ?

A. Give no food of any kind for twenty-four hours and give in a drench two pounds of salts, start him off on scalded bran or roots or some easily digested food.

Q. Why is an over feed of turnip tops or rape likely to kill by bloating ?

A. Because they ferment easily and gases are formed, which cause bloating.

Q. Which is the best for cattle, Epsom or Glauber salts ?

A. Epsom salts, decidedly.

Q. Can an operation be performed for the relief of impaction of the third stomach.

A. No.

Q. After opening with a knife the side of a bloated ox is it necessary to stitch up the wound.

A. No.

Q. After an animal has had one attack of indigestion is he liable to have another.

A. I think not ; but if the attack was due to a weakly digestive system of course he might have another attack because of that, but not because he had had a previous attack.

Q. In choking on an apple is it well to hold a block of wood against the apple and then strike with a mallet and crush the apple ?

Q. No, that would be very dangerous.

Q. I have been told that silage is likely to produce bloating. Is this true ?

A. I do not think so.

Q. Why is an over feed of turnip tops or rape more likely to produce bloating than an over feed of dry fodder ?

A. Because green and juicy foods ferment more readily than dry foods. ment and what ought the steer to get to eat ?

Q. What is the remedy for impaction of the rumen ?

A. T. G. Raynor, Rose Hall : A good strong purgative. For a 1,000 lbs. cow, 2 lbs. Epsom salts, 1 cupful black molasses, 1 tea spoonful salt petre, and table spoonful of ginger.

Q. What do you give for impaction of the third stomach, or mannyplies ?

A. I give raw linseed oil, 1½ quarts, or an ounce or so of aloes, and rectal injections of warm water and soap.

Q. Can a cow lose her cud ?

A. Chas. S. Moore, Stanbridge, Que. : No. The cud is the coarse fodder contained in the paunch. When the cow is well she brings this back to the mouth for re-chewing. when she is sick she has no desire to chew the cud.

Q. What is the best remedy for milk fever ?

A. Dr. Henry G. Reed, Georgetown : Prevention. Place the cow on shorter rations. If coming in in summer or fall and the grass is good, place her entirely on pasture. In winter don't give her much milk-producing food before calving. Two weeks before calving give her a pound of salts at a dose, twice a week. A couple of days before calving two pounds would be good. Do not have the stalls with too much slope towards the gutters. Keep her as high behind as at the front. If this were done there would be less trouble with cows putting out their calf bed after calving.

Q. What is the best remedy for bloat in cattle ?

A. If cattle get a large feed of turnip tops, rape, etc., and the animal swells, the chances are you will lose the animal if you wait to send for a veterinary surgeon. In a case of this kind a farmer should not hesitate to stab the animal on the left side in the centre of that three-cornered piece between the sort ribs and the hook bones. You can do it with a jack-knife. Stab through the paunch. Insert a small tube to let the gas escape. A goose quill is too small, but it will let some of the gas out and give relief.

Q. Would it have a tendency to prevent milk fever to milk the cows for a time before calving?

No, I think no.

Q. Is milk fever likely to affect cows that are on pasture at calving time?

A. Not so likely, but if the pasture is very good it would be better to remove them to poorer pasture.

Q. I gave a cow with milk fever a pound of salts from a bottle and she was dead in ten minutes. What killed her?

A. The cow was evidently choked by the liquid running down the wind pipe into the lungs. An animal down with milk fever cannot swallow, because the throat is paralyzed. A stomach tube ought always to be used in giving medicine to a patient down with milk fever.

Q. How long should the afterbirth be left before steps should be taken to have it removed?

A. Leave it to nature for twenty-four hours.

Q. When there is an obstruction in a cow's teat is it well to allow the calf to suck it?

A. The calf will not suck such a teat unless almost starving.

Q. Is there any danger of a cow dying suddenly from choking?

A. Not very much.

Q. If a cow chokes what is the best thing to do?

A. Work from the outside and try to get the obstruction up or down, or put a horseshoe or clevis in her mouth to keep it open. Put your hand down, but if you cannot reach the obstruction do not use a whip stock or rake handle. Use rather a piece of garden hose. Force a whip stalk down the inside of the hose, being careful not to put it quite to the end. A hose and whip used in this way is a handy substitute for a probang.

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## THE DAIRY.

### IMPROVING GRADE HERDS.

By D. Drummond, Myrtle.

In travelling through the country, we notice that if there is any one branch of agriculture that stands in need of improvement, it is the live stock branch, and especially cattle. In nine cases out of ten, when looking at a herd of cattle it is impossible to tell what ideal the farmer had in view when breeding them unless it was to produce an animal. The breeds are so mixed that in most cases they are worse than twenty years ago, as they have more variations, but it is now easier to breed up on account of each new cross making the whole more pliable or susceptible to improvements. Is there anything we can say to help the farmer improve the stock he has? There is always the common answer "Better feed and better Blood", a good solution of the problem if he knows how to use them to better his stock. These two factors must always go together, but after them comes that great problem of selection, which is in fact the only law of breeding that is entirely under our control. The other laws such as "Like producing like" and "Reversion or Breeding back" are largely beyond the farmer's control, but he must use them as much as possible to help him in his selection. We often hear instructions as to how to select animals for their particular functions so that for the present it is necessary only to discuss the question of how to select them for breeding purposes to get the greatest improvement.

There is an old saying among breeders that the best results are generally produced by breeding from a dam that produces offspring like the sire, and I believe that is the fundamental basis from which we can expect to receive the greatest benefit from better blood in the grade herds of this country whether they are dairy or beef.

**Test Cows Before Breeding Them.** Find out by weighing and testing milk what our cows are doing, then increase the food and give better care and weigh and test again, then you will find the cows that are most susceptible to improvement and that respond most readily to better care.

**Use Only The Best Sires.** Now comes the time for better blood. Get a bull belonging to some of the recognized pure breeds with a long line of high producing ancestry as possible, and see as many of them as are within reach. Find out if possible if the Dam and the Grand-dam have good shaped udders, for it appears that dairy qualities although entirely a female function are transmitted very largely through the sire. That is why a good sire is so valuable in improving dairy herds. Now we expect our bull is better than our cows as he is pure bred of a deep milking strain, but what use is he if he does not transmit the power he has inherited from his ancestors to do something. If the bull has the power of transmitting the good qualities of his ancestors it does not look as if it made much difference which cow was the dam of the calf we wished to raise. If the bull is better than the cows, it is his qualities we want, if they blend with those of the cows so much the better. The best calf to raise is the one that shows most largely the qualities of the sire. By observing closely we will find that it is generally the calves of the cows which showed the greatest improvement from better food and better care that are best to keep. Those cows are the least liable to transmit their own qualities, they are the most pliable as their characteristics are the least firmly fixed.

**Select Heifer Calves.** I would raise as many heifer calves as possible with the expectation of discarding many of them when two or three years old, or even before that age if we notice any tendency to revert back to the original scrub. We must not stop as there is no such thing as standing still in stock breeding. We have either to keep on improving or they will go back in spite of us, because the tendency in our domestic animals is always towards deterioration, and we must put forth our best efforts towards improvement. Now what can we do to counteract this tendency toward reverting back? We can reduce it to a minimum by in-breeding, either by breeding those heifers to their sire or to another that very closely resembles him. When we get past that point we want to breed or blend the qualities of both sire and dam, for now the tendency to reversion to the original will have almost disappeared. This is because the animals become in a few generations to all intents and purposes almost pure bred.

During this time we must never lose sight of the better feed and care as these do a great deal towards improvement of the herd. This is particularly so if the development during early age of the heifers, especially until they have produced their second calf. If then they do not come up to the standard of a good cow discard them.

Q. In building up a herd of dairy cows is it not important to select a certain breed?

A. T. G. Raynor, Rose Hall: I believe it is. After determining the breed stick to the use of the best pure bred sires of that breed obtainable, but have them carry their pedigrees on their backs.

Q. Is there no middle course in breeding for dairy and beef, and may we not produce an animal doing fairly well in both?

A. Yes, I believe it is possible, but the best results in either beef or milk are not obtained in the combination animal.

Q. Our cattle are not as large as they were thirty years ago, and do not seem to have the same constitution. What is the cause?

A. T. H. Mason, Straffordville: Many leading authorities claim that the use of immature sires, which is now the prevailing practice, is the most prominent cause.

Q. Do you think you can produce or raise a good dairy cow from a cross with a shorthorn and one of the dairy breeds?

A. R. H. Field, Addison: Not the highest type of dairy cow.

## CALF FEEDING.

By Duncan C. Anderson, Rugby.

For a number of years, I have had most of my cows drop their calves in the late fall or early winter, and have come to the conclusion that there is a decided gain in so doing. The milking season is lengthened. Cows coming in fresh before Christmas, by liberal feeding in winter, milk nearly as well in the early summer when the pastures are at their best as cows that come in fresh in March. We milk ten months, giving the cows two months rest. They are rested in the early fall when the pastures are at their poorest, at that time the grass is generally dry, parched, and burned up. As we raise on the skim milk a calf to each cow, it is important that the cow should have two months' rest out of the twelve. But when the cows are milked to within a couple of weeks of calving, they get no chance to recuperate. The calf generally comes with a weakened vitality and does not make as rapid or satisfactory a growth in the first six months as when the cow has had a fair period for rest and recuperation.

After a long term of experience, I have come to the conclusion, considering the increased price of winter butter, the long milking season and resting when the grass is poor, that in winter dairying cows give at least twenty-five per cent. more milk in the season, than if they come in fresh in the spring months. Again an early winter or fall calf is as well grown and quite as heavy at two and a half years as a spring calf is at three years o'd. There is a gain of six months in the age of the calf, the reason being that it is weaned off the milk in June, goes on the grass and if fed a little grain or meal in the fall, it is a good strong lusty yearling and winters much better than a spring calf that is just weaned and goes into winter.

**Calf Raising.** When a calf is dropped it is not a good practice to allow the cow to lick and fondle her offspring. When the separation does take place there is always a disturbance in the cow stable, and the mother gets excited. Some nervous cows keep so for the best part of a week. Better results are obtained by removing the new-born calf without allowing the mother to lick it. Rub it dry with a wisp of straw, put it into a roomy, dry, warm pen that is free from frost and draughts and do not give it any milk for the first twelve hours. When a calf is hungry it is not nearly so much trouble to teach it to drink. For the first two weeks it should have a quart of whole milk three times a day, care being taken that the noon milk is warmed to new milk heat. For the next three weeks half a quart of skim milk should be added to the whole milk at each meal. When the calf gets to be five weeks old, take off the noon milk, also the whole milk, giving about three quarts of skim milk twice each day. By this time the stomach will be strong enough to assimilate and digest other food. The noon meal should be pulped roots, chopped oats and well-saved clover hay. If a separator is not used and milk is set in shallow pans or deep setting cans, it should always be warmed up to new milk heat before being fed. If fed cold or too hot it is apt to produce bloating and scours. When, through careless feeding, scouring is allowed to become chronic there is no remedy. When a calf is not doing well, break an egg into its milk; it acts as a tonic and adds strength to the ration.

To supplement the loss of butter-fat in milk, take for twelve calves over two months of age four cups of flax seed. Put it into a common stove-pot and fill it with water. Do this after dinner, and allow it to simmer all afternoon and evening. Next morning boil smartly for about half an hour and stir in some wheat flour until it gets about the consistency of thin porridge. A calf three months old will take a cup full of this flax seed porridge in its skim milk. The flour is used to counteract the loosening effects of the flax seed. Care must be used at first not to overfeed, but one should work up gradually to what I have mentioned, with skim milk, flaxseed tea, roots, chopped oats and clover hay. Calves should always have comfortable, warm pens, kept clean and well bedded. Calves can be raised much more profitably in winter than in summer. Where a separator is used, it is best to skim the froth off the skim milk, and not feed it to the young calves.

especially those that are under three months. It has a tendency to disturb the normal action of the stomach and set up scours. Whenever a calf is scouring reduce the quantity of milk. Be careful to have the pails that the calves are fed from as clean as the milking pails. With skim milk fed at the right temperature, fed out of clean pails in not too large quantities and fed regularly, there will be very little trouble from calves scouring.

**Summer Feeding.** In warm weather calves should be kept in during the day time and turned out during the evening so as to avoid the hot sun and the flies. Whole or chopped oats should be fed, or a mixture of whole and chopped oats. About a cupful twice a day for an ordinary sized calf, that is on good pasture will be sufficient. For fall feeding until the roots are harvested, there is nothing equal to green corn run through the cutting box and mixed with some chopped oats.

The main point in calf feeding is never allow them to stop growing, and for beef animals keep them in good flesh. In feeding calves, as in every system of feeding, the extremes of over and under feeding are to be avoided. Continuous, regular liberal feeding always brings the most profit and the best practical results.

#### DISCUSSION.

Q. What do you feed young calves as a substitute for butter-fat when you raise them on skim milk, and can you raise good calves in that way?

A. G. C. Caston, Craighurst: There is nothing that I know of so good as ground flaxseed. I have raised splendid calves that way. I begin to add skim milk when they are two weeks old, gradually reducing the quantity of new milk. But as soon as I begin to dilute with skim milk I add a little flaxseed meal. I scald the meal so that it makes a jelly, adding more meal as the quantity of skim milk is increased. When four weeks old they are on skim milk and meal.

Q. What is your opinion about cows calving in the fall?

A. Duncan Anderson, Rugby: It is a serious mistake to have all our cows calve in the spring. Cows coming in in the fall give during the milking season a larger supply of milk than those coming in the spring. Calves that come in the fall make a greater growth. From experience I have come to the conclusion that a calf coming in the fall is as well grown and quite as heavy at two and a half years old as a spring calf will be at three years old. By having the calves come in the fall we gain six months in the life of the calf. The calf is weaned when the grass is at its best. Feed a little meal twice a day along with the grass. In the hot weather keep them in during the day time.

Q. Would you sell linseed meal for calves?

A. Chas. S. Moore, Stanbridge, Que: Linseed meal is said to give better results if cooked. I have, however, had good results from feeding it raw, with shorts or middlings.

Q. How much linseed would you give a calf?

A. Start with a teaspoonful at a feed, and gradually increase until the calf is receiving a tablespoonful.

Q. Which is the better food for young calves, whole or skim milk?

A. If you are raising the calf for dairy purposes I would prefer giving her the skim milk after she is two or three weeks old. The idea in raising a calf for a milch cow is to keep her thrifty and growing, but not fat.

Q. In feeding a calf to raise for a dairy cow will it influence it as such to feed it on whole milk instead of skim milk?

A. E. H. Field, Addison: It will be much more expensive and will make no better cow.

Q. Is separator skim milk good for calves?

A. F. J. Sleightholm, Strathroy: Yes. It is the basis of the best calf-feeding when wisely fed.

Q. How should it be fed?

A. To very young calves, feed three times daily in small quantities, at blood heat or thereabouts. Always feed it at the same temperature and at the same time. Supplement by ground and boiled flaxseed, or by ground or whole oats, with a little bran.

Q. Are you prepared to say that it will not kill the calves ?

A. Yes; if rightly fed.

Q. Is it equal to skim milk from shallow pan or deep can methods ?

A. Speaking generally I would say yes, and as a rule it is better on account of its sweetness and uniformity in character.

## HELPING THE DAIRY INDUSTRY.

Reported by the Superintendent.

The Farmers' Institutes of the Province of Ontario have now a total membership of over 20,000 persons. Every settled township in the Province is represented and every county holds a series of meetings each year. Up to this time these meetings have been of a general character, but it is our opinion that the time has now come for specialization. fruit meetings in fruit sections and dairy meetings in dairy divisions. Such subjects as cultivation of the soil, growing of corn, conservation of moisture, destruction of weeds and such topics as all farmers are interested in will continue to be discussed more or less at all Institute meetings.

We have achieved remarkable success with our dairy products on the markets of the Old World. This has assured our dairymen a good price the year round for their products and has induced many general farmers to make a specialty of the dairy business. It is therefore with the hope that we may be able to help in some measure those who are producing the milk, that we have during the past few weeks been holding special dairy meetings for farmers. As reported in these columns recently, meetings were held all the way from Aylmer, Elgin County, to Stirling in Hastings, and from reports received these meetings, without exception, were appreciated as shown by the large attendance.

In the Western part of the province the Institutes were represented by Mr. A. Elliott, of Galt, and in the East by Mr. Henry Glendinning, of Manilla. These gentlemen were also assisted by practical men who understand the manufacture of butter and cheese so that no question arose in reference to the production, care, handling or manufacture of milk but what some member of the delegation was able to throw light on the subject.

Ontario county has been noted for its fine farms, good farmers and splendid live stock. It has never been considered much of a dairy county. The reason for this is that the county is a very long one from north to south and the condition of the soil and water differ materially in different parts.

South Ontario has long been noted as a Shorthorn district, and it is seldom that the sale of Shorthorn cattle occurs anywhere in this province without some of them having come from the neighborhood of Whitby, Columbus, Brooklin, Greenwood, or Myrtle. Even at the Provincial Sale held in March so far east as Ottawa, forty-nine out of sixty-five animals offered for sale came from the southern part of this county.

North Ontario is not so. Here the county is more broken, large tracts of good pasture land, plenty of fresh water lakes and streams, so that the people naturally take to the dairy industry. In this regard we would like to say that probably that no man has done more to help this particular branch of the work than Mr. Joseph E. Gould, of Uxbridge. In fact it is generally conceded that no man has done so much to spread the gospel of corn and ensilage throughout the entire Province as this same Joe. Gould.

Mr. Henry Glendinning who clearly proved the fallacy of the old saying that a "prophet is not without honor except in his own country" discussed the subject of the "Dairy Cow and How to Feed Her". Being within five miles of his own home Mr. Glendinning thoroughly understood the conditions under which the farmers were labouring.

"I have," said Mr. Glendinning, "had the privilege in connection with Farmers' Institute work of driving over a large part of Ontario. In no part of the province have I found on the average, better soil, better natural drainage, or a better class of farm buildings than we have here. Down in Leeds, where Mr. Derbyshire comes from, the land is not nearly equal to ours. Not over 85 per cent. of the land down there is tillable, the rest being broken with rocks. And yet land there will sell for \$20 an acre more than it will here. Why?"

"The answer is simple. While we were still growing grain for sale the people of the East had turned their attention to dairying. While we were impoverishing our land and ourselves by selling oats at 14c to 24c a bushel and wheat at about 60c, they were enriching their farms and making profit for themselves by selling their product in the form of cheese in the Old Country market."

"That is right," put in Dan Derbyshire, who, in his capacity of president of the Eastern Dairymen's Association, was in the chair; "that is right. With our poorer soil our former were making double the income that yours were."

"But," continued Mr. Glendinning, "we are doing better now. We are feeding more on our land than formerly. We shall not, however, reach our full measure of development until we absolutely cease hauling grain to the local warehouses for sale."

"Our development in feeding, has been mainly in the direction of fat cattle. In this respect we lead the Province, as is shown by our victories at the Winter Fair and the position taken at the recent sale of pure-bred stock at Guelph. But there is more money in dairying than in beef cattle even."

"That's a fact," Mr. Derbyshire interjected again. "In Leeds and Grenville we make more out of our bacon—a side line to dairying—than you do out of your beef cattle and we have our butter and cheese to the good."

Then, dealing in a general way with the cow part of it, Mr. Glendinning made these points:

We have our heifers come in at two years, and we keep them milking for twelve months straight. That fixes the milking habit so that they never get over it. We breed them so that their second calf will come fourteen months after the first, thus allowing them to go dry for two months between the first and second calves. June is the worst possible month in the year to have a cow come in.

Water is, perhaps, the most important element in dairying. This will be more clearly understood when it is stated that 80 per cent. of the blood of the animal is water, that 50 per cent. of the whole body is water, and that of the milk 87 per cent. is water.

See, then, that your cows have all they can drink; and, to ensure drinking freely, let each animal have her own allowance of salt. Do not give the animals their salt in common. They will not use it so freely in that way.

You get a faint idea of what cows will drink when you hand-pump a coal oil barrel cut in half full of water and find a couple of cows empty it before you know where you are. You are glad when the last cow has left the drinking-place. Is it surprising, when the pumping is left to a boy or a hired man, that the cows sometimes go thirsty? The only way in which animals can be assured a full supply is by having water always before them so that they may help themselves at will.

Cows never give as freely of milk as when on clover or grass. That is largely because of the succulence. You get the same feeding value in well-cured clover, but you do not get the succulence. You can supply the succulence in winter by the use of silage and the ration will be properly balanced by the addition of clover hay and bran. By this mixture you get succulence, balance and bulk—all these being essentials to successful feeding.

It is a mistake to feed a small ration. A certain amount of food is used up in keeping the cow alive. It is on what you get the cow to assimilate over and above what is required for maintenance that you get your profit in the milk-pail.



## DISCUSSION.

After Mr. Glendinning was through, the usual questioning period followed, the answers to these questions being partly given in the meeting and partly in interviews

R. C. Brandon: You feed your calves skim milk and flaxseed—the latter taking the place of the fat in whole milk. How much flaxseed do you use per calf?

Mr. Glendinning: About one handful per calf—ground and boiled.

D. Annis, Woodville: You have water before your cows all the time. Does not that cause a development of injurious bacteria in the stagnant water?

Mr. Glendinning: Not necessarily. With an automatic drinking trough, by means of which fresh water comes in automatically as the cow empties the trough by drinking, a fresh supply is introduced five or six times a day. Thus the water never becomes either stagnant or warm, and bacteria will not develop at sixty degrees or less. In my case I have a trough the whole length of the stalls; the cows lift the covers when they want to drink and the trough is cleared periodically by flushing through a waste pipe at the end.

Mr. Brandon: There would be a danger where the water was not changed frequently.

Mr. Annis: You say wheat is not a balanced ration, and that the valuable food for cattle in the grain is in the shorts and bran. Would it pay us to sell wheat at sixty-five cents per bushel and buy shorts at ninety cents per hundred weight?

Mr. Glendinning: I believe it would. You sell at over a cent a pound and buy at 9-10 of a cent. Wolf figures that when wheat has a feeding value of \$21.97 per ton, bran is worth \$18.97, and shorts \$21.80. The shorts are thus practically even to wheat in feeding value; they cost less than wheat and they help to balance up a ration with ensilage, while wheat will not. Besides, while a ton of wheat contains less than \$8 worth of fertilizing material, a ton of bran has some \$12 worth, and shorts somewhere about the same. Of course, this is on the assumption that the wheat is full weight. If it is not full weight, you cannot get 65 cents for it, and, on the other hand, shrunken grain contains, Professor Henry says, pound for pound, more feeding value than does full-weight wheat, because there is in it a greater proportion of protein. The question of distance of haul in exchanging wheat for shorts also comes into account in all this.

Mr. Annis: How can you use chaff?

Mr. Glendinning: It can be mixed with the ensilage. William Rennie, when farm superintendent at the O. A. C., mixed his feed—ensilage, cut clover, chaff, and pulped roots—the day before using. The different feeds were put in one heap, layer on layer, and the heating and steaming made them all practically one, and everything was cleaned up.

Mr. Brandon raised the turnip question, and Mr. Derbyshire gave the reply.

"If," said the latter, "you feed but 15 or 20 pounds of turnips, and give these directly after the morning milking, and then sweep your stable thoroughly so that no foulness is left, you may avoid bad flavors in the milk. But even then there is danger that the butter will, if held, develop a bad flavor."

"Besides," added Mr. Annis, "why risk it? You can raise more mangels to the acre than you can of turnips, and there is no risk with the former."

"You can," added Mr. Derbyshire, "do still better with corn. Seven years ago a man, who had been raising grain as his money crop, on a farm within five miles of Brockville, was starved off the place. He was succeeded by a man who followed a wholly different method. The latter broke up an old sod in a field that had been in pasture fifteen or twenty years, and on that he planted corn. He harrowed the land with a harrow, with the teeth sloping backwards, until the corn was as high as my hand. Then he started the scuffler, and he kept the old gray mare going with that until the crop was too high to allow of further cultivation. That corn grew until beyond my reach, and I can reach fairly high; it had cobs as long as my forearm, and when we weighed the crop on a rod square it showed a yield of over thirty tons to the acre. That man has

followed the same system ever since, and last year, from less than 100 acres, he sold over \$2,000 worth of milk and hogs."

Mr. L. A. Zufelt, of Kingston Dairy School, showed, in a striking way, how much we may reasonably hope to gain by the improvement in our dairy product that should follow as a result of carrying instruction to the man behind the cow.

"We are," said he, "annually exporting about seventeen and a half million dollars worth of cheese to the Old Country. The great bulk of that cheese sells on an average at three cents below the best home-made English cheese. Some few of our select cheese sell up with the best English. That shows that we can produce as good an article as is produced in England. Now, if all our cheese is, by means of educating the milk producers and makers, brought up to the English level, that will mean increasing the value of this product by twenty-five per cent. That would add over four and a quarter millions to the value of our exports of cheese without the increase of a pound in the output. Even if but two per cent. were added to the value, that would figure up to \$350,000 a year."

But Mr. Zufelt did not confine himself to cheese. He referred also to butter. "In butter" said he, "there is an even greater loss than in the case of cheese. This is because in butter making the factory system has not yet been generally introduced. Poor home dairy butter is selling to-day at fifteen cents, while choice creamery is going at twenty-three cents. There is a loss of eight cents per lb. That is money absolutely lost. No one is benefited. When money is stolen it is not lost—some one gets it again. But in this case the loss is as complete as if you took so many bills and burned them in the stove.

"But this is not the whole of it. By turning out a poor product we not only reduce the average price, but we check consumption. A pound of poor butter will go further than two pounds of good. Every pound that is not good reduces consumption to that extent, and thus lessens the market for that which we are producing."

Then dealing more with matters of detail relating to the dairy industry, Mr. Zufelt made these points:

Cleanliness is the keystone of success. The cow should be brushed clean before milking; the milker should have clean hands; he should be dressed in clean clothes, and the cow should be milked in a place where there is no dust or dirt. Dust, laden as it is with bacteria, is one of the greatest enemies we have to guard against.

After the milk has been drawn from the cow it should be aerated in a pure atmosphere. Aerating in an impure atmosphere causes injury rather than benefit. Next reduce the milk to a temperature of 60 degrees. Do not mix the morning's milk with that drawn the evening before, unless both are first brought to the same temperature. Better not mix at all.

Cheapness is the curse of the dairy industry. Patrons of factories see the cent they save by squeezing the maker down to the lowest possible limit; they do not see the dollar they lose by inefficiency. It is poor economy to save a quarter of a cent a pound on the cost of making a pound of butter and to lose two cents in the value of the product.

There is not enough of the true spirit of co-operation in this industry. The milk producer thinks his part is done when he delivers his milk at the factory; the maker, too, often has no interest in the business outside of what he gets for turning his milk into cheese or butter. We should all realize that we are all equally interested in the product until it is finally placed before the consumer in England. Until this fact is realized we shall not attain our proper place in the market of Great Britain.

Let co-operation be shown in another way. Instead of having a wagon call at alternate farms for milk, have it call at every farm on the route. That will cut the cost of hauling nearly in half. Instead of having half or a third of the farmers in the neighborhood of a factory as patrons, have them all as patrons. The more milk you have handled under one roof, the less the cost per hundred weight of handling.

Mr. Zufelt, on concluding, was asked a number of questions:

Is it possible to have the milk taken from cows in such clean condition that straining is unnecessary?

Yes. The makers of the finest quality of Swiss cheese refuse to allow the milk from which that cheese is made to be strained.

In answer to another question, Mr. Zufelt described the milk stand used in some of the eastern counties. This stand is well away from the buildings. It is on a level with the wagon. The floor is of slats,  $1\frac{1}{2}$  x 2 inches, three-quarters of an inch apart. The sides are of lath and the whole is neatly roofed. By this means the dust and rain are excluded, and the cans protected against contamination by dogs or other animals.

#### DISCUSSION.

Q. Would you wait until oats begin to turn before cutting for cows?

A. Chas. S. Moore, Stanbridge, Que.: No, they are at their best when in the milk stage. After the straw begins to ripen cows do not relish them.

Q. Do you run your hay through a cutter before feeding it to cows?

A. No, I feed it uncut.

Q. What do you use to keep off the horn fly?

A. Cows should be sprayed or rubbed with a brush two or three times a week, with a mixture of equal parts of machine oil, oil of tar, and crude carbolic acid.

Q. Would the smell of that mixture taint the milk?

A. Yes, if the milk is left to stand in the stable while cooling, but it should never be allowed to remain in the stable after being drawn. Milk in cooling will absorb any flavor that may be in the air.

Q. Do you advise mixing grain with the coarse fodder?

A. Experiments go to show that cows do equally as well when the grain is fed separately as when it is mixed with coarse fodder.

Q. Have you had any experience in feeding wheat?

A. No, not to cows. If you feed wheat, remember that it is not half as rich in protein as the bran, for the whole wheat contains the flour, which is a carbonaceous food.

Q. Would you condemn a cow at this time of year (November 30th) that is giving a good quantity of milk and getting fat at the same time?

A. No. If she gives a good quantity of milk and puts on flesh, so much the better. Most good milkers, however, do not have much tendency to put on fat.

Q. Which is the cheaper feed for cows, bran or oats?

A. At the present time bran is certainly the cheaper.

Q. Will turnips fed to milch cows affect the milk or butter?

A. Yes, and as a result it is not safe to feed turnips for a high-class quality of cheese or butter. It is much better and safer to feed mangels to dairy cows.

Q. What proportion of oats would you feed with ensilage?

A. The amount will depend upon the price of oats, and what other feeds are fed with it. About three pounds, mixed with other grains, may be fed to dairy stock.

Q. How much ensilage should a cow have?

A. About 45 pounds per day, when giving a full flow of milk.

Q. Would a ration of mangels and clover hay make a balanced ration?

A. Yes, theoretically, but it would not be a practical scheme, as it would be too much bulky food.

Q. Which is cheaper to feed, at present prices, corn chop or gluten meal?

A. With corn meal at \$25 a ton and gluten meal at \$22 a ton, the gluten meal is much cheaper, as it is much richer in protein.

Q. Would gluten meal be cheaper than bran if it were \$20 a ton?

A. Yes.

Q. What value has barley in feeding for milk?

A. Barley is not a good milk-producing food, but may be used in limited quantities to produce heat and fat.

Q. How often should cows be watered on an ensilage diet?

A. Twice per day anyway.

Q. Do cows lose much from exposure ?

A. Yes, when milking very much, if the weather be raw and cold. They should not be left out too long.

Q. How much salt should a cow have per day ?

A. About two ounces. Some may be given in the food, but I like them to take it at their will.

Q. Does it pay to feed cotton-seed meal at \$1.50 per hundred pounds.

A. It may in small quantities. Mr. Clemons prefers oil meal, at the same price.

A. There appears to be much difference of opinion on this point. Many good stockmen who formerly fed three times are now feeding only twice a day.

Q. Does rye as a green food flavor the milk ?

A. When fed alone it does, especially in the advanced stages of its growth.

Q. Could you make a balanced ration from corn, clover and roots ?

A. T. G. Raynor, Rose Hall : Yes, but there would be too much bulk to be consumed for a cow to get the required amount of digestible protein. It would pay better to get some of the protein in a more concentrated form than we find it in the clovers.

Q. What would you add to ensilage in feeding for milk ?

A. Bran, oat-chop, gluten meal and clover hay.

Q. Has gluten meal any effect on the flavor of the milk ?

A. I have never heard of any, when fed in reasonable quantities, of three to five pounds per day.

Q. Will silage affect the teeth of cattle ?

A. I have never heard of any case when feeding good silage.

Q. Is lucerne as good for feeding as common clover ?

A. Yes, it is even better, when properly handled, as it contains a larger percentage of protein.

Q. Will plowing kill lucerne ?

A. Yes, if done properly and at the right time. When dry, plow with sharp share two inches deep, and afterwards about four inches deep.

Q. Would you use a Bull back on his own progeny ?

A. No, not as a rule. In some cases it is permissible, with good results.

Q. How much pea meal would you feed to a fattening animal ?

A. Not more than two or three pounds per day, and not alone, but mixed with bran or oats and barley.

Q. In growing an animal, which will give the best results, cooked or raw food ?

A. I believe cooked food will, but the advantages to be gained may not always pay for the increased labor and other expenses.

Q. How shall we feed our animals in the summer weather during these dry years ?

A. By growing green crops and soiling them more or less. Grow lots of corn. Put up two silos, one for winter and one for summer. Balance up the silage with bran, oat-chop, or other concentrates.

Q. How long should a cow rest between milking periods ?

A. T. H. Mason, Straffordville : At least six weeks. Two months is better.

Q. What about feeding corn ensilage in summer ?

A. We will have to come to that in time. Of course, it will be necessary to feed some bran, oil meal, gluten meal, or other nitrogenous foods with the corn, to get the best results.

Q. What is the best grain to feed cows for milk ?

A. Andrew Elliott, Galt : That depends on the foundation food. If corn silage or timothy hay, the best grain would be oats, bran, middlings, cotton-seed meal, oil cake, gluten meal or pea-chop. If the foundation food is largely clover, mix with oats, a little barley, some corn, middlings, rye or peas, depending on the price of each. Always feed a mixed grain ration.

Q. How many pounds of chopped oats and bran would be a proper grain ration for a dairy cow per day ?

A. R. H. Field, Addison: From eight to ten pounds per day.

Q. Can you increase the quality of the milk by a system of feeding?

A. You can influence the flavor, but not the quality, that is, not to any marked extent, except by a long period of feeding, say two or three years. There is a limit, a constitutional limit, and we cannot go beyond the limit of the cow.

Q. Can you improve the condition of the dairy cow's flesh while she is milking heavily?

A. Yes.

Q. How?

A. By feeding grain.

Q. Is there any difference in the feeding value of sugar beets and mangels?

A. I have not been able to find any.

Q. Do you approve of mangels for milch cows?

A. F. J. Sleightholm, Strathroy: Yes, they are excellent food for milch cows.

Q. Would you recommend use of silage to tide over dry summer?

A. Yes. I think, all things considered, silage is one of the cheapest foods for such purposes.

Q. What mixture of grain would you recommend for use to feed green?

A. Oats, tares and peas make a good mixture.

Q. Have you fed green rye (fall sown) in spring?

A. Yes, but it is not suitable as food for milch cows, as it makes very rank butter.

Q. How about green rape?

A. The same may be said of it.

Q. Does silage hurt the teeth of cows by the acid in it?

A. No; not from my experience, nor have I met any person who had found it do so.

Q. Do you find it a good practice to house cows during the day in summer?

A. Yes, if properly attended to. The only drawback to the practice is the lack of sufficient cheap labor. They will surely give more milk than when subjected to the direct rays of the sun and tormented by flies.

Q. Do you feed them in the stable?

A. Yes.

Q. What do you feed them.

A. What I may have; usually green fodder or silage. I think a little bran or a mixture of ground grains a profitable addition.

Q. At what stage may green corn be fed?

A. Not much before the tasseling stage. Before this there is too much water and not enough food stuffs developed in the plant.

Q. Would you cut green corn or feed it whole?

A. Feed it whole as long as the cattle will eat it reasonably clean; then cut it.

## HOW TO PRODUCE BETTER MILK.

By G. H. Barr, Special Instructor for Lambton County.

The question of more money to the patrons and a better reputation for our Canadian cheese is, no doubt, an interesting subject to all dairymen.

We have had, up to the present time this season, excellent weather, and other conditions favorable to getting the milk delivered at the cheese factories in good form, the result being a lot of fine June cheese, but these conditions will not continue all through the summer, and in order to have the finest cheese all season, the milk must be delivered at the factory sweet, clean, and of good flavor.

The question is, how is this going to be accomplished? The answer—by simply knowing how to take proper care of the cow and the milk. Cows should not be allowed to drink impure water, from dirty water troughs, stagnant pools or ponds, or soakage from barnyards. They should not receive any rye, rape, or turnips—these things cause

tainted or gassy milk, which is the cause of a very great loss in the manufacture of milk into cheese, and hence a loss to the patron. Sour, or over-ripe milk, is caused by leaving or keeping it at too high a temperature. Milk for cheese-making should never be left at a temperature above 70 degrees. Evening's milk should be cooled to about 65 degrees. If the milk is to be kept from Saturday till Monday, it should be cooled to 60 degrees Saturday night, and kept as near that temperature as possible, without any stirring on Sunday. The cow's udder and flanks must be clean before commencing to milk; wipe them with a damp cloth, and milk with dry hands into a clean, bright tin pails; wooden or galvanized pails should never be used for milk. Strain the milk as soon as it is drawn from the cow, through either two thicknesses of cheesecloth, or a very fine wire strainer, or both, putting the cloth over the wire. Cool the milk by putting the can or pails into cold water. Stirring it with a clean, long-handled dipper will allow the animal odor to pass off, and aid in cooling the milk more rapidly.

Very few patrons realize the great loss they sustain by sending overripe, tainted, and gassy milk to the cheese factory. This kind of milk will take from one to three pounds more to make a pound of cheese than sweet, good-flavored milk.

If at a factory which receives 10,000 lbs. of milk per day, the maker takes in three or four cans of sour, tainted or gassy milk, at the very lowest estimate, it will take one pound more milk to make one pound of cheese than if all the milk had been sweet, clean, and well-flavored. Supposing cheese to be worth 10 cents per pound, the loss to the patrons in this case will be \$8. If this is continued every day for 26 days, or one month, the loss is \$208.

We are quite safe in making the statement that this loss is sustained in every cheese factory in Ontario during the summer months, June, July and August. The patrons are losing the money, and they can blame no one but themselves, but there is no reason why they should continue to lose. If they take proper care of the milk at the farm, and deliver it in good condition to the factory, this very serious loss can be stopped in a day, and the patrons will have more money, the cheese-maker less trouble, and our Canadian cheese will merit the reputation they should have. "the finest in the world."

#### DISCUSSION.

Q. Is the aeration of milk beneficial?

A. L. A. Zufelt, Kingston: Yes, if done in an absolutely pure atmosphere; otherwise it is a decided injury, as we are simply exposing the milk to all manner of injurious germs.

Q. How would you treat milk during hot weather?

A. First, observé absolute cleanliness at the time of milking, and care of utensils, then cool the milk rapidly, by means of ice or water, to a temperature of 60 degrees F. Keep the milk in a clean place, free from all objectionable odors, and keep the cans covered.

Q. Would it be safe to feed a small quantity of turnips, if done after milking?

A. The feeding of turnips is a very dangerous practice, and should not be tolerated, even in a small way. If a dozen turnips will flavor the milk, one will do so proportionately.

Q. Should whey be returned home in the milk cans?

A. This is merely a matter of cleanliness. If the whey tanks are kept clean and the cans emptied and properly washed as soon as returned, no bad effects will follow; otherwise it is a source of danger. Likewise where the cans are returned empty and allowed to stand around all day with the milk drying on them, and not washed till just before using, it is equally as bad, and, to my mind, there is little choice between the two systems, as either may be good and either bad. It all depends on cleanliness.

Q. What causes milk to be gassy?

A. This condition of milk is produced by gas-forming germs, which may be introduced in many ways. Road dust, dirty stables, and small particles of manure are the most probable sources.

Q. What effect has gassy milk on cheese?

A. It injures the flavor and tends towards openness of body and harshness of texture. It also takes more milk to make a pound of cheese.

Q. Is it possible to make a fancy cheese from gassy or otherwise tainted milk?

A. No; it is utterly impossible to make a strictly fancy cheese out of anything but good, pure, clean-flavored milk. We may make an article which may appear to be fairly good at a certain age, but eventually it is bound to go off in flavor.

Q. Is it possible to detect at the weigh-stand all milk which will have an injurious effect on the quality of the cheese?

A. No, for some of the very worst flavors which we meet with in cheese come from milk which apparently is of clean flavor.

Q. How then can we locate the source of these bad flavors?

A. By means of the fermentation test we can develop the predominating flavors of the different lots of milk, and then locate the ones that are causing the trouble.

Q. What is the fermentation test?

A. It consists of a water-tight box, with a lid, containing glass jars which hold about eight ounces of milk. The milk is warmed up to 100 degrees F. and a small amount of rennet is added to each sample. After the milk has become coagulated the curd is cut into small particles, and the whey gradually removed. The temperature of the curd is maintained at 100 degrees F. until the flavors develop, which usually takes place in from six to ten hours. It is very easy then to locate the samples which are causing trouble.

Q. What is the right temperature at which to churn?

A. F. J. Sleightholm, Strathroy: That temperature that will give you the butter in nice firm condition, in from twenty to forty minutes. At this time of year (January) probably the temperature will be from 60 degrees to 70 degrees F.

Q. At what temperature would you ripen cream?

A. About 70 degrees F.

Q. Do you approve of the use of the separator?

A. Yes. But my having it or not having it is another matter. If I had not right conditions for gravitation setting, or if I had a good outlook for market with private customers, and sufficient help to do the work, then I would think a separator desirable; otherwise I would prefer to send my milk to the creamery.

Q. If cream gets so thick that it will not move in the churn what then?

A. Thin it with a little water at about the same temperature as the cream.

Q. Have you heard of a churn that will bring the butter in ten minutes, and more of it?

A. Yes, almost any churn will bring butter in ten minutes if that were desirable, but the latter part of the claim is foundationless. Let fakirs absolutely alone; such churns are frauds.

Q. What does separator milk lack?

A. Chas. S. Moore, Stanbridge, E. Que.: Simply the fat; the casein, albumen, and sugar are all there. Whey lacks the fat and part of the casein, but still retains some of the albumen and sugar.

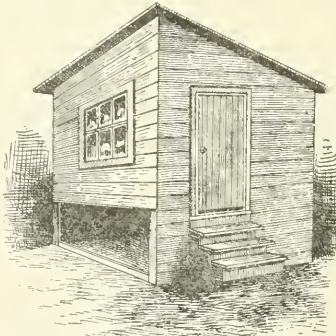
## POULTRY.

## SUITABLE BREEDS OF POULTRY, AND HOW TO SELECT THEM.

By J. W. Clark, Onondaga.

Since there is a constant and increasing demand for table poultry in the English market, and that the raising of poultry for export here in Canada has developed into quite a prominent industry, which has—the most of us think—come to stay, it will be well for us to watch closely and see that the exacting tastes of the pernickety chicken consumers in England are not hampered with too many vexatious variations.

They want birds that come up to their standard of perfection; something that exactly suits their eye; a heavy, compact body, with white flesh and white legs and skin. It is to our advantage to raise poultry that possess certain good qualities. We must have some eggs for incubation, but that is of secondary consideration. It is to our advantage to get a breed that will stand forcing, and one that will thrive well under even unfavorable climatic conditions such as we frequently get. We want a chicken that will make a rapid growth on comparatively inexpensive food, and reach an early maturity.



A cheap but convenient house for poultry.

Egg-laying machines, such as we have in the Leghorns, Andalusians, and Minorcas, will not suit our purpose. These breeds may be all right in their place, but their place is not in a feeding crate. I have fed some of that type, and believe that I have pumped into them many dollars' worth of feed from which I got no profit.

We hear a great deal about the Buff Orpington breed now. I have only a few of them yet, but I am very much pleased with those which I have, and have ordered a number from England. We cannot speak too highly of the Barred Rock; they are a breed with which all are acquainted, and one that excels in the production of winter eggs. If we take a flock of one hundred well-bred Barred Rocks we are certain of getting eighty or ninety good birds for feeding. Perhaps the one objection to that breed is their tendency towards yellow legs and skin. But this can be overcome to a certain extent by systematically weeding out our breeding stock which shows this tendency, breeding only from white-skinned and white-legged birds, and also by feeding a ration that will make white flesh.

The Wyandottes are also a very good breed. I have no doubt that the fanciers of this particular breed could tell you of many points where they excel the Barred Rocks. From the experience that I have had with them I am not prepared to say that they fit



my needs quite as well. Nevertheless, they are a very excellent fowl, and for crossing with an Indian Game cock are perhaps as good as the best.

The same principles that should be observed in selecting breeding animals of the beef breed should be observed in selecting a cockerel and hens to raise table fowls. It is a block of meat of the best quality that is wanted. You would find it quite as difficult to make a good carcass of chicken out of an egg-laying machine as you would to make an ideal carcass of beef with a Jersey steer.

I believe it is wise and essential to the highest degree of success to raise your chicks from hens that are nearly pure bred, and from a pure-bred cock. If your breeding hens have a strain of Leghorn in them, your chickens will not likely be so uniform. There is more apt to be a larger percentage of culls, and some that show the back breeding. I believe that we get stronger chicks by crossing a pure-bred male of one breed with hens of another breed.

An ideal bird for the export trade might be described as having a short neck, with a wide head, bright eyes, and a short, heavy bill. The legs should be short, squarely set, and well apart. The back should be wide and strong. The breast should only be of moderate depth, having plenty of room for a large quantity of meat. The skin, flesh and legs should have a healthy white appearance.

#### RAISING AND FATTENING POULTRY FOR THE ENGLISH MARKET.

In selecting and breeding any class of live stock for a definite purpose, the capacity of a breed and also that of individuals of that breed must be considered if our efforts



Low set, vigorous and heavy. A good feeder.



A good breast. Splendid type for fattening.

are to be followed with success. It would be folly on the part of a horse dealer if he were simply attracted by color. He must place more importance on the conformation of the animal, while keeping in view its ability to perform. From the standpoint of a utilitarian, the same principles are true when applied to any class of money-earning live stock. The same principle is quite essential in the raising of poultry for the English market.

The first point to consider in selecting stock to produce table poultry is, that they shall be **hardy**, that they shall carry a large quantity of flesh of good quality, and that the birds shall present a symmetrical, compact appearance, with the flesh laid on in the

proper places. Perhaps it is not of less importance that the breed used should be a rapid grower, and one that will mature early. For the English market it is highly important that we shall use a breed or strains of a breed which possess a light-colored skin and flesh. When we are catering to the English market we are catering to a class of people who are willing to pay fancy prices for such articles of food as suit their tastes, and we will be well repaid for bending to their desires.

In selecting birds from which to breed, I select blocky ones, having a good width across the shoulders, with short, high-colored legs, and only a fair depth. I always try to avoid breeding from birds which are long in the neck and legs, and which are exceedingly deep in the breast. Birds of that type are quite as difficult to fatten as a long-legged, raw-boned steer. Other points which count in favor of the bird are, a small comb, a bright eye, and a short, heavy bill, showing considerable width where it is joined to the head. These points denote activity, and strong constitutional powers, which are quite essential when we come to forcing in the crates or with a cramming machine. I do not favor the heavy feathered class of poultry. My experience has been that Brahmas, Cochins, and Langshans are not as profitable as other breeds. I do not care to waste feed in the production of feathers. They are also considerably more difficult to pluck, and I consider them to be coarser in flesh than some of the other breeds.

I am a firm believer in cross-breeding for table poultry. As with other stock, I find that birds which have been in-bred, or even line-bred, for a number of years, become less hardy. A large percentage of the eggs are infertile, and when hatched the chickens are more delicate. By introducing new blood from time to time this difficulty can largely be overcome. I like an Indian Game and Barred Rock or Wyandotte cross. A Barred Rock and Wyandotte cross also gives very good results. I have used an Indian Game cockerel with the heavy-feathered Asiatic hens, with fairly good results. I have specially mentioned the Indian Game, because I believe them to be especially well suited to crossing with other breeds. They are a light-feathered, plump-breasted, vigorous bird, and have extra fine flesh.

Any person raising a large number of chicks cannot afford to be without an incubator. But in getting an incubator a person should be careful to select a thoroughly reliable machine. When producing eggs for incubating, I select suitable hens for mating. I use a cock or cockerel with not more than twenty hens. To get good, strong chicks the flock should have abundant exercise, grain gration, a supply of green bone meal, a little chop, and very little soft food. After my chicks are out I do not feed them for twenty-four hours. Nature provides for this time. About the first thing they require is a little grit, such as a little coarse sand, mixed with their food. Their first meal usually consists of a few hard-boiled eggs, chopped fine, with a little granulated oatmeal, which I feed dry. I always avoid sloppy feed during the first week, because it is apt to cause diarrhoea—a very common trouble among little chicks. When a week or ten days old I induce them to exercise by scattering small wheat or a little millet seed among chaff, sawdust, or such like material. A liberal supply of green bone meal and cooked meat will force growth and hasten maturity. Too much care cannot be given in avoiding lice. By using an incubator this trouble is very much lessened.

At from four to five months old I crate for fattening. Before placing in crates I dust them with sulphur and insect powder and grease their legs to keep them smooth and bright. I arrange the crates so that each bird will have access to pure water and coal cinders made from soft coal. My experience has been that coal cinders from soft coal do very well for grit. If any charcoal remains it serves to aid digestion. I feed largely on meal which is a by-product in the manufacturing of rolled oats. This I mix with equal parts of buckwheat chopped, and skim milk. Care must be taken for the first few days, or the birds will go off feed on account of the change to which they have not been accustomed. During the first two weeks I feed three times a day, always being careful not to allow sour feed to remain in the trough. There will be little danger of them becoming "stalled" if care is taken to keep pure water and grit always before them, and sour feed is not left in the trough.

I have been accustomed to using the crammer after the second or third week. I consider that by cramming I can put a finish on birds that cannot be reached in any other way. I use oatmeal—sifted oat chop will do—mixed with skim milk, and add about one pound of tallow twice per week to every sixty or seventy birds. They should be killed and dressed after being crammed ten days or two weeks. I always starve them for thirty-six hours before killing; break the neck close to the head and commence plucking at once. After plucking I place on a shaping board and put weights on them, thus forcing them into a compact appearance.

#### THE BUFF ORPINGTON AS A GENERAL UTILITY FOWL.

The Buff Orpington fowl, though of comparatively recent introduction, has attained a position in the English show pens which would indicate that it is likely to continue to be a general favorite as an all round utility bird. It possesses a combination of the desirable characteristics of three distinct English breeds.

The object of William Cook, of Orpington House, England, who is the originator of the breed, was to produce a distinct type or strain of birds that would combine the good qualities of some of the breeds that are well known to be good egg-producers and table fowls. In this he was most successful, as to-day the Buff Orpington is generally acknowledged to be the best general-purpose bird in England. They are especially suited to the requirements of the English markets, and, as a money-earning breed, they lead all others.

Being connected with a company that has from time to time been forwarding poultry to the English market, I have had occasion to communicate with some of the leading dealers in dressed poultry in Great Britain, and have noted that special mention has frequently been made of the merits of this breed. They find the greatest demand for a white-fleshed bird having white legs, and which will weigh from three to four pounds dressed when five months old. The color of the flesh or legs will frequently make a difference of one or two cents a pound. Such points do not generally appeal to Canadian poultry raisers, but if we intend to continue to build up a trade in high-class dressed poultry with John Bull we must place before him just what suits his eye, while constantly remembering that, however much he may love us, pure sentiment will not induce him to violate his stomach. Our attention has repeatedly been called to the ideal type of bird for the export trade. We have been supplying too great a mixture, and unless we can succeed in improving our stock, with a view to curtailing those vexatious variations, and supply what the English market demands, we cannot expect to get the highest prices.

During the last three months I have visited the poultry departments at the Ontario Agricultural College, Guelph, and at the Central Experimental Farm, Ottawa, and found that the Buff Orpingtons were making an excellent record as winter layers. W. R. Graham, Superintendent, Poultry Department, Guelph, had a pen which were all laying on 15th January. An April pullet usually commences to lay in October or November, and with proper care will continue to produce eggs throughout the winter and spring.

#### COMMENTS FROM SOME EXPORTERS ON DRESSED POULTRY.

Dr. Boulton, Manager Canadian Produce Co., Toronto, says: "The Buff Orpington is worth all the other breeds put together for the export trade."

Jas. Rudden, Game Merchant, Liverpool, says: "For the English trade in dressed poultry the Buff Orpington is the best breed."

C. F. Hodges, Manager Farmers' Packing Co., Brantford, says: "From our experience in shipping dressed poultry to Great Britain, and from what we have seen of this breed, we can with confidence recommend our farmers to get into the way of raising Buff Orpingtons as quickly as possible, as it will greatly help our export trade."

Mr. Courtney, of the firm of J. & W. J. Courtney, London, England, says: "The Buff Orpington meets with greater favor in the markets of England than any other class of poultry."

They are exceptionally hardy. During the past winter I have imported four crates

of birds, which I purchased from one of the best flocks of Buff Orpingtons in England, at a cost of \$50 per trio. They landed in the early part of March in the very best of condition, after being confined in the crates for seventeen days, and crossing the Atlantic in the roughest part of the year. They were healthy and bright, a number of the pullets were laying, and they have never required nursing a single day since they landed.

Their general characteristics may be summed up as follows: They are hardy, quite domestic in habit, mature early, are excellent egg-producers, their bodies are of the proper size and conformation, they have a fine-grained flesh, and they are well suited to our Canadian climate.

#### THE INCUBATOR.

Not many years ago we looked on self-binders as being somewhat of a luxury. There was a time when the old reaping machine was not considered as a necessity. The farmers of Ontario have been, and continue to be, hedged about with changing conditions, with which they must keep abreast. A man who does not raise more than an acre of grain would not think of getting a self-binder for his own use. For the same reason a person who does not intend to raise more than a few dozen chicks would not get an incubator. But for a person who intends to make poultry raising a money-earning industry, a prominent feature, or a specialty on his farm, it will be advisable for him to study the problem of production, starting with the egg. He must calculate on how to get the largest number of thrifty chicks at the least cost. I have had some experience with running after setting hens, as well as running after a reaping machine, and have not the slightest intention of returning to either.

A dozen or fifteen hens incubating eggs according to nature's methods will require much more attention and time than a machine that will do the work equally as well, if not a little better. An incubator may be used in the early spring, when we cannot get a biddy—as a clucking hen is sometimes called. An incubator will set whenever and wherever you set it, and is not apt to leave the eggs to take part in a fight. That cannot always be said of a hen. If you have a good machine, and the eggs are spoiled, it is not hard to locate the cause. As is the case with many other things, the cheapest incubator is very often the most expensive in the end.

In selecting eggs for incubation I try to have the lot nearly uniform in size. I discard unusually large eggs, as well as the small ones. In the early spring it is difficult to get fertile eggs. Abundant exercise for the breeding fowls is the one important essential. Whole grain, meat, green bone meal, and plenty of grit are foods which help to increase the vital energy of the germ. It is a mistake to use a cock or cockerel with more than fifteen or twenty hens, and it is a mistake to use a cock at all, except with breeding fowls in the breeding season.

When starting the incubator I always get a supply of the best coal oil, and usually run the machine for one day—or until I have the temperature constantly at 102 degrees F. I commence to turn the eggs on the second day, and continue turning them twice a day, reversing the tray each time I return it to the incubator. I also change the eggs from the outside to the centre of the tray, crowding those in the centre to the outside. This process of turning the eggs twice each day allows them to become properly aired. As the hatch advances, a slightly longer time should be allowed for the eggs to air.

After the eggs have been kept at a temperature of 102 degrees F. to 103 degrees F. for seven days, they should be examined, and the unfertilized and doubtful eggs may be removed. This can be done by enclosing a lamp with pasteboard, leaving a whole the shape of an egg, and by rapidly placing the eggs—one at a time—before the small hole. The unfertile and dead eggs can easily be detected. This work should be done rapidly, in a warm room, that that the eggs will not be long exposed to a low temperature. The unfertile eggs are still perfectly sound and fit for general use. At about the twelfth day I again examine the eggs and discard those which have not had a sufficient strong germ to carry them through. Those which are not alive can very easily be distinguished at this time. I again test the eggs on the seventeenth day, removing all eggs containing

dead chicks. On the eighteenth day I turn the eggs for the last time, allowing about forty minutes for them to air, provided that the room is warm, say up to 85 degrees F. After replacing them in the machine I gradually raise the temperature up to 104 degrees F., and do not open the machine again until the chicks are twenty-four hours old, when I take them out.



Killing chicken for British market.



Proper position to hold chicken while commencing to pluck, wings between knees.

#### DISCUSSION.

Q. Where do you keep your incubator ?

A. Myron A. Gee, Fisherville : In the house.

Q. Is it not dangerous ?

A. No more than with an ordinary lamp, if good oil is used.

Q. Which is the best brooder ?

A. I make my own brooder. Any one can make a good brooder. Make the heat come up over the backs of your chickens.

Q. Would you put 200 chicks in a brooder ?

A. I would prefer two 100-chick brooders.

Q. What incubators are the best to use ?

A. J. W. Clark, Onondaga: There are many good ones. I have used the Morgan and Safety with good results.

Q. Would you run an incubator without a brooder ?

A. Yes, if I was not anxious to have very early chickens, and a small quantity. You can use the hens as brooders in the spring by taking an egg or so out of the incubator when they are about to hatch, and placing them under what hens you think you will need. If they have just commenced to sit they will mother about thirty chicks each.

Q. What do you do for lice?

A. Dust with insect powder and sulphur, mixed half and half. A little of this placed under the wings and tail answers well.

Q. Do you think it pays a farmer to fatten his own chickens?

A. G. R. Cottrell, Milton: Most certainly it does. A farmer loses by selling his chickens at 6 cents per pound, or on an average of 28 cents per pair.



A trio of Buff Orpingtons. A well and favorably known table fowl in the Old Country.

Q. How old should chickens be when placed on the market?

A. A farmer should never raise any more chickens than he intends to food, and feed well. If his chickens are seven or eight months old before they go on the market, they have then developed a spur, and a chick with a spur will bring about two cents per pound less than birds without the spur. They should be sold at from four and a half to five months old.

Q. How large are your chicks when you sell them?

A. The earlier we get our chicks on the market, the more money we get out of them. Place them in the crates at  $3\frac{1}{2}$  to 4 lbs. weight, and sell them at about  $5\frac{1}{2}$  or 6 pounds.

Q. What about feeding wheat for fattening?

A. Would prefer something else. Wheat is pasty when ground.

Q. Is buckwheat good for fattening?

A. Very good results are obtained.

Q. What about feeding turnips to fowl?

A. I would feed a few if I had not other roots. But one has to be careful as to the flavor of the egg.

Q. What about feeding broilers?

A. As a general thing, farmers are not in a position to make money out of broilers. That part of the business requires a separate house etc.; but there is plenty of money if in a position to grow them.

Q. Can you fatten turkeys in the same way you fatten chickens ?

A. No, you must not shut your turkeys up. They require exercise.

Q. Do you feed ground hone ?

A. R. McCulloch, Saelgrove : Yes.

Q. Does food have an influence on the color of the flesh ?

A. Yes

Q. How do you feed your birds?

A. J. W. Clark, Onondaga : In crates, with troughs in front.

Q. What size are your crates made ?

A. Six feet long by 20 inches square, with divisions every two feet.

Q. How high from the ground do you put your coops ?

A. That depends on the room I have. If I am short of room I place one on top of



The Cranning Machine as used by J. W. Clark, of Onondago.

another, three deep, with pans to catch droppings between. The first one would be about six inches from floor, and a 4-inch division between each coop for pans. If I have plenty of room I put them up 2½ feet from the ground.

Q. How many birds can you put in the crates?

A. That depends on the size of the birds—from 4 to 6.

Q. What prices are realized in the Old Country ?

A. From 10c to 15c per pound, according to quality.

Q. Have you used the crammer ?

A. Yes. It is a good thing to have if you are going in to feeding largely, but I would not advise any one to invest in one for a few birds.

Q. How long should birds be starved before killing ?

A. From 30 to 36 hours. Birds starved that length of time will pluck much more easily than those starved only 12 hours.

Q. Is bone dust good for hens ?

A. Green bone ground is the best, or granulated bone is better.

Q. Do you buy the green bone ground, or grind it yourself ?

A. I grind it.

Q. Will tallow take the place of ground bone ?

A. Not for laying hens.

Q. What proportion of tallow do you feed when fattening chickens ?

A. Commence with one pound to 60 or 70 birds twice a week, and lessen to about one pound to 50 the second week.

Q. Will exporters take scalded birds, or when their heads are off ?

A. They must be dry plucked and have their heads on. You can freeze a dry-plucked bird, and when it thaws out it will remain fresh looking, where the skin of a scalded one will turn dark.

Q. When we have the poultry, where can we find a market ?

A. The Farmers' Packing Company, of Brantford; James Ruddin, Esplanade street Toronto; and the Canadian Produce Company, of Toronto, are handling large quantities of fowl, and are paying good prices for dressed and live birds. They will forward empty crates to you and pay express charges both ways.

Q. What do you advise feeding young chicks ?

A. Myron A. Gee, Fisherville: First feed, at 36 hours old, stale bread, soaked in sweet milk, squeezed dry and crumbled. After that feed corn meal finely ground, one-third, and wheat bran two-thirds, mixed dry and crumbly, in skim milk.

Q. Do you water them, too ?

A. Keep water before them always. Make a fountain of a salmon can and saucer and keep fresh water in it always. Also have sand within reach.

Q. How often do you feed chickens when young, say during the first ten days ?

A. Five or six times a day. Feed very small quantities, aiming to keep them hungry. This is the critical age. After this they exercise more and can use more food.

Q. At what age should chickens be marketed ?

A. Get rid of surplus early cockerels at earliest possible date. Prices are high and you need room for pullets.

Q. What is best weight ?

A. The earlier the season the lighter the weight called for. A plump, fat, four-pound bird is a favorite for export, and takes well in home markets.

Q. Is there any money in selling chickens ?

A. F. C. Elford, Holmesville: Yes, if they are put up in the proper shape.

Q. What kind of chickens are the best for fattening purposes ?

A. I have found Rocks or Wyandottes as good as any.

Q. What do you feed ?

A. Finely-ground oats and skim-milk mixed.

Q. How long are the crates ?

A. This is the model of one: 6 feet long, 16 inches wide, and 20 inches high.

Q. Can you fatten in a crate cheaper than without one ?

A. It is claimed that chicks can be fattened three or four cents per pound cheaper in a crate than in a box stall, and four or five pounds cheaper than allowing them to run loose.

Q. What are chickens worth per pound, fattened as you describe ?

A. I have been offered 10 cents per pound wholesale at my own station. They bring 12 to 16 cents per pound in the Old Country. These prices, however, are for nothing but the very best quality.

Q. What do you think of cross breeds ?

A. G. R. Cottrell, Milton: I never cross fowls at all.

Q. Why not cross the Plymouth Rock and the Wyandotte ?

A. What is to be gained ? Nothing, because the breeds are so much alike.



Q. Have you ever seen a Rock crossed with a Leghorn ?

A. Yes, but after, when you come to the next cross, you are in trouble.

Q. How many male birds would you require for 80 hens ?

A. A farmer with 80 hens should never breed from them all. He is losing money. If he put enough male birds with them he would have to buy five or six, otherwise, if he selected a breeding pen of the best and put one good male with them, he would have better eggs and stronger chicks. He could buy an exceptionally good bird for what six half-breeds would cost.

Q. Does it make any difference as to the age of the breeding stock ?

A. I always like matured stock. The chicks are stronger.

Q. Do you prefer a pure-bred fowl ?

A. J. W. Clark, Onondaga : Most decidedly, if you get the proper conformation.

Q. What breeds answer this purpose best ?

A. The American class of Wyandottes and Rocks are fine birds, but we are having a new breed introduced called the Buff Oripington, an English-bred fowl, that answers this purpose better than any other fowl we have, as they have white legs and white flesh, which our English friends ask for.

Q. Are they a general purpose fowl, and white size ?

A. They seem to be extra good winter layers. I have seven which are laying well, and I like them so much that I have ordered a dozen from England. Mr. Graham, of the O. A. C., has the same number of hens, and every one is laying now (January). They are fully as large as the Rock, and lay a large brown egg.

Q. What do you think of crossing ?

A. The first cross will give good results. A cross of the Rock or Wyandotte with the Indian Game makes a fine, full-breasted bird. The game is strong in constitution and light feathered.

#### POULTRY POINTERS.

By G. R. Cottrell, Milton.

"1. There is an unlimited market, both at home and abroad, for first-class poultry."

"2. A better class of poultry than at present offered for sale would greatly increase the consumption."

"3. Quality must be improved if we expect higher prices."



Packed for shipment to the British market. (Showing box from upper side.)

These three headings were the points from which Mr. Cottrell preached a poultry sermon at Strathroy Dairy School last week. In dealing with the first point, Mr. Cottrell took occasion to say that there was a good market right at home for first-class poultry. In the city of Toronto, for instance, the market is glutted each week with poor, scrawny chickens, selling at from 25 cents to 50 cents per pair, while plump young birds, from 3½ to 5 lbs. each, easily bring from 80 cents to \$1.25 per pair.

"I have," said Mr. Cottrell, "no trouble in getting 10 cents per lb. for all the chickens I can raise. Then there is a great demand for poultry in the Old Country markets. At one time this fall Mr. Riddin, the Liverpool Commission Merchant, had one million chickens in cold storage in Toronto, and there are other firms in that city, as well as in Montreal and other places, who are taking all the chickens they can get for shipment abroad. There is, therefore, no trouble about the market."

In his remarks on the second point, which discussed the question of better chickens increasing the consumption of poultry, Mr. Cottrell said: "As a rule, city and townspeople who can afford to have poultry on their tables two or three times a week, and the wholesale and retail dealers in Toronto tell me that their customers invariably come



Packed for shipment to the British market. (Showing box from underside.)

back after having eaten some birds that have been properly fed. It is the tough, scrawny chickens that spoil the consumption.

"In the third place, we must improve the quality by better methods of breeding and feeding. Many authorities now agree," continued Mr. Cottrell "that the Plymouth Rocks and the Wyandottes are the two best general purpose fowl for the farmer. They can be made to lay when eggs are high priced, and they mature early for the market. Good table fowl should have a broad breast, should be wide between the eyes, good stout legs placed well apart, and good feet. After the chickens are three or four months old they should be put in fattening crates and fed for three or four weeks. This fall I fed three hundred chickens in this way for shipment to the Old Country, for the last three weeks giving them nothing but sifted oatmeal mixed with skim-milk. They had all they could eat three times a day, but as soon as they left off eating the trough was cleaned out and a fresh supply put in next time."

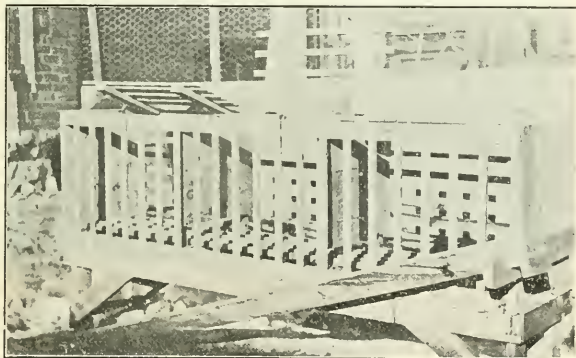
Mr. Cottrell then described the fattening crate, saying: "I make my crate 10 feet long and 16 inches square, slatted on three sides, top, bottom and front. A crate this size will be divided into four compartments, each compartment holding four birds. One trough runs along the entire length of the crate, and the birds put their heads out between the slats and eat the soft food.

"The birds must be dusted with sulphur about once a week to keep off the vermin, and at the end of the second week should have a feed of gravel—about a pail and a half to two hundred birds. This soft, nutritious food makes excellent flesh. The birds not having any exercise, the muscles become tender and juicy, and the fat which is laid on gives them a nice, plump appearance, so that they sell well when taken to market. They should be starved for 36 hours before being killed. This will ensure there being no food in their bodies that might ferment and cause decay in a long ocean trip.

"They should be killed by pulling their necks, if they are to be shipped to the Old Country, or by bleeding in the mouth, piercing the brain, and then letting the blood out back of the neck, for the home market. Old Country people are suspicious about any wound on the body, and even where they are bled in the mouth or head they seem to think that a bird might have been killed 'to save its life.'

"The birds should be plucked dry immediately after they are killed, before the body gets cold, commencing at the breast and working back to the wings and legs. This allows the blood to have drained toward the neck before the feathers are plucked from the extreme parts, and there will be no disfigurement by the blood rushing to fill the holes left where the feathers are taken out.

**Egg Production.** In answer to a series of questions, Mr. Cottrell then took up the subject of "Egg Production in Winter." "The first thing to be noticed," said Mr. Cottrell, "is the poultry house. Too many farmers expect their chickens to roost in the



A Convenient Feeding Crate.

cow stable, scratch in the manure heap, pick up what grain they can get on the bare floor, and lay eggs every day. If a farmer keeps poultry at all he should keep them for the money he can make out of them, and it will pay every time to have a comfortable house for them, and one that can be ventilated without having a draught immediately on the birds. It is not necessary to have a series of ventilating shafts, but the door and window ought to be arranged so that the roosting places do not come between them. They should be left open part of each day in winter, while the chickens are having a run out, so that the air in the room will become completely changed. If the room is a cold one at night it will materially help to have a drop curtain in front of them, which should be rolled up in the day time.

"Laying hens," continued Mr. Cottrell "must be kept with a good appetite all day long. I fed my laying hens in winter some mangels whole about 9 a. m. At noon I give them some meat, either ground bone or table scraps. If you can get hold of a young calf and boil it, bone and all, it makes excellent food for the chickens. About 4 p. m. I

feed a mash, consisting of one part oat meal, two parts bran, and to every pailful add two handfuls of slacked lime. When mixed I throw in a couple of handfuls of chopped clover hay. After they have eaten this up clean I throw a handful of wheat or corn into the outstraw in the scratching-pen, and let them work away at this until night. Some grit, in the shape of crushed granite or fine gravel, must be kept where the chickens can get at it from time to time, and, of course, fresh water must always be within reach."

Setting Hens. "How do you treat setting hen?" someone asked. "I separate them from all other hens," said Mr. Cottrell. "and put them in a nest apart. After the hen is comfortably settled I leave some solid food—usually in the form of grain—and some water handy to the nest, so that she will not have to stay off long and allow the eggs to get cold. On the seventh day I always examine the eggs. By holding them up to the sun or a candle you can always detect those in which the embryo is forming. You should at once remove all the clear ones, as they will soon spoil, and a bad egg in the nest has an injurious effect on the young germs that are hatching."

Mr. Cottrell went on to say, "The hen should be dusted with sulphur when first put on the nest, and once or twice while hatching. After the chickens are hatched allow them to dry off well before removing from the nest, and take them to a "v" shaped slatted



A lot of Youngsters.

crate, without a bottom, so arranged that the hen cannot get out, but giving the chickens their freedom. Better to have a hoard or a small platform in front, upon which to feed and after sprinkling some sand on this, which will supply them with grit, they will soon take to eating solid food."

"More chickens are killed," said Mr. Cottrell "by feeding too soon and feeding food that is too heavy on the start, than in any other way. They should be fed very small quantities of stale bread, mixed with sweet milk, and then squeezed out dry.

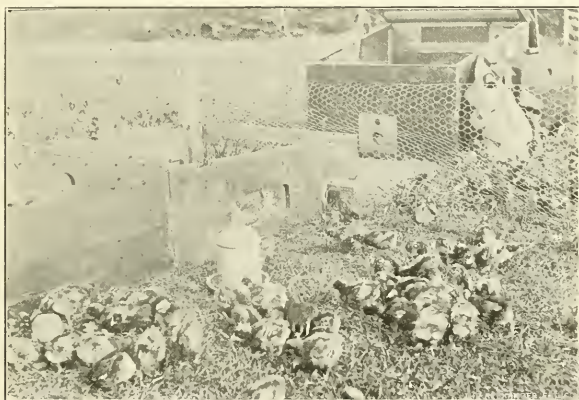
"This should be given three or four times a day, but only in such quantities as will be eaten up clean. At the end of the first week they may be fed small quantities of shorts and corn meal, then gradually they will take solid food, first in form of millet and finally whole wheat. They should, where possible, be given sweet milk to drink from the very first."

"Chickens raised in this way," said Mr. Cottrell, "and then given plenty of food and let run loose, should weigh from 3½ to 4 pounds at four months old. They are then ready for the crates to be finished for the market. If they are allowed to wait until they are six or seven months old they begin to show spurs, and the commission men, on this account, will not pay as much for them. If they are shipped to England they will bring two cents per pound less than if they had been fattened under five months."

In answer to a question, Mr. Cottrell said that potatoes might be fed if cooked first and mixed with a bran mash.

"How many eggs should a hen lay in a year?" was asked. Mr. Cottrell said he expected his hens to average 180 eggs. To do this, however, pullets alone must be kept and they only from hens that have been good layers. "There is a good deal in pedigree," said Mr. Cottrell. "By this I do not mean a pedigree on paper, but the eggs should be set only from the hens that have a good record as egg layers. In this way you can work up a good laying strain from almost any breed."

Mr. Cottrell was kept busy right up until dark answering questions in reference to poultry matters, and it is evident from the interest taken that farmers are beginning to realize the importance of the poultry industry as an adjunct to their business. We know of one lady near Cobourg who makes \$400 a year out of her poultry, and there are hundreds of women bringing poultry to market who average from one to two hundred dollars each season.



A Happy Family.

#### DISCUSSION.

Q. How many hens do you place in one breeding pen ?

A. G. R. Cottrell. Milton : Never more than 16, with a male of the American class.

Q. How large a pen do you require for 16 hens ?

A. A hen should have eight square feet of floor space to herself, but if they have the barnyard to scratch in, they do not need that much, say six feet.

Q. Do you let your hens out in winter ?

A. Certainly, unless it is very cold.

Q. How do you ventilate your hen house ?

A. The easiest way is through the doors and windows. Be sure and give them all the fresh air possible.

Q. How high would you build a hen house ?

A. Keep it low ; probably 9 feet at one side and 4½ at the back.

Q. What kind of a floor would you put in ?

A. I would have a clay floor if you can get it dry enough. Build the house large enough so that the hens will not be crowded, and high enough to put about one foot of earth in the bottom, to raise it above the land outside.

Q. What kind of roosts do you use ?

A. Drop boards about two feet from the ground, and roosts about 8 or 10 inches above that.

Q. Do you have any trouble in getting the hens to perch on the roosts, and not on the drop board ?

A. No. Never crowd your hens on the roost. If you place your hand between hens on a crowded roost you will notice how warm it is. If they are crowded they sweat, and when they come off the roost in the mornings they are apt to get cold.

Q. Do you fatten turkeys the same as you do chickens ?

A. No. Turkeys are a wilder nature, and must be given a considerable amount of freedom. I have fattened them by pulping mangels and mixing with oat meal or pea meal and feeding it once a day, and grain the last at night, say peas at night.

Q. How old do you think fowls should be kept ?

A. The American classes should be sold or disposed of at the beginning of the second year.

Q. How do you tell their age ?

A. Always mark by punching the web of the foot, a different foot for pullets and year olds.

Q. Do you think they do better by mixing the food soft for fattening ?

A. That has been my experience.

Q. Would you put hens into crates to fatten them ?

A. Yes.

Q. Do you change your male every year ?

A. Never do any breeding in. If you are keeping pullets you will have, to change the male.

Q. How many males do you run with your fowls ?

A. Not any until breeding season, and then one to sixteen hens.

Q. Do you prefer mica-crystal grit ?

A. Of course gravel will do very well, but a gravel stone is round, and if buying grit, and only buying one kind, I would prefer mica-crystal grit.

Q. Will it do to pen off your hens in one corner of a basement barn ?

A. It would be possible to arrange it satisfactorily for the hens, but what about the rest of the stock ?

Q. Are there not three kinds of lice ?

A. I know of only two, the large hen lice and the small mite. The mite appears different at different times. When full of blood it is red, and at other times it is white.

Q. How old do you keep your hens ?

A. Never after a year old.

Q. What do you do with hens that eat eggs ?

A. Always be sure to have plenty of straw in the bottom of the nests, so that eggs are not apt to get broken. If you have one or two hens that have the habit you had better kill them, but if the flock have it in general, use trap nests, and plenty of china eggs, both in the nests and scattered around the floor.

Q. Is it not a fact that you will get more eggs when the male bird is not in the flock ?

A. I would not say you would get more eggs, but you would get a better egg, and the male would be more use to you when you did want him.

Q. What kind of a roost do you prefer ?

A. A roost three inches square, or two inches square, and planed.

Q. What do you feed your chicks ?

A. I am very decided on the idea that chicks should not be fed too soon after hatching, and the first feed should be grit, then stale bread soaked in sweet milk, and then made as dry as possible or rolled in oat meal.

Q. How soon do you feed the chicks ?

A. Very seldom before they are three days old, with the exception of grit. Mica grit is very good. I always have sand in the bottom of the brooders, and it is remarkable how they eat it.

- Q. Do you put anything on top of the sand ?
- A. Nothing, only keep it damp.
- Q. How often do you clean those brooders out ?
- A. About twice a week.
- Q. Do you place the food on anything ?
- A. Feed right on the sand ?
- Q. Do you like milk for little chicks ?
- A. I always give them water at the start. Arrange it so that they will not fall into it.
- Q. Do you ever feed millet ?
- A. Yes, but one must be careful with millet, as it is rather strong food.
- Q. How do you like wheat ?
- A. Wheat is an excellent food as soon as chicks will eat it.
- Q. How often do you feed. For the first few weeks feed as often as you can find it convenient, and then only three times a day. Always feed them all they want, but never leave any lying around. Feed regularly and at the end of 3½ or 4 months you should have them ready to fatten.
- Q. Can you hatch chickens too early ?
- A. That depends on circumstances. If you have not a suitable place you lessen your profits by hatching too early.
- Q. Do the eggs hatch as well in the winter time ?
- A. In many cases the eggs are not as fertile.
- Q. What is the cause of the early eggs not being so fertile ?
- A. This the case when the pens are poorly constructed, and in flocks when no attention is paid to breeding, having a number of half-hearted males with a large flock.
- Q. Do you think the Leghorns a good fowl ?
- A. They are splendid layers, but not a farmer's fowl.
- Q. What are the best farmers' poultry ?
- A. Most any of the American varieties. A farmer should select a variety that is extensively bred, so that the breeding stock can be secured cheaply, therefore Plymouth Rocks or Wyandottes are the best.
- Q. Are those varieties not apt to get too broody ?
- A. You can have strains of the same variety that are entirely different in that respect ; some strains are apt to get too broody, and others not enough.
- Q. Do you think late chickens pay ?
- A. Not if your pens are such that you cannot keep them warm.
- Q. Would you prefer a hen house facing the west to one facing south ?
- A. I like west or southwest for house for breeding stock.
- Q. How do you know old hens from year olds ?
- A. Always punch your hens' feet.
- Q. What about feeding mixed grains ?
- A. This will do very well. Hens enjoy a change.
- Q. Do the Plymouth Rock and Wyandotte hens lay large eggs ?
- A. Good-sized eggs, but not the largest.
- Q. What breed of fowls lays the largest egg ?
- A. Minorcas will lay more weight of eggs in a year, but it is the same as in other things—you can have strains of the same variety that lay different sizes.
- Q. What do you do with your old hens ?
- A. They are the cheapest meat you can eat.
- Q. Do you think it worth while to save the feathers ?
- A. Certainly, everything counts. You can get 5 cents per pound for them.
- Q. What do you call a poorly-constructed house ? A very cold one ?
- A. Not all together. For breeding stock I always prefer a building a little on the cool side to a building too warm. I always like a building for breeding pens dry, well ventilated, with a fair amount of light, and facing the west.
- Q. Why do you not give milk to drink ?

A. R. McCulloch, Snellgrove : It is too fattening for egg production.

Q. Is an incubator profitable ?

A. Yes, if a large number of chicks are raised.

Q. What is a remedy for lice ?

A. Crude carbolic acid.

Q. What causes the great mortality of young chicks ?

A. Myron A. Gee, Fisherville : Lice, dampness, and over-feeding. Dust the nest before setting, and on the 18th day dust with insect powder, "Instant Louse Killer, or "Death to Lice."

Q. Do you keep the chicks confined with the hen ?

A. No. I always prefer an A-shaped coop, so that the chicks can get out. Put boards to form an enclosure round the coop, allowing seventy-five square feet of space for chicks to run in till they can jump over, then let them range.

Q. Should growing chicks that have free range get any extra feed ?

A. Yes, or rather light feed in the morning and all they will eat at night will make them grow faster.

Q. At what age should pullets be accustomed to winter quarters ?

A. Latter part of October or fore part of November.

Q. What is the cause of diarrhoea in hens in winter ?

A. Lack of grit, indigestion, or liver out of order from too exclusive grain ration, are the general causes.

Q. Give bill of fare for winter feeds for laying hens.

A. Roots, clover chaff, meat in some form, grain and bran, oyster shell, gravel, ater and a keen appetite.

Q. Do you approve of feeding grain in litter ?

A. Always let grain be from one-third to half the feed, according to condition and breed of hens.

Q. What are causes for hens not laying better in winter ?

A. Cold roosting quarters, over-crowding, exclusive grain ration, no meat supplied.

Q. What is a profitable chicken to keep ?

A. A blocky, quick-maturing type. Cockerels are always fat and pullets lay earlier.

Q. Which are the best layers ?

A. A good laying strain can be built in any breed if best layers are selected, and this should always be done. The Leghorns are good summer layers, but Rocks and Wyandottes excel in winter time.

Q. What is the best breed of turkeys ?

A. G. R. Cottrell, Milton : Bronze turkeys are about the best. Turkeys with a tendency to brown edging on the tail coverts as a rule are larger than those with a clear white edge.

Q. Why do turkeys lay soft-shelled eggs ? Is it because they get no grit ?

A. That is not always the reason. It seems to be characteristic of turkeys. Care should be taken that the hens do not get too fat.

Q. Would you advise feeding turkeys at all ?

A. Feed the male birds well, but the hens very little, if any.

Q. Would you always set hens where they lay ?

A. It is better to do so. It is advisable to have hens lay where you want them to set.

Q. But you cannot get them to lay where you want them to ?

A. Just before laying time place in the building where you have your turkeys a nest for every hen, and better not have two alike.

Q. What kind of a nest do you prefer ?

A. Have it arranged that the hen has not to jump down on the eggs, and that those hatched first cannot leave the nest until all are hatched, thereby causing the hen to leave also. I always like the nest a little flat, not too rounding, so that the eggs will not roll too much together.

Q. What kind or age of stock do you prefer to breed from ?



A. Young hens, weighing 15 to 18 pounds, are the best layers, and make better mothers. One male with ten to twelve hens is a good mating.

Q. How many eggs do you give a turkey hen ?

A. As many as she can conveniently cover. Always give a hen her own eggs, and then if you mark the young when they come out, you can tell in the fall how a certain one is bred.

Q. Are young turkeys hard to raise ?

A. They are till after they get their red wattles ; after that they are quite hardy and need very little feed till fall. \*

## GENERAL.

### AGRICULTURE IN PUBLIC SCHOOLS.

By G. K. Mills, B.A., Collingwood.

Many present here to-night wonder by what right, I a principal of a collegiate institute, presume to address a Farmers' Institute and perhaps to offer advice on some points. As evidence that I have been in the past, and am now, in a position to become acquainted with the conditions surrounding the subject on which I am about to speak, I may say that I was born and reared on a farm. I have worked at home on the farm, I have worked on other people's farms, and I have worked my own farm. Further, I have taught in an ungraded country school, as principal in a village school, and as assistant in both high school and city collegiate institute. Having thus, as it were, served my apprenticeship under all the conditions necessary to a knowledge of what is needed and what can be done for agriculture in the public school. I hope you will bear with me while I present to you what I think could be done, and should be done, in the matter.

While we as Canadians are concerned regarding the prosperity of Canada as a whole, it is with that particular Province in which we live that we are more particularly interested, but since the products and natural resources of our Dominion resemble so closely those of our Province, I think I may safely say that the methods of education that are beneficial to this Province will prove beneficial to the Dominion at large.

If we consider our country for a moment, we will see a young country, peopled by the descendants of the best nations of Europe, nations that in the past proved themselves first in the arts of peace and war, nations that, no matter to which we trace origin, whether British, French or German, we have every reason to feel a pride in, and no cause to feel ashamed. We will also see a young country rich in natural resources, among the wealthiest countries in the world in her resources of mine, forest, field and fisheries, all awaiting the intelligence, energy and enterprise of our rising generations to become properly developed.

Having, therefore, the blood of the best people of the world in our veins, and living in a country of enormous natural resources, what should be our aim in educational affairs ? Are the educational ideals of the older and wealthier nations of Europe suited to our need ? Is this traditional classical education of England what we require ? I think not. Each nation must educate itself in its own way and for its own ends, and it seems to me that we require such a system of education and training, as will enable our young men who are poor in money, but rich in brain and muscle, to give of their best in the effort to develop the natural resources of our country. I have no objection to a classical education, but it is rather for those who have the inclination, money, and leisure to pursue it, and I question strongly the wisdom of making it compulsory for all our young teachers and matriculants. Classical education will take care of itself, and professional education we need not greatly concern ourselves about. Although this is essentially an agricultural country, the vast majority of our schools have been in the past, and are now, preparatory schools for professional life, and insufficient attention

has been given to the proper training of that vast proportion of our children who leave our country schools in early life, to follow the occupation of their parents on the farm, or, becoming tired or dissatisfied with this, to drift into our large centres, there to earn their living as best they can.

In the past few years we have seen a desire on the part of the Government to give more attention to the needs of the commercial classes by establishing a commercial course in our high schools, and to the manufacturing classes by giving aid to technical schools and manual training classes, but for that great body of our people who are, without doubt, the bone and sinew of our country, little has been done as compared with what could have been done. It is not my business, nor have I a wish to criticize the Government, as their legislation is usually as far in advance of public opinion as it is wise to go. I am well aware that for the past quarter of a century fitful attempts have been made to teach agriculture in our public schools by means of a text book, and by means of teachers wholly unprepared by knowledge or training to make even a moderate success of it, but this verbal teaching of agriculture did not amount to anything in the past, nor will it amount to anything in the future, if not supported by practical application. I also know that agriculture is a science or has its roots embedded in many of the sciences, and a man cannot be supposed to have a profound knowledge of these before he can become a successful farmer. It is not required of him that he shall, but if he has become a successful farmer he must have acquired very many of the underlying principles of these sciences, whether he did so because of his early training in schools, or as a result of bitter experience when he grew older.

Those men who have been the most successful are the very people who most regret that in their younger days they did not receive some guidance and training, so that they might have, because of a knowledge of some simple underlying principles, escaped the expensive consequences of their later mistakes. These men have learned proper methods by long experience, and why should we not give our children some direction as to the right and wrong methods of setting about their work, instead of leaving them to follow along in the methods of their parents and grand-parents, only to find out correct methods after repeated failures. I believe that we owe it to our country and to our children to provide for them some means whereby they may profit by our experience, and by the experience of those who have made a special study of the conditions necessary to success.

How may this be done? I will try to tell you some of the things that might be done in our schools: first, as they are present, second, as I would like to see them equipped. To make myself clear, I will take a definite example. Suppose that when spring opens the teacher would ask the pupils to watch for the earliest appearance of the tent caterpillar. Ask them to cut off the branch on which they appear and bring it to school, the position and appearance of the egg masses may be shown them. Push the cut end through a piece of paper and place in a bottle, filled with water, set it in the window and await developments. The twig will leaf out and blossom, the worms will feed on the leaves and grow rapidly, the water will disappear rapidly from the bottle, and will need replenishing every day or so. When the leaves are about eaten it will be necessary to bring fresh branches, to be placed in the bottle, or in another bottle, alongside, and leaned against the others. The caterpillars will continue to feed and grow lustily until about the middle of June, when they will be full grown and become restless. When this is noticed the bottle containing the branches and nest may be placed in a wooden box, fitted with a lid, to prevent escape. The worms will shortly disappear, and all that can be found are small, white cocoons. Ask the pupils to bring a small pasteboard box of any kind, and give each a cocoon to take home and examine daily. About the middle of July the cocoons will hatch out into small, brownish moths. The children may afterwards be told that these are moths that lay eggs on the trees, which hatch out the following spring, to form a fresh nest of caterpillars.

What will the pupils learn from this? They will learn what very few farmers know, viz., the amount of damage that must be done by a few nests of these caterpillars. This is not so easily detected on the tree, as it is continually putting out fresh

leaves as the first ones are eaten. Their attention could be called to this, and they could be easily led to see that the effort and nourishment necessary to do this must reduce the power to produce fruit. The relation between leaves and light could be shown, as these second leaves would not have appeared if the buds had remained shaded by the first. This fact might lead to some of the principles underlying the object of pruning. The large amount of water needed by a growing tree would be apparent to them, and the necessity and methods of providing for this in their care of the orchard might be discussed. By watching the habits of these caterpillars, he will see that if he wishes to destroy them he must either kill them by spraying, as they eat the leaves, or he must remove them during the cool of the evening or on a cool day, when they are at home. He will learn that without careful watching and attention he cannot make a success of his orchard, and as this moth flies far, he will learn his responsibility to his neighbor in the matter of destroying as many of the nests as possible. Above all, he will learn that it is a simple matter to trace the life history of such pests, and, knowing this, will he not, when grown to manhood, approach similar subjects in a more intelligent manner than he would had he received no such training? It is not so much the knowledge although that is exceedingly valuable, as the training he receives in the manner of approaching the subject.

I could dwell on example after example, but these will suggest themselves to every worm, the potato bug, the pea bug, the house fly, the wiggler in the rain barrel. The object is not to multiply examples, but to illustrate methods and to show the pupil that he can work out for himself new cases that confront him in later life.

So much for insect life; now let us consider other life. Could not a boy be made familiar with those plants that are injurious, their habits, their surroundings, and methods of eradication? Could he not be taught by the examination of the contents of the crop how to determine what birds are beneficial and what ones are injurious? Could he not be taught to determine the quality of the soil? By stirring a handful in a bottle of water, the sand, being heavier, settles first, the clay next, and the vegetable matter last. He is then in a position to find out for himself in what one soil excels and in what another is deficient. By a few simple experiments and observations he could easily be led to find out the effect of too much rain on one kind of soil or drought on another. He would then be able to discuss drainage and fertilizers intelligently.

School Equipment. Now a few words as to how I would like to see our schools equipped. I would like to see every country, or even town school, provided with a plot of ground varying from one-half to one acre, according to attendance. This could be divided into our sections, one would contain fruit trees, both large fruits and small, as well as a few ornamental trees. Many very useful and educative lessons could be taught from these, e. g., grafting, budding, spraying, wrapping, transplanting, methods of growing fruit trees from seed, etc. The second section would be the vegetable garden. Plots could be assigned to each child, in which methods of preparing his soil and planting his seed might be illustrated. The third would be the experimental portion. The pupil would be directed to sow his seed broadcast, in drills, thick or sparingly, at a depth of one, two, three inches, etc. The fourth would be devoted to horticulture. Lack of time prevents my entering into any extensive description as to how this school garden, as it might be called, could be used to the greatest advantage of any pupil.

This programme is extensive and may sound revolutionary, but I leave each of you to answer the question for yourselves, whether this method of training the mind, that I have tried to outline, when the pupil is set to work under proper direction to solve these problems for himself and learn to ask himself the reason why, is not a better one than where the pupil sits trying desperately to memorize a lot of data, of which he understands little and cares less. Would not this method be the best kind of mental training, no matter what might be his aim in life? Would it not tend to develop that thinking and inquiring mind that asks itself the reason why, and is not content with tradition?

Now, some very clever man will say, as did an American educationist, "You would give us nothing but hayseed schools." I do not speak against the present work done in the public schools; far from it. I do not think there is a harder working or more conscientious class of people in Ontario than our public school teachers, but the pressure is so great and the drudgery so wearing that they have not time for this, nor have they anyone to guide and direct them aright.

But, you say, we have our public school inspectors. You have one here; you know him; I do not, except by report. I do know he is strong on continuation class work. I believe in continuation classes. The brains and energy of this, or any other country, find their way to prominence from the farm, and the hardest part of that journey is that which lies between the public school and the university, and it is our duty to make it as easy as possible. But I appeal to you as intelligent men to consider if any school with one teacher has a right to expect continuation classes. Surely the vast majority of younger pupils, who can only remain in school for a few years at most, are being neglected. It is well to encourage continuation classes where it can be done without neglecting the majority for one or two, but there is a greater work for inspectors than trying to establish more continuation classes than the neighboring inspectorate. This work is to keep abreast of the times and needs of the country, and in it the inspectors should encourage and guide the young teacher. It is a great work, a heavy task, and without the sympathy and direction, which he has a right to expect from the inspector, what wonder if the task becomes too heavy for youth and inexperience, and the crushing word, "failure," has to be written over against his work.

What has the Government done, and what is it doing? What it has done you know as well as I, but I might mention what it is doing. Sir William McDonald, of Montreal, has donated \$125,000 to the Agricultural College of Guelph for the establishment of a school where the public school teacher may receive the necessary training to carry out some such work as I have outlined. The Government will, no doubt, support this school when built, and maintain it, if necessary.

Now let us see what county councils and agricultural societies could and ought to do to help on this work. Prizes of sufficient value could be given for, say the best collection of injurious plants, injurious insects, the best methods of teaching the work as proved by the work of the pupils, the best vegetables, fruit, etc., grown by the pupils, all of which work must be certified to by the teacher, and, if necessary, a statement furnished by the inspector, to show that the work is being well done. In these and other ways the work could be encouraged.

The question is frequently asked, "Why does the boy leave the farm?" Various reasons have been given and cures propounded, but I do not think anything would have a more beneficial effect than to open his eyes to the fact that he is living in the midst of beauty and plenty if he is only prepared to make use of these opportunities. His calling would be clothed with a new dignity and value, and he would not only cease to be envious of the boy in the city, but learn to pity him. Only in this way can you stay this great exodus. Teach him to know that the farm can be made profitable, if he will only bring intelligence to bear on his work. Teach him to see some of the beauties and possibilities that surround him, and he will be more satisfied and crave less after the uncertain glamor of the town.

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#### MACADAM ROADS.

By Major James Sheppard, Queenston.

Our country roads have not been made on any particular plan, or organized system. They have just been built as the demand for them has arisen, and on the plan most in use in that particular locality. They were not made by one appointed, because he knew nothing about road-making, but because he was a friend, politically or otherwise, of the

Council. In consequence of this lack of system, we have the roads as we find them today. In this we are not worse than others. We often hear of the grand roads in the Old Country, but what was the state of those roads one hundred years ago?

In the neighboring republic we have often heard of the millions they are spending on road improvement, but while no doubt they are making great efforts to improve their roads by States, and by building stretches of model roads, still the percentage of their roads that have been improved is no greater, and I am in doubt if it is as great, as with ourselves. In England up to the year 1820 no great improvement had been introduced in road-making. Old methods are being followed, everyone making a road after his own plan, or as we sometimes do here, without a plan at all. Although a good deal of improvement had been made on what was known as the Coach Roads, no uniform system was in use. Every overseer made his portion of the road and kept it in repair as he thought best; in fact, these early roadmakers were the fathers of our path master system.

In the year above mentioned a Scotchman named J. L. Macadam was appointed road surveyor of the district around Bristol, and it was not long before the Government and people of England began to realize that a new era had begun in road-making, but it was some time before the general public became interested, and even when Macadam's work and writing attracted the men of science, no one realized that another had been added to the list of those few immortal names "That were not born to die," for as long as the English language is spoken, or, in fact, any other modern language, Macadam and the principles he adopted and advanced will never be forgotten, and for all time he will be remembered as the father of modern road-making.

Macadam's Principle of Road-making. It would be well to consider for a short time what is a "Macadam" road, and what are the underlying principles on which it is built.

1. Drainage. Macadam said no water should be allowed within six inches of the grade of the road. When giving evidence before a committee of Parliament, Macadam said: "Ten inches of finely-broken stone, properly applied, will carry any traffic."

"That is if on a hard foundation?" somebody asked.

"No, I do not care whether the foundation is soft or hard, if it be well drained,"

Q. "You do not mean to say that you could put a road through a bog?"

A. "Yes, if a man could work on the bog to drain it, for the road would wear longer on the soft foundation."

2. Grading. A properly shaped and graded road before the broken stone is used.

3. Material. All stone broken to as even a size as possible. Macadam gave the maximum size as six ounces, but in no case large or unbroken stone to be used.

4. Construction. The stone to be put on in layers and rolled or consolidated by the traffic before more was applied.

5. Facing. No material to be used as facing or bonding that would hold or absorb water.

Before Macadam's time road builders thought that on the amount of material used depended the ability of the road to bear traffic, and the larger and coarser the material in the foundation, the better. This he proved to be erroneous, as he was able to demonstrate that the finer the stone was broken in the bottom layers, the more stable was the road. At first sight this seems to differ from Telford's method, whose practice was to lay a stratum of large stone in the bottom as a foundation. The large flat stones laid smoothly on the well-rolled subgrade of a properly-excavated street, then other stone broken and placed on top, and firmly rolled, makes a solid foundation for the finer broken stone to rest on. Stone broken to a uniform size and properly prepared and firmly rolled on a properly prepared surface also makes an even and uniform foundation, but at a cost not exceeding one-third of a properly-built Telford road. Of course, it is not claimed that for city or town streets that have to bear continued heavy traffic, that ten inches of Macadam would be sufficient, or that a Macadam road is as well adapted to such conditions as the more expensive Telford road, but Macadam was not a city engineer; he built

roads in the country and for country use, and no one since his time has been able to improve much on his methods, or to demonstrate that roads can be built on a more permanent basis or cheaper than by following the principles he laid down.

**Mistakes in Road-making.** At the present time quite a lot of road-building is being done in this Province, and the honored name of Macadam is used to designate the work and practice now in vogue. As to the first principle, drainage, in many cases no effort is made to carry the water even in the side ditches. No cross culverts are put in to take the water from under the stone, and road builders forget that if there is a low place in the road, filling it with stone will not prevent the water collecting there. The road is not levelled or rolled, the stone is not broken to a uniform size, sometimes the stone is thrown on the road and broken by hammers, jarring to the bottom all the small particles that ought to be on top to help form a bond. At other times large unbroken stone is dumped down and covered with dirt or gravel, to work up in a year or two and make the road always bad, when if this had not been done it would have been a good dirt road at least part of the year. The usual practice is to place a strip of loose stone from six to seven feet wide along the centre of the road; no rolling is attempted, nor are the stones screened or graded, or any bonding material used. This stone is kicked about by the horses feet, rutted by the wheels, and it generally takes two years to consolidate it so that it can be driven on with comfort, and by that time it is about used up and the process has to be repeated. Is it any wonder that many people are against these so-called Macadam roads? But to the man who has studied the principles that Macadam practised and advocated, and knows the result that follows when the work is properly done, then compare it with the average road-building we see every summer, one is led to exclaim: "Oh, Macadam, Macadam, what fearful things are done in thy name!" When will our road-makers realize that a half-done job is money wasted? What would they think of a man who built a barn and neglected to put the roof on it? He would be no more foolish than the man who thinks to build a road by throwing a few loose stones on an ungraded, undrained roadbed.

**Q.** Has the agitation that has been carried on for the improvement of roads produced any result?

**A.** Major Sheppard, Queenston: The efforts of the Good Roads Association and other progressive men have produced decided results. Our roads are improving, better machinery is used, and a better system of doing the work practised.

#### POINTERS FOR ROADMAKERS.

From Report of Commissioner of Highways, 1901.

1. The steepness of hills should not exceed a rise of one foot in twelve.
2. The roadway graded for traffic should be in the centre of the road allowance, and should have a uniform width of 24 feet between the inside of edges of the open ditches. The width of roadway on cuts and fills should not be less than eighteen feet.
3. Side slopes in cuts and fills should be one and one-half feet horizontal to one foot vertical.
4. The crown given the newly-finished roadway should be uniform and have a rise of one inch to the foot from the edge of the ditch to the centre of the road.
5. When gravel or broken stone is used it should be placed to a width and depth sufficient to form a serviceable road, having due regard to the character and extent of the traffic.
6. The gravel or broken stone used on the road should preferably be obtained in the vicinity of the road, but must be of good quality.
7. As a rule the gravel or stone should not be of less width than eight feet, nor of a less depth in the centre than nine inches.
8. Where roads have heretofore had gravel or broken stone placed on them, they should be repaired by cutting off shoulders, shaping with a grader, and adding a suffi-

cient amount of gravel or broken stone to fill ruts, depressions, properly crown and make a road sufficiently strong to accommodate the travel.

9. The gravel or broken stone placed on any road should be thoroughly rolled; otherwise the grade should be maintained by careful raking or scraping until compacted by traffic.

10. An open drain should be made at each side of the road, and given a sufficient fall to free outlet.

11. Durable sluices and culverts should be built where necessary.

12. Tile underdrains should be laid, so as to carry away excessive sub-soil water, lower the water-line, and secure a dry roadbed, wherever a moist, damp, or springy condition of the sub-soil exists.

13. Modern machinery and implements should be used as far as possible to secure the greatest results from the expenditure, and to provide the best work.

14. Where, owing to special local conditions, any departure from the foregoing regulations may be desired, upon application of the council, an examination of the road or roads in question will be made, free of charge, by an engineer of the Public Works Department, for the purpose of deciding upon a suitable plan.

#### MANAGEMENT OF THE FARMER'S WOODLOT.\*

By Wm. N. Hutt, Department of Agriculture, Toronto.

I think it may safely be said that the farmer's woodlot or bush receives less care and attention than any other part of the farm. Indeed the woodlot is hardly considered as part of the farm at all. The attention it generally receives is the destructive blows of the axe in winter, and the no less harmful browsing of stock in summer. Under this treatment the wood is constantly decreasing in quantity and value, and the land lies as an unprofitable, stumpy waste, which is neither wood nor pasture, or is turned into cultivation, for which, being generally poor land, it is little fitted. Doubtless this unproductiveness of the woodlot is due to the fact that farmers generally do not consider the bush capable of any systematic management or regular cropping, or at all capable of repaying any labor expended upon it.

As farmers we are apt to consider bush land as something to be cleared up, and not to be perpetuated, or as a gift of nature for our own special benefit, and one that cannot be renewed. The time it takes for a seedling tree to become of marketable value is not as long as is usually supposed. Of course, if we had to begin on a bare field to raise timber, it would be a somewhat different matter. But in the ordinary woodlot we find trees of 10, 20, 30, 50, or even of 70 or 100 years of growth.

Nature if left to herself will gradually change a scanty coppice into a forest of value, but at best her methods in forestry are slow and somewhat irregular. However, by careful thought and practical management, nature may be so assisted that the woodlot may be made to supply not only all present needs for fuel, but to give regular crops of merchantable timber, and to be year after year increasing in permanent value. Growing forest trees are very susceptible of management; the crooked may be made straight or the straight crooked, the spreading may be made close, or the close to spread, just as we wish. While the prices of wheat and other farm products have been decreasing, and are likely to decrease still more, the price of lumber, owing to increasing scarcity, has been continually going up. We are painfully reminded of this fact if we wish to put up any building, however small. Any woods under careful handling may be made to produce regular, if not annual crops without the expenditure of a single dollar for replanting.

With these few facts in mind, it is our intention to outline the practical management of a woodlot, such as we might find it anywhere throughout the country, with a view to attaining its greatest present usefulness and permanent value.

\* The illustrations in this article, by the courtesy of Mr. Gifford Pinchot and the United States Bureau of Forestry, were taken from Pinchot's "Primer of Forestry," published by the Bureau.

Taking a sort of inventory of an ordinary woodlot we would find it somewhat as follows: 1, more or less (generally less) of mature trees; 2, trees past maturity; 3, premature trees; 4, healthy growing trees; 5, coppice and seedlings; 6, stump land; 7, waste, i.e., with no wood on it whatever.

1. Mature trees are those which by reason of age have arrived at their greatest size and most valuable quality of timber, and are therefore ready for cutting.

2. Trees past maturity are those which have not been cut on becoming mature, have become dead at the top, and the rain getting down into them has destroyed the quality of the wood. Finally, the trees become hollow, and though they may be annually laying on new wood underneath the bark, yet, owing to the action of insects and wood-destroying fungi, the rate of decay gradually exceeds the rate of growth, till some day the wind brings them down as useless old shells.

3. Premature trees are those which by reason of some accident of wind or storm have become broken and decayed, and, being thereby checked in growth, they never



Chestnut sprouts from the stump.

make valuable timber. A dead top and stunted growth are generally indicative of the premature condition.

4. Healthy growing trees are those which are to take the places of the mature trees as the latter are removed.

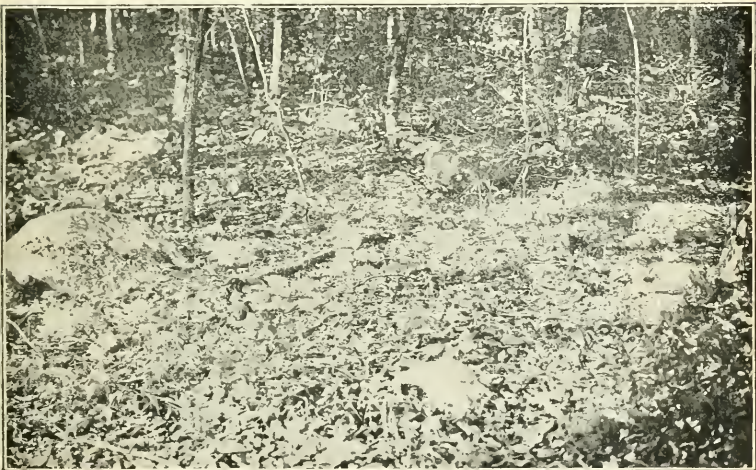
5. Coppice consists of the shoots that spring up from the stumps of trees that have been cut. See figure 1. That seedlings are the tiny trees which have come up from the seed of mature trees.

Methods of Replanting. The first thing to be done with the woodlot is to get it all under crop. There should not be a square rod of it that is not producing trees. Land in a wheat field not producing wheat is waste land; land in a bush that is not raising trees is also waste land.

Reproduction of Trees. All trees reproduce themselves naturally from seed, some also by coppice and under natural conditions the mature trees would see the ground around them. In this way spaces would gradually become filled up with growing timber. If, however, stock are allowed to graze in the woodlot the seedlings and undergrowth are prevented from coming up, and all natural provision for the perpetuation of the forest is cut off. The rough pasture on the few open spaces in a woodlot is of very little value, while the harm done to the trees is very great.



Keep Out Stock. One woodlot which I have had under observation gave a very clear proof this last year. In the spring, as growth started, around the mature trees could be seen coming up in a fine crop of young seedlings. In a few weeks cattle and sheep were turned into the woods. In summer the pasture became very bare, and the stock browsed off the leaves of the little seedlings. Owing to excessive drought in the early fall the pasture was not renewed, and the stock ate off not only the leaves, but also the green shoots of the trees and shrubs as high as they could reach. In the fall, when the stock were taken out of the woods, there was not a seedling to be seen, nor a leaf, nor a green shoot on the older trees within five or six feet of the ground. Under this treatment, year after year, this lot has produced no new trees, and the old trees being removed, it is becoming an unprofitable, stumpy waste. But by far the greater injury from stock results indirectly from the trampling of the soil and the consequent destruction of the natural mulch about the trees. On the vegetable mould of the forest floor depend largely the health and vigor of the trees. This mould, which is composed chiefly of decaying leaves and twigs, is of a very porous nature, and forms a natural reservoir for water. See



The natural forest floor.

figure 2. Under the shade of the tree tops the moisture of the vegetable mould is given up slowly throughout the season, and the air about the trees is kept in that humid condition so favorable for plant growth. The downward movement of water through the forest mould is also slow, and as the water table gradually lowers the roots of the trees push downward through the softened subsoil. For this reason forest trees under natural conditions are deep rooted, and are seldom blown down by high winds. Moreover, by virtue of the slow movement of the water in the forest mould the springs of the woodland have a continuous, even flow throughout the year.

One of the most noticeable features of pastured woodlots in the absence of the natural forest mould. The sharp feet of stock cut up the soft turf and pack it, so that its water-holding capacity is practically destroyed. For this reason creeks become in spring rushing torrents, roaring down hillsides and tearing away the fertile soil, and are dried-up, rocky gullies almost before summer comes. Rain falling upon pastured woods finds

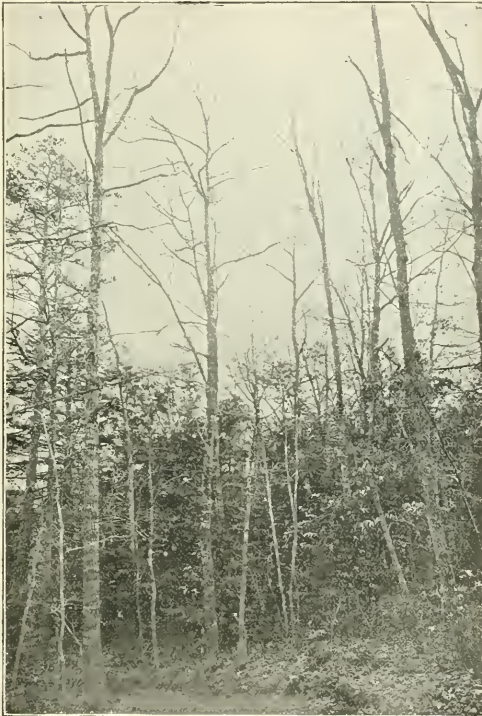
in the soil no natural reservoir, but passes quickly through the soil to swell for a few hours the creeks and is lost to the trees. When summer comes the soil of a pastured woods is hard and cracked like a bare fallow. The rain which fell upon it passed through it so quickly that the roots of the trees have been unable to follow down after the too-rapidly-receding water table. Deep root growth under such conditions is checked, and the trees are frequently blown over by strong winds. It is not an uncommon thing on closely-pastured woodlots to see sturdy oaks and maples, or even the tough-rooted elm, overturned by the wind.

Besides being a reservoir for moisture, the forest mould is a natural seed bed, and a nursery for nuts and seeds which fall upon it from the trees above. It must be known that seedlings of forest trees are among the most delicate of all plants, and require during the early years almost ideal conditions of vegetation. In the deep, rich mould under the protecting shade of the parent trees, the little seedling finds this ideal condition of growth in which to start. When a break occurs in the leafy canopy overhead the little tree stretches up quickly to fill the gap. The parched and trampled soil of a pastured woodlot offers only a lingering death to the tender seedlings and nature's means of perpetuating the forest is cut off. For this reason pasture ranges are always characterized by a decreasing number of trees, and the roots of them, lacking their natural protection, the trees have always a stunted, scrubby appearance. On constantly pastured woods it is not an uncommon thing in a dry summer to see large trees wither up and die. Doubtless these trees had been resisting adverse conditions for years; the wonder was that they lived so long. I have on account of its importance treated this phase of the subject at considerable length, and would finally say that it might be set down as a maximum in forestry that pasturing stock about trees is absolutely antagonistic to successful wood culture.

After all stock are kept out the older trees will seed the waste places, but as the sod has usually become very tough in most bushes, the seedlings have lessened chances of surviving. It has been found to be the cheapest and best method to break up the land where possible and seed it artificially, or plant it with trees.

**Methods of Seeding and Planting.** When possible, a good way is to plow up the land and make a seed bed in which the little trees are grown and tended until they are able to take care of themselves. Tree seeds are not produced annually, but generally every second year, and will not stand drying like other seeds. The nuts and seeds of broad leaf trees are best collected as soon as ripe and packed in moist earth till sown. Chestnuts will be injured in germinating power by drying even for twenty-four hours. The seeds of pines and other evergreen trees may be best kept by gathering the ripened cones in the fall and storing in a dry, cool place till ready for planting. When cultivating up the land and seeding is not practicable on account of stumps and rocky hillsides, trees may be transplanted from a nursery, or the young seedlings may be taken from the woods. By sowing the seeds in the nursery row and giving them garden cultivation, larger trees may be grown in a given time, but the tap root is cut off and they have a tendency to spread out into branches instead of growing long straight trunks. Nursery-bred trees when placed on poor soil and left to shift for themselves are usually overtaken by seedlings under natural conditions. The seedlings grown from nuts have very long tap roots and will not bear transplanting. Nuts and acorns should therefore be planted where the trees are to remain. A method I have found very handy in planting large seeds, such as nuts and acorns, is to punch a hole in the sod about four inches deep with a light crowbar, and to drop in the seed and cover it, pressing the earth in firmly with the heel. Plant nuts thickly, using not less than 10 or 12 per square rod. This will be at the rate of about one-half bushel per acre of shelled nuts. Seedling trees may often be found growing in great numbers under the shade of the mother trees. These may be removed in moist weather and put in with a dibble, where required, putting in not less than four trees per square rod. On lake beaches or drifting sandy wastes it is often next to impossible to get any useful species to grow. In cases of this kind some-quick-growing varieties such as poplar, willow or box elder are planted as nurse trees, and as soon as some humus is collected about them the seedlings of more

desirable trees are planted under their protecting shade. After the useful species have become established the nurse trees may be cut for fuel and the latter come on and take possession of the soil. Many kinds of seedlings are very delicate and slow growing during their first few years of growth, and need to be shaded from the scorching rays of the sun. It is for this reason that the best seedlings are usually found in the moist shade of the mother tree. Weeds or any leafy plant will afford a useful shelter for the little trees, but, on the other hand, if the weeds grow too rank they may shut out the sunlight and starve them. It is well to go over the plantation with a scythe and cut away the weeds where they may be growing too thick and overtopping the young trees.



Mixed growth of shaders and shade enduring trees.

**Kind of Trees to Plant.** The question arises, what kind of trees should we have in the woodlot? This will depend somewhat on the nature of the soil, but we should prefer to have those native species which have the highest market value. The soil of the woodlot is usually the poorest of any soil on the farm, and rightly so, for all crops on poor land wood is that which will give the largest yield.

**White Pine.** If the land is high or gravelly or sandy it might be stocked with white pine, which is "the king of all forest trees." However, pine is often found on land that is pretty stiff in texture, but its growth there would be slow.

**Chestnut.** Chestnut is also suited to light and well-drained land, and has a high value for furniture, railway ties, posts, etc.

**Elm.** Elm by virtue of its present demand for making furniture, baskets, bicycle rims, etc., is becoming a valuable timber, and it has the advantage that it is a rapid grower and will thrive well on almost any land, even where it is too wet for most trees to grow. It has been selling locally at \$6.00 per 1,000 feet, or \$9.00 per cord.

**Hickory.** Hickory is a tree valuable for its nuts as well as for its timber. Some farmers living near Niagara Falls derive quite an important revenue from hickory nuts grown on their farms. Hickory is worth \$12.00 to \$15.00 per cord for making spokes and tool handles. The young trees come into value when not more than four or five inches in diameter, and the yearly thinings from a woodlot have a considerable market value.



A good thick forest cover.

**Basswood.** Basswood is a rapid grower, and is much used in making carriages, cabinet work, and oranges. It is also a valuable honey plant.

**Ash and Maple.** Ash and maple are much used for interior house furnishing.

**White Oak.** White oak is at present the fashionable wood for furniture.

**Cedar.** The cedar can be grown in swamps and places too wet for any other tree, and few trees are more valuable.

**Black Walnut.** Where it can be grown there is no more attractive or valuable tree than the black walnut. For use in making expensive furniture it rivals mahogany, and has been known to sell as high as \$100 per hundred feet rough.

**Mixed Plantations.** Trees seem to do better in mixed plantations than when planted all of one kind, and there is the further advantage that by raising different varieties almost double the number of trees can be grown per acre. Forest trees vary much in the amount of shade they bear. Some, like the beech, the sugar maple, or the spruce tree have a dense crown and are thickly leaved down the trunk, and in the interior of the crown. This shows that the leaves can exist and perform their work in a small amount

of light; in other words, the beech maple, and spruce are shade-enduring trees. On the other hand, there are trees like the walnut, the chestnut, and the oak, which have scanty foliage, and do not have leaves inside of or under the crown. This shows that their leaves cannot perform their functions in the shade. Such trees as these are light-needing trees. The shade-enduring varieties can thrive well under the diffused light of the light-needing trees. For this reason we may just double the number of trees per acre by combining the shade-enduring and the light-needing trees, and the addition of the former will not be a detraction but a benefit to the latter. See figure 3. Under ordinary conditions the trees should stand so thickly that a man with an axe in his hand would be able to touch half a dozen trees in a circle about him. See figure 4.

**Trimming and Cutting.** As soon as the woodlot is entirely under crop, and of the desired varieties, the treatment will consist in taking out the weeds of the forest, or, in other words, all trees of inferior varieties, and those that will not eventually make large, valuable timber. Such trees as hawthorn, ironwood, blue or water beech, are of dwarf, crooked habit, and never make valuable timber, even for fuel. If there are promising young trees of more valuable varieties that would take the place of these, the inferior trees should be cut away. Such trees as red oak, yellow birch, willow, etc., though of larger habit than the last, could profitably give place to more valuable species. However, no tree should be cut unless there are young trees growing under its shade,



Trees standing too far apart to help each other.

which will in a few years fill up its place. The trees should stand so closely that no grass can grow under them. When the forest shade becomes so scanty that grass takes the place of the natural mould or humus covering, it may safely be said that the trees are not thick enough, and under such circumstances no thinning or cutting whatever should take place. See figure 5. If the forest cover is thick enough all premature trees should be cut out. These may be of valuable sorts, but will never make timber of good size or quality. Other trees again are comparatively useless for timber because they have been started under open conditions, and the trunk is short, and branched into many limbs. These trees will never make much but fuel, and should as soon as possible give place to better trees. Of seedlings only the most promising should be allowed to grow, but a small, crooked tree may make a straight upward growth after having its top cut off, so that its energies are directed into one straight, vigorous shoot.

**Forcing Timber.** When the inferior trees are cut away and their places taken by straight, vigorous trees, the management of the woods consists in simply forcing on to maturity the remaining valuable trees. Where trees are grown very thickly there is a constant competition among them for each to stretch up to the light and overtop the others. This competition causes them to grow up very long, straight stems. The shade

of the tops makes the lower and inside branches die, and drop off, and the trunks are thus rendered free of knots. See figure 6. By the proper proportioning of the light-needing and the shade-enduring trees the latter may be used in forcing the upward growth of the former, while the denser foliage of the shaders will be effective in denuding the other trees of side branches. The shade-enduring species do not suffer from the shade



Imperfect natural pruning of a white pine that had stood too much alone in early youth.

as the smaller, light-needing trees would under their mother trees, and so they are forming timber in what would be to the other kind of trees impossible conditions.

Those trees which can overtop the others and get the most light will make the greatest growth, while the continual stretching out of the others will force the leaders in maintaining their supremacy to keep lengthening their trunks. This goes on until the limit of height for the variety of tree is reached. The tree will have a very long straight trunk, but will be of little value, as it has no great thickness. If the sur-

rounding trees which have forced this tree up in height be removed it will develop a spreading top, and direct its energies towards growth in thickness.

This is the life of a forest tree, and only when it has attained its proper height and developed a crown does it begin to make much wood. When the mature tree is cut out those trees under it, which have suffered from its shade, at once begin to branch out and take up its place.

Practical forestry management then simply consist in assisting the process of nature and sometimes even in forcing her hand to direct the growth and hasten the maturity of trees.

#### THE HOME GROUNDS.

By D. A. A. Nichols, in "The Weekly Illustrated Buffalo Express."

A friend, who has spent some money and much time on his home grounds, is not satisfied with the result, as the effect is not what he supposed it would be. He supposed that a lawn primarily meant an expanse of grass surrounded and partially covered with trees and shrubs. We say, "we will walk on the lawn," and the thought of soft, velvety, close-shorn grass is immediately present. William Robinson, the noted English landscape gardener, speaks of it as a garden, while to give the true idea of it to people on this side of the ocean we must call it the home grounds. A good lawn includes trees, flowers, shrubs, rocks in some localities, etc., and the value and effect of a lawn consist in the arrangement of these things. Mr. Robinson advocates, in the garden, the treatment of the "garden" in a manner which will harmoniously unite it with the landscape beyond, thus making a beautiful whole of the near and distant surroundings of the house. The house must be architecturally in harmony with the locality, and then the grounds, before and behind the house, if there be room, must correspond with the architecture of the buildings, and with the topographical and other points of the landscape to be seen from that point. If everything is in harmony, according to Nature's work there, the lawn effects will be satisfactory to the artist and to the unskilled as well. The front doorstep is a good point from which to study the lawn, and its background. And if there be any landscape behind the buildings it must be studied from the back stoop, if there be one.

#### VIEWED FROM THE FRONT DOOR.

The planting of the lawn, therefore, must be planned from the view at the front door. In general terms, it may be stated that, as a rule, the front lawn must be an area of grass, bordered by trees, shrubs and sometimes flowers. The friend mentioned planted his trees and shrubs mathematically distant from each other, and in regular lines. The trees have grown to a good size, and now all distant points are shut out from view, and the turf of the lawn has become spotted and uneven in color. He forgot when he planted his choice trees that they would sometime grow to large size, some of them at least, and so now he is "cabined, cribbed, confined" in a shady grove, with no outward look. The ground was made fertile and deeply worked, and the plants were well and carefully set, where himself and his hired man decided they would best be placed. The future prosperity of the trees was well provided for, but no account was made for ultimate size. Any good landscape gardener would probably have suggested to him that with care such trees would grow tall and wide, and that they should have been so planted that the beautiful distant views should never be completely hidden. The popular notion that a lawn is a place for us to treasure beautiful trees, flowers and shrubs, is entirely misleading, being too narrow, so that in attempting to get and preserve beautiful things we deform our grounds, whether they be large or small. We are apt to plant too much, and to spoil beautiful pictures which would be far more attractive than the possession of rare plants, often too crowded to preserve their natural beauty and real value. Open outlooks are frequently lost through the ambition to have a fine specimen of some rare tree or shrub.

## TO BROADEN THE OUTLOOK.

As far as practicable, the lawn should be so planted that it may seem as wide as possible to be made. Planting the borders in clumps with peninsulas of grass running into and apparently behind them makes the lawn look as if it extends outward indefinitely, adding materially to the broad effect where the area is decidedly limited. These points of turf can be put where there is a line of view to a beautiful distant landscape, and so be made doubly useful. A New Hampshire man whose lawn was large and set full of trees and shrubs, found that his house was too much shaded for good health. So he employed an intelligent Boston landscape gardener to advise him what best to do to keep a good lawn and also get plenty of sunshine. Most of the trees around the outside were left, some needing a little pruning; the trees in the central portions were dug out, and the shrubs were dug out and replanted in masses in the corners, leaving an open area of grass which looked larger than the original lawn, and giving unobstructed views of neighboring hills and mountains in three directions, and yet when the grounds were viewed from a neighboring hill they appeared to be as shady as they were before an improvements had been made. A barberry hedge along the street in front was left, so that the effect of an enclosed English "garden" was retained, while the apparent size of the grounds was doubled, as viewed from the street. A lawn mentioned by Jacob Riis in his "Making of an American" as "decorated" by cast-iron dogs, has recently had half its trees cut out, and yet those left are so scattered about the lawn that it impresses the observer with a sense of confinement, or crowding, while a neighbor's lawn, not two-thirds the size, is so planted that it appears much the larger of the two. Just beyond is a lawn cut in two by a row of hydrangeas and golden elders, so that from the street the house appears to be set in a small lawn back from the front, more retired and cut off from view than the New Hampshire one not so large, with its barberry hedge in front. The general effect is spoiled, as far as landscape beauty is concerned. Such instances are too common, and from them one may learn how not to do it.

## TREES SHOULD BE IN HARMONY WITH SURROUNDINGS.

It makes little difference as to what trees and plants are used, provided they are so placed that they are in harmony with the surrounding conditions. But it is generally better, in order to secure satisfactory results in the long run, to use trees and shrubs native to the locality. The white spruce of Northern New York is quite sure to live to a much greater age, and to retain its symmetry, than the Norway spruce, which is generally used because it grows faster, costs less to propagate, so is cheaper at the outset. In 30 to 50 years the Norway spruce will begin to fail, while the native sort will scarcely have attained maturity of growth, and then it will retain its beauty another half century or more. In arranging the trees the largest (when full grown) are to form the background of the plantation, being careful not to plant so as to hide fine distant views in the future. Then, as far as color is concerned, the darkest foliage should be farthest from the viewpoint.

## FLOWER BEDS

The flower beds, if any, should generally be placed against the foundation walls of the house, or along the borders of the shrubbery. A small lawn will look large and wide if no shrubs or flower beds are cut into the expanse of turf, because the eye has no scale of measurement, while if two or three flower beds or mounds of cannas or bulbous flowering plants are set in the middle of the lawn, the ordinary eye easily estimates the distance between the beds and the border of the lawn, and so it looks limited. The more the beds or shrubs are multiplied, the smaller seems the lawn to the inexperienced eye. In all cases, whether at the first planting, or in making changes, the matter should be studied up from the front door steps, or from the most common point of view for the family, and the work must be so done that there shall be an unbroken ex-



pans of green turf in the middle, with the trees and shrubs and flower-borders around the outside, thus getting the biggest handsome picture possible under the circumstances. We do not want a haphazard, inartistic dotting about of plants on our lawns, nor a Persian rug, nor a set piece of mathematical patchwork. Neither, on the other hand, do we want a tangled wildwood. We want a solid background of dark green, with a scattered mass of lighter green flowering branches and the shrubbery nearer the eye as a stand or set in our favorite place at the house. If the neighboring lawns or fields are naturally or designedly beautiful, the boundary lines of the home grounds can be set sparsely with strips of grass between, so as to make the lawn seem to extend far away. But if the adjoining areas are unsightly or neglected, then the boundary should be set so thickly as to hide the nearby property, except where there is a fine distant scene, and then low shrubs can be made to hide the near undesirable spots. In all cases the arrangement should be as unartificial as possible, unless the buildings are large and architecturally ornate, when an artificial planting arrangement is proper and often desirable.

### CHERRIES, PLUMS AND THEIR KIN.

By E. P. Powell, Clinton, N.Y., in "The Independent."

Mr. Lowell tells us that in Korea the cherry tree is an object of respect bordering on worship. The same sentiment is so strong in Japan that a novel turns on the beauty of nature, rather than upon the beauty of woman. "In Japan the cherry tree comes into bloom early in April, and of all the superb succession of flowering trees it is the finest." In masses the people flock to see the sight, and crowds such as are never to be met with at any other time, collect in those places that are famous for their trees. And yet, even with all this tribute of adoration, the beauty is but partially done justice to.

'The blossoming of the cherry tree is one of the great events of the year. To see it is a sensation. It carries you away. You feel as if the earth had decked herself for her bridal, and you had somehow been bidden to the wedding. There are several kinds of cherry trees; some have single flowers like ours, some double ones; but all are covered thick with white blossoms, touched ever so faintly with pink. The trees, laden with their masses of light and color, stand out in dazzling contrast with the brilliant blue of the sky, while the ground beneath is white with fallen petals. Underneath this splendid canopy is the passing to and fro of the pleasure-seeking multitude.'

I have a strong sympathy with these nature worshippers. If there is a finer poem than a cherry tree it is not yet written. It is grand in blossoming time, but is infinitely handsomer in fruit. I always dislike to set the pickers into a Montmorency or a Morello. When my catbirds see the May Dukes redden they get into the middle of the tree and give me fair notice that they have pre-empted the whole stock. They scold and lecture me for helping myself to even a handful. Very evidently that cherry tree is something more than a reservoir of food to the bird; he thinks it is too fine to be stripped of its fruit. Bird food, par excellence, is the cherry. But I also find that there is nothing finer for a dyspeptic stomach. When I have a headache I climb a cherry tree and eat all that I care for, which is —. The colonists soon found out the value of the cherry, as they did of the currant bush and gooseberry, and they formed the habit of planting the trees clear around the homestead lot. In my boyhood I remember such a row of cherry trees, beginning at the street and surrounding four acres. There the birds reveled and the college boys came for their share. Why not? Cherries are certainly good for young ministers, as well as young robins, and they together kept our hands full to get our share. Twenty years later there came a letter from Maine:

"I am now preaching, and, with the rest, I am trying to preach the Ten Commandments. But when I was in college I stole your cherries and your apples and your maple

syrup, and once I got into your bee house. Here are twenty dollars, and I shall have a clear conscience. Next Sunday I can do better with the Golden Rule. You see it has bothered me to keep square with what I teach. Either I must get a different Bible or I must make amends."

I suppose we ought not to have had those cherry trees in sight from the street. It was a temptation, and the boy was not the only one to blame.

But the birds! I never knew one of them to send in a twenty-dollar bill. But this they do, and they do it will—they drop seeds here and there, and they bring to us seeds of new kinds of fruit, and wise men carefully keep these gifts. So it is that at least half of our new varieties of berries, if not our cherries and plums, originate with the birds. Since the black knot has appeared in cherry orchards the trees have grown to be very much less common, until lazy people have none at all. There have not been enough for us and the birds, both together. The reaction is slowly coming about, and cherry trees are once more freely planted. I have fifty trees and more coming on. A good market will take about all the cherries that you can raise, especially of the sour sorts. The profit is good at seven to eight cents per pound (or quart). Generally a six-pound basket can be had for half a dollar, or even less. This makes the cherry a good fruit for the people. For popular use this and the currant go together.

I say to the robins and the catbirds: You shall have ten trees, or one-fifth of the whole; I must and will have the rest. Then the nine-tenths must be covered with mosquito netting. It takes two sheets, or sometimes three, to a tree—loosely stitched together—and at a cost of thirty-five cents a sheet. But if carefully stored when out of service this netting will last for three years, and after that will be of some use in covering melon boxes. So the cost is not unendurable. On the trees the netting must be drawn close and carefully pulled down to the body of the tree, or the orioles will get in and stay there until every cherry is spoiled. Other birds eat what they need and then go—if they can get out—but an oriole pecks a hole in each one of the hundred cherries, sucking a drop here and there, and soon making havoc of the whole crop. When covered your cherries can stay on the trees until thoroughly ripe. Uncovered, the Black Tartarans and sour Morellos must be plucked as soon as colored, and before fully sweet. But when covered your sour cherries may hang on until August and September. Then you have fruit in no way to be compared with the bitter and sour stuff generally procurable in the market in June.

Plums, like cherries, are everybody's fruit, and, like the cherry also, this delicious fruit originated in Asia. It has been travelling about the world, appreciated by all nations, and undergoing transformations and evolutions. In this country many varieties are exceptionally hardy, and can be grown in the most northern States, while others are specially adapted for the warmer States, as far south as the Gulf. The special advantage of the plum tree is that it takes little room, and it likes company. A bunch of trees will thrive and blossom and bear as heavily as if each tree were allowed free elbow room. Where you are very much contracted for space, a plum hedge is a good thing. Set the trees about eight feet apart, and you will soon have a good wind-break, besides an annual crop of plums. The native varieties will serve you well in this manner, and so will some of the European sorts, such as Damson, Reine Claude and Grand Duke. The Bleeker or Lombard plum makes a hedge very rapidly, but it runs to suckers so fast that without steady care the hedge will soon become a lot of dead wood. So it happens that people with small lots can grow cherries and plums, while they are debarred from larger-growing fruit trees.

We have now several distinct classes of plums—the European, of which the more common varieties are Green Gage, Bradshaw, Lombard, Jefferson, Pond's Seedling, Victoria, and the Damsons; the Japan plums, such as Abundance, Simoni, Satsuma; the Burbank hybrids, such as Chalco, Shiro, America, Climax, Sultan, and many more; and the improved natives—a long list—among which are Hawkeye, Milton, De Soto, Robinson and Forest Garden. This is a rich list to draw from, compared with what our fathers had fifty years ago. Mr. Burbank's productions are remarkable every way—large, rich, beautiful; and for the most part they are free from the tendency to rot,

which plagues many of our European sorts. Some new foreign varieties, mostly seedlings, are Diamond, Pearl, Lincoln, Field and Grand Duke. Professor Budd, of the Minnesota Agricultural College, spent several years in scouring the Old World for new varieties of plums and other fruit that should prove to be hardy enough for our most northern States. His importations have proved to be of considerable importance, but not so revolutionary as we hoped. Some varieties from the colder sections of Russia are useful in Minnesota and Dakota. Meanwhile Japan has been sending us some handsome sorts that have proven to be novel in quality, while they are very early in bearing. Like pears, these Japan sorts must be picked before they are quite ripe, and must be matured in a dark room. Those ripened on the trees are without the highest flavor.

We have just one fight over the plum tree and over the plum crop; after that we can rest. Birds do not like plums and rarely touch them. But about sixty years ago a little rascal appeared in our plum yards, with a determination to make the plum the vehicle for propagating his species. It does not eat the fruit, at least, to any destructive extent, but, marking a semi-circle in the skin, an egg is deposited, which soon hatches, and the plum is on the road to decay. If left alone, this pest will soon destroy the whole crop. It was named the Little Turk, on account of the crescent-shaped cut which it plows in the fruit; otherwise it is known as *curculio* or plum beetle. He is a sly fellow, and if disturbed rolls up his legs and plays possum. That is, he pretends to be dead, and this trick of his is just the thing which has brought him to his undoing. We spread large sheets under the trees, and with large rammers jar the trees suddenly, when down comes the marauder, dead as a stick, and looking very much like a brown leaf bud. This is precisely what he expects us to take him for. But our sharp-eyed hunters know better, and while he is apparently dead they seize him and crush him. If he had remained lively and used his wings he could have got away in spite of us. On the whole, this yearly fight for plums is not so very severe a task. It must begin as soon as the calyx breaks, and continue until the plum skin is tough—about ten days. It is work for our boys and girls, and must be carefully performed twice each day. I see that the tools and sheets are put away each year, with very evident satisfaction on the part of the young folk. The plum tree also has its troubles. A knot quite similar to that which infests the cherry tree, although not identical, attacks many varieties, to their destruction, if not befriended by our help. It is easily mastered on most varieties of plums if cut out twice a year with a sharp knife. But most people wish to have fruit without trouble. They will go without it rather than work for it; and so their plum trees become masses of fungous disease, spreading spores of death into their neighbors' orchards. We had in New York State a statute compelling the destruction of this knot; but it stayed on the statute books only two years. Besides this, the hop louse occasionally gives us considerable trouble by breeding on our trees its spring generations. After several generations of very troublesome eaters, this aphid starts for the hop yards, where it works miserable ruin. Professor Riley showed his masterly skill by tracing out the life history of this insect. The enormous decrease of plum trees in our farm yards during the middle of the last century was mainly owing to the spread of the plum knot. During the last twenty-five years the reaction has gone on very rapidly in the way of replanting. We owe very much to Mr. Burbank and to others who are improving our native sorts and hybridizing species.

For a small garden I should surely have one tree of Green Gage, one of Bleeker or Lombard, one of Coes' Golden Drop, one of Reine Claude, one of Diamond, and then there should be half a dozen of Mr. Burbank's cross-bred seedlings. If I could only have one or two trees, one of them would be Bleeker and the other Green Gage; the first for canning and the latter for table use. The Green Gage concentrates more richness than any other single fruit in existence. It is the very highest standard of quality—if grown in good soil and in the sunshine. If your plot is very small, a mere yard, you may still have a couple of dwarf cherries and a couple of plums, set alternately. The dwarf cherry is simply the Early Richmond or the Morello or Montmorency grafted

on Mahaleb stock. These dwarf trees are not half appreciated by those who have to economize space.

Cherries and plums must never be too much petted, and especially must not be overfed. Rich manures will quickly develop a sappy growth, and then the bark splits, and your trees begin to decay. You must grow your trees without haste. Give them just good garden soil, and keep the grass and weeds away from the roots. Mulch with coal ashes, if possible—half a bushel to a five-year-old tree, to be renewed once in two years. This mulch should be placed about all fruit trees; it keeps the soil loose and moist, and helps the tree to get nourishment from the atmosphere.

I will never let a seedling plum be destroyed, if I can help it. The chances are that we will find it will produce a novelty of good quality; but a seedling cherry you cannot be so sure of. I advise every one who has a few acres of land to have a little nursery of seedling trees. It need be only two or three rods square to enable you to carry on some most delightful and valuable experiments. Destroy the sorts that do not show some sign of marked value; yet each year you will be able to select something from your little plantation that will be your pleasure and your pride. If you can do no more, at least have one row, which you can grow in the form of a hedge, until the inferior can be discarded.

The apricot is in the Rosaceae family, and is a close relative of the plum—perhaps the link between the plum and the peach. It is a native of Arabia, but reaches us also from the far East. There are varieties that bear well in New York and New England, and some of them are hardy as far north as the lakes. The nectarine is only a smooth-skinned peach, and the fruit that we get is seldom of such quality as to make us dispense with the peach. I shall not include a discussion of these trees, or of the peach, because they are not yet trees for everybody's garden. Yet I wish that a great many people would experiment with apricot and nectarine seedlings. Nobody knows when we shall get something of immense value. I shall only add that where the peach cannot be relied upon for outdoor crops it can be grown successfully and cheaply under glass, in common lean-to greenhouses. Plant the trees in boxes, or let their roots run into the soil. They ripen in August, or a little before out-of-door peaches are ripening. The fruit colors finely, but for prime flavor there must be plenty of ventilation and sunshine. Better lift the glass during the summer. The new growth can be shortened in for winter covering. You need no artificial heat, as the peach is a hardy tree, and the blossom buds need but little protection to save them from freezing.

I venture now to go behind the screen, and suggest that cherries and plums are, par excellence, fruits for the housewife. The pleasure of canned fruits is not the eating of them; the pre-eminent fun is in putting them up successfully, and exhibiting them temptingly. The little wife says: "Ah, but you have not seen my cans of plums! Yes, indeed, but they look just too fine for anything!" They do indeed look too beautiful to be disturbed—shelves full of them, suggestive of winter's comfort and of housekeeper's pride. If our people would live more on fruit, as now they easily can, they would be better for it. "See here," said my Uncle John, "you groom your outside muscles every day and you tuck them in bed every night or rest them in hammocks every day, but your inside organs have to work night and day without rest, till they give out, and then you begin on drugs. It is a wretched blunder. Two apples in the morning are better than half a pound of beef, and a pint of cherries for dinner is better than a suet pudding."

"Bless me," said the little wife, "but you would not forego a cherry pie and a plum pudding?"

"To be sure not," said my Uncle John; "only make the crust light, and have plenty of cherries and plums. One need not eat a barrel of flour to get a handful of cherries."

# REPORT

OF THE

# FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO,

1901.

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## PART II. WOMEN'S INSTITUTES.

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## REPORTS OF LOCAL WOMEN'S INSTITUTES

No.	Institute District.	Membership to June, 1902.	No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.				
						Cash on hand per last Report.	Members' fees.	Donations.	Grants.	Miscellaneous.
1	Amherst Island .....	54	11	231	22	15 00	13 50	1 00	20 00	...
2	Brant, South .....	58	5	314	7	12 29	8 25	.....	10 00	.....
3	Bruce, Centre .....	80	16	210	23	.....	18 00	.....	20 00	.....
4	Bruce, West .....	86	16	399	18	13 40	24 75	.....	30 00	.....
5	Bruce South .....	119	10	1,233	24	.....	19 50	.....	30 00	.....
6	Dufferin .....	70	8	96	12	.....	15 00	.....	.....	.....
7	Durham, East .....	191	16	778	21	2 35	46 00	.....	10 00	92
8	Durham, West .....	20	11	152	20	10 40	4 00	.....	10 00	.....
9	Elgin, East .....	58	5	281	14	.....	13 50	.....	20 00	1 80
10	Grey, Centre .....	13	.....	.....	.....	.....	.....	.....	.....	.....
11	Grey, North .....	58	5	144	13	6 00	9 25	.....	20 00	.....
12	Grey, South .....	37	3	38	4	.....	9 00	.....	.....	.....
13	Halton .....	227	14	3,218	30	9 90	58 00	.....	10 00	5 65
14	Hastings, East .....	169	5	398	11	.....	39 50	.....	30 00	.....
15	Hastings, North .....	80	7	182	15	5 15	17 25	.....	30 00	.....
16	Hastings, West .....	120	8	1,853	42	4 30	28 75	2 75	20 00	.....
17	Huron, East .....	71	5	98	7	.....	16 75	.....	10 00	.....
18	Huron, West .....	97	32	1,151	71	8 90	30 00	.....	20 00	.....
19	Kent, West .....	19	3	50	3	.....	3 75	.....	.....	.....
20	Lennox .....	20	.....	.....	.....	.....	.....	.....	.....	.....
21	Lincoln .....	162	6	736	10	13 07	42 75	.....	20 00	.....
22	Middlesex, East .....	9	.....	.....	.....	.....	.....	.....	.....	.....
23	Middlesex, West .....	50	.....	.....	.....	.....	5 75	.....	.....	.....
24	Monck .....	29	3	42	7	.....	4 00	.....	.....	.....
25	Muskoka, South .....	19	6	66	21	.....	5 00	.....	.....	.....
26	Northumberland, East .....	61	9	182	17	.....	14 50	.....	10 00	.....
27	Northumberland, West .....	69	8	100	11	.....	10 00	.....	.....	.....
28	Norfolk, North .....	15	.....	.....	.....	.....	.....	.....	.....	.....
29	Ontario, North .....	63	8	160	7	20 50	11 25	.....	30 00	.....
30	Ontario, South .....	96	8	195	20	31 23	24 00	.....	30 00	15
31	Oxford, North .....	18	6	69	6	.....	3 25	.....	.....	.....
32	Peterboro, West .....	50	11	.....	21	4 29	11 00	.....	10 00	20
33	Peel .....	110	16	982	43	13 60	27 50	.....	10 00	.....
34	Simcoe, Centre .....	21	.....	.....	.....	.....	.....	.....	.....	.....
35	Simcoe, South .....	66	10	213	12	.....	9 00	.....	.....	.....
36	Simcoe, West .....	29	4	54	13	.....	4 75	.....	10 00	.....
37	Union .....	61	5	370	10	.....	12 50	.....	20 00	.....
38	Victoria, East .....	106	9	385	22	7 38	26 50	.....	20 00	.....
39	Waterloo, North .....	33	2	77	6	.....	8 50	.....	.....	.....
40	Welland .....	50	.....	.....	.....	.....	.....	.....	.....	.....
41	Wentworth, South .....	119	20	1,190	25	15 05	21 75	.....	20 00	4 10
42	York, East .....	125	22	437	19	4 55	29 25	.....	20 00	70
43	York, West .....	73	14	327	11	.....	19 00	.....	10 00	.....
	Total .....	3,081	307	16,410	638	.....	.....	.....	.....	.....



FOR YEAR ENDING MAY 31ST, 1902.

Receipts.— <i>Con.</i>			Expenditures.								No.
Total Receipts.	Expenses for meetings.	Secretary's salary, and Directors' Expenses.	Postage and Stationery.	Printing.	Advertising.	Lecturers' expenses.	Periodicals & Books for members.	Miscellaneous.	Balance on hand.	Total.	
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	
49 50	3 75		3 24				13 88	17 00	11 63	49 50	1
30 54	4 95		6 69	1 50		8 35			9 05	30 54	2
38 00	15	5 00	99	1 25				55	30 06	38 00	3
68 15	2 65	16 00	4 78	75	25			19 79	24 93	68 15	4
49 50		10 00	2 43	1 50	1 00	4 40	13 19		16 98	49 50	5
15 00		50	1 18					9 50	3 82	15 00	6
59 27	2 36		2 23		85			53 83		59 27	7
24 40	1 50		20	2 75					19 95	24 40	8
35 30	5 00		2 81	2 00			10 20		15 29	35 30	9
35 25	2 00		1 30			3 00			28 95	35 25	10
9 00	25		1 40	50					6 85	9 00	11
83 55	11 15	18 96	1 50	3 65	1 50	21 20	11 55	2 21	11 83	83 55	12
69 50	9 28		4 58			5 50	3 60	20 15	26 39	69 50	13
52 40	2 00		2 20	3 95	2 05			1 50	40 70	52 40	14
55 80	2 50	10 00	5 97	2 10				6 00	29 23	55 80	15
26 75	1 50	5 00	1 61					28	18 36	26 75	16
58 90	10 35	25 28	4 25	25		16 00		2 50	27	58 90	17
3 75			29						3 46	3 75	18
75 82	17 15		3 74	4 75		12 30		5 00	32 88	75 82	19
5 75			51						5 24	5 75	20
4 00			40						3 60	4 00	21
5 00			3 02						1 98	5 00	22
24 50	1 30	10 00	83		3 40				8 97	24 50	23
10 00	1 18		2 76	1 50					4 56	10 00	24
61 75	9 35	10 00	4 15			2 35	7 35		28 55	61 75	25
85 38		20 00	12 80			23 37	11 15		18 06	85 38	26
3 25			20			3 00			05	3 20	27
25 49	11 50		1 30	1 00	2 25		1 65		7 79	25 49	28
51 10	17 05		3 03			4 20			26 82	51 10	29
9 00	4 00		1 20	2 50					1 30	9 00	30
14 75			50						14 25	14 75	31
32 50	6 75		1 55		50			1 50	22 20	32 50	32
53 88	11 20		2 45	75	2 90		9 70		26 88	53 88	33
8 50			1 00	1 50				50	5 50	8 50	34
60 90	10 50	5 00	9 44	1 50		2 00	1 90	21 02	9 54	60 90	35
54 50	13 36		4 35	2 65		10 40	3 41	1 80	18 53	54 50	36
29 00	2 00		1 60	1 50		5 00		2 96	15 94	29 00	37

# WOMEN'S INSTITUTES OF ONTARIO.

## OFFICERS FOR 1902.

SUPERINTENDENT, G. C. CREELMAN, PARLIAMENT BUILDINGS, TORONTO.

INSTITUTE.	MEMBERSHIP, 1902.	NAME.		F.O. ADDRESS.
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		Sec.-Treas. . . . .	Miss Bessie Tolton . . . . .	"
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		President . . . . .	Miss Ada Richardson . . . . .	Bethany.
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		" . . . . .	Mrs. Wm. Ferguson . . . . .	"
		Sec.-Treas. . . . .	Mrs. C. S. Goodrich . . . . .	"

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		" . . . . .	Mrs. T. J. Holliday . . . . .	Brooklin.
		Secretary . . . . .	Miss Louie Lick . . . . .	Oshawa.
		Treasurer . . . . .	Miss M. A. Hart . . . . .	Foley.
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		Sec.-Treas. . . . .	Mrs. F. Vickert . . . . .	"
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		Sec.-Treas. . . . .	Mrs. H. Fitzgerald . . . . .	"
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		Sec.-Treas. . . . .	Mrs. W. J. Hunter . . . . .	Brampton.
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		Vice Pres. . . . .	Mrs. Chas. Rankin . . . . .	Wyebridge.
		Sec.-Treas. . . . .	Mrs. J. Champion . . . . .	Randolph.
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		Vice-Pres. . . . .	Miss E. Cooke . . . . .	"
		" . . . . .	Miss O. Lewis . . . . .	"
		Sec.-Treas. . . . .	Miss Christina Sutherland . . . . .	"
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		Sec.-Treas . . . . .	Miss May Hewson . . . . .	"
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		Sec.-Treas. . . . .	Miss Mabel S. Fraser . . . . .	"
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		Sec.-Treas. . . . .	Miss E. R. Cullis . . . . .	Powle's Corners.
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		Sec.-Treas. . . . .	Miss Jessie McDougall . . . . .	"
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		Vice-Pres. . . . .	Miss Anna McLeod . . . . .	"
		Sec.-Treas. . . . .	Mrs. Ed. Cauthard . . . . .	"
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		Sec.-Treas. . . . .	Miss M. E. Nash . . . . .	"
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		" . . . . .	Mrs. T. Rainey . . . . .	Box Grove.
		Sec.-Treas . . . . .	Miss Lulu Reynolds . . . . .	Scarboro' Junct.
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		Vice-Pres. . . . .	Mrs. A. Fraser . . . . .	"
		" . . . . .	Mrs. R. Wardlaw . . . . .	"
		Sec.-Treas . . . . .	Miss H. Grubbe . . . . .	"

# WOMEN'S INSTITUTES.

## REPORT OF THE SUPERINTENDENT.

Last year we reported that thirty-three Institutes had been formed, with a membership of 1602, and a total attendance at the meetings of 3,500 women. This year shows an enormous increase. The total paidup membership for the year ending June, 1902 is 3,081. 336 Meetings were held, at which 617 papers were read or addresses delivered, to audiences aggregating 16,410 women.

It will thus be seen that the delegates sent out by the Department are helping a large number of the wives and daughters of our farmers, and it is hoped that the good work started in this way will be carried on by the women of the Province to the upbuilding and betterment of many of our farm homes.

### INSTITUTE NOTES.

One pleasing feature of our Institute work is that in almost every place visited by one of our lady speakers a Women's Institute has been organized. There seems to be a general movement throughout our country districts toward the amelioration of women's work on the farm. Improvements in methods of housekeeping have not kept pace with the introduction of improved machinery on the farm, and the farmers' wives and daughters are beginning to realize that the time has come when the kitchens at least must be remodelled and many appliances and conveniences added. We have this year seven lady speakers in the field and they all write encouragingly of the work.

AMHERST ISLAND. Mrs. S.K. Tugwell writes that the first meeting of the year was well attended and that the interest is keeping up splendidly. Miss E. Fleming a member of the Institute, discussed the subject of "Economy in Cooking" and Mrs. Allen read an excellent paper on "Dust and its Dangers." Both subjects were well discussed and the members are looking forward to the regular Institute meetings and a visit from Mrs. Torrance this month.

BRUCE SOUTH. The energetic secretary of this Institute, Miss Tolton, Walkerton, writes that on the 9th of January they had a meeting in Walkerton at which Mrs. Colin Campbell, Goderich, was the principal speaker. Miss Tolton says that Mrs. Campbell made a splendid impression and enabled them to secure many new members, as well as renewals of last year's membership. At the afternoon meeting Mrs. Campbell spoke on "Household Economics," when there was an attendance of 60 ladies. At the evening meeting, which was a union meeting of Women's and Farmers' Institutes there were over 700 people present.

DURHAM EAST. This Institute was organized last year and this season the ladies have taken advantage of the fact that a lady was on the delegation of both regular and supplementary meetings, and arranged separate meetings in the afternoons and thus advanced the work of their organization. Mrs. John Mulligan, the secretary, reports an attendance of twenty-one ladies at the afternoon meeting at Garden Hill on January 11th, and twenty-eight at South Monaghan the next day. Mrs. Mulligan says, "We have no trouble this year in getting members and will form branches at Garden Hill, Bethany and South Monaghan. All three of these places are anxious to have practical demonstrations, and we are making arrangements to have one of your speakers come back to us later for that purpose. The ladies are particularly interested in Miss Linton's demonstrations, and even some of the men attended our special meetings and helped us by their presence and sympathy."

NORTH GREY.—Mrs. Wm. McGregor, secretary of this Institute, succeeded last year in securing the largest membership in the province. In reporting the meeting at Kemble on

January 7th, Mrs. McGregor writes: "At this meeting we secured 38 new members. It was decided that we hold a meeting here at least once in three months, and that we further make arrangements to exchange papers and essays with other institutes so that in this way we may be mutually helpful. Some of the subjects discussed were 'House Sanitation,' 'Poultry,' 'Special Occasions' and 'Success in Life.'"

HALTON.—The regular monthly meeting of this Women's Institute was held at Milton on January 14th, there being 50 ladies present. Miss McGregor of Milton prepared an excellent paper on "The Work of the Country Home." This was thoroughly discussed by the ladies present, after which a business session was held and arrangements made for the next meeting.

HASTINGS, WEST.—Miss C. Spafford, Sidney Crossing, reports meetings held at Gilbert's School House, Turner's School House, Glen Ross School House and Harder's School House, on the 7th, 8th, 9th and 10th of January. At these meetings there were 112 ladies present at the afternoon gatherings and 900 at the evening meetings. Mrs. Elizabeth Torrance of Chateauguay Basin gave a practical demonstration in cooking at the afternoon meeting and in the evening discussed "Housekeeping as a Business" and "The Object of True Education."

LINCOLN.—The secretary, Mrs. E. W. Fry, Vineland, writes that they had a most interesting meeting at Campden on the 13th inst. Miss Maddock, one of the regular delegates to the Farmers' Institutes, addressed a separate meeting of ladies in the afternoon, at which 90 ladies were present. This gave the local officers very much encouragement. Miss Maddock gave her talk on "Bread Making." Mrs. Staff, of Jordan, gave a paper on "Celery Culture," after which Miss Maddock took up the subject of the "Home Dairy," which occupied the rest of the afternoon. Good practical discussions were brought out by the papers presented and the Campden ladies went away more than pleased with the work of the Women's Institute in that district.

At Queenston the next day Miss Maddock again spoke on "Dairying" at the afternoon meeting, to a mixed audience. Many questions were asked and it was necessary to stop discussion in order to hear the other speakers who were advertised for the meeting. It is Miss Maddock's opinion that a good branch might be formed at St. David's and the ladies of that district are agitating the subject.

UNION.—Union is a part of West Wellington Farmers' Institute and the women there have organized and are having good meetings. Miss Munro, the secretary, writes on January 14th, enclosing a list of 52 members for 1902. Miss Munro also reports successful meetings at Lakelet, with 225 present and 475 at the meeting held at Clifford. Mrs. Colin Campbell, of Goderich, was the principal speaker, her subjects being "Aims and Objects of Women's Institutes," "Home Economics," "Bread Making" and "Home Influence." The Secretary writes that Mrs. Campbell evolved some excellent ideas and good discussions followed her addresses. "We had instrumental music at each meeting and we feel that our Institute is on a good footing and on the high road to prosperity."

WENTWORTH, SOUTH.—Here, at the home of the Women's Institute, a good meeting is always expected and Miss Nash reports an unusually good attendance, when Miss Maddock addressed the ladies on the subject of "Bacteria as they affect the Home, the Soil and the Dairy," this being followed by discussion. Mrs. Gorman, of Stoney Creek, then introduced the subjects of foods, the discussion on which lasted until the time for adjournment. At the close of the meeting an invitation was sent to the members of the Farmers' Institute, who were meeting in a separate hall, to come over to the hall where the ladies were meeting, where a pleasant surprise awaited the visitors in the shape of supper, which it is not necessary to say, was enjoyed by both Institutes. In the evening a joint meeting was held, when Major Shep-

pard gave an address on "How to Keep Down Obnoxious Weeds," Mr. E. D. Smith a talk on the "Possibilities of the Fruit Trade," also an address by Mr. J. B. Davis, on the "Transportation of Fruits." The meeting was made most instructive and demonstrated the fact that it is not necessary to provide frivolous entertainment at an Institute meeting.

Mrs. Elizabeth Torrance, of Chateaugay Basin, Que., was on the regular Farmers' Institute delegation in the counties of Hastings, Lennox, Frontenac, Leeds and Addington. She reports many good meetings, and some at which there was not much interest manifested in her work. She writes to say, that most of the work done was of a very practical nature, and after all that seems to be what is needed. Those who attended the demonstrations seemed to realize that the plainest home work could be made interesting and even a pleasure if system were introduced so as to save many steps.

"I was much pleased at Adolphustown," writes Mrs. Torrance, "to have one woman tell me that she had driven twelve miles to the meeting, and that her mother had driven almost as far to keep house for her while she was away. The mother had been at one of our meetings the day before and was so interested that she insisted on her daughter taking this long drive to attend the Adolphustown meeting. Where possible we have visited the schools in the morning and have tried to interest the children in home work. On the whole, we have had a fine trip and I hope much good will result therefrom."

#### LETTERS FROM OFFICERS.

Wishing to ascertain how the newly appointed officers of the Women's Institutes were taking hold of the work, and whether the members appreciated what was being done, we wrote to the Secretaries asking that they write us a short letter, telling just how the members expressed themselves regarding the Institute, and relating any particular benefits which they felt they had received from the organization. We have pleasure in printing immediately following the various replies received in response to our circular letter. These letters will give the reader an idea of the work that is being done and will afford an opportunity to the different Women's Institute workers and officers of seeing how the work is viewed in the different sections of the Province.

AMHERST ISLAND (Mrs. S. K. Tugwell, Secretary.)

"I think our Women's Institute has done us good in many ways. Our monthly meetings afford an opportunity for us to meet our friends and neighbors, which would not be possible otherwise. At these meetings we exchange ideas about our work, and how to do it in the best and easiest way. Our talks on bread, pie, cake, etc. have been most interesting, and we are keeping the best recipes which we intend to make into a book sometime. We also have some cheerful reading or recitation when we can, and altogether have a pleasant and profitable time, which makes us forget our cares and work at home, and when we go back with some helpful ideas for our work it makes it more attractive and less of a burden."

BRANT, SOUTH, (Mrs. J. E. Brethour, President.)

"The benefits attending the Institute are varied and various, among which are the exchanging of ideas and learning how to do common every-day duties in a simple manner, enabling us to economize in the most precious commodity we possess, viz. time. We are also enabled to learn the reason why we do certain things, and the doing of them from a scientific standpoint. We are also taken "out of ourselves" and our lives broadened, thus beautifying the "common round," to say nothing of the foundation of pleasant friendships."

BRUCE, CENTRE, (Mrs. J. C. Seymour, Secretary.)

"One member has helped in making heathful and nutritious desserts for dinner; another extolled the beneficial effects of the organization in our household duties; others have told of

the benefits and educative privileges and of the helpfulness in listening to the papers read, and all have realized the benefit of the social side of the meetings. Helpful suggestions were given by one member on "House Plants," and this proved to be helpful to some of our members, as was also the discussion on making hens lay. A visitor from Stratford had never attended a meeting of this kind before, but was much pleased and impressed with our Institute meeting, and suggested that if our daughters would take an interest in these meetings the young men of the county would not be so afraid to marry."

BRUCE, WEST, (Mrs. J.H. Wismer, Secretary.)

"This is an association which brings together ruralites and townspeople, and the meetings have a tendency to unite, socially, these two classes. Interchange of ideas and practical experiences in domestic work of every kind, have been very helpful. Members who take active part have a feeling of satisfaction in knowing that their suggestions, papers and addresses are appreciated and will help others. The "Question Drawer" is perhaps the most valuable feature, eliciting answers, and recipes alone worth many times the membership fee. Many other beneficial features might be mentioned, and one of the best evidences of the good we get is shown in the fact that few members care to miss any of the meetings."

DUFFERIN, (Mrs. W. J. Craven, Secretary.)

"Our Institute was only recently organized, and there has not been very much time to see the benefits derived therefrom. The members are interested, and by the end of the year I hope there will be a great deal of good accomplished from the meetings. The meeting together will give the members some new ideas, and fill their minds with new thoughts, which cannot fail to help relieve the drudgery and monotony of work which is done mechanically. Farmers' wives, as a rule, stay at home too closely, and country people are not nearly as sociable as they ought to be, and I believe the Institute will be the means of overcoming this defect to a great extent. When one meeting is over the members seem to be looking forward to the next with a great deal of interest."

DURHAM, EAST, (Mrs. John Mulligan, Secretary.)

"The Institute members have received many benefits from the organization during the past year, among which are the following:—

(1) Useful lessons learned from the use of the separator, giving us pure and clean milk and butter.

(2) How to choose a good dairy cow; the cause of cream not coming to butter.

(3) How to care for and feed chickens.

(4) The lessons learned from cooking lessons on the value of eggs, milk, grains, onions, tomatoes, both as to food value and simple methods of preparing same.

(5) Lessons by a trained cook on meats, soups, sauces, salads, creams, jellies, invalid cooking, cakes, etc.

(6) Much interest is shown in the horticultural line, the members learning how to grow plants, and how to get rid of insects which attack the leaves, roots, etc."

ELGIN, EAST, (Mrs. I. R. Prichard, Secretary.)

"The women of our riding enjoy the Institute meetings very much, because they are brought together to hear discussed questions which are of interest to them. Some say they cannot miss a meeting, for if they do they will be the losers. It gives them a confidence in themselves in taking part in the discussion, so that they forget to be afraid of the sound of their own voices. We find that on the oldest questions and subjects many new ideas and plans are suggested which prove of help to some present."



GREY, CENTRE, (Mrs. S. S. Burritt, Secretary.)

"We consider our meetings a benefit in a number of ways, as we discuss most everything that has to do with the home, such as dairying, poultry, garden'ng, preserving, pickling, etc. We intend to hold monthly meetings, and after the busy season to organize Branch Institutes."

GREY, NORTH, (Mrs. Wm. McGregor, Secretary.)

"Our Institute has been a benefit to our women in stimulating a greater desire for home study and mutual improvement. It removes the idea that our education ends with our school days. The Institute affords many advantages of developing unthought-of capabilities, and gives the members a chance to tell others what experience has taught them. A special benefit of our Institute is its friendly side, bringing about the old-time sociability among an industrious class who have few advantages. We fully realize that an afternoon spent at the Institute is much more profitable and pleasant than an afternoon's visiting, by removing any spirit of contention or jealousy and substituting a higher aim—the building up of a perfect home, which is the basis of national greatness."

GREY, SOUTH, (Miss Kate L. Dixon, Secretary.)

"The Institute meetings are very helpful to all who attend regularly, especially the farmers' wives, who are usually too closely confined to their home duties. By spending, say one afternoon every month in taking a drive to the Institute meeting the farmer's wife is greatly refreshed and benefited. By the exchange of thoughts and ideas she acquires better methods of managing the home and of doing her work. Then, by taking part in the meeting, and preparing a paper her mind is broadened and she becomes more interested in literature, especially that which pertains to the home and its surroundings."

HALTON, (Mrs. J. C. Willmott, Secretary.)

"Our Women's Institute has been of immense educational value, as it is teaching the women to ask themselves the question why they do this or that, and to look for better ways and means of accomplishing their work, instead of doing it in the old-fashioned hap-hazard way. It is making a pleasure of work that was before a monotonous drudgery. It has been the means of mutual improvement by interchange of thought and the introduction of new ideas which widen one's sphere of usefulness. The demonstrations in cooking have been much appreciated by all."

HASTINGS, EAST, (Miss Mary A. Hanley, Secretary.)

"Since the date of the organization of our Institute the circle of interest has been gradually widening. Regular meetings have been held at seven different points in the riding. How these meetings were valued and how anxious our East Hastings women are to welcome a movement for the betterment of our homes and individual life work, is best shown by the membership list which has grown to 158 persons. The talks on food values and cooking demonstrations, given by two of the Institute delegates, were very helpful to our members, and were much appreciated."

HASTINGS, WEST, (Miss C. Spafford, Secretary.)

"The members of our Institute have derived much benefit from the organization, which is shown by the increasing attendance and also of the membership roll. First, it is promoting more sociability among the farmers' wives and getting them to impart to each other that which they have found to be better and less laborious methods of work. For instance we have discussed "Bread Making," contrasting the lightning process with the old slow way. Then we have learned of many new and dainty dishes, by the cooking demonstrations which our delegates have given us, and also the exchanging of recipes, which is becoming customary among our members. The literature also has been most instructive. What we have learned

has given us a greater interest in our every day work, and a desire to learn more about it, and to consider it more as a science than a drudgery."

HURON, EAST, (Mrs. James Armstrong, Secretary.)

"Many of our members have expressed themselves as receiving much benefit from the meetings, not only from the practical nature of the papers read and the advantages gained from the discussions about our various household duties, or the social intercourses, but also the educational advantages gained in regard to conducting our business on business principles. The women also express themselves as gaining much benefit from the literature sent out by the Department of Agriculture. All our members are satisfied with the success we have met with since the organization last January. All appear to have a personal interest in the Institute."

HURON, WEST, (Mrs. Colin Campbell, Secretary.)

"Each Branch of the Institute meets once a month at the homes of the members, and the membership is composed mostly of farmers' wives and daughters, some of whom come a distance of eight or ten miles. One of the strongest proofs that we have that the Institute is a benefit to those who attend, is the demand for meetings. We have received much benefit from the knowledge gained of the properties of food, sanitation, household economy, and the informal talks upon the work that pertains to the special season of the year. The social half hour, after the more formal part of the meeting, is enjoyed by all."

KENT, WEST, (Miss Maggie Mills, Secretary.)

"It would be impossible for me to give a list of the benefits to be derived from Women's Institutes, they are so numerous. However, we have all found better, easier and more thorough ways of doing our housework, and all that pertains to home life. We also find in a benefit socially, for we meet with some with whom we would never come in contact otherwise, and by taking part in the discussions we acquire the way of talking in public without being nervous and timid."

MUSKOKA, SOUTH, (Miss A. Hollingworth, Secretary.)

"The chief benefit we derive from attending the Institute is in the discussions, when each one tells what she has learned by practical experience. Those who say, 'why go to the meetings when I can read these things at home in magazines?', forget that a writer is limited to space and must necessarily omit many side issues, which are often what are most desired by those who are familiar with the main points of the subject. To question a speaker is certainly more satisfactory than to put down the magazine with the question unanswered. Then there is the mental quickening—the power to express our thoughts more freely and forcibly, which comes only with practice. Those who prepare essays reap an additional benefit from the fact that they read more and have the information more deeply impressed on the mind. I believe our meetings have been a source of pleasure and profit to all who have attended."

NORTHUMBERLAND, EAST, (Mrs. J. Wellington Crews, Secretary.)

"We have found great pleasure in meeting in the homes of the different members to discuss different methods of housekeeping and home topics in general. One great advantage of the Institute is in bringing people together, so that they may become better acquainted with one another. This is a great privilege. There are neighbors of mine whom I have known by sight nearly all my life, with whom I had never become personally acquainted until after the organization of our Women's Institute. Some excellent addresses and cooking demonstrations have been given by outside talent, and a number of good papers by members of our own organization."

## NORTHUMBERLAND, WEST, (Mrs. James Davidson, Secretary.)

"From the papers and discussions at our Institute meetings our members have received much valuable information on various subjects pertaining to home life and work. But perhaps greater benefits than these have been derived from friendly intercourse with one another, in extending our acquaintance and in giving us broader views of life. We have also an opportunity to informally discuss many matters of interest, which are easy to discuss in a social way, but rather difficult to put on paper."

## ONTARIO, NORTH, (Mrs. C. S. Goodrich, Secretary.)

"The benefits of our Institute have been many, among the foremost of which I might name sociability, many families having become better acquainted through meeting each other at our meetings. All agree that they have learned a great deal from the different papers that have been given and the discussions following same. We have had very interesting papers on Bread Making, Butter Making, Nursing the Sick, Household Science, etc.—all good, practical subjects. The meetings each month have been well attended."

## ONTARIO, SOUTH, (Miss Lulu Lick, Secretary.)

"Our members generally express themselves as being benefited in many ways by the Institute, notably in the various branches of Domestic Science, Dairying and Poultry Raising. We have added to our knowledge of these subjects not only from the papers given, but by the discussions which follow, when we have an interchange of ideas upon all subjects. Our library—including the magazines—has been a valuable aid in our work, and not least in the list of benefits has been the social intercourse enjoyed and the broader outlook and higher aims, resulting from general efforts to share our best with those around us."

## PEEL, (Mrs. W. J. Hunter, Secretary.)

"The following are some of the benefits we have received from the Institute during the past year:—

1st. The fact of being banded together in this work has broadened our ideas, and made us more liberal and tolerant of the methods of others.

2nd. Many useful hints on cooking and everything pertaining to the household have been interchanged.

3rd. The importance of women's every-day work has been given a prominence in our minds never before thought of, with the result of added interest in our work.

4th. Coming together in these meetings, often from distant points, the women of our country become better acquainted, and are thus more sociable.

5th. Our local Farmers' Institute and our own Institute feel mutually helped by working together, as the interested husband brings his wife along and vice-versa."

## SIMCOE SOUTH, (Miss Christina Sutherland, Secretary.)

"The success of our Institute, since the organization about a year ago, has been more than we expected. The members have found the meetings both interesting and instructive. The meetings have been addressed by outside, as well as home talent. We are much encouraged by the work of the first year, and are looking forward to greater things in the future."

## VICTORIA, EAST, (Miss E. R. Cullis, Secretary.)

"With the present scarcity of help, any plan which tends to lighten labor of housework, without sacrificing the comfort of the household, is thankfully received, and this is one of the reasons the Women's Institute has been so successful. The papers given at the meetings, dealing with household problems, and followed by a free discussion, have been very helpful. One member's directions for washing woollens without shrinking has been a boon to many. The Institute is helpful, if only for the social side. The average woman spends too much time in her kitchen. One member said her mind was rusting for lack of use in anything but her

regular routine work, and the Institute has been just the thing to help her in this direction. The Institute has fostered a much friendlier feeling between town and country women."

WATERLOO, NORTH, (Miss Jessie McDougal, Secretary.)

"In the short time our Institute has been organized we have found it a great benefit socially, being the only meeting in the community which enables *all* the women to come together with a common interest, and to become well acquainted with one another. This is a special boon to newcomers in the district. It has developed the executive ability of those in charge, and we have found it to be just what the busy women in the country need to encourage them in their rather isolated homes, teaching them to be more capable and broad-minded, through the knowledge gained from others, and also to be self-reliant, though their endeavor to give in public the benefit of their experience in various methods of work."

WENTWORTH, SOUTH, (Miss M. E. Nash, Secretary.)

"The past year has been one of much prosperity. The regular meetings have been very helpful to those attending. The demonstrations in cooking might be specially mentioned as being a great benefit to the members. Many new ideas and suggestions were given. The programmes at our meetings cover a variety of subjects, all of which are of a practical or entertaining character."

YORK, WEST, (Miss M. V. Mather, Secretary.)

"Although our Institute has been in existence but one year it has grown rapidly. The members feel that they have been benefited in many ways by attending these meetings. Housekeepers, as a general rule, have not enough variety in their lives, and the same continual round of duties grows monotonous. By attending the Institute meetings new ideas and suggestions are received, and consequently there is more variety and interest in the home duties. The demonstrations in cooking, and talks on foods, have been very helpful, and we have learned not only how but why to do certain things. The Institute meetings have a broadening and enlightening influence on all who attend and take an active interest in them."

YORK, EAST, (Miss Lulu Reynolds, Secretary.)

"Probably one of the benefits of our Women's Institute is in drawing all classes and denominations together. The social side of the Institute is a very important part. I think a great number of our members are benefited as much in that way as they are in the educational line. The educational part of it cannot be too highly estimated. Although I hear some of the members say the meetings are not good—they are not the ones who try to make them better—yet they confess they have picked up hints by the score, which have been thrown out by one and another at the meetings. Foods are cooked to be much more nourishing, and houses are ventilated better, besides other things too numerous to mention. We cannot expect to jump to perfection in anything, the work must be gradual."

## WHAT IS THE GOOD OF GOING TO THE INSTITUTE?

By Mrs. James Gardner, Kemble.

Men and women often ask the question—"What is the good of going to the Institute?" They ask the question with varying motives and different spirits, but in nearly every case an honest doubt is expressed.

I think it is a good thing to be connected with any organization whose chief object is for the mutual improvement of our homes and families. At the meetings of the Women's Institute all subjects for the uplifting of the homes and bettering of housekeeping-methods are discussed. The last report says that the Farmers' Institute has been of more benefit to the farming communi-

ties than any organization that has been introduced. The Women's Institute promises to even surpass it as it has a wider scope than the men's; because it is not confined to the farm alone, but deals with a higher subject. It is said where ever there is a home with a woman in it, there is work for the Institute. The women are beginning to realize that they need instruction in proper methods as well as their husbands.

It is remarkable how rapidly the movement has grown and with what sympathy and approval it has been accepted. It first began in 1897, and we have the honour of being looked upon as one of the pioneer Institutes, being the third one in the province in which there are now forty-three with a membership of over 3,000. Last year 5,300 women attended the meetings of the Women's Institute.

We go to the Institute because it is good to meet together in frequent, friendly relations with one another. Our Creator has made us social creatures, to be developed through human society. Social life is one of the main factors in establishing a nation's ideals. It has a great influence on the school or the church. The most irresistible force in nature is the mutual touch in human life. 'Tis said "The homes of a nation are its strongest foits." The real pride and strength of a nation is not all in the wisdom of her law-makers; be they ever so great, but in the honesty, industry and contentment of its people, and the ideal home comes nearest realization in the well-ordered farm home.

One thing that Canada needs to-day is, that more of her sons and daughters of ability should turn their attention to agriculture, and cease to strive and struggle to live upon the allowance of daily wages paid in town and city offices. Agriculture is the greatest among the arts for it is the first in supplying our necessities.

Some say—"What good can I do going to the Institute"? Women ought to attend the Institute because they are brought together more there than in any place else, face to face with the practical side of life. Narrow minds depend upon luck; strong wills look for cause and effect. We grow queer and odd when we draw ourselves in, and become suspicious and develop a tendency towards prying gossip. We often get morbid, brooding over supposed misfortune or ill treatment. Our characters even, spoil if we are shut up; we get so narrow when we live only to ourselves. To women more than men is there a danger of becoming narrow. Women lacking breadth are said to betray by their conversation minds of narrow compass. They have not the opportunity that men have of meeting together and discussing matters outside the routine of their daily lives. The conversation of the average farmer's wife is butter and eggs, ailments, children and clothes. By earnest toil and endeavor we may cultivate any part of our nature. We can make ourselves new men and women, by giving attention to our business and pleasure. Our business becomes dull if we do not fix our minds upon it and try to make it interesting, and the latter is one of the benefits of an Institute. It instils new life and more interest for the farmer's wife; it takes away the humdrum, treadmill-round that some are apt to follow. It is a matter of wonder how some women go on for ever doing the same things in the same slow, slovenly way as though unaware that the rest of the world is moving steadily forward, leaving them far behind in the race towards success and happiness.

The question was asked at one of our meetings—"Is housekeeping a drudgery?" The reply was: "Housekeeping like everything else is a pleasure or a drudgery just according to the amount of brain and energy we put into the work." I always feel sorry for a woman and her family when I hear her say, "Oh do not ask me to go to the Institute, I hate farming, I cannot bear it, I know too much about it now." I doubt if we know too much already, I think that that is where the trouble lies. But it is the custom of some shallow minds to sneer at farmers and farm life. Why should any woman despise the work of the home? We should not be ashamed of anything unless it is poor work. We have been too

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apt to speak slightly of all work connected with our homes, and any agency which will add to the dignity, increase its pleasures and make it more attractive is to be commended.

Men and women are made for activity, business and employment. Activity is the life of us all. Those who have no occupation are in a bad plight. The man or woman who has no business and nothing to do is an absolute pest to society.

Those occupations requiring manual labor are the surest, most healthful and most independent. Be what nature intended us for and we shall succeed. It is not accident that helps us along in the world but patience and persistent industry. Only by patient and persistent industry can an effort of any kind be developed into really useful and honourable achievements. Any one who looks for a short cut to perfection in any art or industry, is in a poor way to succeed.

We go to the Institute to strengthen our love and enthusiasm for the occupation we are endeavoring to follow, and our success largely depends upon the interest, perseverance and understanding we have. There we learn what is most essential to success; we learn economy, patience and industry. There we may hear of the success or failures in the experiments of others. Whatever may be the plan that we have always followed, there is probably a much better one and we should not be slow to accept suggestions or to follow the example of a neighbor, when by so doing we might lighten our labors and increase our pleasures. We have to advance and change our ways of management. We are living under different conditions to those existing fifty or sixty years ago. The tallow candle, the fire place and the dash churn are things of the past. Who ever heard of hatching chickens with incubators in those days? The cream separator was not then thought of. From four to six cows was the average number and hired help was not so hard to procure. Now not one family in ten can get hired help in the house. But we are learning to manage better and how we may accomplish more so that the best possible labor may fill each and every hour, and also to take better care of our health. Hard work does not break down our women like imprudence and waste of strength. It is said that much was accomplished in those days by what we would now call *main force* and *stupidity*. Changes from what existed a century ago are necessary, in view of the increased knowledge in our day.

Modern education teaches us to do our own thinking. It stimulates us to constantly seek a better way regardless of where it may lead. The progressive individual is no longer bound hand and foot to one idea. The world has need of men and women who keep their eyes and ears open, their minds furnished with the truths and principles revealed through science, careful study and broad observation. Then let us diligently plod onward doing all in our power and might to further agricultural education and the social and financial condition of the farmer. We should look upon it as a duty as well as a pleasure to belong to such a society. I think that one deserves credit of being a philanthropist indeed, who first conceived the idea of a Women's Institute. We do not claim perfection for our Institute or expect that it will work wonders. It is doubtful if that organization has yet been thought of that none can find fault with.

We hope soon to be able to report just as many Women's Institutes, and in just as popular and as flourishing a condition as the Farmers' Institutes are in this prosperous province of ours. I would like to urge all the ladies to work with us unitedly. We are none of us too old to learn to discard wrong methods for right ones, and to undo mistakes resulting from ignorance in the past. We have all the time there is still left in which to overcome old errors, so let us begin at once to take pleasure in simple and honest living, knowing that it is the only hand of the diligent that maketh permanently rich, and to learn to love excellence for its own sake.

## WOMEN'S INSTITUTES.

By Mrs. A. Kinney, Grandview.

As the nineteenth century inherited the goose quill pen but bequeathed to its successor the type-writer, so also the dim light of the tallow taper has been altogether quenched by the brilliancy of the electric lamp. We are not to-day walking foot-sore and weary, following the woollen thread from the old-time spinning wheel, though idle to-day is a treasured keepsake. One person to-day with the aid of machinery is doing the work of one hundred persons as compared with the beginning of the nineteenth century, leaving the ninety and nine to study out and develop more and more of the resources of mother earth still unknown. Many of us may remember watching with unabated interest our mothers, grandmothers, aunts and older cousins using the old spinning wheel. How daintily they handled those fleecy rolls, and when one had been spun, leaving only a short, woolly end, they carefully picked up another and deftly fastened it. Then gracefully stepping backward holding the roll carefully in the left hand, the right hand was extended upward, touching the great big wheel, which soon went buzzing around, giving that business-like hum which meant a finish to the fleeciness of that little roll. With a few more graceful steps, clasps and turns it was wound on the spindle to afterwards be doubled and twisted for yarn or woven into good warm homespun. This is of the past, though still treasured as a memory of the good old times of yore, and days of simple, honest living.

We should have to-day more time for mind improvement and scientific research, and thus be able to converse on useful subjects rather than, shall I say, gossiping. Women are accused of having a weakness in that way. Is the cause a desire to haul some poor, undeserving victim over the coals, or is it because we lack something better to talk about? We will leave all such subjects in the back ages, and as we have stepped into the new century, aim in leaving worthy imprints that others following our example may not err therein. Do we, in our homes, make many crooked, erring steps by being quick-tempered and irritable, and oft times do not have the sunshine in the home that is smiling outside? And have we

"A careful word for the stranger  
And smile for the transient guest,  
But oft times bitter tone  
To those whom we love the best."

Oft times these harsh words are spoken when we are overtaxed, having more on our hands than we are able to accomplish. Cannot we cut out some of the unnecessary work, and as our English lady expresses it, "give over trying to do two days' work in one." Our cook stove will do just as good work by being clean, but it does not need to shine so particularly bright, and our kitchen floor is not any warmer nor more healthful after having wasted much valuable strength to have it so extremely white. It is not necessary to have it in that particularly chaste way. We do not as a rule stay too closely at home? Some years ago the mother in a rural home was being removed to an insane asylum, when her husband remarked that he wondered how she had caught that disease, as she had scarcely been away from her own kitchen for over thirty years!

The Women's Institute will help:—1. To break the natural isolation and monotony of farm life by bringing us in closer communion with each other. 2. Will also help to break down selfishness. Many who may think their way of doing things absolutely perfect may be convinced that there is an easier and better way, and, seeing their error, will throw their minds open to the reception of knowledge on all subjects, it may be to their own advantage, as we are helped by comparing experiences one with

the other. 3. The discussions and debates bring out latent talent, developing in us the power of expressing ourselves in public.

The discussions as well as the writing up of different branches of the work tend to clothe our occupation with its real importance and dignity, as life on the farm is second to none in nobility and independence.

Occasionally we meet with women who have spare time on their hands. How is it employed? By stitching, stitching, stitching at fancy work! Yes, and many who have not spare time are pulling out threads of linen or embroidering fine, fine stitches, putting their strength and energy at a very low value, when they should be resting both mind and body. Let us aim at higher value and not be slaves to fancy-work and living for show.

Will not those who have spare time on their hands look around? There may be an opportunity to lend a helping hand to some friend, on whom life's burdens seem to weigh heavily, and by so doing cheering an otherwise sad life. It may also be the means of securing another helpful member in your institute. A little mission work occasionally in connection with the institute work should not be out of place.

The pioneer Women's Institute has for its motto "The uplifting of womanhood and the broadening of her sphere of usefulness."

Are we improving our methods, and are we ever ready to grasp new ideas which are being brought forward daily? Do we want to know more of our profession? They who know the most are usually the most anxious to know more. We are losing interest in fancy cooking recipes, but what we want is a better understanding of food merits and values. Yes, "balanced rations" for our growing children, not allowing them to carry out the giddy lassie's idea to "drather eat what they drather."

As we note with pleasure the indications that our educational system is undergoing a transformation; as domestic science schools are being opened all over our Dominion, and as we realize the broadening influence of the Women's Institutes, we look forward to the time when we shall see a band of old ladies in every community, not stooped by premature infirmity, but bright, cheerful and healthy. Let us sound the trumpet loud and long that from the woman's standpoint, HOME, we are ever ready to help along the reforms of the day, as well as prove ourselves willing, cheerful co-workers in anything and everything which tends to brighten home life.

Woman's work, woman's influence, mother's work and mother's influence! Where does it begin? Where does it end? Can we solve the problem? Our housewife, instead of being a person of a single occupation, is rather a worker in various arts. We hear man's work spoken of thus—

The farmer behind the plough,  
The blacksmith behind the anvil,  
The merchant behind the counter,  
The machinist behind the lathe,  
The engineer at his engine,  
The clerk behind the desk.

and so on to the end of the chapter. Where do we find our housewife?

As cook—behind the ranges, kettles (heavy and light), pots, basins, frying-pans, etc.

As baker—behind the oven, flour, dough, etc.

As laundress—behind the wash tub and washing machine, mangle, wringer, ironing board, etc.

As housemaid—brooms, carpet sweeper, dusting cloths, scrub brushes, etc.

As seamstress—tape measure, designer, pattern, cutting, fitting, sewing, making, etc.

As hostess—receiving, entertaining, tea table, dishes, decorations, etc.

As wife—love, confidence, purity, happiness, success.

As mother—cradle, patience, kindness, education, character, heaven.

Where shall we place our housewife? Behind the home; the foundation of the universe. Daughters, sisters, wives, mothers, we have grave responsibilities. We must look well to our laurels. Yes, there are Martha Washingtons to-day. There are



Susannah Wesleys to-day. There are Harriet Beecher Stowes to-day. We will be strong. There is no time to play or drift. Shun not the struggle; it is our work; it is God's plan!

We cannot fail in seeing the great benefit that the Farmers' Institutes are and have been to the farmers in educating them in more improved methods of farming, also in more economical ways of feeding their stock, which knowledge could only otherwise have been gained by attending the O. A. C., or some other similar institution. What the Farmers' Institutes have been to the farmers, the Women's Institutes purpose to be to their wives and daughters.

Reports tell us that the O. A. C. is filled to overflowing year after year with farmers' sons, being educated along more scientific lines of farming, and as these young men go out to all parts of the country, is not this science going to spread rapidly? As the leaven leavens the whole mass, so will these improved methods be widespread. Our sons may now be well equipped not only in practical knowledge, but also as scientists. But what about our daughters? A year ago the question was raised regarding a school of Domestic Science in connection with the O.A.C. Now all are rejoicing in the fact that through the generous gift of Sir William McDonald there will be such a school in the near future.

One grand feature in connection with the Women's Institutes will be the possibility of securing the services of these Domestic Science teachers to give practical demonstrations in cooking some of our daily foods at Institute meetings.

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## HOUSEHOLD SCIENCE.

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### THE FARM HOME.

By Miss Fanny Knight, Sault Ste. Marie.

Each and every person listening to me to-day has a home, and with what pleasure we turn our steps homeward, after an absence from it. There we see the familiar faces of father, mother, brothers and sisters, and every object seems like an old friend to greet us on our return.

Why is home so dear? Is it because of beautiful houses, fine lawns and shade trees, modern conveniences and everything up to date? By no means. It is because those that love us are there, whether it be mansion of wealth or cabin of poverty.

I believe the most important factor in farm life is the farm home. Who can appreciate the comforts of an evening spent in the society of his wife and family more than the busy farmer, who has toiled from early morn till the setting of the sun in the open air cultivating the soil and doing the numberless tasks which fall to his lot? The merchant, banker and the majority of men working at a trade, are confined to closed rooms during the day thus making it necessary for them to spend a part of the time in the evenings out of doors in consideration of their health, but not so with those whose work makes it necessary for them to spend a large portion of their working hours outside.

How can we make home attractive? The wife, the mother and the sister are the home-makers, and there is one place where woman has her rights, and where, alas, many fail to live up to their privileges. Hers is the right to cheer the tired husband, father or brother with a bright smile, a good dinner and a neat room; hers the right to sympathize in sorrow or joy, and interest herself in the evening pursuits and pleasures of the boys. She it is who holds the sacred right of influencing and thus having a share in the moulding of the characters of those around her. If every woman used her influence as the precious gift which God intends it to be, the result would

be such a change in the lives and actions of men that we would scarcely recognize this as the same world, in which we are now living.

I fancy I heard some woman say: "Oh, yes, that is all very well in theory, what about practice? It is not always easy to have bright smiles and a good dinner when you have to spend half the morning acting as chore-boy around the farm, or waiting on the men, who seldom can find anything they want without calling to their wives for assistance. Then when the missing article is found and peace once more prevails out-of-doors, to hurry into the house to find the fire out, the house in a state of dire confusion, and dinner time coming as fast as the clock can tick the minutes off." Here is where the man's part comes in. Do your own work and don't expect your wife to do two people's work. You have labor-saving machinery to do your work—get her the modern conveniences to do hers, and don't be afraid to spend a little time and money on beautifying the home. Plant shade trees, make walks, dig up earth for flower beds—ever so many—and if the women in your house fail to plant the seeds, or to be ready helpers in all your plans for the improvement of the yards and gardens, there must be something wrong somewhere. Make home just as beautiful as your means and abilities will allow.

Don't be afraid to give a half holiday to the boys, and to take one yourself, when a picnic or other pleasures present the opportunity. You will work better yourself and get better work from all in your employ for the change; and life will not be a steady grind of work, work, day after day, making the boys wish for a chance to see more of the world, and thus driving them away from the farm as soon as they can manage to go. Let everyone, especially the wives and sisters, endeavor to make home pleasant in its outward appearance, its social life and its surroundings; and one of the farm problems, "How to keep the boys on the farm," will be solved. This will be a great point gained, for the free, unrestrained life of a country boy gives him the best foundation for future greatness, viz., a strong body and a pure mind, ready to grasp and retain that which will make him a great and good man.

#### HOW TO MAKE HOME ATTRACTIVE.

By Mrs. James Armstrong, Gorrie.

Home! What tender associations are linked with home! It is one of the sweetest words in the English language. Nothing but death can break its spell. Home is not the mere dwelling-place of our parents, and the stage upon which we played the part of merry childhood. It should not be a simple habitation, but a divine institution. The first home was in Eden; the last home will be in Heaven. The highest aim and duty of our lives should be to make our homes comfortable and attractive to all its members. Comfort is very important, and every ambitious and good woman will make home as comfortable as her means will allow. She will also try and make home pleasant and attractive. To make home attractive, we must practice a good deal of patience and forbearance.

It is woman's mission to make sunlight in the home, and perhaps there are some of us who find our lives, as it were, set in a sunless, northern atmosphere, that requires all our tact to tint with sunny hues. To make home life sincere, attractive, refined and uplifting is a task well worthy of the energies of all the members of the household. I think it largely depends on the women of our homes, whether these homes are attractive or not. It is the mother which gives it life. The principal part depends upon her. She should see to it that the home is ever bright and cheerful; herself and the children always neat and tidy. Sometimes we may think it does not make any difference how we look in the mornings, while we are at our work. You will very often see women very untidy, who have plenty of nice clothes. A lazy woman in a wrapper, yawning half a day over a novel, is a disgrace and should not

be found outside a story book. Rather should the reality be a trimly-dressed, quick-stepping woman, encouraging by her example her children and her servants (if she has any) to be neat and skillful. It is not so much wealth or learning, or town or country, or station as it is tone and temper that render home attractive.

Sometimes we fix up our homes altogether too much with the idea of what the outside world will say about them, or to out-do our neighbors. If we would dismiss a little of the show that is now so prevalent in many of our homes, we would not only reach a happier state for ourselves and make our homes more attractive for its inmates, but would remove one-half of the nervous ailments from which our women are now suffering. It is all right to have a pretty home, in fact, it is our duty to have it so, but do not let our parlors and other rooms resemble museums, for if you do the men and children will be more comfortable when they are out of them. Furnish your homes with pretty, sensible colors, which will stand the light and sun without fading, so that you can have the blinds up and can let in the sunlight and air. Men and children especially love sunlight and air. Sunshine is one of our best friends in many ways, and no home can be attractive which is darkened up for fear of fading the furnishings or of letting a fly in.

Flowers help to make a home attractive. They are cheap and within the reach of all. How much more attractive our homes are with bright blossoms and green foliage, instead of dark, cheerless windows, no matter how elegant the curtains and fixings may be. Almost every one loves flowers. As each small bud appears and unfolds tiny hands will be clapped for joy, while to the father and mother they bring fond recollections of happy hours and pleasant faces almost forgotten.

So many mothers ask themselves, "How can I best keep my children at home and off the streets, where they learn so many questionable things?" The question might be answered, "Make their home cheerful and attractive for them; try and fill their hearts with the love of the beautiful, so that much of the bad will be crowded out." Let them find so much pleasure at home with flowers and books and other useful and helpful things that the desire to roam the streets and associate with the class of companions they find there will be gone. Make your home so pleasant, bright and attractive that they will not wish to go any place else for pleasure. Make your children your friends; confide in them; let them share with your husband all your plans, hopes and desires. Do not use harsh language. Let the children remember you as models of patience, purity and strength. Let us make home the sweetest, most attractive place on earth to its inmates. Good literature is a pleasant feature in our homes. Teach the children to read and discuss the various topics of the day, also if possible have music in the home, as it is one of the greatest attractions. Those who have it in the home, know what a source of attraction and pleasure it is. Always have everything about the meals bright and cheerful. It is the place where the family gathers three times each day, and very often our best opportunities to display home talent are found there. Have the dishes and table linen clean and bright. Have a vase of flowers, if possible, to adorn the table. Encourage the children to join in the conversation. I do not mean to let them chatter and monopolize the talk, but teach them to cultivate conversation. Always meet each other in the morning with a pleasant word. Let us not forget that everything good in our earthly home has its echo in heaven.

## WOMAN AND THE HOME.

By Mrs. E. C. Monkman, Castlederg.

In presenting this paper to the Institute, I wish to state at the outset that the ideas in it will in no wise correspond with many of the so-called reforms that are being demanded in the name of "Woman's Rights" and by societies of what we call the "New Woman." In fact, I fear that I may have fallen into the opposite extreme and may be in danger of being called old-fashioned.

In the evolution that society is passing through at the present time, the most notable feature is that of the change of position of women. Formerly it was thought that woman had no right to education beyond the mere rudiments, and that she had no business with these higher things, even if she had the ability, which was then considered doubtful. All this has now changed. Woman has entered all our universities (with the exception of Oxford and Cambridge, which still refuse to admit them) and has taken her place with man, side by side in all the courses, and in some of the courses has even surpassed her brother students.

The learned professions are now all open to women. Teaching, medicine, dentistry, even law, the most conservative of all the professions, has at last opened its doors and women may now plead cases at the bar. Such being the case, it behooves us to ascertain how far and how much we can rightly enter upon these professions without losing that indescribable something known as the "feminine charm."

It is now admitted by all that women have the right to this higher education, but I do not think it is at all desirable that we should have along with it that masculine air and manner so easily discernable in our "new woman" or even in our "business woman" of to-day.

Having admitted the right of women to avail themselves of this higher education let us see what the use or aim of education should be. The use or aim of education should be to fit one for the better, more careful and more intelligent performance of present duties, whatever they may be. It should also bring us into contact with what the best and greatest minds have left us on every possible line of human thought. This being the case, let us review shortly how the great minds have regarded women, also what they regard as her sphere.

Let us first consider Shakespeare. It has been said by Ruskin that Shakespeare has no heroes, he has only heroines. Of all the men he describes, the only one who approaches the heroic is his description of Henry V., and it is exaggerated for the purposes of the stage. The catastrophe in each play has been caused by a man. The salvation, if any is possible, is wrought out by a woman. In all the principal features of Shakespeare's plays there is only one weak woman, "Ophelia," and it is because she is so and cannot be a guide to him that Hamlet fails.

Next, let us regard the writings of Sir Walter Scott. In his works only three men reach the heroic type. The others are the mere playthings of fantastic fortune and win or fail as the combination of circumstances in which they are placed point to failure or success. None of them have the intellectual power and the infallible and inevitable sense of justice present in Rose Bradwardine, in Ellen Douglas or in Flora McIver. Much more do the men lack a fearless, instant and untiring self-sacrifice to real duty that not only forces them to act, but forces their friends to correct actions also. So that in all cases in Scott's works, as with Shakespeare's characters, it is the woman who watches, teaches and guides the youth. It is never by any chance the youth who watches over or guides his mistress.

We might summon other authors to our aid on this question, but we find the rule to be invariable. The woman is the one who inspires, guides, and directs man to higher actions. The man is the doer. Not that the woman is as the general of any army, to give commands, but by her sweet and silent influence she incites and inspires men to act in the right way, with the feeling that they are acting of their own free will. Formerly man thought that woman should never guide nor even think for herself. The man was always to be the wiser. He was to be the thinker, the ruler, the superior in knowledge and discretion as in power. The present "new woman" considers "woman's rights" and the "mission of women" as if we can ever separate them from the mission and rights of man; as if she and her lord were creatures of independent kind and irreconcilable nature. Are not both of these views wrong, and should we not rather accept the dictum given us by the great minds of all past ages, viz., that woman's particular province is to guide?

The characters of men and women are essentially different. Man's power is

active, progressive and defensive. He is eminently the doer, the creator, the discoverer, the defender. Woman's power is for rule, not for battle. Her intellect is for sweet ordering, arrangement and decision. She sees the qualities of things, their claims and their places. Her function is to praise, to encourage, and to comfort. She is by right, as Ruskin puts it, the arbiter of praise and of blame. She sets the standard of her men folk high or low as she chooses. What she shows a hearty contempt for is sure to lose ground as a social custom or opinion. Whatever laxity of manners or morals she tolerates is equally sure to gain ground. If she bends her countenance to the lascivious theatre, a low-pitched literature, a paganized art, men will never reform these evils. \* If she sanctions the living of an empty, idle and frivolous life, then that will be the life of her male friends. But if she sets herself against these things they will be disused and despised. Not childhood only, but the world at large is plastic under her hands.

Where is the place where women may exercise this queenly power of ruling and ordering affairs? There can be only one answer to this. In the home. It is the place of peace; the shelter not only from all injury, but from all terror, doubt and diversion. In so far as it is not this, it is not a home, but only a part of the outer world that you have roofed over and lighted a fire in. Wherever the true woman lives, that home is always about her. The stars only may be over her head, the glow worm in the grass may be the only fire, but home is yet wherever she is and sheds a quiet influence around about to those who have no home.

Such being the sphere of woman, let us next consider the best education that will fit her for that sphere. The first requisite I consider necessary is good physical exercise and culture of character that will develop her strength and perfect her beauty of body and of soul. The second requisite is a good moral training, so that she will do what is right and think kindly of those with whom she may come in contact. And as our characters are written in our faces, we say of such a true woman,

"A countenance in which did meet  
Sweet records, promises as sweet."

Such a countenance she will have if she has been trained to kind thoughts and kind actions. Then, as to her mental training, I believe it should be as broad and liberal as it is possible for her to get, so that she will be the better fitted to fill any position in which she may be placed in life, and leave her mark in the world.

"The lives of great ones all remind us,  
We can make our lives sublime  
And departing leave behind us  
Footprints on the sands of time."

### HEALTHFUL HOMES.

By Miss Alice Hollingworth, Beatrice.

It is satisfactory to note that with the opening of the twentieth century we are at last beginning to realize that all the bodily diseases and discomforts from which we suffer are not a "divine visitation," but the result of our own ignorance and neglect, or that of our neighbors or ancestors. When diphtheria and fevers break out in our midst, instead of folding our hands and saying, "It is the Lord's will," we have learned that it is a better religion to clean up our dooryards, cellars and sinks and keep our windows open. Dr. Henry MacCormac says: "We live or we die, live well or miserably, live our full term or perish prematurely, according as we shall wisely or otherwise determine." Unfortunately, we do not realize as keenly as we should that it is not only our own term of life, but the lives of those around us which we help to determine.

Stagnant water near buildings, foul odors from neglected pig-pens or dead animals left unburied on our premises, may cost our neighbor his life; or the unsanitary conditions within the house may, and often do, give rise to infectious diseases, which spread far and wide, and, like the sunshine, fall upon the just and the unjust, the clean and the unclean.

The fundamental principles of good health are pure air, pure water and pure soil. These three things, nature gives us free; when they cease to be pure the fault is ours. To keep them pure we must first of all have the land around our homes carefully drained. Stagnant water on the land contaminates the wells, prevents the soil from acting as an absorbent and disinfectant, which are its natural properties, and the foul odors which a dry soil would absorb are spread more effectively by moisture. It is a true saying that where woods rot, men decay. Keeping the soil pure around the house is a thing that meets with scant consideration. In the great majority of farm houses, the kitchen slops are thrown an arm's-length from the doorstep. When it has been thrown in one place for any length of time the soil becomes over-saturated and clogged with impurities, so that it can no longer absorb the decaying matter, and as the foul odors arise it becomes a fertile breeding-ground for the germs of disease. A sink and drain is such a cheap and simple contrivance that it is a shame for any kitchen to be without one. Of course the sink requires some care, but hot water and soda are cheap and effective.

For drains I have always found copperas, dissolved in water, a sure cure for bad odors. Even worse than the slop-water nuisance is the carelessness shown in the location of wells where they will get the drainage from house or barnyard, quite often from both.

Dr. Stephen Smith describes a visit to a country clergyman, a former school-mate, who told him of a family, five of the members of which had died and another was then fatally ill with typhoid fever, and he had not thought of attributing it to anything else but a "visitation of Providence." An investigation showed that during a busy harvest the valve of the pump had got out of order, and there being no time to replace it, water had been taken from a brook which received, higher up, surface water and drainage from several barnyards. Of the entire family but two escaped attack, and they had not used the water.

I have known of several deaths from diphtheria where water was used from a well that received the drainage from either house or barnyard. The purity of the water in any well depends almost entirely on the ability of the earth, through which it descends, to deprive it, by filtration, of its organic impurities. It is always a question between the amount and character of the filtering material and the amount and character of the impurity. In a deep, porous soil where the water table lies at a great depth, there is little danger, unless the grossest filth on the surface near by is constant and long-continued. But where the water level is near the surface of the ground, or where the well is supplied through rock fissures or gravel seams, which open near the surface of the earth, the most scrupulous cleanliness is needed to prevent contamination. A well may be good for a long time and subsequently become poisoned, because the soil lying between the source of the impurity and the well itself has a certain amount of cleansing power. While this is effective every impurity is withheld, but by degrees the soil becomes foul farther and farther on, until at last there is no grain of uncorrupted earth to purify the water.

Unsanitary conditions are inexcusable on the farm. People in cities are compelled to suffer from conditions which they cannot control, but it is not so on the farm, and it is not a question of money either. No man is so poor that he need have his pig trough at the front door or throw slops under his dining-room window, and every farm will furnish earth enough to bank up the house in autumn, without having recourse to the stinking manure heaps. Yet these are conditions which meet our view as we drive through the country.

The subject of drainage is very important. In selecting a site for a house a

sight elevation should be chosen, so that there will be natural drainage to aid the artificial drains. The cellar, which is sometimes the last thing considered, should be the first, for to a great extent its condition decides whether the occupants of the house are going to be healthy or unhealthy. Above all things, avoid a damp, dark unventilated cellar; have a free circulation of air at all times, sweep out frequently, and whitewash once a year.

It gives me pleasure to see in many of the new farm houses the well-laid hardwood floors, which are oiled, so that they can be kept clean and free from dust with the least labor possible. This is a long step in the right direction. Carpets are an unwholesome luxury, which we all enjoy and cling to, but the quicker we give them up the better. There is a freshness and sweetness about a room with a washable floor that you never get with carpets. I have great faith in soap and water. They go farther in preventing disease than the contents of a dozen drug stores. For this reason I like to have just as little as possible that is unwashable about the house, especially in bedrooms.

Lack of ventilation in the bedroom is a frequent cause of headache and listlessness, which is the inevitable result when we breathe in again the carbonic acid gas which we have exhaled. It is also a mistake to keep soiled clothing in the sleeping room, especially in hot weather. Even with the windows open one can often smell the perspiration on the clothes that hang behind the door.

The sanitary condition of any home is incomplete without a bath tub. When a good zinc one can be bought for less than \$6.00 the cost sinks into insignificance when compared with the comfort and healthfulness which it gives. It is both a necessity and luxury. If the tired woman, who has been working for hours in the hot kitchen until her limbs are aching, can slip away from her work to lie for a few minutes full length in tepid water, then put on fresh clothes, she will feel that half her burden of cares has vanished. Nobody knows better than the boys how to appreciate a bath, and when they come in from their day's work in the field, hot, dusty and wet with perspiration, it is with the keenest pleasure that they hasten to the bathroom for a refreshing dip and dry clothes. Yet there are hundreds of tired women, hundreds of hot and dusty boys, who with all their hard labor are deprived of this simple comfort. Discretion should be used in the temperature of the water for bathing. A cold bath is bracing for those who can stand it, but serious results follow the use of cold water when the body is over heated. Tepid water is the safest at all times.

I cannot close without saying a few words about the glorious sunshine, for it does not get half of the appreciation that it merits. So many women pull down the blinds and shut it out as if it were an enemy instead of the life-giving friend that it is. All life, both animal and vegetable, requires sunlight and cannot thrive without it. It is a foe to disease, and should be admitted freely into every room in the house.

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#### KINDNESS AND ECONOMY IN THE HOME.

By Mrs. D. McTavish, North Bruce.

When we consider what an important place small things occupy, and what an influence they have on our lives, we might do well to consider a few of them.

Our lives, be they long or short, are lived but a day at a time, and each day is made up of what we might consider small events, but when we come to think over them we find that it is these same small events, which we are apt to consider trivial in themselves, which have gone to make up our joys or our sorrows. It is not coming into possession of a great sum of money, or inheriting broad acres, left to us perhaps by some relative who has departed this life, which gives us the greatest pleasure, but we find that it is the thousand and one trifles, we might call them, which have quickened our step and brightened our eye, the love and trust of our children and the

small courtesies of life, experienced day by day. In the same way we find that it is not what we might consider the great griefs and sorrows of our lives which have had the most effect upon us, but it is the small harassing cares, which, like "the little foxes, spoil the vines." Just as it is not the wild beasts of the forest which ruin our crops, but the small insects, which can scarcely be seen by the naked eye, so it is the little carking cares which silver our hairs, and rob our steps of their elasticity. See to it then that we do not be sparing of small courtesies. Let us try to lighten the cares of those around us. A pleasant word costs us nothing and it may send some one on their way rejoicing.

"Slightest actions often meet the sorest needs,  
For the world wants daily little kindly deeds."

And to the members of Farmers' Institutes and others, I would say, lighten the burdens of your helpmeets as far as you can be kindness, and do not be afraid to let them know that you appreciate their untiring (but often tiresome) efforts on behalf of yourselves and your families. A kind word now, or even a smile, will be far better than long obituary notices and columns of poetry setting forth their good qualities. Speak approving, cheering words while their ears can hear them, and while their hearts can be thrilled and made happier by them. The kind things you mean to say when they are gone, say before they go. Post-mortem kindness does not cheer the burdened spirit.

Do not be ashamed to practise small economies. By that I do not mean that you should be niggardly or penurious, but we all know the old adage "A penny saved is a penny earned," and we must also remember that the one that is saved has just the same purchasing power as the one that is earned. It is only by economy that we get the most good of everything, as what is wasted does no good either to ourselves or others. There is no gainsaying the fact that we live in an age of detail, and that money is not made as in former years, but rather saved by economizing in every possible way. That is what our most progressive farmers are doing, endeavoring to find out where they can cut down expenses, and at the same time increase their returns. We should also try to economize our strength and energy, a great deal of which is wasted in needless work which we do. Let us aim more at health and comfort, and less at ostentation and display, and we cannot fail to be happier.

#### CONVERSATION AT THE TABLE.

By Mrs. Sanderson, Gorrie.

It is not what is eaten, but what is digested that makes one grow, and, as we all know, a little laughter and conversation aid digestion. Dr. Johnston has said it is worth one thousand pounds a year to have the habit of looking on the bright side of things.

As a bright fire on a sharp, frosty day gives warmth and comfort to a cold person, so does a bright countenance and cheerful talk impart a certain degree of happiness to others and help them to look on the bright side of life. Hence we should cultivate conversation that is warm and genial, not cold and repulsive, dark and morose. Personal and sarcastic remarks show not only a bad heart but bad taste also.

Conversation in many cases is just what prevents many people from relapsing into utter selfishness, thus conversation should not simply occupy husband and wife and older members of the family, but extend itself to the children. Parents should be careful to talk with them, to share their trifles and to meet them in the thoughts and feelings of their childhood.

The tastes of your children are being framed now by the things they see and hear, and as that taste is lifted towards the lovely and inspiring, or is allowed to sink



to the merely useful and sordid, so will their lives be full or empty of the things which make life a delight.

An old lady who looked as though she might have belonged to the Sunshine Society all her life, was asked by a friend for the secret of her never-failing cheerfulness. "I think," said the old lady, "it is because we were taught in our family to be cheerful at the table. My father was a lawyer with a great criminal practice. His mind was harassed with difficult problems, yet he always came to the table with a smile and pleasant greeting for everyone, and exerted himself to make the table hour delightful, and the effect was marvellous. We were taught that all petty grievances and jealousies must be forgotten when meal time came, and the habit of being cheerful three times a day under all circumstances had its effect on even the most sullen temper."

"A pocket full of sunshine  
Is better far than gold,  
It drowns the daily sorrows  
Of the young and of the old,  
It fills the world with pleasure  
In field and lane and street,  
And brightens every prospect  
Of the mortals that we meet."

#### GOOD MANNERS.

By Miss G. Taylor.

Good manners are the expression of good breeding, and socially wise, in his generation, was the man who defined good breeding to be "the result of much good sense, some good nature, and a little self-denial for the sake of others, with a view to obtain the same indulgence from them." The essence of good manners lies in a desire to do and to be the best that circumstances permit, and circumstances, under any name are partly of our own making, and more or less directly under our individual control.

An adult, whose immature habits of mind and thought have been formed from contact with, or been guided by, those whose ideals are in contradiction to the best usages, may by study and care correct deficiencies and perhaps entirely overcome them. But the transformation must be wrought through anxiety and doubt which are not conducive to social enjoyment. Such people are apt to look upon the varying forms of social courtesy as shallow pretenses, as indeed they are, to his well-meaning, but untutored mind.

On the other hand the man, whose childhood or youth was blessed by the companionship of cultivated, thoughtful people, whose principles bore fruit in everyday actions of courtesy and kindness, is certain to retain some appreciation of their value; and though circumstances may cast his lot among those whose uncouth ways are excused by the limitation of their surroundings he will ever cherish a regard for the finer modes of daily living, in learning which he also received his earliest lessons in perfect self-control, which underlies the qualities which have made him a leader. Such a man is always ready when circumstances favor, or command, to assume and discharge his social obligations in keeping with the highest standards of taste; and whatever changes of formula may be made to keep pace with the changing conditions of this progressive age, are as readily accepted by him as are the changes of the seasons.

The carriage of the body, the tone of the voice, the place and the time for speech as well as for silence, the self-denial with which good taste checks any act that might from one point of view seem justified, but which, from the high, clear outlook of a well-poised mind would be entirely inexcusable, all these and many other things must be studied by the person who aspires to receive what the world accords to its best men and women.

Good manners are not made up of formulated ceremonies nor unalterable habits, nor should they serve the purpose of a screen behind which to hide our real characters. A civil act is not necessarily a kind act, but it is rarely an unkind act, and the essence of good manners is expressed in the injunction to think and act kindly. Forms may vary, but all is based on civility. The key to the highest, most exacting, and most acceptable social etiquette is a perfect regard for the rights of others.

The mother, who has the highest appreciation of the value of good manners, is the most zealous and efficient educator of her children in such matters. She knows the advantage of early beginnings, but she is apt to forget that the impressionable little creatures hear a great deal which they are not, perhaps, able to repeat, but which leave a strong impression that voices itself in a most unlooked-for and sometimes a very disagreeable manner. Very often these startling expressions of the little growing mind are only laughable, but they teach a lesson, and emphasize the value of household civilities, even where courteous conduct is the rule of life.

A command prefaced by "if you please" loses none of its force, if the speaker be dignified in manner and tone, and its utterance in this form will be more readily repeated by children who have always thus heard it. "Thank you" is quickly said, yet it is not always heard between members of families, who would be shocked if told that they were negligent of the details of good-breeding.

A wholesome respect for those who serve us faithfully cannot be too early instilled into the minds of children, but in fairness it must be said that the absence of any such feeling is very noticeable in the conduct of children in many families. Indeed, the rude and often bolsterous authority which juveniles are allowed to assume when deputed to convey a message to servants, is justly instanced by critical observers of family life in America.

The instinct of dominion is strong in the young, and tends toward the subjugation of those above as well as those below them, but while the evil is as great in one direction as in the other, it operates more disastrously when children are allowed to assume authority which they do not know how to use. One of the most glaring sins against good breeding in the household is thus countenanced, and a child to whom such latitude is given will never (save by the miraculous workings of good sense) become that paragon of society, "an easy" host or hostess.

"Mamma" and "papa" sound stiff and ceremonial to those whose ears have become used to the numerous curt and disrespectful titles which are often vouchsafed to parents. Against such appellations all the gentle graces of good breeding and refinement protest. If "papa" and "mamma" are not easily learned, then begin in the nursery to teach the strong, respectful yet endearing "father" and "mother" of earlier times.

An essential element of good manners is self-control. Not to say the thing that leaps to the lips first, to choke down a bright speech that is at the expense of a companion, to stifle the first desire to say "no" when a plan is eagerly proposed, to put aside a book when one's company is needed, to enter pleasantly a game that does not particularly attract, to suppress an inclination to criticize, these are only suggestions of the numerous ways in which the control of self increases one's ability to please. If we would not violate the laws of good breeding our surest course would be to have every act, however small, conform to the one simple command: "Thou shalt love thy brother."

#### SMALL COURTESIES IN HOME LIFE.

By Mrs. James Gardner, Kemble.

"A man or woman's own good breeding is the best surety against another's bad manners."—Lord Chesterfield.

Temperance in speech is no less a virtue than self restraint in any other di-

rection. Our conversation bears so important a part in social intercourse that we make some attempt at it whenever we meet our friends. It is strange, therefore, that we are not more proficient. In the home circle, however, too much is often taken for granted and the graces of true politeness are sometimes entirely dispeused with. The charm of an agreeable conversation is appreciated by all and its cultivation is within the reach of each. Nothing so quickly opens hospitable doors or shows a warm welcome.

Entertaining conversation does not all depend upon a well-stored mind, a ready wit, or a broad culture, but shows qualities of heart as well as head and should reveal sympathy, sincerity and simplicity. Sympathy and adaptability are in a measure created by a desire to please, but it is not merely from a desire to please in society that manners should be studied, but from the wish to consider the feelings of other people. Manners are much more than the word implies. They include courtesy to all, patience under severe strain, and a calm and modest personality.

We should be sensitive to the mood of our listeners and quick to perceive when some one else wishes to speak. There are talkers who seem to take the bit between their teeth and run away with it, and when they do cease no one has anything to say. The common defect of the talkative woman, is the habit of repeating the same statement several times during a single conversation. Whether she suspects you of deafness, stupidity or inattention it is hard to say, but she will inform you five, ten or twenty times in an hour that her children were all born very clever or that she is very nervous, or that she never eats porridge, or that she always reads in bed, or something else of equally profound interest!

Without sympathy no conversation has any charm. The moment that we perceive that the speaker is trying to produce an effect by unnecessary mention of desirable acquaintances or boasting of advantages, or display of attainments, that moment do we only feel contempt for the affectation and pretence. Truth has a marvellous power of making itself felt, no matter what may be said or done. Frankness is admired by every honest man or woman.

The qualities which put us in wrong positions towards life and cause much unhappiness are selfishness, vanity and a desire for sympathy, popularity or public favor. There are always people whom we cannot come near without the feeling that to interest them we must pay tribute to their vanity or limit our conversation just so it may please them. Another class equally disagreeable are those who have so small a soul that they speak in censure of everything and attempt to belittle the efforts or remarks of everyone else, so that their own virtues may shine in comparison. This class mosly have the fault of expressing themselves in the most extravagant manner, so that one cannot rely upon all that they say.

Vanity makes us unhappy because it causes a useless waste of time, ever striving for popular approval. It keeps us wronging others that our own virtues may shine in contrast. Selfishness makes us hard, narrow and vulgar and vastly lessens our sources of pleasure. Happiness lies in self-forgetfulness, and to secure it we must cheerfully accept the conditions of our lot, hope for the best and have faith in the future, and try to do all we can for ourselves and those about us without worrying about consequences. Self-consciousness is but vanity under a less severe name, and self must be forgotten before we can add to our speech the grace and dignity of simplicity. Dignity is the chief charm of woman, just as conversational brightness is her chief accomplishment. We all want to have that charm, and we feel that it is all-important, but it is so subtle, so hard to understand!

What is dignity and how are we to get it? Of one thing I am sure, that dignity is not conceit. It is not "I-am-better-than-you-in-the-social-scale," it is not the stiffness of sticking to certain rules. Dignity that has to make a sensation is not dignity at all. If it were any of these things I would say throw dignity to the winds. But dignity demands that certain conditions be revered. You must have reverence if you would have dignity. Laugh at shams if you will or the humor of real

life, cultivate the witty reply that hurts no one, but never make a butt of old people, of religion or of love. All three are sacred. There is no old woman who was not once as young as we, with an eye as bright and a soul just as open to the beautiful in life, and perhaps an ambition just as high. We are to her a picture of what she once was, she is to us what we sometime may be, and that is often no laughing matter. Reverence for religion includes other people's religion as well as our own. The singing of the Salvation Army, the feet-washing of the Mennonites and the silent gathering of the Friends should make us feel nearer to God and nearer to heaven.

Gossip has gone out of fashion. It is no longer considered nice to say a word against anyone. An ill-natured remark is a social blunder as well as a moral one in good society. We should not allow lapses of manners or levity, and above all the careless expression of a low-grade of thought. This does not imply pride or haughtiness, nor anything of that kind, but a gentle courtesy that will be uplifting. Even exchanges of civilities cement friendship. To be able to say kind words and few is an accomplishment that any of us may acquire. Let none of us who has not acquired the charm of a low, sweet voice and a kindly disposition grumble over lack of opportunity to improve ourselves.

True culture carries with it an atmosphere of breadth—the world and not the village. To women, more than men, is there a danger of becoming narrow; women lacking breadth, are said to betray by their conversation minds of narrow compass, bounded on the north by her children, on the south by her servants, on the east by her ailments, and on the west by her clothes. The mind grows narrow when occupied by trifles. When ignorant of our ignorance we do not know when we betray ourselves.

To sum up the matter, we should never lose sight of the fact that if we are not to be failures we must be good comrades. Our friends and neighbors and those living near us should be able to rely upon us for qualities of fidelity, faithfulness and affection which all help to make life worth living.

To be over-sensitive, to be rude in reply, or contradictory in disposition is to be altogether unfitted for comradeship, and the good comrade always has something to add to the common fund, some fun, some fancy, some bit of song, and thus the days go on in brightness and nobody minds if the road be rough.

## THE CARE OF THE PERSON AND ITS INFLUENCE UPON THOSE WE MEET.

By Mrs W. R. Vandervoort, Wallbridge.

I hardly know how to commence my subject, so many ideas crowd upon me, and as time is limited I wish only to give the more important or essential points.

Let us begin by considering cleanliness of the person. 1st, Its relation to health and comfort, and, 2nd, The influence it causes us to have over others.

The Bath. The bath tub is an important article in the household; and I am sorry to say I find its importance in the country is overlooked or underestimated, chiefly, I believe, because of the inconvenience and difficulty connected with it in the ordinary farm house. There they have no room set apart on purpose for a bathroom, but have to use the kitchen or living room, and as this course excludes the rest of the family until the ablutions are over, they are too frequently, I fear, performed altogether too hurriedly to be thorough. This is more especially so during the winter months on account of the difficulty of having a warm room.

The Duty of the Skin. At the very least, once a week, just before retiring a good warm bath should be taken and an entire change of garments that have been worn next to the person should follow, for the following reasons: The skin is continually throwing off impurities through the pores. Without bathing, these pores in a certain degree, become clogged, and unable to do their duty properly. The clothing next the skin, naturally

becomes laden with these impurities thrown off. A good bath cleanses and opens up the pores and if the same garments are again put on, the skin (which performs a double duty, that of absorbing or inhaling) begins immediately to re-absorb the impurities previously thrown off, which doubtless in the long run is conducive to ill-health.

These two functions of the skin may be easily noted by any one. You have all observed at times that the skin will give off considerable moisture or perspiration, usually of a more or less disagreeable odor, caused by the impurities or waste from the system, which it contains. Now, this process is going on all the time, although we are not always sensible of the fact.

The absorbing properties are also prominently brought to our notice, especially in cases of disease contracted by contagion, which we all understand, means by contact or touch. Again—we apply a blister or liniment to relieve certain ailments. These would be utterly useless if it were not for the absorbing function of the skin.

Some people find it difficult, even although they frequently and regularly take their bath, to remove entirely the odor from perspiration. To such I would say, get five or ten cents' worth of salicylic acid from your druggist and dissolve a pinch of it in a little water, and after a bath sponge with it the parts of the body from which the trouble arises. This is an excellent remedy and cheap also, for the five or ten cents' worth will last about a year.

**The Hair.** In the proper care of the person it is necessary that the hair should always be neatly dressed, not as I have sometimes heard of, viz., just smoothing it on top and twisting in a knot until after breakfast. Upon rising all tangles should be removed and the hair neatly coiled or braided.

A farmer's wife or daughter is a busy woman and has no time in the morning for curling tongs or crimping pins, yet she owes it to her own self-respect and also to the rest of the family to sit down to the breakfast table neat and clean-looking.

**The Teeth.** The teeth should never be neglected. What is more offensive looking than a mouth full of dirty, brown-colored teeth, with remnants of the last meal still adhering to them (or perhaps from a meal partaken of some six weeks before)? Foul teeth are always accompanied by a more or less foul breath. Neglected teeth are frequently the primary cause of stomach troubles; simply because the food left between and around the teeth becomes fermented and decays, inducing decay of the teeth; and as particles of this decayed and decaying matter are continually being carried to the stomach by the process of swallowing, after a while the poor stomach gets into trouble.

**Finger-nails and Hands.** It is also important that the finger-nails should be well cared for, and not allowed to wear a black band of mourning. With very little daily care the hands and nails will always be respectable looking. It is unnecessary, because we do our own work, that our hands should be rough or stained. It is because of carelessness or neglect that they become so.

**Toilet Requisites.** Always keep on the toilet table a bottle of tartaric acid for removing stains, a nail brush or scrub brush and a bottle of rose water and glycerine (equal parts of each or a little more rose water than glycerine, and a few drops of carbolic acid. Any druggist will put it up) or a cake of vaseline camphor-ice. I keep both. Do not just keep them on the table; they are for daily use, not ornament.

**Apparel.** Now a few words in regard to apparel. Those who, like myself, have to do their own work, find it necessary to wear something that will not show soil too quickly and can be washed frequently. I find a neatly-made rather close-fitting wrapper meets all my requirements. It never parts at the waist line, no matter whether you stoop, bend or reach up, like a skirt and shirt waist or blouse frequently do. Then also it is quickly donned, and the weight is all borne by the shoulders. A little wash lace around the neck or a bright ribbon at the throat adds much to the attractiveness of the gown. By all means let it be short, and have the underskirts short also.

**Boots.** Thick-soled boots with low heels (they need not be expensive) are

preferable for working in. They are a protection against dampness, a protection against chilliness about the ankles and the feet do not get so tired.

Minds. We should strive to clothe our minds with beautiful thoughts and ideas by giving some time to proper reading and study. If we cultivate beautiful thoughts by reading works of an elevating and refining character then will our conversation be beautiful, refined and attractive, for "out of the fullness of the heart the mouth speaketh."

Conclusion. Thus far I have endeavored to briefly outline the care we should bestow on our person—neglect these particulars and what will be the result? Lack of proper bathing means a poor complexion, a disagreeable odor of perspiration, and probably not as good health as the free, regular bather. Neglect of hair and apparel will give an untidy appearance that will not attract or gain friends for you, even if it should not be the cause of your losing the few friends you may have. Neglect of teeth and hands will only add to the already untidy effect, and neglect of proper cultivation of the mind will give a mind whose highest enjoyment is local gossip, scandal and chit-chat, destitute of refinement and culture.

Attention to the foregoing principles will make a girl or woman neat, clean, bright, intelligent and attractive. Her company will be sought after and respect and deference will be paid to her opinion and wishes, which will be in great contrast to her more careless and neglected sister, whose company is unsought, who is untidy in appearance, unattractive and unable to enter into or enjoy the higher refining things of nature.

#### THE HOME, AND SOME OF THE WAYS OF MAKING IT ATTRACTIVE.

By Mrs. J. J. D. Banting, Cookstown.

Recently, a London magazine sent out one thousand inquiries in the question "What is Home?" In reply there were a great many different ideas given. One was: "A world of strife shut out and a world of love shut in." That is no doubt what it should be, but I fear it is quite as often "A world of love shut out and strife within." Another answer was: "A Father's kingdom, a Mother's world and a Child's paradise," and many others much the same as these ones I have mentioned. In order to have a happy home each member of the family must do his or her part to make it so. We must be unselfish, kind and considerate one for another, always doing things for the comfort and happiness of the other members of the family, and forgetting ourselves at all times. And if each one does that there will be no doubt but all will be happy. The wife and mother is the chief home-maker.

The ideal wife's great sphere is found in her home, and if she is what she ought to be, home will be the dearest spot on earth to her. She must not think of her home and home duties as of secondary importance. The women of the 20th century are lowering the high and noble standard of the true woman.

If women of to-day devoted more of their time to making their homes bright and attractive for their husbands and sons and not spending so much time over society fads, there would not be so many frequenters of the saloons and other degrading places.

I do not mean to say by this, that her whole time should be devoted to home duties, for every woman owes something to the world, and needs plenty of fresh air and recreation for the good of her general health, but the bulk of her influence should be brought to bear upon her home. A wife should be neat, tidy and cheerful in her home. Of course there are times when this is not possible, but they should not be frequent.

Speak words of kindness to those around us; let them know our love for them. Scatter more roses while they are living and not, as it is too often the case, keep all the roses till after they have gone from us where they know nothing of our tributes of affection.

A woman may not be a belle of society or queen of fashion, but if she is kind, sympathetic and forgiving and her chief pride is in her husband, children and home, she cannot go far astray. Mothers, whether your children are girls or boys, allow them to have their friends in to spend a few hours at their homes and provide games and other pleasures to keep them from drifting away, and treat your children in such a way that they will respect and love you, making you their confidant, telling you everything, whether joys or sorrows. Teach them to ever look to their Heavenly Father for help and comfort who is the giver of all good, and when you depart this life they will rise up and call you blessed.

Let us keep before our eyes at all times this motto, or text :

“Christ is the head of this house.  
The unseen guest at every meal;  
The silent listener to every conversa-  
tion.”

### CHILD TRAINING.

By Mrs. W. G. Strong, Gorrie.

Although I have never had the joy of being a mother, yet, I feel I know a little about children as I was one of a family of twelve, and at the age of fifteen I took charge of the lowest department of the Perth Public School for five years, where I had on the roll over one hundred names, and from about the same time until I came to Gorrie to live (with the exception of about a year when my husband was ill) I taught in the Sabbath School, so I have always been closely associated with children, and it has always been an interesting study to note the different ways and dispositions of the little ones.

Judging from appearances few mothers realize the importance of beginning with the infant to lay the foundation of a noble manhood and womanhood. To be sure some children are born with vicious inclinations that the best training cannot wholly eradicate, but proper training from infancy will greatly improve the character of the adult, however evil he may be naturally.

The proper time to begin the moral education of the child is six months before its birth. The mother should begin the child's training at this time by training her own mind. What she desires her child to be she should be herself during this period. During this six months she should act freely in accordance with her feelings, but she should guard against that which would tend to rouse in herself such emotions and desires as she would not wish to see reproduced as natural tendencies in her child. She should occupy the mind only with such things as are pure and good. For instance, if she be anxious for her child to be an advocate of the cause of temperance she should employ her mind with this subject daily; she should read the best temperance literature; she should make it a subject of much conversation; she should strive to rouse every fibre of her being against this terrible evil. Should she desire a child with a religious turn of mind, she should make this a constant subject of thought; she should study her Bible, and devote much time to the reading of carefully-selected literature treating of this subject. The best selection she could make is the Life of Christ, keeping Him constantly before her mind, dwelling upon the holiness of His character. The proper age to begin the direct training of a child depends upon the child, some children's minds being farther developed at six months of age than others at twelve months, but it would be safe to say that no child, unless idiotic, is too young when a year old to begin his moral education.

One of the first things to begin teaching a child is self-control. The man or woman who gives vent to ill-temper by throwing and kicking everything in reach, can trace the cause to having been permitted to indulge in such outbursts when a child. When a child becomes old enough to scream and kick, when not allowed to do as he

desires, he has reached the age when he should be taught self-control. When a child is showing ill-temper in this way he should be made to stop immediately. This should be done by holding him in a sitting position and thus compelling him to sit quietly, speaking to him, and not in a loud and angry tone, but quietly and firmly. After he is old enough to run about, and in anger throws himself upon the floor, screaming and kicking, he should be made to get upon his feet immediately; or, if he should throw his playthings about, this should also be checked. A child should early be taught that such outbursts of anger will not be tolerated for a moment. It is a very grave mistake to allow children to indulge in fits of passion. One of the first lessons to be persistently inculcated is that of self-control. If self-control were the subject of more thought and instruction, there would be fewer lunatics in the world. If the history of more than half the insane persons in the world could be traced back step by step to infancy, there would be found the root of the evil in unchecked fits of anger. Anger grows by what it feeds on, and the oftener it is indulged in the more frequent and rampant it grows, and it goes without saying that the longer a habit has existed the harder will be its stamping out.

Obedience must be taught a child early if it be taught at all. How often we hear a mother tell her child to do a certain thing, giving the command in an ordinary tone of voice, but the child gives it no attention, even when the command is repeated, and not until the command is finally given loudly and sharply does he render obedience. The mother is wholly at fault for such a state of things. If a child be taught to obey as soon as he is old enough to understand a command he will continue to render prompt obedience in later years. The child who before obeying waits for the command to be screamed at him does so because he has learned by past experience that it is not necessary to obey commands given in an ordinary tone of voice. It was only when mother raised her voice to a very high and angry tone that she ever enforced obedience, therefore it is safe to give no attention to commands not given in a high key.

The mother who permits her children to do just as their inclinations prompt them, except at such times as she feels tired, nervous and angry, and then when a child is doing only what he has done repeatedly during the day, is surprised by suddenly receiving a smart slap on the ear or severe shaking, need never expect obedience from her children except when it is obtained by force. A mother should never enforce obedience when angry unless she has such perfect control of herself that her anger is not made manifest in either looks, speech or actions. It requires a firm steady hand to successfully rear children. A mother must herself exercise self-control if she would teach it to her children or teach them obedience. All commands or rebukes should be administered in a quiet, firm tone of voice. Scolding should never be indulged in. Wherever you find a mother who indulges in scolding from morning till night, you will invariably find disobedient and ill-behaved children.

It is unwise to make too many commands for children to obey, especially is this true of very young children. To err in exacting the strictest decorum at all times from small children is as great a mistake as allowing them too much freedom. Miniature men or women should neither be desired nor expected; but, when you do give a command, do not permit a failure to obey pass unnoticed. Do not refuse a child what he desires, and then, to get rid of his teasing and crying, grant his request. A child should be early taught that no means no, and never yes. If you have been foolish enough to say "no" when it would have been as well to have said yes, stick to it. It is granting a child's request after you have once denied him that causes him to tease and cry when he is denied, for he has good reason for thinking that such a proceeding will procure what he desires.

The child with a wilful, stubborn, disposition, will be found to be extremely difficult to manage, and his case will require different treatment than that of children whose dispositions are pleasanter. It will be found that while one person cannot obtain obedience from him without using force bordering on to cruelty, another would



have no difficulty. This is due to the difference of manner and method chosen by those who require obedience from such a child. The manner which one assumes in giving a command immediately arouses the child's wilfulness to its full extent. Such a child should be asked to do a thing rather than told to do it. Great care should be exercised that this obstinacy may not be roused, but kept as inactive as possible, for wilfulness will be sure to strengthen with use, and the child's will already predominates over his other faculties, and it should not be brought into activity; and in after years what was once stubbornness in the child will be only a healthy strength of mind and purpose in the man or woman.

When the child refuses to obey, it is much better to make no attempt to enforce obedience. For example, should you tell him to pick up a plaything from the floor, and he refuses to obey, do not insist upon his doing it, and do not repeat the request. Do not say anything, but pick it up yourself and then without in any way manifesting anger proceed to administer some punishment—something unpleasant enough to make him more careful to obey in future. Do not frequently administer corporal punishment, whatever the disposition of your children may be, and, in some instances, we would question the wisdom of employing it at all. Be sure that a child shows decided improvement in behavior after receiving a whipping and that nothing else would have given the same result, and then let a whipping be applied so rarely and smartly that it will be something to dread. At first, when a child is very young, in order to make it understand the necessity of obedience, it seems often times necessary to apply slight spankings, but in a short time such punishment may be laid aside with profit, only whipping a child when every other means has failed. It is a suggestive fact that the child to whom a whipping is an everyday occurrence, seldom obeys without it. Never punish children by shaking them or boxing or pulling the ears. Such punishment rouses the child's anger and does much harm.

If you wish to have your children grow into plucky, independent men and women teach them self-dependence. Do not do for a child what he can do for himself. Do not wait upon your children or permit others to do it; it makes helpless puppets of them and causes them to grow up into useless men and women, rather teach them to wait upon others. Do not run to pick up the little tot and pity and coddle him every time he receives a bump, instead, when he is only slightly hurt, tell him not to mind, but jump right up. This treatment will help to harden him for the storms of life in after years. Never attempt to turn the child's mind from his hurt by pretending to scold the object upon which he received his injury, saying, for instance, "Naughty chair to hurt baby," and striking it with the hand or whip as many unwise parents often do, for this course is the first lesson in violence and cruelty. Show children by example, as well as by precept, how beautiful truthfulness is, and how lovely kindness is, and they will get to love these virtues and practise them. When they are especially kind reward them by your warmest praise and approval, for all human beings with warm hearts love approval and appreciation. The child's tendencies should be carefully watched and everything in him which appears vicious or unpleasant should be nipped in the bud.

If a child is cruel and domineering to its little associates it should be sternly reproved and taught to behave gently and kindly. Boys should be especially taught to be tender and chivalrous to all girls and particularly to their sisters. Children who treat their pets roughly and cruelly should be deprived of them. No right-minded person places a little, helpless dumb creature in the complete power of young children who are cruel, through ignorance or through a vicious nature. The treatment of pets should be watched by the mothers of children having them. Watch a group of children while at play. Even the refinement of a pure home is not a sufficient antidote for the poisons of the unguarded play. Something goes amiss and they begin to quarrel. Did you imagine that the smiling lips of your neighbor's sweet-faced, blue-eyed girl could give utterance to such naughty words? or that yonder bright-eyed, manly-looking boy possessed such an uncontrollable, unreasonable temper? Your

own boy and girl. If allowed to play unwatched with such children, will soon know and use them same words and give evidence of an equally bad temper. A few words kindly and wisely spoken at the right moment by a watchful mother would have calmed the troubled little souls and perhaps taught each of them a needed lesson in patience and unselfishness. There is no time when a mother can watch her children with as much advantage to herself and to them as while they are at play.

We hear a good deal about "woman's rights," but there is one field of work to which woman holds undisputed possession. I refer to the care and training of children. It is a most important and honorable work. We should educate and train the hearts and consciences of the children so they can discern right from wrong and have that moral courage necessary to stand up to their convictions, and to mothers falls this great responsibility. Then of what vital importance it is that we have a well-trained and disciplined heart and conscience. How are we to obtain this training? Every time we overcome the irritation caused by annoyances, of which no one knows as well as a mother and housekeeper, we are progressing and are better able to cope with the next one. Our daily and hourly trials are a part of our training! "He knoweth the way I take and when He has tried me, I shall come forth as gold." If the children hear us constantly fretting, how can they help falling into the habit? We must "Press toward the mark of the high calling of woman."

A friend recently said to me, "One gets narrow and mean living the life I do, no society or companionship except that of my baby and an occasional glimpse of my husband, I feel myself a nonentity." What a mistake that mother makes in saying so. In the few months she is shut up with her baby is her opportunity to do something toward her own uplifting, for surely no sensible woman would spend all her time in caring for one baby. She was once a fine musician, but has let it all go, for she says, "No one cares to hear me now." It is her duty to do the best she can for herself, not only for her good, but for the sake of husband and child. It does not pay, dear mothers, to let every little accomplishment and grace of mind and person drift away from us without trying to keep them. We shall not always be taking care of babies, but when I am through I want my children to see enough loveliness in mother to still yield her respect and admiration as well as love. We should constantly keep the future before us and the time when these babies can appreciate our work, both for them and for ourselves, and it will surely have a refining effect upon them.

Take five minutes every day and retire from the world. It will benefit you and your family. Give a little attention to the joys and sorrows of the children. They enjoy anything much more if mamma is interested and if we take the time we can almost always straighten out their troubles for them. "Therefore let us lay aside every weight and the sin of fretting which doth so easily beset us and run with patience the race that is set before us." "Finally, whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are of good report, if there be any virtue, if there be any praise, think on these things," and teach the children to think on them also.

In the great scheme of life each individual has her own work waiting her doing. I cannot do your work and you cannot do mine. If you or I by negligence do not do our share, ten thousand millions of willing souls cannot do the very smallest part that was ours to do, but which we left undone, and when the last great assize is called we shall have to answer for every sin of omission that stands charged against us.

How beautiful is a sound and perfectly developed body. How tender and sweet and altogether lovely a sound and perfectly developed soul! By perfect, I do not mean complete, but rather true. Is there any greater work than the feeding of these tender little soul-buds until they shall have blossomed into maturity? That no blight shall touch their beauty, no silly or coarse soul brush from the petals the dew of innocence, no rough wind disfigure them, no heavy hand give them pain, or thoughtless mind shut out the sunlight, you will need to give them abundance of such food as

Jesus gave to the multitudes that thronged Him, and that was sent to the children of Israel during their wanderings—manna fresh from heaven every day. This is the "bread of life," and to hold in mind that it must be given every day is half of the secret of soul nourishment. A blessing asked for over the flour barrel will not dispense with the necessity of asking a blessing over each loaf that the flour is made into.

Oh! dear mothers and fathers, do not feed your children's souls with hate and envy, greed and love of self. Be careful not to teach them these things by example or by precept. Do not let them see that you prefer your own pleasure before others, that you are thoughtless of other's sufferings or deaf and blind to other's needs. Teach them Jesus' life and show them you are trying to live it. Show them that you feel only love and pity for all of God's children and kindness towards all His creatures, and joy in all His grand and beautiful works. Show them your sympathy with all suffering, your aid to all helplessness, your pity for all wrong. If your children find you busy saying and doing such things as will comfort and cheer and help others you will not cultivate that sensitiveness that grows by constant consideration of self, as to whether people are saying and doing to them just what they ought. This is a common mistake that makes many lives miserable, and if persevered in, these lives come to be made of the sayings and doings and supposed thoughts of other people toward them. Teach them by example and a few words to see only the good in everyone, to ignore the wrong, and to do and say the kindest things in the kindest way they can think of. A child whose mind is so directed will respect all, and think of the real person, rather than of his dress, his features and his manners. If you let them fill their minds with the faults and appearances of others, they will despise and ridicule them, and miss the good. If their minds are directed to the real and the really beautiful in each, they will approach people with thoughts and feelings that will speak to like thoughts and feelings in others and draw out to view as the sunbeams draw out the blossoms. So will children be taught respect, consideration and ability to see the good and beautiful in everyone. When their little playmates are disagreeable or lose their tempers, they can be led to forget their own personal feelings and to consider only what they can do to restore harmony and make the little playmate happy. If they see you handling the Bible with reverence, loving to read it, speaking God's name as of one you reverence and love and speaking about Him as one to be trusted in all things, if they see that in all the contraries of life you rest in this trust, nothing doubting, you will give your children soul food that will do more for them in this life and the next than all else that is possible to do. Whatever else has to be neglected do not neglect to feed the children, body, mind and soul.

## TRAINING OF CHILDREN AT HOME AND AT SCHOOL.

By Miss E. Shea, Beatrice.

"Blessed are they who do hunger and thirst after the knowledge of how to direct, instead of suppress, the spontaneous activity of childhood, for they shall make happy, competent and virtuous children."

Gaining Confidence. One of the first things necessary to gain the confidence of the children is to show confidence in them; to believe them; not to suspect them; but to take it for granted that they will do right. All children like to make confidants of some one. This confidence cannot be forced, even in the case of a little child, any more than a flower can be forced to bloom by picking open its petals.

A child's nature closely resembles a flower in its sensitiveness and development. Parents should never compel their children to give confidence. Children should have their own little plans and at the same time they should be taught to defend them. It is no uncommon occurrence to see a boy or girl fixing up a play house. They each have their own plans for putting up shelves, hooks, etc., and in their unguarded

moments they confide their plans to their father and are at once advised by him to change the whole plan. The result is that the next time they will keep their plans to themselves. In doing this they find refuge in concealment and thus destroy the element of frankness which is such a beautiful trait in the young. We should approach the children in their planning with such a spirit as will enable them to offer us a place in what they are doing. We can watch their work and give a suggestion here and there which will be accepted kindly, and in the end we may have enabled them to see something which they would not have seen unaided.

Parents should never promise their children anything unless it is an absolute fact that they will give it. You will very often hear a mother say to her little daughter, "Now, Mary, I am going to town next week and if you are a good little girl, and mind little Harry while I do some work, I will buy you a doll." The little girl's face is beaming with joy at the idea, she rocks and takes care of little Harry from morning till night, but by accident little Harry gets a fall, what is the consequence? You may depend the mother is quite angry and little Mary gets a bad scolding and to make matters still worse, she tells her politely that since she has acted thus she will not get her the doll. How cruel! Was it Mary's fault? No. Her little arms were not strong enough to hold Harry. She had done her best and still received no credit. Little Mary is very much disappointed, and you may depend she will never have the same confidence in her mother or in any other person who would act thus.

Parents will very often give their children a lamb, colt or some other animal to have and take care of for their own. For example, a father gives his son a lamb. The boy takes a special delight in feeding it, while at the same time he is planning what he will get with the proceeds when he sells it. The time comes after long and careful feeding when the lamb is ready for market, the butcher drives up, takes the lamb and gives the pay to the father. The little boy looks on with wistful eyes and wonders why the butcher did not give the pay to him, but he feels quite till night, but by accident little Harry gets a fall. What is the consequence? You may judge what follows. The father simply puts the money in his pocket and says no more about it, and the poor child is too timid to speak to his father and ask for his rights. What is the consequence? The boy silently glides away and when he has reached a spot where he thinks nobody will hear him he has a hearty cry. Poor boy! he is discouraged in every sense of the word. Perhaps this may be an act of thoughtlessness on the part of the father, but this does not make it any easier for the boy.

Keeping Children on the Farm. It should be the aim of every farmer to keep his children on the farm, as there is no position more honorable than that of a farmer. Some of the so-called farmers reply, "Well, they won't stay on the farm!" One replies, "There is that John of mine, who said when he left me that he had worked his last day on the farm. And then there is Mary Ann, what did she say? She said she wanted to earn money for herself and that there was no show of ever making any on the farm. So they went." And then this farmer wonders why his children have left the farm. The reason is he never gave them any encouragement to remain. Children need encouragement as well as grown people. Give the children something for their own. Let them raise and take charge of it, and when the time comes for selling it, let them sell it. Do not let them run away with the idea that there is no money in farming. It does not cost much to get children interested in the farm and not only that, but they also see that farming, if properly done, is a money-making business.

The same rule in regard to the confidence of the children will apply to the teacher. Children should have confidence in the integrity and uprightness of the teacher. The surest way for a teacher to render her pupils worthy of confidence is to trust them. Let the pupils know that you expect them to act honorably and they will generally do so. They will appreciate at its true value the vigilance you may find it necessary to employ in guarding them from evil and you will have the satisfaction of

seeing them grow up into open-hearted, generous boys and girls. Suspicion is the mark of a weak, cowardly disposition. It can only produce falsehood, injustice and treachery. We want our Canadian youths to grow up with the constant feeling that they are expected to do right, and for this reason are trusted by their teacher.

**Duty of Parents to Teacher.** Parents should help and sustain the teachers in their work. They should impress upon their children the duty of respectful and cheerful obedience. For any parent to discredit a teacher is neither wise nor just. Easy control is out of the question when parents are so forgetful of the welfare of their children as to make disparaging remarks of the teacher. Parents should have their children attend school every day possible, as irregularity is a hindrance to both teacher and pupils. Also train them to the habit of punctuality. Instil in children these habits, and when they are old they will not depart from them.

**Obedience.** Children should be trained to obey through love and respect, not through fear. Young children must be trained to do what they are told to do before they are competent to understand the true value of obedience. The teacher or parent must in every case understand to what extent it may be safe to allow a pupil to act on his own responsibility. It is a mistake to make threats and constant entreaties. Children should obey directly through a sense of duty. The child who refuses to obey directly when spoken to should be dealt with promptly.

**Truthfulness.** Truthfulness has been called the central pillar of character. The way to make children truthful is not by set lessons, but by constantly cultivating habits of truthfulness. They should feel that they can be trusted. Falsehood when made clear should be followed by suitable punishment. Untruthfulness is often the result of fear. This should never become the governing agency in promoting truthfulness. The parent or teacher who cannot look down into the heart of a little child and understand its conflicting emotions has much to learn. Parents should never allow their children to be discouraged, as it leads to mean, sneaking habits.

**Neatness.** Neatness is a personal virtue. "A place for everything and everything in its place" is necessary to both parents and teacher. A slovenly way of attending to duties shows a lack of culture. Children should be taught from early infancy to be neat.

In very many of our homes you will see the boys and girls come in from their work, throw their mitts in one corner, their caps in another and their coat in another. This goes all right until they want them and then it is. "Mother, did you see my cap?" "Jack, have you my mitts?" etc. The house is in a perfect uproar before everything is found. Now this disorder could all be checked by having hooks in reach of the children and by seeing that their clothes were always hung there when they came in. A better plan would be to have a hook for each child and to see that it was used by that child only. Children should always be expected to keep their faces and hands clean, their clothes tidy and their hair well kept.

As for neatness at school, a well-conducted school fosters habits of neatness. The teacher's desk, the pupil's desk, the apparatus, the school room and grounds should be models of order and neatness. A schoolroom that is dirty or untidy from waste-paper, apple cores, etc., shows indifference to the formation of character. The pupils being trained to habits of order in the schoolroom will be prepared to carry their orderly habits through life.

**OUR BOYS. HOW SHALL WE EDUCATE AND INFLUENCE SO TO KEEP THEM ON THE FARM ?**

By a Member of North Grey Women's Institute.

It is a curious proof of a certain quality in the human mind—sometimes called discontent, sometimes mildly named "love of change," that while many who dwell in cities pine for the seldom-enjoyed country, those whose beautiful homes are amidst the

woods and the hills and streams often are in haste to leave them and take up their abode in the city. Why is this the case with so much to make life in the country healthful, pleasant and profitable? Why is it that so many of our boys rush to the towns and cities to become too often a failure as business or professional men? I have asked myself the question "How much has home life to do with this state of things? How much blame lies at our own door and what can we do to prevent the frequent recurrence of the difficulty; what can we do as parents and what can we do as sisters?"

I am well aware that many of the young men who go out from the farm into other walks of life, are eminently successful. To-day farmers' sons are filling some of the best and most responsible positions in business and professional circles, and some of our most talented ministers are those who took their first lesson in agriculture from Nature's text-book, while they were faithfully performing their duties as farmers' sons.

This opens up a wide field for study, and the intelligent lad of twelve or fourteen, who has spent his time industriously on his father's farm has become possessed of a tolerably thorough knowledge of many useful things of which the city boy is entirely ignorant. It seems to me there is a tendency among farmers' boys to underrate their position. There is a certain class of young men who assume an air of superiority and talk vaguely about the "poor farmer," until the farmers' boys begin to think that their position is an inferior one. Such remarks contain a covert sneer at the farmer, which, though some have spirit enough not to be influenced by, yet others who are of a more yielding nature cannot resist, and become discontented. If they mean that we are not possessed of riches, perhaps quite a number will have to plead guilty to the charge, but "wealth is not worth" and "poverty is no crime." On the contrary it has frequently been a blessing. While riches have been the ruin of many a man, the necessity to work has been the salvation of many. It has called into action talents that otherwise would have lain dormant, and some of man's best energies have thus been developed. Ability and necessity lie very close together.

We should endeavor from early childhood to inculcate in the minds of the boys a correct idea of true respectability. While I would not have them think of themselves more highly than they ought to think, I believe we should impress on them more emphatically than is usually done, the fact that our calling is a high and honorable one; that we as a class are not people to be looked down upon, pitied and patronized, but intelligent men and women, able to take our place in and do honor to the community in which we live.

Then we should educate the boy who is to stay on the farm with a view to fitting him for the work. Some say that education spoils the boy and makes him dislike the farm. I confess that I cannot see the matter just in that light. I think, however, there is a mistake made in giving our boy over entirely to the cramming process. During his early boyhood and parallel with his scholastic training, he should be taught to do practical work on the farm. If our boy has done such work well (his appointed tasks) let us speak encouragingly and tell him so. We are not usually afraid to tell him if he fails; we do not as a rule scruple at pointing out to him his defects. Why not then be equally prompt in meting out a few words of well-merited praise. Never compare him with other boys in such a way as to make him suffer by the comparison.

As he grows up we should do all we can within our means to gratify his tastes and inclinations as to the working of the farm and in improvements in buildings, so far as tastes and inclinations are compatible with proper economy and good judgment. By these means an interest in the occupation he is to follow through life will be excited, which will increase with his strength and the development of his mind. We must remember that our boy, though our own flesh and blood, has an individuality of his own. The influence we have exerted over him in his early childhood and youth has no doubt moulded his character to a certain extent, has helped to form his likes

and dislikes and directed his thoughts into certain channels. But, notwithstanding this fact, he is a separate personality with a will of his own and thoughts and opinions of his own which we, though his parents, should respect as much as those of a stranger.

Then I think we should try to keep pace with the times so that we can enter more fully into the thoughts, feelings and desires of our children. As we grow older there seems to be a tendency with most of us to live in the past, while our children are living in the present. We are apt to argue that what was good enough for us twenty, thirty, or forty years ago when we were young, is good enough for our boys, forgetting the changes which time has wrought and that our requirements were as fully met when we were young as those of our children are now, or perhaps more so.

With these few remarks regarding his education, let us for a moment consider how we can influence him as mothers and sisters. What can we do to make home pleasant for the boy, who has chosen to stay on the farm, so pleasant that he will not become discontented and wish to leave the dear old home to pass into the hands of strangers? I wonder how many mothers and sisters as they have yearned for some absent one have asked themselves the question, "Did I exert myself and endeavor in every possible way to make for my boy, a home which was to him the dearest, pleasantest, coziest spot on the face of the earth, the place above all places to be desired? Such is just what home ought to be, whether the sheltering roof be that of a palace or a cottage, and with few exceptions it is within the power of mothers and sisters to make it such.

We know that sometimes the girls, as well as the boys, are dissatisfied with country life. We are not going to discuss that side of the question just now, but presuppose that the girls are perfectly satisfied with the little corners of this beautiful earth where Providence has placed them. An eminent writer has said, "Not one-half of the people know how to make a home." To learn this art is one of the greatest and most useful studies of a woman's life. We should have everything about our home as bright and attractive as possible. In order to do this it is not necessary to have costly adornments, velvet carpets, tapestry hangings and endless bric-a-brac. They are not essential to happiness and comfort. Expensive trappings, like luxurious viands, fall to the lot of the few, not the many, of our land. However, we should study to make the most of our belongings and arrange our rooms in the most tasteful manner possible. Usually boys appreciate a neat, tidy room, and I believe their behavior is much improved by it.

In our work of making our homes attractive we should not forget the kitchen. We talk about the influence of the press and of education, and of the influences of a vast number of other things, but at present I would remind you of the influence of the kitchen. The kitchen is really the heart of the home and although I do not advocate living entirely in it, yet in rural districts it is often the most frequented room in the house and should be the most cheerful. It is the room around which the memories of childhood seem to cluster. There is no doubt that some present, upon whom Father Time has left his touch, have tender recollections of the spacious home kitchen with its scrupulously clean sanded floor, its wide fire place with the singing kettle standing on the hearth, its blazing wood fires in the light of which you built your fairy palaces, the shining tins hanging on the wall of whitewashed logs and pervading everywhere the odor of savory dishes, which the busy but loving mother is preparing for the coming meal. Such scenes we love to look back upon, and many of the impressions received in the old home kitchen will be carried with us to the end of life, and many of us feel we are better men and women for the early impressions, although our means for adornment may have been limited.

We should remember it is not always the most expensive articles which are the neatest and prettiest. The work of ornamentation of our homes should extend beyond the four walls of our dwelling. It is not much trouble to raise a few hardy annuals or keep in order a small collection of geraniums. A few well-kept flower beds

add greatly to the attractiveness of our homes. In whatever circumstances we are placed we should always endeavor to be contented and cheerful, and always have a pleasant word for the boys. This is no doubt more easily said than done, for the average boy is often a trying institution. Still we ought to strive to attain this state of perfection and never by word or look cause him to feel that they are in the way, but on the contrary impress upon them the fact that their presence in the home is necessary for our happiness. Help them in their games and innocent pastimes, making home pleasant for them. Then they will not seek entertainment elsewhere.

Be quick to render little sisterly attentions, such as keeping their wardrobes in order, and not too quick to chide if occasionally a stray collar or tie be found out of place or the print of a soiled boot be left upon the scrupulously clean floor. There may come a time when you will long to see the footprints of your brother, but look for them in vain. We should attend carefully to the physical wants of the boys, even going so far as to consult their likes and dislikes in culinary matters. No matter how plain the meal which is served let it be well cooked and wholesome, and spread upon a covered table with a clean cloth, in a neat and orderly manner, and not in any-way-will-do fashion. No girl's education is complete until she can not only properly cook and serve a meal, but knows how to perform every other duty which falls to the lot of the housekeeper, which is essential to the happiness and comfort of her loved ones. Such work is not drudgery, it is a vocation. It is not degrading. Canon Farrar says, "A life spent in brushing clothes, washing crockery and sweeping floors may yet be a life so ennobled that for the sake of it a king might gladly yield his crown." The women of our rural districts, notwithstanding the numerous duties which fall to their lot, are by study and practice making their homes attractive to their sons and brothers, a place to be desired above every other place, and doing a work and exerting a moral influence which will be felt for years to come.

### HOUSEHOLD ECONOMICS.

By Mrs. Colin Campbell, Goderich.

Among the hopeful signs of progress now before us none are more encouraging than our rapid development along the lines of household economics. Those intricate and valuable services performed in the home are no longer left confidently to untrained hands and untaught heads.

Household Economics cover all subjects which relate to the location, architecture, furniture and sanitation of the house, the proper food, clothing and exercise for the individual and the conditions of life to which these are a means. We have come to see that this work is not merely service, but an art, based on scientific principles. Certain phases of this subject should form part of the education of every woman and every man. No one can afford to-day to be without at least an elementary knowledge of sanitary science. No one can afford to be ignorant of those principles which make the home happy, healthy and elevating, nor of the forces which are working against it or for it.

Training for the Home. It is repeatedly said that the teaching in our schools should find closer application to the home. The problem is how to make this application. The home demands the very highest intelligence and training. The schools and colleges have certainly an important place in the training of women for home-makers.

Education includes more and more the development, not only of the mind, but of the directing capacity of the mind, to qualify women to take their place in the actual daily life where their lot is cast. The average college-trained woman cannot fairly be charged with inefficiency when she has undertaken the superintendence of a home. Her management has been above the average in sanitary conditions, in the



moral and intellectual training of the children and in all that makes for the high ideals of life. Yet no one can doubt that her life would be more useful, that she would pay fewer premiums to experience, if she had been taught to apply her science to home affairs. The training that will conduce to make a woman the best wife and mother is that which will enable her to impress on the minds of those committed to her care true and noble ideals of living. The life work of the great majority of women will always be in the home, and there she has power to mould the character of the future men and women.

**Sanitation in the Home.** Every woman should have a knowledge of sanitation at her command. Many diseases may be prevented by attention to sanitary measures. This means, first, the free use of the two great natural disinfectants, pure air and sunshine; second, the quick removal of refuse. Sanitary law is often flagrantly violated by throwing into the yard the dust gathered when sweeping a house. Possible germs of disease are removed if all dust is burned, and all clothing and rooms are kept constantly disinfected by air and sunlight.

Medical men tell us the present prevalence of consumption is due largely to a lack of sanitary precautions in the past. The soil, houses and clothing have all been infected more or less, and years of education will be needed to teach the proper methods for the prevention of the disease.

With well water there is a series of dangers to be avoided. If a well be shallow and fed by surface water, all the impurities of the soil will be found in it. It is said that in very loose soils a well of sixty or eighty feet deep will drain a large area, perhaps as much as two hundred yards in diameter, or even more. All wells and cisterns should be inspected regularly. Wells should be securely covered, so as to prevent substances being washed down from the surface. They should be at a safe distance from cesspools, and the drainage should be away from the wells, instead of towards them. No sewer should be allowed to pass near a well, and no well near which a sewer passes should be used. The well is usually dug near the kitchen door, probably between kitchen and barn. The drain, if there is a drain from the kitchen, conveys the dirty water of wash-day and all other days, which sinks through the ground and finds its way to the well. Very often liquid impurities from the barnyard percolate the soil and help to contaminate the water in the well. The water may be perfectly clear, nevertheless, you drink a foul poison, slow in action, it is true, but making every fibre in your body ready for diphtheria, typhus and consumption. The sum of all sanitation for the home is this: see that no open cesspool or drains poison either air or water about the house.

**Ventilation.** The necessity of pure air in our homes cannot be too strongly urged. Sanitarians agree that pure air is the first essential for a healthful home, and its importance should secure for it the careful attention of every housekeeper. Our houses ought to be abundantly supplied with fresh air. The supply of fresh air should be in proportion to the quantity consumed. As a house is not open to the air, its ventilation must be artificially provided. In the ordinary home of the present time the use of the windows has to be depended upon more or less for a quick change of air. In houses almost constantly occupied, the window openings become necessary. A screen can always be used to shut off direct draught if there is danger of harm. The three essentials of all ventilation can be summed up in a few words. Firstly, to provide an abundance of pure air in all parts of the house; secondly, to avoid draughts, either hot or cold; thirdly, to provide means of escape for all foul air and odors.

How shall we make our homes more comfortable, more healthful, and secure these blessings by the least economic outlay? There is no progress without much struggle and disheartening discouragements, and in my tours through the country I find the greatest obstacles to the success of these efforts are the apathy and indifference of those most in need of help, the large army of housewives. Some will say they are too old to learn anything new, and the beginners are so much occupied with their household work and social requirements as to postpone or neglect scientific

economics. Those who do the work as wage-earners will naturally follow the example and directions of those who employ them. This is the most serious obstacle in our way, but we must only work a little harder to present the advantages of true household management, if we would secure the co-operation which will introduce into every home a right way of living and enjoying life. The demand for home science training is growing, and growing rapidly. Our leading educators are coming to believe more and more that this demand is a legitimate one, and are preparing to make provision for such instruction.

Q. What do you consider of first importance in the building of a house, from a sanitary standpoint?

A. Mrs. Colin Campbell, Goderich. Location and surroundings.

Q. Why would you be more particular about the cellar than the parlor?

A. Much of the air which enters the different rooms of the house comes from the cellar. The air of the cellar makes its way into every part of the house.

Q. How may we prevent the deposit of moisture upon the cellar walls in summer?

A. In very hot summer days the windows should be closed during the day.

Q. Would you recommend sleeping in the open air in summer?

A. Sleeping in the open air is one of the prescriptions for consumption, and if it cures that disease why should it not also prevent?

Q. Why do you prefer electric light to the ordinary gas light or kerosene lamp?

A. All combustion uses up oxygen and produces carbonic acid gas. With the exception of the electric light all artificial illumination of the rooms is a great tax upon the air supply and upon the means of ventilation. It has been estimated that one ordinary gas jet will consume as much air as two people, and a kerosene lamp will use as much as four people.

Q. Which is the better temperature to keep a house, 65 degrees or 70 degrees?

A. If a house could be evenly heated at 65 degrees Fahrenheit people would be healthier than at a higher degree. The chief advantage of a heat of 70 degrees is that it can contain more moisture than a lower one.

Q. How should upholstered furniture be made?

A. Without tufting, so that it can be thoroughly cleaned by brushing.

Q. How can furnishings injure health?

A. By preventing free access of light and air, and by forming catch-alls for dust.

Q. How should the ideal house be ventilated?

A. By means of flues.

Q. Are windows not ventilators?

A. Windows are made for the admission of light and for an occasional thorough change of air, but are not ventilators.

Q. How often should all living and sleeping rooms be aired?

A. They should be thoroughly aired at least once a day.

Q. Should the well be used for cold storage?

A. The practice of hanging dressed meat and poultry and milk cans in the well should never be tolerated.

Q. What are your most serious objections to elaborate furnishings?

A. They are agents to minister to our comfort or our pleasure, but when proper care cannot be given to such furnishings let them be sacrificed on the altar of cleanliness. Let each housewife be mistress of her furnishings, else she will be their slave.

Q. Why not use a feather duster in dusting?

A. Miss Laura Rose, Guelph. Because instead of gathering up the dust it only scatters it. I like to use a large, soft cloth, which I can take to the door and frequently shake.

## SYSTEMATIC HOUSEKEEPING.

By Mrs. A. Beck, Goderich.

In order to become a systematic housekeeper or be successful in any business we must make it a pleasant duty. Aim at perfection. Have for our motto, "What is worth doing is worth doing well." Ambition, energy and perseverance are beneficial. Have a place for everything and see that everything is kept in its place. Retiring early at night and rising early in the morning places the housekeeper in advance during the day. Before baking or cooking, much time is saved by having the material on hand and proper utensils to work with. The secret of your success in baking will be a good hot fire. A very helpful system is to time yourself while doing your work. Buy a good article, it will prove to be the cheapest in the end. For eating it will taste better, for wearing it will last longer and look better, and for your house you will take more care of a good article than a poor one.

I fail to find a systematic housekeeper who is absent from her duties five days out of six. I am speaking in particular of a woman who manages her own house and home and does her own work. Washing early in the week, Monday if a fine day, gives a good start for the week. Then iron and bake bread on Tuesday. Wednesday is a very good day for cake baking. Go over the house with the carpet sweeper and dust up, wipe off kitchen floor on Thursday, sewing or mending, shopping, visiting or calling. On Friday, thoroughly sweep and dust the main part of house, wash windows, clean cupboards and silver, order in groceries for Saturday morning. On Saturday have a general clearing up and preparing for the Sabbath. Some women have the vague idea that housekeeping is not so ennobling as to be a fine musician or painter or needle worker. Stop and think if the happiest homes are not where the best housekeeping is done. Housekeeper, feel that you are occupying one of the highest professions on earth and doing as much good in the world and fulfilling the mission that God has given you, as the best temperance lecturer. In fact, if home duties were a little more properly cared for, there would not be so many unhappy homes to-day. Let us aim at making our homes more attractive and pleasant.

Much satisfaction is derived from keeping a daily account of your expenditures and often avoids disputes with merchants. Be moderate in your dress. If you cannot afford all the home comforts and dress too, do without the dress. It is well to have some knowledge of dressmaking and tailoring. One often gets more wear from a made over article than when new. Be a fond, loving mother, but do not spoil your children by not teaching them how to be good housekeepers, modest and obedient.

Systematic housekeeping is one long life-time experience, learning something new every day and keeping in practice the knowledge you have gained in the past. The better way would be to take one subject at a time and thoroughly discuss it. For instance, house-cleaning is one of the important duties of to-day. Having some experience in that line, I do not favor upsetting the whole of the house at once, but prefer taking one room at a time, commencing at the attic and ending at cellar or back kitchen.

## THE PROFESSION OF HOUSEWIFERY.

By Miss Josie Speedie, Muskoka Falls.

When a woman takes upon herself the duties of housekeeper and home-maker she enters upon a profession quite as important and dignified as any other. It requires brains and muscles, executive ability and concentration of purpose, a comprehension of many arts and sciences and a knowledge of more trades than all other professions taken together. If our young housewife has been trained in housewifely ways by a careful mother she is indeed fortunate. but if she has not, she has no reason to be

discouraged, for with a comprehension of the importance of her profession and a determination to succeed, she will soon find herself on the highway to successful housekeeping and home-making. It is a good thing and a blessed thing to be able to build up and maintain a fair, sweet and harmonious home, and there is no calling on earth that is higher or better or more satisfying than that of home-maker.

Good housekeeping does not always mean home-making, but home-making always means good housekeeping in the best sense of the world. Eternal vigilance must always be the price of good housekeeping, but a continual round of drudgery it need not be, if the work is planned systematically and performed intelligently. Good housekeeping means health, happiness and comfort to the entire household, while poor housekeeping means discomfort, discord and unhappiness. Even if a housewife is not obliged to do her own work, it is essential that she should know how it should be done, then if she is fortunate to have competent help she will appreciate the service rendered. There should be mutual confidence and respect between mistress and maid. There is said to be something essentially vulgar in any woman, whatever her opportunities may have been, who despises home-making; tasks which the wisest, best and most cultured women have delighted in.

The housewife must be able to make a practical application of the science of chemistry to common every day cooking; she must comprehend the laws of sanitation, and appreciate the hygiene of cleanliness; she must have a good knowledge of the care of all kinds of meats; must comprehend the mystery of compounding sausages and rendering lard, have a realizing sense of the merits of butter and cheese. She must also understand the nutritive value of different kinds of food and be able to furnish her family with well-balanced rations. She must be able to cook and serve a wholesome dinner and at the same time be competent to preside over the same with dignity and grace. She must be an adept at making, mending and nursing. She must be a financier and a general all-round business and household manager. You know we often hear it said that some women have a genius for housekeeping. Some one has defined genius "as the power of persistence." When a housekeeper becomes disheartened over the small daily trials, or is perplexed and worried over problems that seem hard to solve, she must remember that perfection in any profession requires time, study and practice, and a perfect system of housekeeping must be a gradual development.

At first there may be mistakes and discouragements, but with patience and persistence the plucky housewife will soon find herself mistress of the situation; the household machinery will begin to run smoothly and tasks which at first seemed hard will become simple and easy.

Through practice the brain will become quick to conceive and comprehend, and the hands deft and clever to perform all the tasks that make for the up-building and maintaining of that most beautiful and enduring earthly structure, a true, harmonious home. Wherever you find such a home you will be sure to find a patient, intelligent and loving housewife as its maker.

#### CONVENIENCES IN HOUSEKEEPING, OR HELPS IN THE KITCHEN.

By Mrs. Wm. Allen, Stella.

My subject will not have much interest for those who live in what Mrs. Scott has called "a well-appointed house," for that house should hold all the modern, up-to-date conveniences, but we do not all enjoy these comfortable homes. Our fathers' ideas of comfort and convenience, when building twenty or thirty years ago, were different from ours to-day, and it is more especially in the old houses that the housekeeper needs to study and make her own conveniences and save extra steps and work for herself, for in Amherst Island, as in many other places, one of our greatest needs is mothers' help. Hired help is hard to get, even for those who wish to keep it. As

for our own girls they are soon transplanted to homes of their own and the mothers are again without help.

Of the larger conveniences I will say little, as the washing machine, clothes wringer and barrel churn are now almost as necessary as the sewing machine. The butter worker and charcoal iron are growing favorites. The small flour sifter that holds about a quart and turns with a crank, when kept in a dish of flour on a shelf in your cupboard, will save many an extra step, if your flour barrel is at a distance. If the same shelf can hold the rolling pin, biscuit and cake cutter, baking powder, soda, cream of tartar and spices, it is almost as convenient as the much-praised kitchen cabinet. A pie lifter saves washing of holders and dish towels. The egg beaters are many, but I like none as well as the wire spoon. It can be used also in place of the perforated spoon or clipper for stirring cream.

A small bag or square of cheese cloth can take the place of the wire soap shaker and of the grease strainer and is more satisfactory than either.

No patent dish washer has yet been invented that can replace the old-fashioned two-hand one, nor does the chain "Yankee" dish cloth, nor the stick with a mop on the end, do as good work as a yard of cheese cloth.

Who has not wished for a raisin seeder about Xmas when fruit cake or plum pudding are in season? They are, however, rather wasteful, as much of the pulp goes with the seed. When using the rotary cake cutter the paste or dough rotates as fast as the cutter. The serrated knife for cutting hot bread or cake is a real comfort.

Empty baking powder cans make good home-made salt, pepper and flour dusters if you perforate the lids with a fine wire nail and hammer. Keep them on a shelf beside or behind your stove. In or around that shelf have plenty of hooks and nails to hang the long-handled spoon, the measuring cups, skimmer and everything you need to use on the stove. A wire holder to hang the broom and mop in, when not in use, is found very convenient; also a fitted cover of canton flannel for the broom, for use when sweeping walls or ceiling.

Then there is the steam egg poacher, the double boiler for rice or porridge, the wire basket in which to put eggs for boiling or crullers when cooking; the small potato press for a dainty dish of potatoes, and many others which might be mentioned for use in other parts of the house.

### A CONVENIENT KITCHEN.

By Miss Josie Speedie, Muskegon Falls

A convenient and comfortable kitchen is what every housekeeper should have. It should be on the same floor as the dining-room, as steps between these two rooms often cause accidents as well as make many unnecessary steps in a day, and most women who do their own work find there are steps enough to tire them. This part of the house should be of the cleanest and sweetest and one where you would not be ashamed to take your best friend, if you happened to be busy there. It is there that all the food we eat is prepared. All dishes used in the preparation of meals should be perfectly clean, and to have the kitchen always presentable, it is necessary that there should be a place for everything and everything in its place.

The interior should be finished in such a way that it will look neat and clean and be easily cleaned. Very often rooms are allowed to go shabby because the owners fail to realize at what little expense they can be papered or painted, provided they are willing to do the work themselves. The work is not so difficult as many suppose. A little practice, with the help of a few definite rules, will enable any one to do this work in a thoroughly satisfactory manner. The kitchen should be conveniently large with at least two windows, as no one likes to work in a dull room.

There are many ways of finishing the walls. I prefer a chair boarding and floor

of hard wood. These can be oiled where soft wood would need paint. The walls, above the chair boarding, should be plastered and papered and the ceiling done the same as the walls.

The furniture of the kitchen need not be expensive to be convenient. It is the labor-saving devices that are needed. A sink is a very important and handy invention. On farms where fluids are used to a good advantage, they could be carried away to a barrel some distance from the house. Bore a hole in the bottom of the sink and put in a pipe about two inches in diameter. Carry this down, through and under the floor two feet or more and have it terminate about fifty feet from the house, in a barrel sunk in the ground. A V-shaped turn in the pipe under the sink will do much to prevent return of gas.

A good-sized work table is best covered with zinc or oil cloth; the latter looks nicer. Then if you have a small table on castors, the top just even with the top of the stove, and a shelf beneath, even with the oven when the door is open, and both of these covered with zinc, it can be moved close to the stove and hot dishes and pans put on it, thus saving many steps.

If you have little pantry room, place a large box with shelves in it under the work table. In it can be kept the heavier cooking utensils. Have a curtain on it to suit the color of your room. It will be very convenient and not look objectionable. Have a wide shelf above the table for extra dishes or for the clean dishes as they are dried to put away. Have this kept covered with paper.

A kitchen cupboard is a help in taking care of spices and small groceries. This has a flat top, two drawers and shelves below enclosed with doors. Another style has shelves above as well as below, enclosed with glass doors. A kitchen cabinet is a much more elaborate affair and consists of cupboard with shelves, cutting and kneading boards, spice boxes, flour bins, large drawers and a small cupboard beneath. It is very compact and a great convenience.

All the utensils should be kept as near as possible to where they will be needed. The tin covers of saucepans and kettles hung on a rack within reach of the range. The cooking forks and spoons have their niches just below. The little knife is not in the knife box amid carvers and mixing spoons, but where it can be got at once.

The matter of cook stoves is too vast to enter upon. A range is preferred where means will allow, but no stove is handsome and none that is kept clean and bright is ugly, so long as it bakes well. A few ordinary chairs will do, with an easier one for resting in. There are often a few minutes when one is obliged to wait for a dish to cook, no matter how industrious the worker, and at such times have a book or magazine handy to improve the moments.

## DOMESTIC HELP; THEIR TREATMENT, TRAINING, DUTIES AND RIGHTS.

By Mrs. J. H. Wismer, Port Elgin.

The subject of "Domestic Help" seems to me to be a clear case of capital and labor, and it must be evident, even to the most careless observer, that in domestic circles these two enemies are as much at war as we find them in our factories and other places of employment. Yes, I believe more so, and the reasons seem plain.

Speaking generally, nothing more is expected from the average workingman than that he perform his labors well, and this alone satisfies his employer, but in most homes the work to be done is only one factor of the many qualifications required.

If I should try to dispose of this first division of our subject (treatment) in a few words as possible, I would repeat the Golden Text of Christ's Gospel: "Whatsoever ye would that men should do unto you, do ye even so to them." That would mean that the lady of the house would say: "I will treat the girl in the kitchen exactly as I would like to be treated if I were in her place; I will offer her no work that I con-

sider beneath myself, and while I must always look upon her as a subordinate, I shall never treat her as an inferior." With fair wages, and this rule fully carried out, where is the girl who would complain, or could be induced to do you an injustice?

A great deal could be said about the duties and rights of the domestic, but much would depend on the circumstances, and what would be suitable in one instance might not be proper in all cases. As a general rule, however, I should say that no objection should be raised against doing any part of the household work, as I am one of those who believe that all labor is honorable and dignified, but prudence and justice would suggest to the employer that no one person should be required to perform all the hard, tiresome work to the exclusion of that which is more pleasant.

Industry, habits of cleanliness, truthfulness, politeness, morality and a disposition of willingness to please are all virtues that should be insisted upon, and where these are possessed I see no reason why the servant should not be allowed to mingle with the family or be introduced to our acquaintances when they make us a friendly call. We can scarcely come to any other conclusion when we consider that in many cases the principal difference between the employer and employed is only a matter of wealth.

When there are good reasons why the domestic should wear a special costume or take her meals before or after the family or company, there would be no excuse for refusal, but a girl possessing the virtues mentioned, and being required to practise eating alone in the kitchen, or to wear a certain head-dress as a sign of servitude or badge of inferiority, would be foolishly sacrificing her self-respect by submitting.

Perfection on the part of the domestic should not be looked for. They are human, and they have their failings. Sometimes they will require to be sensibly spoken to for inattention to duties, and the employer who fails to speak at the proper time, neglects an important duty. It must not be forgotten though, that when they do well they like to be praised for it, and if you have plenty of scold and no praise you are in a fair way to be poorly served.

## VENTILATION AND HEATING.

By Dr. Sinclair, Walkerton.

Before commencing a study of the first part of our subject, let us clearly understand its meaning. Ventilation is the process of changing the air in rooms and closed places, so that a certain standard of purity may be preserved notwithstanding the vitiation which the air undergoes from the breath of occupants, the products of combustion, of illuminating agents and other causes.

We shall first consider what pure air is, and what amount of contamination is required to produce a deleterious effect upon the health of individuals inhaling it. Pure air is a mixture composed of 78.98 parts nitrogen, 20.99 parts oxygen, and 0.02 parts carbon dioxide, in every 100 parts. The association of these gases in atmospheric air is not a chemical union, but merely a mechanical mixture, readily separated. Oxygen is the absolutely essential element for the support of human and all animal life. Nitrogen is the vehicle for carrying the oxygen, or for diluting it so as to make it fit for ordinary respiration. Carbon dioxide is far from being such an indifferent agent. It is essential to life in the vegetable kingdom, but not in the animal. To man it is a superfluous agent, doing no harm in minute quantities, but becoming very injurious as the quantities are increased. While oxygen, nitrogen and carbon dioxide are the three essential components of life-giving air, other gases, such as ozone (or peroxide of hydrogen) nitrous and nitric acids, and water in a gaseous form, are found to be more or less intermingled with them. Ozone, which is merely oxygen which has taken on a new set of properties in consequence of the action of electricity or some other force, is most valuable as a disinfectant.

Air becomes contaminated in various ways; by respiration, by combustion, by putrefaction, sewage emanations and excremental filth, by gases, vapors and suspended metallic, mineral and vegetable matters given off by trades and manufactories, and by poisons of unknown nature given off by damp and filthy soil.

To us the first-mentioned means of contamination is perhaps most important. Air, as expelled from the lungs, contains only 13, instead of approximately 21 parts of oxygen, the missing 8 parts having been withdrawn by the blood-cells in those organs. The 0.03 or 0.04 per cent. of carbon dioxide allowable, is increased to 4 or 5 per cent. An increase of watery vapor is perceptible, and this is loaded with organic matter, the most injurious ingredient of re-breathed air.

Quantities of this organic matter are given off with the perspiration, by the skin, as well as by the lungs. When it comes in contact with the moist warm air of a room it undergoes decomposition and forms a medium on which the various disease-producing bacteria feed and multiply, and thus the room is made a focus from which contagious diseases are spread and propagated. Organic matter is characterized by a fetid odor, easily recognized in over-crowded rooms, the occupants of which have not paid strict attention to personal cleanliness, and quite frequently, though in a less degree, in the neighborhood of our beds after they have been slept in, and also in sick rooms. The odor, when strong, creates in those unaccustomed to such impurity, a feeling of positive debility, the result of poisoning. Now substances which imbibe water freely will absorb this matter and retain it indefinitely, owing to its molecular form. Among the most common absorbents of your households are woollen goods of all kinds, feathers, carpets and moist paper, besides the woodwork and furniture. Take warning then, and banish all articles of such description which cannot be easily and frequently washed and cleansed. We find that straw and horse hair take up organic matter in a very slight degree; and just here is a suggestion for your beds. If you cannot afford a good hair mattress, an expensive luxury, avoid wool ones, and those of unknown composition, as well as the still more unhealthful feather bed, and resort to pure clean straw that you can afford to empty out and renew at will.

We have seen that air, as expelled from the lungs contains carbon dioxide to the amount of 4 or 5 per cent. instead of 0.03 or 0.04 per cent., as it is in pure air, or 0.06 per cent., the limit of what can be endured without injurious effects. We can readily see then the necessity for frequently changing and freshening the air of our habitations. It has been ascertained that whenever other impurities exist in the air carbon dioxide increases in the same proportion; and it is therefore usually taken as the standard of impurity, so that in order to have pure air to breathe we must get rid of the excess of carbon dioxide.

Carbon dioxide is produced in large quantities not only by the breathing of human beings and the lower animals, but by the perspiration, by the combustion of fuel and lights, and by decomposition of animal and vegetable refuse. It is estimated that 822,000,000 cubic feet of it are produced in the City of London, England, every day; or 9,500 cubic feet per second. Nevertheless through its powers of oxidation and the physical changes which it undergoes through the agency of storms, rain, currents, temperature, etc., the atmosphere preserves a marvellous uniformity of composition. Then shall we not make some provision in our closed buildings for the operation of some of those agents?

We have still another gas which is important for us to consider as an impurity of the air, viz., carbon monoxide, a most deadly poison. It is always present where combustion is imperfect. Our coal stoves and furnaces become generators of this poison, if not carefully and skilfully managed. It can easily be distinguished when burning on top of the coal by its pale, blue flame. Its formation can be prevented by giving the fire sufficient draught, and seeing that it burns brightly. The draught is especially necessary when a fresh supply of coal has been thrown on. This gas is not only formed by the incomplete burning of coal, but by that of wood, or any other carbonaceous material. This gas often destroys human life when allowed to escape



into bedrooms, the occupants of which are asleep. It acts as a narcotic poison, keeping those exposed to it in a comatose condition until life is extinct. Its milder effects are languor and oppression, difficulty of breathing, slight dizziness, confusion of thought, headache, accompanied by a feeling as if a tight band encircled the forehead and temples, in a word the symptoms of narcotic poisoning.

Besides the impurities formed within the room itself we find many others, quite as injurious, drawn in from its neighborhood, where that is not in the condition it ought to be. The burning fires create a draught by which the air of surrounding soil is drawn within by suction. Then let us see to it that the soil about our dwellings is kept dry and clean, as well as the dwellings themselves. It is a well-demonstrated fact that the death rate from consumption, rheumatism and its concomitant heart disease, infantile diarrhoea, and a variety of other diseases, is materially lessened by the drying of the sub-soil. The popular idea that the air ends where the ground begins, is a widespread delusion. All soils are more or less porous, and contain air, which may give place to foul gases or to water. A house built on gravelly soil is upon a mixture of two parts small stones and one part atmospheric air. It is as necessary to keep this air pure as it is that of our dwellings, in order that we may enjoy perfect health. Where dish water is thrown from the door upon the ground, soap-suds disposed of in the same manner on washing-day, and all sorts of decomposing particles are sent with them, forming one grand cess-pool, or a large area of wet soil, giving out its poisonous exhalations to pollute the air, we must expect to find general bad health, and the most virulent types of contagious diseases. In the days when we lived in the old-fashioned houses, with their ill-fitting doors and windows, and large open fireplaces, these poisons were so quickly sucked through the house, and were so diluted with fresh air, that they did little harm. But the modern house, with its double doors and double windows, and absence of ventilating flues, forms an excellent receptacle for storing them to the subsequent injury of the inmates. Look well, then, to the cleanliness of your own yard, and, in case you are living in a closely-settled part of a town or city, look to your neighbor as well. If he is not paying sufficient attention to the matter report him to the health officer.

The size of the rooms we occupy is a question of great importance. In the British Army, previous to 1836, the death rate from consumption was exceedingly high, and the Government was moved to appoint a commission to inquire into the cause of such mortality. The decision of the commission was that the limit of air space allowed each soldier was insufficient. Acting on this suggestion the Government ordered that every soldier in barracks should be allowed 600 cubic feet of air space, and that was ordered to be well ventilated. This change was followed by an immediate improvement in the health of the soldiers. It is now an established rule that each individual requires a minimum of 600 cubic feet of breathing space, while 1,000 cubic feet is required for perfect comfort and health. The air of this space should be replaced by pure external air, at least three times per hour, in order that the individual may have the 3,000 cubic feet per hour required to keep him perfectly healthy.

In our uneven climate we require a different system of ventilation in summer from what we do in winter, owing to the necessity for artificial heat in the cold weather. During the warm weather in summer there is a larger amount of organic matter given off by the skin than in cold, and this necessitates freer ventilation, but on the other hand, the outer air is nearer the temperature of the body, and can be more freely admitted. Open your doors and windows and drive out the foul air; while, at the same time replacing it with pure and fresh air from outside. This means of ventilation will be found insufficient for fully occupied rooms, such as school rooms, churches, public halls, etc., and the deficiency must be made up by artificial modes of ventilation.

The subject of ventilation, in a cold climate like ours, is inseparably connected with that of heating, for it is impossible to have efficient ventilation in cold weather without warming the air, so that its rapid movement may not produce the discomfort

of draughts. The degree of moisture contained in the air must also be considered in the same connection, a cool current of air being rendered more disagreeable by an excess of it, and a warm current becoming less conducive to comfort by either an excess or a deficiency of it. With most systems of heating at present in use, the great difficulty is to secure sufficient humidity in the atmosphere breathed. A pan or kettle of water set on top of the stove or furnace giving off its steam may make up this loss. A certain amount of moisture is an absolute necessity to health and comfort.

We shall now consider the two parts of our subject together, and try to gain some information as to the best mode of securing both heat and ventilation, adequate to our needs. In cold weather, our efforts are directed mainly to securing a sufficient supply of warm air to counteract the effect of the colder atmosphere out of doors, and we seldom think of making provision for the escape of foul air. Fortunately for us, provision is often made without thought or knowledge on our part, by imperfect carpentering, draughts in stoves, etc. We think mainly of economizing fuel, and at the same time securing enough heat to keep us comfortably warm, while to secure a constant access of pure, warmed air to our bodies, the consumption of a large amount of fuel is necessary.

We have three great natural agents to co-operate with us in the securing of proper ventilation, the law of diffusion of gases, the difference of weight between masses of air of unequal temperature, and the wind, which is the result of the second of these agents. All must be taken into account when our arrangements are being made. Now there are numerous systems of ventilation and heating; some good, some fair and some very bad. Since a part of the time allowed for one of your afternoon meetings is very inadequate to an exhaustive study of the subject before us, we shall consider only one—recognized to be, on the whole, the best of these systems.

By this system a ventilating flue made of tin, or some other smooth-surfaced material that will not tend to accumulate dust and dirt, is placed in the wall, its lower opening communicating with the out-door air, the fresh air entering here, and being carried to a furnace in the basement, about whose surface it is passed, for the purpose of warming, and then carried on its upward way through the flue, until it reaches a point in the wall above the breathing line of the occupants of the room. An opening is there made, and the flue connected with it, so that the warmed air may escape into the room. Now we know that heated air is lighter in weight than cold, and its natural tendency is to rise, consequently if we were to stop here, we would have the upper part of the room hot, while the lower air would remain cold, and might cause great discomfort, but, by placing an outlet for the foul air at the floor immediately beneath the point where the warmed air enters, we create a draught by which the cooler foul air of the lower part of the room is drawn off, and is replaced by warm air from above. By this means the heat is distributed fairly equally to all parts of the room, by diffusion and circulation. Thus we have, at the same time, a well-heated and a well-ventilated room.

Were we to extend our study of the question of heating, we should find that steam and water possess many advantages over hot air, but the question of ventilation becomes more complicated where either is used.

In a well-managed room the temperature should never rise above 70 degrees Fahrenheit, and never fall below 60 degrees, 67 degrees being found comfortable for most people sitting still. The humidity should be kept as near 70 per cent. as possible, and the size of the inlets and outlets should be so regulated as to allow of the air being completely changed not less than three times per hour, and the air conducted from without, through the ventilating shaft, should be perfectly pure. In order that this may be so, it is necessary to see that no decomposing matter of any kind is allowed to lodge in our neighborhood. It may not be out of place at this meeting to suggest that the same rules of health should be observed for the lower animals as for man.

## DISCUSSION.

Q. If bacteria are around us all the time how is it that some people fall a prey to disease while others seem always strong and healthy?

A. Miss Blanche Maddock, Guelph. Nature has so arranged that when the body is strong and healthy there is a force in the system at enmity with the bacteria, which protects it and prevents the entrance of disease germs. If the body is run down or weakened by any cause this force is not sufficiently strong to protect the system and disease is the result.

Q. Is it possible for a person to take consumption from a tubercular animal?

A. Prof. Harrison (Agricultural College) says yes, and such cases have been known. Although much has been said to try and prove the contrary, it cannot be done. recent case having proved beyond a doubt the truth of the statement.

Q. If disease is due to bacteria, why is it that disease is more prevalent in the slums?

A. The acknowledged fact that diseases is more prevalent in slum districts proves the presence and action of bacteria. 1st, Because one of the most favorable conditions for growth of the bacteria is uncleanness or impurity of any kind. Of course these are abundantly supplied in slum districts. 2nd, Because of the overcrowding of such quarters. Pure air and sunlight, nature's health preservers, are shut out, consequently the system falls an easy prey to disease.

Q. If the foregoing is true, how is it that epidemics are so often traced to rural districts, where there is no over-crowding? Why is it that often several members of the family in the country are taken with typhoid fever?

A. Where an epidemic has been traced to a rural district it has been found in every case that the same sanitary conditions exist. I think perhaps there is no subject more discussed at our institute meetings than the lack of cleanliness in farm surroundings. Old buildings and outhouses are allowed to remain standing, many of them retaining the accumulation and rubbish of years. The farm water supply is allowed to become contaminated and impure. Too often there is neglect in thoroughly cleansing and scalding dairy utensils, consequently milk (one of the greatest disease conveyers known) becomes laden with disease germs. The typhoid fever germs thrive in such conditions. Thus through the milk, not only the family, but all consumers of the milk are affected.

Q. Is it possible to destroy germs by frost?

A. Not under ordinary conditions. When packed in ice for some time they may be destroyed.

Q. Would a room that has been closed up all winter (after sickness) and kept very cold be free from disease germs in the spring?

A. No. cold will not destroy germs. It will keep them in check, but as soon as the room is opened in the spring and subjected to the usual warmth and moisture they would again multiply rapidly.

Q. What effect has sunlight on bacteria?

A. Prof. Harrison says the effect of sunlight has been overestimated as a germ destroyer. If bacteria in solution were exposed to the direct rays of the sun it would in time destroy them, but the rays of the sun would not destroy them if exposed on a dry substance. The main benefit of sunlight is in keeping the individual strong and in a condition to resist disease germs.

Q. Could you introduce into already ripened cream, cream that was all ready for the churn, a certain kind of bacteria that would ensure the keeping qualities of the butter, the same as commercial preservatives?

A. No. The culture containing the germ that will give a butter of good keeping quality must be put in before the cream is ripened, in order to get the start of the other injurious germs that would destroy the keeping quality and prevent the uniform ripening of the cream.

Q. What is the cause of stringy sticky milk or cream?

A. This trouble is due to a germ which gets into the milk, very often through feeding dry fodder at milking time. If it once gets into a stable or dairy it is very difficult to destroy it. Thorough disinfecting and scrupulous cleanliness are the only remedies.

Q. Are milk cans not more easily cleaned after whey has been returned in them than when the milk is allowed to dry on them?

A. The cans look cleaner with less trouble after whey has been in them, but they contain a great many more germs than when returned empty (and unwashed). The reason for this is that the whey tanks are laden with bacterial life. Nine patrons out of ten may be careful and cleanly, taking care to always send clean, pure milk to the factory, but the impure whey of the tenth patron being mixed with the rest contaminates it. Thus by returning whey in the cans germs causing trouble in the cheese are spread over a whole section.

Q. If cans are washed at the factory is it necessary to wash them again at the farm?

A. Yes, decidedly. The dust from the roadside that gets in the cans is sufficient to spoil a whole can of milk. If the cans have been washed at the factory they should be washed with hot water and a brush in order to remove any remaining grease, and then scalded with boiling water in order to kill the germs that are sure to be in the can until scalded in this way. If the cans have not been washed at the factory they ought first to be washed in luke-warm water in order to loosen the milk that will have dried on the sides and bottom. Then wash with hot water and scald the cans.

Q. What do you consider of first importance in the building of a house, from a sanitary standpoint?

#### FOOD IN ITS RELATION TO THE BODY.

By Miss Agnes Smith, Hamilton.

Before we can study the question of food, we must know something about the body to be fed. The body is made up of organs each having its own particular function. The various materials composing the organs are called tissues. We have bone tissue, muscular tissue, nerve tissue, and so on. The tissues are built up of cells and each kind of tissue is composed of cells of a similar kind. For example, if we examine a grain of wheat we find the starch cells are quite different from the bran cells. They are different in structure because they differ in function. So it is in all the higher forms of life, some cells have one function, some another. We might compare a yeast cell to a man living all alone, doing everything for himself, being his own tailor, carpenter, etc. A human body is like a nation in which some are farmers, some manufacturers, some merchants, and just as the merchant does not understand farming, nor the man who raises wheat know how to make it into flour, so a cell of one kind cannot do the work of another. As for example, in lung tissue the cells are adapted for absorbing oxygen and in the retina of the eye for receiving light.

The millions of different cells in our bodies have all to be fed, but they are not able to lay hold of food as it enters the body. It must be prepared for their use in a special way, in short, we say it must be assimilated. The digestive juices produce their effect upon it and it is absorbed and carried into the blood. The blood then carries it in the form of nourishment to the minutest parts of the body. It is not till our food becomes blood that the body is able to derive nutriment from it. If we thought oftener of the wonderful house in which we live, it would keep us from doing many things that we now thoughtlessly practise. Many of us are more careful of our sewing machines than we are of our bodies. The body has been called a machine; let us see in what this analogy consists. A machine requires fuel and water for action; so does the body; but there is one great difference; man is a self-building

and repairing machine, or at least he ought to be. Too often we have to shunt into a repair shop and lay up for a week or two. This is usually the result of carelessness or ignorance.

The body asks of the food fuel for action, also material to build it and keep it in repair. We find there are two great classes of foods corresponding to these two requirements—the body builders and the fuel foods.

During the period of growth the body builders form the tissue, and all through life they keep it in repair and in working order. Tissue builders may be divided into three parts, first, water; second, mineral waters, and third, nitrogenous foods. Water is necessary for health, and few of us really recognize its importance. Good water is a prime requisite. Modern science has shown us how disease may be transmitted by water. In towns and cities the sanitary conditions of water supply is carefully looked after by competent authorities but in the country it is an individual matter.

There are three conditions to be considered when thinking of the water supply: first, source of supply; second, position of well, and third, construction of well. If satisfactory answers can be given to these questions we may feel quite safe. If, however, we are doubtful about the purity of the water, there are some simple household tests that may be used. First, boil some of the water and if a disagreeable odor is given off it is not as pure as it should be. Second, evaporate some of the water in a small dish and if the residue is dark and viscid it contains organic matter and should not be used. Third, another test for the presence of organic matter in water is the bleaching of permanganate of potash.

We found when considering the body that all digested food was carried by the blood to its different parts. The liquid part of the blood is 90 per cent. water, and so is a great factor in conveying nourishment. It also aids in carrying away the waste of the body into its proper channels. Water also keeps all the fluids of the body in the proper state of dilution. It actually enters into the chemical composition of the tissues. When we understand that 3-5 of the entire body is water, we see what an important part this fluid plays.

The second division of the body builders, as we have classed them, is the mineral water found in food. This is found in large proportions in the bone, teeth and hair. It may be laid down as a general principle that the tissue-building materials are derived from foods of animal and vegetable origin such as milk and fruits. The roots of plants go down into the earth laying hold of the mineral matter stored there, and working it into their own structure. This prepares them in a form ready for man's use.

The last class of body builders, the nitrogenous foods, is the most important. Nitrogenous foods contain albumen, which is the most complex of organic substances. Albumen is found in both the animal and vegetable world. Such vegetables as peas and beans contain a large percentage of this tissue-former, but that found in the animal kingdom is much more easily and thoroughly assimilated, that is, made into life. This is quite in accordance with the economy of nature. The ox and sheep in their abundant leisure, prepare grass and grain into a concentrated food for use. The other class of foods, the fuel foods, may be divided into, first, starches and sugar; and, second, fats. Starch and sugar are very similar and have the same chemical composition. It is possible by means of heat to convert starch into a kind of sugar as in the toasting of bread. Starch is a vegetable food; it is formed and stored by the growing plant as food for the young shoots of the next year, or to be used in time of adverse circumstances. In the body it is converted into fat to make heat or energy, or may be stored as a reserve supply of energy.

Fat, our other fuel food, is principally of animal origin, although some nuts and seeds are rich in fat. It is a much more concentrated food than starch. It is able to be stored as a reserve supply of energy much more easily than starch, to be called upon in the case of sickness or starvation. Starches and fats are the fuel of the body. Just as an engine produces heat from the fuel with which it is supplied, and part of

this heat is changed into energy, so these foods keep up the body heat and enable it to do the work required. To a certain extent the nitrogenous foods are able to replace the fuel foods for they can act as fuel, but these foods are always more expensive than the regular fuel foods and are needed for other purposes. It is, however, impossible for the fuel foods to build tissue; while a nitrogenous diet may sustain life, a person confined to fuel foods would soon waste away and die.

We have found what every class of foods does for us and that we need every class to carry on our life processes to the best advantage. But what does this mean for the every-day housekeeper? It means that she should familiarize herself with the composition of the common foods so as to be able to make suitable combinations. This knowledge of the composition of foods makes it quite clear to us that food is not necessarily nutritious in proportion to its cost. When it is necessary we can substitute cheap foods for more expensive ones and get the same food value.

### PRINCIPLES OF COOKING.

Report of Miss Agnes Smith's Talk at Simcoe Fair, October 16th, 1902

We have two great classes of foods, viz., body-building foods and fuel foods. Our body-building foods are water, the albuminous foods and mineral substances. As an example of the mineral substances we have lime in milk. The fuel foods are starch, sugar or carbohydrates and the fats. In cooking we have to remember that the albuminous foods do not need much cooking; starches have to be well cooked; the fats do not need cooking as they are all ready for digestion, so that we only have the albuminous foods and the starches to consider. To-day we will take eggs as an example of albuminous foods. In the first place it is necessary to cook eggs at a low temperature in order to preserve the digestibility.

Meats. In meats there are three parts—the juice, the tubes that hold the juice in place, and the framework that keeps all these tubes in their places. The juice of the meat is the same substance as the white of the egg. It is hardened and toughened by heat, so that in cooking meats we have the same principles as in cooking eggs. In roasting meat something else comes into consideration. We want to form a coating on the outside to keep the nourishment inside. If we brown a piece of meat through and through we will not get any good from it. As an illustration we will cook an egg. Put the egg in boiling water and immediately take it off the fire, where we will leave it for ten minutes. This is cooking the albumen at a low temperature. If you like to put it in cold water and let it come to a boil it amounts to the same thing. Some may think it a very small matter to cook an egg, but if it is any better to do it properly, we may as well do it so, and get all possible good from it. To cook an egg hard, we put it in hot water and set it on the back of the stove for twenty minutes, which is sufficient to lower the temperature, and you can have a hard-cooked egg and still have it in better form than by boiling it for three minutes. In regard to meats, we should as far as possible cook them at a low temperature. To make soup we put the meat on in cold water to draw out the nourishing qualities. There is no sense in keeping meats or chickens lying in water, as this tends to draw out the nourishment.

An Omelet. Now we are going to make an omelet, which illustrates the same principles as broiling meat. First, we separate the parts of the egg and add one tablespoonful of milk to the beaten yoke; blend the yoke and the milk together. Sprinkle a little salt on the white of the egg, beat well, and mix with the yoke and milk. This we put in a hot pan and have extreme heat on one side while the other side is not exposed to the heat. We do not turn the omelet as the extreme heat on the one side is sufficient to cook the albumen which needs but very little cooking.

Starchy Foods. Starches require exactly the opposite treatment to the al-

buminous foods. They cannot be cooked too much. To illustrate this we will make an ordinary white sauce. Take equal quantities of butter and flour. Flour of course contains other substances besides starch, but it is a starchy food. Heat the butter and when warm, mix in the flour, and to this quantity add half a cup of milk. This must boil. It must reach a high temperature before it is fit for food. The reason for this is that each of the little starch grains has a coating round it, which is like thin white paper. It is impossible for the digestive juices to get through this coating until it is broken. It is not well to add salt to any milk mixture until it is cooked, as it is apt to curdle.

So far we have been cooking starch with moist heat. In making toast we are cooking starch which has already been cooked. When we toast bread we are just forming a crust over the bread, and in that way we are cooking the starch still further.

But how are we to manage when we have to cook albuminous foods and starchy foods together? To illustrate this we will make a lemon-filling and use one cup of water, three tablespoonfuls of corn starch and half a cup of sugar. Mix the sugar, corn starch and water, and as starch needs thorough cooking, let it boil. Remove from the fire and stir into this a beaten egg. The heat which is in the mixture will be sufficient to cook the egg. Last of all add the lemon juice.

#### THE FOOD VALUE OF MILK, BUTTER AND CHEESE.

By Miss Laura Rose, Guelph.

The stomach and the moral nature are in intimate sympathy with each other, and the great process of digestion or assimilation underlies the whole human structure. Upon it depends the mental and moral growth, therefore what we shall eat and how it shall be prepared is the essential care-thought.

Milk is the natural food and the first food of life. It is peculiarly adapted to the human stomach and contains all the elements necessary for the growth of the infant body. A healthy stomach will absorb milk as readily as a sponge absorbs water. Just before our food is changed into blood, in the last process of digestion, it closely resembles milk. Why then not take more milk and less bulky, fibrous food and so relieve the digestive system of some of its hard work? Children should especially be encouraged to take milk with their food, in place of tea or coffee, for instead of being harmful as in the case of the latter beverages, it furnishes nutriment as well as drink. A glass of hot milk with just a dash of red pepper and a little salt in it acts as a wonderful stimulant and if taken when one has a weary over-taxed feeling many a bad cold or sickness could be averted.

But milk to be wholesome must be fresh and pure. Cleanliness in every detail is necessary yet there is such scope for slackness and so much slackness practised, that it accounts to a great extent for the small quantity of milk used. We hear people say, "I cannot bear milk, it has such a cowy taste and smell." Real clean milk from properly fed cows has really very little taste or smell, and when there is anything unpleasant about it, it is well to investigate matters.

The supplying of milk to cities has become a great and serious question. The establishment of laboratories where perfectly pure and pasteurized milk is furnished for the use of infants and invalids has helped in saving many lives. Thirty per cent. of all deaths occur during the first year of existence and sixty per cent. of the children fed on cow's milk die before their fifth year. Very often chemicals are put into milk to keep it sweet longer, but it is a dangerous practice and cannot be too strongly condemned. For this purpose common baking soda is sometimes used and frequently formaline and boric acid. The latter gives rise to serious bowel trouble; seven grains to a pint of milk causes diarrhoea. Milk is often diluted with impure water, and in this way disease germs find access into the human system. If

there is any doubt about the purity of the milk or if it is apt to sour before being used, the easiest, safest plan is to heat it to a temperature of about 160 degrees—hold it at that for twenty minutes, then quickly cool.

**Cream and Skim Milk.** Cream is generally considered the most important part of milk, while little value is laid on skim milk. What is cream? Its principal constituent is fat, a valuable heat producer, and one which will store up fat in the body, but cream is deficient in the nutrients essential for vital purposes and the general up-building and repair of the body. Skim milk is rich in these compounds, and strange as it may seem, will sustain life better than cream. A healthy child would starve if fed only on cream. I would not for the world say one disparaging word regarding cream. Who does not like good cream? What a fitting accompaniment it makes to well-made porridge, apple pie pudding, fruit, in fact, a little cream improves almost everything. It is one of the pleasantest and best ways of taking fat, and would we all could get more of it.

More skim milk should be used not only as a drink, but also in the preparation of foods in soups, bread, pies, etc. Prof. F. G. Short writes in "Hoard's Dairyman," as follows: "If the Government, instead of sending missionaries to Europe to teach the value of corn for human food would spend an equal amount of money in teaching how to use the despised skim milk and the value of it as food for humanity instead of hogs, there would be more profit to the dairymen and consumer as well. But corn is golden and appeals to the imagination while skim milk is thin and cannot be handled on the board of trade. There is money in it all the same."

Exactly why skim milk should be regarded with so little appreciation is difficult to say, except perhaps because it is liquid. If we had the same amount of nutrients and water held in a solid form by cellulose there is no doubt it would bring a good price in the market, but the average consumer does not distinguish between solid and liquid water, and consequently milk is passed by for something not more nutritious, but more solid. Two quarts and a half of skim milk have about as much food value as a pound of steak and more value than a quart of oysters. A recent report of the British Farmers' Association shows that skim milk is a valuable addition in bread making and materially increases the yield, and consequently the profits, besides adding to its nutritive value.

It is a mistake to make milk an entire diet for children after a certain age. Prof. Davenport of the Experimental Station, Illinois, experimented in this regard with some calves. Those fed entirely on whole milk sickened and died. Others, when partially paralyzed, recovered when fed solid food.

**Butter.** People seldom realize the important part fat plays in the economy of the body. They take it because they are fond of it, or leave it alone if they dislike it. We have little idea just how much fat we do eat, it is so often concealed in eggs, in milk, in cakes, in pastry and in cereals, like oatmeal, corn, etc. All fats contain three principal fats: olein, palmitin and stearin. Their chief difference is they melt at different temperatures. The less olein the harder the fat. Usually each fat has some distinct flavor and smell due to volatile oils. Butyrin is the characteristic fat in butter, and when it changes through age, or other unfavorable conditions, to butyric acid, it causes that rancid taste and smell in butter. Practically fats are very much alike and all serve the same purpose in the body. Some, owing to having more olein in them and so breaking up more readily, are more quickly absorbed into the system. Butter is especially valuable in this respect, and its pleasing flavor induces us to eat freely of it. Good bread spread liberally with good butter makes a complete diet, and one of which, with a few extras, we never tire. Were I a consumptive, instead of taking the disagreeable cod liver oil I would take plenty of lightly-salted, fresh butter and trust to it doing me more good than the patent medicines.

**Cheese.** Chemists tell us that cheese is one of the cheapest of foods, as its nutritive value is much greater than that of meat and its cost less. It is not only valuable on account of the proteids, fats and carbohydrates it contains, but because of its flavor



and aroma. Physiologists say we could not exist on foods devoid of flavor, still at the same time flavors are not counted as food stuffs, but they unquestionably play a most important part in our diet.

In our country, cheese is considered a luxury rather than a staple food, yet one pound of cheese is equal in food value to more than two pounds of meat, and it is much more evenly balanced in fats and proteids. The poor man should look upon cheese as a blessing and use it far more freely. Throughout Europe generally the economic value of cheese appears to be pretty fully understood and appreciated. In Switzerland it ranks second only to bread, skim milk, cheese and bread forming the chief diet of the peasants. So it is the case in Germany, and my own observation when in England showed me what quantities of cheese were consumed there. In our country the idea seems to have become fixed that cheese is hard to digest. Personally speaking, I find I can often eat bread and cheese when afraid to eat anything else. Dr. Ruhner, a German scientist, experimented with himself. He found he could not consume much cheese when taken alone, but with milk he could take nearly half a pound a day, and it was only when he ate more than a pound a day, that it was less completely digested than meat. Prof. Konig says that in moderate amounts cheese is just as digestible as meat and eggs. It certainly is a cheap, easy and convenient way of getting part of the required six or seven ounces of proteid necessary for the body each day. The harm resulting from eating cheese lies in the fact that it is taken when too green. It is not until cheese has passed through a ripening process that it has any economic importance. Fresh or partially cured cheese is very bad for anyone. The undigestible casein or curdy matter in the cheese, through the action of certain forms of bacteria, breaks down and becomes quite digestible.

There are many different kinds of cheese on the market. All have some special characteristic and all have their devotees. The fancy makes are expensive, and from the point of food value not any more nutritious than a good Cheddar, the kind commonly made throughout Canada.

#### DISCUSSION.

Q. How much salt do you use for a pound of butter ?

A. Miss Laura Rose, Guelph. The salt in butter is largely a matter of personal taste. If one is making really good butter it is too bad to hide its fine aroma and flavor by heavy salting. When salting in the worker I use three-quarters of an ounce per pound and salt in churn one ounce per pound, as more salt passes off as brine.

Q. What is the cause of butter being bitter at this time of year (winter) ?

A. There are two reasons; the cream may be held too long at too low a temperature. The air contains wild yeast germs. These find their way into the cream and, contrary to most germ life, thrive at a low temperature. We know that the characteristic feature of yeast is to produce bitter flavors. Their presence in the cream give rise to the bitter taste in the butter. Very often in the winter many of the cows are stripping. Sometimes the milk from such has a bitter, salty taste and makes a correspondingly had-flavored butter.

Q. What would you do in such a case ?

A. In the first place I would hold the cream at a higher temperature and churn oftener. In the second place I would not use any milk that did not taste nice. By occasionally introducing a fresh milked cow into the herd the cream churns better and the flavor of the butter is improved.

Q. Do you use butter coloring ?

A. Yes, when necessary. Good butter color does not affect the flavor or keeping qualities of the butter, nor is it detrimental to health. Do not use too much: always err on the pale side. Usually one teaspoonful to four gallons of cream is sufficient.

Q. How often do you wash your butter ?

A. When butter comes in nice granular form and has a good flavor I wash but

once. If there has been any taint on the cream, if the butter is very soft or if I am going to pack the butter, then I give it two washings.

Q. At what temperature do you have the wash water?

A. In winter time it ranges from 48 degrees to 54 degrees, according to the temperature of the room and the firmness of the butter.

Q. How can you tell good butter paper?

A. It should be of good weight; should be tougher when wet than when dry, and should have rather a sweetish taste.

Q. Do you put it on the butter wet or dry?

A. I always wet it in clear, cold water. It folds more neatly on the butter and does not stick to the butter when removed.

Q. Is very hard butter considered good butter?

A. No, butter should spread readily on bread. The feed, breed and condition of the cows affect the firmness of the butter. Cows receiving no succulent food or a long time milking, or if pure-bred Jerseys, will make firm butter—frequently so firm as to be objectionable.

Q. Did you ever know of cream being bewitched, and what is the cause?

A. I have heard that in years gone by people thought a witch had gotten into the churn when butter would not come, and to drive her out they put in a red hot horseshoe, with the result that she vanished and butter soon came. Investigation now proves that in such cases the temperature was too low, and the horseshoe method is not now approved of.

Q. How do country women make cheese?

A. It is very hard to tell how cheese is made. Come to the dairy school, and I will gladly show you how real, nice, small cheese can be made, with just such utensils as may be found in every kitchen.

Q. Do you consider toast indigestible, and how do you make it?

A. I have known a few people who could not eat toast at all, but generally speaking, well-made toast is considered more digestible than bread. In the browning process the starch has been partially converted into sugar, thus simplifying the digesting of it. Fresh bread, quickly toasted, is bad for any one, especially when spread with melted butter. It makes a mass difficult for the digestive juices to penetrate. Hygienic or "double" toast is supposed to be the best. The bread is first put in the oven and dried and then toasted.

## MILK AS FOOD.

By Miss Jean Rowand, Walkerton.

The chief bulk of milk is, of course, made up of water, the amount of which may vary even in ordinary, unadulterated milk from 90 per cent. in a very poor product to 84 per cent. in an unusually rich milk. The corresponding solid matter or "total solids" varies from 10 per cent. to 16 per cent. This solid matter or "total nutrients" is made up of protein, fats, carbohydrates and mineral matter. The composition of ordinary milk is about as follows:—Water, 86 to 88 per cent.; fat, 3 per cent. and upwards; Solids, not fat, 8.5 to 9.5 per cent.

A quart of milk contains about the same amount of nutriment as three-quarters of a pound of beef, namely, four ounces. Six ounces of bread would likewise supply not far from four ounces of nutritive substances. To put it in another way, about one-eighth of the whole weight of the milk, one-third of the beef and two-thirds of the bread consist of actually nutritive ingredients. The seven-eighths of the milk and one-third of the bread are water, while the two-thirds of the meat, which is not actual nutriment, is mainly water, but consists in part of bone.

But while the quart, or two pounds of milk, the twelve ounces of beef and the six ounces of bread all supply like amounts of nutriments, the nutritive values are not exactly the same; in other words, they would not be equally useful for food. Either

the milk or bread eaten alone would make a better balanced food for man than the meat, because it contains the different kinds of nutritive ingredients in proportions more nearly adapted to supply the wants of the body than is the case with the nutrients of the meat.

Milk contains all the ingredients needed for nourishment; that is, it furnishes the materials which build up the body and keep it in repair, and also those which supply it with fuel to keep it warm and to furnish the animal machine with the power needed to do its work. When milk is used for food, the casein and allied compounds serve the body for building and repair, and are also used for fuel. The fat and sugar are the chief fuel ingredients. The mineral compounds aid in forming tissue, and have other uses as well, but they are needed only in small quantities.

The value of milk for nourishment is not as well understood as it should be. Many people think of it as a beverage, rather than a food. Milk is particularly adapted for use as a food by man for several reasons. It contains all of the four classes of nutrients, viz., protein, fats, carbohydrates and mineral matter in more nearly the proper proportions to serve as a complete food than any other food material, although no one substance can furnish a complete food for an adult. It is in a form well adapted for varied uses either alone or more especially in combination with other food substances and in the preparation of various dishes for the table.

"We live not upon what we eat, but upon what we digest." Milk ranks among the most digestible of the animal foods in respect to all its ingredients. The fat of milk is an extremely fine emulsion, and is thus, in a sense, "predigested," or in a partly digested form before it is taken into the stomach. This may help to explain why it is so easily digested. When milk is taken into the stomach it is speedily curdled by the action of the pepsin and acid of the gastric juice. When milk is eaten alone, or in large quantities, the casein gathers in large lumps, which may be difficult of digestion by some. This is particularly the case with infants and with adults whose digestion is weak, and is one of the reasons why milk should be used with other foods and not taken in large quantities alone.

Human milk differs from cow's milk in the way in which it curdles when taken into the stomach. The casein of the former is not precipitated in such large lumps and is thus more easily digested and does not cause irritation. There is one per cent. casein in human milk and three per cent. in cow's milk. If for any reason a baby is deprived of its natural food—its mother's milk—it is given cow's milk. I had my attention called to this by hearing Mrs. Rorer of the Philadelphia Cooking School address the Experimental Union at Guelph, and she said the milk of the cow being intended for the calf, necessarily is not fitted for the human being; the former reaches maturity at about three years of age, the human being at seventeen to twenty-one. Examine the milk of the cow and you will find all the necessary elements for the growth of the calf. Examine the milk of the mother and you will find the necessary elements for the slower development of the infant. Prof. Mills asked how to modify cow's of milk to 100 degrees Fahrenheit, add two dissolved junket tablets, allow the milk to of milk to 60 degrees Fahrenheit, add two dissolved junket tablets, allow the milk to stand until thoroughly congealed, then stir it with an egg-beater; drain and throw away the curd, or use it for something else, saving the whey. To this add one pint of water, six teaspoonfuls of sugar of milk, eight tablespoonfuls or five ounces of cream and the whites of four eggs, mix together, whey, water, cream and sugar of milk. Take a small quantity of the mixture and put it in a fruit jar, add the whites of the eggs to it, screw on the top of the jar, and shake the mixture until the whole is thoroughly blended. Then return it to the mass and put it at once in a cool place. This will be given an ordinary milk. (A child cannot digest starchy materials until after the first teeth appear.) These materials are all in our homes with the exception of the junket tablets and sugar of milk. The junket tablets are just prepared rennet, and the sugar of milk forms the basis of most of the powders and pills that the doctors give us, and both can be had at the drug store.

Even after average milk is skimmed it still contains nearly ten per cent. of solids or nutritive ingredients. The value of skim milk as food is not generally appreciated. Taken by itself it is rather "thin" and has not staying power. One would have to drink such a large quantity to get the needed nourishment, and it is so readily disposed of that it does not satisfy the sense of hunger. But when taken with bread or used in cooking, it forms a very nutritious addition to food.

A pound of lean beef (round steak) contains about 0.18 pounds of protein. 2 1-2 quarts or five pounds of skim milk will furnish nearly the same amount of protein and have about the same fuel value as the pound of round steak. Two quarts of skim milk have a greater nutritive value than a quart of oysters. The nutriment in the form of oysters would cost from thirty to fifty cents, while the two quarts of skim milk would have a market value of from four to six cents. An oyster stew made of one part oysters and two parts skim milk would owe its nutriment more to the milk than to the oysters. I could eat a lunch of bread, ten oysters and one pint of skim milk; cost four cents. You could eat a lunch of: Soup, 8 ounces; beef, 2 ounces; potatoes, 2 ounces; turnips, 2 ounces; bread, 4 ounces; butter, 1-2 ounce; coffee, with milk, 1-2 ounce; sugar, 1-2 ounce, and the cost would be from fifteen to twenty cents, and yet I would have just as much nourishment as you would. It is a pity that our appetites would not let us live on bread and milk. What a lot of work it would save!

The ingredient of our food which costs the most and most apt to be lacking in ordinary dietaries, is protein. Skim milk has nearly all the protein of the whole milk. It has all the value of the whole milk for building and repair of tissue, for the making of blood, muscle and bone, and half the value of whole milk for supplying muscular power. When these facts are fully understood skim milk will doubtless be more wisely utilized. The ways in which a skilful cook can utilize skim milk in cooking are almost endless, and the protein thus added to the daily ration is of the utmost importance.

Besides skim milk, there is another important by-product resulting from the manufacture of butter, namely, buttermilk. Buttermilk as a beverage furnishes more nutriment than almost any other beverage except whole milk and skim milk, unless it be cocoa and chocolate. To many persons buttermilk is much more palatable than whole milk or skim milk. An ordinary glass of buttermilk would contain as much nourishment as half a pint of oysters, or two ounces of bread, or a good-sized potato. Buttermilk is much appreciated by many invalids and acts as a laxative.

As Josh Billings says, "I have seen many things on milk, but the best thing I ever saw on milk was cream."

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## BUTTER MAKING IN THE HOME.

By Mrs. Acheson Laird, Gorrie.

In the first place we must have good milk and that only comes from good healthy cows, fed on good sweet pasture, grain, etc., with pure water to drink and pure air to breathe. Impure water, especially has its effect both on the health of the animals and on the quality of the milk. The stable should be kept perfectly clean and the cows well bedded. The milk should be strained immediately after milking and on no account should it be allowed to stand in the stable. A good strainer is necessary, a cloth one being the best. Have your pails made of tin and with as few seams as possible, where the dirt lodges in and is hard to remove. Always clean every article thoroughly which is used for milk and in butter making.

In creaming the milk it is best to use the cream separator as a less amount of cream is lost than by other methods. The cost of hand separators is from \$65 to \$125 each, according to size. They will skim from 160 to 400 pounds an hour. These separators, with proper care, will last for years.

A dairy thermometer is indispensable in butter making, as no person can guess at temperature correctly at all times, and it is best to get a good one,

Each skimming when put in the cream can should be well mixed with what has been in before. No fresh cream should be put in the can from twelve to sixteen hours before churning or the butter will not all churn out.

The best churns to use are those with no inside fixtures. The churn should never be more than half full of cream to churn properly. The cream then has a better chance to fall. Before the cream is put in the churn, the churn should be thoroughly scalded with hot water and then rinsed with cold water. The churning should be done at as low a temperature as possible, so as to have the butter to come in a reasonable length of time. The colder the cream is churned the less butter will be left in the buttermilk and the butter will be better. We think it better to color the butter. The general demand is for colored butter. One can soon learn by experience how much coloring matter to use. Fine dairy salt should always be used.

#### DISCUSSION.

Q. Is it best to work butter once or twice ?

A. Miss Blanche Maddock, Guelph. If the butter is going to be used at once one working is generally sufficient, but if it is to be packed two workings are better. If the butter comes soft it is well to work it slightly, then leave it to stand in a cool place to firm up, and work a second time.

Q. Does it injure the butter to use coloring ? Would you advise it ?

A. If the market demands coloring use it. There is nothing injurious in the prepared butter color.

Q. How long should you churn ?

A. It is well to regulate and ripen the cream so as to bring the butter in about half an hour.

Q. At what temperature would it be necessary to churn in order to bring the butter in that time ?

A. Any hard and fast rules for temperature cannot be given, as the temperature for churning depends on the season of the year, the richness and ripeness of the cream, and the churn, and also on the individuality of the animal. We should aim to have the cream test from 25 per cent. to 30 per cent. butter fat; should be sure that the churn is not more than half full, and that the cream is sufficiently ripened. It should have a pleasant acid taste and smell, when these points are observed. We should churn at as low a temperature as possible, so that the butter will come in nice, granular form in about half an hour.

Q. What is the cause of cream frothing in the churn ?

A. There are two reasons for this. 1st, The cream was too thin; contained too much skim milk; and, 2nd, The temperature was too low for churning such thin cream. The richer the cream (usually) the lower the temperature required for churning.

Q. What would you do if the cream was in that condition ?

A. Take some of it out and raise the temperature.

Q. If the cream is too warm just before churning, would it hurt to put in a little cold water ?

A. Yes, it makes the cream thin and fills up the churn to no purpose. If the cream is too warm the better plan to lower the temperature is to place the can in cold water. This will cool the cream rapidly to the required temperature. If the cream is too cold place the can in warm water. Never pour hot or cold water into the cream to regulate the temperature.

Q. Can you give me any cause for having heavy butter ? After churning a longer time than usual, when the butter did come it fell to the bottom of the churn ?

A. Mrs. A. Kinney, Grandview. I think I can give you one cause, as a similar case came under my notice a few years ago. Mr. Kinney was called to the home of a relative to help them out of just such a difficulty. Mr. Kinney treated the cream

to a much higher temperature than would be at all advisable with good cream, and after churning two or three hours succeeded in getting butter, but of a very inferior quality, and which fell to the bottom of the churn.

Q. Mine was not an inferior quality, and our next churning was all right. There had been no change in the herd.

A. One cause is conditions surrounding the dairy herd, care, feed and health of the cows. Mr. Kinney decided, after visiting the stables, that conditions were such as to cause the trouble at that time, with that herd. It was the year when feed and bedding was so very scarce and high priced, consequently many farmers used sawdust and leaves for bedding for their stock. As soon as this trouble was removed the conditions were improved. A good cow will usually do her duty if comfortably housed in well-ventilated stables. She must be given good, sweet bedding, properly balanced rations, with change of diet occasionally, and free access to salt, also plenty of good pure water, but not ice water.

Q. Will it pay to have a separator when having ice the year round to use for creamers?

A. Yes, it has been proved there is a gain of one pound per week to each cow in the herd by using a separator as against creamers used under the most favorable circumstances.

Q. Is the lever butter worker much easier worked and as easily handled by a woman as the old butter bowl?

A. Yes, very much easier work and quite simple to handle. If there are any boys around it is much more interesting for them to use than the old butter bowl.

Q. Are they hard to make?

A. Not at all. Any one who is handy with carpenter's tools can make one.

Q. Is it necessary to roll the salt for butter?

A. Not at all when using a fine dairy salt.

Q. Is there any particular brand better than another?

A. One excellent dairy salt is that made at Windsor. Most dairy salt is good. Never use coarse salt for butter.

Q. How long a time is best to allow salt to stand on butter before working?

A. One hour. When salting the butter, after having given it two good washings in clear water, be sure to scatter the salt evenly and quickly over the butter in the granular form, lifting it carefully with the ladle so as to distribute the salt evenly, without compressing it in the least. Allow it to stand in a room where temperature is about 65 degrees to 70 degrees.

Q. How many times is it necessary to work butter?

A. One thorough working is all that is necessary, being careful to have your butter in a solid mass, even in texture and color. Have the surface smooth before printing.

Q. Is it best to print it at once?

A. Yes, while it is nice and pliable. Be careful not to allow it to get overheated or cold and hard, making it impossible to mould a smooth print.

Q. Do you not think plain, white butter paper preferable to cloths?

A. For shipping or selling at wholesale to dealers it is preferable, but for private customers the cloths are in favor.

Q. We have been told that using a separator injures the grain of the butter. Is it so?

A. No, it does not to any extent, and it must be admitted that it is away in advance in the way of cleanliness, time and profit, to any other method of creaming milk to-day.

Q. Is it not difficult to ripen cream when it is all kept perfectly sweet?

A. Not at all. You can make a uniform article (providing the feed of the cows has been looked after) by ripening the cream quickly. The day before churning heat it to a temperature of 70 degrees Fahrenheit, holding it at that temperature through

the day and early part of the night. It usually cools down towards morning, to our churning temperature, in winter, of 65 or 66 degrees Fahrenheit. Separator cream can be churned at a much lower temperature.

Q. Do you advise the use of a starter ?

A. Not unless you are sure you are using a pure one. When using a starter do not take your cream up to so high a temperature. When ripening the cream keep it covered, but not nearly air tight. Also stir often while ripening, and keep it away from any fumes which might taint its flavor.

Q. What temperature is it advisable to churn at in summer ?

A. At about 56 to 58 degrees Fahrenheit. The lower the temperature you can possibly churn at gives a better grained butter and more exhaustive churning.

Q. What is the right temperature for churning ?

A. Miss Aliee Hollingworth, Beatrice. This can only be learned by experience in your own dairy. 60 degrees Fahrenheit is a normal temperature, but it is often necessary to go above or below this to obtain the best results. Much depends on the breed and feed of the cows, the season of the year and the richness and ripeness of the cream. Always bear in mind that the lower the temperature at which you can obtain butter with half an hour's churning the greater will be the gain both in quantity and quality. Keep experimenting along this line. Two years ago I made the statement that I always churned at 67 degrees Fahrenheit in winter, and that statement is still confronting me in the Institute report, though I have since learned to handle the cream in a way that gives better results at 63 degrees Fahrenheit.

Q. What quality of salt do you use ?

A. Only the finest quality of dairy salt. Some women, thinking to save a few cents, roll or crush the barrel salt for butter. This makes a finer crystal, but does not remove the other mineral elements which are in the coarse salt and which spoil the butter.

#### CARE OF MILK.

By Mrs. W. W. Wilkinson, Cheltenham.

This is a very important subject as far as the farmer is concerned, when farmers must, in order to gain a livelihood, turn their attention to something else than the growing of crops year after year. The time was in Ontario when there was money in grain crops. The soil was fertile, the prices of grain high, so that farmers could earn a livelihood by that style of farming, but we must now look to some other source than grain-growing for a living. Stock-raising and dairying seem to be the two most profitable industries for the farmer at the present time. The soil and climate of Ontario seem to be especially adapted for dairying, and our Government is doing its duty towards advancing this industry. With cold-storage facilities and the education of the farmers along these lines by Farmers' Institute meetings and Agricultural Colleges, there is no reason why we should not become the greatest country in the world.

The greatest drawback is the want of proper cleanliness in the handling of milk from the time it is milked until it is marketed, and while the men have an important part to perform in seeing that the cows are provided with proper stabling and that they are kept perfectly clean, still there is an important part for the women to do as well. First, I think it is our duty to see that the men keep everything clean and right and that we fulfil our part by seeing that the milking utensils are kept clean also. In this respect it would be well for us to follow the example of the Hollanders, who are noted for their cleanliness in dairying, and who have taken the first place against all competitors in this industry. Now I will try to give you, as shortly as possible, rules in taking care of milk, which we should follow closely if we ever hope to take the place we should as a dairying country. How is it that some dairy farmers are prosperous and have established the fact that the dairy industry can be made to yield

large profits, while others fail to find the profitable side of this industry? The cause of failure is not on account of the low price of the manufactured article, but mostly on account of the handling of the milk from the time it leaves the cows until it is sold either as milk, cream, butter or cheese. The most of our dairy farmers neglect the chief principles which should be observed in producing pure milk. The care of milk seems a simple matter, but better methods in our dairying in Canada must be followed, if we are going to make a success of it. In looking over the butter market in the "Sun" a few weeks ago, it reported that there was a lot of poor stuff on the market. One lot came from Wellington County and the man was willing to take 12 cents for it, but could not find a buyer even at that price, so we may be sure that making butter did not pay that farmer.

Impurities and changes in milk, which were supposed to be due to ill-health of the cows, to foods eaten, or to thunderstorms, etc., science now teaches us are caused by very small vegetable organisms called germs or bacteria. Different forms of these little creatures produce different effects, many of which produce disease. In a single drop of badly infected milk the bacteria may be counted by the million. Dirt in milk is a sure sign of large numbers of bacteria, and so to prevent this we should adopt more cleanly methods in handling the milk. Science teaches us that impure milk is caused by bacteria. Let us see how they get into the milk and how they may be kept out of it. This is an unpleasant subject when looked at from its worst side, but a little care on the part of the farmers would overcome the difficulty. The causes of impure milk might be discussed under three heads, viz.: 1st, Diseased animals and persons and unnatural conditions. 2nd, Uncleanliness in the stable. 3rd, Uncleanliness outside the stable.

Contamination of milk by the germs of disease is the most dangerous form. Some infectious diseases attack animal and man alike, and if a cow is suffering with one of these she is a menace not only to the whole herd but to persons who consume her products, for the milk may readily act as a carrier of germs to the consumer. It has been found that in certain diseases, especially when the udder is affected, the germs may be in the milk at the time it is drawn. In that case no amount of protection after milking will ensure freedom from disease-producing bacteria. Different authorities hold that tuberculosis or consumption, diphtheria and other diseases may be transmitted from the cow to the consumer. Other factors than bacteria may influence the appearance and composition of milk at the time it is drawn and render it unnatural and impure. The cow's health is an important factor, but abnormal milk is also due to excitement of the cows. Never allow the dog to chase the cows home from the field or abuse them at milking or any other time, as this will seriously affect the quantity and quality of the milk. The cow is an animal of regular habits and even the change of milkers or changing the cows from one stable to another will affect the composition of the milk and make it of poorer quality.

Many changes in the quantity and quality of the milk may be charged to neglect. A farmer who leaves his cows out in a bleak storm should not be surprised that his test at the factory has fallen, while that of his neighbor's, whose cows were sheltered, did not fall. One of the first functions of food is to maintain the bodily heat, and when necessary it will be used for making heat instead of forming milk, thus the state of weather, temperature and storms affect them to a greater or less degree. Dairymen are all aware that bad treatment or neglect quickly result in decreased profits. The brutal treatment of a cow by an attendant by kicking, beating or otherwise is not without its affect on the milk. Bloody milk is often caused in this way.

The second cause of impure milk is uncleanliness in the stable. The largest part of the impurities found in the milk get into it in the short time after it is drawn from the cow, and before it leaves the stable. This brief period may be called the critical time in the history of dairy products. In many stables myriads of bacteria are entering the milk every minute it remains exposed, being carried there by many kinds of foreign matter, some of which would do no harm were it not for the germs



they bring. Grotenfelt mentions the following impurities which he found in unstrained fresh milk, viz., manure particles, fodder particles, moulds, fungi, cow hairs, particles of skin, human hairs, parts of insects, flies, down from birds, small bits of wood, woollen threads, fine threads, soiled particles, dust, etc. It is evident that these different kinds of foreign matter are derived from numerous sources, but the bulk of impurities consist of ordinary stable dirt, chiefly manure, and its presence in milk is evidence of slovenly methods. Over fifty grains of this matter have been found in 100 pounds of milk, and when it is remembered that it contains myriads of bacteria of the forms causing decomposition, it does not seem strange that milk is soon affected by its presence. Germs introduced in this way in large numbers may act as poisons to delicate consumers, and cause severe intestinal troubles.

Dirt gets into the milk when in the stable principally from three sources. The cows, the milkers and the air, but this classification is unnecessary for stables which are carelessly cleaned. In such places there is a constant shower of bacteria. The cows supply most of the dirt to the milk, as any one will admit, if they are at all familiar with the conditions in many stables. It is not uncommon to see the cows covered with so much dust that the color of their backs cannot be seen. Their flanks, hips and sides are sometimes plastered with layers of manure. When the cows are dirty it is impossible to keep milk even decently clean when milking. Large lumps of dirt, hairs and chaff are continually falling into the pail.

Untidy attendants constitute another source from which milk is made impure, they frequently turn from cleaning horses or other dirty work to milking the cows; with no thought of their unfitness to handle milk. On some farms milking is regarded as the dirtiest of all work and milkers prepare for it accordingly. Dust adheres to the milker's clothes and it easily falls into the pail. His hands and finger nails also contribute a share to the impurities. Thus he may be the means of conveying to the milk as many kinds of germs as fall from the cows, and in addition to these he may transmit human disease to delicate consumers.

Air is also a source of germs found in the milk, as it carries more or less small particles of dust and these have many bacteria in and upon them. As dust is continually tending to settle, the largest number of bacteria is to be found near the floor and a vast number may fall into a milk pail or can in a very short time. Most of the dirt in the air is caused by dry, dirty fodder and bedding.

The next cause of impure milk is uncleanliness outside the stable. What has been said about improperly kept stables applies equally to an unclean dairy room. Milk will not remain pure if kept in an unclean place. Never allow the dairy room to be kept damp or sloppy, as this will produce bacteria. Where unclean dairy utensils and impure water are used the milk cannot be kept pure or sweet. Utensils are sometimes made of poor material or so dented that milk is not completely removed from them and furnish legions of bacteria to the next lot of milk which is put into them. It is almost impossible to keep wooden pails clean, the pores of the wood are so open. The supposed economy of using old delapidated vessels of any kind, those have double bottoms, patches and dents, frequently result in impure milk.

Neglected strainers and wiping cloths used for drying are also sources of impurities in the milk. Cleaning utensils is an operation sadly neglected on many dairy farms. Milk pails washed in cold or luke warm water soon become covered with a greasy, sticky layer of foreign matter. If impure water is supplied to a dairy it will affect the quality of the milk. Frequently milk is stored in tanks of water, in creamers, etc. This water is rapidly fouled by the dirt on the bottoms and sides of the cans, by impure ice, milk slopping over, and thus becomes another means of contamination. How are we to keep milk pure? The fact that bacteria are usually attached to larger bodies makes the work of preventing their existence in milk very easy, but with all the care we can give some bacteria will get into the milk. Therefore it must be cooled as soon as possible after milking or separation and held at a low temperature to prevent their increase. The first requisite for pure milk is healthy

cows. The milk from an unhealthy or diseased cow should never be put with the other.

The cleaning of the cow is too often considered of small importance. Every milk cow should be curried and brushed daily and the udder and lower parts should always be cleaned just before milking. Some dairymen groom their cows as carefully as horses in the best stables, their coats are kept clean and free from dust. The soft manure should be cleaned from the hips and flanks. It is also recommended to wipe the udder and teats with a damp cloth before milking. Of course all this requires a great deal of work, but it will certainly pay in the end.

A great deal more might be said with regard to the care of milk on the farm, but time will not permit. A great deal might be said about the attendants who milk, how they should keep their hands and clothes clean and also concerning the cow stable; how there should be plenty of light, plenty of bedding, how the manure should be removed before milking time, how the stables should be white-washed or otherwise cleaned from top to the bottom and then thoroughly disinfected, but this is such a large subject that it would only weary you to continue it further. However, these are some of the main points in dairying, which if followed out will make this industry more profitable as well as more respectable. The Danes and Hollanders follow out a great deal more particular rules than I have given to you to-day. So let us all make an earnest effort to uphold our reputation as a dairying country and at the same time make this work more profitable for us all.

#### DISCUSSION.

Q. Will silage taint the milk ?

A. Miss Helen McAllister, Coventry. No, not from feeding it to the cows, but if the stable is not properly ventilated the milk will take on the taint from standing in the stable where the cows are being fed.

Q. Is silage better than dry fodder corn for milk ?

A. Yes, silage is the best bulky food, on account of its succulent nature. It is as near green pasture as any fodder that can be had.

Q. In skimming shallow pans would it not be just as well to use your finger in place of a knife to loosen the cream from the edge of the pan ?

A. No, you would not get the cream off the sides of the pan so well. In using your finger the cream would adhere to it and the sheet of cream would form in creases; the skim milk would run on top and go off with the cream, making it porous in quality.

Q. Is "culture" the same as "starter" ?

A. Yes, it is considered a more suitable name.

Q. What do you mean by pasteurizing ?

A. Pasteurizing is heating the milk to 160 degrees Fahrenheit; allowing it to stand at that temperature for twenty minutes, then cooling to between 60 and 70 degrees Fahrenheit. Then add the culture and allow it to ripen. By doing this we drive off food flavors and kill a great number of undesirable germs. It also gives more uniformity and better keeping quality to the butter.

Q. Would it be any extra expense for the farmer to pasteurize milk for butter making ?

A. Not necessarily. The cream can be put in a pail and set in a pot of hot water.

Q. Would it do to cool milk by setting the deep cans in snow ?

A. No; it has not proven satisfactory to set deep cans out in the snow. The snow melts away from the sides and only acts as a protection instead of allowing cold air to circulate around the cans. Setting in water with snow or ice is the best plan for both winter and summer.

Q. How does pasteurizing affect the flavor of butter ?

A. The flavor is not so high as when the milk is not pasteurized, but you have a more uniform product and a better keeping quality. The higher the temperature for pasteurizing, up to 185 degrees Fahrenheit, the better the keeping quality of the butter.

Q. How much culture do you add to the cream ?

A. About 15 per cent. if you wish to churn the following day, that is in twenty-four hours; and 7 per cent. to be ready for churning in forty-eight hours.

Q. How do you add coloring to the cream ?

A. I use a teaspoon to measure the coloring. A teaspoonful is equal to one dram. First dip the spoon into the cream to prevent the coloring from sticking to it. Put the coloring into the spoon and pour it into the cream that is already in the churn.

Q. Do you think it best to send the milk to a cheese factory or creamery ?

A. I prefer to send it to the creamery.

Q. Do you wrap the butter as soon as it is printed ?

A. Yes; it saves handling of the butter and protects it from becoming tainted, at least to a certain extent.

Q. How do you tell good butter paper ?

A. By wetting the paper. If it is good paper it becomes tougher by wetting. Water decays poor paper.

Q. Do you use salt in the water to wet the paper ?

A. No, it is not necessary. When dry the salt will form on the outside and give a rough appearance to the package.

Q. How do you salt butter in the churn ?

A. When salting in the churn have the butter washed and in granular condition, about like wheat grains. Then sift on half the salt, giving the churn a turn to turn the butter over; then add the remainder of the salt. Give six revolutions of the churn and allow to stand for ten minutes. Then revolve the churn until the butter is in two or three large lumps. Allow it to stand for a couple of hours, then take out and wash. Use a little more salt, as considerable goes off with the brine.

Q. Do you consider it a good practice to salt in the churn ?

A. Yes, the butter does not require so much working, and consequently the grain is not so liable to be injured. In warm weather the butter is not exposed so much to the heat.

Q. Would you recommend a woman to have a separator if she had to run it herself ?

A. Miss Alice Hollingworth, Beatrice. Yes, I would rather turn a separator than go back to the old system. At the same time I consider it heavy work and do not propose to do it while there is a man on the premises.

Q. Do you wash the separator every time you use it ?

A. Yes, although some agents will tell you it is only necessary to run some water through after the milk. It should be taken apart every time. Wash first in tepid water, then in hot water and finally scald.

Q. How many cows should a man have to make it worth while to have a separator ?

A. If you have one good cow it will pay you to have a separator.

Q. What is the difference in profit between using a separator and gravity raising ?

A. We realized an increase of 60 cents per cow per month in the winter. Our milk goes to the factory in summer, but we consider it worth while to keep a separator for the winter.

Q. Who should do the milking ?

A. Prof. Dean (Ontario Agricultural College) says it is most profitable when women milk, because they are more gentle than men, and cows respond to gentleness with more milk. I would recommend that women teach their boys to be gentle and also teach them to milk.

#### THE ABNORMAL FERMENTATIONS OF BREAD.

By Prof. F. C. Harrison, O.A.C., Guelph.

An address delivered at the Canadian Master Bakers' Convention.

I presume that most of you present at this meeting have come here with the spirit of the Athenians of old, "either to tell or to hear some new thing," but in

giving you a brief address I shall have little absolutely new information to bring before you, as the experimental work in my laboratory has this year been along other lines than bread-making. Hence I must fall back on a topic which I hope will be of some use to you—I refer to the abnormal fermentations of bread. But before taking up this subject I shall state for the sake of clearness that fermentation is a term applied to certain chemical changes which are associated with and inseparable from the life and development of certain organisms, which are so minute that we term them microscopic or more briefly micro-organisms. The normal fermentation of bread with which all bakers are familiar is due to the energy of the yeast plant, growing in the dough and producing in that substance certain changes, the results of which make bread palatable and digestible.

Any other fermentation going on at the same time as the normal one or arising after the bread has left the oven, must be looked upon as abnormal and inimical to the baker and his product.

As I have already said, these abnormal fermentations are associated with life, but the individuals are so small that the ordinary observer cannot see the actual organism but only the results that they accomplish; and so we must first consider how these organisms or bacteria get into the bread. The following are the possible sources of contamination :

1. From the flour.
2. From impure yeast.
3. From the air or from water, milk or dirty utensils.
4. From badly prepared or unsterilized yeast food.

Bakers should recognize that flour or dough is at all times open to infection by bacteria from one or other of the above mentioned sources, but by a knowledge of the conditions under which these microscopic plants grow, and by the exercise of scrupulous cleanliness they should be able to control and direct the fermentation along right lines.

The commonest abnormal fermentation of bread is known as sour bread, which means that the odor and flavor of the bread are sour to the senses of smell and taste. This sourness is fairly common; statistics which I have gathered from various sources, principally from small towns in the United States, with populations ranging from 7,000 to 25,000, show that the percentage of sour bread was 26., a rather high figure. From the number of references in the literature on baking, we must also admit that the trouble is a common one. It was left to a bacteriological examination to discover the right cause of souring. Briant's researches have been the most important, and the limited number of my own experiments fully confirm this writer's results.

Sour bread is caused by lactic acid bacteria associated with (but in far less numbers) butyric acid and acetic acid, producing bacteria. These bacteria are especially numerous in low-grade flours, in fact, the poorer the flour the larger the number of injurious organisms. Prescott has lately shown that flour may contain bacteria undistinguishable from the colon bacillus, the most numerous inhabitant of the intestines and a germ that produces acidity. This organism is certainly more liable to be found in poor than in high-class flours.

Lactic and butyric germs are also commonly found in poor flours, where they remain in a dormant condition until provided with the essentials necessary for their growth, namely, moisture, a sufficient temperature, and proper and adequate food supply. The food supply naturally surrounds them, and when water is added to the flour and the temperature is raised to between 70 and 80 degrees Fahrenheit, they are able to reproduce with remarkable quickness and rapidly manifest their presence by the products they form. Dough, with considerable moisture present, or as you term it "slack," gives the bacteria a better environment and consequently sourness is more apt to increase rapidly in such doughs. Temperature also plays an important part; the best temperature for growth of most of the acid-producing germs is about 97 degrees. Hence if these high temperatures are present, bacterial activity will be greatly increased.

Acid germs are also present in many samples of yeast. We have analyzed a large number of yeast samples used for bread-making purposes, and many of them contained injurious bacteria in large numbers; in fact, some of them had more bacteria than yeasts, a state of affairs which is very serious, as the alcoholic fermentation will be weak and thus give the bacteria a good opportunity to grow; for in dough we find that there is always a struggle for existence going on with the survival of the fittest.

If, on the other hand, the normal alcoholic fermentation is at first vigorous, and then commences to stop, it gives the bacteria opportunity to grow. Hence, "overproved" dough is especially liable to become sour.

Nor must we forget that dirty utensils, either tubs or troughs, harbor injurious bacteria, which are able to reproduce enormously when given favorable conditions. All cracks and crevices which harbor food are teeming with life, usually undesirable from the baker's standpoint, and, therefore, absolute cleanliness should be the rule in every detail; for to be forewarned is to be forearmed.

Lastly acetic bacteria or those which produce vinegar and which are often present in flours, sometimes cause trouble, and as these bacteria require a plentiful supply of oxygen, it has been suggested that all dough should be kept as much as possible out of contact with the air; but we doubt if such a remedy is practical, as the lowering of the temperature follows the removal of covers on the dough troughs and retards the whole course of fermentation.

Sticky, Slimy or Viscous Bread. This affection is not nearly as common as the preceding, yet the number of cases recorded is quite large, and this abnormal fermentation is frequently met with in country districts.

As the name implies, the bread, usually the crumb near the centre of the loaf, is slimy or sticky, forming short threads if the finger is pressed against the cut surface of the bread and withdrawn. The stringiness increases with age, a proof of the living nature of the trouble. Cases of sticky bread usually occur in the warm summer months, the high temperature favoring the growth of the bacteria which produce the trouble.

From this sticky bread it is comparatively easy to isolate an organism which when placed in sterilized (i.e., germ free) bread is able to produce the stickiness met with under natural conditions, thus proving the relation of bacteria to the trouble.

The specific germ causing stickiness is a very common inhabitant of the soil, and is usually present upon the skins and "eyes" of potatoes, and where these tubers are used for making a brew or ferment, there is a danger of introducing the slimy germ, unless the potatoes and the mash are properly sterilized.

The slimy germ, which is known as the "potato bacillus," on account of the frequency with which it is met with on potatoes, is also found in yeast cake. I have repeatedly found this germ present in both dried and compressed yeast cake, and given favorable conditions for rapid growth, it might produce epidemics of slimy bread at any time. This particular bacillus forms spores—a form analogous to the seed of higher plants and which can resist unfavorable conditions. Hence it is very resistant to heat and is able to withstand the baking temperature quite readily: in fact, at no time is the heat of baking high enough to kill the spores of this bacillus.

This germ is occasionally met with in milk.

This affection may be controlled by using absolute cleanliness in the yeast tubs and kneading troughs, the proper sterilization of the brew or ferment by the use of a certain quantity of hops; for in a number of experiments we have made with hop extracts we have found that even a small quantity of good hops (1-2 ounce to the gallon) has great antiseptic power and hinders the development of the potato bacillus, without injuring the activity of the yeast. The bread should be kept in a cool place after baking, for this stickiness is most prevalent during hot weather, and a cool temperature prevents the rapid growth of this injurious bacillus.

**Musty or Mouldy Bread.** Musty or mouldy bread is, as a rule, only met with after the bread has been cut and allowed to stand several days. Occasionally, however, we find bread only one day old affected with mustiness. This affection has been the subject of several investigations, the results of which agree in the main points. The specific organism is a mould called *Mucor mucedo*, which has a certain action on bread, producing a musty odor without decomposing the bread, but the chemical composition of the bread is changed by the growth of this mould, and this change favors the subsequent growth of any bacteria that may be present. Flours which have become damp or even very low grade flours, may have this mould present in large quantity, and although the organism is killed by the baking process, yet the musty flavor persists and is present in the baked loaf.

**Bloody Bread.** Bloody or red bread is not an affection which troubles bakers, but it sometimes makes its appearance in the household. The microbe which produces this affection is of great historical interest, for we read in the pages of Livy, the Roman historian, that the bread of the Roman army turned red, and in consequence 170 malevolent women were put to death, because they were thought to have produced it. This same thing happened during the siege of Troy by Alexander the Great. Many a victim of the proceedings, taken against witchcraft during bygone centuries must have been consigned to the stake on the charge of having fabricated the blood red spots that were occasionally found developed on the Host, and which filled the credulous minds of the masses with horror; and even in 1819, the entire Province of Padua was set in commotion by the frequent appearance of such spots and drops on various articles of food. I have also heard of reports of its presence in Ontario, and I had sent me from the vicinity of Cobourg, Ontario, a sample of bread with the characteristic red blotches upon it. Knives brought into contact with the red mass and used again without being cleaned, naturally carried the infection to fresh food, and the pantry quickly became seeded with this organism, much to the consternation of the household, who were at a loss to account for the trouble. By careful disinfection the germs were destroyed, as they are very readily killed, and no more trouble ensued.

This germ is, as a rule, found in dirt and soil. Klein, who investigated an infection of foodstuffs caused by this germ, furnishes the following explanation as to the cause of the outbreak he investigated: The back of the premises, including the pantry, faces southwest; it looks over a churchyard that has not been used for generations; but a few days previous to the outbreak, great disturbances by workmen had been going on in that churchyard, and as about the very time of these disturbances strong southwesterly winds were blowing, it is in the highest degree probable that the microbe disturbed during the alterations from quiet nook and corner in which it had previously settled, was blown by the wind into the premises lying close by and in the direction of the wind; and it is more than likely that this germ had been "lying low" in some spot on or near the surface of the area of the churchyard.

A study of these "outbreaks" teach us the value of storing and putting away food, which on being cut or otherwise prepared, is in a suitable condition for infection with organisms. It is also important to keep flies away, for we know of many diseases which are carried by these pests.

## BREAD MAKING.

By Miss Blanche Maddock, Guelph.

In speaking to Women's Institute members on the subject of Bread Making I do not pretend to say which is the best method of making bread, because I should not be able to do so. There are a great many "best" methods. Therefore, we can only lay down general principles, which may be applied to all methods.

The object of our Women's Institutes, as I understand it, is not so much to take up what may be termed outside work or study as to begin in the home by taking up our common every-day work and discover, if we can, the science in connection with

it, thus removing very largely, the cause of monotony and drudgery in house work. In order to do this we must commence at the beginning of things, as for instance, in the making of bread, we must first go back to the wheat from which our ordinary bread is made.

On looking carefully at a section of wheat we discover, 1st, a layer of bran; 2nd, a layer of coloring matter; 3rd, a layer of cells containing gluten; 4th, the endosperm, or central portion of the wheat; 5th, the embryo or germ of the wheat, which gives life to the new grain. Studying these different portions of the grain we are enabled to determine those which are best fitted for bread making and the reason why. By knowing this we are able to act intelligently. When we are told by a manufacturer that we have not been using the right kind of bread, that in the ordinary white patent flours all the strength has been extracted and that we should use brown bread or whole wheat biscuits to the exclusion of white bread, we are able to know to what extent he is correct.

We know that bran is composed of a woody, fibrous substance known as cellulose. This cellulose is completely indigestible in the human stomach. The second layer, or coloring matter, is found to be of no particular food value, therefore, is of no use for bread making. If, in the third layer, the gluten could be extracted from the cells it would be of great benefit in bread making, but as the cell walls are made up of this cellulose or indigestible material, it is proven, after repeated experiments, that more vital force and energy are required to assimilate these cell walls than any benefit that is obtained from the small amount of glutinous matter which is contained in them.

Brown bread is made by simply crushing the entire grain. Whole-wheat breads are made by taking off the outer layer of bran, also most of the coloring matter, retaining only the layer of glutinous cells. But as a food is valuable not for the amount of protein or muscle-forming food which it contains, but for the amount of digestible protein which it contains, we are forced to the conclusion that after all the white flour or central portion of the wheat, that which contains the starch, sugar and gluten in a digestible form, is the best part of the grain for bread-making purposes.

As there are many different kinds of white flour, it is well to be able to tell a good bread flour from an inferior variety or from the many different pastry flours which are sold at the present time. A good flour will be of a yellow tinge, will crunch slightly between the teeth and will have a gritty feeling when rubbed between the fingers. It should also have a pleasant, nutty flavor.

After we have chosen our flour the next thing is to decide on the yeast to be used. I do not use hop yeast; first, because more uniform results are obtained from the manufactured yeasts. By examining the yeast and discovering what it is, we will readily understand the reason for this. We find that it is a small plant, in fact, one of the lowest forms of plant life. We find also that its growth and habits are very similar to the bacteria that are all around us in the air, in the water, everywhere. As it is these bacteria that cause sour and bad-flavored bread, and as their conditions of growth are so similar to those of the yeast plant, we can readily see that in order to have a good yeast it is necessary that all injurious bacteria be kept out. This cannot be done in the home, but in large factories every precaution can be taken; even the air being filtered into the room where the yeast is made. Second, because the manufactured yeasts save time and labor. I think this is one of the ways the members of our Institutes may lessen their work very materially. The old three-day method of making bread (preparing the yeast one day, setting the sponge the second day and kneading and baking the third day) is fast disappearing.

The method that I have found most satisfactory is as follows: Dissolve a yeast cake in warm water for about twenty minutes, or until bubbles appear on the surface. Have the flour warming while the yeast is dissolving (always keep flour in a warm, dry place), mix in the salt with the flour, make a hole in the centre where the dissolved yeast is poured in, and mixed into a batter. Gradually add more

water at the same temperature (about 100 degrees Fahrenheit) and continue mixing the flour until nice, spongy dough has been formed. Knead thoroughly. The stronger the flour, or in other words, the more gluten there is in the flour, the more kneading it will require. This should all be done in the evening. Next morning form into long narrow loaves and leave to rise. When they have about doubled their bulk, put in a medium hot oven and bake slowly.

Some of the Main Points to Which We Should Pay Attention in Regard to Temperature.

Be sure the flour is warm, and light before setting the bread. Cold, heavy, flour prevents a uniform working of the yeast, consequently the texture of the bread is destroyed.

Be sure the water is at the right temperature. In bakeries the temperature would be about 80 degrees Fahrenheit, but in the home smaller quantities are used and the temperature of the room is not so uniform, therefore, a higher temperature must be used (about 100 degrees Fahrenheit). Too hot or too cold water will prevent the yeast from working.

Be sure the temperature of the oven is right. If it is too cold the bread will become excessively light and crumbly, and if it is too hot the crust will harden before the gas has had time to work through the dough and escape. Large air-holes under the crust will be the result.

#### DISCUSSION.

Q. Why is it that wheat bread rises so much more readily than rye, barley or other grains?

A. Miss Blanche Maddock, Guelph. The part of the grain that causes the rising is the gluten. Rye and barley do not contain gluten in the same form as the wheat grain.

Q. Why is bran injurious for people when it is so beneficial for cattle?

A. Because the digestive organs of cattle are especially adapted to digest coarse fodder. They are entirely different to those of the human being.

Q. Would you advise using potatoes in bread to keep it moist?

A. That would depend very largely on the individual taste and experience. I think potatoes have a tendency to keep the bread moist a longer time, and they certainly do not injure the bread. By adding potatoes to bread we are increasing the starch constituent, which already makes up the greater part of the bread, thus making it a one-sided ration.

Q. What about skim milk for bread making?

A. Skim milk is excellent for bread making, as skim milk contains the bone-forming elements which are lacking to some extent in flour. It also improves the flavor and gives rather a closer texture to the bread.

Q. What is the cause of heavy bread?

A. One cause is too much yeast for the strength of the flour. In the process of bread making the yeast forms gas. This gas works up through the dough and is caught in the gluten, a sticky substance which expands, and forming little pockets or cells holds the gas until the heat of the oven hardens the cell walls and drives off the gas. If there is too much yeast the excessive gas formed works up through the dough and breaks these gluten cells before they are hardened by heat, and escapes, causing, as we say, the dough to fall. Heavy bread is sometimes caused by the sponge or dough being chilled while rising.

Q. What is the cause of large holes between the crumb and crust?

A. This is due generally to the oven being too hot. The crust of the bread is hardened by the heat before the gas has had sufficient time to work through the crumb. When it reaches the crust and cannot escape it forms these holes between the crumb and the crust. In order to prevent this the oven ought to be of a moderate heat, and it is well also to prick holes on the top of the loaf so as to allow for the escape of gas.

Q. Why is the crust of bread more easily digested than the crumb.

A. Because the heat of the oven changes the starch cells on the surface of the loaf into sugar; thus one step in digestion has been accomplished.



Q. Is brown bread better than white bread for dyspeptics ?

A. Yes, because it contains a certain amount of rough material that passes through the system more readily than concentrated foods.

Q. Why is baker's bread usually lighter and whiter than home-made bread ?

A. Because soda and alum are used, but they are injurious to the system.

Q. How long should dough be kneaded ?

A. That depends on the strength of the flour. A flour rich in gluten will require considerably more kneading than a weak flour. If thoroughly worked the first time one kneading will be sufficient.

#### OUR DAILY BREAD.

By Miss Laura Linton, Guelph.

Bread is one of the earliest, most generally used and most important forms of food adopted by mankind. With good bread the plainest meal is a feast in itself. Without it the most elaborately prepared menu is unsatisfactory. Bread making is at once the easiest and the most difficult branch of culinary sciences—easy if the elementary principles are mastered and followed, difficult if there be any neglect to use proper care and materials. It should be regarded as one of the highest accomplishments, and if a fraction of the time and thought which are expended upon fancy cooking were devoted to this most important article of food, the sale of remedies for digestive ailments would be appreciably decreased.

As bread is used in every household almost every day in the year its food value is of interest to us. Life could be sustained indefinitely upon bread alone, but the body would not be properly nourished. Fine wheat flour contains about seventy-five per cent. starch and about ten per cent. nitrogenous matter, but is quite deficient in fat. Bread and butter make an almost perfect food, forming a fairly well "balanced ration."

Of all the cereals, wheat yields the best flour for bread making. This is due to the fact that it is the only grain which contains the constituent, gluten, in the proper proportion, and of the desired quality, essential to making light, spongy bread. When the starch is washed out of a quantity of flour, the gluten will remain as a greyish-yellow, tough, elastic substance, which can be drawn out into threads. It is the most valuable part of the wheat, being the proteid or flesh-former.

The greater part of the wheat grain is starch. That part of the starch lying nearest the bran cells contains the most gluten. As this part of the starch is hard and closely attached to the bran, much of it is lost in the manufacture of our white flour. A great quantity of the mineral matter—that which goes to form the bones and sustain the nerves—is also carried off in the bran. Those who advocate the use of whole wheat flour, maintain that because of these losses our wheat flour has degenerated into a lifeless and unsatisfactory food.

While it is true that whole wheat is richer in some valuable constituents than white flour, and that in the system of some persons it has a most beneficial effect, it does not necessarily follow that bread made from it furnishes more nourishment than white bread. Whole wheat flour contains bran, and bran is composed largely of cellulose. Cellulose is practically indigestible to the human system. A certain amount of it in our food is a necessity, but taken in this form it is not only undigested itself, but owing to its thick coatings it protects from the action of the digestive juices a large proportion of the nutrients contained in the flour. It also acts as a mechanical irritant and is hurried along the digestive tract too quickly for complete assimilation to take place. From practical tests it has been found that white bread furnishes more energy than an equal weight of whole-wheat bread.

Good flour should be creamy-white in color, should not pack easy, and when squeezed in the hand should fall apart when the hand is opened. It should have a grainy feeling rather than a velvety touch. Velvety flour contains more moisture

and lacks the body of the hard flour. When eight or nine months old, flour is usually at its best. It should be kept in a dry, cool place as it readily absorbs moisture, the gluten loses its tenacity and the bread is coarser and heavier. Flour is almost as sensitive to odors as milk, consequently should be kept in a pure atmosphere.

Liquid yeasts made at home seem to be most generally used, and for bread that will keep well will have a clean, sweet taste in the mouth, and yield the most in bulk from a given amount of flour. There is nothing equal to a perfect home-made yeast bread. We add yeast to the flour in order to make a bread that will be light and spongy. Any fluid will penetrate more quickly through a sponge than through putty, and the digestive fluids are no exception to this rule. Bread made with a mixture of flour and water and baked at once would be close and dry and difficult to masticate and digest. Good bread should be of such a light, spongy texture that the greatest possible amount of surface is presented to the action of the digestive juices. To obtain these qualities we should expand the dough as much as possible without destroying the sweetness. The process by which the expansion is brought about, due to the yeast, is one of fermentation.

Yeast is a tiny plant, one of the simplest forms of vegetable organism in existence. In order to grow it requires a fair degree of warmth, moisture and starch or sugar to feed upon. When placed in the flour, to which some warm liquid has been added, it finds all the conditions necessary for growth and begins at once to reproduce. It buds off in every direction and multiplies into many millions to the cubic inch. It feeds upon the starch, changing some of it into sugar and the sugar into alcohol and carbonic acid gas. This gas, because of the warmth, expands and being lighter than the dough, rises and in its efforts to escape, expands the elastic mass. Right here is seen the importance of the gluten. If it were not present the gas would very readily break through the walls of the bubbles it forms and escape, and the bread would fall, but because it is present the walls of the bubbles are tough and elastic, will expand without breaking, and keep the gas confined to the dough.

We may take it as a general principle that the slower any fermentation takes place the more desirable the product, and this principle applies to bread making. On the farm, as a rule, it seems more convenient to set the bread over night, and bread made in this manner is better than bread made in a few hours. It may neither look better or taste better, but it is more wholesome. Some of the constituents of the flour are by the action of the yeast partially digested. This is a slow process and in rapidly-made bread has not time to take place properly.

Milk will make a whiter and more nourishing bread than water. Water bread will keep moist longer. The addition of a small amount of shortening will make bread tender. Butter is the most wholesome; lard will make whiter bread. Separate pans for each loaf are advisable, the loaves are better shaped, more evenly cooked and more wholesome. The sweet, nutty crust of the bread is partially digested in the process of baking. When taken from the pans the bread should be set where the air can circulate freely around it. An old window screen with cleats on the ends makes an excellent bread cooler.

#### DISCUSSION.

Q. Should bread be covered while cooling?

A. Miss Laura Linton. If you like crisp crust do not cover the bread, but for the tender, wafer-like consistency that some prefer it should be covered with several thicknesses of cloth. It is best left uncovered.

Q. What is the best receptacle for bread?

A. A tightly covered tin box or stone jar, which should be scalded and sunned twice a week.

Q. Why is the crust of bread sweeter than the crumb?

A. The starch, because of the intense heat of the oven, is changed into dextrin, a form of sugar. This change takes place all over the surface of well-made toast. The

dextrine is soluble in water, consequently toast water contains a considerable amount of nourishment.

Q. Should potatoes be used in bread ?

A. It is false economy to substitute potatoes for flour. Potatoes are very deficient in flesh-forming material and potato starch is much inferior to wheat starch.

Q. What is the best temperature at which to keep bread while it is rising ?

A. 70 to 80 degrees Fahrenheit. If over 90 degrees there is danger of souring. An excess of heat will readily kill the yeast plant. It can stand a considerable amount of cold, however, without injury. Bread will rise in a refrigerator, if left long enough, and have an excellent flavor, but such a temperature is not the best.

Q. What causes sour bread ?

A. The fermentation is allowed to continue until the alcohol changes to acetic acid.

Q. Why is it difficult to make pastry from good bread flour ?

A. When pie crust stretches under the rolling pin there is small chance of satisfactory pastry. This stretching is due to the elastic gluten. The more gluten the better for bread, the less gluten the better for pastry. Pastry flour is made from soft wheat, poor in gluten.

Q. Why does wheat hold first rank as a cereal ?

A. Mrs. Colin Campbell, Goderich. On account of its nutritious value and the fact that it not only contains food for every part of the body, but the properties are in almost the correct proportion.

Q. What are your most serious objections to flour made from the entire wheat grain ?

A. Such flour cannot produce as white a loaf and it is doubtful whether the cerealin is thoroughly digested by the human stomach.

Q. Is bran of no value in flour.

A. The value of bran in flour, unless it can be ground more finely than at present, is at least questionable.

Q. Is there any rule given by which an inexperienced person can determine the grade of flour ?

A. No. The best bread flours in the market are of a yellowish-white tinge. Never buy that which has a blue-white tinge. Good flour adheres to the hand. Poor flour is not adhesive and may be blown about easily.

Q. Are there any ways of testing the temperature of the oven without a thermometer ?

A. Place a teaspoonful of flour on a plate in the oven. If it browns in five minutes the oven is hot enough for a loaf of bread. If in one minute it is right for rolls, or if you can hold your hand in the centre of the oven until you can slowly count twenty, it is about right.

Q. Why does the centre of the loaf never become hotter than 212 degrees F. ?

A. Because of the moisture present.

Q. When do you consider the proper time to add the salt ?

A. Salt tends to retard fermentation and consequently should be added toward the end of the mixing.

Q. Who is to blame for the inferior quality of bread supplied to the public by the bakers ?

A. The public. They have not yet recognized the paramount importance of obtaining bread made from the best grades of flour and by the best approved methods.

Q. If the bakers were to use the best grades of flour and more approved methods would they not have to charge a higher price for their bread ?

A. Try to educate people in this respect, so as to be able to see the gain, to the body of really first-class bread, and of appreciating this fact that a baker cannot use the very best flour, apply the most approved methods of manufacture and employ thoroughly competent men, unless he charges a fair price for his products.

Q. How long should bread be kneaded ?

A. It must be kneaded long enough for the dough to lose its stickiness and become soft and elastic. This may take from twenty to thirty minutes.

Q. How may an inexperienced person tell when the dough is light ?

A. When risen just enough it should be soft and velvety, but not sticky to the touch, and very elastic.

Q. What is gluten ?

A. Gluten is one of the most important constituents of the wheat grain; a sticky, tenacious, nitrogenous substance, which enables the dough to retain the gas formed in it.

Q. Which contains the most gluten, hard or soft wheat?

A. Hard wheat.

Q. How many kinds of yeast are used for bread making ?

A. Three kinds ; liquid (home-made or bakers'), dry and compressed yeast.

Q. At what temperature should dough be kept when rising ?

A. About 75 degrees Fahrenheit.

Q. How do you make good bread ?

A. Miss Laura Rose, Guelph. It certainly is an art in which every farmer's wife should be skilled. In the first place, so much depends on the flour, and these days much of it is not very good. Get flour made from hard gluten wheat. See that the yeast is fresh and strong. Give the dough a thorough kneading and keep it warm.

Q. Why do people use for bread the water potatoes are boiled in ?

A. Owing to the water containing some of the starch, a constituent of the potato. The addition of potatoes to bread makes it more moist.

Q. How can you tell a good bread flour ?

A. Mrs. A. Kinney, Grandview. One of the simplest methods of testing bread flour is to take some flour in the left hand, add a little water and with the right fore-finger mix a rather stiff dough in the hand. If the flour is good the dough will become stiffer and dryer with working and have an elastic, rubbery feeling. If the flour is of inferior quality the dough will become soft and sticky. Flour that is of a bluish-white shade or that feels soft and salve, and when balled together in the hand remains in a lump, should be avoided. The more glutinous flour has a very noticeable yellow tinge.

Q. Can more bread be made from a given weight of hard flour as against soft flour ?

A. Yes, in weight. The soft flour absorbs less water than the hard, spring-wheat flour. It also requires more kneading than spring-wheat flour to make a choice quality of bread. More delicate cake and pastry can be made from winter wheat flours. Pastry flour is simply soft wheat flour.

Q. Is brown bread healthful ?

A. The coarser flours with the particles of bran often increase the paristaltic action of the intestine and thus tend to prevent constipation, but for a healthy person its claim of superior value is very questionable. Entire wheat and various other special flours may be desirable for the variety they afford in bread making, but white bread yields the highest percentage of digestible nutrients.

Q. In what proportion do you prefer using the hard and soft flours?

A. We are well pleased with results from equal proportions. Though rather a coarse-grained bread it has a delicious, nutty flavor; can be easily masticated and does not become compressed, but crumbles in the mouth when quite fresh.

Q. Do you have the miller blend them ?

A. No, we buy them separately and find it more satisfactory.

Q. Do you put in the salt when setting the bread sponge ?

A. No, it is best to add the salt after the sponge has risen.

Q. Do not the more starchy flours make a whiter, nicer-looking loaf ?

A. Yes, but we have cared too much for color in flours, to the detriment of more

substantial qualities. The more glutinous flours are tissue builders, while they also furnish energy. The soft flours are fat and heat producing.

Q. Do you think it much cheaper to make bread than buy it ?

A. Yes, it is much cheaper.

Q. Why do you prefer setting the bread in the morning ?

A. We find it to be much less work.

Q. In what way most particularly ?

A. It is an unwelcome task when we find ourselves very tired at the close of the day, and also more work in the early morning. We all know what a risk we run if we do not mix our bread when it is light.

Q. You use a large quantity of yeast ?

A. Yes, the quicker we can make our bread the better. If we are a long time baking the bread the alcohol will be at work doing mischief. If the yeast is good and sweet do not spare it, the bread will not taste yeasty, as the gas is evaporated by the baking process.

Q. What is your test for heat in oven for baking bread ?

A. Our old reliable is holding the hand in the oven long enough to count fifteen. Another plan is to sift a little flour in a pan in the oven. If it browns nicely in five minutes the oven is hot enough.

Q. How long will it take a medium-sized loaf to bake in an oven at that heat ?

A. About one hour. Much of the indigestibility of bread is owing to imperfect baking. The scientific method of baking bread is to fix the air cells as quickly as possible at first. This can be done by baking the bread in small loaves in separate pans, thereby securing a uniform heat and more crust, which is the most easily digested part of the bread.

Yeast Recipe. Take 24 medium-sized potatoes, which after being boiled and mashed, are mixed with the water off the cooked potatoes; then add one quart of cold water. Put 2 tablespoonfuls pressed hops into one quart of cold water, and when it comes to a boil, strain and pour over; 3 tablespoonfuls of flour, 2 tablespoonfuls of sugar, 1 tablespoonful of salt. Then mix together, and when cooled to a temperature of from 75 to 80 degrees Fahrenheit, add 2 yeast cakes (previously soaked). Let the yeast stand at least 24 hours before using, stirring often.

This yeast may be used for three-hour bread. Half the quantity, adding no water, will make a baking of six fair-sized loaves, setting the bread in the morning.

Q. Do you allow the yeast to stand in a warm place while rising ?

A. Not close to a stove, but in a warm room, at a temperature of 65 to 70 degrees Fahrenheit. Then set it away in a cool place where it will not chill or freeze; the cellar preferred.

Q. Do you warm the yeast before setting bread ?

A. Yes, the night before setting bread bring the yeast from the cellar. In the morning heat the yeast to a temperature of 70 to 80 degrees Fahrenheit, also having the flour at a temperature of not lower than 65 degrees Fahrenheit. Flour should be kept at that temperature in winter and away from any contaminating odors. It is quite as necessary to use a thermometer in bread making as in cheese and butter making.

Q. Why do you prefer using hops in the yeast ?

A. They give strength to the yeast, also a wholesome flavor, and also tend to kill unwholesome bacteria.

Q. Which is preferable, setting a sponge or mixing it right up stiff and moulding into loaves ?

A. Setting a sponge is preferable, especially if the housewife is alone and she can hurriedly beat up the sponge before breakfast; and after the breakfast work is away and the little ones off to school the sponge is usually ready to mix and knead right into loaves. Knead each loaf for twenty minutes, or if a rather small baking knead the whole mass for an hour.

## BREAD MAKING.

By Mrs. Wm. McMaster, Stella.

No doubt you will all be amused at my telling how to make bread, when I am sure every lady here can make better bread than I can, and many take prizes at the annual fair. I am not going to tell you how to make bread, I am only going to try and tell you how I make it.

I use potato yeast, or as it is called by some, "Railroad Yeast." Take two quart dippers full of peeled, sliced potatoes and put them on the stove to boil in one quart of boiling water. When cooked, mash with a potato masher in the water they are boiled in. Then put through a colander. In a crock put two heaping cupfuls of flour, half a cupful of salt, half a cupful of sugar and one dipperful of cold water. Stir until smooth and then add the potatoes and two dipperfuls of boiling water. Let the hot water run through the colander, which has the potatoes in it, into what is in the crock; and last add one dipperful of cold water. Set aside to cool until luke warm, then add two yeast cakes, which have been soaking in tepid water for a quarter or half an hour. Put a cover on the crock and wrap something around it to keep it warm. In winter, put a couple of warm (not hot) bricks under it. When light, which is generally the next day, empty into jars or sealers and put in the cellar, when it is ready for use. In summer I only make half the quantity as it does not seem to keep so well in warm weather.

Those of you who still use the old-fashioned, wooden bake tray, I would advise to just try the covered tin ones, they are so light to handle and easy to keep clean. We should be as particular about our bread tray, kneading and baking pans as we would be if they were milk vessels. Yes, and what we keep our bread in also. It should get a sun bath at the very least every time we bake. I have read it should get it every other day in summer. Anyway, I am sure it would do no harm.

On baking morning, sift the flour into the bread tin. If cold weather, warm it by putting it in a dripping pan with a paper under it (under the flour, I mean) and setting it in the oven, placing two little sticks under the pan to keep it off the bottom of the oven. Stir occasionally until it gets warm, but not hot. Some of the bread tins will go in the oven and the flour can be warmed very nicely in them and it saves emptying. Be careful not to let the flour get too warm or to let it stick to the bottom of the pan.

For every quart of the yeast I use I take nearly the same amount of tepid water. Put the yeast in a tin, set it in hot water and stir constantly until luke warm; stir in the flour, add the water and salt, a heaping tablespoonful; stir all as thick as can be stirred with a spoon; cover up nice and warm and put in a warm place to rise. In cold weather put warm bricks under it. When light, which usually takes an hour, sometimes it takes more and sometimes less, mix with your hands until it gets stiff. Next time it is light, knead into loaves on the kneading board and put back in the tins. When light the third time, knead into loaves, put part into the baking tins and the rest back in the bread tin. Cover with a clean cloth, which is kept for the purpose. When light put in a warm oven. If the oven is too hot it forms a hard crust and the bread does not seem so light. I hope the day is not far distant when we will all use thermometers when we are cooking as well as when we are churning.

The pans that I like best are the ones that hold two small loaves about two inches deep, and are made of sheet iron. Let the bread bake one hour and take out of the pan and turn upside down to cool. Hot bread should not be covered.

Parker House Rolls. In the morning, if you want rolls for tea, scald one pint of sweet milk and when luke warm add two tablespoonfuls of sugar and two of lard or butter; a little salt, one pint of the potato yeast which has been made luke warm, and flour enough to thicken; cover and set where they will be warm, and when light knead them on the kneading board. Let them rise again and when light, knead and roll out; cut with a large cutter; butter the tops, fold over, and let rise and bake.

## HOME-MADE BREAD.

By Miss G. Peacock, Springfield.

It has been said that "bread is the staff of life;" if it is to-day, then it is to many of us a very disagreeable staff. Some bread looks good and tastes good, but contains very little nutriment. Then we have bread that neither looks, tastes or feels good. I believe the latter to be the most general among our farming population of to-day, and is eaten at a great risk of disordered digestion. It is tasteless, dark, heavy and repelling. Now the farmers earn their bread by hard, honest toil and should have the very best bread. There is nothing in all of our domestic life that affects the health and happiness of the family more than the quality of our daily bread. Good bread and butter is fit for a king. Poor bread and butter makes us all feel as heavy and sad as the bread.

To make bread is the easiest as well as the most difficult of sciences, easy, if we have sufficient interest to master a few principles of bread making, difficult if there be neglect to use proper care and materials. To get the materials is the first thing. We will first examine a wheat kernel. The chemical analysis is:

	Whole Wheat.	Fine Flour.	Germ.
Water.....	12.5	13.0	12.5
Albuminoids..	13.5	10.5	35.7
Starch, dextrine ..	68.4	74.3	31.2
Oil .....	1.2	.8	13.1
Cellulose ..	2.7	.7	1.8
Mineral .....	1.7	.7	5.7

You will notice the large percentage of mineral matter in the germ. It is mostly phosphoric acid, a substance required in the brain. Prof. A. H. Church says the germ should be in the flour to make good bread.

The wheat grain contains a little germ, starch cells, gluten cells (inner coat of bran or coloring of bran), endocarp, epicarp and epidermis. The last three constitute the bran and are a protection for the life of the future plant. Starch supplies to us heat and energy; gluten, bone and muscle. Starch is insoluble in cold water and is a snow-white glistening powder.

Wheat gluten is divided into four albuminoids, viz., gluten fibrin, gluten casein, mucéidin and gliadin. Gluten is a yellowish-grey, tough, elastic mass. In a mixture of flour and water, it gives it the property of yielding a sponge which is hardened by baking.

The bubbles which make the dough light, are produced in different ways, the most common way being the yeast fermentation, which is considered the best by cooks and scientists. It produces rapid alcoholic fermentation in organic substances containing starch and sugar.

Yeast is a colorless vegetable plant or germ of the fungus order. It grows by multiplication of its single cells, many millions being soon produced in a single cubic inch of suitable food. Yeast, with the help of heat and moisture, which is necessary for its culture, changes starch into sugar, then changes the sugar into alcohol and carbon-dioxide or carbonic acid gas. The gas being so much lighter than the dough rises in its effort to escape and makes the mass much larger than when first mixed. The toughness of the gluten prevents the gas from escaping. Further action of the ferment weakens the gluten, and if left too long your dough will fall. Be sure to bake the dough before the fermentation has turned to the acid stage and before the tough gluten walls are broken by gas.

The heat in baking further expands the gas, hardens the gluten walls, kills yeast plants and sets the alcohol free.

We may now begin with a wheat grain and compare the growth, beginning in the tiny seed and germ. It is the same as a chicken in the egg supplied with food for a short time. We find the action of growth is much the same as the yeast in

bread making. The germ contains a natural ferment called diastase. When the kernel is placed in proper conditions (heat and moisture) it begins to expand, the diastase begins to act on the starch changing it to dextrin, alcohol and carbon-dioxide.

**Baking Powder Breads.** 1st, Get good flour by finding a good miller or dealer; 2nd, Good yeast; 3rd, Warm water; 4th, A little care, and bread making is then a very easy thing. Use a china, porcelain or granite dish. Never use tin or cheap glazed crocks, the former is easily scraped off and the latter has lead in the glazing and is injurious.

Early in the morning mix yeast, water and flour in a suitable dish, mix with a wooden paddle or better a limber knife, you can clean out the dish much quicker and easier. You may mix it to a drop batter or a stiff dough and turn it out on the board at once and knead it about five minutes, then return to the crock and let it rise until double in size, then take on the board and knead about fifteen minutes or less if you like, using very little or no extra flour. Mould into small individual loaves, set in a moderately warm place, let it double in size, then bake it thoroughly. Do not let it burn at all, if you do it will be half done, pasty and unwholesome. When done turn out of pans and cool across a couple of wires or a sieve, then put away in a clean place and do not eat it until it is cold.

#### A SHORT TALK ON A FEW OF THE VEGETABLES.

By Mrs. E. M. Torrance, Chateaugay Basin, Que.

As all vegetables have a somewhat different composition they have varying uses as human foods. Vegetables alone cannot sustain life, yet a fresh, crisp salad on a hot July day is an acceptable addition to any table. Our systems need some green food, and until spring comes we should do what we can to supply ourselves with these needed greens. Many people do not understand how necessary it is to our well being to use some green food in winter. Minced parsley (and any one can grow a box of parsley) added to a dish of creamed potatoes served at breakfast, pleases our eyes as well as our stomachs. Many people say these things take time; not so, if you go about it in the right way, and when one thinks of it, after all it is the little things that give the finish to any table.

Water cress; if crisp and fresh, is always delicious, and is easily grown, but one must be careful in cleansing all such greens. Romaine lettuce has a longer, narrower leaf than ordinary lettuce and a slightly bitter taste, which is agreeable in the spring time.

Asparagus is a very wholesome vegetable and has a known value in purifying the blood. Its season is not a long one, but if once a bed is planted and given a little care it will yield its delicious product for a generation. Asparagus should not be cooked too much, twenty-five minutes being long enough. Cook it in boiling, salted water. It may be served with a cream sauce or one of drawn butter, using for the liquid the water in which it was cooked.

Dandelion and spinach have much the same value as asparagus, and our systems demand them. They are among the most digestible of our early summer vegetables, just as onions and cauliflower are among the later ones. Spinach contains iron, and is valuable in our dietary both in summer and winter, and is so easily grown that no garden should be without a plot of it. It is one of the green vegetables, not valuable so much for nutritive properties as for mixture with other foods, on account of the salt it contains and appetizing flavors.

For the most part green vegetables are better boiled. They should first be thoroughly washed to free them from earth and insects, but seldom allowed to soak in the water. When ready to cook they should be put into a saucepan of boiling water to which salt has been added. The cooking of vegetables should commence so as to finish just at the time they are needed for the table, as they lose in flavor if



kept standing for any length of time before serving. Celery has a good effect on the nervous system and cases of rheumatism. Tomatoes we are told are good for the liver. They are a healthful food if simply cooked. Just as soon as we begin to cook a tomato it begins to deteriorate, and lose its natural flavors, and an acid is developed. Uncooked tomatoes make some of our best salads, but they should never be cut until the moment they are wanted, as the juice and pulp drain away and leave only the frame work, and the flavor is never the same.

Garden peas are another thing that need to be freshly gathered and young. Cook them simply, thus retaining all the delicious, sweet flavor this vegetable has.

The onion is a useful vegetable, and considering its value it is a pity it is not more generally used, and all because nature gave it a perfume due to a volatile oil rich in sulphur. In some medical practices it is being recommended as a tonic. If it were understood that they would cook at the simmering point (180 degrees Fahrenheit) and need not boil quickly, one would not lose so much of the flavor by having it disseminated in odor throughout the house. They are an excellent food when eaten raw, and every salad is improved by a drop or two of onion juice, if nothing more. It is a pity we do not find leaks oftener on our tables. They belong to the onion family, but have a more delicate flavor and are very easily grown.

Many people do not understand what is meant by "sugar corn," so they add cane sugar to it while cooking. If instead, they understood that some of the sugar and flavor goes off with every second after plucking, they would pick their peas and corn while the water was boiling. The person who lives in the country and has a garden has untold advantages over those who have to buy what has been gathered several days, and perhaps wilted, losing its first freshness. It is well to have the garden near the house, so that the person who has to gather and cook the vegetables will not feel that it is a tiring journey to procure them. If they were handy and plentiful I think more would be used in the summer and the general health of the entire family would be better. Fruit, vegetables, eggs, and milk, and its products, are the best foods for summer and not too heating either in the preparing or eating.

Vegetables have not the same condensed value and gelatine that meat has, cellulose and starch forming a large part of many of them. The ordinary food forms of starch, such as rice, arrowroot and tapioca are among the most easily digested forms of that food, but they are incapable of sustaining life. One of the most familiar of the starch foods is the potato. In boiling, the change that takes place is the breaking up and bursting of the many starch granules and the gluten is converted into a more soluble form. As we all know there is a great difference in potatoes, some are waxy and some floury. Chemistry does not very clearly define the why of this. One must just do it for themselves and cook the starch in the wisest way, not letting the waxy potato remain one minute longer in the pot when cooking than is necessary. When draining give the pot a circular motion, so that the air may get a chance to dry out the cells and thus help to make the potato more palatable. A question that is often asked is, "Should potatoes be cooked in skins or not?" I would say decidedly, cook them in the skins, for the reason that from 53 to 56 per cent. of the saline constituent is potash, and potash is an important constituent of the blood. In some countries where scurvy had been very bad before the potato was introduced, it is now not known, and medical men say it is due to a freer use of saline vegetables with other food. People who use an abundance of fruit or green salad may eat pared potatoes, but where they are the chief vegetable they should be cooked with the skins on, for the skins resist the passage of the greater part of the potash. If one notices, the skins burst only after the potatoes are cooked and the starch grains expanded.

Since the year 1845 the potato has been troubled with a disease which causes the foliage to die off suddenly and the tubers to decay. Though potatoes are rich in nutrients they contain 75 per cent. water (or 12 ounces in a pound). The potato being deficient in flesh-forming material cannot be used as a complete food, needing the addition of lean meat or some nitrogenous food such as eggs, milk, etc. In the

years when they were the chief food in Ireland they were balanced by buttermilk. If one knew the composition of the material used, I think it would be easier to cook foods better. Taking the potato as an example. It is a heat and force former, lacking nitrogen, and its composition would stand, according to A. H. Church :

	In 100 parts.	In 1 lb.
Water.....	75.	12.
Albuminoids..	1.2	.84
Alkaloids (solanin and organic acid).....	1.5	.105
Starch..	18.	2.385
Dextrin and pectose..	2.	.14
Fat..	.3	.21
Cellulose.....	1.	.70
Mineral matter..	1.	.7

Few cooks understand why so many vegetables should be cooked in boiling, salted water; why meat should be quickly seared before roasting; why yeast, soda and cream of tartar are used to raise bread and cake batters. Sometimes one is tempted to think that the art of cooking and seasoning vegetables is a lost art, judging from the tasteless dishes one often has served up to them. It would be well if one could instil into the minds of our home keepers that no vegetable should be served so sloppy that it cannot be lifted with a fork. Some things, like tomatoes, should be thickened and made thereby more attractive. Why cannot we put a little more common sense and thought into our living, changing our diet to suit the season.

If a person is not hungry, why should he eat? Rest is often what the system needs. The warm weather has relaxed it, and a few days of rest, if not continued too long, may do good.

If one cannot eat chops, fried potatoes and griddle cakes for breakfast, try a head of lettuce and a slice of bread and butter or some fruit, or one of the non-heating cereals might be relished.

If the truth of the line telling us that "variety is the spice of life" was applied as it should be, we might have a good deal better and yet more simple living, with improved digestion.

I am not a believer in a purely vegetarian diet. There are times when meat, and meat only, will fill the craving of one's nature, but it is not with the thermometer at 90 degrees Fahrenheit in the shade. A mid-day meal of good bread and butter and a well-cooked potato, or corn, tomatoes and some fresh fruit, would be more likely to furnish and at the same time cool one's blood, enabling him to think clearly and work with renewed pleasure. For let us remember where Jehovah said to the first man. "Thou shalt eat the herb of the field."

## THE COOKING AND SERVING OF VEGETABLES.

By Mrs. James Armstrong, Gorrie.

Good cooking is to make the food palatable and pleasing to the eye. To know just how long to cook the article, the exact amount of seasoning to use, and the proper way to garnish and serve it. Cooking is not the degrading occupation some people regard it, fit only for those who cannot do anything else. It is a science not difficult to comprehend, but one that requires interest, attention and judgment; a science that has claimed the devotion of wise and learned men and women. The kitchen has been called the "Laboratory of a Household," wherein are concocted all those comfortable dishes that pertain to the health of a family.

Ruskin says, "Cooking means much tasting and no wasting." How many times suitable food is provided for a family, food which would nourish and strengthen the worn-out tissues, but it is utterly spoiled in the cooking. Vegetables, as well as every other kind of food, should be cooked just long enough and no longer. Over-cooking

is as bad as under-cooking. A good cook studies the fire she is to cook with. She makes an intelligent use of the proper utensils, does not boil vegetables in a cake pan nor attempt to fry in a roaster. A good cook does not put off until the last minute her preparations for the meals, but has everything ready to begin on time, giving each article its full time and right amount of heat, neither having the stove red hot nor putting the saucepan on the coals; her food never burns, never is under-done, but is always just right, because she is careful, watchful and thinks of what she is doing.

Aside from their value as a food, nearly all vegetables possess curative properties of a very high order, and will many times do more towards aiding nature in overcoming disease and toning the system than many drugs. This is particularly the case with children whose recuperative powers are great. Housekeepers should therefore begin by serving the table daily with the first spring vegetables and continue throughout the season. Many families use meat to the exclusion of other diet, which is by no means wholesome to say nothing of the expense. A taste for vegetables can be cultivated in children very early, and mothers of families should see that such as are liked by their children are served with daintiness and variety so as to tempt the appetite and render vegetables a necessity upon the table. The daily diet may be so varied as to have some vegetable of medicinal quality served throughout the season, so as to keep the family in good health. If called upon to decide the most important item in cooking vegetables, in order to have them palatable, I would say the proper seasoning is by far the most necessary detail of this branch. Of course the tastes of people differ as to seasoning, but a perfect blending of the various flavors suited to each dish rarely fails to be acceptable. Good seasoning of vegetables as well as of all food consists in knowing exactly how to produce the result.

In regard to the various utensils used to cook vegetables, I prefer the granite ware. If you use salt in cooking vegetables in the iron pots you will darken them, that is, such vegetables as corn, etc. A great deal is in how the vegetables are sent to the table. Never send them to the table in cold dishes. Always have the dishes perfectly clean and if possible free from cracks and unsightly marks. It pays to take time to arrange the vegetables nicely, as what looks nice is, I think, much more appetizing.

Potatoes are said to be valuable on account of their easiness of digestion and nourishing qualities. The different ways to cook potatoes are innumerable. Old potatoes are better if let stand in very cold water for ten minutes after peeling, it makes them firm. New potatoes should always be put in boiling water to cook and if possible do not let them stand around after peeling them.

The value of the sweet potato as an article of food has long been well known, but it was during the war between the Northern and Southern States, when luxuries of all kinds for the table were wholly unattainable, and even necessities were scarce, that the Southern housekeepers learned for the first time its possibilities as a vegetable. Tomatoes are very wholesome, and are one of the best-liked summer vegetables and like potatoes there are a number of ways of cooking and serving them.

Onions are possibly the most healthful vegetable which is eaten at the table. They tone the system and invigorate the digestive organs. Cauliflower is recommended for people of sedentary habits. Asparagus is a good blood purifier and is used by the French in treating rheumatism. In boiling cabbage some people make a great mistake by boiling it too long. It should have a fresh taste when cooked and not too soft and soaked with water when served. A great many say they cannot eat cabbage, it does not agree with them. I think one reason is that they cook it too long. There is no tastier vegetable if properly cooked and served. Among the early spring vegetables few are more desirable than spinach, not particularly for its excellence as an article of food, but also for its medicinal qualities. It is considered to be a purifier of the blood, is one of our best early vegetables and can be served in a variety of ways. Celery is very quieting to the nervous system and very beneficial to sufferers from neuralgia and rheumatism. The most common way is to serve the stalks cold

(after they have been thoroughly washed). Lettuce is a sedative, besides being cooling to the system. It is of course best as a salad, but it may be dressed with ham gravy, hard-boiled eggs, or fried and seasoned with salt, butter and pepper.

The proper accompaniments for different kinds of meats are as follows: Roast and tomato or mushroom sauce; roast mutton, hare, venison and various kinds of beef should be served with grated horse-radish; roast pork and apple sauce; roast veal game, red currant jelly; boiled mutton and caper sauce; boiled chicken and bread sauce; roast lamb and mint sauce; roast turkey and cranberry sauce; boiled turkey and oyster sauce; boiled fresh mackerel and gooseberry sauce; boiled shad, boiled rice and salad; roast pigeon and mushroom sauce; fresh salmon, green peas and cream sauce; roast goose and apple sauce.

### CANNING FRUIT.

By Mrs. S. A. Lount, Walkerton.

I really do not think, ladies, that I can tell anything about canning fruit that you do not already know, but perhaps I can say something about the keeping of fruit which some of you may not have thought about, and if we each give our experience or ideas on some subject relating to Domestic Science and discuss it we will not only have a "Women's Institute," but we will have a "Mutual Improvement Society" as well, for I am sure we can each learn something from the other.

Fruits are much more easily canned than vegetables. There are continually floating about in the air a great variety of wild yeast plants or microbes, and if a single one of those little germs alight on the underside of the lids or on the edge of the jar before the lid is sealed down, it is quite sufficient to cause fermentation in the jar of corn, peas or anything containing sugar. For this reason fruits canned with sugar are more liable to ferment than those canned without.

I think the great secret of canning fruit and vegetables, to have them keep well, is to have the jars perfectly free from those little germs. To be successful in canning it is necessary to sterilize or sufficiently heat the jars to kill anything that may fall from the air into them.

In canning strawberries and raspberries, I just scald as many jars as I will require. I also throw the lids and the rubbers into cold water and let them come to the boiling point, then set them to one side until I am ready to use them, then I fill my jars just as full as they will hold with the uncooked fruit and shake them down, but not enough to mash them, and fill up again. I then put the lids on, without the rubbers, and set them in bread pans that are partly filled with water and put in the oven, which is not too hot at first, but after they are in a short time I make the oven pretty hot for there is then no danger of breaking. While they are heating I make my syrup. I allow one cup of sugar to every quart jar of fruit (berries) and I add enough water to make a good syrup. It will take a good cup of water to a cup of sugar. As soon as the juice comes about half way to the top of the berries and they are well heated, I take the jars out and fill them to overflowing with the hot syrup; put the rubbers on, seal up and turn upside down on the table. If there is a drop of juice runs out they are not air tight and I take the lids off, put more syrup in and seal over again.

I pit cherries, then weigh and add half a pound of sugar to one pound of cherries. Stir the sugar through them pretty well, and let them stand over night. The next morning I let them boil up once only and then put into hot jars, seal up and turn upside down on the table. If canned fruit is cooked much it destroys the natural flavor of the fruit and it will not be as nice a color.

I pick plums with a fork, to prevent the skins from cracking and coming off. I make a syrup of half a pound of sugar to one pound of plums and I only put in a few at a time. As soon as they are tender I skim them out on a platter and put more

in. When I have them all cooked I put them all back in the syrup and let them boil up once, then put into hot jars and seal.

Peaches and pears I do the same as plums, only, of course, I peel them and put them into cold water to prevent them from turning dark.

Black and red currants I always preserve pound for pound. I put water enough on the black currants to show up through them and I boil till soft, then I add the sugar and boil half an hour longer. I only put a little water on red currants because they have so much juice of their own, but I cook them for about half an hour before adding the sugar, then boil another half hour. Currants done in this way will be in a jelly when cold.

I have been fairly successful in canning tomatoes and corn, but other vegetables I know nothing about. Corn must be freshly gathered and cut from the cob as soon as possible and packed into jars. A little mallet, something like a small potato masher, is a good thing to pack it with. I put the tops on loosely and stand the jars in a boiler with enough cold water to come more than half way to the top of the jars. Bring it to the boiling point and boil for four hours. There should be something put on the bottom of the boiler to protect the jars.

Tomatoes I scald to remove the skin. If they are too large to go into the jars I cut them in two, but I like them in just as large pieces as I can get in the jars. I put them in a granite kettle with a little salt and let them come to a boil, and then seal them in jars.

The particular part in canning vegetables is to have the jars, lids and rubbers well scalded in boiling water, for it is those little wild yeast plants or microbes which are the cause of all fermentation.

#### DISCUSSION.

Q. What temperature would you recommend for the fruit to be heated in canning?

A. Mrs. Colin Campbell, Goderich: 170 degrees Fahrenheit.

Q. Why do you prefer a porcelain-lined or enamelled kettle?

A. If a copper or brass kettle is used the contents are more or less imbued with verdigris produced on them by the action of the acids.

Q. What quantity of sugar should be used in proportion to fruit when preserving?

A. To every pound of fruit allow three-quarters of a pound of sugar.

Q. Would you add any water?

A. To any quantity of fruit over three pounds put half a pint of water in preserving pan.

Q. What causes preserved fruit to ferment?

A. Fruit gathered in damp or wet weather will often cause the jam to ferment, or jam made from over-ripe fruit never keeps well.

Q. When should fruit be gathered?

A. In dry weather.

Q. How long should fruit for jam be cooked?

A. Small fruits should be cooked slowly forty minutes, large fruits until you can pierce them with a straw.

Q. How do you can tomatoes?

A. I scald the tomatoes and remove the skins; put them in a porcelain-lined kettle, bring them slowly to a boil and simmer thirty minutes. Put the tomatoes boiling hot into the jars and seal.

Q. Which are best kind of pears for canning?

A. Bartletts.

Q. What are the proper proportions to can apples and quinces?

A. To every four pounds of apples allow one pound of quinces.

Q. How do you dry peaches?

A. I spread them in a single layer on boards and stand in the hot sun to dry gradually until they turn leather color; bringing in always before sunset.

Q. Would you recommend drying fruit in the oven ?

A. All fruit may be dried in the oven provided the oven is not sufficiently hot to scorch or scald the fruits. This is an excellent way as the fruit is dried more quickly and you escape the danger of its being stung by insects.

Q. Where should dried fruit be kept ?

A. When dry put into paper sacks and hang in a dark, dry, cool place.

Q. What about paring peaches ?

A. It is best not to pare them, but the fur should be thoroughly rubbed.

Q. How do you keep fruit from spoiling ?

A. Miss Laura Rose, Guelph: Have the fruit well cooked, the jars thoroughly washed and sterilized by boiling them in water or baking them in the oven, and use good new rubber bands.

#### CANNING OF VEGETABLES.

By Mrs. T. F. Saunders, Wroxeter.

Although the present method of preserving fruit by excluding air from the vessel in which it is kept, is comparatively new to modern housekeepers, it is by no means a new art, as antiquarians, in their researches among ancient ruins have proved that fruit was preserved in similar manner by housewives thousands of years ago. In these days of cheap canned goods, a great many persons consider it unwise to can their own vegetables, while many prefer doing so, feeling that anything kept for a length of time in tin vessels is very unhealthful, and I must say I belong to the latter class.

The canning of vegetables is similar to the canning of fruit. One should bear in mind that the exclusion of air, and the having of everything used thoroughly sterilized, is one thing needful to complete success. Although, properly speaking, tomatoes should be classed as fruit, they are generally considered as a vegetable, and used as such. Probably I have had more experience in canning tomatoes than any other vegetable. I have heard many complaints from ladies of their canned tomatoes spoiling, but, although I have canned large quantities almost every year for a number of years, I rarely lose a jar. In the first place, you want your tomatoes perfectly ripe and of good quality. I find that a very acid tomato is much harder to keep than a sweeter variety. First, have your jars and tops thoroughly cleaned and placed in boiling water. Then pour boiling water over the tomatoes to loosen the skins. Remove these, cut the tomatoes in halves and if there is any hard, green core, be sure to cut it out. Put the fruit in a preserving kettle, heat slowly to the boiling point and boil ten minutes, fill your jars to overflowing and quickly screw on the tops, turn them upside down to see if they are air-tight. I cannot see why they should not keep any length of time. I have kept them three years perfectly.

Tomatoes may also be canned by filling the jars with the prepared fruit, either cut or whole, screwing the top and setting them in a steamer or boiler and cooking for an hour. They will shrink some. Take one jar and fill up the rest, put on rubbers and screw down tightly.

String beans may be boiled until tender, filled into jars, fastened down tightly and boiled two hours, or cooked until tender, filled to overflowing into hot jars (using as little of the water in which they were cooked as possible) screwed down tightly and cooled. Peas may be canned in the same way as beans.

Rhubarb may be canned by removing the skin, cutting into short lengths, packing as closely as possible in jars and filling the jars to overflowing with pure, cold water. No cooking is required for the preservation of this plant. Of course the jars must be perfectly air tight.

## VEGETABLES.

By Mrs. F. V. E. Dickson, Wroxeter.

We are all apt to fall into conventional ways, which frequently are more or less correct, not because we know they are right, but because other people do so, thus we really spend our lives in copying those whom we consider a little in advance of ourselves in the ways of the world.

Potatoes have little or no flavor and are more easily eaten than many other vegetables and take less care in the preparation than many others, so we find in most families that they are served every day. They are valuable as bulk food and especially so when eaten with meat.

All dishes should be made to please the eye, if possible, and strange as it may seem in nine cases out of ten, what pleases the eye pleases the stomach. There seems to be an almost unwritten law that certain things are right to serve together. The following rules may be applied to the cooking of most vegetables. Have them as fresh as possible; stale and withered ones are unwholesome and unpalatable; summer vegetables should be cooked on the same day they are gathered, if possible. Pick them over and wash well, cutting out all decayed or unripe parts. Lay them, when peeled, in cold water for some time before cooking. If you boil them put a little salt in the water. Cook them steadily after you put them on. Be sure they are thoroughly done. Drain well and serve hot.

In winter, vegetables such as beets, carrots and turnips are much improved by being laid in cold water over night before cooking, as it makes them fresher and crisper.

In cooking green beans, I have found that they were very much better when cooked slowly for two hours, than when cooked in the old way of quick boiling for half an hour. All the summer roots are much better used while small.

With chops, serve mashed or creamed potatoes, with a salad of lettuce or tomato. For a roast beef dinner, the green vegetables may be cauliflower, cabbage or green beans, for boiled beef, turnips or carrots and plain boiled potatoes with a lettuce salad or celery. With boiled mutton always serve caper sauce, boiled rice and stewed turnips; with lamb, mint sauce and peas. With pork, beans, apple sauce and turnips may be served.

Serve one starchy vegetable and one green vegetable with hot meat. With poultry and roast mutton, some tart jelly ought to be served and many people now use rich jam or preserves with their meat.

## ROAST FOWL.

By Mrs. W. J. Hunter, Brampton.

At this time, when on nearly every table in the land fowl is served more or less during the winter months, I fancy nearly every housekeeper thinks she knows the best and most tasty way of serving them. Therefore, in giving this article, I do not by any means wish to dispute the claims of other housewives. I thought if we might present one way of doing them, it would bring discussion and we would all learn something, and perhaps save our fowl in such a way this winter that the family might pronounce them the best yet.

First, in choosing a bird to roast, be sure it is a young one. The woman who raises her own birds has no difficulty. But, alas, all the birds slain are not in their infancy, and it may be that after spending some little time preparing one to the best of our ability, when it is brought to the table the matter of dissection is as difficult as it is trying to the temper of the carver. In purchasing fowl two rules generally hold good. In selecting a turkey or chicken pierce the skin with a needle or pin and in a young bird it will pull out without raising the skin. If the bird is an old one

the skin will adhere to the needle and be raised up with it. In geese or ducks there are two bones that rise up toward each other on the under side at the tail. If these are bent with finger and thumb they will snap off in a young fowl, but will bend in an old one. **Slige** carefully. A piece of white paper will answer. Pull out any odd pin feathers **skin down** back of neck and cut neck off close to body; remove windpipe and loosen crop all around, taking care not to break it. Now, make opening to remove entrails. In chickens or turkeys cut open between the breast and leg in hollow of thigh; in geese and ducks cut crosswise on breast side a little in front of tail. Insert hand and loosen all around inside, then grasp the gizzard and draw gently. Be sure not to break the gall bag as by so doing you will give the whole fowl a bitter flavor. Remove light red substance between ribs, but leave the sole, that is the dark flesh on inside of backbone. Wash well in lukewarm water and wipe quite dry with a clean cloth. We do not advocate sprinkling salt inside, as it tends to draw the juice. Lay on table, breast side up, and press hard to break breast bone; push lower part of leg up into skin of second joint.

Now prepare the dressing. For goose and duck almost the same dressing will do. Perhaps a little more onion in goose dressing would be better. Prepare as follows:—Chop onions to about one-third the bulk required, par-boil in water and drain well; add stale bread crumbs, salt, pepper, pinch of sugar, small piece of butter and sage to taste. Some people like a dressing of mashed potatoes. For chicken dressing prepare bread crumbs, liberal piece of butter, salt, pepper, little sugar, very little good mace and celery salt, an egg to bind it slightly and summer savory to suit the taste. Turkey may be filled with this or one-third sausage meat or raw oysters cut up. In stuffing turkey and chicken make a ball of the dressing and insert in crop to plump it out. In goose and duck put it all inside and pull skin of neck back tightly behind. Close openings, push legs up into skin at the side and skewer together. In white fowl turn tips of wings back; in goose and duck cut wings at middle joints and serve tips with giblets. Be sure to skewer and tie the fowl well so that it will be in nice shape when cooked. Have oven pretty hot just at first, then cook slowly. A covered baking pan is the best, but if an open one is used be sure to baste the fowl often. Use a little butter and nice dripping to baste chicken, and water, salted slightly, for goose. Dredge flour on top before putting fowl in the oven.

For gravys (after fowl is lifted) set pan on top of stove, put in large cooking spoon of flour, stir until brown, then add water until of proper consistency. For turkey and chicken gravy tbin with milk instead of water and season with a little mace, celery, salt, pepper and sugar. Put a dash of sage in goose gravy, and if desired boil liver and chop fine and add to it. Parboil giblets (neck, heart, gizzard, liver and wing tips) and put in pan to brown about fifteen minutes before lifting fowl.

With chicken serve bread sauce. With goose serve apple sauce; with duck, apple sauce or currant jelly, and with roast turkey, cranberries made into sauce, or better still put in a mould and turn out cold.

Have plates real hot and a good sharp knife for the carver, and I think you will furnish a meat to the king's taste.

#### DISCUSSION.

**Q. Is fish a brain food ?**

**A. Miss Blanche Maddock, Guelph:** The prevalent idea that fish is a brain food is a mistaken one. The reason that fish is usually recommended for students and others engaged in work requiring brain power is because it contains the elements necessary to keep the whole system in repair and in sufficient quantities for the exertion made, but not in such large quantities as to clog and tire the brain, which meats are apt to do. It thus leaves the brain free to think and act.

**Q. Would you put meat on in boiling water or cold ?**

**A.** The meat should be put in boiling water for a short time until the albumen (of which the lean meat is largely composed) is hardened or coagulated. This forms



a strong coating around the outside of the meat and prevents the juices from escaping. When this coating has been formed remove the meat to a place on the stove where it will cook at a temperature just below boiling point. By this method the juices are kept in soluble form and the lean of the meat is made tender and digestible.

Q. Why is pastry injurious ?

A. When food containing flour is taken into the mouth the starch in the flour should be thoroughly mixed with the saliva before entering the stomach, but in pastry the starch cells are sealed over with fat so that they cannot become broken up in the mouth, and therefore have to go into the stomach in that condition. Thus the work that should be done in the mouth has to be done in the stomach and intestines.

Q. If rice contains very little bone-forming food how is it that some nations live almost exclusively on that food ?

A. In the countries where rice is used as the staple article of diet the temperature of the climate is so high that the people make very little physical exertion. Therefore the waste or drain on the system is very slight. Rice and the other foods used are made up largely of starch and sugar, these giving sufficient nourishment for the exertion required. The small amount of bone-forming food contained in them is quite sufficient to keep the body in repair.

Q. Why does it injure tea to boil it ?

A. There is a certain property in tea known as tannin, which is injurious. When the tea is boiled this is drawn out into the water.

Q. Why are eggs, which are cooked at a low temperature, better than those cooked in boiling water ?

A. When eggs are cooked in boiling water the albumen or white of the egg becomes tough and leathery, and consequently is more difficult to digest than when the albumen is coagulated in a soft, jelly-like form.

Q. Does it improve a cake to beat the yolks as well as the whites of the eggs ?

A. Yes, the object in beating the egg is to get the air into it. The more air in the egg the lighter the cake will be.

Q. Is it well to feed growing children meats underdone ?

A. Pork should never be fed to any one underdone. There are very often disease germs in pork which are only destroyed after thorough cooking. White meats should always be thoroughly cooked. Under some circumstances, where the child is run down in health or anaemic, rare beef is beneficial, but generally speaking it is best to cook all red meats sufficiently to change the red color, but not enough to harden or coagulate the juice.

Q. Is it injurious to use sugar with porridge ?

A. Sugar with oatmeal porridge is apt to form an acid in the stomach, thus causing heart-burn.

Q. Is crushed wheat as good a breakfast food as oatmeal ?

A. In the winter time oatmeal makes a better breakfast food as it is stronger and is more heating than wheat. It is well at any season of the year to use different cereals, as a variety of food is very necessary.

Q. Are fruits of any particular food value ?

A. Fruits are beneficial not so much for the actual food elements which they contain as for the acid (of which they are largely composed), which assist in the digestion of other foods. Fruits also assist in keeping the blood pure and the system in order.

Q. Why are vegetables so beneficial when they are made up largely of water ?

A. As the body is about three-fifths water it is necessary to take sufficient to keep the system in running order. All the elements in our foods which go to build up and nourish the body are carried to the different parts by means of water. After repeated experiments it is found that water taken in vegetables (while it has the same chemical elements) has a more beneficial effect than when taken separately.

Q. Are potatoes more nourishing when cooked in the skins ?

A. Yes, because the mineral part of the potato, also most of the starch, are found next the skin. The nearer we go to the centre of the potato the farther apart are the starch celis.

Q. Are potatoes hard to digest ?

A. No, the starch cells are dissolved by the saliva in the mouth before they reach the stomach or intestines.

Q. Is it advisable to use for cooking purposes the water in which potatoes have been boiled ?

A. Miss Agnes Smith, Hamilton. Potatoes are said to contain a poison which is dissolved by the cooking, so it is better not to use the water.

Q. How would you cook cereals ?

A. Allow them to boil and then cook slowly for a long time, so that the woody fibre may be softened.

Q. What are the uses of a double boiler ?

A. 1st. To cook milk mixtures. There is not the same danger of burning the food. 2nd, For custards; the albumen of the egg is not so easily coagulated, and curdling is not so apt to occur. 3rd, For the cooking of cereals.

Q. What is the best method of cooking tough steak ?

A. Put the meat on in cold water and let it come to boiling point. Then set it back and allow it to simmer until tender.

Q. In cooking meat in a double roast pan is it advisable to cover it when first putting it in the oven ?

A. Allow it to brown before covering.

Q. In baking a custard what means should be taken to keep it at the proper temperature ?

A. The baking dish containing custard should be set in a pan of hot water.

## THE FLOWER AND VEGETABLE GARDENS.

### CULTURE OF FLOWERS.

By Mrs. A. R. Orser, Stella.

When asked to contribute a paper on the "Culture of Flowers," I felt that it would be difficult for me to do so as my knowledge of the subject is limited; but having promised to do what I could, I feel that I ought to at least make an effort to do so. I have written only of those I have been successful in growing. Plants of more difficult culture, I have left for persons better competent to give them the treatment they require.

Requirements of Plants. Flowers, like people, have their likes and dislikes, and if we would be successful in growing any one variety, we should acquaint ourselves with its habits, and so far as we can, meet its requirements. Some like partial shade, others like a full southern exposure the entire day, others prefer the morning sun only, while others like best entire shade. Some require a great deal of water; others not so much, and others very little indeed. Nearly all require good drainage, and the kind of soil they will thrive in best.

Geraniums. If I could have but one plant, I would choose the geranium, for the reason that it is easy of culture. Its requirements are, good soil, suitable drainage, sufficient water only when needed and a southern exposure. If given these, any one can be successful in cultivating geraniums.

Begonias. The begonia, too, is a popular house plant, and requires no more attention than can be easily given. They never do well in a window where they get the sunshine, so should be grown in a window with an eastern exposure. They delight

in a moist atmosphere, and a soil of leaf mould, loam and sand. They are seldom attacked by insects, but sometimes are by the mealy bug, which is easily routed by the application of an emulsion of fir tree oil and kerosene.

**Fuchsias.** The fuchsia is one of the best summer-blooming plants. It begins to blossom early in the season and will continue until late in the fall. It should have a soil of leaf mould mixed with sand. The pots should be well drained, as stagnant water at the roots will injure the plants. If soil and drainage are what they should be, too much water is scarcely possible. As soon as it becomes root-bound, it should be removed to a larger pot. The morning sun is best, but it may be placed with perfect confidence in a window with a northern exposure. If attacked by the mealy bug or aphid, the fir tree emulsion used according to the directions given, will entirely rout them out. Tobacco tea is often used in fighting the green aphid. Make the tea about the color of tea to be used on the table. Plants should be dipped in this tea and allowed to remain about five minutes.

**To Kill Root Worms.** Plants are often injured by little white worms in the soil. To destroy them, take a piece of perfectly fresh lime as large as an ordinary-sized tea cup and put in a pail of water, let it dissolve, and pour off the clean water, apply enough to the soil to thoroughly saturate it.

**I use as a fertilizer liquid ammonia,** one tablespoonful to about three quarts of water. Water the plants thoroughly with this once a week for a period of six weeks, spring and fall, when a marked improvement will be seen in the growth and color of the foliage and in the abundance of bloom.

In conclusion, let me say, if we, who have plants, find them a delight and blessing, which I can say they are to me, let us not be niggardly with them. 'Tis true, one cannot always slip a plant, for there are times when to do so would annihilate it, but when we have one to spare, let us give it to one who has not, and our prunings, instead of throwing them away, let us pass them on that they may be to others what they have been to us, a joy and a blessing.

## PLANTS AND THEIR GROWTH.

By Mrs. G. W. Knowlson, Gorrie, Ont.

Some think that all plants require the same care. This is a mistake. The six principal points to be remembered are heat, sunlight, watering, air, drainage and good soil. The following plants require a temperature of 70 to 80 degrees in the day time and 55 to 60 at night, viz.: begonias, ferns, coleus, calceolarias, cacti, palms and geraniums. The following will do well in an atmosphere ranging from 50 to 60 degrees by day and 40 to 45 degrees by night.—Oleanders, roses, carnations, callas, primroses, violets, verbenas and chrysanthemums. Plants require rest at night and a slightly lower temperature assists materially in this respect. Over-anxiety to keep out the frost at night is often the cause of a higher temperature being maintained at night than in the day time. This is injurious to plant life, as it induces a weak, spindly growth that invites disease as well as a beautiful crop of insect pests.

I have found from experience that callas will not bloom unless given at least three months' rest. By resting I mean to be without water and to allow the leaves and stalks to die down completely to the bulb. When you wish to replant again shake off all the old soil from the bulb and repot in fine rich soil, using a pot one size larger than the one used the previous year. When growing, water freely and give plenty of sunlight and fresh air.

Geranium slips if planted in February and properly treated, will bloom in June, or if planted in August will bloom in January.

When planting slips, put the plants in the earth before watering, and use small pots. Give warm water in the winter also plenty of sunlight. Water all newly-potted plants once thoroughly and withhold water until the soil shows signs of becoming

ing dry again. Too much water given to newly potted plants before root action has well started will often destroy them.

I have found by experience that a mixture of equal parts of decayed sods and rotten stable manure is the best kind of soil for plants. The sods for this purpose may be obtained along the roadside. Lay down a course of sods and on top of this an equal course of well-rotted manure and so on alternately until the heap is finished, the last layer being sod. This heap should be turned over carefully two or three times a year, breaking up the sods finely with a spade or fork.

I think broken brick to be the best to use for drainage.

### ROSE CULTURE.

By Miss A. Hampton, Millbrook.

Roses may be divided into two classes, climbing and bush roses. The climbing roses include Sweet Briar, Hybrid Briar, Noisette, Baltimore Bell, Prairie Queen and Rambler. The bush variety are divided into numerous families of June roses, Damask, Province, Moss, Japan, China, Bourbon, Tea, Polyanthus, Hybrid Perpetual and Hybrid Tea.

The Moss Rose is one of the most hardy and popular but its growth at first is very slow. The Rambler, Hybrid, Perpetual and Hybrid Tea are the most tender, and require to be sheltered from north winds. The Ramblers are adapted for walls or festooning over the end of piazzas. They are not perpetual bloomers, but their flowering season lasts a long time. Their growth is remarkably rapid and their foliage particularly fine.

All roses require very rich soil, pure air and sunshine. The old wood should be kept trimmed out. It is the young growth that produces the flowers. In the fall trim and transplant the house roses. Keep the garden roses free from sod at the roots, as the sod prevents the young shoots from coming up. In the fall lay the bushes down and cover with boards. Some cover with straw, but straw attracts mice. Cow manure is the best fertilizer. Hen manure is too strong, and in using it you are likely to kill or injure the bushes. The best plan is to put the manure into a bucket, pour water on it, stir and pour round the bushes. Once or twice a season is sufficient. Soot applied in the same way is good, it darkens the bloom.

Among the rose pests are the red spider, the bark louse, green fly and mildew. For house roses, one of the best remedies is tobacco smoke. Cover the plant with a paper cone, and get one who smokes to blow a few whiffs from a cigar into the cone. This will kill the bark louse and green fly. Also bathe them occasionally with soap suds, as it will keep the grubs from the roots. If plants are exposed to draughts they will mildew. For mildew scatter sulphur on the soil. The red spider is fond of other plants as well as roses, and often does irreparable damage. The best preventive is cold water baths.

For garden roses the best insecticide is Paris green. Do not make it too strong. One teaspoonful is sufficient to a pail of water. Keep your plants in a healthy condition. As a man full of vitality and strength will escape many of the natural diseases flesh is heir to, so healthy plants will in a great measure escape their enemies.

For winter bloom, let the plants rest by keeping in a dark place during the summer. Water just enough to keep alive. In the fall trim and transplant.

### THE PALM.

By Miss Needham, Millbrook.

The date-palm is common in the east, especially Palestine, where it grows to the height of 70 feet. It does not bear dates until 8 years old, and then continues to bear for about 100 years. There, dates take the place of bread to a large extent, and its wood is used for many purposes. In the west the palm is prized as a house-plant (not growing very high) for its graceful branches and being an emblem of joy. There are

many varieties, some of the favorites being cocos, latania, ostrich-feather and kentia.

To grow this plant successfully the most suitable soil is half sandy loam and half well-rotted manure. It requires a deep pot (on account of the shape of its roots) rather than a large one, and should not be transplanted unless the present one is full of healthy roots. Do not neglect the drainage which should be finely broken crockery in the bottom of the pot to a depth of about one inch, or better still use charcoal as it keeps the soil sweet and will add color to the foliage and flower of any plant. If the tips of the branches become brown the cause is either imperfect drainage, too much heat, furnace gas, want of water, or keeping in too much shade, though palms do not require the sun. Once in two or three weeks they should be soaked until every root is reached. The branches should be sponged or sprayed about once a week, using milk and water. Sponging with a little castor oil is good to give a gloss to its branches. By washing thoroughly occasionally with soapy water there will be no trouble with scaly bug. A very small quantity of sulphur mixed with the soil will keep grubs from the roots.

### WINTER WINDOW GARDENING.

By Mrs. W. J. Arnott, Churchville.

Winter window gardening, like a great many other things, has made rapid progress during the last thirty-five or forty years. In former days about the only plants seen in windows were a few stalky geraniums and small chrysanthemums. Plants were then both scarce and expensive. Now there are very few houses without their window plants, some of which would compare very favorably with those grown in green houses, and flowers are so much used on nearly all occasions that they seem almost a necessity.

A few years ago in one of the large manufacturing towns in England a good prize was given for the best cottage window-garden, and it was thought in this way to stimulate the people to take a greater interest in keeping their homes neat and tidy. To have a successful window garden, you need to commence in spring by putting bulbous plants to rest, taking cuttings from geraniums and sowing seeds of annuals. Calla lilies are amongst the best winter bloomers, if properly cared for. Give them a rest during July and August, then repot in good rich soil, give plenty of drainage, keep in a cool place until October, then place in a warm, sunny window, give an abundance of water and each lily should bloom about every five or six weeks until the following July.

Cuttings taken from geraniums in spring will bloom earlier in winter than those taken in July or August, but the spring plants will grow very large and take up more room. Annuals such as mignonette, nasturtiums and others bloom better in winter by sowing the seed in small pots in spring, keeping them well pinched back during summer, so they will have strong, woody stalks, then put in larger pots for winter blooming. Last winter I had a plant of tall nasturtiums from which I must have cut dozens of blossoms, almost as pretty as those of summer. Smilax is a pretty delicate-looking vine for the window and is easily grown. Primulas are constant bloomers, the white being very pretty. Heliotrope will also bloom all winter. Tuberoses are pretty for November. Pot the bulbs in May, sink in the ground during summer, and bring in before frost comes, and they will fill the house with fragrance. Chrysanthemums are also fine for November, but are hard to keep free from insects, so it is better to not mix them with the other plants, for if insects get a start in the fall it will be hard to get rid of them. Freesias are a pretty white fragrant flower grown from small bulbs. Put in rich earth near the last of August, keep in the dark for two weeks, place in a cool, sunny window and they should bloom in February. The flowers keep a long time after being cut. Bulbs of nearly all kinds need to be kept in the dark for several weeks to grow strong roots.

Pot all plants in good rich soil in the fall, giving plenty of drainage and they will need little more until spring. We use a soil composed of about one pail of leaf mould, one of clay loam, one of well rotted manure and half a pail of sand, well mixed and sifted, the coarser parts being used for second drainage above the broken pots or charcoal. Do not fill the pots too full. A little liquid manure or soot in the water given occasionally keeps the leaves fresh and green. Give plenty of fresh air and water freely with luke-warm water. I do not say these are the best ways of treating plants, but they are the ways from which we have had the best results. The cultivation of flowers is very interesting. They are God's gifts and speak to us of rest and peace.

#### DISCUSSION.

Q. How do you care for house plants ?

A. Miss Laura Rose, Guleph. The different varieties need different treatment, so to be successful one must study the characteristics and wants of each. Generally speaking, the average woman keeps too many plants. Cull out the poor ones and give the few more space and care. One really pretty plant is more admired than a dozen spindly, sickly ones. Prof. Hutt says more plants are killed by over-watering than anything else. Give them a good drink when the soil tells you they need it. Keep the leaves free of dust for it is through them the plants breathe.

#### THE VEGETABLE GARDEN.

By Miss Ruth Pirie, Winterbourne.

**Location.** The garden is frequently under the care of the women and in such cases should be near the house, to be in reach for gathering and for fifteen-minute opportunities for gardening. All heavy crops such as potatoes, melons, squash and cabbage should be put in the field where they can be cultivated with horse and plough.

**Cultivation.** A light, sandy loam is usually preferred, but fine vegetables are grown, with ordinary care, in heavy, dark soils. A mellow rich soil which will hold moisture is easily recognized and should be chosen if available. The size of the garden should depend on the size of the family and their taste for vegetables. The garden should be dug or plowed in the fall, and the clods left exposed to the frost, which is nature's most effective agent in opening up the soil, and putting it in order for plant growth. The manure should be put on in the fall and is best when thoroughly rotted. In the spring, the soil should be broken fine as deep as the plants roots are expected to go, this being from fifteen to twenty inches. Thus the earth is left fine, loose and mellow for the tender roots. The earth, thus prepared, holds moisture and readily supplies the roots with food. To determine the proper condition of the soil in spring squeeze a little of it in the hand, if it makes a ball and sticks to the hand, it is too wet, if it breaks hard it is too dry. To work easily it should crumble easily and leave very little dirt on the hands.

**Use Good Seed.** The seeds should be ready by the time the ground is prepared. It has been proven that large seeds produce stronger plants than the small, light seeds. It is a mistake to plant old seed, and it is also well to procure a supply from a different part of the country, but not very remote nor from too different a climate.

Investigation has shown that beans, peas and other vegetables collect nitrogen from the air and leave it in the ground. Thus these plants may be followed by others that especially need nitrogen. Lettuce may be succeeded by beans and tomatoes; beans by radish or celery, beets by spinach or lettuce and onions by peas or cucumbers.

**How and When to Plant.** Beans should be planted when the weather and ground are warm, the seed planted with the eyes downward. The lima is a good kind. Poles should be provided for the vines.

Beets. Soak the seed in warm water for a day before planting and cover an inch deep for early use. We sow as soon as the ground can be worked. Sow in June for winter use.

Radishes require a loose, sandy soil. Ashes spread on the ground before planting will protect the roots from grubs.

Cucumber seed is sown when the ground is dry and warm (about the 5th of June) in hills four feet apart, mixing the soil with a little rotten manure and ashes. Place from ten to twelve seeds in each hill and cover half an inch deep, thin to three or four in a hill when they begin to run. To prevent the striped bug, nail four pieces of board together and cover with mosquito netting, placing one over each hill.

Melons should have a warm, light soil and plenty of manure and the seed should be sown in hills six feet apart. Citrons should be put in hills nine feet apart.

Parsnips should have a rich soil. Sow seed thick, in drills, half an inch deep. In the fall take up enough for winter use and store in the cellar, and leave the remainder in the ground until spring. Cover the tops with a little earth when the frost comes.

Tomatoes for early crops should be set in dry, gravelly soil. If a large and rather late crop is desired, set in rich, moist soil. If some of the branches are clipped off, leaving only the strongest and thickest, it will increase the earliness of the tomato. The plants should be supported by a hoop or ladder trellis or small stakes driven into the ground and the plant attached to them by soft twine.

Cabbage seed should be sown in the house in March or April and planted when the ground is warm. When the heads begin to form, throw a handful of salt in each cabbage. Persian insect powder is good to use for the worms. It may be applied with a bellows while the dew is on the plants. A German remedy is a mixture of buckwheat flour and black pepper, also applied in the early morning.

Currant bushes should be sprayed with white hellebore in order to destroy the worms. Some people spray the bushes with cold water and then dust wood ashes over them.

The chief purpose in cultivation is to keep the weeds down. Spend a short time each week in the garden with a hoe as the weeds are much more easily kept down when small than if allowed to grow large. The surface of the beds should never become solid, and if the hoe is used around the roots of the plants it lets the air into the roots, which is much needed to assist plant growth.

## MISCELLANEOUS.

### EMERGENCIES.

By Miss Sarah E. Conn, Strathroy.

In giving you this paper I do not expect to tell you anything new, but merely to remind you of many things you already know. An emergency is the occurrence of some thing unexpected. Every woman will meet with emergencies in her experience, and it is well to be prepared. Emergencies do not develop the ability to meet them, they call for the ability which should already have been acquired. They prove more than anything else can, whether or not a person is fitted for the responsible duties of a nurse. I do not mean a trained nurse only, but any one whom circumstances may have placed in charge of a sick person.

To be able to meet an emergency requires, first of all, self control. If a doctor or someone who is your superior in learning, is present, then be a machine. Do just as you are told, but keep your wits about you so that you will be able to obey promptly. If you are responsible then act, command; send away anyone who cannot obey.

Fainting. This is one of the most common emergencies you will meet with. What is the cause of fainting? It may be hysteria. It may be that the brain has not blood

enough to retain consciousness, it may be apoplectic, i.e., a blood clot on the brain. Whatever may be the cause, lay the person down, see that the heart and lungs are not compressed. Let the patient have plenty of fresh air and bathe the face with cold water. Spirits of ammonia is a safe and quick remedy, dose thirty drops. Never give anything until you have tried the simpler remedies. For the sake of emphasis I repeat: send everyone away who is not useful to you and do not talk about it afterwards.

**Apoplexy and Alcoholism.** Lay the person down and apply ice, or something cold to the back of the head.

**An Epileptic Fit.** Take care that the person does not injure himself. Put something such as a towel or handkerchief between the teeth to prevent biting or chewing the tongue.

**Hemorrhage.** Do not get frightened. Use pressure if you can apply it. If the hemorrhage is from the legs or arms tie something around between the cut and the heart. If you are skillful you can stop the bleeding in one of these ways until the doctor arrives. Hemorrhage from the lungs is characterized by its bright red color and frothy appearance. Put ice on the chest and keep the patient quiet. Give bits of ice to eat. A hemorrhage from the stomach has a dark brown color and is sometimes mixed with food. Make sure that it does not come from the throat. Give bits of cracked ice and keep the patient quiet. Put an ice bag over the stomach. For hemorrhage of the intestines, as in typhoid fever and dysentery, use ice. For nose bleed, try cold applications on the back of the neck. Put the patient on his back and plug the nose with cotton. If you cannot stop it send at once for a physician.

**Burns.** Perhaps the most alarming accidents are those resulting from fire. If your own clothes catch fire lie down on the floor and roll over and over, keeping the lips closed tightly. If you see another woman in the same danger (it is most likely to be a woman) throw her down and wrap around her a shawl or rug, or any heavy woollen thing at hand to stifle the flames. Begin at the head and keep the fire as much as possible from the face. The great danger is that of inhaling the flames. In the treatment of burns or scalds the first object is to exclude the air, this will at once relieve the pain. Apply soda with a wet bandage, or paint with white of egg and as one layer dries apply a second and third. Carron oil, linseed oil and lime water in equal parts is a popular remedy, but pure olive oil is as good or perhaps better, as linseed oil often contains irritating impurities. Before applying the oil to burns from acids pour on plenty of water to dilute and entirely wash off the acid. For burns from lime and potash, apply diluted vinegar to unite with the alkali and form a neutral substance. This will prevent further trouble.

For a severe bruise, apply a cold wet cloth and hold the parts above the heart.

**Dellrium.** Be gentle but firm, never rough. Do not argue with the patient. It is often well to appear interested in the conversation. See that nothing sharp, such as knives or scissors are within reach.

**Poison.** An emetic is the best and safest thing. Mustard and warm water have been recommended for this.

**Fracture.** Put the person in as comfortable a position as possible, without too much moving. Remove the clothing and get ready for the doctor. Have plenty of hot water, fresh towels, etc., also prepare the bed by putting on a rubber sheet and draw sheets, as the patient may lie there for many weeks. The blood from an hemorrhage from any part of the body should be saved for the doctor to see.

**Sunstroke or Heat Prostration.** In most cases this is preceded by headache and dizziness, and more or less mental disturbance. It is not necessarily the result of exposure to the direct rays of the sun. It may be produced by intense heat of any kind. Fatigue and foul air aggravate the tendency. Symptoms: Face pale and dusky, the skin hot, the breathing labored, pulse weak and fluttering, sometimes convulsions, but more often no movement after the first insensibility till death. The temperature of the body sometimes rises to 105 degrees Fahrenheit or 106 degrees Fahrenheit. The first thing to be done is to reduce the temperature. Remove the patient to the shade, take



the clothing from the head and chest, throw cold water on the body or give a cold bath, have all the fresh air possible. As soon as the temperature goes down, artificial respiration may be resorted to. If the temperature rises again, give another cold bath. Do not give alcoholic stimulants without medical advice. Aromatic spirits of ammonia may be given if stimulants seem necessary.

**Snake Bite.** In the case of the bite of a snake, the bleeding should be encouraged rather than checked. Bathe in warm water and bind the limb above the point of injury to prevent the poison going to other parts of the body. Ammonia water may be used externally and internally. Keep the patient lying down. The wound should be cauterized and then poulticed. The bite of any animal should be regarded with suspicion. That of the cat or rat is said to be more dangerous than that of a dog.

**Bites and Stings of Insects.** For the bites and stings of insects, treat with cool lotions. For the mosquito bite ammonia water is good. Care should be taken that the sting of a bee or wasp is not left in the wound.

**Poison Ivy.** The eruption from poison ivy or sumach may be treated with a solution of baking soda. These are the only plants in this part of the country which are poisonous to the touch.

**The Treatment of Drowned Persons.** When a person is apparently drowned, first turn face downward for a moment and pull the tongue forward. See that there is no mucus in the throat. Put something under the chest, so that the water can run out. Turn him over and commence artificial respiration by raising the arms above the head and moving so that the elbows touch the sides. The two movements should be repeated slowly and steadily, not more than sixteen times in a minute, to stimulate natural breathing. The case should not be considered hopeless under two hours.

In case of an accident, send a written message for the doctor, describing as well as you can the nature and urgency of the case, so that he may come prepared with the necessary appliances. A verbal message sent by an excited bystander is never delivered intelligently.

Different doctors use different remedies, all equally good, but one can always use the simple things without seeming to be officious.

## SUGGESTIONS FOR HOME NURSING.

By Miss M. A. Hart, Foley.

In country homes, many conveniences and appliances for successfully nursing the sick, which are found in cities, are absent. In the country a trained nurse is very often an impossibility, thereby leaving much of the responsibility for the patient's recovery upon some member or members of the household. The doctor can prescribe and direct, but if his instructions are not followed carefully and intelligently, the patient is very liable to succumb to the disease which holds him in its grasp.

The first and most necessary requisite of a sick room is pure air. Emanations from the body and the breath of the patient are constantly tainting it, and if it is not regularly purified the patient inhales it over and over again, poisoning his system with it. But while fresh air is absolutely imperative, you must be careful to keep the room at a proper temperature, say 70 degrees Fahrenheit, and to see that the sufferer is protected from draughts. Lower the window at the top a few inches. If the upper sash is not made to come down, remove the cleats underneath and move them down the required distance. If the weather is too cold to allow the window to be left open, cover the patient, head and all, with an extra blanket, and open the window for a short time, three or four times a day. It is no sign that the air in the room is fresh because it is cold. Cold air may have been breathed and re-breathed until it is as impure as warm air. To assist in keeping the air pure, no vessel that has been used should be left in the room one moment longer than is absolutely necessary. A little disinfecting solution should be kept standing in them.

The room should be as plain and as simply furnished as possible. All curtains and draperies are best removed, to leave no hiding places for dust and germs. and, if possible, the carpet should be taken up, and the floor wiped every day, or every other day, with a cloth wrung out of a solution of corrosive sublimate. The wood-work and furniture should also be dusted with a cloth wrung out of this solution.

An iron bed is best to use in sickness, having a woven wire mattress upon it. A feather bed should never be used if it is possible to avoid it. The lower sheet should be kept smooth and tight, to prevent bed sores. This is done by turning the edges over and pinning them at the four corners underneath the mattress. A rubber sheet is a valuable addition to a sickroom. A strip one yard wide and long enough to go across the bed, and to tuck in underneath, can be folded in a sheet and placed across the middle of the bed, with the ends pinned under the mattress. This saves the lower sheet and can be easily changed without disturbing the patient. Have the covering as light as possible, consistent with warmth. Too much clothing makes the patient restless. Florence Nightingale says: "Feverishness is supposed to be a symptom of fever: nine times out of ten it is a symptom of bedding."

Unless specially forbidden, the patient should have a bath every day. It opens the pores of the skin, and removes waste matter which otherwise would be absorbed by the body, greatly to the detriment of the patient's recovery. A sponge bath is easily and quickly given, without fatiguing the sufferer. Before beginning see that everything necessary is at hand—two blankets, two towels, sponge and soap, a basin of tepid water and a pitcher of hot water to replenish it, as the water cools. If clean clothing is to be put on have it aired and ready. To remove the night dress draw it gently up at the back till it lies in folds under the neck. Lay the arms above the head on the pillows, raise the head with one hand, and with the other slip the folds over the head, keeping the patient covered to the chin with one of the blankets. It can then be easily slipped off the arms and taken away. Before removing the night dress the blanket should be put on the bed under the patient to protect the lower sheet and mattress. This is done by rolling it lengthwise half way across, tucking the free side under the mattress and lifting the patient over the roll. Then go around to the other side, unroll the blanket and tuck in the edges. The bed linen can be changed in this way by putting the soiled sheet before the fresh one. The upper sheet is changed by spreading the clean one over the bed clothes, holding it firmly with one hand and with the other draw them out underneath it. The soiled sheet can be taken off and the remainder of the upper clothes spread on again.

But we must not forget to bathe our patient. First bathe and dry the face, neck and ears. Then, under the blanket, bathe and dry the arms, one at a time, then the chest. Now, turn the patient on his side and do the back, then the back of the limbs and feet. Turn again on the back and wash the front of the limbs and feet. Put on clean clothing, change the blankets and put on the upper clothing.

Poultices form a very important part in the treatment of numerous ills. Flaxseed meal is the best material for a poultice. It is made by using a pint of boiling water into which is stirred, a little at a time, sufficient meal to make the poultice of the consistency of thin porridge, smooth and free from lumps. Have a soft piece of cotton, or better an old, fine guernsey free from holes, and about an inch longer than necessary and twice as wide. 6 inches by 10 inches is a good size for a poultice, but it may be made larger if necessary. Fold lengthwise and sew the two sides together, and one end. Slip into the bag, by the aid of a spoon, enough of the prepared meal to make a poultice about three-quarters of an inch thick, sew up the end and apply while hot. It is necessary to have at least two of these that a warm one may be applied when the first one gets cold. To re-heat, have a pot of boiling water on the range with a steamer set on it. Put the poultice on a plate and set in the steamer, covering closely. To keep warm roll it up on the plate while being carried to the patient. If necessary it may be held in place by a bandage. It should never be allowed to get cold or hard, but should be emptied and fresh poultices made. A little

lard added to the flaxseed helps to keep it soft. After removing the poultice the part should be rubbed with vaseline and covered with a couple of thicknesses of flannel.

Mustard is also commonly used for poultices, made in the proportion of one teaspoonful of mustard to two of flour, and made into a paste with warm water and vinegar. They are very useful to relieve sore throat and pain in the chest. A little glycerine is sometimes added, when the patient has a very sensitive skin. Liniments should be rubbed in until the skin is dry, and a piece of flannel spread over the affected part.

A few words might profitably be said with regard to emergencies and accidents. At such times we require to keep our wits about us, and to know what should be done immediately. Some valuable additions to the family medicine chest are—some old cotton, torn into strips two inches wide, for bandages, pieces of old pocket handkerchiefs or fine table linen, a box of some good salve, some reliable liniment, some adhesive plaster and a roll of absorbent cotton. Armed with these one can do much to at least relieve most of the accidents which are liable to occur at any time.

For sprains, cloths wrung out of ice water and changed often are a good remedy. Follow by a good rubbing with liniment.

Bruises are benefited by being soaked with hot water for an hour or so, then wrapped with flannel, applying heat in the shape of hot water bottles; also rub with liniment.

Burns are best treated by keeping the air excluded. If a person's clothing takes fire wrap a rug around him or turn him over and over on the floor. If the clothing sticks to the flesh, do not try to pull it off—cut it away. Should the flesh be much burned raise the upper bed clothing on boxes, so that they may not touch the patient. A doctor should be summoned as soon as possible. For slight burns vaseline or lard are good, but failing these any kind of grease without salt.

In cases of fainting lay the patient on his back, loosen the clothing about the neck and waist and raise the feet higher than the head. If consciousness does not return hold ammonia to the nose, shake the body and dash cold water in the face.

Poisoning must be treated promptly. It must be gotten out of the stomach as soon as possible. Tickling the back of the throat with a feather or the finger will cause vomiting, as will also warm water with a little mustard added. For potash, ammonia, etc., use vinegar or lemon juice, as an antidote. For acids such as carboric, oxalic, etc., use baking soda, magnesia or lime water. For turpentine or alcohol use starch dissolved in cold water and thickened with boiling water or gum arabic, dissolved in warm water. Poisoning by arsenic, saltpetre and copperas is treated by giving the white of an egg stirred into water, flour and water or milk. Strong coffee is recommended for laudanum, morphine, belladonna. Apply cold to the head and warmth to the feet; rub the limbs and try to keep the patient awake. A light diet for a few days is advisable in all cases of poisoning.

## HEREDITY.

By E. F. Irwin, M.D., Weston.

When I promised this essay, I did not realize the task I was setting for myself. I find on a very superficial review of the subject that one needs to be a specialist in biology to give a comprehensive discussion on the subject of heredity. The theories on this subject have been many and varied; some learned men have spent most of their lives trying to discover through what agency the characteristics of the parent were given to the child. All these theories would not be interesting to us, so let us be satisfied to know that the microscopical cells which go to form our minute beginning contain the chemical and physiological products which form our future destiny, mentally, morally and physically, and give us our power of resistance to temptation and disease. The factors thrown in to make up this destiny in any one generation are so

many and varied that it would be risky to wager much on the worth of any one generation.

The characteristics that are handed down through many generations are the most stable. New characteristics developing in any one generation, if not very decidedly impressed upon the individual, will be replaced in the next generation by the old family characteristics of past generations. For instance, a criminal may beget a worthy child, but the moral fibre of resistance to crime while sufficient for him, is not strongly enough developed to be imparted to his offspring, and so is replaced by the older and stronger instinct. The same is true of the power to resist disease. For instance, two generations may develop tuberculosis, a third may have sufficient resistance for himself but not strongly enough developed to impart that power of resistance to others. Therefore the fourth generation falls a victim to the disease. Hence the old proverb, "The sins of the parents shall be visited on the children even to the third and fourth generations." On the other hand, it is a great satisfaction to note that any generation may acquire new characteristics, chemical or physiological, strong enough to be passed on to the next generation. These characteristics may be mental, moral, physical or in the power of resistance to disease. Acquired physical defects, as injuries or loss of limbs do not affect future generations, except in so far as that injury deteriorates the well-being of the injured person. On the other hand, acquired disease may so change the chemical and physical condition of the cells, that many old family characteristics are replaced almost entirely by characteristics and failings foreign entirely to the old happy state of prosperity and health to which the past generations were heir. These failings may follow in the line of poisons, chemical or lead poisoning, or any infectious or wasting disease, from the results of which the parents are still suffering while the family is being reared. But these are insignificant items compared with the misery that the world has to endure as a result of what is known as fast living, especially in young men. One has only to visit the hospitals of the cities to see victims, in multitudes at the very age when they should be capable of performing the most sacred duty to their creation, their fellow creatures and the State. Yet many of these, though physical and moral wrecks, will become the parents of untold misery to die young, or to pass on this wretchedness to another generation. A disease may make no appreciable physiological change in the individual, but the toxins of the disease may so change the chemical character of the germ cells that while the individual apparently becomes perfectly well, the results of the disease (but not the disease itself) may show in the next generation.

This inheritance of course is not all along the line of disease. Mental impressions and habits are always at work. For instance, a strong, healthy man may drink moderately, and it never affects him, but it so affects the chemical condition of his cells that one of his children is nervous, one an epileptic, and another a confirmed drunkard. Then, again, you see a cross, irritable child, who will not amuse herself, and is hard to please or satisfy. Just ask the mother if she were quite contented with her family affairs before the child became a baby.

And now, let me pass on to a part of the subject more interesting to me and possibly to you, i.e., the inheritance of disease. We have discussed the subject loud and long, and are slowly but surely coming to a more comprehensive knowledge. Now that all our important diseases are known to be due to specific germs, we believe that the disease itself is seldom transmitted, but rather the results of the disease and the predisposition or the lack of power to resistance. On very rare occasions, a child may be born with typhoid fever, smallpox, tuberculosis or other disease if the mother is very much afflicted with the disease at the time. Succeeding generations in certain families are peculiarly exempt from all or from certain diseases; this simply means that the power to develop natural anti-toxine has been strongly developed in some former generation, and has, through careful living and good health, been handed down; but let one generation be dissipated or in ill-health when raising his or her family, and that characteristic may be lost.

Tuberculosis, so dreaded, could be stamped out in a very few generations if it were possible to prevent contagion, so let us be as careful as we can without giving painful moments to our afflicted fellow-creatures.

And now, to sum up, let me say, young men and young women, there is no better motto than "Keep yourselves unspotted from the world."

The marked physical defects that we see every day are oftener due to lack of love and unity, than to mental impressions as we are so often lead to think. Young girls and boys, and young men and women, it becomes your duty to live so that you are worthy to receive, from the partner of your choice, the same purity of body and mind that you demand. If you must sow your wild oats, let it be in your old age when the results will harm few but yourself. Parents, do not be afraid to tell your boys and girls these things in time and leave behind you blessings and not curses for your little stay on earth.

### ILL-EFFECTS OF MOUTH BREATHING.

By Dr. Mabel Henderson, Hamilton.

Mouth breathing is perverted breathing, using the mouth for a purpose for which it was never intended. Various functions are performed by the mouth, but it was not meant to be used habitually as an organ of respiration. Nature designs every organ to perform its own duties and whenever an organ assumes the duty of another, a two-fold injury occurs, first, to the organ assuming the new function, and, second, to the organ whose function is assumed. And, strange to say, the injury to the one is as great as that to the other; in other words, the sins of omission equal the sins of commission. The air, in its passage through the nose, is relieved of dust and what foreign matter it may contain; its temperature is modified to that of the body, or nearly so, and it becomes moist, all of which prepare it for contact with the sensitive membrane of the larynx and bronchial tubes. In mouth breathing these conditions are not fulfilled, and the air passes unmodified in temperature, dry and dust-laden, directly to the lungs. It practically amounts to the admission of unsuitable air to the respiratory organs. The immediate effect of mouth breathing during sleep is a dry, parched condition of the lips, tongue and throat, the final effect being inflammation, irritation and impairment of the natural functions. The acuteness of taste is diminished, the throat is prone to frequent attacks of inflammation and soreness, there is a lack of pliability of the muscles and lining membrane of the throat, the vocal powers are restricted, there is a lack of clearness in the tones, and frequent attacks of hoarseness, and voice failure on prolonged reading. Mouth breathing, in fact, is the reason why many people who possess good physical organizations, strong in every respect, except when called on for continued use of the voice, when they find it fails after a limited effort. The vocal chords have been performing the respiratory function of the nose and in doing so they have become unfit for the natural use. A person cannot expect to possess a strong, clear, durable voice and habitually breathe through the mouth during sleep. A good voice is only compatible with nasal breathing.

Mouth-breathing results in bronchial irritation and inflammation, ending in cough, expectoration, bronchitis, asthma and many other symptoms. These are the sins of commission, trying to perform the duty of one organ with another. The disuse of the nose, incident to mouth-breathing, results in enlargement of the tonsils and of the bones of the nose, and also in the thickening of the lining of the nose, so that the functions of the nose are impaired, and nasal breathing becomes more or less difficult, the sense of smell less acute, the sounding-board functions of the nose are impaired so that the natural resonance of the voice is lost. Enlarged nasal bones mean catarrh, but the removal of the enlarged portion of bones does not cure the catarrh. It only amounts to temporary suspension of prominent symptoms. From the very nature of the condition there can be no cure until the parts resume their normal functions, that is, till mouth-breathing ceases and nasal-breathing is resumed. All over

the country specialists have declared uncompromising war upon the enlarged nasal bones with cautery and knife, and the "slaughter of the innocents" still goes on without reference to any other diseased membrane or the habit of mouth-breathing that must be relieved before a cure of the nasal catarrh can be effected. Yet mouth-breathing seems to be accepted as a matter of course. Even physicians do not seem to realize that a physiological law can not be habitually violated without producing pathological results, any more than civil or moral laws can be violated without incurring the penalty. Nature's laws are inexorable and every infraction is rigidly punished. Mouth-breathing is a perverted action and cannot be indulged in without penalty. Whether we recognize the penalty as disease or not it exists just the same. Mouth-breathing is a prominent faction in the cause and continuance of all catarrhal affections of the nose, throat and bronchial tubes. Cough is a persistent symptom and cough remedies are useless in a catarrhal cough.

It is not easy to break up a well-formed habit. Will-power in the daytime and a bandage tied over the head and under the chin at night are necessary. Children should be watched. If they breathe through the mouth their noses should first be examined to see that no obstruction to breathing is present, and they should then be persistently trained to breathe through the nose.

Health Commandments :

1. Thou shalt have no other food than at meal-time.
2. Thou shalt not make unto thee any pies, or dyspepsia will be visited upon the children to the third and fourth generation of them that eat pie, and long life and vigor upon those that live prudently and keep the laws of health.
3. Remember thy bread to bake it well, for he will not be kept sound who eateth his bread as dough or sour.
4. Thou shalt not indulge sorrow nor borrow anxiety in vain.
5. Six days shalt thou wash and keep thyself clean, and the seventh day take a great bath, for in six days man sweats and gathers bacteria enough for disease, therefore the Lord has blessed the bath-tub and hallowed it.
6. Remember thy sitting-room and bed-chamber to keep them ventilated.
7. Thou shalt not eat hot biscuit.
8. Thou shalt not eat thy meat fried.
9. Thou shalt not swallow thy food unchewed, or highly spiced, or just before hard work, or just after it.
10. Thou shalt not keep late hours in thy neighbor's house, nor with his cards, nor his glass, nor with anything that is thy neighbor's.

### THE RAISING OF POULTRY.

By Mrs. James Bogue, Strathroy.

I have been requested to tell you what I know about the raising and feeding of poultry. I do not know whether I can tell you anything new or anything that you do not know, but as each one of us must do her part, I shall endeavor to give you briefly a few points that I know from personal experience.

Give the hen from eleven to thirteen eggs, see that the nest is clean and dry, and dust a little sulphur in it. Place food and water conveniently near and leave the hen to do her part. Do not be like some of my acquaintances who take the hen off the nest at least a half dozen times a day to see how she is progressing, for any one who does that will find difficulty in counting her chickens.

At the end of three weeks, if no accident has happened, take the hen and chickens from the nest, dust them with insect powder and put them in a perfectly clean coop. If it has been used before, in order to be sure that it is perfectly clean, whitewash it with fresh lime, be sure to get in the corners, for nothing but perfect cleanliness will insure healthy chickens.

Feed the young chicks with bread and milk and any table scraps for a week or ten days. Then begin to give wheat sparingly, meanwhile continuing the soft food. If you let the hen run with the brood when they are two weeks old, so much the better.

If the chickens are hatched in April, you may expect eggs in September. I know of nothing on the farm that gives such quick returns as a flock of poultry, or that will at the same time afford so much pleasure.

We read in some of the papers that a flock of hens will take care of themselves. Do not try that, or the hens will not care for you, "for what is worth having, is worth caring for." Light, sunshine, plenty of clean water and a supply of green food in the shape of grass, roots, lettuce and cabbage with a supply of oyster shell or gravel, are the chief requisites in caring for a flock of poultry. Keep the roosts clean with coal oil.

To feed hens, requires judgment and attention, hence the many failures among poultry keepers. Unless you can take interest enough in them to feed and water regularly, leave the business alone.

The French people are the most successful poultry keepers in the world, for they are the ones who give the most care to their pets. With chickens, as with children, we must study their welfare, and it rests with us whether they are to live and prosper or die.

The poultry interest has made vast strides during the past few years, and many persons are making a business of it. Formerly it was chiefly in the hands of the farmer's wife or daughter, and the farmer himself did not consider it worthy of his attention. But times have changed now, and with a good market not only for eggs but also for dressed poultry, the farmer's wife sees she must keep up with the times or fail. Hence she tries to find out the best breeds both for eggs and for table use.

Some of you will say, "How can a person look after poultry and at the same time care for the house and family?" Here is one point in the favor of poultry. The majority of us stay too much in the house, simply because we have no out-door duties. Now if we can gather health and eggs at the same time, are we not the gainers in more ways than one?

#### DISCUSSION.

Q. In packing eggs, would you use salt or grain to pack them in?

A. Miss Laura Rose, Guelph. Eggs wrapped in paper and packed in salt, keep very well. I have also used water glass satisfactorily in the proportion of one cup of the water glass to eight cups of water. The eggs are just dropped into the liquid as gathered.

Q. How old may an egg be before it is packed?

A. The fresher the eggs for packing the better. Unfertilized eggs keep much better than fertile ones.

#### ON GOING TO MARKET.

By Mrs. A. Brown, Winterbourne.

As I have been asked to give you something on "Going to Market," and having had between seventeen and eighteen years' experience on the Guelph Market, I would say to those who are inexperienced, and are intending to try their luck in that way, to have everything of the very best, and your butter baskets and cloths as clean and tidy as possible. Put a large cloth, say a yard and a half of bleached cotton, neatly hemmed, in your basket. Have your butter in pound rolls, wrapped up in paper made for that purpose, then pack with another cloth and fold the first cloth neatly over all. If the weather is hot, first put small pieces of ice between the butter and the basket, and larger pieces on the top, then cover carefully, and your butter will remain firm for several hours. When you uncover at the market, have a dry cloth to put over the others, as it makes things look more inviting.

In regard to carrying eggs to market, I would say I use a cloth similar to the one used for butter. First put the cloth in the basket, then a few clean oats (which I use to pack the first row of eggs), then a sheet of paper and another row of eggs, and so on until your basket is full. Then fold your cloth over the whole and your egg basket has a natty appearance. In the winter time I pack them in oats altogether, as it keeps them from freezing. Have your eggs perfectly clean and tempting looking. I keep all the shabby little eggs for home use. Often a fastidious buyer will ask if they are perfectly fresh, and pick one up and shake it, and even lick the end of it to make sure that they are not salty. At such times I recall the words :

" An ye hinna siller in yer pouch,  
Ye maun hae silk upon yer tongue."

I have often noticed if white eggs are the largest, customers all prefer white eggs. On the other hand, if the brown eggs are the largest, they will say, "Please give me the brown eggs, I always like them best." Such people are like the old lady who went to her grocer, and asked for a dozen "black hen's eggs." "My good woman," he said. "I don't know a black hen's egg from any other colored, hen's egg." She replied, "Oh, but I do." He then said, "Well, just go and pick out a dozen for yourself." In a few minutes she came back with a dozen of the largest eggs she could find.

Dry picked poultry sell the best on the market. Scalded ones look blotchy and do not sell so readily. Some customers prefer them drawn, others think they keep better undrawn. In either case, see that your fowl have no food for at least twenty-four hours before killing them, as a fowl with a full, discolored-looking crop is not a "toothsome-like" bird. Another thing I would mention is, if your fowls are old, say so. When customers find that they can depend on what you say, that what they buy is just as you will recommend it to be, you will have no lack of customers.

I would advise all going to market to have everything clean, neat and tidy, just as though you were trying for a prize at the exhibition. With your produce first-class, and attending market regularly, you cannot fail to be a successful market woman.

### CHEERFULNESS.

BY MISS MARGARET E. ROSS, CLIFFORD.

Women who are real home-makers are so in a double sense,—not only are they dispensers of material comfort and well-being to their inmates, but they embody within themselves the spirit or essence of home, so that it has long been proverbial that a home without a woman's presence is a mere mockery.

But there are women who are not true home-makers. They give faithful hearts to their work ; their watchful care provides whatever their families can desire ; their home-making is a labor of love, but it is a labor. They make what might be the joy of service into a burden, and, the brightness of spontaneous effort lacking, their whole atmosphere is full of unrest. They are the women who worry.

"Worry is the rust upon the blade," the rust that eats into the very hearts of many homes and steals their peace and brightness ; the worm at the core of unhappy family life.

A woman's life is checkered with suffering ; she seems burn with a taste for it. The tendency of her mental constitution is toward sadness, and her physical derangements are often caused, or intensified, by depression. It is easy for the feminine mind to make mountains out of mole-hills, because the horizon of a woman's sphere (so-called) being narrow, she sees every obstacle at close range and is apt to get it between her and the sunlight. Besides, the mental and moral tissues render her liable to jars and wrenches to which the coarser masculine fibre would not respond. As the old Scotch hymn hath it :

" Our life contain a thousand springs  
And dies if one be gone ;  
Strange that a harp of thousand strings  
Should keep in tune so long."



Nevertheless there is no virtue in depression. It is often a matter of mere habit,—a self-indulgence as much to be condemned as any other vice. If as much zeal were exercised in the pursuit of happiness as is expended in the search for misery, the world would no longer be a vale of tears.

But it is not only the uselessness of worry that makes it wrong,—besides doing no good, it does positive harm. In the home and elsewhere, worry is destructive of the happiness not only of its victim, but her associates. It weakens character, by encroaching on cheerfulness and destroying buoyancy. It tends to deaden sympathy, by centering the mind on itself. Above all it produces irritation of temper, which is liable to express itself in nagging and scolding. On all these accounts, and many more, it proves itself, not only negatively but positively harmful.

The remedy, it seems to me, is to be found in resolute and sustained cheerfulness. We cannot force love, or hope, or faith, but there is such a thing as forced cheerfulness. "There seem to be some persons, the darlings of fortune, who are born cheerful," but we of common clay are not so. There are times when it is easier to be sad than smiling and it is in these hours of heaviness that the effort to be cheerful must be made. It were no virtue to smile with a light heart, but it takes a heroic effort to be bright in spite of heart-ache.

Sometimes it is hard to be cheerful, but it is none the less a duty, and as in the case of all other duties, its performance is accompanied not only by the blessing of its immediate, visible result, but by a bracing and ennobling effect upon the character. "To have what we want is riches; but to be able to do without, is power, and, having that, we command all things."

What we all need to cultivate is the faculty of looking on the bright side, and when this attitude of mind becomes habitual, cheerfulness no longer needs to be forced. Once possessed of a firm conviction that "Behind the clouds is the sun still shining," the rainy days will have no power to dismay. "Wondrous is the strength of cheerfulness; altogether past calculation its power of endurance."

Its resistant power is also inestimable. In times of real trial, those who have frittered away force and elasticity upon every little pebble of vexation or disappointment, have neither strength nor courage to roll away the huge rock of trouble that threatens to crush them. "It is the winning of what we call little struggles that gives strength and confidence for great battles."

And if occasionally we make mistakes or grow faint-hearted in our strivings to be true home-makers and joy-givers, we can always begin again,—one slip does not make a failure, any more than one swallow makes a summer. So if to-day has not gone right, let us resolve to have a bright to-morrow, for

"Every day is a fresh beginning,  
Every morn is the world made new.  
Ye who are weary of sorrow and sinning,  
Here is a beautiful hope for you.  
A hope for me and a hope for you."

"If I have faltered more or less  
In my great task of happiness;  
If I have moved among my race  
And shown no glorious morning face;  
It beams from happy human eyes  
Have moved me not; if morning skies,  
Books, and my food and summer rain  
Knocked on my sullen heart in vain—  
Lord, thy most pointed pleasure take,  
And stab my spirit broad awake."—Robert Louis Stevenson.

## HOW AND WHEN TO REST.

BY MRS. F. W. ELLIOTT, PORT ELGIN.

"Dear me" ! says someone, "must we rest by rule now?" Yes, and no. We shall not burden ourselves with rules and regulations to make us still more in need of rest.

"How to rest," depends on the nature and degree of weariness from which we are suffering, and upon our individual tastes. Sometimes we weary of the monotony of our work, or of our surroundings, and even of our own company. The remedy for that would be to get away from these for a time, see things from a different standpoint, get out of the rut, get some new pictures on memory's wall, and, perchance, come back thinking our own lot not so hard after all. But it may be that the time and labor involved in getting to and from some such a place are too great to admit of such a mode of resting so we must confine ourselves to our own resources.

We shall suppose that we have had the usual experience of a hot summer's day ; up early and busy all forenoon with the thousand and one things, great and small, that fill a house-keeper's day. At last the dinner is over, the dishes washed, the house and ourselves set in order and we think we may safely snatch half an hour to rest. How shall we get the most good out of it? It will not be necessary to lie down unless we are very much exhausted. Here is where the diversity of taste comes in. One might spend the time in music, another in reading, still another might prefer to write a chatty letter to a friend, another might potter among her flowers, while some might prefer to seek a shady spot and drink in the beauty of the day. Whatever is chosen should be thoroughly congenial, and nothing in the nature of a task must be undertaken. We shall then return to our work feeling that a change is sometimes as good as a rest.

If we are really fagged out mentally or physically, or both, let us seek a darkened room, well ventilated, a fairly hard couch or bed, with a low pillow and thereon stretch our weary limbs and let ourselves go. By that, we mean, relax all our muscles, until we are limp. This is comparatively easy if our couch be long enough, broad enough, and strong enough to support us. The next step is not so easy, viz.: getting our brain in the same state, unless we are, as we sometimes say, "too tired to think." We must not think at all if we can help it, least of all should we try to plan anything, or to keep up a connected train of thought, such as how to have our dress made, or our old one re-made, what to have for tea, or what we are going to do on the morrow, etc. If we cannot quite obliterate thought let us turn it into some pleasant channel, some memory upon which we love to dwell, even castle building is permissible at such a time. Soon we shall cease to direct our thoughts for we shall be in dreamland, and if we do take more than the proverbial "forty winks," we shall not have committed one of the deadly sins. But even if we should not get so far as sleeping we shall be rested and refreshed.

There is such a thing as resting while working. There are so many things that can be done just as well sitting as standing, such as peeling potatoes and apples, kneading bread, churning, (generally), dressing, combing our hair, etc.

Supposing that we just have to keep going all day. Even then we can make our toil easier by keeping our eyes, and indeed all our senses, open to the beautiful. The color of a flower, the glory of a sunset, the sweet song of a bird, the perfume of the meadow, all are restful. Then, too, we can control our thoughts, and where work does not require fixed thought, we may practically be living in another sphere.

"When to rest." There can be no set time for this. Generally some time in the afternoon is chosen, but a good time is whenever we can. Probably we feel most like resting just after dinner, but the ever-present dinner dishes, the fear of some caller catching us in disorder,

goads us on. Some of us need rest more than others, and even five minutes of complete relaxation works wonders, and may be taken more than once a day.

Let us rest before we are forced to do so, before nature goes out on strike. Method and system are all very well, but we must not be slaves to them. We mustn't wash on Monday because it is Monday, even if we have to lose all the next day on account of it, and perhaps pay a doctor's bill into the bargain.

None of us are indispensable; the world will move on without us; still, we needn't shorten our lives by neglecting to take proper periods of rest. There is a time for everything under the sun, therefore, there must be a time to rest.

If any of us are fortunate enough to go away for a prolonged rest, let us remember to leave our worries at home and make the most of our opportunity. Above all, don't let us go on a "Pleasure exertion," as Samantha Allan says. Then let us rest in the way that seems to suit our case, and just as often as we can. We have not said anything about resting at night, as that is a foregone conclusion, but what has been said applies to that. Many a person rises with a headache and is unrefreshed, because of bad ventilation. If the nightly period of rest were not so frequently curtailed and irregular, we might not need to rest so much through the day.



ANNUAL REPORT  
OF THE  
FARMERS' INSTITUTES  
OF THE  
PROVINCE OF ONTARIO  
1901.

PART III. MEETINGS AND STATISTICS.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

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# FARMERS' INSTITUTES OF ONTARIO.

1901-1902.

## ANNOUNCEMENT OF SUPERINTENDENT.

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In this volume will be found the names of the speakers who are to address Farmers' Institute meetings during the coming months ; also a list of the subjects on which they are prepared to speak.

**A NEW DEPARTURE.** In order that the printing of the Sessional Papers might not be delayed, the Premier requested that this year and hereafter, the regular report of the Farmers' Institutes should be published early in the year rather than in the fall as heretofore. In this report it was customary to publish a financial statement of the Institutes, but as these statements were presented at the annual meetings in June it was not possible to include them in the regular report, they are therefore published at this time, and we trust that all those interested in Farmers' Institute work will notice the figures and take cognizance of the splendid growth in membership over former years. These statistics will hereafter be published in Part III. of the Farmers' Institute report, which from this time on takes the place of our Annual Bulletin.

**WOMENS' INSTITUTES.** We beg to call the attention of our readers to the list of Officers for the Women's Institute contained in this volume. It will be seen that this feature of the work has grown very materially during the last year. We have now thirty-three Women's Institutes in active operation with a total membership of 1,602. We have also eight lady speakers on our staff and we expect a splendid series of meetings during the coming winter.

**SPECIAL NOTICE TO DIRECTORS AND OFFICERS OF FARMERS' INSTITUTES.** Another Institute season is about to commence and I desire to call your attention to a few matters connected with the work

In the first place the Institutes are becoming more popular each year, as indicated by the increased attendance. Those attending are getting more out of the meetings each year, as indicated by the intelligent questions asked the delegates and the demand by the members for the reports and bulletins published by the Department.

So far, then, everything is running smoothly. Where must we look for expansion in the future? We must by persistent effort endeavor to get out to our meetings those farmers who need the instruction most. I realize that this class, the ones, who from ignorance of the best farm methods, are poor farmers indeed, are the very ones who most need instruction and are also the hardest to reach. Personal canvass is no doubt the best way to secure their attendance.

**A WORD TO DIRECTORS.** Are you helping your secretary? Have you spoken to all of your neighbors about attending the nearest Institute meeting? Have you secured a large membership in your township and sent the names and fees into your secretary? Have you thought over what you are going to say at the next meeting you attend? Have you taken any notes on your work since the last meeting that would interest your neighbors and serve to bring out a discussion at the coming meeting?

If you have not done these things you have fallen short of the standard set for a director of a Farmers Institute

**TO THE PRESIDENT.** Are you thinking of any plans by which you can make your meetings more interesting and instructive? Have you yet arranged in your mind or on paper a few suitable remarks for opening each meeting? Have you consulted with your secretary as to any new features you propose to introduce, or have you picked out and conferred with him about certain men who might read papers or deliver addresses at the meetings?

If you fail to think of these things you are not a model president, and your Institute will not make the progress that it should during your term of office.

**TO THE SECRETARY.** To you must fall the heavy share of the work. You are probably the most concerned as to the success of the year's work. What have you done by way of preparation for this winter's meetings? Have you spoken to any of the men or women in your district about helping at the meetings? Have you thought about any new features that might be introduced to help your attendance and increase your membership? Have you written to each of your directors asking their co-operation and advice? Have you consulted with your president as to a plan of work for your series of meetings?

## ATTENDANCE, MEMBERSHIP, ETC.

1900-1901.

The year 1900-1901 has been a very satisfactory one from every standpoint. The attendance at the meetings has increased, and the interest has been kept up throughout the entire season. We are pleased to note that the membership ending June 30th, 1901, is 20,387. The number of meetings held was 730, with an attendance of 131,653 persons.

The Institutes holding the largest number of meetings during the year ending June 30th, 1901, are :

Hastings, N. ....	22	Peel .....	12
Ontario S. ....	18	Huron, W. ....	11
Waterloo, S. ....	15	Ontario, N. ....	11
Durham, W. ....	14	York, E. ....	11
Halton. ....	14	Grey, N. ....	10
Haldimand .....	12	Prince Edward .....	10
Middlesex, N. ....	12		

The following is a list of the Institutes having the largest attendance at their meetings during the season :—

	No. of Meetings.	Attendance.		No. of Meetings.	Attendance.
Halton .....	14	5,490	Renfrew, S. ....	6	2,434
Bruce, S. ....	7	5,110	Huron, S. ....	8	2,275
Norfolk, N. ....	8	3,790	Grey, S. ....	7	2,250
Waterloo, S. ....	15	3,589	Victoria, E. ....	8	2,225
Huron, W. ....	11	3,260	Waterloo, N. ....	9	2,195
Bruce, W. ....	8	2,915	Perth, N. ....	8	2,155
Hastings, N. ....	22	2,781	Peel. ....	12	2,035
Northumberland, E. ....	7	2,580	Leeds, S. ....	7	2,020
Middlesex, N. ....	12	2,545			

The Institutes having the largest membership to July, 1901, are :—

Halton .....	748	Huron, W. ....	363
Hastings, N. ....	578	Perth, N. ....	362
Waterloo, S. ....	533	Haldimand .....	361
Peel. ....	525	Huron, E. ....	357
Wellington, C. ....	404	Lanark, N. ....	339
Lambton, W. ....	401	Waterloo, N. ....	337
Ontario, S. ....	385	Oxford, S. ....	324
Norfolk, N. ....	375	Oxford N. ....	314
Ontario, N. ....	373	Northumberland, E. ....	303
Middlesex, N. ....	367		

The following list shows the Institutes having the smallest membership :—

Port Carling and Bala .....	19	Renfrew, N. ....	79
Amherst Island .....	44	Carleton .....	79
Muskoka, C. ....	51	Brant, S. ....	87
Cornwall .....	59	Prescott .....	90
Nipissing, W. ....	70	Algoma, C. ....	92
Brant, N. ....	73	Essex, N. ....	97
Addington .....	78		

## REGULAR AND SUPPLEMENTARY MEETINGS AND DELEGATES THEREFOR.

## REGULAR MEETINGS.

DIVISION I. G. C. Caston, Craighurst ; J. E. Meyer, Kossuth ; Mrs. Colin Campbell, Goderich.

1 Clifford (Town Hall) .....	Union .....	Jan. 7th.
2 Lakelet (Temperance Hall) .....	Union .....	Jan. 8th.
3 Walkerton (Town Hall) .....	S. Bruce .....	Jan. 9th.



REGULAR MEETINGS. *Con.*

4 Paisley (Town Hall).....	C. Bruce.....	Jan. 10th.
5 Port Elgin (Town Hall).....	W. Bruce.....	Jan. 11th.
6 Tara (Vandusen's Hall).....	W. Bruce.....	Jan. 13th.
7 Spry (Schoolhouse).....	N. Bruce.....	Jan. 15th.
8 Lion's Head (Town Hall).....	N. Bruce.....	Jan. 16th.
9 Chesley (Town Hall).....	C. Bruce.....	Jan. 17th.
10 Durham (Town Hall).....	S. Grey.....	Jan. 18th.
11 Holstein (Town Hall).....	S. Grey.....	Jan. 20th.
12 Gorrie (Town Hall).....	E. Huron.....	Jan. 21st.
13 Brussels (Town Hall).....	E. Huron.....	Jan. 22nd.
14 Clinton (Town Hall).....	W. Huron.....	Jan. 23rd.
15 Dugannon (Temperance Hall).....	W. Huron.....	Jan. 24th.
16 Hollyrood (Temperance Hall).....	S. Bruce.....	Jan. 25th.

## DIVISION 2. D. Drummond, Myrtle; G. R. Cottrell, Milton; Elmer Lick, Oshawa.

1 Milverton (Grosch's Hall).....	N. Perth.....	Jan. 7th.
2 Shakespeare (Temperance Hall).....	N. Perth.....	Jan. 8th.
3 Mitchell (Town Hall).....	S. Perth.....	Jan. 9th.
4 Brucefield (Dickson's Hall).....	S. Huron.....	Jan. 10th.
5 Exeter (Town Hall).....	S. Perth.....	Jan. 11th.
6 St. Mary's.....	S. Huron.....	Jan. 13th.
7 Kintore (Foresters' Hall).....	N. Oxford.....	Jan. 14th.
8 Thorndale (Harding's Hall).....	E. Middlesex.....	Jan. 15th.
9 Harrietsville (Oddfellows' Hall).....	E. Middlesex.....	Jan. 16th.
10 Coldstream (Township Hall).....	N. Middlesex.....	Jan. 17th.
11 Adelaide (Town Hall).....	N. Middlesex.....	Jan. 18th.
12 Parkhill (Town Hall).....	N. Middlesex.....	Jan. 20th.
13 Ailsa Craig (Town Hall).....	N. Middlesex.....	Jan. 21st.
14 Forest (Town Hall).....	E. Lambton.....	Jan. 22nd.
15 Kingscourt (Schoolhouse).....	E. Lambton.....	Jan. 23rd.
15 Oilsprings.....	W. Lambton.....	Jan. 24th.
17 Bridgen (McKenzie's Hall).....	W. Lambton.....	Jan. 25th.
18 Appin (Township Hall).....	W. Middlesex.....	Jan. 27th.
19 Mt. Bridges, (Township Hall).....	W. Middlesex.....	Jan. 28th.

## DIVISION 3. C. W. Nash, Toronto; R. S. Stevenson, Ancaster.

1 Mount Elgin (Foresters' Hall).....	S. Oxford.....	Jan. 8th.
2 Norwich (Foresters' Hall).....	S. Oxford.....	Jan. 9th.
3 Courtland (Town Hall).....	N. Norfolk.....	Jan. 10th.
4 Delhi (Morgan's Hall).....	N. Norfolk.....	Jan. 11th.
5 Aylmer (Town Hall).....	E. Elgin.....	Jan. 13 & 14th.
6 Middlemarch (Grange Hall).....	W. Elgin.....	Jan. 15th.
7 Dutton (Town Hall).....	W. Elgin.....	Jan. 16th.
8 Rodney (Township Hall).....	W. Elgin.....	Jan. 17th.
9 Highgate (Highgate Hall).....	E. Kent.....	Jan. 18th.
10 Croton (Croton Hall).....	E. Kent.....	Jan. 20th.
11 Eberts (Township Hall).....	W. Kent.....	Jan. 21st.
12 Dover Centre (Grange Hall).....	W. Kent.....	Jan. 22nd.
13 Tecumseh (St. John's Hall).....	N. Essex.....	Jan. 23rd.
14 Essex (I. O. F. Hall).....	S. Essex.....	Jan. 24th & 25th.
15 S. Woodilee (St. Lawrence Hall).....	N. Essex.....	Jan. 27th.

## DIVISION 4: Major Jas. Sheppard, Queenston; Miss Blanche Maddock, Guelph.

1 Princeton (Duke's Hall).....	N. Oxford.....	Jan. 7th.
2 Burford (Cornish Hall).....	S. Brant.....	Jan. 8th.
3 Oshweken (Council House).....	S. Brant.....	Jan. 9th.
4 Ancaster (Township Hall).....	S. Wentworth.....	Jan. 10th.
5 Stoney Creek (New Hall).....	S. Wentworth.....	Jan. 11th.
6 Campden (Fry's Hall).....	Lincoln.....	Jan. 13th.
7 Queenston (Schoolhouse).....	Lincoln.....	Jan. 14th.
8 Crowland (Town Hall).....	Welland.....	Jan. 15th.
9 Ridgeway (Town Hall).....	Welland.....	Jan. 16th.
10 Marshville (Town Hall).....	Monck.....	Jan. 17th.
11 Attercliffe (Cheese Factory).....	Monck.....	Jan. 18th.

REGULAR MEETINGS.—*Con.*

12 Fisherville (Town Hall) . . . . .	Haldimand . . . . .	Jan. 20th.
13 Hagersville (Opera House) . . . . .	Haldimand . . . . .	Jan. 21st.
14 Waterford (Town Hall) . . . . .	N. Norfolk . . . . .	Jan. 22nd.
15 Vittoria (Lecture Room) . . . . .	S. Norfolk . . . . .	Jan. 23rd.
16 Langton (Town Hall) . . . . .	S. Norfolk . . . . .	Jan. 24th.

## DIVISION 5 : T. G. Raynor, Rose Hall ; J. W. Clark, Onondaga.

1 St. George (Library Hall) . . . . .	N. Brant . . . . .	Jan. 7th and 8th.
2 Rockton (Township Hall) . . . . .	N. Wentworth . . . . .	Jan. 9th.
3 Freulton (Township Hall) . . . . .	N. Wentworth . . . . .	Jan. 10th.
4 Nassagaweya (Township Hall) . . . . .	Halton . . . . .	Jan. 11th.
5 Nelson (Township Hall) . . . . .	Halton . . . . .	Jan. 13th.
6 Milton (Town Hall) . . . . .	Halton . . . . .	Jan. 14th.
7 Stewarton (Town Hall) . . . . .	Halton . . . . .	Jan. 15th.
8 Ospringe (Schoolhouse) . . . . .	C. Wellington . . . . .	Jan. 16th.
9 Bellwood (Township Hall) . . . . .	C. Wellington . . . . .	Jan. 17th.
10 Rockwood (Town Hall) . . . . .	S. Wellington . . . . .	Jan. 18th.
11 Aberfoyle (Town Hall) . . . . .	S. Wellington . . . . .	Jan. 20th.
12 Galt Town Hall) . . . . .	S. Waterloo . . . . .	Jan. 21st.
13 New Hamburg (Wm Tell Hall) . . . . .	S. Waterloo . . . . .	Jan. 22nd.
14 Linwood (Spahr's Hall) . . . . .	N. Waterloo . . . . .	Jan. 23rd.
15 Elmira (E. M. S. Hall) . . . . .	N. Waterloo . . . . .	Jan. 24th.
16 Drayton (Town Hall) . . . . .	W. Wellington . . . . .	Jan. 25th.
17 Moorefield (Township Hall) . . . . .	W. Wellington . . . . .	Jan. 27th.
18 Farewell . . . . .	E. Wellington . . . . .	Jan. 28th.
19 Conn (Orange Hall) . . . . .	E. Wellington . . . . .	Jan. 29th.

## DIVISION 6 : Duncan Anderson, Rugby ; Dr Henry G. Reed, Georgetown.

1 Kemble (Schoolhouse) . . . . .	N. Grey . . . . .	Jan. 7th
2 Owen Sound (Y. M. C. A. Hall) . . . . .	N. Grey . . . . .	Jan. 8th
3 Flesherton (Township Hall) . . . . .	C. Grey . . . . .	Jan. 9th.
4 Shelburne (Town Hall) . . . . .	Dufferin . . . . .	Jan. 10th.
5 Camilla (Private Hall) . . . . .	Dufferin . . . . .	Jan. 11th.
6 Tottenham (Town Hall) . . . . .	S. Simcoe . . . . .	Jan. 13th.
7 New Lowell (Town Hall) . . . . .	W. Simcoe . . . . .	Jan. 14th.
8 Stayner (Stewart's Hall) . . . . .	W. Simcoe . . . . .	Jan. 15th.
9 Thornbury (Town Hall) . . . . .	C. Grey . . . . .	Jan. 16th.
10 Meaford (Town Hall) . . . . .	N. Grey . . . . .	Jan. 17th.
11 Minesing (Workman's Hall) . . . . .	C. Simcoe . . . . .	Jan. 18th.
12 Phelpsston (Village Hall) . . . . .	C. Simcoe . . . . .	Jan. 20th.
13 Waverley (Orange Hall) . . . . .	C. Simcoe . . . . .	Jan. 21st.
14 Wyevale (Orange Hall) . . . . .	C. Simcoe . . . . .	Jan. 22nd.
15 Lafontaine (Picquac Hall) . . . . .	C. Simcoe . . . . .	Jan. 23rd.
16 Midland (Town Hall) . . . . .	C. Simcoe . . . . .	Jan. 24th
17 Matchedash . . . . .	E. Simcoe (aft) . . . . .	Jan. 25th.
18 Coldwater . . . . .	E. Simcoe (eve.) . . . . .	Jan. 25th.
19 Orillia . . . . .	E. Simcoe . . . . .	Jan. 27th.
20 Stroud (Temperance Hall) . . . . .	S. Simcoe . . . . .	Jan. 28th.
21 Kettleby (Temperance Hall) . . . . .	N. York . . . . .	Jan. 29th.
22 Newmarket (Temperance Hall) . . . . .	N. York . . . . .	Jan. 30th.

## DIVISION 7A : Henry Glendenning, Manilla ; Miss Laura Rose, Guelph.

1 Bronte (Town Hall) . . . . .	Halton . . . . .	Nov. 21st.
2 Kilbride (Town Hall) . . . . .	Halton . . . . .	Nov. 22nd.
3 Hornby (Town Hall) . . . . .	Halton . . . . .	Nov. 23rd.
4 Ballinafad (Town Hall) . . . . .	Halton . . . . .	Nov. 25th.
5 Cheltenham (Orange Hall) . . . . .	Peel . . . . .	Nov. 26th.
6 Streetsville (Town Hall) . . . . .	Peel . . . . .	Nov. 27th.
7 Woodbridge (Orange Hall) . . . . .	W. York . . . . .	Nov. 28th.
8 Weston (Dufferin Hall) . . . . .	W. York . . . . .	Nov. 29th.
9 Wexford (Methodist Hall) . . . . .	E. York . . . . .	Nov. 30th.
10 Agincourt (Temperance Hall) . . . . .	E. York . . . . .	Dec. 2nd.
11 Bowmanville (Good Templar's Hall) . . . . .	W. Durham (afternoon) . . . . .	Dec. 3rd.
12 Courtice (Sons' Temperance Hall) . . . . .	W. Durham (evening) . . . . .	Dec. 3rd.

REGULAR MEETINGS,—*Con.*

13 Orono (Town Hall).....	W. Durham (afternoon).....	Dec. 4th
14 Newcastle (Town Hall).....	W. Durham (evening).....	Dec. 4th.
15 Millbrook (Town Hall).....	E. Durham.....	Dec. 5th.
16 Bethany (Town Hall).....	E. Durham.....	Dec. 6th.
17 Blackstock (Town Hall).....	W. Durham.....	Dec. 7th.

## DIVISION 7B: Duncan Anderson, Rugby; Miss Blanche Maddock, Guelph.

1 Pickering (Fire Hall).....	S. Ontario.....	Nov. 21st.
2 Brooklin (Masonic Hall).....	S. Ontario.....	Nov. 22nd.
3 Manchester (Town Hall).....	S. Ontario.....	Nov. 23rd.
4 Zephyr (Town Hall).....	N. Ontario.....	Nov. 25th.
5 Cannington (Town Hall).....	N. Ontario.....	Nov. 26th.
6 Oakwood (Township Hall).....	W. Victoria.....	Nov. 27th.
7 Lindsay (Town Hall).....	W. Victoria.....	Nov. 28th.
8 Feneion Falls (Dickson's Hall).....	E. Victoria.....	Nov. 29th.
9 Bobcaygeon (Town Hall).....	E. Victoria.....	Nov. 30th.
10 Peterboro (Council Chamber).....	W. Peterboro (afternoon).....	Dec. 2nd.
11 North Monaghan (Town Hall).....	W. Peterboro (evening).....	Dec. 2nd.
12 Lakefield (Town Hall).....	W. Peterboro.....	Dec. 3rd.
13 Keene (Town Hall).....	E. Peterboro.....	Dec. 4th.
14 Norwood (Town Hall).....	E. Peterboro.....	Dec. 5th.
15 Stirling (Music Hall).....	N. Hastings.....	Dec. 6th.
16 Madoc (Masonic Hall).....	N. Hastings.....	Dec. 7th.

## DIVISION 8: R. McCulloch, Snelgrove; G. R. Cottrell, Milton; Miss Laura Linton, Guelph.

1 Harwood (Boyle's Hall).....	W. Northumberland.....	Nov. 25th.
2 Grafton (Town Hall).....	W. Northumberland.....	Nov. 26th.
3 Warkworth (Town Hall).....	E. Northumberland.....	Nov. 27th.
4 Brighton (Opera House).....	E. Northumberland.....	Nov. 28th.
5 Ameliasburg (Centre Schoolhouse).....	Prince Edward.....	Nov. 29th.
6 Demorestville (Town Hall).....	Prince Edward.....	Nov. 30th.
7 Frankford (Sweetman's Hall).....	W. Hastings.....	Dec. 2nd.
8 Wallbridge (Town Hall).....	W. Hastings.....	Dec. 3rd.
9 Newburg (Finkle's Hall).....	Addington.....	Dec. 4th.
10 Centerville (Town Hall).....	Addington.....	Dec. 5th.
11 Tweed (Town Hall).....	E. Hastings.....	Dec. 6th.
12 Cannifton (Township Hall).....	E. Hastings.....	Dec. 7th.

## DIVISION 9A: C. W. Nash, Toronto; D. Drummond, Myrtle.

1 Napanee (Town Hall).....	Lennox.....	Nov. 25th.
2 Selby (Town Hall).....	Lennox.....	Nov. 26th.
3 Emerald (Cheese Factory).....	Amherst Island.....	Nov. 27th.
4 Stella (Town Hall).....	Amherst Island.....	Nov. 28th.
5 Westbrooke (Westbrooke Hall).....	Frontenac (afternoon).....	Nov. 29th.
6 Cataraqui (Town Hall).....	Frontenac (evening).....	Nov. 29th.
7 Inverary (Orange Hall).....	Frontenac (afternoon).....	Nov. 30th.
8 Sunbury (Town Hall).....	Frontenac (evening).....	Nov. 30th.
9 Newboro (Town Hall).....	Leeds, S.....	Dec. 2nd.
10 Lansdowne (Town Hall).....	Leeds, S.....	Dec. 3rd.
11 Mallorytown (Oddfellows' Hall).....	Brockville.....	Dec. 4th.
12 Addison (Ashwood Hall).....	Brockville.....	Dec. 5th.
13 Maitland (Workman's Hall).....	S. Grenville.....	Dec. 6th.
14 Shanly (Orange Hall).....	S. Grenville.....	Dec. 7th.

## DIVISION 9B: Andrew Elliott, Galt; R. S. Stevenson, Ancaster.

1 Vernon (Town Hall).....	Russell.....	Nov. 25th.
2 Vars (Town Hall).....	Russell.....	Nov. 26th.
3 Moose Creek.....	Stormont.....	Nov. 27th.
4 Maxville (Public Hall).....	Glengarry.....	Nov. 28th.
5 Dalkeith (Public School).....	Glengarry.....	Nov. 29th.
6 Vankleek Hill (High School).....	Prescott.....	Nov. 30th and Dec. 2nd.
7 North Branch (Schoolhouse).....	Cornwall.....	Dec. 3rd.

REGULAR MEETINGS.—*Con.*

8 South Branch (Patron's Hall).....	Cornwall.....	Dec. 4th.
9 Aultsville.....	Stormont.....	Dec. 5th.
10 Morrisburg (Music Hall).....	Dundas.....	Dec. 6th.
11 Iroquois (Town Hall).....	Dundas.....	Dec. 7th.

## DIVISION 10. Major James Sheppard, Queenston; Chas. S. Moore, Stanbridge, Que.

1 Merrickville (Town Hall).....	N. Leeds and Grenville.....	Nov. 25th.
2 Kemptville (Town Hall).....	N. Leeds and Grenville.....	Nov. 26th.
3 South March (Town Hall).....	Carleton.....	Nov. 27th.
4 Stittsville (Green's Hall).....	Carleton.....	Nov. 28th.
5 Renfrew (Temperance Hall).....	S. Renfrew.....	Nov. 29th.
6 Stewartville (Town Hall).....	S. Renfrew.....	Nov. 30th.
7 Beachburg (Town Hall).....	N. Renfrew.....	Dec. 2nd.
8 Osceola (Town Hall).....	N. Renfrew.....	Dec. 3rd.
9 Almonte (Town Hall).....	N. Lanark.....	Dec. 4th.
10 Carleton Place (Town Hall).....	N. Lanark.....	Dec. 5th.
11 Smith's Falls (Town Hall).....	S. Lanark.....	Dec. 6th.
12 Perth (Town Hall).....	S. Lanark.....	Dec. 7th.

## DIVISION 11.—T. H. Mason, Straffordville; F. A. Sheppard, Queenston.

1 Powassan (Stewart's Hall).....	E. Parry Sound.....	Jan. 7th.
2 Trout Creek (Trussler's Hall).....	E. Parry Sound.....	Jan. 8th.
3 South River (Library Hall).....	E. Parry Sound.....	Jan. 9th.
4 Sundridge (Orange Hall).....	E. Parry Sound.....	Jan. 10th.
5 Burk's Falls (Wilson's Hall).....	E. Parry Sound.....	Jan. 11th.
6 Kearney.....	E. Parry Sound.....	Jan. 13th.
7 Sprucedale.....	E. Parry Sound.....	Jan. 14th.
8 Starratt's Corners.....	E. Parry Sound.....	Jan. 15th.
9 Magnetawan (Orange Hall).....	E. Parry Sound.....	Jan. 16th.
10 Dunchurch (Keley Hall).....	W. Parry Sound (aft.).....	Jan. 17th.
11 McKellar (Armstrong Hall).....	W. Parry Sound (eve.).....	Jan. 17th.
12 Broadbent (Schoolhouse).....	W. Parry Sound (aft.).....	Jan. 18th.
13 Orrville (Schoolhouse).....	W. Parry Sound (eve.).....	Jan. 18th.
14 Parry Sound (Town Hall).....	W. Parry Sound.....	Jan. 20th.
15 Carling (Schoolhouse).....	W. Parry Sound (aft.).....	Jan. 21st.
16 McDougal's Schoolhouse.....	W. Parry Sound (eve.).....	Jan. 21st.
17 Falding (Rankin Hall).....	W. Parry Sound.....	Jan. 22nd.
18 Nowar (Atkin's Hall).....	N. Muskoka.....	Jan. 23rd.
19 Huntsville (Court House).....	N. Muskoka.....	Jan. 24th.
20 Hillside (Schoolhouse).....	N. Muskoka.....	Jan. 25th.
21 Emberson (Orange Hall).....	N. Muskoka.....	Jan. 27th.
22 Ravenscliffe (Patrons' Hall).....	N. Muskoka.....	Jan. 28th.
23 Stisted (Township Hall).....	N. Muskoka.....	Jan. 29th.
24 Utterson (Town Hall).....	C. Muskoka.....	Jan. 30th.
25 Port Sydney (Music Hall).....	C. Muskoka (aft.).....	Jan. 31st.
26 Allansville (Schoolhouse).....	C. Muskoka (eve.).....	Jan. 31st.
27 Raymond (Orange Hall).....	C. Muskoka (aft.).....	Feb. 1st.
28 Ufford (Mr. Kay's House).....	C. Muskoka (eve.).....	Feb. 1st.
29 Bracebridge (Town Hall).....	S. Muskoka.....	Feb. 3rd.
30 Baysville (Town Hall).....	S. Muskoka.....	Feb. 4th.
31 Uffington.....	S. Muskoka (aft.).....	Feb. 5th.
32 Germania (Weise's Schoolhouse).....	S. Muskoka (eve.).....	Feb. 5th.
33 Gravenhurst (Town Hall).....	S. Muskoka.....	Feb. 6th.
34 Bala (Currie's Hall).....	Pt. Carling & Bala.....	Feb. 7th.
35 Port Carling (Victoria Hall).....	Pt. Carling & Bala.....	Feb. 8th.

## DIVISION 12.—W. S. Fraser, Bradford; Myron A. Gee, Fisherville.

1 North Bay (Town Hall).....	W. Nipissing.....	Jan. 7th.
2 Sturgeon's Falls.....	W. Nipissing.....	Jan. 8th.
3 Verner.....	W. Nipissing.....	Jan. 9th.
4 Warren.....	W. Nipissing.....	Jan. 10th.
5 S. Tarentarus (Schoolhouse).....	C. Algoma.....	Jan. 11th.
6 E. Korah (Schoolhouse).....	C. Algoma.....	Jan. 13th.
7 W. Korah (Schoolhouse).....	C. Algoma.....	Jan. 14th.

REGULAR MEETINGS.—*Con.*

8 Base Line (Schoolhouse)	C. Algoma	Jan. 15th.
9 Desbarats	St. Joseph's Is. (aft.)	Jan. 16th.
10 McLennan (Temperance Hall)	St. Joseph's Is. (eve.)	Jan. 16th.
11 Richard's Landing (Town Hall)	St. Joseph's Is.	Jan. 17th.
12 Jocelyn (Kent's Hall)	St. Joseph's Is.	Jan. 18th.
13 Marksville (Town Hall)	St. Joseph's Is.	Jan. 20th.
14 Cloudslee (Schoolhouse)	E. Algoma (aft.)	Jan. 21st.
15 Thessalon (Town Hall)	E. Algoma (eve.)	Jan. 21st.
16 Sowerby (Maccabee's Hall)	E. Algoma	Jan. 22nd.
17 Iron Bridge (Orange Hall)	E. Algoma	Jan. 23rd.
18 Bellingham	E. Algoma	Jan. 24th.
19 Walford (Schoolhouse)	E. Algoma	Jan. 25th.
20 Massey (Schoolhouse)	E. Algoma	Jan. 27th.
21 Providence Bay (Schoolhouse)	E. Manitoulin	Jan. 29th.
22 Mindemoya (Schoolhouse)	E. Manitoulin	Jan. 30th.
23 Tehkummah (Schoolhouse)	E. Manitoulin	Jan. 31st.
24 Manitowaning (Town Hall)	E. Manitoulin	Feb. 1st.
25 Green Bay (Schoolhouse)	E. Manitoulin	Feb. 3rd.
26 Sheguiandah (Trotter's Hall)	E. Manitoulin	Feb. 4th.
27 Little Current (Turner's Hall)	E. Manitoulin	Feb. 5th.

## SUPPLEMENTARY MEETINGS.

## DIVISION 1.—J. E. Orr, Fruitland ; W. S. Tompkins, Grand View, N.B.

1 Harriston (Town Hall)	Union	Feb. 4th.
2 Drew (Temperance Hall)	Union	Feb. 5th.
3 Dromore (Russell Hall)	S. Grey	Feb. 6th.
4 Ayton (Doersam's Hall)	S. Grey	Feb. 7th.
5 Hanover (Telford's Hall)	S. Grey	Feb. 8th.
6 Elmwood (Elmwood Hall)	S. Grey	Feb. 10th.
7 Hepworth (Schoolhouse)	N. Bruce	Feb. 11th.
8 S. S. Sec. No. 4 (Anabel Schoolhouse)	N. Bruce (aft.)	Feb. 12th.
9 Wiaiton (Town Hall)	N. Bruce (eve.)	Feb. 12th.
10 Mar (Schoolhouse)	N. Bruce	Feb. 13th.
11 Allanford (Orange Hall)	W. Bruce	Feb. 14th.
12 Arkwright (Township Hall)	W. Bruce	Feb. 15th.
13 Port Egin (Town Hall)	W. Bruce	Feb. 17th.
14 Ribbey's Schoolhouse	W. Bruce	Feb. 18th.
15 Underwood (Township Hall)	W. Bruce	Feb. 19th.
16 Tiverton (Town Hall)	W. Bruce	Feb. 20th.
17 Kincardine (Town Hall)	C. Bruce	Feb. 21st.
18 Ripley (Agricultural Hall)	C. Bruce	Feb. 22nd.
19 Bervie (Orange Hall)	C. Bruce	Feb. 24th.
20 Glamis (Mechanic's Hall)	C. Bruce	Feb. 25th.
21 Chepstowe (Hartleib's Hall)	C. Bruce	Feb. 26th.
22 Cargill (Foresters Hall)	S. Bruce	Feb. 27th.
23 Mildmay (Township Hall)	S. Bruce	Feb. 28th.
24 Belmore (Forester's Hall)	S. Bruce	Mar. 1st.
25 Teeswater (Township Hall)	S. Bruce	Mar. 3rd.
26 Lucknow (Town Hall)	S. Bruce	Mar. 4th.

## DIVISION 2 A.—Andrew Elliott, Galt ; C. W. Nash, Toronto.

1 Wingham (Town Hall)	W. Huron	Feb. 4th.
2 Auburn (I O G. T. Hall)	W. Huron	Feb. 5th.
3 Port Albert (Forester's Hall)	W. Huron	Feb. 6th.
4 Bcnmiller (Gledhill's Hall)	W. Huron	Feb. 7th.
5 Bayfield	S. Huron	Feb. 8th.
6 Zurich (Town Hall)	S. Huron	Feb. 10th.
7 Crediton	S. Huron	Feb. 11th.
8 Greenway (Wilson's Hall)	N. Middlesex	Feb. 12th.
9 Sylvan (Macabee's Hall)	N. Middlesex	Feb. 13th.
10 Beechwood (Grange Hall)	N. Middlesex	Feb. 14th.
11 West McGillivray (Town Hall)	N. Middlesex	Feb. 15th.
12 Lucan (Town Hall)	N. Middlesex	Feb. 17th.

SUPPLEMENTARY MEETINGS.—*Con.*

13 Granton (Town Hall).....	N. Middlesex	Feb. 18th.
14 Lobo (Masonic Hall).....	N. Middlesex	Feb. 19th.
15 Arkona (Showless' Hall).....	E. Lambton	Feb. 20th.
16 Uttoxeter (Grange Hall).....	E. Lambton	Feb. 21st.
17 Sarnia Town (Council Chamber).....	W. Lambton (aft.)	Feb. 22nd.
18 Sarnia Township (Moor Line Schoolhouse).....	W. Lambton (eve.)	Feb. 22nd.
19 Petrolia (Council Chamber).....	W. Lambton	Feb. 24th.
20 Courtright (Stewart's Hall).....	W. Lambton	Feb. 25th.
21 Wilkesport (Richmond Hall).....	W. Lambton	Feb. 26th.
22 Beacher (Schoolhouse).....	W. Lambton	Feb. 27th.
23 Rutherford (Township Hall).....	W. Lambton	Feb. 28th.
24 Oakdale (Schoolhouse).....	E. Lambton	Mar. 1st.
25 Inwood (Orange Hall).....	E. Lambton	Mar. 3rd.
26 Alvington (Town Hall).....	E. Lambton	Mar. 4th.

DIVISION 2 B.—W. N. Hutt, Southend; G. R. Cottrell, Milton, (4th to 8th inclusive); Prof. W. R. Graham, O.A.C., Guelph (10th to 21st inclusive); Miss Helen McAllister, Coventry.

1 Rostock (Hall).....	N. Perth	Feb. 4th.
2 Monkton (Town Hall).....	N. Perth	Feb. 5th.
3 Atwood (Agricultural Hall).....	N. Perth	Feb. 6th.
4 Millbank (Town Hall).....	N. Perth	Feb. 7th.
5 Gowanstown (Hall).....	N. Perth	Feb. 8th.
6 Bluevale (Forester's Hall).....	E. Huron	Feb. 10th.
7 Fordwich (Donaghey's Hall).....	E. Huron	Feb. 11th.
8 Molesworth.....	E. Huron	Feb. 12th.
9 Ethel (Town Hall).....	E. Huron	Feb. 13th.
10 Walton (Workmen's Hall).....	E. Huron	Feb. 14th.
11 Murdie's (Schoolhouse).....	E. Huron	Feb. 15th.
12 Staffa (Public Hall).....	S. Perth	Feb. 17th.
13 Kirkton (Aberdeen Hall).....	S. Perth	Feb. 18th.
14 Russeldale (Chosen Friends).....	S. Perth	Feb. 19th.
15 Sebringville (Forester's Hall).....	S. Perth	Feb. 20th.
16 Tavistock (Public Hall).....	S. Perth	Feb. 21st.

DIVISION 3 A.—Henry Glendenning, Manilla; Miss Blanche Maddock, Guelph.

1 Drumbo (Town Hall).....	N. Oxford	Feb. 4th.
2 Braemar (Town Hall).....	N. Oxford	Feb. 5th.
3 Brooksdale (Forester's Hall).....	N. Oxford	Feb. 6th.
4 Lakeside (Town Hall).....	N. Oxford	Feb. 7th.
5 Wellburn (German Hall).....	E. Middlesex	Feb. 8th.
6 Bryanston (Temperance Hall).....	E. Middlesex	Feb. 10th.
7 Crumlin.....	E. Middlesex	Feb. 11th.
8 Ilderton (Forester's Hall).....	E. Middlesex	Feb. 12th.
9 Hyde Park.....	E. Middlesex	Feb. 13th.
10 Dorchester Station (Town Hall).....	E. Middlesex	Feb. 14th.
11 Belmont (Masonic Hall).....	E. Middlesex	Feb. 15th.
12 Langworth (Hall).....	E. Middlesex	Feb. 17th.
13 Lambeth (Masonic Hall).....	E. Middlesex	Feb. 18th.
14 Riverside (Schoolhouse) S. S. No. 1.....	W. Middlesex (aft.)	Feb. 19th.
15 Melbourne (Woodman's Hall).....	W. Middlesex (eve.)	Feb. 19th.
16 Walker's (Schoolhouse).....	W. Middlesex (aft.)	Feb. 20th.
17 Napier (Township Hall).....	W. Middlesex (eve.)	Feb. 20th.
18 Glencoe (Town Hall).....	W. Middlesex	Feb. 21st.
19 Wardsville (Town Hall).....	W. Middlesex	Feb. 22nd.

DIVISION 3 B.—A. McNeill, Walkerville; Dr. Henry G. Reed, Georgetown; Mrs. A. Kinney, Grandview.

1 Shedden (Morrison's Hall).....	W. Elgin	Feb. 4th.
2 Dutton (Town Hall).....	W. Elgin	Feb. 5th.
3 West Lorne (Township Hall).....	W. Elgin	Feb. 6th.
4 Ridgetown (Township Hall).....	E. Kent	Feb. 7th.
5 Blenheim (Township Hall).....	E. Kent	Feb. 8th.
6 Bridgend (Grange Hall).....	E. Kent	Feb. 10th.

SUPPLEMENTARY MEETINGS.—*Con.*

7 Thamesville (Town Hall).....	E. Kent	Feb. 11th.
8 Zone (Town Hall).....	E. Kent	Feb. 12th.
9 Tuppersville (Keith's Schoolhouse).....	W. Kent	Feb. 13th.
10 Fletcher (Morphey's Hall).....	W. Kent	Feb. 14th.
11 Tilbury (Palmer's Hall).....	W. Kent	Feb. 15th.
12 Wheatley (Gibson's Hall).....	W. Kent	Feb. 17th.
	and South Essex.....	Feb. 18th.
13 Leamington (Town Hall).....	S. Essex	Feb. 19th.
14 Kingsville (Town Hall).....	S. Essex	Feb. 20th.
15 Harrow (Town Hall).....	S. Essex	Feb. 21st.
16 Amherstburg (Town Hall).....	S. Essex	Feb. 22nd.
17 Maidstone.....	N. Essex	Feb. 24th.
18 Sandwich S. (Orange Hall).....	N. Essex	Feb. 25th.
19 Belle River (Town Hall).....	N. Essex	Feb. 26th.
20 Comber (Town Hall).....	N. Essex	Feb. 27th.
21 Yarmouth Centre (Town Hall).....	E. Elgin (aft.).....	Feb. 28th.
22 Sparta (Royal Templars' Hall).....	E. Elgin (eve.).....	Feb. 28th.
23 Mount Salem (Garner's Hall).....	E. Elgin (aft.).....	Mar. 1st.
24 Straffordville (Town Hall).....	E. Elgin (eve.).....	Mar. 1st.

DIVISION 4 A : T. G. Raynor, Rose Hall ; T. H. Mason, Straffordville : (Feb. 11th to March 5th). C. A. Zavitz, B. S. A., Guelph, (4th to 10th inclusive).

1 Bealton (Bealton Hall).....	N. Norfolk	Feb. 4th.
2 Windham Centre (Town Hall).....	N. Norfolk	Feb. 5th.
3 Kelvin (Kelvin Hall).....	N. Norfolk	Feb. 6th.
4 Scotland (Fosters' Hall).....	S. Brant	Feb. 7th.
5 Harley (Township Hall).....	S. Brant	Feb. 8th.
6 Mount Pleasant (Foresters' Hall).....	S. Brant	Feb. 10th.
7 Cathcart (Foresters' Hall).....	S. Brant	Feb. 11th.
8 Oxford Centre (Town Hall).....	S. Oxford	Feb. 12th.
9 Beachville (Town Hall).....	S. Oxford	Feb. 13th.
10 Ingersoll (Town Hall).....	S. Oxford	Feb. 14th.
11 Springford (Town Hall).....	S. Oxford	Feb. 15th.
12 Tilsonburg (Town Hall).....	S. Oxford	Feb. 17th.
13 Brownsville (Methodist S. Room).....	S. Oxford	Feb. 18th.
14 Fairground (Town Hall).....	S. Norfolk	Feb. 19th.
15 Walsingham Centre (Town Hall).....	S. Norfolk	Feb. 20th.
16 Simcoe (Library Hall).....	N. & S. Norfolk	Feb. 21st and 22nd.
17 Port Dover (Town Hall).....	S. Norfolk	Feb. 24th.
18 Nanticoke (Town Hall).....	Haldimand	Feb. 25th.
19 Caledonia (Association Hall).....	Haldimand	Feb. 26th.
20 Canfield (Grange Hall).....	Haldimand	Feb. 27th.
21 South Cayuga (Drake's Hall).....	Haldimand	Feb. 28th.
22 Dunnville (Town Hall).....	Monck	Mar. 1st.
23 Wellandport (Misener's Hall).....	Monck	Mar. 3rd.
24 Pelham Centre (Town Hall).....	Monck	Mar. 4th.
25 Smithville (Agricultural Hall).....	Monck	Mar. 5th.
26 Caistorville (Hall).....	Monck	Mar. 6th.

DIVISION 4 B : Duncan Anderson, Rugby ; Robt. Thompson, St. Catharines.

1 Norval (Orange Hall).....	Halton	Feb. 4th.
2 Drumquinn (Township Hall).....	Halton	Feb. 5th.
3 Postville (Township Hall).....	Halton	Feb. 6th.
4 Appleby (Town Hall).....	Halton	Feb. 7th.
5 Waterdown (Township Hall).....	N. Wentworth	Feb. 8th.
6 Millgrove (Town Hall).....	N. Wentworth	Feb. 10th.
7 Carlisle (Town Hall).....	N. Wentworth	Feb. 11th.
8 Westover (Town Hall).....	N. Wentworth	Feb. 12th.
9 Kirkwall (School House).....	N. Wentworth	Feb. 13th.
10 Sheffield (Town Hall).....	N. Wentworth	Feb. 14th.
11 Jerseyville (Palmer Hall).....	S. Wentworth	Feb. 15th.
12 Carluke (School House).....	S. Wentworth	Feb. 17th.
13 Glanford (Temperance Hall).....	S. Wentworth	Feb. 18th.
14 Bartonville (Parish Hall).....	S. Wentworth	Feb. 19th.

SUPPLEMENTARY MEETINGS.—*Con.*

15 Binbrook (Temperance Hall).....	S. Wentworth.....	Feb. 20th.
16 Tapleytown (Old Church).....	S. Wentworth.....	Feb. 21st.
17 Grimby (Town Hall).....	Lincoln.....	Feb. 22nd.
18 Beamsville (Town Hall).....	Lincoln.....	Feb. 24th.
19 Jordan (Zimmerman's Hall).....	Lincoln.....	Feb. 25th.
20 Grantham Township (Orange Hall).....	Lincoln.....	Feb. 26th.
21 Niagara (Court House).....	Lincoln.....	Feb. 27th.
22 Niagara Falls South (Town Hall).....	Welland.....	Feb. 28th.
23 Willoughby (Town Hall).....	Welland.....	Mar. 1st.
24 A'lanburg (Town Hall).....	Welland.....	Mar. 3rd.
25 Humberstone (Town Hall).....	Welland.....	Mar. 4th.

## DIVISION 5 : G. C. Caston, Craighurst ; F. C. Elford, Holmesville.

1 Onondaga (Township Hall).....	N. Brant.....	Feb. 4th.
2 Moyle's School House.....	N. Brant.....	Feb. 5th.
3 Glenmorris (Township Hall).....	N. Brant.....	Feb. 6th.
4 Branchton (Foresters' Hall).....	S. Waterloo.....	Feb. 7th.
5 Ayr (McGeorge's Hall).....	S. Waterloo.....	Feb. 8th.
6 New Dundee (Myer's Hall).....	S. Waterloo.....	Feb. 10th.
7 Beslau (Old Church).....	S. Waterloo.....	Feb. 11th.
8 Baden (Village Hall).....	S. Waterloo.....	Feb. 12th.
9 Phillipsburg (Village Hall).....	S. Waterloo.....	Feb. 13th.
10 Wellesley (Town Hall).....	N. Waterloo.....	Feb. 14th.
11 St. Clements (Schneider's Hall).....	N. Waterloo.....	Feb. 15th.
12 Waterloo (Town Hall).....	N. Waterloo.....	Feb. 17th.
13 Winterbourne (Lecture Room).....	N. Waterloo.....	Feb. 18th.
14 Elora (Village Hall).....	C. Wellington.....	Feb. 19th.
15 Metz (Orange Hall).....	C. Wellington.....	Feb. 20th.
16 Hillsburg (Village Hall).....	C. Wellington.....	Feb. 21st.
17 Grand Valley (Chatfield Hall).....	E. Wellington.....	Feb. 22nd.
18 Arthur (Town Hall).....	E. Wellington.....	Feb. 24th.
19 Kenilworth (Township Hall).....	E. Wellington.....	Feb. 25th.
20 Mount Forest (Town Hall).....	E. Wellington.....	Feb. 26th.
21 Palmerston (Town Hall).....	W. Wellington.....	Feb. 27th.
22 Rothsay (Temperance Hall).....	W. Wellington.....	Feb. 28th.
23 Glenallen (Coot's Hall).....	W. Wellington.....	Mar. 1st.
24 Georgetown (Town Hall).....	Halton.....	Mar. 3rd.
25 Burlington (Town Hall).....	Halton.....	Mar. 4th.

## DIVISION 6 : C. H. Black, Amherst, N.S. ; F. M. Lewis, Burford ; Miss Alice Hollingworth, Beatrice.

1 Desboro (Township Hall).....	N. Grey.....	Feb. 4th.
2 Kilsyth (Township Hall).....	N. Grey.....	Feb. 5th.
3 Annan (Grange Hall).....	N. Grey (aft).....	Feb. 6th.
4 Leith (Public Hall).....	N. Grey (eve).....	Feb. 6th.
5 Bognor.....	N. Grey.....	Feb. 7th.
6 Walters Falls (Oddfellows' Hall).....	C. Grey.....	Feb. 8th.
7 Kimberley (Union Hall).....	C. Grey.....	Feb. 10th.
8 Rivenna (Township Hall).....	C. Grey.....	Feb. 11th.
9 Maxwell (Orange Hall).....	C. Grey.....	Feb. 12th.
10 Relesy (Orange Hall).....	Dufferin.....	Feb. 13th.
11 Laurel (Township Hall).....	Dufferin.....	Feb. 14th.
12 Horning's Mills (Workmen's Hall).....	Dufferin.....	Feb. 15th.
13 Perm (Orange Hall).....	Dufferin.....	Feb. 17th.
14 Collingwood (Court House).....	W. Simcoe.....	Feb. 18th.
15 Dumtroom (S. S. Hall).....	W. Simcoe.....	Feb. 19th.
16 Singhampton.....	W. Simcoe.....	Feb. 20th.
17 Creemore (Leonard's Hall).....	W. Simcoe.....	Feb. 21st.
18 Alliston (Town Hall).....	S. Simcoe.....	Feb. 22nd.
19 Bond Head (Orange Hall).....	S. Simcoe.....	Feb. 24th.
20 Aurora (Town Hall).....	N. York.....	Feb. 25th.
21 Queensville (Presbyterian Church).....	N. York.....	Feb. 26th.
22 Mount Albert (Town Hall).....	N. York.....	Feb. 27th.
23 Stouffville (Spoffard's Hall).....	N. York.....	Feb. 28th.



SUPPLEMENTARY MEETINGS.—*Con.*

DIVISION 7 A : J. E. Orr, Fruitland ; A. J. Reynolds, Scarboro J'ct ; Miss Agnes Smith, Hamilton.

1 Bolton (Town Hall) . . . . .	Peel . . . . .	Jan. 7th
2 Palgrave (Shore's Hall) . . . . .	Peel . . . . .	Jan. 8th
3 Sandhill (Methodist Hall) . . . . .	Peel . . . . .	Jan. 9th
4 Charleston (Township Hall) . . . . .	Peel . . . . .	Jan. 10th
5 Alton (Science Hall) . . . . .	Peel . . . . .	Jan. 11th
6 Belfountain (Public Library) . . . . .	Peel . . . . .	Jan. 13th
7 Churchville (Templars' Hall) . . . . .	Peel . . . . .	Jan. 14th
8 Brampton (Concert Hall) . . . . .	Peel . . . . .	Jan. 15th
9 Malton (Templars' Hall) . . . . .	Peel . . . . .	Jan. 16th
10 Islington (Town Hall) . . . . .	W. York . . . . .	Jan. 17th
11 Thistleton (Rowntree's Hall) . . . . .	W. York . . . . .	Jan. 18th
12 Kleinburg (Temperance Hall) . . . . .	W. York . . . . .	Jan. 20th
13 Maple (Masonic Hall) . . . . .	W. York . . . . .	Jan. 21st
14 Thornhill (Hughes' Hall) . . . . .	E. York . . . . .	Jan. 22nd
15 Unionville (Victoria Hall) . . . . .	E. York . . . . .	Jan. 23rd
16 Boxgrove (Foster' Hall) . . . . .	E. York . . . . .	Jan. 24th
17 Ellesmere (Curlers' Club) . . . . .	E. York . . . . .	Jan. 25th
18 Goodwood (Town Hall) . . . . .	N. Ontario . . . . .	Jan. 27th
19 Uxbridge (Town Hall) . . . . .	N. Ontario . . . . .	Jan. 28th
20 Udon (Orange Hall) . . . . .	N. Ontario . . . . .	Jan. 29th
21 Beaverton (Alexandra Hall) . . . . .	N. Ontario . . . . .	Jan. 30th
22 Brechin (McGrath's Hall) . . . . .	N. Ontario . . . . .	Jan. 31st
23 Woodville (Woodville Hall) . . . . .	W. Victoria . . . . .	Feb. 1st
24 Little Britain (Little Britain Hall) . . . . .	W. Victoria . . . . .	Feb. 3rd

DIVISION 7 B : Henry Glendenning, Manilla ; W. N. Hutt, Southend ; Miss Laura Linton, Guelph.

1 Blackstock (Township Hall) . . . . .	W. Durham . . . . .	Jan. 7th
2 Solina (Sons of Temperance Hall) . . . . .	W. Durham (aft) . . . . .	Jan. 8th
3 Tyrone (Sons of Temperance Hall) . . . . .	W. Durham (eve) . . . . .	Jan. 8th
4 Kendal (Temperance Hall) . . . . .	W. Durham (aft) . . . . .	Jan. 9th
5 Orono (Town Hall) . . . . .	W. Durham (eve) . . . . .	Jan. 9th
6 Welcome (Temperance Hall) . . . . .	E. Durham . . . . .	Jan. 10th
7 Garden Hill (Orange Hall) . . . . .	E. Durham . . . . .	Jan. 11th
8 South Monaghan (Town Hall) . . . . .	E. Durham . . . . .	Jan. 13th
9 Lifford (Temperance Hall) . . . . .	E. Durham . . . . .	Jan. 14th
10 Omemece (Bradburn's Hall) . . . . .	E. Victoria . . . . .	Jan. 15th
11 Dunsford (Old Church) . . . . .	E. Victoria . . . . .	Jan. 16th
12 Cambray (Tomlin's Hall) . . . . .	E. Victoria . . . . .	Jan. 17th
13 Burnt River (Orange Hall) . . . . .	E. Victoria . . . . .	Jan. 18th
14 Seagrave (Town Hall) . . . . .	S. Ontario . . . . .	Jan. 20th
15 Columbus (Town Hall) . . . . .	S. Ontario . . . . .	Jan. 21st
16 Whitby (Town Hall) . . . . .	S. Ontario . . . . .	Jan. 22nd
17 Whitevale (Town Hall) . . . . .	S. Ontario . . . . .	Jan. 23rd

DIVISION 8 : A. McNeill, Walkerville ; Erland Lee, Stony Creek.

1 Lakehurst (Town Hall) . . . . .	W. Peterboro (aft) . . . . .	Jan. 7th
2 Hall's Bridge (School House) . . . . .	W. Peterboro (eve) . . . . .	Jan. 7th
3 Ennismore (Town Hall) . . . . .	W. Peterboro . . . . .	Jan. 8th
4 Stewart's Settlement (Union Hall) . . . . .	W. Peterboro . . . . .	Jan. 9th
5 Douro (St. Patrick's Hall) . . . . .	E. Peterboro . . . . .	Jan. 10th
6 Warsaw (Town Hall) . . . . .	E. Peterboro . . . . .	Jan. 11th
7 Havelock (Town Hall) . . . . .	E. Peterboro . . . . .	Jan. 13th
8 Westwood (Town Hall) . . . . .	E. Peterboro . . . . .	Jan. 14th
9 Hastings (Town Hall) . . . . .	E. Northumberland . . . . .	Jan. 15th
10 Menie (Lamb's Hall) . . . . .	E. Northumberland . . . . .	Jan. 16th
11 Wooler (Town Hall) . . . . .	E. Northumberland . . . . .	Jan. 17th
12 Castleton (Town Hall) . . . . .	E. Northumberland . . . . .	Jan. 18th
13 Centreton . . . . .	W. Northumberland . . . . .	Jan. 20th
14 Coldsprings (Township Hall) . . . . .	W. Northumberland . . . . .	Jan. 21st
15 Baltimore (Chapman's Hall) . . . . .	W. Northumberland . . . . .	Jan. 22nd
16 Consecon (Killip's Hall) . . . . .	Prince Edward . . . . .	Jan. 23rd

SUPPLEMENTARY MEETINGS.—*Con.*

17 Wellington (Town Hall) .....	Prince Edward .....	Jan. 24th.
18 Bloomfield (Town Hall) .....	Prince Edward .....	Jan. 25th.
19 Cherry Valley (Town Hall).....	Prince Edward .....	Jan. 27th.
20 Milford (Town Hall).....	Prince Edward .....	Jan. 28th.
21 Cressy (A. O. U. W. Hall) .....	Prince Edward (aft).....	Jan. 29th.
22 Waupoos (Town Hall) .....	Prince Edward (eve).....	Jan. 29th.

DIVISION 9A. Andrew Elliott, Galt; F. M. Lewis, Burford; Mrs. Elizabeth Torrance, Chateaugay Basin, Que.

1 Harder's (School House) .....	W. Hastings .....	Jan. 7th
2 Gilbert's (School House) .....	W. Hastings .....	Jan. 8th
3 Turner's (School House) .....	W. Hastings .....	Jan. 9th
4 Glen Ross (School House).....	W. Hastings .....	Jan. 10th
5 Springbrook (Foresters' Hall) .....	N. Hastings .....	Jan. 11th
6 Marmora (Town Hall) .....	N. Hastings .....	Jan. 13th
7 Eldorado (Town Hall) .....	N. Hastings .....	Jan. 14th
8 Queensboro (Orange Hall).....	N. Hastings .....	Jan. 15th
9 Bogart (School House).....	E. Hastings .....	Jan. 16th
10 Moira (Workmen's Hall).....	N. Hastings .....	Jan. 17th
11 Foxboro (School House) .....	E. Hastings .....	Jan. 18th
12 Read (Hanley's Hall).....	E. Hastings .....	Jan. 20th
13 Shannonville (A.O.U.W. Hall) .....	E. Hastings .....	Jan. 21st
14 Switzerville (School House) .....	Lennox .....	Jan. 22nd
15 Odessa (Town Hall) .....	Lennox .....	Jan. 23rd
16 Sillsville (Town Hall).....	Lennox .....	Jan. 24th
17 Adolphustown (Town Hall) .....	Lennox .....	Jan. 25th
18 Emerald (Cheese Factory).....	Amherst Island .....	Jan. 27th
19 Stella (Town Hall) .....	Amherst Island .....	Jan. 28th
20 Joyceville (Joyce's Hall).....	Frontenac .....	Jan. 29th
21 Sydenham (Town Hall).....	Frontenac .....	Jan. 30th
22 Enterprise (Merrill's Hall).....	Addington .....	Jan. 31st
23 Tamworth (Town Hall).....	Addington .....	Feb. 1st
24 Gananoque (Town Hall).....	S. Leeds .....	Feb. 3rd
25 Seeley's Bay (Select Knights' Hall) .....	S. Leeds .....	Feb. 4th
26 Delta (Town Hall) .....	S. Leeds .....	Feb. 5th

DIVISION 9B. A. W. Peart, Burlington; John Gardhouse, Hightfield.

1 Athens (H. S. Hall) ; .....	Brockville .....	Jan. 7th
2 Caintown (Presbyterian Church) .....	Brockville .....	Jan. 8th
3 Lyn (School Hall) .....	Brockville .....	Jan. 9th
4 New Dublin (Township Hall).....	Brockville .....	Jan. 10th
5 Algonquin (Temperance Hall).....	S. Grenville .....	Jan. 11th
6 Donville (Epworth Hall) .....	S. Grenville .....	Jan. 13th
7 Spencerville (Town Hall) .....	S. Grenville .....	Jan. 14th
8 Mainsville (School House) .....	S. Grenville .....	Jan. 15th
9 Moulinette .....	Cornwall .....	Jan. 16th
10 Cornwall Centre (Township Hall) .....	Cornwall .....	Jan. 17th
11 Martintown (St. Andrew's) .....	Glengarry .....	Jan. 18th
12 Lancaster (McRae's Hall) .....	Glengarry .....	Jan. 20th
13 North Lancaster (McDonald's Hall) .....	Glengarry .....	Jan. 21st
14 Monkland (Truax Hall).....	Stormont .....	Jan. 22nd
15 Avonmore (Beaver Hall).....	Stormont .....	Jan. 23rd
16 Newington .....	Stormont .....	Jan. 24th
17 Berwick (Town Hall).....	Stormont .....	Jan. 25th
18 Inkerman (Workmen's Hall).....	Dundas .....	Jan. 27th
19 Chesterville (Forester's Hall).....	Dundas .....	Jan. 28th
20 Casselman (Town Hall).....	Russell .....	Jan. 29th
21 Fournier (McGregor's Hall) .....	Prescott .....	Jan. 30th
22 Curran (School House).....	Prescott .....	Jan. 31st
23 Billing's Bridge (Town Hall) .....	Russell .....	Feb. 1st

DIVISION 10. A. C. Hallman, New Dundee; R. H. Field, Addison.

1 Frankville (Brownbridge's Hall) .....	N. Leeds & N. Grenville.....	Jan. 7th
2 Easton's Corners (Warren's Hall).....	N. Leeds & N. Grenville.....	Jan. 8th

SUPPLEMENTARY MEETINGS.—*Con.*

3	Bishop's Mills (Temperance Hall).....	N. Leeds & N. Grenville.....	Jan. 9th
4	Millard's Corners (Orange Hall).....	N. Leeds & N. Grenville.....	Jan. 10th
5	Burritt's Rapids (School House).....	N. Leeds & N. Grenville.....	Jan. 11th
6	North Gower (Town Hall).....	Carleton.....	Jan. 13th
7	Manotick (Harmony Hall).....	Carleton.....	Jan. 14th
8	Burnstown (Temperance Hall).....	S. Renfrew.....	Jan. 15th
9	Mount Patrick.....	S. Renfrew.....	Jan. 16th
10	Northcote (Temperance Hall).....	S. Renfrew.....	Jan. 17th
11	Loch Winnoch (School House).....	S. Renfrew.....	Jan. 18th
12	Golden Lake (School House).....	N. Renfrew.....	Jan. 20th
13	Locksley (School House).....	N. Renfrew.....	Jan. 21st
14	Pakenham (Agricultural Hall).....	N. Lanark.....	Jan. 22nd
15	Clayton (Forester's Hall).....	N. Lanark (aft).....	Jan. 23rd
16	Middleville (Town Hall).....	N. Lanark (eve).....	Jan. 23rd
17	Watson's Corners (Temperance Hall).....	N. Lanark (aft).....	Jan. 24th
18	McDonald's Corner's (Agricultural Hall).....	N. Lanark (eve).....	Jan. 24th
19	Lanark (Town Hall).....	N. Lanark.....	Jan. 25th
20	Balderson (McGregor's Hall).....	N. Lanark.....	Jan. 27th
21	Drummond (Township Hall).....	N. Lanark.....	Jan. 28th
22	Gillies (School House).....	N. Lanark.....	Jan. 29th

## SPEAKER'S SUBJECTS.

ANDERSON, D. C., Rugby.—“Soil Cultivation,” “Root Growing,” “Management of Manure,” “Cattle Raising,” “Green Crops as Fertilizers,” “The Bacon Hog.”

Evening Subjects.—“Poultry on the Farm,” “Advantages of Farm Life,” “The Farm as a Financial Investment.”

BLACK, C. H., Amherst, N.S.—“Breeding and Feeding for Beef,” “The Dairy Cow and How to Care for Her,” “Green Feeds to Supplement Pastures,” “Rotation of Crops,” “Clover Culture.”

CAMPBELL, MRS COLIN, Goderich.—“Aims and Objects of Women's Institutes,” “Bread and Bread Making,” “Canning and Preserving,” “Household Economics,” “Home Influence.”

CASTON, G. C., Craighurst.—“Problems of the Soil,” “The Importance of Succulent Food in the Feeding of Live Stock,” “Our Export Bacon Trade, How to Increase and Maintain it,” “Orchard Fruits—the best Varieties and How to Grow Them,” “Cold Storage and the Transportation and Marketing of our Perishable Products,” “Picking, Packing and Shipping Apples to Home and Foreign Markets.”

Evening Subjects.—“Horticulture on the Farm,” “Poultry on the Farm,” “The Agricultural College and the Education of the Farmer,” “The Land we Live in.”

CLARK, J. W., Orondaga.—“Poultry Raising and Fattening for the English Markets,” “Suitable Breeds and How to Select Them,” “How to Manage an Incubator,” “How to get a Large per cent. of Fertile Eggs,” “Hog Raising,” “How to Breed and Feed for the Export Trade,” “Care of Sheep,” “Management of Manure.”

Evening Subjects.—“Destruction of Weeds,” “Poultry Raising as an Occupation for Boys, Girls, and Women.”

COTRELL, G. R., Milton.—“Poultry for Profit on the Ordinary Farm,” “The Different Breeds of Poultry and Their Characteristics,” “The Preparation of Poultry for Home and Foreign Market,” “How to Build a Poultry House and Keep the Poultry Healthy.”

Evening Subject.—“Poultry Production for Boys and Girls.”

DRUMMOND, D., Myrtle.—“Bacon Hog and Pork Production,” “Selection, Breeding, and Care of Dairy Cattle,” “Cultivation of the Soil,” “Corn for Silo, Varieties and Cultivation,” “Notes on Chicken Feeding,” “Summer Care of Dairy Cow, or Soiling.”

ELFORD, F. C., Holmesville.—“Alfalfa as a Soiling Crop,” “Summer Feeding of Hogs,” “Fattening Chickens for the British Market.”

Evening Subject.—“The Growing Lad for the Growing Country.”

ELLIOTT, ANDREW, Galt.—“How to Maintain Fertility and Moisture in the Soil,” “Corn and the Silo a Necessity,” “Clover and Clover Hay,” “Economic Feeding,” “Improved Methods in Dairying Necessary to Success,” “The Dairy Cow,” “What we Gain by Keeping Sheep,” “The Bacon Hog,” “Concrete on the Farm.”

Evening Subject.—“Our Farm Homes.”

FRASER, W. S., Bradford.—“Hog Raising for Profit,” “Corn as a Fodder Crop,” “Care and Management of Sheep,” “Clover Crop and How to Handle it,” “Care of Implements,” “Underdraining,” “Beef Rings Among Farmers.”

Evening Subjects.—“Farmers' Needs,” “Farm Home,” “The Home Dairy.”

FIELD, R. H., Addison.—“Corn Growing and the Silo,” “Care and Growth of the Dairy Cow,” “Keeping Cows for Profit,” “Silo Construction,” “Raising Calves, and their care until three years old,” “Profit in Hog Raising.”

Evening Subjects.—“The P's and Q's of the Farm” “Farming My Choice.”

GARDHOUSE, JOHN, Highfield.—“Horse Breeding for Profit,” “Care and Management of Horses,” “How to Select and Feed Beef Cattle,” “Care and Management of Sheep,” “Raising Feed for Live Stock.”

Evening Subjects.—“How to Improve Present Farm Conditions,” “How to Interest the Young People in the Farm.”

GEE, MYRON A., Fisherville.—“Care of Sheep,” “Hog Raising,” “Poultry, Their Housing and Care,” “Soil Cultivation,” “Corn and Fodder Crops.”

Evening Subjects.—“Poultry on the Farm,” “Elements of Success,” “Farm Problem.”

GLENDENNING, HY. Manilla.—“Cultivation of the Soil and Rotation of Crops,” “Under-draining,” “Weeds, and How to Destroy Them,” “Grasses for Pasture,” “The Growing of Red and Alsike Clover for Seed,” “Breeding and Feeding of Hogs for Market,” “Feeds and Feeding,” “Poultry on the Farm.”

Evening Subjects.—“The Farm Water Supply,” “The Farmer's Fruit and Vegetable Garden,” “Spraying for Insects and Fungous Diseases.”

GRAHAM, W. R., Guelph.—“Poultry for Profit,” “How to Properly Kill, Pluck, and Otherwise Prepare Poultry for Export,” “How to Get Eggs in Winter,” “Hatching and Rearing Chickens Naturally and Artificially.”

Evening Subject.—“Canada's Opportunity in the Poultry Markets of the World.”

HALLMAN, A. C., New Dundee.—“Breeding and Care of the Dairy Herd” (Illustrated), “Useful Hints on the Swine Industry” (Illustrated), “Cultivation of Fodder Corn and the Silo,” “Catch Crops,” “Cultivation of the Soil and Clover,” “Root Culture,” “Water Supply on the Farm and the Value of Indoor Watering System,” “The Farmer's Fruit Garden,” “The Cream Separator and Butter Making on the Farm.”

HARCOURT, R. B. S. A., Guelph.—“Economical Cattle Feeding,” “Soil Moisture in Relation to Plant Growth,” “Soiling and Soiling Crops,” “Milk Production,” “The Care and Handling of Milk for Creameries and Cheese Factories,” “Flour and Bread Making”

HOLLINGWORTH, Miss A. BEATRICE.—“Butter Making,” “The Weed Question,” “What Women Have Done, and Can Do,” “The Importance of Good Housekeeping,” “Healthy Homes,” “Our Friends the Flowers.”

HUTT, W. N., Southend.—“Pruning the Orchard,” “Spraying Mixtures and Their Application,” “Injurious and Beneficial Insects,” “Management of the Farmer's Wood Lot,” “Crop Failures and How to Avoid Them,” “Seeds, Seed Grain and Seeding,” “Birds in Relation to Agriculture,” “Beautifying the Home”

KINNEY, Mrs. A., Grandview.—“Home-made Bread and Butter,” “Our Women's Institutes.”

Evening Subjects.—“The Cheerful Life on the Farm, Social and Domestic,” “Evening at the Homestead.”

LEE, ERLAND, Stoney Creek.—“Lessening the Injurious Effects of Dry Weather on Our Crops,” “Breeding and Feeding the Dairy Herd,” “Corn and the Silo,” “Care of Milk for Cheese Factory or Creamery,” “Cream Separator and Butter Making on the Farm,” “The Use of Farmers' and Women's Institutes.”

LEWIS, F. M., Burford.—“The Orchard and Its Care,” “Soil Moisture and How to Retain It,” “Manures, Barnyard and Green, and Their Application,” “The Farmer's Garden,” “The Farm Home.”

LICK, ELMER, Oshawa.—“The Handling and Marketing of Fruit,” “Fruit Growing from a Commercial Standpoint.”

LINTON, Miss LAURA, Guelph.—“Principles of Cooking,” (with simple demonstration), “Our Daily Bread,” “Dairying on the Farm,” “The Comfortable Home”

MCALLISTER, HELEN C., Coventry.—“Private Dairy Butter Making,” “Practical Hints on Cheese Making at Home,” “The Work Taken Up in a Course at the O. A. C. Dairy School,” “The Farmer's Fruit and Vegetable Garden,” “Winter Window Gardening for the Amateur,” “The Importance of Organization for Farmers' Wives and Daughters,” “Home Influence.”

MCCULLOCH, R., Snelgrove.—“Dairy Farming and Its Relation to Soil Fertility,” “Improving Our Dairy Herds,” “Cow Foods, Their Composition and Effect on Butter Flavor” (Illustrated), “Milk and Cream for City Trade.”

Evening Subjects.—“Farm Houses,” “The Prosperity of our Country Depends on the Prosperity of the Farmer.”

MCEWING, JAS., Drayton.—“Farm Drainage,” “How to Maintain Fertility of the Soil,” “Mistakes Made in Farming,” “Soil Cultivation and Rotation of Crops.”

Evening Subjects.—“Some Things Boys Should be Taught,” “The Gospel of Home Influence,” “The Farmer as a Factor in National Progress.”

McNEILL, A., Walkerville.—“The Fruit Marks Act, Its Effect on Foreign and Domestic Trade,” “Export Trade in Apples and Pears,” “Spraying for Insect and Fungous Diseases.”

"Apple Culture," "Cold Storage Buildings and Fruit Houses," "Modern Methods in Fruit Growing," "Packing and Shipping Fruit."

Evening Subjects.—"Light and Shades of Farm Life," "Fruits and Flowers on the Farm," "Some Social Problems," "How to Get the Most Out of the Farm."

MADDOCK, Miss BLANCHE, Guelph.—"Domestic Science," "Dairying," "Bread Making," "Bacteria," "Women's Institutes," "Mission of Flowers and How to Grow Them."

MASON, T. H., Stratfordville.—"The Hog as a Money Maker," "Sheep Raising," "Care and Food of Dairy Cattle," "Corn Growing for Grain and Silage," "Butter Making."

Evening Subjects.—"Changing Conditions in Canadian Agriculture," "Poultry Raising for the Boys and Girls."

MEYER, J. E., Kossuth. "Keeping Poultry for Profit on the Farm," "Raising Poultry for the Market," "Different Varieties of Poultry and their Characteristics," "How I Built my Silo," "Experiences with Rape as a Forage Plant," "How I Endeavor to utilize every foot of land on my Farm."

MOORE, CHAS. S., Stanbridge East, Que.—"Feeding Dairy Cows so as to produce the Greatest Profit for Food Consumed," "Cultivation of the Soil," "Care and Application of Farm Manures."

Evening Subject.—"A Study of the Clovers and their Relatives"

MORDEN, E., Niagara Falls.—"The Farmer's Fruit Garden," "How to Grow Small Fruits," "Best Varieties of Fruits," "Some of the Newer Fruits," "Insects Injurious to Fruits," "Japan Plums," "The New Currant Culture," "The Road Problem," "How to Beautify the Farm," "The Chemistry of Every-day life."

NASH, C. W., Toronto.—"Chemistry of the Soil," "How Plants Grow," "Evolution of Domestic Animals," "The Value of our Birds," "The Enemies of the Wheat Plant," "Our Insect Pests," "Nature about the Farm," "The Enemies of the Pea Crop and How to deal with Them."

ORR, J. E., Fruitland—"Notes on Plum Culture," "A Practical Talk on Spraying," "Some Insect Enemies the Orchardist has to fight," "The Latest Ideas in Controlling the Codling Moth," "The San Jose Scale and Some Other Scale Insects," "The Care of Fruit Trees," "A Few of the more Common Diseases of Fruit Trees, their Preventives and Remedies."

PEART, A. W., Burlington.—"Apples, Pear, Plums, Grapes, Blackberries, Raspberries, Currants, their Varieties, Cultivation, Marketing, etc.," "Insects and Fungi Injurious to our Orchards and Methods of Combatting Them," "Underdraining," "Management of Soils," "The Application of Fertilizers."

Evening Subjects.—"Agricultural Education," "Leaks on the Farm."

QUINN, M. J., Toronto, 107 Gladstone Ave.—"House Heating, Ventilation and Sanitation," "Simple Methods of Disposing of Household Wastes, Including Sewage and Garbage," "Simple Methods of Cold Storage Construction."

RAYNOR, T. G., Rose Hall.—"Stock Improvement," "The Value of Foods," (Illustrated), "Soiling Stock," "Selection and Management of Dairy Cows," "Some Common Diseases Affecting Stock," "Apple Culture," "Modern Methods of Soil Cultivation," "How to Feed the Soil," "Clover and Corn," "The Bacon Hog," "Concrete and its Use."

Evening Subjects.—"Some Common Mistakes in Farming," "Agricultural Education," "Agricultural Development."

REED, HENRY G., V.S., Georgetown.—"The Influence of the Natural Laws on the Breeding of Live Stock," "Ordinary Diseases of the Stomach of Cattle," "Horse Breeding for Profit," "Diseases Incident to Newly Calved Cows and Preventive Treatment," "Care of the Brood Mare and her Foal," "The Horse's Feet in Health and Disease," "The Horse in Peace and War."

REYNOLDS, A. J., Scarborough Junction.—"Objects and Methods of Cultivation," "Corn and Silo," "Summer and Winter Dairying," "Clover Growing," "Application of Manure," "Some of the Essentials for a Successful Institute."

ROSE, Miss LAURA, Guelph.—"Science in Butter Making," "Food Value of Milk, Butter and Cheese," "Milk, its Secretion, Composition and Management," "Difficulties in Dairy Farming and How to Overcome them," "The Making of Bread and Buns," "A Chat with Housekeepers on House-keeping," "One Eye in the Field, the Other in the Town," "As Others See Us," "A Three Months' Drive Through Cape Breton."

SHEPPARD, F. A., Queenston.—"Propagation of Fruits, Grafting, Budding, etc.," "Small Fruits, Varieties and Cultivation," "Planting and Care of Orchards," "Tomato Growing for Early Market and Factory," "Packing and Transportation of Fruit," "Cultivation and Conservation of Soil Moisture," "The Use of Concrete for Farm Buildings."

Evening Subjects.—"The Codling Moth and its Effect on the Apple Crop," "Birds in Relation to Agriculture and Horticulture," "The Advantages of Farm Bookkeeping, and some Methods of Keeping Them," (Illustrated).

SHEPPARD, MAJOR JAMES, Queenston.—"The Packing and Sale of Apples," "Planting and Care of Orchards," "Four Reasons Why We Till the Soil," "Forty Years' Experience in Growing Corn," "Tomatoes for Home and Market," "Ensilage and the Round Silo," "The Export Bacon Trade."

Evening Subjects.—“ Propagating Fruits, Graftings, Budding, etc.” “ Three Historical Days On the Niagara River.”

SHERRINGTON, A. E., Walkerton.—“ The Care and Management of the Orchard,—Planting, Cultivating and Pruning.” “ Small Fruits for the Farmers' Garden and how to grow them,” “ Picking, Packing and Marketing of Fruit,” “ Spraying for Insects and Fungous Diseases,” “ Tomato Growing for Home and Market,” “ Soil Cultivation,” “ Breeding and Feeding of Poultry,” “ Poultry for the Home and British Market.”

Evening Subject.—“ Beautifying the Farm.”

SLEIGHTHOLM, F. J., Strathroy.—“ Creamery Skimmilk as a Stock Food,” “ How to Rear Profitable Milkers,” “ Two Year's Record of a Common Cow,” “ Summer Feeding of Milch Cows,” “ Difficulties in Farm Butter Making and How to Overcome them.”

Evening Subject.—“ Training Boys for Business.”

SMITH, MISS AGNES, Hamilton.—“ Principles of Cooking (with simple demonstrations),” “ Food in its Relation to the Body,” “ Domestic Science,” “ The Sanitary Home.”

SMITH, MRS. J. L., Whitby.—“ A Practical Talk to Our Young People.” “ The Young Man on the Farm, His Advantages and Disadvantages,” “ The Days and Ways of our Grandmothers,” “ Economy in the Home,” “ Food and Diet” “ Woman's Life and Work on the Farm,” “ Helpful Hints to Young Housekeepers.”

SMITH, J. H., Ridgetown.—“ Farm Mechanics,” “ The Sun at Work on a Hundred-acre Farm,” “ Relation of Soil and Plant,” “ Scientific Agriculture or the Relation of Science to Farming,” “ Farmers' Education,” “ Farm Bookkeeping,” “ Canada for Canadians,” “ The Choice of a Profession.”

STEVENSON, R. S., Ancaster.—“ Breeding and Selection of Dairy Cows,” “ Feeding the Dairy Cow Economically,” “ Corn Growing and Ensilaging,” “ The Cream Separator,” “ The Breeding and Feeding of Beef Cattle,” “ Farmers and Farm Life.”

THOMPSON, R.—St. Catharines.—“ Poultry for Profit,” “ Swine Breeding and the Export Bacon Trade,” “ Pointers for Growing Corn for Grain and the Silo,” “ Small Fruits and Fruit Trees,” “ Gathering and Marketing Fruit,” “ Cold Storage for the Farmer,” “ Underdraining,” “ The San Jose Scale and Other Orchard Pests,” “ The future Farmer and his Education.”

TOMPKINS, W. S., Grandview, N. B.—“ Cultivation of the Soil and Rotation of Crops,” “ Conservation of Soil Moisture,” “ Benefits of Farmers' Institutes,” “ Mixed Husbandry—its Advantages” “ Mistakes made in Farming,” “ Care of Manure and How to Apply it,” “ Cheap Foods and how to Feed them,” “ Mistakes in Sheep Breeding,” “ Leaks on the Farm,” “ Raising Hogs for Market.”

TORRANCE MRS. ELIZABETH M., Chateauguay Basin, Que.—“ A Talk on Apples, Tree and Fruit” “ Housekeeping as a Business,” “ Vegetables, and the Place They Should Hold on Our Table,” “ Our Summer Fruits,” “ Eggs, Their Use and Abuse,” “ The Object of a True Education.”

TWISS, R., Woodburn.—“ Raising Pigs for Profit,” “ The Dairy Cow, and How to Care for Her,” “ Corn Growing and the Silo,” “ Why I am a Member of The Farmers' Institute,” “ Life is as You Make It,” “ Young Man, Stick to the Farm.”

ZAVITZ, C. A., B. S. A., Guelph.—I. A Half-dozen Five-minute Talks on Subjects relating to Field Agriculture. (The subjects to be suggested by the members at the meeting.) 2. Results and Conclusions from Agricultural Experiments conducted throughout Ontario in 1901. 3. Pasture Crops. 4. The Selection of Seed in its Relation to Good Farming. 5. Results of Several Years' Experience in Growing the Following Crops : Grass Peas, Egyptian Peas, Cow Peas, Soy Beans, Hairy Vetches, Crimson Clover, Lucerne and Dwarf Essex Rape. 6. The Leading Varieties of Grain Crops for the Farmers of Ontario. 7. Important Results of Practical Experiments in Growing Potatoes.

Evening Subject.—The Ontario Agricultural College in its Relation to the Agriculture of the Province.

### LIST OF RESERVE SPEAKERS.

The following is a list of reserved delegates whose services may be obtained by local Institutes at the time indicated after each name, and on the following terms : The legitimate expenses of the delegate must be borne by the Institute employing him or her from the time he or she leaves home until he or she returns thereto, together with a per diem of \$2.50 for the time the person is absent from home, Sunday excepted :

Caston, G. C., an occasional meeting in December.

Clark, J. W., February.

Cottrell, G. R., February.

Elford, F. C., January.

Fraser, W. S., February.

Graham, W. R., an occasional meeting in December and January.

Gee, Myron A., December and February.

RESERVE SPEAKERS—*Continued.*

Hallman, A. C., February.  
 Hutt, W. N., December.  
 Lee, Erland, February.  
 Lick, Elmer, February.  
 McEwing, Jas., February.  
 Meyer, J. E., February.  
 Moore, C. S., January and February.  
 Morden, E., any time.  
 Quinn, M. J., any time.  
 Sheppard, F. A., December and after February 10th.  
 A. E. Sherrington, Walkerton.  
 Smith, J. H., any time.  
 Thompson, Robt., December and January.  
 Twiss, R., January and February.

## LADY DELEGATES.

Campbell, Mrs. Colin, December and February.  
 Hollingworth, Miss Alice, December and January.  
 Kinney, Mrs. A., January.  
 Linton, Miss Laura, February.  
 McAllister, Miss Helen, December and January.  
 Smith, Miss Agnes, December and February.  
 Smith, Mrs. J. L., any time.  
 Torrance, Mrs. Elizabeth, December and February.

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STATISTICS.

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## REPORTS OF LOCAL

Institute district.	Membership, December, 1900.		No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Cash on hand per last Report.		Members' fees.	Receipts.						
	Membership to June, 1901.					%	c.		%	c.	%	c.	%	c.	%
Addington	71	78	5	711	23	17 11	19 50	50 00							
Algonia Centre (Slate River Valley)	80	92	4	253	11	22 67	24 50	50 00							
Algonia, East	139	128	7	523	23	30 46	32 00	25 00	4 00						
Amherst Island	58	44	3	370	4	48 23	11 00	50 00							
Braot, North	129	73	6	606	22	33	28 75	50 00							
Braot, South	84	87	5	950	24	39 58	22 25	50 00						100 55	
Brockville	227	189	9	1,575	28	15 11	47 75	50 00	8 20						
Bruce, Centre	159	140	8	800	14	167 19	34 75	50 00						89 36	
Bruce, North	104	172	6	487	10	101 57	46 75	50 00						106 50	
Bruce, South	203	219	7	5,110	48	250 04	45 75	50 00						86 94	
Bruce, West	211	283	8	2,915	28	113 45	70 50	50 00						114 50	
Carleton	150	79	5	805	15	47 50	37 50	50 00							
Cornwall	81	59	6	493	15	71	12 75	50 00							
Dufferin	277	291	7	892	44	224 47	67 75	50 00						202 00	
Dundas	201	239	5	1,857	30	181 04	59 00	49 75							
Durham, East	173	151	7	955	22	65 37	37 50	50 00						25 00	
Durham, West	180	198	14	947	32	113 46	49 25	50 00						5 00	
Elgin, East	221	251	7	755	18	47 03	70 00	50 00							
Elgin, West	179	182	7	840	34	22 40	42 50	50 00							
Essex, North	80	97	7	675	33		25 00	50 00							
Essex, South	199	208	9	1,355	50	92 14	52 75	50 00							
Frontenac	142	110	5	1,255	26	71 22	23 50	50 00							
Glengarry	216	173	5	1,535	12		44 25	50 00							
Grenville, South	100	131	5	1,213	18	60 10	31 75	50 00							
Grey, Centre	160	157	7	663	33	43 15	39 75	50 00							
Grey, North	232	242	10	1,290	41	88 00	60 25	50 00							
Grey, South	227	270	7	2,250	25	136 84	70 25	50 00	10 35	184 00					
Haldimand	339	361	12	1,660	56	417 81	88 00	50 00							
Halton	502	748	14	5,490	58	196 84	188 25	75 00						121 20	
Hastings, East	127	138	7	1,275	39	2 63	32 75	45 00	50 00						
Hastings, North	535	578	22	2,781	86		142 50	75 00							
Hastings, West	128	118	6	1,335	27	29 91	30 00	50 00							
Huron, East	229	357	8	1,388	49	51 59	88 25	50 00							
Huron, North	132	287	8	2,275	27	286 38	58 25	50 00	27 85						
Huron, West	330	363	11	3,260	64	24 59	93 75	50 00						215 00	
Kent, East	210	222	7	930	41	20 33	53 50	50 00							
Kent, West	138	210	9	1,097	25	88 95	52 75	75 00							
Lambton, East	185	203	7	912	50	48 33	51 50	50 00						65 32	
Lambton, West	315	401	9	1,067	62	41 59	91 75	50 00						74 65	
Lynark, North	373	339	9	2,721	52	46 54	85 00	65 00	35 90						
Lynark, South	115	174	5	1,100	31		43 00	65 00							
Leeds, N. & Grenville, N	151	137	8	1,080	19	54 22	34 25	50 00						41 45	
Leeds, South	271	198	7	2,020	45		53 50	50 00							
Lennox	110	122	6	620	25	65 97	30 75	75 00							
Lincoln	220	270	7	1,595	38	59 47	51 50	55 00						28 00	
Manitoulin, East	150	157	7	1,230	12	78 05	38 75	25 00							
Middlesex, East	283	284	9	1,995	54	113 47	81 00	50 00						108 70	
Middlesex, North	340	367	12	2,545	65	357 64	91 25	25 00							
Middlesex, West	167	200	7	800	30	65 36	49 50	50 00							
Monck	149	204	8	1,054	30	38 28	50 00	55 00							
Muskoka, Centre	51	51	4	277	10	44 10	12 50	25 00							
Pt. Carling and Bala	21	19	4	167	11		4 75								
Muskoka, North	207	195	7	556	49	7 44	51 75	25 00							
Muskoka, South	103	110	5	264	19	35 94	26 00	45 00							
Nipissing, W	70	70	5	156	8		17 50	25 00							
Norfolk, North	322	375	8	3,790	46	47 52	92 25	15 00	50 00						

FARMERS' INSTITUTES.

Receipts.			Expenditure.																		
Miscellaneous.		Balance due Treasurer.	Total receipts.	Due Treasurer per last Report.		Expense for meetings.		Secretary's salary, etc.		Postage and stationery.		Printing.	Advertising.	Lecturers' expenses.	Lecturers' allowance.	Periodicals for members.	Miscellaneous.		Balance on hand.	Total.	
%	c.	%	c.	%	c.	%	c.	%	c.	%	c.	%	c.	%	c.	%	c.	%	c.	%	c.
.....	.....	.....	97 17	.....	.....	16 00	20 00	.....	.....	5 96	17 00	.....	2 30	.....	11 60	.....	.....	.....	23 07	86 61	.....
.....	.....	.....	91 46	.....	.....	7 50	28 00	.....	.....	2 22	1 50	1 50	10 25	.....	.....	.....	.....	.....	26 84	91 46	.....
50	.....	.....	109 73	.....	.....	15 00	5 00	.....	.....	1 63	7 01	.....	.....	.....	.....	.....	.....	.....	71 09	109 73	.....
.....	.....	.....	79 08	.....	.....	40 75	10 00	.....	.....	1 25	9 00	.....	.....	14 36	.....	.....	.....	.....	3 72	79 08	.....
.....	.....	.....	212 38	.....	.....	38 49	25 00	.....	.....	2 91	5 50	2 00	11 04	.....	.....	.....	.....	.....	90 34	212 38	.....
.....	.....	.....	121 06	.....	.....	6 00	20 00	.....	.....	3 53	14 75	9 80	23 10	.....	.....	.....	.....	.....	6 78	121 06	.....
.....	.....	.....	341 30	.....	.....	60 80	25 00	.....	.....	5 30	40 17	.....	10 50	.....	.....	.....	.....	.....	187 78	341 30	.....
21 63	.....	.....	326 45	.....	.....	50 12	45 60	.....	.....	6 13	13 00	.....	30 00	.....	.....	100 00	.....	.....	181 82	326 45	.....
1 00	.....	.....	432 73	.....	.....	12 00	57 90	.....	.....	19 38	30 00	9 65	17 95	.....	.....	.....	.....	.....	262 60	432 73	.....
.....	.....	.....	349 45	.....	.....	.....	35 00	.....	.....	7 10	27 50	8 75	20 50	5 00	47 50	.....	.....	.....	128 69	349 45	.....
.....	.....	.....	135 00	.....	.....	7 53	25 00	.....	.....	10 15	12 25	.....	.....	.....	.....	.....	.....	.....	49 07	135 00	.....
16 60	1 74	.....	560 20	.....	.....	15 00	29 00	.....	.....	2 50	10 00	.....	8 70	.....	.....	.....	.....	.....	256 06	560 20	.....
6 56	.....	.....	296 35	.....	.....	.....	30 00	.....	.....	4 65	1 00	32 00	12 30	.....	.....	25 00	.....	.....	196 20	296 35	.....
.....	.....	.....	177 87	.....	.....	41 60	25 00	.....	.....	10 50	24 75	.....	.....	.....	.....	.....	.....	.....	71 02	177 87	.....
.....	2 60	22 31	220 81	.....	.....	12 25	32 00	.....	.....	.....	43 35	.....	23 14	.....	.....	.....	.....	.....	82 18	220 81	.....
1 79	.....	.....	168 82	.....	.....	16 50	20 00	.....	.....	1 20	14 85	6 00	.....	13 21	.....	.....	.....	.....	89 81	168 82	.....
.....	.....	.....	114 90	.....	.....	7 75	25 00	.....	.....	16 36	22 25	4 00	11 40	.....	.....	.....	.....	.....	26 89	114 90	.....
.....	11 63	32 13	86 63	.....	.....	9 25	15 00	.....	.....	60 80	8 00	.....	21 65	.....	.....	.....	.....	.....	86 63	.....	.....
3 07	.....	.....	197 96	.....	.....	7 50	59 15	.....	.....	4 60	19 40	.....	28 08	10 00	.....	.....	.....	.....	59 08	197 96	.....
.....	.....	.....	144 72	.....	.....	9 50	20 00	.....	.....	3 60	14 00	20 50	4 14	.....	.....	.....	.....	.....	67 98	144 72	.....
.....	55 10	82 35	149 35	.....	.....	24 00	25 00	.....	.....	2 00	.....	5 00	.....	11 00	.....	.....	.....	.....	149 35	.....	.....
.....	.....	.....	141 85	.....	.....	10 50	20 00	.....	.....	7 85	18 50	.....	14 35	.....	.....	.....	.....	.....	64 15	141 85	.....
.....	.....	.....	132 90	.....	.....	39 85	25 20	.....	.....	5 44	17 50	3 50	.....	.....	.....	.....	.....	.....	37 16	132 90	.....
.....	.....	.....	198 25	.....	.....	29 95	33 50	.....	.....	13 75	12 00	13 50	.....	.....	.....	12 10	.....	.....	76 34	198 25	.....
32 60	.....	.....	544 04	.....	.....	51 75	72 70	.....	.....	5 78	13 75	5 25	8 49	.....	.....	47 65	.....	.....	313 72	544 04	.....
49 50	.....	.....	605 31	.....	.....	48 00	89 50	.....	.....	42 54	56 84	.....	30 52	.....	.....	.....	.....	.....	605 31	.....	.....
.....	.....	.....	581 29	.....	.....	106 45	65 00	.....	.....	10 72	77 05	.....	35 56	.....	.....	86 25	.....	.....	146 64	581 29	.....
.....	.....	.....	130 38	.....	.....	8 00	25 00	.....	.....	18 46	22 25	.....	23 75	.....	.....	.....	.....	.....	28 57	130 38	.....
.....	.....	35 46	217 50	.....	.....	25 45	61 00	.....	.....	5 57	26 00	1 00	62 50	.....	.....	.....	.....	.....	50 02	217 50	.....
.....	.....	.....	109 91	.....	.....	38 00	30 00	.....	.....	4 00	15 55	5 00	10 10	.....	.....	.....	.....	.....	11 76	109 91	.....
.....	.....	.....	189 84	.....	.....	39 75	22 50	.....	.....	10 39	17 50	4 00	.....	.....	.....	.....	.....	.....	85 50	189 84	.....
.....	.....	.....	422 48	.....	.....	69 15	43 50	.....	.....	3 57	11 77	31 49	78 80	.....	.....	.....	.....	.....	152 19	422 48	.....
.....	.....	.....	383 34	.....	.....	67 80	60 70	.....	.....	18 25	24 00	13 00	52 10	.....	.....	.....	.....	.....	307 16	383 34	.....
.....	.....	.....	123 83	.....	.....	19 00	20 00	.....	.....	19 75	14 50	3 00	18 65	.....	.....	.....	.....	.....	17 43	123 83	.....
.....	.....	.....	216 70	.....	.....	34 80	32 17	.....	.....	6 50	6 25	2 24	28 63	.....	.....	.....	.....	.....	96 11	216 70	.....
.....	.....	.....	215 15	.....	.....	33 10	10 00	.....	.....	6 70	9 00	3 00	25 70	.....	.....	.....	.....	.....	119 15	215 15	.....
8 00	.....	.....	265 99	.....	.....	55 05	32 15	.....	.....	2 50	24 45	1 50	10 50	.....	.....	.....	.....	.....	127 11	265 99	.....
.....	.....	.....	232 44	.....	.....	89 55	34 70	.....	.....	2 02	55 55	.....	34 25	.....	.....	.....	.....	.....	16 37	232 44	.....
2 50	7 89	15 49	115 89	.....	.....	16 15	25 00	.....	.....	1 30	14 25	24 70	15 00	4 00	.....	.....	.....	.....	.....	115 89	.....
.....	.....	.....	182 42	.....	.....	20 85	10 00	.....	.....	2 50	24 25	8 00	.....	.....	.....	.....	.....	.....	77 02	182 42	.....
.....	3 76	.....	107 26	.....	4 75	39 45	15 00	.....	.....	2 45	14 25	.....	11 71	.....	.....	.....	.....	.....	.....	107 26	.....
.....	.....	.....	171 72	.....	.....	90 47	15 00	.....	.....	2 79	16 47	.....	.....	.....	.....	.....	.....	.....	46 99	171 72	.....
.....	.....	.....	193 97	.....	.....	1 00	30 00	.....	.....	7 42	13 25	12 00	5 15	.....	.....	.....	.....	.....	114 15	193 97	.....
.....	.....	.....	141 80	.....	.....	1 00	12 00	.....	.....	2 25	9 60	.....	28 55	.....	.....	.....	.....	.....	65 80	141 80	.....
4 86	.....	.....	358 03	.....	.....	50 25	37 60	.....	.....	14 80	28 50	20 44	5 10	.....	.....	9 40	.....	.....	172 16	358 03	.....
16 43	.....	.....	490 32	.....	.....	19 25	44 90	.....	.....	6 30	18 65	.....	25 30	.....	.....	.....	.....	.....	375 92	490 32	.....
.....	.....	.....	164 86	.....	.....	27 80	36 00	.....	.....	3 43	8 29	.....	17 85	.....	.....	.....	.....	.....	60 84	164 86	.....
.....	.....	.....	143 28	.....	.....	23 15	27 00	.....	.....	9 25	12 00	13 61	23 40	.....	.....	.....	.....	.....	26 12	143 28	.....
.....	.....	.....	81 60	.....	.....	6 50	11 00	.....	.....	3 85	5 25	2 50	.....	.....	.....	.....	.....	.....	37 50	81 60	.....
.....	1 76	6 51	90 65	.....	1 51	.....	2 75	.....	.....	2 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	90 65	.....
.....	.....	.....	111 94	.....	.....	30 62	29 35	.....	.....	4 48	7 75	2 00	.....	.....	.....	.....	.....	.....	72 63	111 94	.....
.....	.....	.....	42 50	.....	.....	11 90	15 00	.....	.....	6 66	7 75	.....	.....	.....	.....	.....	.....	.....	16 37	42 50	.....
.....	.....	.....	204 77	.....	.....	3 03	10 10	.....	.....	2 00	10 00	.....	.....	.....	.....	.....	.....	.....	43 67	204 77	.....
.....	.....	.....	.....	.....	.....	41 40	50 00	.....	.....	10 57	18 75	.....	20 38	.....	.....	.....	.....	.....	.....	.....	.....



FARMERS' INSTITUTES — *Concluded.*

Receipts.			Expenditure.																																									
Miscellaneous.			Balance due treasurer.			Total receipts.			Due treasurer p r last report.			Expense for meetings.			Secretary's salary, etc.			Postage and stationery.			Printing.			Advertising.			Lecturers' expenses.			Lecturers' allowance.			Periodicals for members.			Miscellaneous.			Balance on hand.			Total.		
%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.	%	c	e.			
10 00			16 75			130 25			21 51			5 25			35 00			3 41			17 50									20 38									28 20			130 25		
		253 93			127 00			280 12				19 50		31 25	5 60		25 15	4 30		7 25	6 50		29 30				29 30						90 60		46 03	253 93								
		222 79			131 39			322 79	7 22			52 20		72 85	4 56		32 35	1 50		37 00			29 50				37 00			25 40		54 26	280 12											
36 95		393 48			108 65			72 96				41 20		38 00	17 67		8 15	21 77		16 50			135 00				135 00			38 12		77 07	393 48											
		8 15			53 10			295 42				2 75		15 00	5 60		3 00	3 00												10 00		39 65	108 65											
		2 50			20			186 46				26 75		15 00	4 00		5 75													24 00		21 26	72 96											
		4 10			1 00			121 90				107 25		75 00	8 03		56 50	11 00		20 00	30 00		76 70				76 70			61 50		242 08	626 56											
		200 00			8 85			337 58				85 40		20 00	7 58		26 00	44 25		12 75	24 00		61 50				61 50			16 03		249 93	548 78											
		14 50			12 75			164 50				33 73		15 00	2 50		26 00	18 00												25 70		69 148 17	148 17											
		258 21			14 50			505 67	17 64			33 85		25 00	9 00		26 05	18 90		15 90	2 50						2 50			5 00		71 87	208 07											
		258 21			14 50			121 90				8 30		20 00	1 05		16 00	12 60		22 60			22 92				24 00			15 25		24 94	99 14											
		258 21			14 50			121 90				22 50		16 35	94 11		40 22	22 00		22 92							24 00			16 05		136 46	136 46											
		258 21			14 50			121 90				25 00			5 35		8 75	13 00		5 36										8 19		67 00	67 00											
		258 21			14 50			121 90				11 25		21 35	2 78		2 70	20 25		19 00										10 80		186 96	186 96											
		258 21			14 50			121 90				5 00		30 00	5 00		19 50	17 60		17 60										10 00		37 36	124 46											
		258 21			14 50			121 90				29 70		25 00	7 00		26 14	8 50		6 70										44 31		190 20	337 58											
		258 21			14 50			121 90				83 95		30 00	12 30			7 00		25 80										5 45		164 50	164 50											
		258 21			14 50			121 90				7 00		16 90	5 13		8 50													65 68		56 50	56 50											
		258 21			14 50			121 90				110 85		74 25	9 25		84 00	80 86		3 40							21 70		30 00	91 36		505 67	505 67											
		258 21			14 50			121 90				16 35		42 25	2 50		12 00	3 00		15 35										31 91		52 24	121 90											
		258 21			14 50			121 90				37 70		20 00	3 78		29 50	1 50		17 10										52 24		134 87	134 87											
		258 21			14 50			121 90				21 00		31 30	7 62		11 75	11 48									13 90			24 00		121 05	121 05											
		258 21			14 50			121 90				39 85		30 00	12 15		13 50	3 75		19 70							7 10			31 95		202 34	360 34											
		258 21			14 50			121 90				92 95		107 50	9 70		13 75	16 25		45 29										13 50		258 12	557 06											
		258 21			14 50			121 90				20 00		40 00	5 00			11 00		23 96										124 98		224 94	224 94											
		258 21			14 50			121 90				30 75		38 55	2 61		42 40			6 25										63 05		205 81	205 81											
		258 21			14 50			121 90				14 30		25 00	5 00		32 25			10 20							28 25			10 80		125 80	125 80											
		258 21			14 50			121 90				9 65		31 00	5 27		17 05	9 10		5 00										62 50		88 84	228 41											
		258 21			14 50			121 90				41 45		23 85	1 20		17 00			17 13										40 00		32 86	173 49											
		258 21			14 50			121 90				17 50		16 20	5 94		9 75	5 50		5 17										6 80		85 38	152 24											
		258 21			14 50			121 90				8 00		25 00	8 70		16 50	10 00		14 95							7 50			16 25		33 26	140 16											
		258 21			14 50			121 90				91 00		23 50	11 40		35 40			33 27										143 64		288 21	288 21											
		258 21			14 50			121 90				11 67		20 00	3 24		35 45										36 50			17 85		134 26	258 97											
		258 21			14 50			121 90				9 00		25 00	3 12		21 20	4 30		14 70										203 00		20 87	307 19											
		258 21			14 50			121 90				25 50		38 15	10 39		25 50	19 24												4 95		159 56	283 29											





ANNUAL REPORT  
OF THE  
CANADIAN ASSOCIATION  
OF  
FAIRS AND EXHIBITIONS  
FOR THE YEAR  
1901.

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*(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO).*

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THE LEGISLATIVE ASSEMBLY OF ONTARIO.



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1901.



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*T O R O N T O .*

# ANNUAL REPORT

OF THE

## CANADIAN ASSOCIATION OF FAIRS AND EXHIBITIONS

FOR THE YEAR

1901



*To the Honorable, the Minister of Agriculture:*

SIR,—I have the honor to present herewith the First Annual Report of the Canadian Association of Fairs and Exhibitions.

I have the honor to be, Sir,

Your obedient servant,

G. C. CREELMAN.

Editor and Ass't. Secretary.

TORONTO, August 1st, 1901.

OFFICERS :

*President* . . . . . J. THOMAS MURPHY, Simcoe.  
*1st Vice-President* . . . . . JOHN BURNS, Whitby.  
*2nd Vice-President* . . . . . W. B. SANDERS, Stayner.  
*Secretary Treasurer* . . . . . ALEX. MCFARLANE, Otterville.  
*Assistant Secretary and Editor* . . . . . G. C. CREELMAN, Toronto.

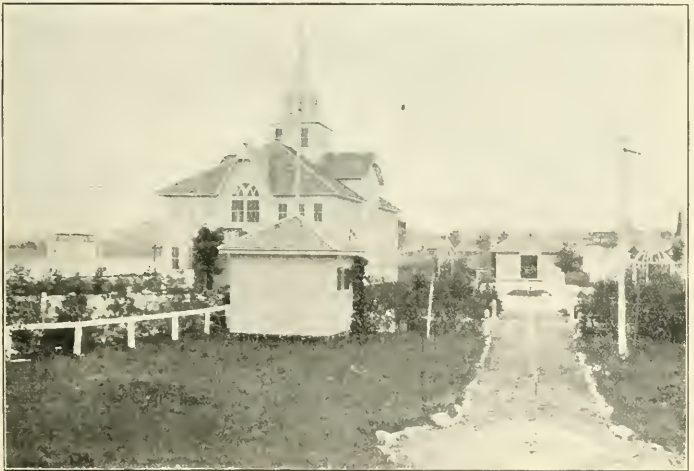
*Executive Committee :*

JAMES MITCHELL . . . . . Goderich.  
 J. W. SHEPPARD . . . . . Cayuga.  
 D. H. PRICE . . . . . Aylmer.  
 GEORGE ROBINSON . . . . . Erin.  
 WILLIAM LAIDLAW . . . . . Guelph.  
 FRANK METCALFE . . . . . Blyth.  
 S. McCLURE . . . . . Eden Mills.

*Auditors* . . . . . { J. Y. MURDOCK, Jarvis.  
 { J. M. GARDHOUSE, Highfield.



A JUDGE OF BEEF CATTLE GIVING HIS REASONS FOR AWARDS.

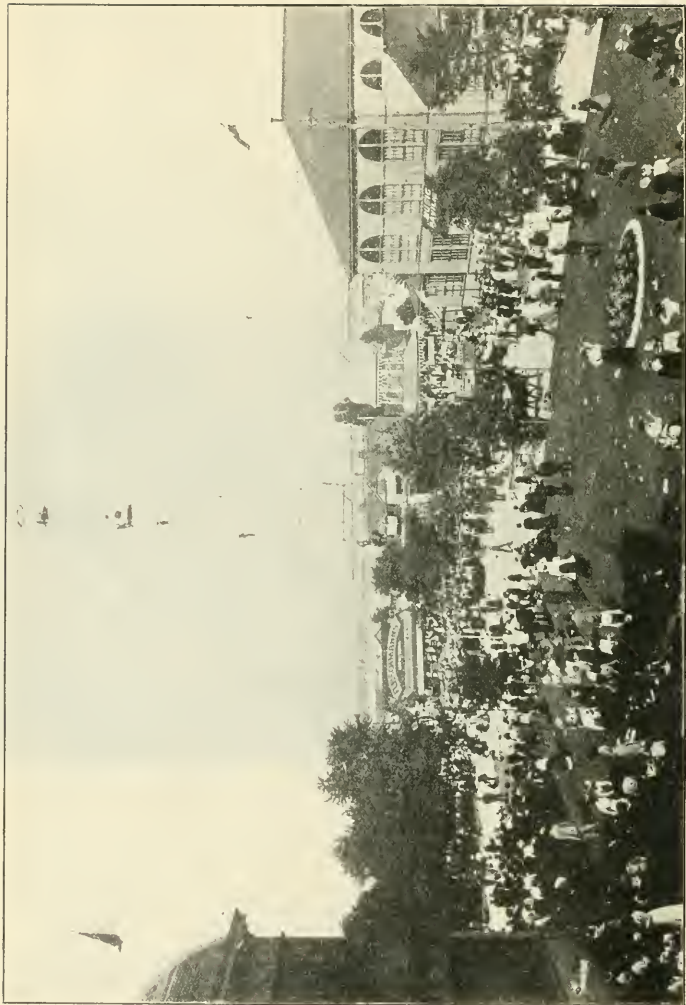


EAST ELGIN COUNTY FAIR BUILDINGS AND GROUNDS, AYLMER, ONT. ONE OF THE NEATEST AND MOST ATTRACTIVE AGRICULTURAL SOCIETY PROPERTIES IN ONTARIO.





Parade of Prize Winning Horses before the Grand Stand at the Western Fair, London, Ont.



THE INDUSTRIAL FAIR GROUNDS ON FARMERS' DAY, SEPTEMBER 4TH, 1901.



# CANADIAN ASSOCIATION OF FAIRS AND EXHIBITIONS.

## ANNUAL MEETING.

The annual meeting of the Canadian Association of Fairs and Exhibitions was held in the County Council Chamber, Old Court House, in the City of Toronto, on Wednesday and Thursday, the 20th and 21st days of February, 1901, beginning at 2 o'clock p.m.

The President, Mr. THOS MURPHY, of Simcoe, occupied the chair.

After the reading of minutes of the previous meeting by the Secretary, Mr. ALEX. MCFARLANE, of Otterville, the programme as arranged was carried out, the following being the principal papers that were read and discussed.

## AGRICULTURAL SOCIETY STATISTICS.

BY CAPT. W. F. McMASTER, ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.

The speaker first presented the following figures relating to Agricultural Societies in this Province, as reported to the Ontario Department of Agriculture :

### DISTRICT AGRICULTURAL SOCIETIES IN ONTARIO.

RECEIPTS.	1899	1898
Balance on hand as per last Annual Report (including fees retained)....	14,884 22	14,498 78
Legislative Grant.....	39,410 00	38,837 00
Municipal Grant.....	9,629 57	10,457 12
Members subscriptions and donations.....	29,263 99	27,739 74
Admission fees to Exhibition, rent of ground, stall, etc.....	46,817 42	47,203 87
Money borrowed on mortgages and notes.....	18,587 88	14,683 55
Funds merged from other societies for Union Exhibition.....	7,672 21	8,775 83
Miscellaneous minor receipts.....	4,487 62	4,695 09
Balance due Treasurer.....	1,071 10	1,379 21
<b>Totals.....</b>	<b>\$171,794 01</b>	<b>\$168,270 19</b>
EXPENDITURE.		
Balance due Treasurer as per last report.....	1,563 19	1,873 02
Grant to Branch Societies.....	52 01	
Prizes paid for animals and dairy products.....	47,849 06	45,749 18
“ field, orchard and garden products.....	10,802 41	10,384 43
“ manufacturers and improvements.....	2,136 55	2,421 30
“ fine arts, ladies' work, etc.....	12,243 55	11,809 96
Grants to Union Exs. (\$5,464.10) prizes for previous year paid, \$1,346 89	6,810 99	6,161 69
Purchase of grounds, erection of buildings, interest, insurance, etc.....	18,902 90	20,535 79
Paid for loans or mortgages.....	19,292 83	16,299 22
Meetings, periodicals, purchase of live stock, etc.....	550 07	758 20
Miscellaneous, expenses, etc.....	37,161 68	36,286 75
<b>Balance on hand.....</b>	<b>\$157,365 24</b>	<b>\$152,279 54</b>
	14,428 77	15,990 65
<b>Totals.....</b>	<b>\$171,794 01</b>	<b>\$168,270 19</b>

Assets.	1899.	1898.	Liabilities.	1899.	1898.
Cash on hand.....	14,428 77	15,990 65	Due to Treasurers ...	1,071 10	1,879 21
Land and buildings....	226,442 35	220,616 00	Prizes unpaid.....	1,612 91	1,996 74
Miscellaneous.....	6,993 63	4,987 53	Due on mortgages and notes.....	76,711 45	74,584 58
			Miscellaneous.....	6,672 55	6,350 39
<b>Totals.....</b>	<b>\$247,864 75</b>	<b>\$241,594 17</b>	<b>Totals.....</b>	<b>\$86,068 01</b>	<b>\$83,310 82</b>

Societies reported.	1898.	1899.
District Agricultural.....	93	96
Branch Agricultural and Horticultural.....	375	387

## DISTRICT AGRICULTURAL SOCIETIES.

Class.	1899.		1898.	
	No. of Entries.	Amount paid.	No of Entries.	Amount paid.
Horses .....	14,977	\$19,215 80	15,887	\$17,333 47
Cattle .....	9,485	10,373 68	9,683	10,195 45
Sheep .....	7,890	6,680 91	8,112	6,871 60
Swine .....	5,108	4,763 75	5,518	4,924 90
Poultry .....	13,734	4,192 00	14,806	3,872 05
Dairy products .....	6,341	2,681 92	6,072	2,551 71
Grains and seeds .....	7,173	2,591 28	8,137	2,560 75
Roots and other hoed crops .....	12,603	2,835 40	13,773	2,765 40
Orchard and garden products .....	23,352	5,382 68	25,099	5,193 03
Implements and manufacturers .....	3,712	2,140 60	4,082	2,241 55
Fine arts, ladies' work and all other objects, etc .....	41,221	12,183 55	42,618	11,848 96
Totals .....	145,796	\$73,041 57	153,792	70,864 87

## TOWNSHIP AGRICULTURAL AND HORTICULTURAL SOCIETIES

RECEIPTS.	1899.	1898.
Balance on hand as per last Annual Report (including fees retained) ..	35,501 79	29,295 45
Legislative Grant .....	34,064 00	34,378 00
Municipal Grant .....	11,525 47	11,889 68
Members' subscriptions and donations .....	66,432 99	94,718 05
Admission fee to Exhibition, rent of ground, stall etc .....	83,736 27	56,180 86
Money borrowed on mortgages and notes .....	3,768 92	12,490 47
Funds merged from other societies for Union Exhibitions .....	7,754 87	8,154 46
Miscellaneous minor receipts .....	8,564 44	7,037 01
Balance due Treasurer .....	1,002 39	1,144 73
Totals .....	\$252,333 14	\$255,288 91
EXPENDITURE.	1899.	1898.
Balance due the Treasurer as per last Annual Report .....	909 38	1,990 77
Prizes paid for animal and dairy products .....	74,143 27	72,866 88
“ field, orchard and garden products .....	17,236 70	17,397 96
“ manufacturers and implements .....	2,750 11	3,003 97
“ fine arts, ladies' work, etc. ....	17,254 99	16,241 62
Money paid for prizes awarded in previous year .....	2,765 63	2,473 82
Grant to Union Exhibitions .....	10,873 10	11,258 02
Purchase of grounds, erection of buildings, interest, insurance, etc ..	26,883 49	17,716 64
Paid for loans and mortgages .....	8,826 53	15,338 49
Meetings, periodicals, purchase of live stock, etc .....	7,509 95	7,319 97
Miscellaneous expenses, etc .....	50,980 76	53,939 17
Balance on hand .....	\$220,133 91	\$219,547 31
Totals .....	\$252,333 14	\$255,288 91

Assets.	1899.	1898.	Liabilities.	1899.	1898.
Balance on hand .....	\$32,199 23	\$35,741 60	Balance on hand .....	921 61	750 86
Land and Buildings .....	217,813 15	212,857 61	Prize money unpaid .....	2,006 99	2,511 44
Miscellaneous .....	4,718 91	5,277 44	Owing on mortgages and notes .....	45,819 29	51,633 26
Totals .....	\$254,731 29	\$253,876 65	Miscellaneous .....	13,041 64	12,873 62
			Totals .....	61,789 53	67,769 18

## TOWNSHIP AGRICULTURAL AND HORTICULTURAL SOCIETIES

Class.	1899.		1898.	
	No. of entries.	Amount paid.	No. of entries.	Amount paid.
Horses .....	30,963	\$26,860 19	32,181	\$26,201 99
Cattle .....	17,023	12,759 69	17,852	13,250 49
Sheep .....	13,469	8,630 37	14,160	8,737 60
Swine .....	7,889	5,701 43	8,485	5,768 93
Poultry .....	18,932	4,015 45	20,129	4,026 15
Dairy products .....	15,722	4,897 28	15,213	5,054 04
Grains and seeds .....	16,543	4,752 08	17,931	4,867 48
Roots and other hoed crops .....	30,750	5,223 62	31,069	5,214 66
Orchard and garden products .....	41,541	7,433 80	46,077	7,096 18
Implement and manufacturers .....	6,406	2,703 01	7,165	2,394 59
Fine arts, ladies' work etc .....	62,487	16,679 04	66,823	16,308 54
Totals .....	267,725	\$99,655 96	277,085	\$99,521 05

After submitting the foregoing statement, Captain McMaster, proceeded to make the following remarks.

**THE AUDIT.** The first matter to which I would draw your attention, is the absolute necessity of the balances from the previous year corresponding with that shown by the audited statement; otherwise the report to the Legislature would not correspond. One of the greatest troubles and annoyances is that of the audit not being done previous to the annual meeting, by the auditors appointed for that purpose. Some reports have been signed by one auditor only; but if an auditor dies or has left the district, one of the first duties of the directors is to appoint another and have a thorough audit completed prior to the annual meeting, else the Act has not been complied with. In this respect the Act is not passive.

**PRIZE MONEY HELD FOR MEMBERSHIP FEE.** Another source of trouble in analysing the statements is, the prize moneys retained for membership fees for the following year. Such sums so retained are simply cash paid and should appear in the receipts as such for that year. Why should such money be held in abeyance, in the treasurer's hands? It is contrary to the Act and cannot be passed over by the Department.

The form of Financial Statement has been carefully prepared by the Department with a view to meeting all requirements, but any suggestions tending to improvement will be received with due consideration.

I now wish to draw your attention to the Statement herewith presented.

**BALANCE ON HAND.** The balances on hand vary but little from year to year. Any material change is owing to the sale of property in order to purchase more suitable premises. Neither the Legislative nor Municipal Grants show any material change.

**SUBSCRIPTIONS AND DONATIONS.** In members' subscriptions and donations, while they have increased in the District Societies by about \$1500, in the Township and Horticultural Societies they have decreased.

**FEES, RENTS ETC.** The admission fees and rents of grounds, etc. in District Societies varies very little from year to year, but in Branch Societies the difference is marked, depending on the weather.

**DISTRICT SOCIETIES ONLY ARE JUSTIFIED IN BORROWING MONEY.** Money borrowed on Mortgage Notes I think the less Branch Societies run in debt the better, as they have but a limited area, and many of their members are also members of District Societies. District Societies are justified in borrowing money in order to provide accommodation, as required by the Act for Exhibitors.

**INCREASED PRIZE LISTS** I notice that the prizes paid in nearly every class have been increased as between 1898 and 1899; particularly in animals and dairy products.

**LOANS REDUCED** I am glad to report the reduction in loans and mortgages in District Societies,—while in the Branch Societies it is the reverse as 1898, 1899.

**MEETINGS, PERIODICALS, PLANTS, PURCHASE OF LIVE STOCK.** I cannot too strongly emphasize these things. I consider them the basis of the Agricultural structure, on which all our national wealth depends. Some Societies purchase live stock with their funds instead of holding Fairs. It can be easily seen that in time these Societies will forge ahead in the superiority of their stock, horses, bulls, rams, boars, etc.

**LIVE STOCK VS HOTELS.** The question aptly presents itself, are these Societies not doing more toward the actual development of Ontario than those who hold Fairs for the benefit of local hotel keepers? Some Township Societies are but the outcome of money subscribed by tavern keepers to qualify sufficient members to obtain the Government grant.

**CONCLUSION:** After eighteen years experience in auditing and analysing reports, my conclusion is that Township Society Fairs should be discontinued.

## SPECIAL ATTRACTIONS AT AGRICULTURAL EXHIBITIONS.

BY JOHN BURNS, WHITEBY.

The subject that has been allotted to me is one which gives very many Societies considerable anxiety, and is, therefore, one worthy of careful consideration, and of so grave a nature that I feel myself quite unequal to the task of dealing with it with that degree of ability which its gravity demands. However, I will endeavor to present a few thoughts as they occur to me in as brief a manner as possible, trusting to the ability of the delegates present to develop the same in the hope that some good may come out of the discussion.

**THE OBJECT OF FALL FAIRS** The first and primary object of the Fall or any other Fair, should be to induce the agriculturist, the manufacturer or the artist to bring together and put on exhibition the very best of their products, with a view of stimulating each other to still greater efforts as time goes on. There is no sane man but will admit that great good has been accomplished since the Fall Fair was first instituted; and there is no better illustration of the correctness of the statement than by comparing the old Provincial Fair in Toronto of thirty-five years ago with the Industrial at the present day, or the progress of any well conducted fair in the same space of time.

**THE OLD-TIME FAIR.** In the days gone by, the people came together for a healthy purpose, mainly that of seeing the best that the several industries could produce, and also that of seeing each other; the older people coming with a cool business object in view, the young largely for pleasure; but all combining to form a grand whole. In the olden days, people came to the Fair intuitively. All that the public looked for was the date, and when the day came round the boys and girls were up probably before the parents for once in the year, and all was bustle. The old fashioned waggon was rigged up with the wooden side springs, and the whole family came out, the whole country seemed to be alive because it was Fair day. The hotel yards were gorged to overflowing, and soon the old Fair grounds were thronged with a happy crowd. The grounds were small, probably three or four acres, with the fences lined with the best stock the locality could produce. A small ring was made with a rope for showing the animals and drivers in, and the lines swarming with thousands of spectators. Under the old management, the whole Fair presented the appearance of a bee-hive, and all could be taken in at a glance. The day over, the throng made their way home, tired enough but feeling that they would not have missed the Fair for a good deal. Such was the Fair of the old days, when it was filling the mission for which it was intended.

**THE MODERN FAIR.** But times have changed, and one noticeable feature is the depraved desire for something of the nature of an entertainment, a thirst for excitement, and if that element is wanting, the public feel that the Fair is a failure. This change has been brought about largely by the introduction of the race ring, which necessitates the purchase or rental of larger grounds, in most cases at some little distance from the town, which renders it inconvenient to get the accommodation for teams and rigs.

The crowd is thus taken from the town, many trying their horses in the vicinity of the Fair ground, consequently the town people never see a half of the people who attend the Fairs. This has the effect of producing a spirit of apathy and indifference on the part of the townspeople, which has a telling effect on the success of the enterprise.

**ATTRACTIVE.** Coming to the subject proper—special attractions—the subject suggests that a change has taken place in the public mind, and the real and legitimate exhibits that once filled the Fair grounds and swelled the coffers of the Society from the gate receipts, have now failed to attract, and something of an artificial nature must be adopted to draw or attract the crowd, as every Society is dependent largely on the gate receipts to enable them to pay prizes and running expenses.

**THE GRAND STAND.** This state of affairs has induced many Societies to introduce the horse race and performances in front of the grand stand, and so make these attractions the leading feature in their advertising. Then in order that the crowds who are attracted in that way may enjoy that for which they have come and paid their money, the Association erects a grand stand and charge a fee and seat one thousand or more people, who are consequently tied up for the afternoon, and hence never see or take any interest in the more substantial objects on exhibition, which is very unsatisfactory to those exhibitors who have gone to great trouble and expense to make their exhibit.

**THE GREAT PROBLEM.** So far, I have endeavored to place the past and present conditions before you, and as we have to deal with the present only, this brings us right up against the subject, special attractions, and are they conducive to the best interests of the Agricultural Society? In a word, I think they are not, for the reason already given.

Then it becomes a question for those who have been for years catering to what I may be allowed to call a depraved appetite, how to dispense with those attractions and still satisfy the public, as no fair will be a success without patronage through the turn stiles. It is an easy thing for one to see an existing difficulty, but quite another thing to provide a remedy.

**THE TORONTO INDUSTRIAL.** In the first place, the Toronto Industrial has reached such proportions, and the railroad gives such good rates, that large crowds from every community are drawn there, and spend two or more days, or in fact all the time they can afford, and return home to find the work on the farm running behind, and by the time their own county fair comes around, feel that they have scarcely the time to spare and hence the old time interest in the fair has disappeared.

**THE COST.** Any well organized society that has been depending on special attractions, whether they be horse races or performance, must do so at a cost of from three to four hundred dollars, and I am free to believe that they do not have the effect of adding twelve or sixteen hundred more visitors to the fair. If this position is conceded, then why continue to spend money at a direct loss.

**TRY IT WITHOUT ATTRACTIVE.** There are societies who, while admitting that the attractions do not pay for the investment, yet would be afraid to risk running the fair without them. To such I would say, for the first year or two there might be a falling off in the gate receipts, which loss might be met by a little more activity on the part of a half dozen directors in soliciting specials, and while soliciting, let their chief claim for assistance be for the purpose of doing away with all performances, and I have faith enough in the right thinking element in every community, believing if the situation be properly presented that there would be a hearty response.

Time has created an unnatural thirst for excitement at fairs, and it may take time to counteract this state of affairs, but I believe it can be done and still preserve the time-honored institution to the community.

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#### DISCUSSION.

**STAYNER.** W. B. Sanders, who occupies the double position of Mayor of Stayner and president of the local Agricultural Society, made a valuable contribution to the discussion. "I have," said he, "been in touch with agricultural fairs since 1873. During the eighties I was judge at the Toronto Fair. As a result of my 27 years' experience I have very pronounced views upon this whole matter. The Toronto Exhibition and local fairs

occupy different positions. The Toronto show has a large local constituency to appeal to—a constituency which calls for amusement. The success of the show is, I believe, due to the special attractions provided. In the case of local fairs I am entirely opposed to the introduction of special features: they are not good, and they do not pay. You cannot secure anything worth while for less than \$60, \$75, or \$100. When we brought a wild West show to our town it cost a good deal more than that, and the addition to the gate receipts was not sufficient to pay the cost. During the last three years we have excluded these fairs altogether, and although we have done this we have not lost ground, as suggested by Mr. Burns. On the contrary, we have four or five thousand people at our exhibition. It is true we are not exacting in the matter of admission fees. We have adopted somewhat of the Patron system, and allow a man and his wife to come in on one ticket; but we have not lost by doing so. As to speeding in the ring, however, I would not think of abolishing that; it is one of the best features we have. It also serves a useful purpose. It results in the training of horses such as the market calls for, and in this way is a benefit to the agricultural interest."

**GRAND VALLEY.** James Reith, of Grand Valley, said there was no grand stand in connection with his show. Neither was there horse racing; not even speeding in the ring. "Still, said he, "we have been successful. I would like to hear from some of these who have these mountebank exhibitions and learn what their experience is."

**NEW MARKET.** E. Jackson, of Newmarket, provided the answer. He said a Wild West show had been given at Newmarket. This cost was \$400, but as a result of giving the entertainment the receipts for admission fees last year more than doubled those received in any other year during the speakers recollection. "In addition to this," said Mr. Jackson, "we had a trial of speed, limited to horses in the locality. We also gave three prizes for the best turnout of school children, and also additional prizes for efficiency in certain subjects named."

**CANNINGTON.** J. N. Purvia, of Brock, said that there was always a little trotting in connection with Cannington show, and that was what drew the crowd. Their society had been gaining ground since the introduction of this feature.

**BURFORD VS. BRANTFORD.** D. G. Hanmer told of two cases; one where there were special attractions, and another where there were not. "Our township show at Burford," said he, "is one of the most successful in the province. We have a big attendance, are paying off our debt, and are able to pay one hundred cents on the dollar in prize money every time. In that show there are no special attractions. We have a county show at Brantford as well. For the county show \$1,000 was spent in special attractions. Last year the County Association was unable to pay the prize money and a good many who had paid as much as \$25 in entry fees not only failed to receive a prize but lost the money paid in making entries as well. This year the fair grounds of that association must either be sold or handed over to the man who holds the mortgage."

**HALTON.** G. R. Hunter of Halton, said this was a day of special attractions. "There are," said he, "special attractions everywhere—even in the church. When the pastor in our town announced he would preach on young ladies, a big crowd turned out—more than the church would hold. A few years ago we dropped our speeding in the ring and the receipts for admission fees at once fell off. Last year we had a splendid trial of speed, and the attendance was all right. One man who had strongly disapproved of having this trial of speed before it took place, said afterwards it was the best part of the show. Those who were most bitter against the introduction of this feature were right up against the fence while the trotting was going on, and they stayed until that part of the show was over."

**MARKHAM.** H. C. Marr, president of the Markham show, said they could not get along at all without special attractions, but he confined his definition as to what special attractions consisted of to speeding in the ring, and the display made by Dragoons from Toronto. "Last year," said he, "our receipt amounted to \$1,928. We have between seven and eight thousand dollars' worth of buildings, are clear of debt, and have \$1,400 in the treasury. We could not make such a showing as this but for the assistance of our half mile track. It would be a backward movement to do without this. The bulk of the attendance is made up of our young people, and young people want something with life in it. Aside from this, we give liberal prizes. Last year the prize for heavy draft horses was \$20, and for stallions \$15. We give \$20 divided into three prizes, for

each one of four breeds of bulls—Shorthorn, Jersey, Ayrshire, and Holstien. We give a \$7 purse for first, second, and third prizes in rams; \$7 and \$8 divided into three prizes, for boars; and we have 174 sections in poultry.”

The Secretary of the Markham show supported Mr. Marr's position. The former said the show would certainly go down without the feature furnished by speeding in the ring. “That” said he, “is the main attraction,”—a statement which was corroborated to the full by Secretary Hall.

#### SPEEDING IN THE RING VS RACING.

At one time the trend of discussion seemed to indicate that the feeling was practically unanimous in favor of the affirmative. This, however, was due to a difference in understanding as to the definition of the term. The majority of those present at first included under the head specified speeding in the ring, or horse-racing, while others considered this part of an educational exhibit, and confined special attractions to side-shows, fakirs, trapeze performers wild west business, skirt dancers, and the like.

Eventually, after a common understanding had been arrived at, it was found that the feeling was practically unanimous in favor of having a go with the horses, but was equally pronounced against side shows.

Even on the simple matter of putting horses over the track there was a question as to the sort of term that should be made use of.

“What is the difference between horse-racing and a trial of speed?” asked Dr. Quinn of Brampton.

“It is a case of six of one and half a dozen of the other,” answered Mayor Saunders, of Stayner.

“We call it speeding in the ring when it is our fair,” suggested superintendent Creelman, “and horse-racing when it is held under the auspices of some other fellow's fair.”

Another member said if it were called horse-racing they would not be able to get a grant from the government for the show.

D. G. Hanmer gave another reason for the more defined definition. “At our show,” said he, “a minister was observed quite close to the ropes while the speeding was going on. When some one asked how he could justify his presence there he said was not a horse-race but a trial of speed he was watching.”

#### THE LAW REGARDING HORSE RACES.

Just here the question came up as to what the law says in regard to speeding or horse-racing, and Mr. C. C. James, Deputy Minister of Agriculture, put the matter very clearly. “It is not a question of withholding the grant,” said Mr. James, “but a question of complying with the law. The law says that an offence is committed when horse-racing is permitted on fair grounds. Even if that offence is committed, we do not withhold the grant but anyone is at liberty to summon before a magistrate those aiding in the horse-racing, and to have the offenders punished as provided by the statute. The department leaves that matter in the hands of the people of the locality. You can hardly expect a man to be sent from Toronto to enforce the law if the people of a section do not wish to have it enforced. If it is desired to put down horse-racing, the law is there, and anyone in the locality can put it in motion. If in the County of Simcoe, for instance, they do not want horse-racing, all they have to do is to enforce the law, while in Elgin, if they want races, the people need not enforce the law against racing.”

“But, besides the speeding in the ring,” continued Mr. Price, “we have a high-class circus performance. You may laugh at that if you like, but the average man likes to see this sort of thing.”

“Do you allow the fakirs to come in and run side-shows?” asked Dr. Clarke of Goderich.

“We do,” replied Mr. Price, “and charge them for the privilege, but we are careful to see they carry on a legitimate business. If there is any attempt at gambling, we close them down at once, and forfeit their money. One man was run off our ground last year.”

"Do you encourage exhibits by business men, and charge a fee for allowing the exhibit to be made?" asked Mr. Metcalf.

"We allow these exhibits," answered Mr. Price, and make no charge. Several of the business men have gone to very considerable expense in fitting up departments in the Palace for their exhibits. This is now embarrassing us, because the space taken is required for other purposes. The business men are, however, very liberal, a number of them contributing five or ten dollars to our funds. We have paid over \$500 for platform entertainment alone, and we have found it paid to do so. Our experience is that this is what draws the crowd. A large number of young people join the society and pay their membership fee of one dollar. A young man will get a double ticket and bring his girl in then on this ticket, and pay 50 cents after admission for a double seat on the grand stand. The grand stand, as originally built, would not hold the crowds that thronged to it, and we had to enlarge it."

### SPECIAL ATTRACTIONS AT FALL FAIRS.

BY D. H. PRICE, ALYMER.

I will give you the results of actual experience. Ours is a small country fair, supported by the town of Alymer and two townships. We have had experience both with and without special attractions. In commencing, I would say, if you can make your fair successful without special attractions keep away from them; but, unfortunately, in many places it is impossible to do without these features. That is what we have found in our case. You cannot lay down a rule here which will apply to all parts of Ontario. For instance in the Town of Simcoe, which is in the adjoining county, they have one of the best agricultural fairs in the province; one that is carried on in a thoroughly clean, straightforward manner, and without special attractions of any kind whatever. That fair is, as I have said, one of the most successful in Ontario. But in our case, where I believe we have just as good a people and just as highly educated a community, we have found it impossible to do without these artificial aids. It is all very well to talk of depraved taste, but we have to meet facts as they exist, and deal with them.

**ATTRACTIONS DEFINED.** By special attractions I do not mean short skirt dancers and that sort of thing. I mean high class circus performances. We have had special attractions of this nature for two or three years and as a result we have been enabled to about double our prize list for live stock. Under the old system without special attractions, we had a membership of from 300 or 450. Last year as a result of the gradual working up of the fair, following upon the enlargement in special features, we increased our list to nearly 1000. By means of the increased revenue thus secured we are enabled to spend five, six or seven hundred dollars a year in improving the grounds. We have put in artificial lakes and fountains, planted cedar hedges and established our own electric light plant. We have not lost sight of the agricultural features, in fact, these have been improved and made more useful with the extra means placed at our disposal by the moneys received from the increased attendance.

**HORSE RACING STRAIGHT.** Even in the matter of racing, or speeding in the ring, we have had to go beyond the lines formerly laid down. We tried in the first place to confine this to a test for purely farm horses, but we found that one farmer, having an especially good horse would spend as much as fifty dollars in having the animal trained. Other farmers, knowing this, would then refuse to compete, and thus the events were not filled. Now we have placed this whole thing in the hands of the horsemen themselves. They raise the money for prizes, pay out the prizes, and leave us free of all responsibility in the matter, except the general supervision in order to keep the thing clean. The money for the speeding part of the show is raised by the horse breeders, hotel men, and those making entries. It does not take as much as you would think. The entry fee is five per cent., win or lose, and ten per cent. for the winners. Sometimes we have actually had a profit from the entry fees over and above the amount paid in prizes, but the parties I refer to are liberal in putting up funds. Hotel keepers will give from \$35 to \$50 for a thing of this kind; merchants will give five or ten, and the horse breeders also contribute. We get liberal



contributions from other sources also. Our president is a private banker, and he does not stop at spending \$50 to \$100 out of his own pocket to help us out.

"Would not the speeding contest be kept cleaner if you kept control in your own hands?" asked one.

"Well, we have control in a way," replied Mr. Price; "because we have a voice in the management, and so keep a general oversight over the whole thing."

"Do you give the horsemen a share in the gate money?" asked Mr. Metcalf.

"Or in the grand stand receipts?" asked F. D. Blakely of the North-West Farmer.

"No," replied Mr. Price, in answer to both questions. "All the money that goes into the speeding contest is raised in the manner I have stated, namely, by contributions from the business men, breeders, and the horsemen themselves."

"Our experience," said F. Chisholm, treasurer of the Halton Exhibition, "has been much the same as that of the people of Alymer. We find that we could not get the hotel people to contribute to an ordinary show, but we can get them to put up for the horse racing."

"What is the best prizes you offer for speeding?" asked Dr. Clarke.

"One hundred to one hundred and fifty dollars, and we get good horses for that," answered Mr. Price.

**PERFORMANCES BEFORE THE GRAND STAND.** Mr. Price continued: While the directors have nothing to do with the raising of money or direct management, they have control of the races, and see that everything is conducted properly, and that no pool selling, book-making or gambling of any kind is allowed. The horsemen do not share in the grand stand or gate receipts in any way. The money is contributed by hotel men and horsemen who would not donate a cent if there were no races. It is therefore a paying investment for the Society, as the races are undoubtedly a drawing card for both the gate and grand stand. Besides this we have a high class circus performance on which we spend about \$500, annually. You may laugh if you will, but I do not hesitate to assert that the average man likes to see a circus just as much as the boys and girls. We know that this pays us also. It has largely increased the sale of membership tickets, especially to young men and boys, and also draws others who would not walk across the road to see a big pumpkin.

Without some performance of this kind it is utterly impossible to have a night exhibition, and our receipts from the gate and grand stand at night (we give three night shows) will, with fair weather, pay every cent of the cost of these attractions. Before we adopted this plan of amusements before the grand stand we did not make a dollar out of a night show, and practically not a dollar out of the grand stand, day or night. The change has certainly been a good one for us. It has proved to be the right thing to draw the fellow who does not exhibit to raise money to pay the one who does exhibit.

**THE FARMER AND THE FAIR.** Our experience is that those who make the exhibits in the agricultural department are not the ones who provide the funds for running the fair. They will give a dollar for membership fee. This, in our case, entitles the holder to free admission for member and wife, or any other member of the family; it permits him to bring his horse and team into the ground, and to make as many entries as he wishes. The member can go in all through the three days of the show, for either day or night performance. We are as liberal in other matters as we are in that of admission. We provide free food for the stock, and employ a man to keep the stalls and alley-ways clean. All this is given for one dollar, and the man who pays that dollar may draw from ten to twenty-five dollars in prizes. In order to make up these prizes we must get the 25c. admission fee, and we get the bulk of our admission fees from those who do not care a rap for the agricultural side of the question.

**CONCLUSIONS RE ATTRACTIONS.** To sum it all up, the introduction of special attractions in connection with our fair has more than doubled the gate and grand stand receipts, and nearly trebled the membership fee, within three years. It gave us money to plant trees, build roads and walks, erect fountains, build artificial lakes, and make the grounds the finest country grounds in Canada. We have added to our general prize list, and more than doubled our premiums on all live stock. We own our electric light plant, and have one of the best half mile tracks in Canada. I cannot say what it will do for others, but the above are the facts regarding our Society.

## DISCUSSION

50 MEMBERS, BUT ONLY 17 WERE FARMERS. "We have been enabled," said Mr. Hunter of Halton, speaking along the same line, "with the help of our special attractions, and by selling peanut stand privileges, etc., to set up a prize list of \$500, a prize list that has secured from 400 to 500 entries. But if we depended upon the farmers alone we could not set up the prize list or secure the entries. I have myself secured fifty members for our society, and only seventeen of these are farmers. Too many farmers do not care to give a dollar unless they see a prospect of getting five back again."

"That is our experience, too," said Mr. Metcalf of Huron, "and agricultural societies are kept up by the business men rather than by the farmers. If the farmers would take the interest in this matter that business men do, we would not need any special attractions to draw the crowd. Too many of them will pay their dollar in membership fee only when they think they have got an extra big turnip or something that will secure a prize at least equal to the membership fee. The great majority of the farmers now on our list of members are those from whom we have retained \$1 as membership fee from prizes given in the previous year."

Mr. Price said that their experience in Aylmer accorded with this view. "We never canvassed so little for members," said he, "as we did last year; half of those who are on our list came into my office and paid their fee voluntarily, and still, as I say, we have more than doubled our list of members. The great bulk of these members are not farmers, but young people and townspeople generally—people who want amusement and pay their money in order to have the opportunity of getting it."

A POLL ON SPECIAL ATTRACTIONS. In order to find out more clearly than could be brought out in discussion just what the practice was in the different fair associations in regard to this matter of special attractions a poll was taken of those which have special attractions and those which have not. It was discovered by this vote that those associations which have nothing but a purely agricultural exhibition, with both special attractions and horse-racing left out, had seven representatives present. Those which allow speeding in the ring, but have nothing in the way of special attractions, had twenty-nine representatives present. Those which had special attractions in addition to the speeding in the ring had five representatives present.

In defining special attractions Mr. Marr of Markham used the words: "Monkey on a stick" or "bare legs," but the general definition was understood to include everything in the way of platform amusements, balloon ascensions, wild west shows, and the like.

A DANGEROUS THING TO DO. Mr. Venning of Dorchester mentioned a practice which is probably not confined to one fair association. He said that he had taken \$20 out of his own pocket to pay membership fees for twenty men, relying on these men to return the money later on. "I did this," continued Mr. Venning, "in order to enable the treasurer to make the required affidavit with a clear conscience. I succeeded later on in getting this money, save in one case, and in that case I substituted another name."

"Is that in accordance with the law?" asked Mr. Jackson of Newmarket. "I understand there must be a certain number of names of members on the roll at a certain date, and that the treasurer must make affidavit to that effect."

"That is so," said Mr. James, "and I would not like to be the man who would make the affidavit unless that number of *bona fide* members were on the roll."

Mr. Venning said that in the case referred to the treasurer did not know but that the money had been paid by *bona fide* members.

DIVIDING THE FUNDS. Mr. Fred Metcalf of Blyth said there should be a fairer distribution of the funds allowed agricultural associations. "In our riding," said he, "the electoral district show is held at Brussels. That has a grant from the Province of \$380, while our township show, held at Blyth, received \$117. Still our show is the better of the two. Our gate receipts last year, on the basis of 10 cents per head, totaled \$735.85, while the receipts at Brussels were less than \$500."

Mr. Metcalf proposes introducing some educational features in connection with his own show this coming year. "We are," said he, "in the centre of one of the best apple-producing sections of Ontario. Apple-growing is an important industry with us. The area in orchards is continually increasing, and many of those who contemplate setting out

trees are in doubt as to the variety to plant. As an object lesson I intend giving a five-dollar prize for the best collection of apples, five in each collection, to be shown at our next fair. That will enable people to see just what sort of fruit they may expect to obtain from the different varieties named. In addition to this, I hope to arrange for a little talk by some expert on the quality of the fruit shown, and its adaptability to different soils, etc."

## WHY MANY FAIRS HAVE FAILED

BY O. C. JAMES, M. A., DEPUTY MINISTER OF AGRICULTURE FOR ONTARIO

It has been said here to-day that these agricultural shows are not getting the support of the farmers. Why are they not doing so? If they are not to be continued as agricultural societies, if they are not to get the support of the farmers, would it not be better to frankly face the situation and change the whole system? Why keep up the farce of calling something an agricultural society, when it is of an entirely different nature? Is there not something wrong in the system when you do not get the support of the farmers? The farmer is perhaps the most hard-headed man in the community; if he does not put up his dollar, it is because he does not think there is the worth of a dollar for him in the thing. If he can see a dollar's worth of value he will give the dollar every time.

**WHY LIVE STOCK IS OVERLOOKED**—You say that the grand stand performance is necessary to draw the young people. Why are not people attracted to see the live stock show as well? Do you give them an opportunity of seeing this stock under favorable circumstances? Are your grounds so laid out and kept in such order that a young man and a young woman, or a man and his wife, can go and see these as conveniently as they can the show from the grand stand? Have you not been developing the grand stand features rather than the educational features? (Applause)

The live stock parade at the Toronto Industrial Exhibition was one of the most notable features of the whole show. Those who did not get there early could not get anywhere within reach of the ropes. The great majority of the people preferred to see that rather than the circus performance; and they were right. There is no finer exhibition than a good display of live stock. Do you afford your people at your local shows as good an opportunity of seeing an exhibit of this kind as was afforded in Toronto?

Young people will naturally go where they are comfortable. If they go to a grand stand, and the show is not good, they can at least carry on a conversation in comfort. My experience with local shows is that such an opportunity as should be offered is not offered to those who desire to see the stock. You have been pushing the grand stand features, but have not pushed the others in equal proportion. Until that is done, I am doubtful if you will get the interest in the live stock that you should.

**A POINTED ILLUSTRATION.** Take the Provincial Winter Fair at Guelph, for instance. There were no special attractions there; there was no fakir there; there was nothing but a straight educational exhibition; and still the one thing needed was more room. Why did such crowds go there? They went there because they could see a purely educational exhibition with the same degree of comfort as they experience in witnessing a grand stand show at the ordinary fair. If that same idea is adopted in connection with local fairs I believe you will have similar results. I am not opposed to amusements altogether, I think these are all right in their place, but there is danger of their running away with the management, and thus causing the educational features to be overlooked.

**EVERYTHING DEPENDS ON THE START.** Everything depends on starting right. If you start with amusements as the main feature, you cannot afford to drop these, because people are educated to look for them. But if you start on educational lines, and keep them up, you can hold the crowds without the special attractions. A great deal depends on the officers. A good officer will make a success of a show of any kind. An active officer at Aylmer has made a success of the entertainment features at that show; an active officer in the Simcoe show has made an equal success of an educational exhibition. It all depends on the man, and the line on which the start is made. People stay in the grand stand through an inferior show—and the bulk of the entertainments offered there are very

inferior indeed—because it is a comfortable place to stay. Provide equally good accommodation for those who wish to see the live stock show, and you will have no difficulty in getting the crowds there.

**Avoid Drifting from Right Lines** One thing I am anxious about is that we shall not drift away from the purpose for which these exhibitions were established. The first object, and the object all the time, of these institutions is the education of the people. Remember that these shows have not been created for the purpose of making money. They have been created in order to serve a useful purpose. If you can keep your accounts even without special attractions, then I would say, by no means allow special attractions to be introduced.

## THE AGRICULTURAL SOCIETIES OF ONTARIO.

By F. W. HODSON, DOMINION LIVE STOCK COMMISSIONER, OTTAWA.

It was in 1830 that financial aid was first given to agricultural societies by Provincial statute. At present there are in Ontario, receiving aid and assistance from the Legislature, ninety-six District Societies and 375 Township and Horticultural Societies. In 1868 the appropriations for these societies amounted to \$54,074; in 1878 the amount was \$59,699. There was but little increase until 1892, when the grant was increased by \$100 to each district, at the request of the various societies. The total amount appropriated in 1897 was \$76,650, where it now stands. From 1872 to 1896, the total grants to agriculture have amounted to \$3,956,045, and of this \$1,561,023 has been given for agricultural societies. If to this we add \$418,952, given to the various agricultural associations, we have a total of \$1,979,975 out of \$3,956,045, or just \$1,953 more than half of the total. That is, the Government has handed over a little more than one half of its appropriations to the farmers in organizations to be expended by themselves. This has been largely supplemented by fees for membership, &c. Financial and other statements and reports, audited and certified, are all required to be furnished every year, and the general work is supervised by the Department. These societies, during the twenty six years, have done a great deal in improving the agriculture of Ontario, by the introduction of pure-bred stock and improved varieties of seeds, and by stimulating the farmers to the development of superior products of all kinds.

In 1895 there were 96 District Societies and 361 branch societies. The following are their financial statements:

RECEIPTS		EXPENDITURES	
Cash on hand.....	\$ 37,965	Prizes for animals and dairy products ..	\$117,142
Legislature grants.....	74,871	Prizes for field, orchard and garden-products.....	30,828
Municipal grants.....	19,723	Prizes for manufactures.....	6,796
Subscription fees and donations.....	89,440	Prizes for fine arts and ladies' work ..	29,296
Gate receipts, rents, &c.....	118,337	Other prizes.....	5,359
Money borrowed.....	32,444	Buildings, grounds, insurance, &c.....	38,363
Miscellaneous.....	13,877	Borrowed money repaid.....	32,667
		Stock, machinery &c.....	4,493
		Working expenses.....	79,890
Total receipts.....	\$386,657	Total disbursements.....	\$344,834

The statement of assets and liabilities at the end of 1895 was as follows:—

ASSETS		LIABILITIES	
Cash on hand.....	\$ 38,639	Owing on notes and mortgages.....	\$119,140
Land and buildings.....	379,068	Prize moneys due.....	6,656
Miscellaneous.....	23,948	Owing to Treasurers.....	5,494
		Miscellaneous.....	6,346
Total.....	\$441,655	Total.....	\$137,636

I have taken the year 1895 as an example because it represents a fair average of those which have gone immediately before and those following.

"The objects of District and Township Societies shall be to encourage improvement in agriculture, horticulture, manufactures and the useful arts :

(a) By importing and otherwise procuring seeds, plants and animals of new and valuable kinds ;

(b) By offering prizes for essays on questions of scientific inquiry relating to agriculture, horticulture, manufactures and the useful arts ;

(c) By awarding premiums for excellence in the raising or introduction of stock, for the invention or improvement of agricultural or horticultural implements and machinery, for the production of grain and of all kinds of vegetables, plants, flowers and fruits, and generally for excellence in any agricultural or horticultural production or operation, article of manufacture or work of art.

(d) By carrying on experiments in the growing of crops, the feeding of stock or other branch or agriculture, or by testing any system of farming through arrangements with one or more of the farmers of the municipality in which the Society is organized.

A NEW ACT NEEDED. All the clauses but the one allowing an annual exhibition seem to have been lost sight of, with the result that an network of small shows covers the entire country. 'Tis true the Act allows the Associations to amalgamate, but this is seldom done, or long continued, because of petty, personal or sectional jealousies. The condition as it now exists in Ontario was established long ago, and although the Act has been amended from time to time, it is antiquated. An entire re-organization is needed. When there were no railways and few thoroughly good roads, the present Act and system were desirable, the most desirable that could have been devised, especially as the Agricultural and Arts Association then existed. The county and township associations were then controlled and guided by the council of that body, the permanent secretary of which was the superintendent of the Ontario Fair System, but when the Agricultural and Arts Council was by the Acts of Parliament disbanded, the entire Act should have been thoroughly revised. Since then the county and township associations have been without an active head or central guiding power, and have drifted in as many different courses as there are associations. 'Tis true they have reported to the Ontario Agricultural Department annually, but the work of that department is so varied that only a very superficial supervision can be given, these associations. What could be done under existing conditions has been done, and well done.

There are many good exhibitions in the province, but none that can not be greatly improved from an educational point of view.

NOW TWO AGRICULTURAL ASSOCIATIONS IN EACH RIDING. In each electoral district now covered by the district and township associations, there is a Farmers' Institute organized, which annually receives a grant of \$50, part of which comes from the county. Nearly \$10,000 is annually spent by the Ontario Department of Agriculture in this work.

UNITE FAIR AND INSTITUTE SYSTEMS. By uniting the Institute and Fair Systems under one management and under one board of Directors in each district, by allowing each district to hold or not to hold a show, as the case requires, but allowing each to hold meetings annually, as already arranged for Farmers' Institutes, a great deal of money could be saved annually.

NO EXTRA COST FOR ADMINISTRATION. It would cost no more to administer the combined Fair and Institute System than it now costs to administer the Institute System. The same official, viz, the Superintendent of Farmers' Institutes, could do both, without causing him great additional work. For should a county or a township in a county hold one or more shows annually, the shows would simply count as extra meetings and be reported as such to the superintendent on forms supplied for the purpose. Some Institutes are already doing this.

EXPERT JUDGES. Doubtless the number of fairs now existing should be reduced, some claim that shows should not be held nearer to one another than from 30 to 50 miles. This is a question to be considered and decided by the people or their representatives. By uniting the Institute System and the Fair system, not only much money and effort would be saved, but the best men in each county and township could be elected as directors to the joint associations. Where desirable, fall shows could be arranged in groups as Institute meetings are now arranged. To these when requested by the directors, the Ontario Department of Agriculture could send expert judges for each

class of stock; etc., as is now done in the case of speakers to Institute meetings, many of whom are engaged from two to three months each year.

For Institute work the Province is divided into about 100 Institute Districts, in each of which the Department allows an Institute to be formed. These Institutes are arranged in Divisions. There are 12 such Divisions in the Province. The Institute meetings in each Division are so arranged that a speaker chosen for the work may commence we will say on the first of January and continue until the end of the month, addressing one or two meetings each day. The date of meeting and the speaker sent are chosen by the Superintendent of Farmers' Institute.

No Institute is compelled to hold its meetings at the time set by the Superintendent nor is any Institute compelled to accept the speakers chosen by the Superintendent; this is left entirely to the Institutes. Each Institute is at liberty to ask for speakers and an allotment of dates, when sending in their annual report to the Superintendent. When they do so, speakers are sent free of charge to the regular Institute meetings, just as judges could be sent to the shows. By this plan better judges could be obtained; men who not only could judge well, but who could address the spectators and tell them why they placed the awards as they did. Thus more uniformity would be established in judging, and therefore in the type of each breed judged. Many educational features could from year to year be added that would be of great value to the country. Without additional expense, when desired by the local society, prizes could be awarded in each township and county for the best managed farm, flocks, herds, studs, &c. This would all come within the scope of the township and district associations. By such a plan a great deal of valuable information could be obtained yearly and published by the Superintendent.

MUCH INJUSTICE IS DONE BY PRESENT SYSTEM OF JUDGING. If this plan were adopted one judge should be sent to each division to judge horses one for cattle and one for sheep and swine. In each class a good local man should be added. This local man would in this way be educated for the work and competent men be available. The work of each judge or committee should be carefully and impartially reported by the officers of each association on blanks provided for the purpose. Men could be employed as judges for several months each year and properly paid for their services, as institute lecturers are now. This course would encourage good practical farmers to fit themselves to act as expert judges. As it is now, it a hardship and a loss to a suitable man to act as judge. The employment of incompetent judges is a great injustice to exhibitors. It is a serious matter for the farmer to spend money, time and feed in fitting a stud, herd or flock, and at the end of six or eight months have the prizes placed by a novice, or worse still by a knave, some crafty competitor has appointed. At the smaller shows the novice is frequently appointed; at the larger shows the knave too often appears. The present system of appointing judges and making awards has in many cases lost all educational value. Many of us have lost sight of the fact that this money is granted for educational purposes.

The dishonest and the ignorant judge is each a public nuisance. Another almost if not quite as great is the professional exhibitor, who each fall will buy, borrow or steal a full exhibit along some line, sometimes in several lines, and scoop in a large amount in prizes at a number of shows. Three months after the shows are over, if you visit the home of such a one you cannot find a dozen animals or birds good enough to use for breeding purposes. At county and township shows prizes should be awarded only to makers, growers or breeders of the various exhibits; in fact, at our larger shows more encouragement should be given to the actual farmer and breeder than is now done. Managers are afraid to take this stand for fear of injuring their respective shows. Let the success of the Provincial Winter Show be an encouragement to such.

THE PROVINCIAL WINTER FAIR. Will the people appreciate an exhibition run on purely educational lines? I think they will. For proof of this let us glance at the history of the Provincial Winter Show. Up to 1890 it was conducted by the Agriculture and Arts Association and such local societies as chose to contribute. In 1892 the Provincial Live Stock Associations took a controlling interest in this important exhibition. The results have been most gratifying. In 1891, there were 91 entries in all classes; \$102 were received as entry fees, and \$86 as gate receipts. A total of \$188 was therefore received, and there was \$325 paid in premiums. Under the supervision of the Associa-

tions there has been a steady growth until in 1898 there were over 800 entries and over \$1,100 gate and entry receipts. The amount paid in prizes was \$4,500. In 1899 there was over \$5,500 paid in prizes. In 1898-99 block tests and lectures by the judges in the rings were introduced, and have proven of great value. In 1900 there were over 3,000 entries and 11,400 persons attended the exhibition; a lecture room was provided and seating for over 600. This accommodation was inadequate. Hundreds wished to hear the lectures who could not get into the room. It is safe to say that this is the most important winter show held in any part of the world. Visitors attend from all parts of the continent. The success of this show proves that the people wish to be instructed. I believe that the greatest attraction that our county and township exhibitions can offer is a carefully prepared educational programme. Commenced in a small way and carefully extended year by year.

**A PLEA FOR THE BOYS AND GIRLS.** During the last few months I have received hundreds of letters and copies of posters and I have been shocked to see to what straits the directors of some of our local fall shows have been driven in the hope of drawing a crowd.

The following is an example :—

### SPECIAL ATTRACTIONS :

#### HORSE RACING ON 13TH AND 14TH.

“Great French Jugglers, Tumblers, Flying Trapeze Actors, Slack Wire Performers, &c. Moving Pictures of South African War, as shown lately in New York and other large cities. Short-skirt Dancers, Bicycle Races, Merry-go-round, Glass Blowers exhibit, &c.

The two candidates for parliamentary honors have been invited to speak at the Pavilion in the Exhibition Grounds, on the evening of the 13th instant.”

To this wretched bill were attached the names of two good men as president and secretary.

I say with all reverence, “God bless our boys and girls if they are educated by the jockeys, the jugglers, and the females with short skirts, and the drove of common fakirs who are encouraged and even hired to attend our fall exhibitions both great and small.” Gentlemen, it is time to call a halt.

**ABOLISH HORSE RACING AT THE FAIRS.** Horse racing, if properly conducted, is not an objectionable sport, but in my opinion it should have no place at our fall shows. We send our sons and daughters to the fall shows to learn in other lines. Encourage if you will your local racing clubs, but let them meet at another time and place. They do the fall shows and many of those who attend them an injury. The following is a copy of a letter I recently received from a reliable director of one of Ontario's most prominent local exhibitions. It, too, may be taken as a sample of many others :—

“I send you data as to the amount of money spent on special attractions at our last fall fair. Since seeing you I have made careful enquiries and find that two brass bands were paid a little over \$100. The trotting and jumping prizes were about \$250. The man with the balloon got \$120 for one ascension each day, the society to find all the needed appliances, so that he cost the society about \$145. The special attractions cost \$500. The first day there was a good turnout; on the second day the total gate receipts were \$135. On that day the prizes for horse racing amounted to \$100. For balloon which did not go up on account of high wind \$60. For band \$35. Total for special attractions second day, \$195. Total gate receipts second day, \$135. This statement does not include caretakers, prizes, or any other legitimate expenses.”

**'TIS TIME FOR A CHANGE.** A plan which should be introduced in Ontario and for which the Province is ripe, is the British method of local associations such as our township societies, hiring for the season or buying thoroughly good sires for the use of their members. This plan has proved of great value in Scotland, and will do so here. The use of better sires can thus be obtained by the general farmers in a district than by any other method.

The plan also proves of great value to the country, because the best animals are bought for use by the local associations; while under present conditions the best sires are annually sold out of the country, the general farmers often using inferior underbred or

grade sires. This is telling seriously on the stock of the country. To meet foreign competition successfully Canada must produce the best of everything. Five-sixths of all the produce of our fields is fed to live stock. How important is it that the stock shall be of good quality.

Several Societies in Ontario have for years bought and kept stud males for the use of the members, one township owning as high as 18 Shorthorn bulls. Mr. A. W. Cohoe, Sec'y-Treasurer of the Rochester and Maidstone Agricultural Societies, writes ;—"This society has kept stock animals for years to the full limit of its means, and our members have the name of owning the best stock in Western Ontario. We have more good buyers and ship more good stock from Woodslee than from any similar station west of Toronto. Our system has proved very valuable, others give similar evidence."

WHAT QUEBEC IS DOING. On February 1st, 1901, the Department of Agriculture of Quebec issued the following letter :—

QUEBEC, 1st Feb'y, 1901.

SIR,—I take the liberty of calling your attention in a special manner to a resolution of the Council of Agriculture, intended to give better facilities to agricultural societies for the improvement of the breeds of farm stock in this Province and which resolution was adopted by the Council at its sittings of the 23rd and 24th January last.

In future, agricultural societies shall have the right, whenever they deem advisable not to hold an exhibition, to spend the subsidy allowed them by the Government, either in purchasing thorough-bred live stock or in giving bounties to owners of such stock for keeping the same within the limits of the societies, and, in such case, the directors may refund to members the entire amount of their subscription in fodder seeds or chemical fertilizers. The agricultural societies will thus have all the necessary facilities for recruiting subscribers.

By thus enlarging the sphere of action of our agricultural societies, the Council of Agriculture has merely carried out the wishes frequently expressed and met a need which the entire farming class unanimously desired to have supplied.

The importance of the improvement of farm stock is admitted on all hands and if there be still any diversity of opinion with regard to the means to be employed to attain that end, there is no longer any discussion as to the merits of the question to be solved.

The breeding of horses, in particular, should receive special attention from agricultural societies. England has recently purchased large numbers of horses, but unfortunately while we were selling her large cargoes of hay, of meat, of canned fruit, we could only supply a very small number of horses of the standard required.

We barely supplied 3 per cent. and yet Canada is acknowledged to be a country well suited to horse breeding.

We have thereby lost the opportunity of realising large profits, not because we had no horses but solely because our animals were not considered fit for service.

There is therefore a future for the farming classes in the raising of good horses for army remounts and even for commercial purposes.

If I have deemed it my duty to call your attention in a very special manner to the decision of the Council of Agriculture, it is because I am convinced that it may, if wisely carried out, render great service to farmers and that you will add your efforts to those of your countrymen who take an interest in the development and progress of Agriculture, the basis of our national prosperity.

The new regulations of the Council respecting bounties and the purchase of thorough-bred live stock will shortly be sent you.

I have the honour to be

Your obedient servant,

F. G. MIVILLE DECHENE,  
Commissioner of Agriculture.

WHAT NOVA SCOTIA HAS DONE. In a letter dated February 8th, 1901, Mr. W. B. Chipman, Secretary of Agriculture for Nova Scotia, writes :—

"Our agricultural societies were established 110 years ago and were reorganized in 1864. The Act states :—

"The object of such agricultural societies shall be to encourage and promote the introduction of improved stock, seeds, fruits, roots, implements, methods of culture, drainage, orchard cultivation, and improvement in farm buildings and domestic manufactures; and to diffuse information concerning agriculture and horticulture. The funds of such societies, derived from the subscriptions of members or the public grant, shall not be expended for any object inconsistent with those above mentioned."

Of late years we have confined the work of the associations to the purchase and maintenance of breeding sires. If they wish to go outside of this they must ask permission from the officers. We now have 131 associations, the divisions are small. 73 societies which recently reported owned 117 bulls, one society has 8, many societies also own rams and boars."

IMPROVED LIVE STOCK IN ENGLAND AND IRELAND. In a recent letter Mr. Sanders Spencer, Holywell Manor, St. Ives, Hunts, England, says :—



"For many years various societies, mainly the district societies in both England and Scotland, have hired stallions for the season; the first call for them to rest with the members of the societies, any vacant nominations to be open to the general public at an increased fee. In Northumberland the county society have for two or three years purchased Shorthorn bulls, which have been stationed in the country districts. Very great benefits have been derived from this access to good sires. An extension of this system is most desirable and very probable. In Ireland the Congested Districts Board purchase large numbers of Shorthorn bulls and Scotch Polled, as well as light and heavy horses. These are placed at service for a low fee. Nothing has done more to grade up the Irish stock, which (cattle especially) has improved immensely to my knowledge during the last forty years."

**CANADIAN HORSE BREEDERS ADVANCE ALONG SIMILAR LINES.** At a meeting of the Canadian Horse Breeders' Association, held in Toronto this month, it was decided to adopt the Scotch system of granting premiums from the funds of the Association, to specially selected pure-bred stallions, which will serve in certain districts. The understanding is that local agricultural societies, through which these premiums are to be given, shall supplement the grant made by a sum of equal or greater amount, and shall further guarantee a certain number of mares at a fixed service fee. This Association has this year set apart \$500 for this purpose.

**A SUPERINTENDENT NEEDED.** In this and in previous papers dealing with our agricultural societies I have suggested some reforms. I am conscious that it will take time and patient effort to bring any or all of them to pass. I do not wish to see either the large or small societies expunged, but to see them improved. By them a great work may be accomplished.

Before they can be improved a suitable man must be chosen and given charge of the work. In due time the Agricultural and Arts Act should be revised. As we have shown that nearly \$400,000 is annually spent by the officers of agricultural societies in Ontario, the oversight of the work should receive the undivided attention of a most capable man. By this means the work of the associations can be made uniform. Such a course will not increase but lessen the public expense.

As an example take the Farmers' Institute system. In 1891 95 meetings were held and about 2,500 members enrolled; in 1894 a superintendent was appointed. From that time the work improved annually. In June, 1900, the membership had increased to 18,058. The number of meetings held that year was 715, and the attendance totalled 138,982.

In 1894 the cost of each meeting was \$25 41. Last year it was \$13.50. Here we see the advantage of careful organizations and supervision. The same conditions would prevail in the case of the agricultural societies.

This is a very important question, not only of interest in Ontario, but in every Canadian province. The agricultural associations have great possibilities before them which have yet to be realized.

#### DISCUSSION.

**PROPOSAL CAME AS A SURPRISE.** Mr. Hodson's proposal came as a thunderbolt to the delegates, and they viewed it rather timorously—as one might handle a strange object, not knowing whether it was dynamite or a meteorite.

"I can," said Mayor Saunders, "see a great many difficulties in the way of carrying out the suggestions made by Mr. Hodson. The adoption of these suggestions would lead to the closing of many of our shows. In my own electoral district there are five or six local agricultural associations, and three horticultural societies. I am sure if we attempt to unite these with the Farmers' Institute we will create complications we may be sorry for afterwards. I fear, for one thing, that, as the whole institution would be under the control of the Government, a political complexion might be given to it which would cause injury."

**NOT NECESSARILY FEWER, BUT CERTAINLY BETTER SHOWS.** "You forget," said Mr. Hodson, "that according to the suggestions in my paper it is expressly stated that none of these local shows should be wiped out, save by the action of the people themselves. My desire is, not to wipe out, but to aid in systematizing the work. This cannot be done

effectively save by the appointment of a superintendent for the whole work. I have suggested a cheap way of securing this supervision. What have we done in the Farmers' Institute by means of systematizing? In the old days it cost \$25, \$35, and \$40, and even more, to hold an institute meeting. Under the present system, with a central head, and the work systematized, the cost is \$13.50. Why was the cost high in old days? It was because of lack of system. Let me give you one illustration. A local institute asked that Professor Dean and another speaker be sent to Smith's Falls. It cost \$74 to send these speakers there. Some time after the people of Perth, who had heard of the success of the Smith's Falls meeting, wanted the same speakers at their meeting, and we had to incur the same expense in providing for the second meeting. As it is now, speakers take regular routes, and go from one place to another within easy reach of the last place. This is how we have reduced the cost of holding meetings.

**GOOD JUDGES AT LITTLE COST.** In the case of local fairs, if good judges are employed, the cost is greater than the association can afford. Under the plan I have proposed judges appointed by the Live Stock Associations would go from point to point; these would be first-class men, and would be provided at little or no cost to local associations. Neither do I see any reason to fear that a political complexion would be given to the matter. When I was superintendent of the Farmers' Institute system I had the selection of speakers. I never asked a man his politics in appointing him on the staff, but I know there were Conservatives, Liberals, and Patrons on that staff. Never once were the screws put upon me in making selections, and I do not see why political influence should be felt in the appointment of the judges, more particularly since the appointments would be made by the Live Stock Associations."

**DIFFICULTY IN COVERING THE GROUND.** Mr. Jackson thought there would be difficulty in getting judges to cover the ground in the time allowed by circumstances. "Your Institute campaign," said he, "covers practically the whole winter; but all the fairs of the Province occur within a few days."

"There are," said Mr. Hodson, "three hundred local fairs held every year. By dividing into twelve divisions we could cover the ground with one set of judges in seven weeks; by dividing into fourteen divisions we could cover it in six weeks. Besides, you must remember some of the fairs would not fall in with the arrangements."

**AN INTERFERENCE WITH EDUCATION.** Mr. Reith said the agricultural societies were part of the general system of education in the Province. "We are continually," said he, "seeking to extend our educational system. One of the latest steps taken in this direction looks towards the organization of travelling libraries. I am afraid this movement for the destruction of agricultural societies is in the direction of curtailing educational work."

But Mr. Reith said he himself had for years advocated the appointment of a superintendent for the whole Province.

Dr. Robinson, the president of the Halton Farmers' Institute, favored the adoption of Mr. Hodson's proposal to amalgamate the Farmers' Institutes with the fair associations. "It would," said he, "result in a saving of money, and add to the value of the general educational work performed along agricultural lines."

**REFERRED TO A COMMITTEE.** Mr. Hodson's paper was then referred to a committee, consisting of Messrs. Creelman, Hanmer, Laidlaw, Saunders and Jackson, with instructions to report at the next annual meeting.

## OPINIONS OF PROMINENT FARMERS

FROM ALL PARTS OF ONTARIO, ON THE PRESENT CONDITION OF OUR TOWNSHIP AND DISTRICT SOCIETY FAIRS.

In order to find out just what our people thought of the fairs system as now carried on in Ontario, the following circular letter was sent out. We append to this paper some of the replies:

MY DEAR SIR,—

At the urgent request of several prominent gentlemen I carefully prepared an article entitled, "Results obtained in the Province of Ontario by Organized Effort." This article was published in several papers, each having a large circulation among farmers. By this mail I send you a copy of the

OTTAWA, November 26th, 1900.

exhibition number of *The Farming World*, in which this article also appeared. Please see pages 48 to 51, inclusive. I wish to especially call your attention to page 51. Will you kindly read the articles published under the sub-heading "Ontario Has Made Mistakes"? After you have read it, please write me your views on this subject. For several years I have given a good deal of attention to this question and have come to the conclusion that much of the money and time spent in maintaining and attending many of the small fall shows is worse than wasted. There is a growing feeling throughout the country that the Ontario Agricultural and Arts Act should be thoroughly revised, and that our present fair system should be re-organized. I am not in favor of doing away with our local Agricultural Associations, but of putting them on a better and more useful footing. Fewer fairs and better fairs should be the order of the day. Many of the local Agricultural Societies can do more useful work in some other direction.

The system of buying and owning, or hiring, pure-bred males by Societies, as is largely done in Europe, is very advantageous. By this plan every farmer in a district may have the use of a very desirable sire of any of the pure breeds of horses, cattle, sheep or swine, by simply paying to his local Society a small annual fee. In some places all membership fees are pooled and used by the executive officers in maintaining the animals owned at convenient centres. After stock males are once bought they can usually be sold for enough to buy others, when they have been the property of the Association long enough, or an exchange can be made with some other neighborhood. In some sections males are not purchased outright, but hired by the season for the use of members of the Association. Not only will the members be greatly benefited by either of these plans, but it will open up a large home market for much of the best breeding stock, which is now either sold to American competitors or sacrificed to the butcher, and thus in either case lost to the country.

I have just received a letter from Mr. R. F. Seymour, Essex, Ont., in which he says:—

"The township fair has been discontinued and stock animals are kept in place of an exhibition, which meets with the approval of the ratepayers and creates quite an interest. We have some thirteen pure-bred Shorthorn bulls in different parts of the townships of Maidstone and Rochester."

I believe seven out of ten thinking men believe that Ontario's Agricultural Societies should be re-organized, but we are all too busy or too modest to bring our views before the public. If we desire the Government of the day to take this matter up, we must make public opinion, or rather we must ask our neighbors to express their opinion. I do not write you in my official capacity, but simply as a citizen of Ontario, and as one who desires to see Canada and Canadian institutions in advance of all others. I believe that this is a public question worthy of your best thought. May I not have the honor of hearing from you at an early date. Letters sent to me here do not require postage. I enclose you an envelope. Can you send me a copy of the poster and the hand bill advertising your local fair?

Yours very truly,

F. W. HODSON.

#### REPLIES.

**SOCIETY STOCK DID NOT GIVE SATISFACTION.** "As a director of Glengarry Agricultural Society for over thirty years, I have," says James Clark, of Dominionville, "endeavoured to have township societies in the counties of Glengarry, Stormont, Dundas and Prescott done away with altogether. I have also tried to secure the organization of one agricultural society for all these counties. I am firmly of the belief that we have too many fairs, thus taking up a lot of time at a season of the year when corn and other field crops ought to have attention. Some years ago we brought several pedigreed bulls and Clyde and Percheron horses into this county. Somehow, however, these did not give satisfaction. There were local jealousies, and everyone seemed to think that he should have one of the animals at his own door. The greatest difficulty we experience in connection with fairs is in procuring proper judges, men who will award the prize to the animal rather than to the owner. I entirely agree with the proposal to have judges sent out by the department, and would be willing to pay expenses of proper men, as they are the mainstay of our fairs.

**SUGGESTIONS IN LETTER APPLY IN EAST ELGIN.** Walter O. Lewis, of Orwell, says that Mr. Hodson's suggestions are particularly applicable to East Elgin. He says that for years the county fair was held at St. Thomas, at the extreme eastern limits of the riding. The fair was a failure year after year on account of its location; the last year in which it was held there only ten per cent. of the prizes were paid. Then the show was moved to Alymer. "But as a director of the Alymer show," says Mr. Lewis. "I feel that too much of our money is spent for mountebanks and not enough in prizes to induce stock men to exhibit." This is a striking comment on the address delivered by Mr. Price. Mr. Lewis thinks there should be but one fair in East Elgin, and that at Alymer. "There is," he says, "a strong feeling for reform in our fair system, and if the Institute system could be planned so that one set of officials would serve it would result in much saving of time and money. At present there is too much trouble in the selection of competent judges, and the plan proposed by Mr. Hodson is one I can most heartily endorse. Nothing would be so great a benefit as to have pure bred stock distributed throughout the Province. At present cattle are deteriorating in our locality, and any plan for improvement will have my hearty support."

**PURE BRED STOCK IN PREFERENCE TO FAIRS.** Allan Robbins, of Gainsboro says: "I quite agree with the proposal that the Government should assist agricultural societies in obtaining pure-bred stock rather than in holding exhibitions, as now Prizes in county agricultural societies should be limited to residents of the county. This would shut out the professional exhibitor, who goes from fair to fair and takes in the bulk of the prizes. County fairs, taken as a whole, are not what they should be, and I believe one of the chief causes for this is found in the professional exhibitor."

**SMALL SHOWS HAVE SMALL PRIZE LISTS.** Robert Sibbald of Annan says he thinks there are too many small shows, and that in his own township the farmers seem to have lost interest in the matter. Prizes are so small, he says, that people think it not worth their while preparing articles for competition, and that time is wasted in attending shows.

*Wm. Harris, of Day Mills, Algoma, says at present the Institutes and agricultural societies work against each other, and both are injured in this way.*

**AMALGAMATE WITH INSTITUTES AND HOLD TWO FAIRS IN EACH COUNTY.** J. A. Nelles, Secretary of the Western Fair of London, says he thinks if an attempt were made to do away with grants to local societies, unless something else could be substituted, the farming community would make a vigorous kick. "The grants have been so long established," he says, "that it would be a most difficult thing to do away with these without antagonizing the agricultural interest. The idea of centralizing is a good thing, but it strikes me it might cause trouble. The question would be. Where should the fair be located? and local jealousies would be aroused in settling the question"

"I have thought for a long time," says Robert Buckley of Cheapside, "that there are too many small fairs. *If we could have about two good fairs in the county, and have them in connection with the Farmers Institute, as you propose, more good would result than under the present system.* Very few of the small fairs now existing are of any benefit. It would be a splendid thing if agricultural societies could be used as a means of bringing in pure bred sires. If once fairly started this system would soon show an immense improvement in the quality of our stock."

"*If all township societies were abolished*" says Mr. R. A. Havill of Rainham, "the majority now exhibiting at home would not take trouble to drive to the county town. In that case some townships would be left without inducement to improve their stock. On the other hand, that might be the means of prompting some of the more energetic men to bring in the best-bred stock for the benefit of others as well as themselves."

**MONEY WASTED ON SMALL SHOWS.** Charles Young, writing from Richards' Landing, gives the combined opinion of a few of the more enterprising farmers in his section. These farmers, he says, fully agree with what Mr. Hodson states, in saying that much of the money spent in maintaining small fall shows is worse than wasted. These small fairs are kept alive by interested parties, who make a point of raising a few roots and buying or borrowing from others, and also fitting up a few animals for the simple purposes of gobbling the prize money. "I have" says Mr. Young "been secretary of St. Joseph Island Agricultural Society since its first commencement, and I find great difficulty in having a good honest, square exhibition, and keeping educational features well in the front. By combining the Farmer's Institute and agricultural societies a long step would be taken towards remedying existing grievances"

**ANOTHER VOICE FOR SMALL FAIRS** "If the question of doing away with fall fairs in this district were put to a vote," says Archibald McColl, secretary of West Elgin Fair, Alboro, "I believe there would be a large majority in favor of keeping them on. At the Wallacetown and Rodney Fair the number of visitors was as large, if not larger, than at any previous show. This in itself would indicate that there is no growing feeling in favor of doing away with these exhibitions. If the only object of the fair were to give the farmer and his friends a holiday (in too many cases almost the only holiday in the year), and a chance to compare notes and discuss the year's results, the fairs would be worth all they cost. If the smaller fairs were abolished, the result would likely be that in a few years we would find only professional exhibitors, men who would exhibit with the sole object of making money or selling stock."

**TOWN SPORTS RUN THE SHOW.** "Our agricultural associations, as now conducted, are too often controlled by the sporting class," says James Smith, Inglis Falls. "This is especially true where there is a large town in the electoral district. In North Grey these are generally from one to three farmers on the Board of Directors, and the rest are

residents of Owen Sound, chiefly sportmen, and consequently there are three days of horse racing, intermixed with dancing and other sports. The townships try to copy the county show, and one favorite form of amusement is competing for prizes for the poorest turn-out. This is simply disgusting. Making the directors responsible for a general superintendent would remedy this evil."

"It will require a good deal of agitation and education," says W. H. Gainer, Welland, "to carry out the proposal in anything like its entirety in this locality. *The uniting of the various Boards of Directors would meet with opposition. The purchase of stock by township societies would be a wise thing*

**IN FAVOR OF TOWNSHIP SHOWS** A. W. McGregor, of Desboro, says that he does not agree with the suggestion that township fairs should be done away with. *Where a good township fair is held, he says it is all right. "In Sullivan township we have one of the best fairs in the County of Grey. This township fair last year was better than the county fair held at Owen Sound. I do not think it would be fair to abolish township organizations that have gone to the expense of buying grounds and putting up buildings, as we have done. If you put the shows in cities you put them out of the reach of the poorer people. At our last township fair we had something over one hundred pure bred Durhams, besides other breeds. No doubt many township fairs might be done away with, but where there are good fairs these ought to be helped, as it is the small fairs that help to keep up the big ones."*

**WHERE UNION IS ADVISABLE** "I quite agree with your views in regard to uniting the Institute and fair systems," says John McKenzie Kagawing. "and especially of having the Department of Agriculture send expert judges to our fairs. We have more trouble over the judging of stock than over all other matters combined. I would also be in favor of societies getting male animals for use of members, but as our total receipts amount to \$260 we could not go far in that direction. If all the fair associations on Manitoulin Island would unite they might do something more."

"I think societies should make more effort in the direction of securing pure-bred stock for the use of farmers" says Alex. McLean, Carleton place.

"Our township fairs are purely agricultural," says W. A. Douglas, Onondaga, "and my impression is that they will outlive the large fairs. I consider they do a vast amount more good than the large ones, because it is there a stock breeder makes his first start and improves from year to year, until he can enter the big fairs."

"I am fully aware there will be a tempest in a teapot" says W. H. Sylvester, Burk's Falls. "If the present system is radically revised. Still, I think there should be a change. *The proposal to procure pure-bred breeding stock I believe worthy of consideration.*"

**TOO MANY SIDE SHOWS** "There is a growing feeling that there is too much show and horse racing at the fairs," writes David Beatty of Chabman, "and this leads people from the question of agriculture entirely. Still, if you do not have some special attractions you cannot get a crowd. *I would be sorry to see local fairs discontinued, as in many instances they are of more benefit to the farming community than larger ones.*"

W. T. Petrie, of Ilstein, says he thinks there should be no racing nor circus amusements at agricultural fairs. These cost a lot of money and draw people away from the exhibits, and exhibitors, feeling they receive no attention at the hands of the public, are discouraged.

"I am a believer in agricultural fairs," says J. H. Amos of Brinsley; "but I am of the opinion that they are not managed as they should be. In McGillivray township the prizes are small; and there are not as many classes as there should be. We allow no horse racing, gambling, or special attractions. You can hardly call large fairs agricultural exhibitions, because they are largely race meets and circus performances," Mr. Amos closes a resolution adopted by the directors of his society, declaring that it would not be to the public interest to have small fairs done away with.

**A PLACE FOR SMALL FAIRS.** "We have had an exhibition ground in this village for about thirty years," says Wm. Elliott, of Comber. "and the society has about fifteen acres and two halls, and the debt amounts to only \$300. *County fairs might suit the richer class, but not the farming-class in general. Much more good is done by township fairs than would be done by one large fair.*"

Stephen Kettle, of Ursa, says he thinks *township fairs stir up interest and emulation as nothing else would*. Not only the farmer but his wife and children take an interest in it. "If these were dropped, what would take their place?" he asks. "I had instructions from the society at one time to discover what a pure-bred bull would cost. The price ran from \$150 to \$200 and this put a damper on the matter."

Joshua Knight, of Elginburg, says he thinks it would be a good thing if the Farmer's Institute had control of the shows, as most of the fairs in that section of the country are carried on in a very poor way.

FEWER AND BETTER FAIRS. "Fewer and better fairs is a subject that has been quite freely discussed among the farmers here," says R. S. Webster, of Udora, "*Personally I am in favor of county fairs only*"

"There are too many small shows at the present time," writes J. W. Hodgson, "but if they were done away with a great number of the poorer class of farmers would be deprived of a show of any kind. Our society once tried buying pure-bred stock, but it was a failure. The idea of hiring never occurred to us. That might prove better."

THE GROUNDS AND BUILDINGS PROBLEM "I more than agree with you when you say that seven out of ten thinking men believe that Ontario's agricultural societies should be reorganized," says William Pratt, Penetanguishene. "I have failed to find one thinking man who does not think so. But we must bear in mind that a majority of these societies own grounds and buildings which they cannot be deprived of. The proposal to amalgamate with the Institute has a great many objectionable features. It is almost impossible to hold a fair without suitable grounds and buildings, and as these would require to be permanently located, sectional jealousy would come in. While I fully believe that township fairs should be abolished, I must admit that I have not found a plan to replace them."

LOCAL LIVE STOCK ASSOCIATION. "I have long believed that our district shows should be made movable," says Samuel G. Bergie of South River. "If the local fairs could be made into live stock associations it would work wonders in the improvement of live stock"

"Township fairs have entirely outlived their usefulness," says A. W. Cohoe of South Woodlee, but instead of discontinuing township associations I would change these into stock associations similar to those we have in the Township of Rochester and part of Maidstone. We have kept stock animals here to the full limit of our resources for years, and we have the reputation of having the best stock in the western part of Ontario"

CHEAPNESS THE ONE CONSIDERATION "I have" said J. I. Graham of Vandeleur, taken \$11 more money in prizes than any man in the county. If I should speak from a selfish standpoint I might say leave things as they are; but when we take into account all that is spent to run each little fair, I certainly think it would be better if we had no township fairs, but one good central exhibition. It would be a great gain to the Province if people could be induced to use pure bred sires, but cheapness seems to be the one consideration."

THE SMALL SHOW MUST GO. W. J. Anderson, president of the South Lanark Farmer's Institute, writing from Smith's Falls, says: "*I believe the time has come for a radical change. Time and money are wasted in maintaining these small township fairs. Fewer fairs and better ones should be the watchword.*"

"I am pleased to find most of the township fairs have died out," says David Barr of Renfrew, "but I would be sorry to see the district ones given up. They are doing good work. Our fair is doing important work in the improvement of stock, especially sheep, swine, and poultry"

"I do not think it would be advisable to do away with the agricultural township societies in this locality," writes Alfred Brunton of Tara, "as it would have the effect of preventing many of our people from seeing a show at all."

SMALL PLACES HAVE BEST SHOWS. Dr. A. MacKay, of Ingersoll says, "I would not advocate cutting off township and village fairs, as my experience is strongly favorable to these. Our town, with a population of 5 000, has always a poor show, while Thamesville, Dorchester, Embro, and Otterville, small places of from three to six hundred, have enormous crowds"

EVIL OF LOCAL JUDGES. W. H. Evoy, of Bar River, says he is fully persuaded that a lot of the money paid out for prizes is useless waste. "In our prize list," he says, "one half of the money is given to useless objects. I am heart and hand with you in the matter of securing competent judges for our fairs. As secretary I have a good

opportunity of seeing the need of this. We select the best judges we can find, but frequently these are men who know comparatively little of the good or bad points of animals. Quite often, too, judges selected from a distance cannot come, and then we are obliged to select some one at hand, who knows every exhibitor, the consequence being jealousies and dissatisfaction. I have known exhibitors to take judges by the arm and walk them around the ring just before the judging commenced."

A. Barrow, writing from Bracebridge, says he most heartily approves of the change proposed by Mr. Hodson. "I have," said he, "frequently heard it remarked that if the Government would adopt some plan by which pure-bred stock could be brought in it would be a great benefit, especially in this section, where farmers have but limited means. In Muskoka we have long felt the need of pure bred bulls. There has been a good deal of dissatisfaction in the matter of the selection of judges. I am not very sure as to the advisability of amalgamating the agricultural societies and the Farmers' Institutes. I am afraid if the fees for the joint organization were the same as it is now for the agricultural society it would reduce our Institute membership."

Thomas Graham, writing from Port Perry, says: "I think the Government should encourage district societies, especially those which have buildings, grounds, etc., of a good standard, as well as railway facilities. Stick to the fairs," says Mr. Graham, "but on a larger scale" One of the points strongly emphasized by Mr. Graham is the need of securing more efficient judges.

AN EXPERIENCE IN SOCIETY OWNED SIRES. "The townships of Southwold and Dunwich organized an agricultural society in 1854," says L. F. Else, Boxall, "and in March, 1855, they purchased bulls for use of members. This purchase was the cause of a great deal of good, the stock of the district being greatly improved. At one time the society owned some fifteen or twenty bulls. In course of time there came to be several breeders of pure-bred stock in the district, and stock-getters became so thick upon the ground that the society's animals did not get patronage enough to pay for keep. Besides, people came to look upon the society as interfering with private business. The society disposed of its stock and has been out of that branch for the last ten years. We have discussed for a long time the proposal to abolish small fairs, and think this would be an injury, as the larger exhibitions would be in the hands of professional exhibitors. At our fair we find there is an improvement in the exhibits from year to year.

"I fear those who pay the dollar subscription to the local fair do so more on the chance of making two or three dollars in prizes than for any other purpose," says Richard Cole of South River. "Your suggestion for the appointment of expert judges by the Government, if carried out, would give great satisfaction.

IN FAVOR OF THE TOWNSHIP FAIR. "There is a very strong feeling in this section against doing away with the township fair," says W. H. Jarvis, Teeswater, President Culross Agricultural Society; "but we have one of the best fairs in the section. Besides, we have about \$1,200 worth of property that would be thrown away if these small fairs were abolished. So far as pure-bred stock is concerned, this section is now fairly well supplied in that direction."

"The proposal to abolish small fairs might suit very well in the older districts," says James Wiggins, Powassan; but it is not adapted to this newly settled country. Our farmers are taking a lively interest in the local fair, have purchased five acres of land, and erected an agricultural hall upon it."

"Small local fairs suit us best," says W. J. Varcoe, Roseneath, "because the large towns are too much to one side of the territory to be available. What is needed is the enforcement of the present Act, rather than the revision of it. Horse-racing and gambling are carried on at too many shows."

SPEEDING AND PROFESSIONALISM. "Many of our farmers will not show because of the professional exhibitor," says Albert Pay, St. Catharines. "Speeding in the ring is taking a prominent place, and large purses are offered. These purses are mainly taken by ringers. This is not the purpose for which fairs were created. I enjoy a good horse race as much as many others, but do not think an agricultural ground the place to hold it. Two or three of our small fairs are kept going by a few interested parties, who wish to have some money spent in the villages on fair days. We have in this district some very fine improved stock, whose owners would not care, after going to the expense of getting this stock, to see the

Government oppose them in their own business. These men should be encouraged, as they are a great benefit to the community. If their stock could be bought and used by the association to start with, some of these objections would be overcome."

**ADVANTAGE OF THE COUNTY SYSTEM** "If county fairs are properly supported by Government grants," says Henry Roberts of Brampton, "so that larger prizes could be given, thus inducing greater competition, the object for which fall fairs were intended (namely, the breeding and production of first class stock and produce), they would be attended with much larger success than at present. By having only county fairs the Department of Agriculture could more easily send expert judges. It would be wise to let Institutes carry on their work separate from the fairs. I consider it an impossible undertaking for associations to introduce pure-bred sires, as there are so many classes of these sires. The better plan would be to provide for registration of sires, and allow none but those registered to serve."

**AMALGAMATION FAVORED.** "I have for some time recognized the fact," says J. G. Foster of Moira, "that agricultural fairs have failed as educators. I believe that by uniting the Institutes and fairs money and time could be saved. One of the principle difficulties I see is that the time when it seems necessary to hold fairs is a very busy season, while the winter appears to be the only time people can get out to attend meetings. One of the greatest shortcomings in connection with fairs is the lack of competent judges. I am heartily in favor of the idea of co-operation in procuring the best sires"

"A union of the fair and Institute system, so far as the county or riding is concerned, would be all right," says Walter Scott, Belgrave. "But how about the township shows? Some of these are much better than the riding exhibition, and were it not for the local shows many of our people would never see an exhibition of any kind. The idea of the department sending out judges for each class of stock would be very acceptable, and I think would work well"

**AN EFFORT AT AMALGAMATION.** "We certainly have too many fairs," says W. E. Pollard, Bowmanville, "and I am afraid the object for which these were established has been lost sight of. There are too many professional exhibitors. A few years ago we held a meeting of the three township societies to try and arrange for one exhibition in the county, but local jealousies caused our efforts to come to naught. We should use our exhibitions for the exchange of good stock. In no way is money being lost so quickly as by using scrubs. It would be all right to unite the Institute and agricultural societies if the head were not too autocratic."

**WHERE SOCIETIES OWN ANIMALS** "There are far too many one-horse fairs," says one correspondent, writing from Balderson. "Two of our local agricultural societies use their funds for maintaining pure bred males. Drummond Township Society, of which I am secretary and treasurer, has done a vast amount of good in this way. They usually keep two bulls, one Durham and one Ayrshire; two rams, one Oxford and the other Leicester; besides two boars. Quite a number of farmers within the bounds of this township now have pure bred herds of the best quality. Burgas township follows along the same line. We have too many live stock associations, and the Government at Ottawa should open herd books, which would be suitable for the whole Dominion."

**THE JUDGE IDEA PARTICULARLY GOOD** "The reforms you are proposing are just what I have been looking forward to for several years," says J. H. Elliott, Thessalon. "The proposal to appoint outside judges is particularly good. Outside men coming from a distance would show no partiality, and would give better satisfaction all round. Such judges would be able also, to say just what sort of stock should be raised, and the boys in this way would be interested. The latter might obtain lessons which would in after life make them much better farmers. The proposal that the agricultural society should bring in pure-bred stock is a splendid one, as there are comparatively few private individuals who can afford to go to the expense."

"I am quite convinced that there is need of a thorough reorganization in this matter," says James Outts, Midhurst. "There are too many fairs, and they are not always conducted in a way calculated to impart very much information."

"I think the proposal to amalgamate the Farmers' Institutes and agricultural societies under one management is on the right line," says James Lochore, of Thompson.



"Even in our new country the local fairs are too close together. Fewer fairs and better ones would be of more public benefit."

**A SPECIMEN JUDGE.** "I have been intimately connected with county fairs for upwards of fifty years, both as an officer and exhibitor," says the secretary of the Osprey Agricultural Society, Feversham, "and I long ago came to the conclusion that there was something radically wrong with the present system. From my experience in watching judging at county fairs, I have come to the conclusion that it is nothing more or less than a farce. This is not the fault of the societies, as they honestly try to get competent judges, but this seems to be impossible in a great many townships. I have seen judges award prizes offered for a Shropshire ewe lamb to cross from a Shropshire ram and a Leicester ewe, although an almost perfect type of pure-bred Shropshire lamb, from imported stock, was shown in the same ring, this pure-bred lamb afterwards being sold for \$40. Still, this pure-bred animal took no prize, because, as the judge said afterwards, it had not such long wool as the other. This is but an illustration of what you will see at almost every county fair. The proposal to amalgamate the Farmers' Institute with the agricultural societies would in a great measure remedy this fault, while the sending of competent judges by the Department of Agriculture would be of incalculable value.

**THE PURE-BRED STOCK IDEA.** "In our Institute district," said Captain John Douglas, of West Bruce Farmers' Institute, Tara, "the township fairs are doing good work, and are maintained as purely agricultural exhibitions. In many electoral district shows, on the other hand, there are many objectionable things in the way of fakes, horse racing, etc. This speeding in the ring causes young men to take greater interest in a fast horse than in improving other lines of stock on the farm. I would not approve of doing away with local shows where they are properly carried on, because that is where a new beginner gets his first encouragement. In larger shows the prizes are all taken by people who are thoroughly up in the business—prizes in many cases being given for animals which have been fitted up for show purposes, to the detriment of their breeding quality. I have no doubt that in many localities it would be a great benefit for the old societies to do away with the shows, and devote their means and energies towards the improvement of all kinds of stock, and even for the Institutes to co-operate in this work. By co-operation under proper rules an immense benefit could be conferred. Many years ago our county society had four pure-bred bulls placed in different localities, for the use of members. The result was a great benefit to our people. By changing the animals about from one locality to another, it was not necessary to sacrifice them just when they were coming to their prime. That is one great evil under the system of private ownership. Animals are generally purchased at about twelve months, and immediately put to service for two years. In nine cases out of ten they are sold to the butcher just at the time when they are coming to be really useful for service. A few years ago I purchased a son of the noted bull which won the championship at Chicago. I kept him nearly three years. He was the finest animal ever owned in North Bruce. At three years, in fair condition, he weighed 2,340. He more completely combined beef and milking qualities than any animal I ever knew; and yet at that age I had to sell him to the butcher. Many people say that was the greatest loss this locality ever sustained. I have talked to a great many of our people, and they are strongly of opinion that the Government, through the agricultural societies, Farmers' Institutes, and perhaps municipalities, should give grants to assist in maintaining pure-bred sires for the improvement of stock."

"I think if the idea of securing pure-bred stock could be carried out properly it would be of greater advantage than the local fairs," says J. D. Moore, of Queenville.

**EXPERT JUDGES.** "We have improved our show fifty per cent by getting expert judges," says Isaac Lennox of Warton. "There should be only one member from each family; not a dozen families running the entire show and gobbling up all the grants. The experiment of keeping male stock proved a failure in this locality years ago."

"I have thought for some years that the small local fairs have to a great extent outlived their usefulness, says Alex. Wilson of Castleton. "Our local fair has been quite successful of late years, but it has required a good deal of effort on the part of the officers to make it so. The idea of uniting the fair and Institute systems, strikes me as a good one. One of the difficulties we have to contend with is the securing of competent judges. The plan for buying or hiring pure-bred sires ought to meet with general favor."

**WOULD PROMOTE ECONOMY AND EFFICIENCY.** "I have thought for some years that the smaller township fairs should be abolished, and superseded by something on a larger scale says R. H. Knowles, of Hespele. "The plan you suggest for amalgamating the fair and Institute system is one that had not occurred to me before, but it seems to be one that should commend itself as a measure of economy and efficiency. As an educator, the small township fair is a failure and not worth the money and energy expended. The adoption of the plan for bringing in pure bred sires through agricultural societies would prove of inestimable benefit to the country."

**FIRST STEP TOWARDS IMPROVEMENT.** "I believe that the first step to be taken to improve our agricultural exhibitions is to reduce the number of these exhibitions," says Major Hood of Guelph. "In the second place, I would not allow any exhibition to draw Government grants which throws away its funds on so called special attractions. I would make the exhibitions strictly agricultural and industrial. One good show in each Institute division will be quite sufficient. The plan of local associations hiring or buying first-class males would, if adopted, certainly prove the means of enabling the average farmer to improve his stock at less cost than now."

"I would be in favor of the amalgamation of the Farmers' Institutes and agricultural societies, and of giving them liberty to hold a fair or act, as they see fit," says S. Martin of Princeton. "By sending expert judges the Government would certainly be the means of raising the grade of the exhibits. I consider your suggestion for bringing in pure-bred sires all right as regards horses, but do not think it would work well with other lines of stock"

**THE SMALL SHOW USEFUL IN THE NEWER DISTRICTS.** "In these new parts the small show is still a useful institution," says Wm. Clarke of Huntville. "But I do think we have too many of them. I do not think it would be wise to introduce the system of owning or hiring pure-bred stock up here; more educational work would be required before that idea could be carried out." Mr. Clarke mentions one illustration of the value of co-operation in his section. In 1883 a bull was purchased for \$50 cash and a note for another \$50. Ten men put up the cash required (five dollars each), and in return got a guarantee of four free services of the animal purchased. "The animal," says Mr. Clarke, "ran two years, and you can see the results from that start to-day. Since then we have never been without a good pedigreed bull. At first many people would go past this animal to get a cheap service at fifty or seventy-five cents rather than pay a dollar for a good one, but when the buyers came to buy the product of these bulls then producers found the mistake they had made, and now many are seeing the advantage of using a good sire."

**FOR A MOVEABLE FAIR.** Henry Arkell of Teeswater says he has long felt there are too many fall fairs, and that too much time is taken up in attendance of the same. "There is little profit in this," he says, "at a season of the year when farm operations require very close attention. Within a radius of sixteen miles of where I am writing nearly a score of fall fairs are held—too many, in my opinion, by sixteen. I think it would be well to divide the country into districts of about the area I have mentioned. In such districts I would provide for the holding of shows at four different points; the show to be held at one point one year and at another point another year, and so on, until the four points were covered. This would give every district an opportunity to get up a good show. I think the plan to amalgamate the fair boards with the Institute system would be a good thing. We would then have more efficient officers than we have now. I fully concur with the proposal that the Department of Agriculture furnish expert judges on application. Objections will come from certain parties. Less enterprising men will say there is no use exhibiting, because more progressive men will take all the prizes and the less enterprising ones will stay at home. This would be unfortunate, as it is the non-progressive we want to benefit. To induce them to take part in the exhibition it seems to me some change should be made in the prizes. Either more classes should be provided, so that these men will not come into competition with the experts, or else the latter should be asked to forego the prize money, being satisfied with the honor. By having expert judges we would do away with the petty jealousies which often occur, and fix higher ideals as to the sort of stock that should be raised. The suggestion that societies purchase pure-bred sires is one that I heartily agree with. I have frequently advocated the same thing myself. This would cause a great saving in individual outlay, and would be a means of obtaining a much better class of males for use all over the country."

**FINANCIAL INTERESTS IN THE WAY.** "The financial position of many agricultural societies is an obstacle in the way of the improvement you suggest," says Jonathan Cross, Caledonia

Springs. "But if the indebtedness of the societies could be met by some other arrangement I do not see why more modern and progressive organizations should not be substituted. The necessity of doing away with small township shows is apparent to all thinking men."

"When we started our society I had great hopes that we should be able to accomplish something of value to farmers," says S. C. Gardiner of Iron Bridge. "Some of us subscribed and purchased a Holstein bull, but the man who cared for the animal did not handle him very well, and much dissatisfaction was thereby caused. Then, again, the bull proved not to be of the right breed for us here, and this caused further trouble. I think sometimes that the money granted by the Government to these societies is just so much thrown away. Certainly there should be fewer societies, with shows not closer together than within twenty miles of each other. I would like to see pure-bred stock animals kept instead of holding an exhibition."

**MUCH IN FAVOR OF AMALGAMATION.** E. Hawthorne, writing from Warsaw, says: "I am very much in favor of amalgamating the Farmers' Institute and Fair associations. It appears to me a waste of energy to maintain two institutions when one strong organization will meet all requirements. In our electoral district, the offices of president of the agricultural society and president of the local Institute are filled by one person. There are no two or three agricultural societies in the district in which I reside, but we have had no show for years, while we do own and keep pure-bred males for the use of members. This has been of inestimable benefit to the people of this part of the country. When holding fairs we were invariably in debt, and it was hard work to secure the fifty members in order to secure the Government grant. At present we have nearly double that membership, the treasury always shows a surplus, and our stock will compare very favorably with the original 'brindle cow.'"

**OBSTACLES IN THE WAY OF AMALGAMATION.** "I have been of opinion for some time that we have too many small fairs," says O. L. Fewster of Conover. "The difficult problem is how to overcome the petty local jealousies that would stand in the way of amalgamation. Unless this can be accomplished by legislation, it will perhaps never be accomplished. It would be a good idea to amalgamate the Institute and fair systems, but there would be difficulty in this, too, as the Institute is for the whole county, while agricultural societies are local. The plan you propose for obtaining pure-bred males is commendable, as well as feasible."

"One fair in each electoral district would be quite sufficient," says Charles O'Reilly of Norwood. "The proposal to amalgamate the Institute and exhibition associations meets with my hearty approval. Expert judges sent from outside would give better satisfaction than the present system."

**TOWNSHIP SHOWS VS COUNTY SHOWS.** "My opinion is," says Alexander Garvie, secretary of the Derby Agricultural Society, Kilsyth, "that the township shows, when properly conducted, are of far more benefit to the community at large than the electoral district or other larger shows. My idea would be to have the local shows in each township first, and then, after these were over, to hold the county or district show, when leading farmers from each township could compare their exhibits. Our township of Derby is ten miles long and six miles wide. We have a society with a membership of 190, and offer about \$500 in prizes. We allow no side shows of any kind, but put up a purely agricultural exhibition. At our show farmers meet annually and compare their stock and produce, and select their breeding animals. I do not think over fifteen or twenty of our members are united with the District Society. The latter seems to be trying to unite an agricultural show with a circus, and the greater part of the attention appears to be paid to the entertainment part. This seems to be the case more or less with all the larger shows. These larger shows are held in villages or towns, and the principal object seems to be to draw a crowd, the result being that about the only parties benefited are the hotelkeepers and merchants. The idea of having the Government send judges to local fairs is a splendid one. This is just what we want, as township societies are not able to pay judges to come from a distance to serve simply one show. The money could not be spent to better advantage by the Government than in this way. I think it would also be an advantage to have the Institute and Agricultural Societies amalgamated, as expense would thus be saved."

**STOCK STEADILY DETERIORATING.** Wm. Spong, of Baysville, says: "I have felt for some time that the farmers are not making enough of their advantages in connection with agricultural societies. Everything is lost sight of but having a show, and the more

solid advantages of using pure-bred stock are neglected. Some oppose the purchase of pure-bred stock by the societies on the ground that this would interfere with private enterprise; but the present system of private ownership is resulting in our stock becoming poorer every year. *I would like to see at least a part of the funds of our societies used in the purchase of pure-bred stock, but the majority of our members object to this change*" Mr. Spong, speaking for his section, is rather in favor of small shows. It is impossible, he says, in his section, where there is much bush and many hilly roads, to take cattle long distances, and for the majority it would be impossible to show stock at all if they had to travel fifteen or twenty-five miles to do so. It is, he says, the small farmers who need education, and he is not sure this object would be attained by having fewer, even if better, shows. With fewer shows he thinks professional showmen would be encouraged, to the detriment of the average farmer. "Perhaps," adds Mr. Spong, "*the joining of the agricultural societies and the Farmers' Institute under one management would infuse new life into both. I should like to see it tried.*"

**ONLY ONE PURE-BRED BULL FOR A TOWNSHIP.** "While I do not like to see our township fair done away with," says A. McGillivray of Murillo, "I must admit the truth of what you say, that much of the time and money spent in maintaining and attending many of the small fairs is worse than wasted. The absolute necessity of securing the service of pure-bred males is to me very apparent. I am afraid that the township of Oliver is very much behind in this respect. I know of but one pure-bred bull in the township."

"*The educational features of the small fairs are,*" says James B. Tinnar, of Blyth, president of the Morris Agricultural Society. "*for the most part lost sight of, or else are made subservient to other attractions. While these attractions assist in drawing a crowd, they have very little effect in advancing the interests of agriculture. A great deal of money and time are spent solely with the view of affording an outing for the people of the country, and providing profit for the business men and hotelkeepers of the town. The tendency of shows is more and more trending in the direction of making the race track and circus performances the chief feature. Some shows that were once conducted on purely agricultural lines have gone to the wall for lack of patronage. It would be well if some of the small shows could be amalgamated with the larger ones. The purchase by the agricultural societies of pure-bred sires would probably meet with a fair measure of success in counties where the raising of good stock is not so carefully looked after as it is in Huron.*"

**INCOMPETENT JUDGES.** "You have entirely voiced my feelings," writes W. E. Streatfield, of Emeraldale. "I have been secretary of agricultural societies for years, and I am coming more and more to the opinion that *these shows are not the benefit to the townships they should be. Bickerings and bad feelings are raised by supposed incompetent judges. With district fairs and outside judges sent by the Department, as well as Institute speakers, we would have an immense improvement.*"

D. S. Cameron of Ailsa Craig says he would not like to see the fall fair discontinued. "There is no need of the societies taking hold of pure-bred bulls here, as local breeders supply the need."

"I think in time the small fairs will drop out themselves," writes R. Clay of Katrine. "If railway rates were reduced at fair time, the difficulty of reaching central points would be removed, and better shows would be held."

John M. McNabb of Southampton, as president of the North Bruce Agricultural Society, says: "I am sorry to say that although our board of directors are all progressive farmers, our fairs are losing interest, especially to the younger people. If their views were carried out the show would degenerate to the nature of a circus"

**EXPERT JUDGE IDEA APPROVED** "*I believe great good would result from having uniform judging carried on by experts sent by the Department of Agriculture,*" says R. A. Lehmann of Orillia, secretary of the East Simcoe Farmers' Institute. "*The pure-bred sire plan might also be tried.*"

"I quite agree as to there being altogether too many small shows," says S. S. Tuttle of Orillia, secretary of the East Oxford Agricultural Society. "This causes a loss of valuable time and waste of money. The prizes are too small to pay exhibitors for attending. It is high time an entire reorganization was effected. *It would be much better if there were only one exhibition in each electoral district. Then we could have an exhibition that would be a credit to the county instead of having half a dozen that are a discredit. If*

we had \$1,600 for one show in Oxford, the banner county of the Province, we could put up an exhibition second to none west of Toronto ; but, with so many small towns, all are below the standard that should be attained. The trouble is that each small village wants to have a show of its own, and these are not able to put up prizes sufficient to make a good exhibition.

**THOROUGH REORGANIZATION CALLED FOR** One of those from whom information had been received is C. A. Mayhew of Thamesville, secretary of the East Kent Agricultural Society : " I think," said that gentleman, " that it would be a good idea to have the Farmers' Institute and the Agricultural Society joined together. The Agricultural Act itself should be thoroughly revised and our present fair system reorganized. When canvassing for members for our Agricultural Society I hear a good many complaints from farmers about their being too many small fairs. In our county, shows are within eight to ten miles of each other. There are too many for the people to keep up. Some societies, instead of trying to build up the agricultural part of the fair, are trying their best to make race meets of the annual event, paying about as much for races as for all other prizes."

**ONE FAIR FOR A RIDING SUFFICIENT.** " I have long been satisfied," says George Binnie of Buessan, " that there are too many fairs in Ontario. There is so much subdivision of funds among the riding and township fairs that the usefulness of the whole expenditure is to a great extent lost. This is true even where the money is put to the best possible use, which very often it is not. One exhibition in each riding is quite sufficient. I am somewhat doubtful as to whether it would be wise to amalgamate the fair and institute system. If township associations are to exist at all, they could not be better employed than in procuring and keeping pure-bred sires for the use of members."

**TOWNSHIP FAIRS USEFUL ONLY IN ISOLATED SECTIONS.** Wm. Collins, who is secretary of the West Peterboro Farmers' Institute, as well as the local Poultry Association, says : " I am fully in accord with the opinion that a great amount of money is wasted in township fairs. It would be better to give it to one good county fair. One should be sufficient ; certainly one for each riding is an abundance. Township fairs, save in isolated places, are of little use. To show to what extent overcrowling has gone on, I may say in a radius of four miles from the town of Peterboro there are four small township shows, while the riding exhibition is often run at a loss for the want of better patronage. The whole Agricultural Act needs revising, and in this connection more recognition should be given to the poultry industry. Provision should be made in each county for an exhibit in the winter season of poultry, alive and dressed. I would not care to give an opinion as to agricultural societies owning or buying up sires. There will be no difficulty in getting good animals under the present system, if farmers will only pay a reasonable price for the use of same. I am not struck with the suggestion of amalgamating the Agricultural Societies and the Farmers' Institute. I cannot see that this would be any saving. I think it better to let each do their own work. I am sure amalgamation would result in complication, as some would want all institute and others would want the major part exhibition."

**OPINION OF AN INSTITUTE.** J. P. Fox of Winchester, before writing his letter, submitted the matter to twenty representative farmers at an Institute meeting. After considerable discussion a resolution was passed declaring that in the opinion of the meeting it would be in the interest of agriculture in the Province to amalgamate the agricultural societies and Farmers' Institutes with the object of holding one central exhibition in each county or district, or purchasing pure-bred stock as the members should decide. " Of course," says Mr. Fox, " there would be difficulties in carrying out this scheme, because many of the township societies have expended large sums of money on buildings and grounds."

" I fully believe with you," says J. C. Hanley of Road " that the time has arrived when the local fair and institute system should be amalgamated. The small local fairs have almost ceased to be educators, but are merely occasions for social gatherings and for affording an opportunity for parties living near the fair grounds to divide the greater part of the prize money ; and this without exhibiting anything worth seeing."

**SPEND THE MONEY ON STOCK.** " We have three fairs within 12 miles of Huntsville," says Joseph Kitchen. " This is altogether too many. I have talked the matter over with directors of our Institute and Agricultural Society, as well as with several other farmers, and nearly all agree that fewer fall fairs would be better, provided the money so saved were spent in pure-bred stock. Such animals are few and far between in this district."

"I have always maintained," says James Smith of Sprucedale, "that there are too many fall shows." Mr. Smith has the same idea as Mr. Arkell, namely, that shows be reduced in number, and that the larger fairs thus provided for should not be held in one permanent place, but moved about from town to town. *Mr. Smith is strongly in favor of the scheme of securing pure-bred males by means of Government assistance.* "It would be hard in this back country for individuals to undertake to purchase such stock," he says.

**TOWNSHIP FAIRS FOR TOWNSHIP PEOPLE.** "I think," says James Begg, of Gravel Hill, "that every township should have its own fair, and that this should be solely for the township, outsiders not being allowed to compete." Mr. Begg's reason for saying this is, as others say, that professional prize-takers go about from fair to fair and scoop in the prizes. But he says township fairs should be continued, because the ordinary farmer cannot take articles for a long distance, and the back country cannot compete with the front. "*I would,*" he says, "*do away with county fairs and continue the township fairs.* I should do away with all horse-racing, balloon ascensions, and the like. If a show can be carried out without an entrance fee at all, all the better. I attended a fair this fall which had a circus performance at one corner, a merry-go-round at the other, racing in the ring, and a large display of house plants. There were some very good animals on the ground, but nobody was looking at them, the crowd having other attractions."

**GOOD ROADS OF MORE IMPORTANCE.** John Murphy, writing from Silver Hill, says he thinks there is a waste of public money in keeping up so many small societies. "All these," he says, "draw money from the Province, and I don't think the expenditure of this money does much good. The urgent need now is better roads leading to market towns. The leading roads of Ontario are in a horrible condition at this time of the year (December 15). *If the money used on shows was devoted to making better roads, I think the public interest would be better served.*"

**WIPE OUT USELESS BODIES.** J. H. Delamere, of Minden, says he has been an active member of agricultural societies for over forty years, and for more than half that period a director or officer.

"I certainly think," said Mr. Delamere, "that the time has arrived when a reorganization of local agricultural associations should take place—a reorganization by which useless bodies now in existence should be wiped out, and those doing useful and progressive work fostered. I have spoken very freely on this subject to many agriculturists. I do not find that all agree with me, but the most intelligent, liberal-minded, and progressive farmers are mostly in favor of such a change. One of our greatest drawbacks in connection with shows is a lack of competent and disinterested judges. I think if the government supplied pure-bred males as part of the assistance granted to agricultural societies in districts like ours (Haliburton) and kept these animals systematically moved about, under the direction of judges who could rearrange the matter every season during the round of local shows much benefit would accrue. *Judges covering a circuit of fairs as you propose would be just the right men to determine where these animals would be of most service.*"

**TOWNSHIP BETTER THAN DISTRICT FAIRS.** "In East Grey," says J. W. Patton of Rocklyn, "township fairs are very much better than the district fairs. The Great Northern at Collingwood was a failure, and the fairs at Owen Sound and Flesherton were no better than our township shows. At Euphrasia township show there were 168 entries for horses, and I question very much if any of the so-called larger fairs had as many cattle, sheep and swine as we had. *I do not favor withdrawing Government aid from these local shows, because in many cases farmers cannot afford to take their families to the industrial or other fairs at a distance.* Besides, small farmers could not drive their stock forty or fifty miles to large centers. As to your suggestion about pure-bred stock. I fail to see how such animals, supplied by the government, or owned by agricultural societies, could be handled without incurring heavy expense. There might even be dishonesty on the part of the men to whom such stock would be entrusted."

**NO GRANTS TO FAKIRS.** "I am not in favor of the abolishing of the township agricultural fairs," says John McKee, secretary of the South Oxford Farmers' Institute. "There is no doubt that the management of some of these could be greatly improved from an educational standpoint. *Any society that allows fakirs on the grounds should forfeit its grant. If properly qualified judges were selected, who could address the people and explain their reasons for fixing the awards, it would be a step in the right direction.* If township fairs were abolished,

many a farmer's son and daughter would never see an agricultural exhibition at all, and would thus be without an opportunity of viewing specimens of the different lines of live stock. *Rather than abolish the township show I would abolish the county show.* Farmers have too few holidays now, and if the township fair were abolished they would have fewer still. I am not in favor of society or syndicate ownership of pure-bred males; that has been tried, and shareholders have been only too glad to sell out to an individual. *I cordially approve of holding sales of pure-bred stock at fairs.* This would be a great benefit to the country. Societies in awarding prizes should not indiscriminately offer the same premiums both for dairy and beef breeds. They should fix their prize list according to the conditions existing in the locality. In our township of North Norwich, for instance, I do not know of a herd of Durham cattle, yet the society offers the same prizes for Durhams as for Holsteins or Ayrshires. The result is that a Durham breeder comes in from another county, scoops in all the money, and there is no benefit whatever to the locality. *Our section is noted for three things—bacon, dairy products, and fruit. In such a section the prizes should be so adjusted as to foster these industries.* I do not agree with the statement that it would cost no more to administer the combined fair and Institute system than it now costs to administer the institute system alone. I am the only officer in our Institute who gets a salary, if the sum of \$25 per annum can be called such, and I am mighty sure I would not undertake to manage a fair for nothing."

**LITTLE ONES KILL BIG ONES.** "I am not in favor of the small township fairs, as they almost kill our larger ones," says James Ohinnick, president of the Peninsular Fair Chatham. "If it were not for the secretary-treasurers running these shows for what they get out of them financially, and the small grants of the Government and County Councils, they would soon cease to exist. *I think your plan of purchasing pure-bred sires instead of holding these small fairs would be a good one, and would meet with general approval.*"

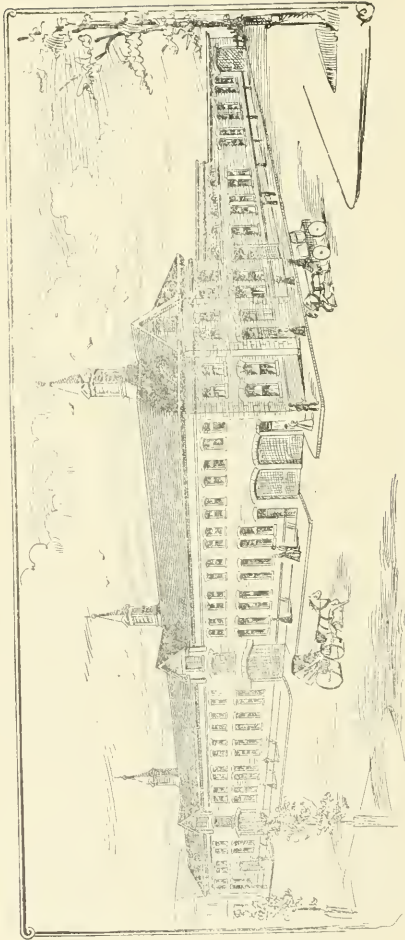
"Although I have been secretary of an agricultural society for several years," says F. V. Gunther, secretary Wallacetown Agricultural Society, Oos Hill, "I do not think the society has done much good, especially in the matter of live stock. *Better live stock is what we want,* and I think your proposition to this end is a good one. My proposition would be for each society to go into only one line of stock each year, say cattle one year, horses another, and so on. In a short time we would in this way obtain a complete stock of pure-bred sires.

**EXPERT JUDGES AND AMALGAMATION.** "I have had many opportunities of observing the way our local Agricultural Society has been managed," says John Wilson of Utterson, "and I long since came to the conclusion that the whole thing is nothing but a humbug; time and money are wasted without any good being done. If the grant now given local fairs were given to county fairs some good would be accomplished. It is almost impossible to get expert judges for local shows, and the result is generally dissatisfaction and petty jealousy. *I believe the proposal to amalgamate Institutes and fairs is a good idea.*"

"I have," says Wilson Ransom, Elora, "been a director of both township and district shows for a number of years, and I find that our local show is of more value, and gives more instruction to new beginners than the larger one. We have numbers of families who do not attend the district fairs at all until after receiving a few prizes at our local fair. *But you are on the right track in regard to getting in pure-bred stock, and I hope you will succeed in your undertaking.*"

**THE SOCIAL SIDE OF THE QUESTION.** In a great many of the letters great emphasis is laid on the importance of the social features of small shows. These shows afford people in the township an opportunity of meeting together for social intercourse—almost the only opportunity of the kind afforded during the year. This and the fact that the township show seems in the opinion of many to give the small breeder a chance to make a start, are the principal arguments put forward in favor of maintaining the present system.

Several of Mr. Hodson's correspondents in the eastern part of the Province make special reference to the poultry industry. That industry seems to be a very important one in the eastern section of Ontario. It is so important that it would seem, that while nothing should be done that would weaken the poultry side of the winter fair, as if it would be well to make arrangements for a special poultry exhibition for that part of the Province lying east of Toronto.

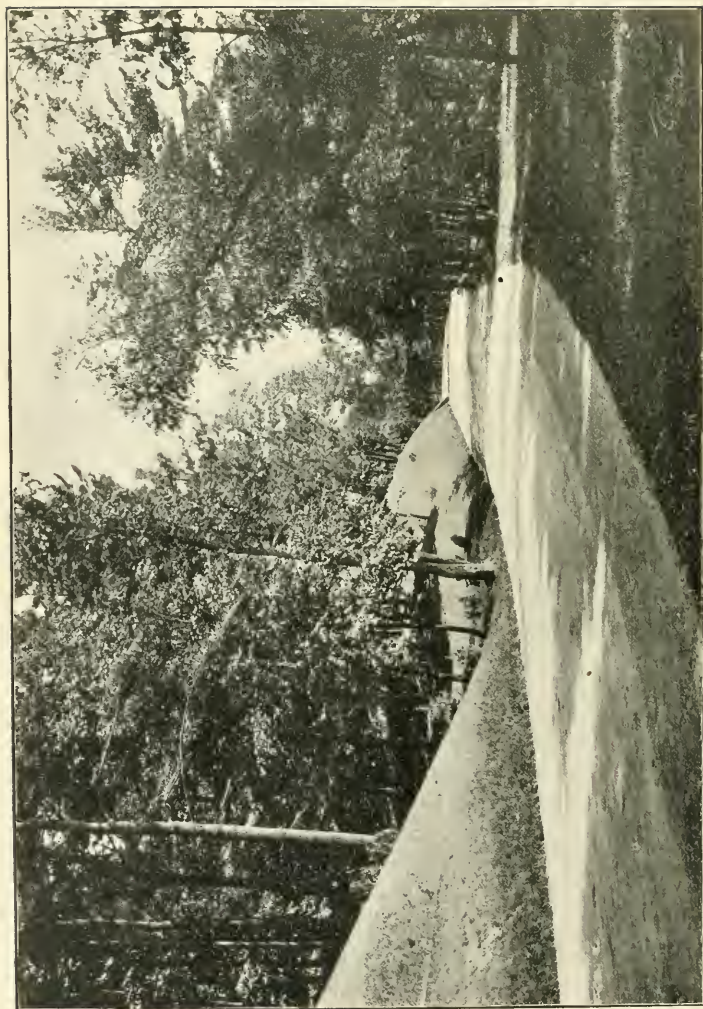


PROVINCIAL WINTER FAIR BUILDING, GUELPH, ONT.

This beautiful stone building covers one acre of ground and contains on the first floor a special department for dairy cattle; a lecture room; a boiler room; a killing room and a room for hanging the carcasses. Besides the accommodation for the live stock there is also on this floor a large show ring provided with seats on each side. Upstairs is devoted to poultry and last year there were over 2,000 entries in this class. About 11,000 persons were in attendance, of which number 1,518 were affiliated members of Farmers' Institutes. \$7,000 were offered in prizes in all classes. The Fair for 1901 will be held December 10th, 11th, 12th and 13th.







A Model.

SIXTH ANNUAL REPORT

OF THE

COMMISSIONER OF HIGHWAYS

ONTARIO

1901.

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(PUBLISHED BY THE ONTARIO DEPARTMENT OF PUBLIC WORKS.)

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TORONTO:

PRINTED AND PUBLISHED BY L. K. CAMERON,  
Printer to the King's Most Excellent Majesty.

To the HONORABLE F. R. LATCHFORD,  
Commissioner of Public Works.

SIR,—I have the honor to submit to you the following report for the year 1901, being my Sixth Annual Report on Road Improvement in Ontario.

I have the honor to be,

Sir,

Your obedient servant,

A. W. CAMPBELL,

Commissioner of Highways.

PARLIAMENT BUILDINGS,  
TORONTO, ONTARIO, 26th February, 1901.

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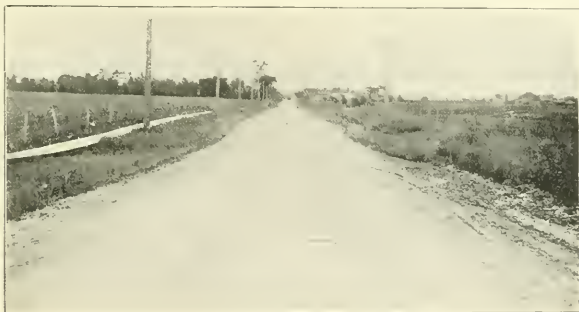
# SIXTH ANNUAL REPORT

OF THE

## COMMISSIONER OF HIGHWAYS

### THE GOOD ROADS MOVEMENT.

The road question is one which is being very generally considered throughout Canada. Good Roads Associations have been formed in almost every Province, those most active being in the Provinces of Ontario, Quebec, New Brunswick and British Columbia. While in every Province, more or less consideration has been given to the subject by the Provincial Governments, Ontario is the leading Province in this movement, both as regards an active public interest, which has been organized in good roads associations, and in Governmental action.



A STONE ROAD BUILT BY WELAND.

The roads of the Province were the chief public work until the time of railway construction, when Government aid, previously directed to the common highways, was largely withdrawn and applied to steam railway construction. The period of railway construction having reached its stage of comparative completeness during the past couple of decades the public has awakened to the fact that the common highways have not received the consideration from local authorities and the people generally which should have been given them, and that the system of constructing and maintaining the roads, in which statute labor is the chief factor, has not been changed in keeping with modern requirements.

For many years it has been the policy of the Government to open up, as required, in the newer districts of the Province, colonization roads, the appropriation for this work having amounted to about \$100,000 annually.

It is, however, in the older section of Ontario that the movement for good roads

has had its modern significance. The first definite step was taken in the year 1894, when the Good Roads Association of Ontario was organized, a large number of delegates attending this first convention, representing county councils, township councils farmers' institutes, dairymen's and other associations. The plans and purposes adopted by the association and embodied in the constitution were the following :

1. To combine as far as practicable the efforts of all persons engaged in the work of road reform.
2. To awaken interest in the subject among the people at large.
3. To receive, publish and discuss any well considered plan for local, provincial or national action or legislation.
4. To aid in providing a proper road exhibit and instruction in roadmaking at Farmers' Institutes, County, Dairymen's, Creamery and other association meetings.
5. To establish the Association on the broadest possible basis throughout the country, so that its influence may be of weight in any direction in which it may ultimately be thrown.
6. To obtain and spread among the local associations full information regarding recent legislation for road improvement.
7. To obtain and publish full information regarding methods of road-building, as practised in various parts of Canada, and other countries.
8. To procure and furnish the local associations, at reduced prices, all valuable publications on the subject of roads and road legislation.

Two years later, in 1896, the Government of the Province, recognizing the importance of the work of the Association, appointed a Provincial Commissioner of Highways, whose duty, as defined, was to give the people of Ontario practical information on the best methods of road construction. This was, and still is, done by issuing bulletins and reports, by addressing public meetings and conventions, and by taking advantage of such opportunities as occur to contribute to the various journals and the press generally. The chief duty of the Commissioner, however, has been to visit municipalities which request his services, examining the roads and the materials available for their construction, discussing the question with the council, and usually addressing a public meeting. Under his supervision, short sections of road are built as models, all his services in these matters being without expense to the municipalities.

A local association has been formed in the eastern part of the Province, which has been very active and is achieving excellent results. One of the chief features of its work has been the organization of a good roads train carrying a complete outfit of road-making machinery. Operations were confined to a small section of Ontario, about ten counties, in which model sections of roads and culverts were constructed.

Older Ontario is largely agricultural in character, being in this respect exceptionally fertile and prosperous. The result of this is that numerous towns have sprung up, more or less manufacturing, but largely dependent upon the agriculture of the surrounding country for support. The effect is to impose certain conditions upon road construction. Roads approaching railway and market towns are, in many cases, heavily travelled by vehicles, loaded with farm produce, and receive the traffic from a considerable area. Beyond these are other roads of moderate travel, receiving the traffic from a smaller district ; and beyond these again are the roads which accommodate but a few farms. As a result, every class of road is required, varying from the carefully designed macadam roadway to those which are merely the best that can be made out of a common dirt road. The intermediate class is the one which merits and receives the greatest consideration in Ontario, owing to the fact that its extent is much the greatest of any of these classes. It is the class of road in which the average Ontario farmer is chiefly interested, as it is the road which passes his own door.

It is from this standpoint that the question of road reform in Ontario has been approached. The general movement has been to secure the best class of road of an ordinary type for common farm traffic. In pursuance of this, the benefits of good roads have been urged. It has been pointed out that good roads from a business standpoint



will improve the condition of all classes of farms, whether dairying, stock raising, or purely agricultural. The amount of the present expenditure has been pointed out. This in older Ontario has amounted annually to about a million and half days of statute labor, and \$2,000,000 in cash appropriations; or a total estimated value of \$3,500,000. It has been shown that this expenditure has not been applied to the best advantage.

Those having immediate charge of the expenditure are chosen annually by the township council to oversee the work. No fixed plans or specifications, or well defined instructions for building roads, have been agreed upon by the people. The result has been that each pathmaster is working out his own ideas, which may in turn be completely changed by his successors. There are so many in charge of the work, each responsible for his own division only, that no one is responsible for the work generally, the result being a confusion of ideas and no proper enforcement of the work as a whole. The effect has been one of patchwork and inefficiency.

A rapid revolution in these matters has not been attempted. The common highway is the chief public work in charge of the township councils. Slowly, however, by a process of education, the objects of the movement are being achieved, and without urging the expenditure of larger amounts upon the highways, methods are being changed. The townships are steadily, of their own accord, giving up statute labor, providing instead a complete money appropriation and placing the control of the roads in the hands of permanently appointed overseers. Seeing the good results achieved, a willingness is created to vote larger sums of money annually.

While Ontario is markedly an agricultural country, it possesses what is not always common in farming districts—a good supply of road-making material, distributed with a fair degree of uniformity. In some instances rock exposures occur, in places there are large beds of gravel underlying the surface mould, while other districts avail themselves of a considerable quantity of scattered boulders, which have to be removed from the fields.

Wherever consistent with fair wearing qualities, the material available in the locality is to be recommended. The importation of stone from a distance for use on country highways is not, as a rule, necessary, and the use of the local supply facilitates general improvement. In the case of gravel the chief points to be observed are that it is clean, free from excess of sand or earthy material, and that it is of fairly uniform size. These conditions can sometimes be secured by careful selection in the gravel pit, but in other cases screening is necessary to remove earthy material and large stones. In instances where large stones prevail, a stone crusher, with screen attachment is placed in the pit, and all material is passed through, thereby cleaning it and reducing it to suitable dimensions. Where field boulders are utilized, these, having been collected from the fields, are piled on the roadsides, where they are crushed by a portable stone crusher and left ready for use. In other instances, where there is not a local supply, crushed stone is brought in by train, the railway companies having shown a disposition to aid in the improvement of highways, especially where they converge to their own stations, by giving reduced freight rates, amounting in cases to the bare cost of handling the stone or gravel.

The latest development of the good roads movement in Ontario has been the appropriation of one million dollars by the Legislature to aid in the improvement of country roads. The motive for this step has, very largely, been to encourage county councils to assume the management of the most heavily travelled roads in each county, thereby forming them into one class, in the construction and maintenance of which the most efficient superintendence, plans, methods and machinery can be employed. One-third of the cost of constructing or reconstructing roads assumed under a county system will be paid by the Provincial Government, and the Act is so framed as to give county councils every opportunity to accept this aid. Should any counties fail in this, a proper proportion will be given to townships fulfilling certain prescribed conditions. Already county councils are everywhere interesting themselves in the matter.

## HIGHWAY IMPROVEMENT LEGISLATION.

The Act passed by the Legislature in 1901, appropriating \$1,000,000 to aid in the improvement of public highways has received throughout the Province the earnest attention of county and township councils. Conferences of county and township councils have been held in many cases, and wherever the question has been rightly understood there has been, practically, unanimity as to the benefits to be derived, and township councils are lending their assistance to the selection of the most important roads within their several townships, to be included in the system upon which improvements are to be made. Among the counties which have been most active in this regard may be included Lanark, Leeds and Grenville, Victoria, Dufferin, Wentworth, Welland, Peel, York, Wellington, Elgin, Halton and Simcoe.

The Act contains an alternative plan, giving county councils until January 1st, 1903, the privilege of taking advantage of the Act: failing in this, the township councils may then obtain their proportion of the Provincial appropriation.

Unfortunately, in a number of particulars, there has been some misapprehension as to the meaning and intention of the Act.

### Roads to be Assumed.

Should a county council desire to take advantage of the Act, the first step would be to arrange with the various township councils as to what roads shall be assumed. These roads should be such as the council and township councils consider the most useful in serving the requirements of the people in each section. These roads may consist of one road in each township, or several roads; or part of one road, or parts of several roads, may be selected. As a general thing, they should consist of what are now the most heavily travelled roads in each township, leading to the market, town or village, of the district.

The roads should preferably connect, so as to form a continuous system—but it is not necessary that they should do so. In some counties the trend of travel is all in one direction, leading to one market centre. In other counties the trend of travel is cut up into a number of distinct sections, each township, it may be, having one or two market centres. Nor is the trend of travel marked by county or township boundaries, but divides according to local conditions, the most important factor in determining the line of travel, being, as a rule, the nearest or best market. These circumstances must be all taken into consideration in framing a county system of roads, and the aim should not be so much a connected system as a most useful system.

The object, it should be plainly seen, is not the improvement of old county roads many of which have become of but secondary importance, owing to the building of railways, and the growth of new local markets. Distinctly, the object is not the resurrection of old county systems, unless these roads can make good their claim to being still the roads of greatest travel.

In designating the roads unless there is some plain discrepancy, or a protest from some section of the people interested, the plan of the county council as to roads to be improved, whether a connected system or not, will be accepted by the Government. The reason for this is the belief that the county councils, with the advice of the township councils, will view the matter from a county standpoint, and that they are best able to frame the most serviceable system, the one upon which the expenditure will be the greatest benefit to the people.

### Nature of Improvement Required.

The impression prevails, in some localities, that the Department of Public Works will require an expensive standard of road. On the other hand, a fixed standard will not be laid down. That will be left to the county engineer or commissioner having charge of the work, and his report as to the treatment of the road, and the character and cost of

the work undertaken will, for the most part, govern. That report, however, it will be necessary to submit to the Department, but so long as it embodies the elementary principles, proper drainage, crowning, and as far as possible uniform grading, and a systematic application of material, it will meet the requirements.

For example, in going over a road which falls within a county scheme, the first mile, owing to its having already been graded, gravelled, etc., to some extent, may only require patching and simple repairs to put it in good condition, at a cost of not more than \$100; whereas the next mile, unimproved and neglected, through swampy land, might cost \$500 to drain, grade and gravel or stone. And the next mile, being at the outer end of such road, on favorable soil, and receiving but little traffic, might be made equally good and serviceable by proper draining, grading and a light coat of gravel, at a cost of a couple of hundred dollars.

### Number of Miles to be Assumed.

The number of miles to be assumed by a county council is not limited by the Act. The only requirement in this respect is that the mileage to be maintained by the county should be, as far as practicable, distributed among the various townships, in proportion to their area, in order that all the townships may be benefited.

It is not required that the expenditure shall be made in proportion to the area, nor in proportion to the road mileage.

Road improvements may be placed wherever they will be most serviceable and effective in bettering the condition of the roads. It is quite possible to conceive of a case in which the greatest benefit to one township will arise in making almost the whole expenditure in an adjoining township. Take as an example a township where road material is plentiful and where liberal use of it has been made on the roads, bringing them all to a good and serviceable condition. If the people of this township, in order to reach their market town, have to pass through an adjoining township, in which road material is scarce, and where, through the character of the soil and difficulty of drainage, road-making is difficult and expensive, and the roads bad in consequence, it is apparent that the greatest benefit to the first township will arise from building and maintaining a good road through the second township, leading to the common market. Having in view such a condition as this, of which instances are common throughout the Province, the reason for leaving the distribution of the expenditure to be governed by local circumstances will be apparent.

### Amount of Expenditure.

The amount of money a council spends on the roads may be such as it sees fit to raise. This is not limited by the Act in any respect. The only restriction is with regard to the amount to be received as Government grant, this to be one-third of the cost of the work, up to, but not exceeding the county's proportion of \$1,000,000.

This money, payable by the Government, may be drawn as the work progresses, and the rapidity with which it is drawn will depend upon the expenditure the county decides to make. It may be drawn in one year if a sufficient amount of work is done by the county. Or the work may be extended over several years, and the proper proportion of the money due under the Act will be paid from year to year as earned.

### Inspection.

Special provision is not being made for Government inspection. The certificate of the county commissioner or engineer, as to the completion of the work will be accepted as to the manner of doing the work and expenditure of money. It is desired that the services of the Public Works Department in this respect will be advisory, rather than that of inspection. Any consultation or assistance of this nature rendered by the Department will be without expense to the municipalities.

### Statute Labor.

The Act provides that the statute labor assessed against the lands fronting on the improved roads may be commuted by the township council in which the lands are situated, if the council so desires. The property adjacent to the improved roads will undoubtedly derive a direct benefit which should render it liable to such a measure. The commutation money will belong to the township, to be used as the council may direct. A natural step would be to use it in improving other roads in the township; while some townships propose using it in paying the rate levied against the township for county roads.

### Good Maintenance Desired

The aim of the Act is not so much to oblige the building of an expensive system of complete roads, as it is to secure uniform and systematic work, employ and properly operate modern and economical implements, and provide careful, constant and methodical supervision in maintenance; to provide object lessons in the care and treatment of roads and set examples for those having charge of the remainder.

The Act, as it stands, has the alternative plan, whereby townships may individually carry on the work, but it is urged that the best results can be accomplished by a county council, because, as a council, they would have charge of these particular roads only, would have sufficient work for, and would naturally employ, a competent man to supervise and care for them.

Whereas, under township control, the township council, having charge of all the other roads in the township, as well as these special roads, will be influenced, after the first expenditure, to make future municipal expenditures on other roads, and those which have received Government aid will be neglected. While other roads in a township remained unimproved, many councils, after once improving a road under the Act, owing to local jealousies, would find it impossible to make a sufficient yearly expenditure to properly maintain it, and under such circumstances the first outlay would not accomplish its chief mission. There are other reasons, familiar to most experienced councillors, why the principal roads, those subjected to extremely heavy travel, can be better and more economically maintained by the one larger body in the county, rather than by the half dozen separate townships working independently of one another.

It cannot be doubted that the county councils, constituted as they are now, will take a deep and intelligent interest in this work, and will strive to create such a distinction between their roads, and those under township management as to stimulate a friendly rivalry which must naturally do much in the interest of improved highways and economical management.

### The Towns Assist.

One chief object in recommending that certain roads be cared for by the county council is to obtain from the towns and villages in the county a fair share of assistance in keeping up the leading roads. There can be no question as to the justice of requiring the towns and villages to contribute towards the cost of this work. Towns and villages are benefited by the improvement of roads, and the county should not hesitate to assess them. This can be done through the county council only. It is not the intention that any of the money should be spent in the towns, but that all should be spent in the townships. Where the county has to raise two-thirds of the total amount, such a percentage of this will be contributed by the towns as to make their contribution, added to the Government grant, equal to about one-half the cost of the work. Where the townships, instead of the county, take advantage of the Act, towns and villages cannot contribute in this way. Under a county system, a portion of the cost of road-building is levied, in the county rate, against the towns and villages within the municipality for road purposes. At the present time, under township systems, the farmers bear the entire cost.

### Further Benefits.

All the expenditure placed on roads would be spent in the county, and thus returned in a great measure, to those who contributed it in the first place, together with the Provincial grant.

Under county control a properly organized corps of men can be employed to build and repair the roads. As at other employments they become experienced and do better work, and in the matter of repairs are ready to make them as soon as signs of wear appear.

By a county plan uniformity of work and system will be secured throughout the various municipalities. Under township control a diversity of plans is certain to be adopted.

In a county plan an experienced and properly qualified man could be employed to have constant supervision of the work, whereas under township control each municipality cannot afford to pay the salary of such a man. Under every good system it is necessary to have responsibility centralized and defined, not divided and easily shifted from one to another, as it now is under the statute labor system.

Under county control, modern machinery, too expensive for individual townships, can be purchased and handled to advantage, an experienced operator can be employed for each implement, and a better and more uniform class of work will be secured.

A township can manage its roads properly only by adopting a plan similar to that outlined under a county system, but by extending it over a county it becomes more cheaply operated.

It is urged that, while there may be some feeling adverse to townships parting with the control of any of their roads, it is nevertheless impossible, under a township organization, in the case of heavily travelled roads, to levy the necessary taxation equitably, or employ the most economical and at the same time serviceable system. The trend of opinion has turned towards collecting the most important roads of each county, placing them under the management of the county council. It has been shown that by such a means road-making can be placed on a more business-like basis, and consequently greater efficiency is secured. It provides for a more equitable system of levying the cost, for a better use of modern machinery, and for a higher grade of oversight and workmanship. At the present time township councils are unable to maintain the roads by statute labor, and are in consequence compelled to make annual appropriations of money from the general tax. This money is, in the main, spent on the roads which would comprise a county system, but owing to the contracted character of the township system township councils cannot expect to apply this expenditure to the greatest advantage.

A greater cost to the individual citizen need not be feared, as no greater road mileage is to be maintained. The effect of a county system is merely to group the most heavily travelled roads under one management, where they can be most economically maintained.

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### PROCEDURE.

Under the Highway Improvement Act the preliminary step taken by county councils has been to hold a conference of all municipal councillors, or representatives of councils within the county. At these conferences, the majority of which have been attended by the Commissioner of Highways, the meaning and intention of the Act has been discussed, and to some extent a plan of roads considered.

It then rests with the county council to pass a by-law definitely laying down a system of county roads. A copy of this is sent to each township council within the county, and they have three months in which to consider the by-law. Each council will, within the three months, report to the county council their acceptance of the plan, their rejection of it as a whole, or such alterations in the system of roads as would meet their

approval. If a township wishes roads taken other than those proposed by the county, in case of failure to agree, the matter will be submitted to arbitration. If more than a third of the municipalities oppose the by-law as a whole, the question must be submitted to a vote of the people. If the by-law meets the acceptance of the municipal councils, or two-thirds of them, the county council may, at the end of three months, proceed to perfect their plans for the improvement of the roads.

### The By-Law.

The first by-law required in assuming the roads is of very simple form, that of the County of Simcoe, being :

#### BY-LAW NO. 702.

A by-law to designate the highways to be improved in the County of Simcoe.

Whereas, it is deemed necessary and expedient to designate by by-law the highways to be improved within the County of Simcoe, pursuant to the provisions of an Act entitled "An Act for the Improvement of Public Highways," I. Edward VII., Chap. 32.

Therefore, the Municipal Council of the Corporation of the County of Simcoe enacts as follows :

1. That the several roads and highways mentioned and set forth in the schedule to this By-law annexed, and shown in red on the map of the County of Simcoe to the said schedule attached, be, and the same are hereby designated as the roads or highways to be improved in the County of Simcoe under and in accordance with the provisions of the above mentioned Act for the Improvement of Public Highways.

Passed at Council Chamber, Barrie, this seventh day of February, 1902.

#### SCHEDULE REFERRED TO IN BY-LAW NO. 702 OF THE COUNTY OF SIMCOE, ENTITLED, "A BY-LAW TO DESIGNATE THE HIGHWAYS TO BE IMPROVED IN THE COUNTY OF SIMCOE."

Road No. 1.—Burton Avenue, from the Essa Road easterly to the eastern limit of the Town of Barrie; Penetang road, from said eastern limit of the Town of Barrie, through the Townships of Innisfil and West Gwillimbury and the Village of Bradford, to the road known as the Bond Head road, or the concession line between the 6th and 7th concessions of the Township of West Gwillimbury; the said concession line from the said Penetang road westerly to the Village of Bond Head, and the town line between the Townships of West Gwillimbury and Tecumseth; the said town line between the last named townships from the said concession line northerly to the concession line between the 7th and 8th concessions of the said Township of Tecumseth; the said concessions line between the 7th and 8th concessions of Tecumseth; and the town line between the Townships of Adjala and Tecumseth southerly from the concession line between the 7th and 8th concessions of the Township of Tecumseth to the sideroad between lots 15 and 16 of the Township of Adjala; the said sideroad between lots number 15 and 16 in the several concessions of the said Township of Adjala.

Road No. 2.—Commencing on the railway crossing on the road known as the Essa road, in the Town of Barrie, thence the said Essa road to the town line between Essa and Innisfil; the said town line thence south to the Village of Cookstown; the town line between the Townships of Essa and Tecumseth and between the Township of Tossorontio and Adjala to the Village of Rosemont; the town line between the Townships of Tossorontio and Essa from the south town line of said townships north to the side road between lots number 10 and 11 of the Township of Tossorontio; the said side road between said lots 10 and 11 in the several concessions of the Township of Tossorontio; the side road between lots numbers 25 and 26 across the 1st, 2nd and 3rd concessions of the Township of Tossorontio.

Road No. 3.—Commencing at the terminus of Elizabeth street, at the western boundary of the Town of Barrie, the give road known as the continuation of Elizabeth street, to the concession line between the 6th and 7th concessions of the Township of

Vespra ; the said concession line south from the said given road to the town line between Innisfil and Vespra ; the town line westerly from the said 7th concession line between the Townships of Vespra and Innisfil and Vespra and Essa to the western boundary of the Township of Vespra ; the town line between Essa and Sunnidale from the said western boundary of Vespra to the west side of the Nottawasaga River ; thence the given road to the Village of Angus ; the established road from the Village of Angus, near the centre of the 3rd concession, to the concession line between the 3rd and 4th concessions of Essa ; the concession line between the said 3rd and 4th concessions from the said established road south to the town line between the townships of Essa and Tecumseth ; the sideroad between lots numbers 5 and 6, in concessions 4 to 14, inclusive, and the broken front of the Township of Tecumseth ; the concession line between the 4th and 5th concessions of Tecumseth, from the sideroad between lots 5 and 6, westerly to the town line between Adjala and Tecumseth ; the town line between Adjala and Tecumseth northerly from the said last mentioned concession line to the sideroad between lots 10 and 11, in the 6th and 7th concessions of the said Township of Adjala ; the concession line between the 5th and 6th concessions of the Township of Adjala, from sideroad between lots 10 and 11 northerly to the sideroad between lots 15 and 16 in the said concession.

Road No. 4.—Commencing on the town line between the Townships of Sunnidale and Essa, at the deviation road leading to the Village of Angus ; the said town line from the said point westerly to the road known as the Sunnidale road ; the said line between the 12th and 13th concessions ; the said line between the 12th and 13th concessions easterly from the said Sunnidale road to the town line between the Townships of Nottawasaga and Sunnidale ; the said town line between the Townships of Sunnidale and Nottawasaga, from the sideroad between lots 24 and 25 to the sideroad between lots 33 and 34 of Nottawasaga, and the road known as the Lake Shore Road to Pretty River Bridge, in the Town of Collingwood, from the town line between Sunnidale and Nottawasaga.

Road No. 5.—Commencing at the Sunnidale road, between lots 21 and 22, the established road leading westerly, known as the New Lowell and Creemore road, to the town line between Sunnidale and Nottawasaga ; the town line northerly between said townships to the sideroad between lots 9 and 10 in the Townships of Nottawasaga, the said sideroad between lots 9 and 10 from the said town line to the deviation or established river road leading to the Village of Dunedin ; the said deviation, established or river road to the said Village of Dunedin ; Hurontario street, from the said Village of Dunedin to Sixth street, in the Town of Collingwood, and the sideroad between lots 33 and 34, from Hurontario street to the western boundary of the Township of Nottawasaga ; the sideroad between lots 24 and 25, in the Township of Nottawasaga, from Hurontario street easterly to the Town of Stayner, and from the easterly boundary of the Town of Stayner to the eastern boundary of the said Township.

Road No. 6.—The road known as the Mill road or the concession line between the 4th and 5th concessions of the Township of Vespra and the deviation thereof from the Town of Barrie to the northerly town line of the said township ; the town line between Townships of Flos and Vespra, from said last mentioned road westerly to the sideroad between lots 5 and 6 in the 1st concession of the Township of Flos ; the sideroad between lots 5 and 6 in the several concessions of the said Township of Flos ; and sideroad between lots 13 and 14 in concessions from 1 to 10, both inclusive, in the Township of Tiny ; concession line between the 10th and 11th concessions of the said Township of Tiny, from the said sideroad easterly to the deviation road leading to the Town of Penetanguishene ; the said deviation road from said last mentioned point to the said Town of Penetanguishene ; the established road from the Town of Penetanguishene to the concession line between the 15th and 16th concessions of the Township of Tiny, and the said concession line westerly to the Village of Lafontaine, known as the Penetanguishene and Lafontaine road, and the road known as the Minesing road from the concession line between the 4th and 5th concessions of the Township of Flos from the Village of Fergusvale westerly to the town line of the said township, and the concessions line between

the 12th and 13th concessions of the Township of Sunnidale from the western boundary of the Township of Flos to the Sunnidale road ; the concessions line between the 5th and 9th concessions of the Township of Flos from the sideroad between lots 5 and 6 westerly through the Village of Elmvale to the western boundary of the township.  
Smth, Winona.

Road No. 7.—Ross street, in the Town of Barrie, easterly to Davis street; Davis street from Ross street northerly to Steel street ; Steel street easterly from Davis street to the Penetanguishene road ; the said Penetanguishene road northerly to lot 51 ; the deviation of the said Penetanguishene road from lots 51 to lot 59; the said Penetanguishene road to lot 60 ; the deviation of said road from lots 60 to lot 69, and the said Penetanguishene road from lot 69 to the town line between the Townships of Tay and Medonte ; the town line between the Townships of Tay and Medonte easterly to the concession line between the 10th and 11th concessions of the Township of Medonte ; the deviation road from said last mentioned point to the Coldwater road, in the Village of Coldwater ; thence Coldwater road northerly to the town line between Tay and Medonte; the town line between Tay and Medonte easterly from the said last mentioned road to the town line between the Townships of Matchedash and Tay ; the said last mentioned town line northerly to the sideroad between lots 6 and 7 ; the said sideroad between lots 6 and 7, in the 1st and 2nd concessions in the Township of Matchedash.

Road No. 8.—The sideroad between lots letter "E" and number 11 and in the 1st concession and between lots "A" and 11 in the 2nd concession, and between lots 29 and 21 in the 3rd to the 11th concessions, both inclusive, all in the Township of Oro ; the concession line between the 11th and 12th concessions of the said Township of Oro, from the sideroad between lots 20 and 21, northerly to the sideroad between lots 15 and 16 ; the sideroad between lots 15 and 16, in the 12th, 13th and 14th concessions of the Township of Oro ; the sideroad between lots 15 and 16 in the 1st concession of the Township of South Orillia, easterly from the town line to the deviation or established road, across lots 14 and 15, in the said 1st concession ; the said deviation road across lots 14 and 15 to the concession line between the 1st and 2nd concessions of the said Township of South Orillia ; the said concession line between the said 1st and 2nd concessions northerly from the said deviation road to the deviation road leading easterly from the said concession line established across lots number 11 and 12, in the 2nd and 3rd concessions of the said township ; the said deviation or established road across lots 11 and 12, in the 2nd and 3rd concessions, to the concession line between concessions 2 and 4 of the said township; the aid concession line between concessions 3 and 4 from the last named deviation road northerly to the sideroad between lots number 9 and 10, in the 4th concessions of the said township ; the said sideroad easterly from the last mentioned concession line to the deviation road leading to the Town of Orillia ; the said deviation road from the said sideroad to Andrew street, in the Town of Orillia.

Road No. 9.—The road known as the Coldwater road, from West street, in the Town of Orillia, westerly and northerly through the Townships of Orillia and Medonte, to the Village of Coldwater ; the established road from the town line between the Townships of Tay and Medonte northerly to the Village of Fesserton, and thence from the Village of Fesserton, through the Villages of Waubaushene, Sturgeon Bay, Victoria Harbor, Old Fort, and thence to the Town of Midland ; the Muskoka road, from Newwash street, in the Town of Orillia, through the Township of Orillia, to the Severn Bridge.

Road No. 10.—The sideroad between lots 25 and 26 in the 1st and 2nd concessions, and between lots 10 and 11, in the 3rd to the 14th concessions, both inclusive, of the Township of Oro ; the town line between the Townships of Oro and South Orillia northerly from said sideroad between lots 25 and 26 to the road between lots 9 and 10, in the 1st concession of the Township of South Orillia ; the said road between lots 9 and 10 in the 1st, 2nd and 3rd concessions of the Township of South Orillia.



Resolution and Notice.

The following is a copy of a resolution and notice accompanying the foregoing By-law, as transmitted to each Municipal Council :

Moved by Mr. Bruce, seconded by Mr. Jupp ;

Ordered : That the County Clerk be instructed to send by registered parcel post, together with the copy of the By-law to designate Highways, required to be transmitted to the clerks of the townships of the county under the Act for the Improvement of Public Highways, a map or plan of the county, showing the designated highways, which he is hereby authorized to procure and prepare, and a notice in the words or to the effect following :

Dear Sir,—I enclose you herewith a copy of By-law No. 702 of the County of Simcoe, for the consideration of the Municipal Council of your township.

The said Municipal Council is requested to report to me within three months of the receipt of this notice their answer, "Yes" or "No." to each of the following questions :

I. Are you in favor of a County Road System ?

II. Do you approve of the roads within your township, designated by the County Council in the Schedule to By-Law No. 702 ?

If either of the above questions is unanswered within the said time, it will be presumed that the Municipal Council is in favor of an affirmative answer to such question.

Yours truly,

R. T. BANTING.

County Clerk, County of Simcoe.

To.....

Clerk of the Municipality.

ACT FOR THE IMPROVEMENT OF PUBLIC HIGHWAYS.

The complete Act for the Improvement of Public Highways, which received the assent of the Legislature, April 15th, 1901, is as follows :

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows :

1. The sum of \$1,000,000 is hereby set apart to be paid out of the Consolidated Revenue Fund of the Province to aid in the improvement of public highways, subject to the terms and conditions hereinafter set forth. \$1,000,000 appropriated for road improvements.

2. (1) The highways to be improved in any county may, before the 1st day of January, 1904, be designated by by-law of the county council, and a copy of such by-law shall be transmitted forthwith to the clerks of the townships of such county. Townships to report acceptance or rejection of by-law.

(2) The municipal councils of the townships shall within three months of the receipt of such notice from the clerk of the county council, take into consideration the highways so designated in said by-law and shall report their acceptance or rejection of the same to the clerk of the county council. By-law designating highways to be improved.

(3) On the receipt of such reports by the clerk of the county council from the clerks of the township councils in the county, if it should appear that one-third of the township councils are adverse to the highways designated by the county council as county highways, then the roads within such townships as reported adversely which are to form part of the county highway system of such township shall be determined by arbitration as provided in the Municipal Act. Arbitration where one-third of the township are adverse.

(4) Where it appears that more than one-third of the township councils disapprove of the system of highways designated in the by-law submitted by the county council, the county council shall then submit to the ratepayers of the county qualified to vote on money by-laws the question, "Are you in favor of a county road system?" If a majority of the votes cast is in favor of a county road system, the roads to be designated and assumed within any township, the council of which disapproved of the roads designated by the county council, shall be determined by arbitration as provided in the Municipal Act. Rev. Stat. c. 223. Submitting question to ratepayers.

Submitting by-law for improving roads

3. Before the final passing of a by-law by a county council designating and assuming roads as provided in sub-sections (1), (2) and (3) of the preceding section, the county council may submit the same for the approval of a majority of the ratepayers of the county qualified to vote on money by-laws.

When local municipalities may adopt road scheme.

4. In case the by-law or question so submitted fails to receive the assent of a majority of the ratepayers of the whole county so voting or the county council neglects to take action as provided in section 2, then the council of any local municipality in the county may, on or before the first of January, 1904, pass a by-law designating the roads within such local municipality to be improved, but no by-law for the improvement of roads in any municipality shall take effect until such by-law is approved by a majority of the ratepayers of such municipality in the manner provided by the Municipal Act with respect to by-laws for the creation of debts.

Application of grant to purchase of toll roads.

5. Any municipality may apply the whole or part of the moneys to which it may be entitled under this Act towards paying any expenses that may be incurred for the purchase of toll roads within such municipality, or for freeing the same from tolls. Such toll roads as are purchased shall be included in the roads to be designated and assumed or improved in accordance with the provisions of this Act.

Regulation and inspection.

6. Any highway, in order to come under the provisions of this Act as to aid, shall be constructed or repaired according to the regulations of the Public Works Department with respect to highways.

Mileage assumed to be proportioned to assessed area.

7. The road mileage to be designated and assumed in accordance with this Act shall, as nearly as practicable, be in proportion to the assessed area of each township and county, provided always that no township or county shall receive out of the said sum of \$1,000,000 more than the sum to which it is entitled under this Act.

Grant of one-third of cost of improvement.

8. On the completion of any work or road improvement under this Act the council of the municipality under which such work was carried on shall submit to the Public Works Department a statement setting forth the cost of such work, such statement to be certified by a competent engineer, who shall further certify that the regulations of the Public Works Department have been complied with, and on the receipt of said statement by the Provincial Treasurer, certified and approved by the proper officer of the Public Works Department, the municipality shall be entitled to receive out of the moneys hereby set apart for public highways an amount equal to one-third of the cost of the work, but not to exceed the proportion of the appropriation to which such municipality is entitled.

Issuing debentures for expenditure on highways.

9. The municipal council of any township or county taking advantage of this Act may raise by debentures, payable in thirty years, as provided by the Municipal Act, such sums of money as may be necessary to meet any expenditure on highways under this Act, but in no case shall the debentures issued under this Act exceed two per cent. of the equalized assessment of the county.

Statute labor on improved roads to be commuted.

10. The statute labor, for which all lands fronting on roads constructed or repaired under this Act may from year to year be liable, may be commuted and may be applied towards the improvement of the other highways of the municipality as may be determined by the township councils concerned.

Amount of colonization road grant to be deducted.

11. In the case of any township receiving grants from the consolidated revenues of the Province for colonization roads, the amount of such colonization grants shall be deducted from any sum of money to which such township is entitled under this Act.

Grants made before passing of Act to be deducted.

12. Where any township has been in receipt of grants for colonization roads out of the consolidated revenue fund, for the five years previous to the date of this Act, the assessed area of such township shall be deducted from the area of the county in which such township is situated, in determining the sum to which the county is entitled under this Act.

## REGULATIONS WITH RESPECT TO HIGHWAYS.

The regulations referred to in section 6 of the foregoing Act will be the following: All road improvement under the provisions of 1 Edward VII., chapter 32, is to be done by a capable commissioner appointed by the Council.

A plan of the roads to be improved, a report as to their present condition, and approximate amount of travel over them, specifications showing what work of improvement is to be made, together with an estimate of the cost, shall be prepared by the said

commissioner, these to be presented to the Department of Public Works for approval. The improvements must be of a character suited to the requirements of the locality and may consist of: (a) Re-surfacing and substantial repairs on old gravel or stone roads; (b) draining and grading the roads; (c) draining, grading and gravelling the roads; (d) draining, grading and metalling the roads with broken stone. These plans and specifications shall, as far as practicable, provide as follows:

1. The steepness of hills should not exceed a rise of one foot in twelve.
2. The roadway graded for traffic should be in the centre of the road allowance and should have a uniform width of 24 feet between the inside edges of the open ditches. The width of roadway on cuts and fills should not be less than eighteen feet.
3. Side slopes in cuts and fills should be one and one-half feet horizontal to one foot vertical.
4. The crown given the newly finished roadway should be uniform and have a rise of one inch to the foot from the edge of the ditch to the centre of the road.
5. When gravel or broken stone is used it should be placed to a width and depth sufficient to form a serviceable road, having due regard to the character and extent of the traffic.
6. The gravel or broken stone used on the road should preferably be obtained in the vicinity of the road, but must be of good quality.
7. As a rule the gravel or stone should not be of a less width than eight feet, nor of a less depth in the centre than nine inches.
8. Where roads have heretofore had gravel or broken stone placed on them, they should be repaired by cutting off shoulders, shaping with a grader, and adding a sufficient amount of gravel, or broken stone, to fill ruts, depressions, properly crown and make a road sufficiently strong to accommodate the travel.
9. The gravel or broken stone placed on any road should be thoroughly rolled; otherwise the grade should be maintained by careful raking or scraping until compacted by traffic.
10. An open drain should be made at each side of the road, and given a sufficient fall to a free outlet.
11. Durable sluices and culverts should be built where necessary.
12. Tile underdrains should be laid, so as to carry away excessive sub-soil water, lower the water-line, and secure a dry roadbed, wherever a moist, damp, or springy condition of the sub-soil exists.
13. Modern machinery and implements should be used as far as possible to secure the greatest results from the expenditure, and to provide the best work.
14. Where, owing to special local conditions, any departure from the foregoing regulations may be desired, upon application of the council, an examination of the road or roads in question will be made, free of charge, by an engineer of the Public Works Department, for the purpose of deciding upon a suitable plan.

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### THE TOWNSHIP SYSTEM.

That statute labor has done much to improve the country roads cannot be questioned. In the pioneer days of the Province, farms were far apart and there were few settlers to make or use roads. The consequence was that every man knew that the work of cutting out roads had to be done, and all turned out willingly, each one to do his share. They needed the roads to go to market but a few times in the year. The church, school and public meetings were, to many, unheard of luxuries, yet, if necessary, they were prepared to spend a couple of weeks where only a couple of days were required by statute. We are very differently situated. All have now good farms, the one adjoining the other, and the land is cleared and large crops are grown, so that it is necessary for the farmer to go to market, the postoffice or the village store almost every day. Big loads have to be hauled over the roads, and it is of great moment that we should be able to do so easily and without interruption. To do all this, it is absolutely

necessary that the roads should be vastly better than they were forty, thirty, or even twenty, years ago. Unfortunately, there are many roads throughout the townships unsafe for travel, and for weeks at a time, in some districts, the farmers cannot go to town after dark with even a moderate load.

### Has Done Good Work.

There are, no doubt, sections, and even townships, in which the residents will be inclined to argue that statute labor has constructed their roads in a fairly substantial manner, and is keeping them in good condition. The roads in some divisions are as good as anyone would need, and all kept up by statute labor. The men turn out and do a good day's work, and it is difficult, perhaps, for them to see why any exception could be taken to the present system. The difficulty arises from the fact that, while one section is good, and statute labor is efficiently performed, there are other sections in the township where the work is half done, and where the roads in the wet season are in an almost impassable, and even dangerous, condition. It sounds very well to say that one section cannot help what another section is, that if the residents of one division do not take enough interest in their roads and farms to properly perform their statute labor they should be allowed to have bad roads. That would be all very well if the indifferent people were the only sufferers; but, on the other hand, those who keep up their roads suffer almost as much as those who do not. It is almost useless for one section to keep up its roads where, no matter in what direction from it one drives, he is certain at the end of it, to drop off into bog holes and impassable mires.

### Paid to Neglect Roadwork.

From the fact that townships are each year making large money appropriations for repairing roads arises the evil that a premium is placed on neglecting to perform statute labor. Those who fail in their duty in this respect very often do so from the fact that, by appealing to the council, they can be paid for repairing their roads, and doing the work which they should have done by their own statute labor. The money with which the council pays for this work is collected from the entire township, and it follows that those who do their road work faithfully must also pay for the work done in 'his way by men who will not perform their statute labor.

### Benefits of Commutation.

The natural query arises as to how benefits will arise from a system of commutation whereby every taxpayer will have to pay a rate for every day of statute labor for which he is liable. There are many ways whereby waste will be overcome. The time spent by a hundred or so pathmasters attending the clerk's office to qualify for office, the time spent in warning hands out to work will be saved. The time of pathmasters as bosses will be saved. A great many people come to work too late, and stop too early, and that time will be saved. Then there is the waste which comes from doing road work as an annual holiday, the carelessness in properly planning the roadwork, the hauling of sand and loam instead of gravel, working at wrong seasons of the year, too few teams or too few shovelers. In all these, and in many other respects, there will be removed waste whereby, at the present time, the number of days on the statute labor roll really represents scarcely one-third that amount of dollars.

### The Proper System.

Under a proper system of commutation a township is divided into a suitable number of sections, one, two, three or four, as circumstances may dictate. The council appoints a supervisor, or commissioner in charge of each section, and under this supervisor, who is held responsible for all outlay on roads, work has to be performed as systematically and as economically as if each were working on his own farm.

It is sometimes objected to the commutation system that it is almost too just and compels the poor man to pay in money what he can much more easily pay in labor. Any by-law adopted should provide that the commissioner, in employing men and letting contracts, should divide the work as much as possible among those residents of the township who desire employment upon the roads, and who are in a position to do the work satisfactorily, giving preference to those living in the vicinity of the work to be done. In this way the poor man has every opportunity to work on the roads and can, in all probability, earn more in working on the roads than he has paid out as his share of the road tax.

#### **Work Must be Well Done.**

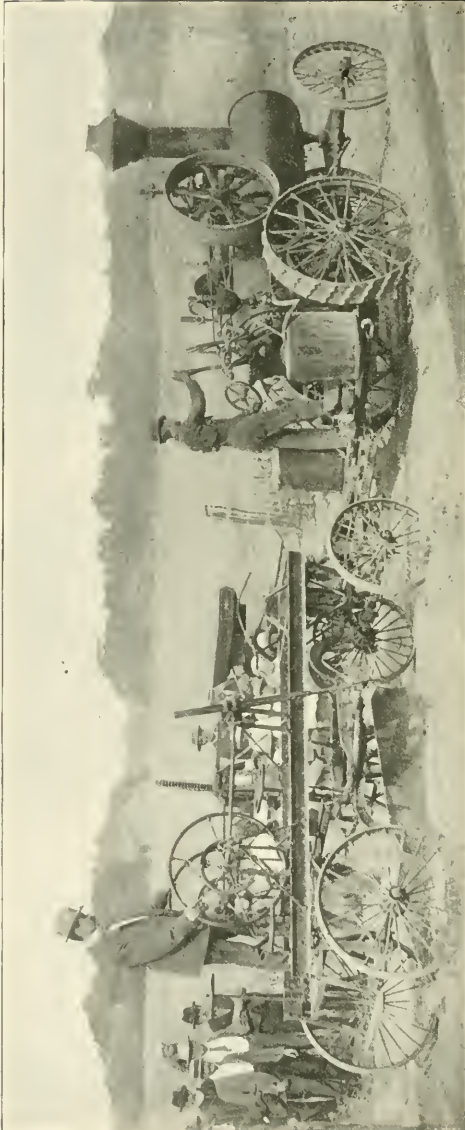
A question further arises that if these men are allowed to work on the roads what better off will the township be under commutation as opposed to statute labor? The answer is that the township will be a great deal better off, because the men will have to do a full day's work of ten hours a day. Instead of enjoying a holiday they will be under a foreman, who will see that they go to work suitably prepared. Instead of sending a boy, as many now do, or instead of going with a waggon not fit to draw half a load, a man will have to go with a waggon that will carry a yard or more of gravel at a trip. Instead of loafing in their time and getting off early to milk the cows or do the chores, as is so often the excuse, they will have to do a full day's work, and it will be the duty of the foreman or overseer to see that a sufficient number of teams are provided and a sufficient number of shovellers, and at the same time to do a full day's work himself.

#### **Improvement is Fairly Distributed.**

It is feared by some, especially those living in the outlying districts, and off the main roads, that the roads in their section will be neglected, and that in attempting to do permanent work and extending it from year to year, as should be aimed at under a proper system, it will be a long time before their farms are reached. That is one of the most mistaken views of the proposed reform that could possibly arise. That is, as a rule, what the case is at the present time, and it will be overcome if a proper system is adopted. A proper by-law will provide that all the taxes from each division will be spent in the division where they are collected, and in that way the money cannot be taken away from one section and spent elsewhere. At the present time one section may keep its roads in good condition by means of statute labor, but, as previously pointed out, there are other sections where the men loaf in their time, and then in the spring and fall, when the roads are bad, go to their township council and get grants of five, ten, twenty and fifty dollars to help them do the work they should have performed at the time of statute labor. Scores of these grants are made by the councils every year, and the sections which do their road work as it ought to be done have to pay their share of them, although they may never ask for or get such grants for their own roads.

#### **Experienced Roadmakers.**

The means whereby a proper system of road management will tend to improve are very many. Townships which have from fifty to one hundred pathmasters find that each makes the roads as he sees fit. No two pathmasters will exactly agree as to how the roads should be constructed, graded or crowned and the result is a patchwork system in all these respects. Few townships have an up-to-date, continuous, macadamized road throughout their entire area. Under one road commissioner for each township or for each division of a township, uniform systems could be followed from year to year. The commissioners themselves becoming, through experience, experts in their work, machinery could be used by them to better advantage; and in ways almost without number, a decided gain would be effected by reforming the system of road management to an extent, and with a spirit in keeping with modern progress.



A GRADER OPERATED BY A TRACTION ENGINE.

## THE TOWNSHIP SYSTEM OUTLINED.

The chief points in the systems of road management in townships where improved methods have been adopted include the following :

Statute labor is commuted at a fixed rate per day, and the amount is collected at the same time as the other taxes, by the township tax collector.

The township, if desired, is divided into a convenient number of road divisions for road purposes, usually two, three or four, and a road commissioner is appointed over each.

The duties of the road commissioner are :

(a) To supervise all work and repairs done on the roads and bridges within his division.

(b) To acquaint himself with the best methods of constructing and maintaining good roads, and of operating graders and other road machinery, used by the township.

(c) To employ, direct and discharge all men and teams required to carry on the work, and to purchase necessary materials.

(d) To see that all washouts, drain and culvert obstructions, bridge failures and other unforeseen defects are repaired or protected, with the least possible delay, so as to prevent further injury to the road, or accident to the users of the road, and to otherwise act promptly in all cases of emergency.

(e) To report to the council early in each year as to the work required the coming season, and to carry out the instructions of the council with regard thereto, and to perform such other services as may be required of him from time to time, under the written instructions of the council.

(f) To collect the poll tax in his road division.

(g) To keep an accurate record of the men employed and the work done, and to furnish this written form to the Reeve at proper intervals in order that the Reeve, upon being satisfied of the correctness of the statement, may issue cheques for payment thereof.

(h) To stake out all works and see that they are undertaken systematically, so that no time will be lost in taking men, teams and machinery from one part of the township to another.

The usual road appropriation is made from the general funds of the township, this to be used for the purchase of tools, machinery and materials, or for small jobs and contracts.

The residents of the township are employed to do the work, provided they come properly equipped, and will do a fair amount of work.

Work is paid for in cash, if desired, but preferably by cheque; payment to be made in accordance with the pay roll submitted by the road commissioner or overseer, accompanied by necessary vouchers and such information as may be considered necessary.

A general plan for road improvement should be laid down by the council for the commissioner to follow.

This plan should specify the width to be graded, width and depth of road metal, character of drainage, etc., of all roads.

Roads of importance should not be less than twenty-four feet between the inside edges of the open ditches. No roads should be of less width than eighteen feet.

All roadmaking machines should be under the care of the road commissioner.

The same man and teams should be hired to operate the machinery for the entire season, as they become proficient and do better work. This applies particularly to the operation of a road grader.

The council appoints foremen in different parts of the township to collect the necessary labor, and act promptly when roads are blocked with snow, the men employed to be paid in cash by the council.

### STATUTE LABOR COMMUTED AND ABOLISHED.

The number of townships turning from the ordinary method of performing statute labor, to systems of commutation, or even the entire abolition of statute labor, is steadily increasing. Returns from clerks of other townships show a gratifying progress, in that the great majority state that a change in the method of township road management is being seriously discussed. The indications are that within a very few years the townships will of their own accord adopt approved methods of supervision, in place of the existing statute labor system. The strong feeling in favor of statute labor which existed at the commencement of the good roads movement has been almost completely overcome. The system proposed in its place is no longer an experiment, but a plan which experience has proven to be one of economy and efficiency.

The following schedule showing the townships in which statute labor is abolished or commuted presents strong evidence of the growth of road reform. It will be observed that in a number of cases commutation is partial, and in some instances the original number of pathmasters have been retained. The unnecessary number of pathmasters is one of the serious defects of the statute labor system, and where they are not reduced to a suitable number of overseers, one, two or even four overseers for a township, the new system cannot be said to have had a fair trial. This schedule does not include the numerous townships in which are unincorporated villages communiting statute labor.

Township.	System.	Year changes was made.	No. of road divisions.	No. of road commissioners or overseers.	Special road or commutation rate.	Remarks.
Fullarton	Statute labor abolished	1901	5	1	$\frac{1}{2}$ mill on \$1 assessment	Councillors act as commissioners. Rate equals 45c per day of statute labor.
Stafford	"	1901	2	4	50c per \$100 assessment	Councillors oversee all work.
North Plantagenet	"	1901-2	4	4		
Malden	"	1892	4	45	1 5-10 mills on \$1 assessment	
Drummond	"	1902	4	4		
Winchester	"					
Blanshard	"	1902	2	2	50c per day	Each commissioner paid \$25 yearly.
Cumberland	Statute labor wholly commuted	1902	4	4	45c	
Westminster	"	1891	5	5	50c	
Glochester	"	1901	55	55	50c	
S. Norwich	"	1903	5	5	75c	
Monck	"	1896	26	26	50c	
Embrook	"	1901	4	2	75c	
Berbie	"	1900	2	2	50c	
Felham	"	1900	21	21	60c	
Pickering	"	1900	4	4	50c	
Ortilla	"	1892	8	8	25c	
Harton	"	1895-6	4	4	75c	
North Monaghan	"	1900			\$1.00	Township divided into four districts and each district into four divisions. All work under township engineer who appoints foremen in each division.
York	"					
Sidney	"	1900	5	1	50c	
Goulbourn	"	1901	4	1	60c	
Bromley	"	1901	5	5	75c	
Darling	"		24	24	\$1.00	
Ratter and Duonett	"		10	10	\$1.00	
Ernestown	"		69	69	75c	
Pelee Island	"	1898	13	4	50c	Divisions placed in four groups, A, B, C, D, with a commissioner for each group.



Saltfleet.....	"	"	1893	3	35c	"				
West Hawkesbury.....	"	"	1902		60c	"				
Ekfrid.....	"	"	1902		75c	"				
St. Joseph.....	"	"	1902	3	75c	"				
Guelph.....	"	"	1902			"				
McIrvine.....	"	"	1896	2	\$1.00	"				
South Dumfries.....	"	"	1901	5	75c	"				
North Grimsby.....	"	"	1892	2	50c	"				
Maccanlay.....	"	"	1901	6	\$1.00	"				
North Dorchester.....	"	"	1900	22	50c	"				
West Nissouri.....	"	"	1901	52	50c per day	"				
Whitby.....	"	"	1900	12	60c	"				
Statute labor wholly commuted										
Rear, Leeds and Lansdowne.....	"	"	1901	5	75c	"				
Tecumseh.....	"	"	1900	6	50c	"				
Caledon.....	"	"	1901	2	65c	"				
Phummer Addl.....	"	"	1901	1	\$1.00	"				
Carlow.....	"	"	1901	5	60c	"				
Westmeath.....	"	"	1902	2	75c	"				
Ancaster.....	"	"	1898	24	50c	"				
East Zorra.....	"	"	1898-1902	1	50c	"				
South Grimsby.....	"	"	1901	3	65c	"				
Alwrick.....	"	"	1902	2	50c	"				
Downie.....	"	"	1901	5	60c	"				
A councillor acts with each commissioner.										
Toronto Gore.....	"	"	1899	2	65c	"				
Clinton.....	"	"	1895	4	50c	"				
West Oxford.....	"	"	1902	2	50c	"				
By-law provides for one or more commissioners.										
Nelson.....	"	"	1900	2	50c	"				
Thorah.....	"	"	1902	2	50c	"				
Otonabee.....	"	"	1900-1		50c	"				
East Oxford.....	"	"	1900		60c	"				
Middleville.....	"	"	1901		75c	"				
Blenheim.....	"	"	1899-1901		50c	"				
Bastard.....	"	"	1898		50c	"				
Burford.....	"	"	1888		50c	"				
Stamford.....	"	"	1896	2	50c	"				
Commissioners superintendent commuted districts only.										
Sarawak.....	"	"	1896	2	60c	"				
Osgoode.....	"	"	1902	3	60c	"				
Tilbury North.....	"	"	1898		50c	"				
Kingston.....	"	"			35c to 50c per day	"				
Sarnia.....	"	"	1891		\$1.00 per day	"				
Prohibcoke.....	"	"			\$1.00	"				
Louth.....	"	"	1895	23	40c to 50c per day	"				
North Crosby.....	"	"	1898-1900		60c per day	"				
Niagara.....	"	"	1901	55	50c	"				
North, Norwich.....	"	"	since 1894	48	50c	"				
East, Whitby.....	"	"	1900		50c	"				
75 divisions n township.										

Councillors act as commissioners

Commissioners act under a member of council.

A councillor acts with each commissioner.

Councillors and reeve act as commissioners for entire district.

By-law provides for one or more commissioners.

Commissioners superintendent commuted districts only.

Four wards in township.

Five "

75 divisions n township.

## RESULTS OF THE NEW SYSTEM.

Township clerks, commenting on the results of the abolition and commutation of statute labor in townships where approved methods have been adopted, say:

**MALDEN**—In reply to your questions in detail, I beg to inform you that when statute labor was abolished our council adopted the only plan left for them, that is to raise all the money required by general township rate, and the increase in taxes is scarcely perceptible. But we find that one dollar expended by the council is equal to five days statute labor. We expend about \$2,000 a year on the improvement of our roads and bridges. Every ratepayer wanting work done to give him an outlet for surplus water from his farm puts himself in touch with the council. They have to study the wants of every ratepayer, as well as the needs of the roads and bridges, and by having control of \$2,000 or more, they are enabled to dig ditches to their proper outlet. No one is allowed to suffer by having water thrown in front of his place and left there until the next road master is appointed to carry it off. Roads are gravelled by the mile, all work is done in the early part of the year, and not when farmers have leisure time. All work is sold and received by the council. We have four road machines, and scrape every rod of road in the township each spring. We employ men to cut all noxious weeds found growing on the roads, and prohibit all stock from running at large. We believe that we are progressing in the right direction, and if you can suggest any improvement in our system of doing road work we should be most happy to hear from you.

**STAFFORD**—The township not being large it is not divided; we have one road commissioner. Road money is raised by special rate, and is equal to about 45c per day of statute labor. No change is contemplated except to divide the township into two divisions, but I think even this will not be done. We have a road commissioner who goes over the roads and lays out the work and gets the ploughing done; then the grader follows with four teams of horses; the man who operates the grader has full charge of the work and is also the time keeper. The leading men of the township would not go back to statute labor under any conditions. We have as yet had only a year's experience, but did more work than was ever done in two years before.

**FULLARTON**—The result has been quite satisfactory; more gravel has been put on and, what is better, the gravel has been put on where it is most needed.

**YORK**—The township is divided into four districts; all money is expended under the supervision of the township engineers, who appoint foremen over divisions in each district. There are some four divisions in each district.

**GOULBOURN**—We have found the new system gives good results and general satisfaction.

**SIDNEY**—There are five divisions and one overseer, who went over the roads of each division in company with a councillor of that locality, and divided the roads into minor divisions and made an estimate of the amount necessary to be expended on each minor division. The overseer then proceeded to engage competent men to superintend the work of each minor division. The collector tells me that in collecting the rate it is working all right and the general expression of the township is that they have no idea of going back to the old system, and pathmasters and road lists are a thing of the past.

**BERTIE**—Our by-law is quite similar to the Pelham by-law, and our experience at the end of the year was also similar to the experience of Pelham, viz., all the strenuous opposition, the condemnation, the fault-finding, the open threats to turn the council out and go back to the old, with a council elected for that purpose. When nomination day came there was no one to champion the cause of retrogression, and the election resulted in the re-election of all the members of the council of 1901, who in January, 1901, commuted statute labor in the face of a recent adverse plebiscite.

With the commuted statute labor funds more work and better work was done; the commissioners' salaries were paid, a road roller was purchased, and there remains to the credit of the said fund a matter of \$500, with which to begin work for this

year, by getting out the material and placing it at the disposal of the commissioners.

ORILLIA—A good deal of discussion took place on nomination day and while defects were pointed out, there was no one who suggested a return to the statute labor system as previously in vogue here. It is generally conceded that much better and more permanent roads have been built in the past two years than in five years previously, but certain back roads have been somewhat neglected, and an endeavor will be made to remedy this this season.

BINBROOK—Twenty-six overseers were appointed. This was done principally on account of keeping the roads open in winter, but I am satisfied that it is a mistake to have so many.

TILBURY NORTH—We do away with statute labor entirely this year, I think.

MONCK—Everyone appears to be well satisfied with the change from the old system, so much so that the whole council was re-elected by acclamation, and all officers reappointed. Our statute labor was reduced from \$1.00 per day to 75c; our township rate is 1-2 mill less on the dollar than last year, and the surplus greater than ever.

SOUTH NORWICH—The overseers are appointed as usual, the money paid in a lump sum to them and they let jobs, giving the ratepayers in their respective divisions a chance to put in their time at a contract price by the day or by the cord, if drawing gravel. The change seems to be now meeting with general favor; the people believe it to be ahead of the old system of worrying in their time to the detriment of the highways. We will let it run along a year or so, and then I think some improvement will be made. The council advances the money, pay the parties for their work and collect taxes in full. We spent \$1,500 last year, and you can see a decided change. We get what we pay for, namely, a 1-4 cord of gravel instead of 1-8th.

CLINTON—There are a few parties in the township against commutation. They have brought out a man for two years past who was in favor of commuting half of the time, and he was defeated by a large majority both times.

DOWNIE—Last year being the first trial at commutation, I do not think it was managed as perfectly or to as good an advantage as it can be in the future. Experience always teaches. Labor was also higher than in former years, yet I think that if faithful work is performed under the old system of statute labor, that it cannot be excelled by commutation at 60c per day.

ANCASTER—One or two of the council are in favor of having only two salaried overseers; the majority are in favor of present number.

NORTH GRIMSBY—The commutation system is quite satisfactory.

MACAULAY—The municipality of Macaulay has just had the past summer under road commissioners, and we find it worked to the satisfaction of a large majority of the ratepayers. A vote was taken at the nomination meeting, in December, whether we would continue under the new system or go back to the old statute labor. The result of the polls was 40 for the new system and 3 for statute labor, so I think that statute labor is a thing of the past in Macaulay, and there was a saving of a little over \$200 compared with the expenditure of past years.

WHITBY—There are twelve road divisions, a commissioner for each division to make emergency repairs and act in conjunction with one member of council in expending commutation tax in division. Some considerable opposition was expressed at first, but is gradually wearing off. All of our present council have pronounced in favor of the system; some of them at first opposed. The majority of the ratepayers approve. The saving of money is apparent.

TECUMSETH—The system is giving general satisfaction.

BROMLEY—We intend giving the change a fair trial. At a council meeting on Monday the council made five divisions, instead of three as last year; the original divisions being too large for a commissioner to handle properly.

OTONABEE—The rate is 50c per day when a whole road division is commuted, otherwise it is 75c per day; to encourage other road divisions to commute, so as to get the whole township under it.

EAST OXFORD—A vote will probably be taken at the next municipal election on the commutation of all statute labor.

LANARK—The area commuting is the centre of the township, about four square miles, in which were 246 days of statute labor. Commuted at 75c per day this was equal to \$184.50. No change is contemplated until the end of three years, the term for which the above change was made for an experiment.

BLLENHEIM—Some more divisions talk of petitioning council to pass by-laws to commute their statute labor.

BASTARD—All statute labor will be commuted in a very few years.

BURFORD—Eleven divisions at present commute. Commutation is giving satisfaction in the divisions where it has been tried. Council are thinking of submitting the question to the people at the next election.

STAMFORD—The Reeve and most of the council are in favor of commutation, but are unwilling to do so without petitions; I enclose by-law. We have now in our township sixty-one road divisions, of which twenty-six are commuted and 35 uncommuted; pathmasters are appointed for the uncommuted roads. Two road overseers work or superintend the other two commuted districts.

NORTH NORWICH—Forty-four divisions out of forty-eight commuted statute labor; our by-law is optional with the divisions, and it has been gradually adopted since 1894. There are forty-eight divisions and an overseer for each division; our council are thinking of abolishing overseers and appointing two commissioners for the township to devote all their time on the work.

SARAWAK—The change was made in 1896, and works first class; would not go back to the old system on any account. There are twenty divisions in the two wards performing statute labor, twenty overseers and two road commissioners, working 606 days work; and two commissioners only for the two wards commuting statute labor. The commutation rate is 60 per day. One other ward will be under commutation this year. This ward voted 60 for and 20 against commutation; the fourth ward voted 6 for and 49 against. I think by 1903 the whole obsolete statute labor will be left behind.

KINGSTON—There are 75 road divisions, of these 23 are commuted. The change has been going on for 30 or 40 years. A change has been discussed for several years past, and has its promoters and opponents. I think a change is desirable.

SARNIA—There has been considerable discussion regarding a complete change to commutation, but no action has been taken so far.

NORTH OXFORD—Commutation of statute labor is optional; that is to say, if the majority in any road division wishes, by making application to the council they can commute at 60c per day for each day's work, if not they can pay the pathmaster 65c for each day's work, and if not paid at the time and put on the roll it is charged 75c per day as per by-law. The new by-law was passed January 13th, 1902.

ETOBICOKE—The village labor has been commuted for some years; other divisions are being added year by year as circumstances permit. A commutation by-law was submitted to the ratepayers in January, 1901, but was defeated by a small majority. A by-law commuting statute labor is now being discussed by the council.

## COMMUTATION BY-LAW.

The by-law commuting statute labor in Pelham has been exceedingly successful in that Township, and has been largely used as a model in framing the by-laws of other municipalities. Although published in the last annual report of this Department, the growth of public feeling in favor of the commutation system has created so many requests for additional copies of this by-law that it has appeared desirable to again include it in this report. Accompanying it is a communication from Mr. J. C. Crow, Clerk of Pelham, which emphasizes a number of important details, and discusses in a most interesting and instructive manner the new system of road management as developed by the experience of Pelham.

### Preamble.

Whereas the highways of this municipality have been maintained by statute labor performed thereon, supplemented by sufficient grants from the township levies to meet all the expenditure connected therewith;

And whereas for several years an agitation has been gaining strength to have the statute labor commuted or paid in money, instead of worked out as heretofore by the ratepayers under the direction of pathmasters chosen for each road or locality;

And whereas the ratepayers of the township, at a public meeting recently called by this council to discuss with the Good Roads Commissioner of the Province the advantages of the commutation system, did express themselves as desiring its adoption, and the council believes that better results would be possible if the change asked for were inaugurated, and the commutation moneys thus available judiciously expended where most needed by one or two competent overseers to be placed in charge of all the public highways of the municipality;

Be it therefore enacted by the Municipal Council of the Township of Pelham, and it is hereby enacted as follows:

### All Labor to be Commuted.

1. Upon, from and after the passing of this by-law all statute labor to which any person (resident or non-resident) may be liable in this municipality shall be commuted at the fixed rate of fifty cents (50 cents) for each day's labor; and the amount of each person's commutation tax shall be added in a separate column opposite such person's name in the collector's roll, and shall be collected and accounted for like other taxes, and shall be kept by the Treasurer in a separate account, to be known as "The Commuted Statute Labor Account."

### Two Road Divisions Only.

2. The sub-division of the public highways of the township into ninety-eight statute labor districts, as at present, is hereby abolished, and in lieu thereof the township shall be divided for road purposes into two districts or divisions only (to be as nearly equal as may be), to be known as North Division and South Division; North Division to comprise and include Concessions One to Seven, inclusive, and South Division the remaining Concessions, eight to fourteen, inclusive. The west half of the Concession Line Road, which separates these two divisions, shall belong to the South Division, and the east half to the North Division.

### Two Road Commissioners Only.

3. Over each of these two road divisions there shall be appointed a single overseer, to be styled for the purposes of this by-law a "Road Commissioner," who shall hold office continuously during the pleasure of the council and who shall have the exclusive control and management of the maintenance, repair and improvement of all the public roads, streets, bridges and highways in his division, including the Township Boundary Line Roads bordering on the same, in so far as the commutation and other moneys belonging or appropriated to his division will enable him to do, subject always to such written instructions as he may from time to time receive from the Road and Bridge Committee of his division.

### General Duties of Road Commissioners.

4. It shall be the duty of each of the Two Road Commissioners who may be appointed to carry out the provisions of this by-law: (1) To acquaint himself with the best and most modern methods of constructing and maintaining good roads, and of advantageously operating the tools and implements with which he may be supplied for that purpose;

(2) To employ, direct and discharge all men and teams he may require to carry on his work;

(3) To begin the annual labor as early in the spring of each year as the condition of the roads will permit, and work continuously till the appropriation to his division for the year is exhausted;

(4) To plane or scrape any of the roads in his division whenever in his judgment they may require it;

(5) To keep the bridges, sluices and ditches in his jurisdiction open and in repair, and the highways free from obstructions at all times;

(6) To properly protect by railing, or otherwise, all pits, precipices, deep waters, and other places dangerous to travel;

(7) To see that the provisions of the Act to prevent the spreading of thistles and noxious weeds upon highways and road allowances are carried out;

(8) To cause the roads within his division that are used by the public in winter to be made and kept open during the season of sleighing in each year;

(9) To crown or round the roadways in the centre so as to shed the water to the side ditches, the crown on level roads not be exceed one inch of raise to each foot of width from side to centre; and

(10) To perform such other services as may be required of him from time to time under the written instructions of the Road and Bridge Committee of his division.

### Commuted Labor to be Supplemented from General Funds as Heretofore.

5. All expenditure for road materials, tools or machinery, or for jobs or contracts similar to what have hitherto been met out of the general funds of the municipality shall continue to be met from the same source, to be still known as the Road and Bridge Account, leaving the commuted statute labor moneys of each year to be applied in that year exclusively toward the maintenance and repair of the highways of the township in place of the statute labor, which has heretofore been used for that purpose. The total commutation moneys received shall be annually apportioned between and expended in the two road divisions established by this by-law, upon the basis of the assessed value of the property in each division, as ascertained from the assessment roll of that year, and the Treasurer shall charge each payment made by him to the fund and division to which same belongs, as defined by this section.

### Paying for Work Done.

6. Each commissioner shall keep an accurate record of the men employed and the work done by him under this by-law, and he shall furnish to the Reeve in such written form and at such intervals as his instructions may require, properly itemized statements made up from these records and duly certified by him, accompanied by any vouchers pertaining thereto. The Reeve, having been satisfied of the correctness of such statements, may issue his cheques upon the proper fund, from which payment should be made, as per Section 5 above.

### Roadways.

7. In order to remedy the inequalities that at present exist throughout the township in the width of those portions of its highways which are intended respectively for the use of vehicles and of persons travelling on foot, it is hereby further enacted that hereafter the Road Commissioners in reconstructing or re-grading any highway shall aim at a uniform standard width of track or roadway for vehicles of not less than twenty nor more than twenty-eight feet (according to the importance of the road) in the centre of each highway between the inside edges of the side ditches, unless the confines or formation of the road is such as to justify a deviation from this rule.

### Gutters.

8. Ditches or gutters shall be constructed to drain every highway immediately adjacent to and parallel with the travelled roadway, and separating same from the foot-

paths set apart by the next section. Every side ditch shall be of such width and depth as its capacity may require, and shall have an outlet to which the water will flow freely and not be held to soak into and soften the foundation of the travelled roadway. The inside edges of all ditches shall be lined true and straight, and the sides evenly sloped. Shoulders must not be allowed to form next to the roadway.

### Footpaths.

9. All those portions of every highway outside of the side ditches of both sides thereof (whether the ditches, as at present constructed or as they will be when made in accordance with this by-law), shall be, and the same are hereby set apart as footpaths or walks for the convenience or use of persons travelling on foot; and it shall not be lawful for any person to travel thereon on horseback or in wheeled vehicles, drawn by beast of burden or propelled by steam or electricity, under a penalty of not less than one dollar, nor more than five dollars, and costs, to be recovered before any Justice of the Peace in the county.

### Remuneration of Commissioners and Others.

10. A day's work for all persons engaged by the commissioners under this by-law shall consist of ten hours faithful service, exclusive of the time spent going to and coming from work, but payment in all cases except upon job or contract work shall be by the hour. The remuneration to each of the two commissioners shall be fifteen cents for every hour necessarily devoted by him to his duties hereunder, and to the operators of the grading machines twelve and a half cents per hour; all others in the employ of the commissioners shall be paid such price per hour as may be agreed upon with the commissioner. The commissioners shall include a memo. of their own and their employees' time in the statements to be furnished to the Reeve under section six above.

## COMMUTATION IN PELHAM TOWNSHIP.

Clerk's Office, Township of Pelham, Ridgeville, Feb. 13th, 1902.

A. W. Campbell, Esq., Commissioner of Highways for Ontario:

Dear Sir,—Your recent letter reminding me that our township has now had two years' experience with the Commuted Statute Labor System and asking me to point out the advantages and weaknesses of the new system, and how we propose to remedy the latter, was duly received and I now find time to reply. In my letter to you of similar purport about a year ago I measured the success of our first year with commutation by the attitude of the ratepayers as manifested at the annual election proceedings. I think this is a fair index of the pulse of the people, and am glad to say that, measured by the same test, commutation has gained strength, as at our recent annual town meeting no candidate nor even any ratepayer raised his voice against the new system. It is true there was some good-natured criticism of the methods pursued by the members of council and the two road commissioners, but some of it I thought was quite deserved, for manifestly it is absurd to gravel roads in the autumn right in the midst of the fall rains, or to use pipe for a sluice three times too large or too small; or to grade up a piece of road with loose unpackable sand six inches deep preparatory to gravelling it, and then fail to put on the gravel, etc., etc. The criticisms will bear fruit I am confident, as the officials will no doubt give due consideration to what they heard.

THE FEASIBILITY OF OUR BY-LAW. I spoke a year ago of how, in drafting our by-law, we made it quite general in its application, reserving matters of detail for the instructions which we proposed to issue annually to the commissioners. One reason for this course, as I then intimated, was because of our inexperience with the commutation system, and also because we were not able from any source to obtain a by-law to model after, which anywhere near came up to our ideas of what such a by-law

should be. I am pleased now to be able to say that we have only found it necessary to change the by-law in one particular—its last clause, which fixed the remuneration of the commissioners. Both these officers worked throughout the first year at the price named in the by-law, 15 cents per hour, but at the close of 1900 both resigned. One was a merchant with his time fully occupied, and the other thought it would pay him better to attend to his farm than to work for the township (with his horse and conveyance, which he required most of the time) at 15 cents per hour. The council, however, wanted his services and he was prevailed upon to continue by increasing his wage to 17 1-2 cents per hour. In the other division a new man had to be chosen, and he was got at 15 cents. He has shown himself to be efficient, and I have no doubt that this year his remuneration will be placed on a level with that of his colleague. The knowledge of road building each has acquired is worth a good deal. One year's experience in charge of half a township is worth a dozen as a mere pathmaster over a mile or two of road, the annual labor for which, under the old system, was put in in two or three days. Where we erred was in naming the remuneration of the commissioners in the by-law at all. We each year, at our first council meeting, pass a by-law fixing the salaries of all the officers for the year, and it would be quite the proper thing in that by-law to determine the fees of the road commissioners, which could thus each year be adjusted to our requirements.

One or two other minor changes I would suggest in the by-law. The last word in the first line of sub. sec. 8 of sec. 4 "used" might better be "required," so that the commissioner might use some discretion as to what roads he would open in times of snow blockades. It is unreasonable to expect every road, no matter how little used, to be shovelled out after every storm. I interpret sec. 561 (8 and 9) of the Municipal Act to bear out this view. Again, the provisions of sec. 6 for paying for work done are rather inadequate and hardly safeguard the pockets of the ratepayers in directing the Reeve to issue his cheques upon the presentation to him by the commissioner of a correct pay sheet. The Reeve can have no actual knowledge of the character or honesty of the work shown in any pay sheet which comes from a division quite distant from where he lives. It is likely that a remedy for this, this year, will be to require the Road and Bridge Committee of each division, the members of which should all the time have an eye upon the work being done by the commissioner, to examine and approve every pay sheet before it goes to the Reeve for payment. It seems to me that the R. & B. Committee might very profitably meet at the close of each month or half month (during the road work season) for the double purpose of passing upon the work done and approving the pay sheets for the expired month or half month, and to advise and consult with the commissioner as to the work for the next month.

I think the commissioners and many of our people are coming round to the belief that both the minimum and the maximum widths for vehicles fixed by section 7 of the by-law (20 feet to 28 feet) are too great. We have no highway which requires a roadway of more than 24 feet, and we have some so little used that 16 feet would be quite sufficient. Were these widths reduced there would be some saving in the first cost of grading, as well as in the annual after cost of planeing them each spring.

**THE INSTRUCTIONS TO THE COMMISSIONERS.** You gave publicity in your last annual report to both our by-law and the instructions issued thereunder to the commissioners for the year 1900. About the only change made in these instructions when the council revised them for 1901 was to further restrict the power given the commissioner by instruction number 1, so that instead of his being at liberty himself to let jobs or contracts up to \$10.00, his limit was fixed at \$5.00. This, I think, was the very opposite of what should have been done. With the experience they had gained their latitude should have been enlarged rather than diminished. Instruction No. 5 as to the appointment of foremen for snow purposes is faulty. When these big snowstorms came on which we are now experiencing, they caught the commissioners unprepared for them in that they had not yet appointed their foremen. I have had almost daily inquiries coming to my office for the past three weeks as to who the overseer or foreman is for this and that locality. The regulation should be amend-



ed so as to require the commissioners to appoint these overseers before January 1st of each year and to report their names to council at its last meeting in December or first meeting in January, or perhaps to have them announced at the annual town meeting at the close of the year or posted up in the clerk's office (as I have them now).

So much as to the practicability of our by-law and regulations. But when you ask how well we have carried them out I cannot be so enthusiastic, because I feel that in some important respects we have not lived up to our opportunity, or to the ideal we aimed at in our by-law. The most serious failure, I think, is the divided authority and jurisdiction which I referred to a year ago—part of the work being done by the Road Commissioners and part by the members of council. It was to cure this very evil that the change to commutation was made. Our by-law in its preamble states it to be the belief of the council "that better results would be possible if the change asked for (commutation) were inaugurated and the commutation moneys thus available judiciously expended where most needed by one or two competent overseers to be placed in charge of all the public highways of the municipality."

This idea of getting rid of the 98 pathmasters and road divisions and placing the highways in charge of a couple of competent men is further emphasized in section 3, which enacts that each commissioner "shall hold office continuously during the pleasure of the Council, and shall have the exclusive control and management of the maintenance, repair and improvement of all the highways in his division in so far as the commutation and other moneys belonging or appropriated to his division will enable him to do." The council must have been sincere in these enactments for in the instructions which they almost immediately afterwards issued to the commissioners they said :

"The council trusts that you fully realize your responsibility in assuming the charge of the seventy-five miles or thereabouts of public roads in your division. . . It will be your duty neither to neglect any road nor to give any more than its due share of attention. A good deal will depend upon your judgment in these particulars."

In keeping with this idea so often repeated we prepared and placed in the hands of each commissioner pay sheets containing double columns, one for the expenditure chargeable to road and bridge account (ordinary taxes) and the other the commuted labor outgo. You will remember that our by-law aims at having the commuted labor do just what the road work formerly did, all expenditure for plank, gravel, tools and contracts to be met out of general taxes as before. As the pay sheets were filed with me month by month during 1900 I could not but notice how little of road and bridge expenditure they contained. This meant either that the roads were being maintained solely with the commutation moneys, or else that the provisions of our by-law, which cost us so much time and deliberation, were being disregarded at the very outset, and that the jurisdiction of the commissioners was more on paper than real. The accounts which came before council and were paid at each succeeding session as of old, soon made it apparent that the commissioners had far from exclusive control. Some of these accounts bore the O.K. of the commissioners, thus making them quite eligible for insertion in the pay sheets as contemplated by the by-law ; but most of them were quite outside the knowledge of the commissioner, having been vouched for by members of council who thus indicated their intention of continuing to exercise more or less authority upon the roads which, by their by-law, they had handed over to the commissioners.

I very much regretted this failure to live up to the by-law which I felt might as easily be ridden through in any other particular, because this divided authority much lessened the value and usefulness of the commissioners who, to my mind, should be in full control (subject always to the direction and instruction of council), and who should be held responsible by the council and people for everything done or neglected on our highways. The council should direct, the commissioners perform. In evidence of what I have been saying you will be surprised to learn that while the expenditure on roads in 1900 out of ordinary taxes was \$962.88, only about one-sixth of it was reported to council through the commissioners' pay sheets, \$153.40 in one di-

vision and but \$14.51 in the other. The other five-sixths came before council in the form of accounts from the various claimants as I have indicated. It almost seems as if the council places a different value upon commutation moneys to that given to money coming from ordinary taxes. The commissioners had free hand as to expending the former, but not so with the other. Each touches the ratepayer's pocket alike, and one should be as carefully husbanded as the other.

In 1901 the amount appearing in the road and bridge column of the pay sheets was still less, \$140.06; but it doesn't look so bad, as the total road and bridge expenditure for the year was only \$576.18. I think you will agree with me that almost every conceivable kind of road expenditure, except perhaps such as the purchase of a car of sewer pipe, etc., should have the sanction of the road commissioner, whose constant devotion to his duties should make him an expert in all these matters. In brief, everything possible should come to the council through the pay sheet. Even large bridges built by contract—we have no expensive ones—could very fittingly be entered there, as the commissioner, because of his experience, should always be one of the committee under whose supervision they are built. I am confident, too, that this change would be followed by a reduction of the number of council meetings and a shortening of the length of each sitting, as the time of council meetings in the past has been largely occupied with the consideration of road and bridge accounts, and making out Reeve's cheques to pay them. The new system may be credited with the saving of one council meeting already this year. For the first time in many years we are having no February meeting, at which it was our practice to appoint our army of pathmasters. Another all day sitting in May to apportion the statute labor will also be saved.

Last year I was able to say that the outlay for councillors' committee time—almost wholly at road work—was slightly less in 1900 (\$73.50) than in the previous year under the old system. In 1901 it was again slightly reduced, being \$65.25. This item would be cut in half were the councillors to hand over the control of the roads to the commissioners, without making a corresponding increase in the pay to commissioners.

A trial was given in one division last year to a traction engine to draw the road grader. I do not think, however, that it was considered superior to horses, though as they only had a home-made triangle for purposes of side draft, perhaps they were not properly equipped. Two or three ratepayers have suggested that money might be saved if the planing of the roads each spring were done by contract, at so much per mile or trip, instead of by the hour. This is worthy of a trial.

I am sorry that I could not have answered your inquiry in much less space, but some people cannot be brief. Yours, in the reform.

J. C. CROW, Clerk Township of Pelham.

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## TOWNSHIP REPORTS.

That the present feeling throughout the Province with regard to road reform is in strong contrast with that which existed at the commencement of the good roads movement is evidenced by the many reports from township clerks favorable to the abolition of statute labor, and indicating that a change will take place in the near future. Among these reports are the following:

ELIZABETHTOWN—A change is being discussed and will probably take place in the near future.

SOUTHWOLD—I believe that the time is near when the present system of statute labor will be abandoned; there is a strong feeling in favor of doing away with the present manner of road making.

HARWICH—Commutation has been mooted, but has not been seriously considered, and yet I believe there are many decidedly in favor of the change.

JOHNSON—Council are in favor of commuting all statute labor, but think the question should be submitted to the ratepayers. By an oversight this was not done last January, and will probably not be done till January 1903. Any information your Department can give will be gladly received. The municipality owns a road grader.

ST. VINCENT—No portion of statute labor has been commuted as yet, though there is an agitation in some localities for commutation. The council propose taking a plebiscite (informal vote) in the matter at the next annual elections. The more progressive farmers desire a better and more thorough system of roadmaking than statute labor.

OXFORD—Some are for abolishing statute labor, others do not want any change. I do not know which is in the majority. I have personally advocated an assessment of 50c for each statute labor day. Most of the divisions would gain by it.

PUSLINCH—A by-law has been prepared dividing the township into four divisions as nearly equal as may be, commuting the labor at fifty cents per diem. Work to be performed under four road commissioners who hold office during the pleasure of Council. Wages, fifteen cents per hour. For hired labor, twelve and a half cents per hour; day's work of ten hours, clear of going to and returning from work. The said by-law was presented to the council at their last meeting, was informally read and approved, by all the councillors. Three of the councillors expressed a desire to introduce and pass the by-law there and then, two councillors objected on account of the extra expenditure for smallpox, and the by-law was postponed until fall.

ONEIDA—I am satisfied that a great mistake is being perpetuated in not commuting the statute labor; I know that a good deal of work is not performed, and what is done is very unsatisfactory.

WEST WAWANOSH—A change is being discussed; we are having a public meeting on June 3rd.

NORTH GOWER—A change is discussed, but no action is expected to be taken until it is ascertained what action the county council will pursue in regard to the appropriation made by the Government.

WATT—A change is being discussed; I am doubtful of it being put in force this year.

YARMOUTH—Statute labor division No. 15, being the unincorporated Village of Sparta, commuted statute labor. Applications will be made in March to have divisions 108 and 33 commuted; division 33 comprises the unincorporated Village of Union. The system of commutation where tried in this municipality has been satisfactory. I believe it is the proper way to deal with this important matter.

NEPEAN—Commutation is often discussed, the reeve urging it strongly (clerk assisting), but nothing actually done yet.

RAMSAY—The old system of statute labor is still in force. I think the council this year will take steps to have it abolished.

McNAB—There is a change contemplated, but nothing definite done in the matter only talk, some for and some against. The consequence is we have miserable roads. I think if the ratepayers were agitated in the matter they would go in for a change.

EDWARDSBURGH—A change has been discussed and I think it will not be long before statute labor will be a thing of the past.

MATCHEDASH—A change has been discussed, but no action taken. From my own point of view on those lines I would rather pay the tax than do the work, as I would be a gainer financially, and I believe better work would be done by contract.

RAWDON—I read your report last year with interest and believe if one were placed in the hands of every councillor it would prove effective.

HOWARD—Commutation has been discussed for several years, with no definite result.

EAST WAWANOSH—It is generally admitted that it would be a good thing if the old system of statute labor could be dispensed with and some other better system introduced; so far it is the only way of keeping up our roads, with a new road grader purchased last year.

VESPRE—No change is at present contemplated, though the matter of a change is often discussed by council and ratepayers. It is only a matter of a short time until a change from the present system will be made.

MARYSBURG, SOUTH—The council passed a by-law to do away with statute labor, but it was not legally done. It was done to get an expression of the people; the people are divided on the subject.

SOUTH WALSHINGHAM—A change has been discussed for the last ten years; we have a grader, but it is very unsatisfactory working it with statute labor.

CAMDEN—Council are thinking of doing away with statute labor and repairing roads out of general funds.

RAMA—We intended to take a vote on the question this year at municipal elections, but all were elected by acclamation and it was left over for next year.

SCARBOROUGH—Commutation has been discussed for a number of years. The Legislature should abolish statute labor in the older settled portions of the Province.

AMHERST ISLAND—Commutation has been discussed, but not acted upon. In my opinion a tax of 25 cents on every day's work levied would accomplish better results than 50 cents, in case statute labor is not performed, as few pay.

NOTTAWASAGA—A change is being discussed and approved of by a large number of ratepayers.

HALLOWELL—It is a shame how our roads are worked. Not over one-half of the work is performed.

HARROWSMITH—A change is frequently discussed, but I do not think it will ever be different until the Government makes it compulsory to commute all statute labor, which, I think, should have been done years ago.

STORRINGTON—A few years ago a by-law was passed to commute the statute labor, but before the statute labor season arrived, some of the "old-fashioned, no-improvement people" created such a howl that the council called a special meeting and repealed the by-law; the statute labor is played out; the Government will have to take hold of the matter.

EAST WILLIAMS—We asked a vote to change, but did not state what system would take its place; I think a good substitute for statute labor laid before the people might cause the system to be abolished; there is not much discussion, yet everybody hates statute labor.

MARA—Commutation of statute labor is talked of, but that is all. Council have talked of submitting it to the electors to find out how many are in favor of the change. I cannot see any use in submitting it to the people at all, but if that is to be done I would like to see the matter discussed and the people educated in the matter, so that they might vote intelligently. I believe if voted on just now, a majority would be against the change.

WHITCHURCH—The farms fronting on Yonge street, and some village lots north of the village of Stouffville commuted statute labor; the people in the township are opposed to paying a commutation tax.

KALADAR, ANGLESEA AND EFFINGHAM—A change would be desired by those desiring good roads, but the old useless system of statute labor will never be abolished unless it is made by Provincial legislation.

CANBOROUGH—Our road work or statute labor is still done on the old system and no change is contemplated; we are ten years behind the times.

BRUCE—The question of commutation has been raised, but there appears to be an almost general desire to leave (as it is put) well alone, from the fear of an increased expense for road repairs.

ARTHUR—On the west side of the township one half of the statute labor was commuted and applied on the purchase of two road machines. They are paid for now and suppose things will revert back to the old system. There is considerable discussion, but I do not think there will be any change for some time to come.

TURNBERRY—Three or four years ago there was considerable discussion, latterly little or none; but it is sure to come, sooner or later.

DEREHAM—Many speak favorably of commutation, although nothing definite has been done. Not even a vote of the ratepayers has been asked for.

PLYMPTON—We still adhere to the old system; it is unjust and it would only be making it more unjust to commute at a specified rate; very little is said about it.

McKILLOP—I think it would be a good act to compel all townships not to have more than four pathmasters.

ANSON AND HINDON—I have been trying to bring about a change in our township, as I think the sooner statute labor is abolished in our county the better, as we have very bad roads.

INNISFIL—I am in favor of knocking statute labor on the head, and each ratepayer paying 50 cents per day, to be collected in taxes; appoint one or two commissioners, and I think more labor would be received and better roads.

LOBO—Some little discussion; a change may be made some time in the distant future.

KING—Several attempts to change have been made, but the farming community are wedded to their idol, statute labor, or what ought more properly to be termed statutory indolence.

VAUGHAN—A change is not contemplated at present but may be soon.

MOORE—Statute labor is still being performed in this township, though in my opinion we could get better results if work was all commuted.

EAST GWILLIMBURY—A change is being discussed towards commutation, and progress is being made, though not very fast.

TOWNSEND—A change is being discussed.

SOMERVILLE—An effort was made last year to get a change in the method of road-making, or rather to change from no method to a method, but it failed, and since then there has been no agitation.

EAST HAWKESBURY—The people are beginning to discuss commutation and may succeed in some divisions.

BILLINGS—A change is being discussed, strongly in favor of commuting the whole statute labor at fifty cents per day.

CHAFFEY—Many of us think a change will be very beneficial.

HUNTINGDON—There is some talk regarding a change, but nothing definite as yet. The majority of the people would rather do the work than pay money.

MEDORA AND WOOD—By-law to be passed next meeting to commute all statute labor.

OSPREY—A change is being discussed.

HAMILTON—It is proposed to take a vote on the question of commutation at the next municipal election.

WILBERFORCE—A change is often discussed but meets opposition. Old system has outlived its usefulness here.

GOSFIELD NORTH—A change is being discussed, but there is strong opposition to it. If you could see any way to assist us in enlightening the ratepayers on this subject, you would greatly oblige.

WOLFE ISLAND—A change has been talked of for some time, but our people have not been educated to it. I think if you could favor us with an address on the subject it would very much aid in effecting the change.

WEST LUTHER—The council of this township took a vote on commuting statute labor at the municipal elections a year ago, but it was defeated. Some of us believe that if we could get you to give a lecture at our township hall, and have the matter properly discussed, a majority of the ratepayers of the township would be in favor of commuta-

tion. We were thinking of making the special rate for commutation 40 cents per day. Our day is only six hours.

SULLIVAN—At the nomination meeting, when about 300 ratepayers were present, the commutation system at 50 cents per day was discussed; an expression of the meeting showed a large majority in favor of the change; the council intended to consider the matter on February 3rd, but owing to the snow blockade they did not meet. They will likely talk it over at their next meeting on March 3rd. If you could help them to decide in favor of commutation, you will do our township a lasting favor.

SOUTH HIMSWORTH—Any information you may give us in reference to the best methods will be appreciated.

TILBURY EAST—The township of Tilbury East still follows old methods, but the advisability of adopting the commutation system is often discussed, and action may be taken soon.

KEPPEL—A change is being very much discussed; the statute labor has outlived its usefulness, although I think a majority of our township are against commutation. The experiment in the police villages has been an unqualified success, double the work being accomplished, even at 65 cents.

SAULT STE. MARIE.—The council are talking of commuting statute labor this year.

ELMSLEY SOUTH—A vote was taken at the municipal elections in January, 1901, on the following question and carried by a large majority: "Are you in favor of abolishing statute labor, and commuting at 50 cents per day?" "Yes or No"—129 voted "yes," and 40 voted "no." Nothing, however, was done by the councillors.

WEST WILLIAMS—The question of abolishing the doing of statute labor and levying a rate of 50 cents per day in lieu thereof, and spending the several amounts in the road beats by the township commissioners was submitted to a vote in 1900, and defeated by a narrow majority. The abolition is coming.

REACH—There is a strong feeling in the township in favor of a change, and the council have instructed me to prepare a by-law dividing the township into fifteen road divisions, with a commissioner for each division, but I am unable to say for certain whether the council will take any action the present year. They are all agreed that some scheme for the improvement of the roads other than the present is needed.

## THE ROAD SURFACE.

A road surface of gravel or broken stone performs various services. The subsoil of clay or loam alone ruts readily, softens quickly after a rain, and has little supporting power. A well-compacted layer of gravel or broken stone over it distributes the concentrated wheel load over a greater area of sub-soil; it does not rut readily, and affords good surface drainage; it gives a smooth, hard wearing surface; water does not easily penetrate it so as to soften and reduce the supporting power of the subsoil.

The depth of gravel or stone to be used must vary with the quality of the material, the amount and nature of traffic on the road, and the nature of the subsoil. A dry, compact and stony subsoil, needs less metal than does a plastic clay, difficult of drainage. No definite rule can be laid down other than that from six to twelve inches of well consolidated material will afford a sufficient range to accommodate most circumstances. Under ordinary conditions ten inches of metal should accommodate the heaviest traffic to which a gravel or broken stone roadway can be economically subjected.

A very notable defect of most country roads is the flat or even concave surface. Others present the opposite extreme and are so rounded up as to be dangerously high in the centre, making it difficult for vehicles to turn out in passing. Roads must be crowned sufficiently to shed water from the centre to the open drains at the side, otherwise water will stand in the roadway, soak into it, soften and cause rapid wear and decay; but a crown higher than is necessary to properly drain the surface is also objectionable.

The amount of crown should not be more than sufficient to provide for surface drainage. A steeper crown than is necessary tends to confine traffic to the centre of the road, and in turning out, the weight of the load is thrown on one pair of wheels in such a way as to rut the side of the road. The shape of the crown is a matter on which expert road-makers differ, but with the class of material available for roads in Ontario, and the methods and plans of construction, a form as nearly circular as possible will be found most serviceable, and most easily obtained.

From the edge of the open drain the graded portion of the roadway should be crowned with a circular rise of one inch to the foot from side to centre. That is, a drive-way twenty-four feet wide should be one foot higher at the centre than at the side. This amount of crown may appear excessive, but with gravel roads, and roads metalled with the quality of stones commonly used, is not more than sufficient to provide for wear and settlement consistent with good surface drainage.

The elevation of the road above the level of the adjacent land, need not be greater than is sufficient to provide against the overflow of storm water, which should always be guarded against. The depth of the open drain must vary according to the amount of fall and the quantity of water to be provided for; also according to the sub-drainage needed and provided. When tile subdrains are used, the open drain can often be very shallow; in which case the width of the graded roadway can be narrowed, there being no danger of accidents such as are caused by a deep trench at the roadside. The tile drains should be placed below severe frost, and usually a depth of three feet will answer.

A degree of moisture is necessary in the summer season in keeping sand roads or roads over sandy ground in their best condition. One of the most lasting and beneficial improvements to sand roads is the planting of rows of trees on each side of the road, and close together to provide continuous shade. They will prevent, in part, the drying effects of the winds, as well as intercept the rays of the sun. For this purpose the white elm, with its arching branches, is most serviceable, and will add much to the appearance of the country.

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## GRAVEL ROADS.

The Province is very fortunate in having, over a large proportion of its area, a plentiful supply of gravel, suitable for road metal, and it has been used to a great extent in surfacing the ordinary country roads. Where it is to be obtained within easy hauling distance it, undoubtedly, is a most valuable material for use on country roads, and on many of the little travelled residential streets of towns. In localities where gravel is not within easy hauling distance it will be advisable to consider the use of other material; since gravel, if not found in the immediate locality and therefore expensive in transportation, will frequently be found less economical in final cost than a better, though higher priced stone.

Gravel may be described as a mass of fragments of stone, rounded and worn by the action of air, water and ice, the pebbles representing the hardest bits of the rock from which they were detached. With it, is commonly mingled a variable quantity of boulders, sand, clay and earthy matter. The rounded, water-worn character of the pebbles composing the gravel, does not permit as perfect a bond as is the case with a road-covering of crushed stone, in which the sharp angular sides take a firm, mechanical clasp.

Gravel has not very satisfactory wearing qualities, especially when it contains an excessive amount of earthy matter. Where much sand and clay is contained, these should be removed by screening, and the large stones and boulders should be broken. If there is a considerable proportion of the latter, a method which offers many advantages is to place a rock crusher with a rotary screen attachment in the pit, passing all the material through, thereby removing the earthy substances, and breaking the stone with one operation. If the number of large stones is not great, it will be the cheaper plan to

screen the gravel in the ordinary way, or, better, by a rotary screen propelled by steam, the large stones being broken by hand or used in the road foundation.

When being prepared for use on heavily travelled and important roads, care should be taken to remove the dirt from the gravel. Sand and clay, when mixed with gravel afford an easy means of consolidating the road covering in such a way as to be very suitable for traffic in dry weather. But in wet weather, moisture is absorbed, the roadway becomes soft and slushy, ruts form readily, and the bond will be found of a very temporary nature. For little travelled roads, it may be impossible to take the precaution to screen the gravel; and perhaps, if the earthy matter is not in excess, screening may be omitted to advantage; it is necessary, however, to emphasize the point that this can be recommended for little travelled roads only. It is the stone, not the earthy material which is needed on the roads. There is enough dirt already on the roads without the township paying for hauling more. Nor should there be loose stones or boulders as they will work up and roll loosely under the feet of horses and wheels of vehicles.

When gravel is not screened, very much may be accomplished by care in selecting and taking it from the pit. In drawing gravel to the roads, it is frequently the case that teamsters wish to be in company with each other as much as possible. For this reason, when loading the gravel, while there may be room for only one wagon in the pit, at the point where the best material is to be found, a dozen teams will drive in and the wagons are filled with whatever stuff can be most easily obtained, whether gravel, sand, boulders or clay. Another common cause of earthy matter and sod being mixed with the gravel, is to be found in the practice of tunnelling under an overlying layer of soil, which gradually falls into the pit, is mixed with the metal, and is drawn with it to the road. This earth should be first stripped from the surface if it does not form too deep a strata, or care should be taken as it falls to keep it from mixing with the gravel.

In searching for gravel, the clearest indications are usually to be found along the banks of streams, where any extensive strata are apt to be exposed. A post-hole auger affords a convenient means of making tests over the surface of the soil for gravel, but the best implement is generally a simple form of drill. There are cases in which a gravel bed may be entered at the level of a stream bed, and water is thereby obtained for washing the metal by natural drainage, affording a cheaper means of freeing it from sand and earthy matter than by screening it. Gravel is still being deposited in drifts and bars by the agency of streams; this will be found to partake of the character of the pit gravel of the locality, but generally will contain less clay, although sand may easily be in excess. This is usually one of the best sources, as the gravel can be washed by natural drainage. Lake gravel is often a good metal, but varies greatly. It is apt to be slaty, and undersirable in quality. It will be free from dirt and clay, but usually contains sufficient sharp sand to secure consolidation, especially if a roller is used. Gravel which retains a perpendicular face in the pit in the spring, and shows no trace of slipping when thawing out, may generally be assumed to be sufficiently clean and free from clay for use on the road without any treatment other than is necessary to remove stones greater than one inch and a quarter in diameter.

A great many townships buy gravel by the load. This is very much like buying water by the pailful instead of digging a well. Gravel should be bought by the pit or by the acre, and should be available at all times for any farmer who wants to increase the value of his land by improving the road past it. Especial care should be taken by councils to see that, prior to the performance of statute labor, the pit is stripped and the gravel otherwise treated if necessary.

The majority of old gravel roads have been neglected in a number of particulars. They are allowed to become too flat to shed the water. The sides of the roads form square shoulders which obstruct the water in passing to the surface drains. Open drains are often deep and dangerous, but are not provided with proper outlets. If drains are merely receptacles for water, the subsoil of the roadway absorbs this moisture, is softened and in the wet weather of fall and spring travel forces the gravel



downward, and the mud to the surface, mixing the gravel and soil to such an extent as to very much destroy the usefulness of the road covering.

A great mistake is made when repairing these roads with a grading machine, by cutting off the shoulders and bringing the loosened material into the centre to round up the roadway. If a portion of the shoulders happens to consist of clean gravel, this may be replaced on the hardened track of the road. But as a rule the shoulders are composed of fine stuff, sand, dirt, loose stones and sod, of the greatest injury to the roadway. This stuff is of such a nature as to at once roughen the road, while in wet weather it absorbs water, becomes soft and slushy, and ruins the hard gravel foundation underneath. The material composing these shoulders should be thrown outward across the open drains, and used in levelling the roadside, or it should be otherwise disposed of in such a manner that it will not injure the roadway. When these shoulders have been cut off, it will be advisable to pass the road scraper over the centre to take away as much fine stuff and loose stones as possible; and on this a new layer of gravel or broken stone may be placed to complete the crown of the road.

The drainage usually found on existing roads consists of open ditches on each side of the graded portion, with a depth of about eighteen inches. They are frequently carried through rises of ground, past natural watercourses. Little attention is given to the regularity of the grade in the bottom, nor to the amount of fall, as evidenced by the varying depths of stagnant water at wet seasons. The object of these drains was more to procure earth to raise the centre of the road above the water line than to lower the water.

The best practice does not direct that the old open drains should be deepened for the purpose of draining the subsoil. Deep open drains are expensive, dangerous and unsightly, and the excavated earth generally does more harm than good to the road, when used to round it up, especially if piled on top of gravel. When the combined cost of construction and maintenance is considered, a tile drain laid under the bottom of open drains is cheaper and more serviceable. It is urged by some that one tile drain placed in the centre of the grade is the better plan. In the case of an old road with a hard surface this is very difficult and expensive, and the roadbed, if metal has been used, is destroyed by so doing. If any obstruction occurs with one central drain, in order to locate and remove the cause of the difficulty, the roadbed must be broken up, sometimes extensively. Where side drains are constructed, they not only drain the foundation, but they protect it by intercepting the soakage water from the adjacent land. Where open drains exist, as they do on the majority of roads, the cost of excavating for the two underdrains is lessened, and smaller tile may be used. Outlets can easily be had into the tile drains for surface water from the ditches, by the use of catch-basins when necessary, and this is rendered more simple when two tile drains are used.

The success of a drain largely depends on its outlets. Frequently its usefulness is largely removed if not entirely destroyed by the imperfect outlets on private property, the result of the opposition of the landowner, and the dislike of the municipal council to invoke the aid of the Municipal Act to enforce its construction. A drain without an outlet is useless. The secret of successful drainage is to dispose of water in small quantities before it gains force and headway; and for that reason it should be carried away by natural watercourses as often as possible.

Sometimes townships are wasting an enormous amount of gravel, and in a few years will have to face a serious difficulty—that of finding a substitute. There are townships now not far from that difficulty; which have for years been piling gravel on badly drained, badly graded, badly maintained roads. The immense hollows on many farms testify to the large amount of material which has been used.

Gravel placed on a poorly drained, poorly graded road, the repair of which is not attended to at the proper time, is quickly rutted, and in the wet seasons of spring and fall is mixed with the soil beneath, its usefulness as a road covering being largely lost. But on the other hand, when the road is well drained, well graded, the gravel so laid upon it as to form a distinct coating, and ruts repaired as rapidly as they form, the life of the gravel is very much extended.

## BROKEN STONE ROADS.

Broken stone, when of a suitable quality and properly applied, is a more durable surfacing material than is gravel. Owing to the greater cost, however, it is used only those townships only which have not a supply of gravel. As ordinarily used, broken stone gives less satisfaction than gravel, because the latter binds quickly under traffic owing to the presence of sand and clay. To get the best service from broken stone a road roller should be used to consolidate it; otherwise the stones roll loosely for a considerable length of time. The feeling of councils with regard to its use is that it makes a passable road for a short time in fall and spring, but that a good dirt road for summer use is spoiled. Townships which have only broken stone for road metal, will receive decided benefit from the use of a steam roller, which will at once consolidate the stone and make a thoroughly good and smooth road for all seasons of the year.

The different kinds of stones for macadam roads cannot well be approached from the standpoint of names. Granite, limestone, sandstone, are names of different rocks common in this Province, but to say that granite is better than limestone, or that limestone is better than sandstone, while true, perhaps, of the best qualities of each, may be quite incorrect, since a good sandstone may be infinitely preferable to a poor limestone or granite. The best stone for a macadam road is that which is hard and tough, not easily affected by the atmosphere, moisture, or the varying conditions of climate. The choice will generally lie between a cheaper and less durable stone near at hand, and a more costly but better stone from a distance. A great proportion of the macadam roads in Ontario will be constructed of limestone, since this rock is the most common, quarries being within easy access of almost any part of the Province. In quality it ranges from that which is useless to that which is almost equal to trap. Limestone, which is tough and close grained, is an excellent material for roads on which the weight of traffic is not excessive. Some dolomitic limestones, while hard, appear to lack in toughness. Other limestones, of a slaty texture, have few wearing qualities, are rapidly disintegrated on exposure to the atmosphere, and should be avoided. Some limestones of an open, porous nature, yield readily in this climate to the effects of moisture and frost, merely turning into mud. But the excellent binding qualities of limestone make up largely for a lack of hardness, a sort of cement being formed by the dust, which adds very much to its durability.

In determining the best quality of stone for road purposes, there are four prominent destructive agencies which have to be considered: (1) The crushing action of loads; (2) the grinding action of the wheels; (3) the blows from the shoes of horses; (4) climatic influences of air, water and frost.

With respect to the first three, a stone may have great hardness and splendid crushing strength, but at the same time be brittle, yielding readily to the grinding effect of wheels, and the blows administered by the hoofs of horses. On the other hand, a stone may be able to resist, in a measure, the second two wearing agencies, those of "abrasion" and "impact," and yet be so soft as to crush readily.

The fourth agency, the decomposing effect of the atmosphere, is one of very great importance. The denser stones, those which absorb the least water, are usually best able to resist the injurious action of frost and moisture. The weight of a stone is usually some indication of durability in this respect, the lighter stones being those of less density, and in consequence are the less desirable.

There are other features which a good rock for road-making should possess. When crushed they should break into a compact form. A stone that, in breaking, takes thin, flaky shapes, will not wear so long as one that breaks into cubical pieces, nor will it consolidate so readily in a roadbed, for a wheel, in passing over the side of a flat stone, will throw it out of place and loosen the stones adjoining.

The tests usually applied in determining the qualities of stone are those which indicate crushing strength; the power to resist impact and abrasion; the density, determined by the weight of the stone; the amount of water absorbed. While elaborate trials may be made, a practical man can judge of the qualities of a stone by applying

simple tests ; by breaking the stone with the hammer ; wearing it on a grindstone ; crushing it in a blacksmith's vice ; scratching with an iron nail ; breaking small pieces with the finger. By such simple means, a general idea of the stone can readily be formed, but no test is so conclusive as actual wear on the road.

Broken stone produced from boulders is objected to as road metal on various grounds. The rounded sides will not permit consolidation with the minimum of vacuum. If they have been exposed to the atmosphere the boulders are very apt to be decomposed, are soft and will crumble readily. The mixture of different kinds of rock on the road surface, some hard, some soft, permits unequal wear, and produces a rough surface.

While these are defects which certainly are not to be overlooked in the choice of a road metal, boulders, nevertheless, constitute a very valuable material for the construction of a road, particularly in localities where they are plentiful and gravel or bed rock not readily obtainable.

In selecting field boulders, care should be taken to discard all rock which shows signs of having "weathered" or decomposed by the action of the atmosphere. Sandstones and granites are peculiarly subject to this disintegration, while soft limestones are very common. Rocks which should be condemned from this cause are those which crumble readily under successive blows of a hammer, or which show iron stains when broken. A little experience will quickly teach a judicious roadman to detect the stone which is unfit for road purposes.

Railway companies have signified a desire to assist in the building of roads, especially those leading the traffic to their own lines, and in some instances have delivered the material free, in others not charging more than half freight rates. When they are permitted to carry the material at slack seasons, they have expressed a willingness to do the work at actual cost of hauling, which would place these municipalities in a position to procure first-class material at less cost than others where material is considered plentiful. In this way, too, many towns and cities now using gravel of an inferior quality would be enabled to use a first-class quality of durable material.

## DIRT ROADS.

Nearly all roads in Ontario have at one time been "dirt" roads. By a slow process of evolution some have become gravel or broken stone roads. A dirt road nicely crowned and well drained will make an excellent foundation on which to place a layer of gravel. A driveway which has passed through an apprenticeship as a dirt road, and has, during that time, had due attention given to its drainage requirements, will have indicated the points at which open drains, culverts and underdrains are most needed. With these provided, gravel can be applied to the best advantage. The little wear to which they are subjected, however, rendering their maintenance very simple, will make the time required for their improvement comparatively short.

These dirt roads are very much abused by the road-makers. With each year's statute labor, sod, vegetable mold and stones are brought to the centre of the road, to be mixed with mud during the period of fall rains. For six months of the year a dirt road is often as good a driveway as could be desired for light travel. In order to extend its usefulness the greatest care must be taken to see that drains and culverts are placed wherever needed, and that they are always in good working order. It should be well-crowned, or rounded up, so as to shed the water freely to the side ditches ; but in making this crown, sod and vegetable mold should be carefully excluded. A great deal of injury is done to this kind of road by running a grading machine along the edges, bringing loose stones and sod to the centre. This stuff should be thrown outwards and across the open drain. Under-drains should be used judiciously ; while a complete system may not be used, tile drains should at least be placed where the water does not leave the side of the road early in the spring, or wherever the ground appears to be continually damp. If open drains are kept in good working order, and if the road is kept properly crowned, its condition in fall and spring will indicate the points at which tile drainage is most needed.

## UNDERDRAINAGE.

It may be accepted as a general rule that roads tiled without gravel are better than roads gravelled without tile. All roads except those on pure sand can be improved by tile draining. A single line of tile, if placed about three feet below the bottom of the open drain, if the graded portion of the road is about 24 feet wide, would accomplish nearly all that tile drainage will do. If one side of road is higher than the other, lay the tile on the high side so as to intercept the subsoil water as it flows down the slope. A four-inch tile meets most conditions, but the size will depend on the length of the drain and the amount of water to be carried away. Care must be taken to give the tile a uniform grade, so that there will be no depressions. If possible, give a fall of at least three inches in one hundred feet. The cost will be about fifty cents a rod. The work, if properly done, will be a permanent and substantial improvement to the road, and will save many times the cost by lessening the amount of gravel needed on the road.

The name "macadam" is commonly applied to any road surfaced with broken stone and in this respect is a very unfortunate misnomer. It is the neglect to provide for a dry subsoil that is the greatest cause of the unfortunate condition of roads throughout Canada to-day. Roads which are not well drained are but a repetition of the English roads as they existed before the time of macadam—they are the roads which the system of Macadam displaced. A roadbed in which sub-drainage is not sufficiently provided, is the opposite of a macadam road.

The importance of drainage cannot be too thoroughly impressed. Clay in thick beds, when dry, will support from four to six tons per square foot of surface, according to the quality of the clay. If only moderately dry it will support only from two to four tons per square foot of surface. If the clay is wet and soft it will yield to almost any load. Gravel, if well compacted, forms a much stronger roadbed, is less yielding to the action of moisture, and for this reason, even for a thin surface coating, strengthens the road somewhat. But the real strength of the road must lie in the subsoil. Vegetable molds and alluvial soils are weak, have a sustaining power of only one-half to one ton per square foot, and for this reason it is well to remove such soils, securing, if possible, a gravel, clay or sand foundation.

A dry subsoil becomes of greater necessity in a cold and humid climate, such as prevails throughout Ontario for a considerable portion of the year. The injury done to roads by frost is caused entirely by the presence of water. Water expands on freezing, and the more there is under a road and above frost line, the greater is the injury. In freezing, the particles of soil in immediate contact with the water are first compacted. When room for expansion ceases within the body of the soil itself, owing to its saturated condition, the surface is upheaved. When thawing takes place the subsoil will be found honeycombed, ready to settle and sink beneath traffic. It is therefore of the utmost importance that the soil should be relieved of all water of saturation as quickly as possible by under-drainage. The impassable condition of the roads during spring, often axle-deep with mud, is to be attributed very largely to a wet subsoil which has been honeycombed in this manner.

The making of a strong foundation thus resolves itself into a question of under-drainage, and the means whereby proper under-drainage is obtained must be adapted to the manner in which water finds its way under the road, and the nature of the soil. A soil retains in its texture, by capillary attraction, a certain amount of water. In the case of a plastic clay soil, which will absorb nearly one-half its weight, and bulk of water, the water retained in this way may be the cause of injury. In the case of gravelly, sandy, or other porous soil, it is necessary to remove only the water held by hydrostatic pressure in the foundation of the road. The effect of this is, that, with a clay subsoil, under-drains are nearly always beneficial in securing a strong foundation, and are necessary for traffic of even moderate degree. With porous soils, on the other hand, the

necessity and means of drainage will depend upon the height to which the water rises in the foundation, and the direction from which it comes. When a strong foundation is needed, these under-drains should be three or four feet below the surface of the subsoil.

Their location with respect to the road should be varied with circumstances. The most effective type of drainage employed is a system in which there is a tile drain on each side of the roadway underneath the open gutters, with V-shaped drains at intervals from the centre of the roadbed to the side drains. From this the scale descends to drains at the sides of the roads only; then a drain at one side only, or in the centre of the road; then only an occasional drain at springy or damp points.

It is of advantage to understand the manner in which under-drains act in different cases. With porous soils, in which the water rises under hydrostatic pressure, the water enters the tile from below; just as water rising in a vessel finds an outlet in the sides or flows over the top, so the underdrains supply the necessary outlet for this excess moisture at a proper depth from the surface; it "lowers the water-line."

With clay the process is different. Absorbing and holding as it does, like a sponge, a large quantity of water, drains are less effective, but none the less necessary. The cracks and fissures which appear throughout the surface of a baked soil during the summer drought, afford a clue to the action of under-drains upon the soil. As the clay yields up its moisture, it shrinks, is torn apart. These fissures commencing at the drain spread in different directions, and each fissure thus becomes a new drain leading to the tile. This process goes on, the fissures become filled with sand, vegetable and other porous matter, so that they assume a degree of permanency, and, in clay soils, under-drainage is more effective after several years than at first.

### BONDING THE ROAD.

The "bonding" of a road covering, is a matter very frequently discussed. Some road-makers advocate the use of a foreign binding material, mixed with the stone, such as sand, loam or clay. It is generally conceded by the best authorities, however, that the less foreign material incorporated with the stone, the better. The best roads to-day are bonded by intermixing with the broken stone, the chips and dust created in crushing, and by thorough rolling. A dust of stone suitable for road-making will form a cement which will unite and re-unite after being broken, and added to this is the mechanical clasp which stones assume after sufficient rolling.

The use of sand as a binder, while it lessens the amount of rolling required to produce a hard surface, tends strongly to injure the durability of the roads. When these foreign binders are used, the road is more easily permeated by water, and in wet weather such as we have to guard against stringently in a Canadian climate, the bond is less perfect, and the road is more readily rutted, the presence of sand having prevented as strong a mechanical interlocking of stones.

### ROAD MACHINERY.

We are living in an age when economy of labor is being sought in every branch of manufacture and construction. To enable one man to do the work of two by the use of labor-saving machinery is the tendency of development in every department of

labor. The use of machinery in road-making is assuming prominence, and as a result we are enabled to obtain not merely greater economy, but actually better and more finished work on the highways. Of these machines, road graders, rock crushers, and rollers are the best known and most commonly used. To the list can be added wheeled scrapers for earthwork, especially useful in making cuts and fills; also the implements for making cement-concrete pipe for culverts, and minor appliances for the convenience of labor.

The machinery of road-making, like the machinery of farming, has developed very materially of recent years. A full plant, for complete, economical and serviceable work is expensive. Cities can afford such a plant, nearly every city in the Province and a number of towns having supplied themselves with a full outfit of road-making machinery.



A COLONIZATION ROAD.

Townships, however, cannot as a rule do this. A road grader is all that the great majority will buy, and some have not even done this. Some few have bought rock crushers. The result is that only the very simplest of road-making appliances are available for use on the country roads. The main roads, many of them heavily travelled, receiving all the traffic from a large territory, receive almost the same treatment in construction and maintenance as do the hack concessions.

There is one, perhaps there may be said to be two, exceptions, and these point to a feasible plan for obtaining proper machinery for the heavily travelled roads. The County of Hastings, on its system of county roads, makes use of graders, a traction engine, a rock crusher, and a steam roller. In the County of Victoria, while it has not a system of county roads, the council purchased a roller and rock crusher, to be used by the different township councils, a plan, which, while an improvement, does not achieve the full success it deserves. The only system as yet suggested whereby these machines can be made available on our roads, is under a complete county system, where the roads subjected to heavy travel will receive the treatment they so urgently demand, both on the ground of economy and more efficient service.

## The Road Grader.

Road graders are now so commonly employed in the construction and repair of roads, and their utility is so generally recognized, that it is scarcely necessary to urge their adoption. They are modern, labor-saving implements which do their work better and more cheaply than can be done by hand, and that nearly three hundred townships of Ontario have purchased them is forcible evidence of their value. It is not their use which it now seems necessary to urge, but rather there is need of guarding against their mis-use.

In too many townships the councils have rested content with merely buying a grader, and having done this, seem to be satisfied that they have done their full duty. Unfortunately the grading machine is not possessed of intelligence, it does not know when or how a road should be graded. So that, unless a method is established, and unless a capable man is engaged to operate it, the grader is likely to give but little service. There are several questions which naturally present themselves in connection with the use of a grader which councillors and road commissioners should distinctly answer.

### *When Should the Grader be Used?*

Arrangements should be made every spring to have the grader ready and in use as soon as the ground is sufficiently dry. The soil is then in its best condition for manipulation, having been mellowed by frost; the roads are rough and most in need of treatment. Roads which are properly graded early in the spring are at once compacted by traffic and they will remain in their best condition all summer. If the work is left until late in the season, clay soils have become baked and hardened, difficult to handle and rough when finished. Sandy soils, if loosened up late in the year, will be much more dusty than if treated early in the spring, when they are damp and readily compacted by traffic.

### *Where Should the Grader be Operated?*

This is a query which few townships have answered satisfactorily, and it is of first importance that they should do so. It should be the duty of the township road commissioners, councillors, or a committee of the council (according to the local system of road management) to go over the roads in the spring, and determine what grading is required.

This work should be staked out according to definite widths and dimensions of the roads as required by township regulations. The grader, when it commences in the spring, should proceed to each piece of work consecutively, and should be in use continuously until all the grading is done for that year.

At the present time it is customary for the grading machines to go here and there over the township without method—one day on one side of the township, next day on the opposite side, then to another distant part, backward and forward, wasting a considerable part of the wages of men and teams in moving from one part of the township to another. By following a well-considered schedule the cost of moving the machine between the different pieces of work is reduced to a minimum.

Some distinction should be made between the grading of new roads and repairs of old roads. Where the roads are being metalled from year to year with gravel or broken stone, it is, as a rule, a waste of money to grade a greater length of road than can be gravelled or macadamized the same year.

### *Who Should Operate the Grader?*

One of the first essentials in providing that the roads will be properly graded is to select the right man to operate the grader. He should be an active, energetic man, with some mechanical experience; one who will take an interest in his work, who will make a study of road-making and who will be willing to follow the instructions given

him by the township road commissioner or councillor having supervision of the work. When such a man is found he should be engaged from year to year so that his growing experience will render him more efficient.

There are many townships which do not employ a regular operator, but instead allow the grading machine to be handled by anyone and everyone. In some cases it is even passed around in the performance of statute labor from beat to beat. Managed in so careless a manner, a grading machine will be a source of disappointment only.

#### *How Should the Grader be Operated?*

The same horses should be used in operating the grader for an entire season, at least. "Green" horses are very awkward, will not pull together, waste much time, and even a reliable man as operator cannot, under such circumstances, perform good work. It is a great waste in many ways to attempt to use a grading machine with horses provided, as is sometimes done, as a part of statute labor. Horses used continuously become accustomed to the work, to each other, and to the driver, and will produce much better results.

Some townships, instead of horses, use a traction engine. Where one can be rented from a local thresher, it can usually be obtained very cheaply in the early part of the year. Where a considerable stretch has to be graded without turning, as in cutting off the shoulders of old gravel roads, a traction engine is much preferable to horses. It is more steady and does not stop to rest.

#### *How should the Roads be Graded?*

The township regulations as to the width and dimensions of road should be closely followed in grading. These will generally provide for a width of twenty-four feet between the inside edges of the open drains on roads of greatest travel; twenty feet on roads of moderate travel, and eighteen feet on roads of least travel. A rise of one inch to the foot, from the inside edge of the drain to centre of the road is ample crown for a new road, after the gravel or stone has been placed on it. More than this is unnecessary and an injury. There is a tendency in the use of graders to crown the roads excessively, and this should be guarded against.

Road graders are of much use in the repair of old gravel and stone roads, in restoring the crown, but unfortunately it is no exaggeration to say, that miles of road have been ruined by mis-use of graders in this work. Old roads are commonly flat, sometimes concave, with square shoulders at the side. In repairing these roads there may be a small amount of stone which has been crowded out by the wheels of vehicles, and which it is safe to draw again to the centre of the road. On no account should the square shoulders at the side be drawn to the centre of the road. These shoulders are composed of earth and sod, and if placed on top of the old gravel or stone foundation will merely turn to slush in wet weather and utterly ruin the road. The only way to repair such roads is to cut off these shoulders, throwing them away from the road across the open ditch, if necessary, and then to restore the crown by placing a coating of new gravel in the centre of the road.

Grading machines are exceedingly valuable implements in road-making, but there is a proper time, place and way, and councillors using them cannot too soon provide a practical solution.

#### **The Rock Crusher.**

A rock crusher is a valuable implement in many localities, and a number are now owned by municipalities in Ontario, chiefly, as yet, towns and cities. About fifteen townships have purchased them, while a number of others rent them, or contract for crushed stone at a rate per cord.

These machines are made after various patterns, the main division being into rotary and jaw crushers. Some of smaller size are set on wheels and may be moved



readily from place to place. Others are for stationary work, in a quarry, or at a point to which stone, field boulders, etc., are brought to be broken. They are operated by steam power; a traction engine, or stationary engine, as circumstances render most advantageous. Some municipalities owning a steam roller obtain power from it, but this is apt to injure the roller.

One of the most valuable features of a crusher is that by attaching to it a rotary screen, the crushed stone may be separated into grades according to size, usually such as will pass through a three-inch ring; such as will pass a one and one-half inch ring; and fine chips and screenings. By placing the coarse stone in the bottom of the road, and the finest on top, a smoother and more durable road is obtained. An average cost of a crusher is \$700 or \$800, and with it stone at the crusher may be crushed for from 20 cents to 30 cents per cubic yard, according to the kind of crusher and the quality of the stone.

### The Road Roller.

The advantages to be derived from a road roller in the construction of a broken stone road are becoming more and more appreciated. Unless a roller is used, the stone must be spread loosely on the road, and left for traffic to consolidate. A road should be made for traffic not by it. To leave loose gravel and stone in the roadways is neither an agreeable method of constructing a road, nor will it produce the most durable road.

The consolidation of loosely spread stone or gravel by traffic is a slow process, causing much inconvenience to travel, during which the earth of the subsoil becomes mixed with the stone. Earth intermixed with stone prevents the strong mechanical bond which clean metal will assume when the stones are wedged one against the other by a roller. The particles of earth, when wet, have a lubricating influence on the stone, and under the action of wheels the surface is more readily broken up. By the use of a roller the earth subsoil should be first thoroughly consolidated. The stone should be placed on this foundation in layers, and each layer well compacted. In this way a smooth, durable, waterproof coating of stone, free from earthy material, can be laid over a firm foundation.

There are different classes of rollers. The horse roller, weighing six or eight tons, will do fairly well if a steam roller cannot be afforded, but the horse roller is not sufficiently heavy for the best results. It has to be used much longer than the steam roller. The feet of the horses, in exerting sufficient strength to move the roller, sink into and disturb the road metal, and injure the shape and quality of the roadway, while on hills it is at a disadvantage.

The steam rollers are of various weights, ranging from eight to twenty tons. Rollers of fifteen tons weight are those generally used by the towns and cities of Ontario. The cost of horse rollers is usually about \$90 per ton, or from \$500 to \$600 each. Horse rollers are, however, generally so constructed that the weight may be increased by iron castings; so that a roller of five tons may be made to weigh about six. Steam rollers cost about \$3,000. For operation a horse roller, with two teams, will cost \$6 per day. A steam roller will cost \$10 a day, but will do three times the amount of work done by a horse roller, so that the saving in operation is considerable.

### TILE CULVERTS.

A great number of townships throughout the Province have largely discarded timber as a material for small culverts and sluiceways. Cedar, where obtainable, has been most commonly used, but all varieties of suitable lumber are becoming scarce, the price is constantly increasing, and the quality now available is far from being equal to that of former years.

Those municipalities which have experimented with vitrified and concrete tile have, with very few exceptions, been favorably impressed with the new material. Failure

and some dissatisfaction are occasionally reported, but this in every case can be traced to causes not in any sense condemnatory of the new materials. Where any kind of tile is used there are certain requirements which must be observed. In the first instance the tile must be of good quality. It is just as necessary to use good tile in culverts as in sewers; where "culled" tile are used, failure is, almost of necessity, the result. These tile must be perfectly sound and straight, not warped or mis-shaped in any way, otherwise good joints cannot be made, water will lay in hollow places, and culverts are apt to wash out.



MAKING CONCRETE CULVERT PIPE.

Excellent culvert pipe of concrete can be manufactured cheaply in any gravel pit under the immediate direction of the road overseer. The pipes are from two to four inches in thickness according to diameter; which latter may safely and conveniently reach three feet, in lengths of two and one-half feet.

The implements required are of the simplest kind. The most important are two steel, spring cylinders, one to set inside the other, leaving a space between the two equal to the thickness of the finished concrete pipe. By "spring-cylinder," it may be explained, is meant such a cylinder as would be formed by rolling a steel plate into a tube without sealing the joint. With the smaller of these cylinders the edges overlap or coil, slightly, but are so manufactured that the edges may be forced back and set into a perfect cylinder. With the larger, the edges do not quite meet, but may be forced together and fastened. Accompanying these molds are bottom and top rings, which shape the bell and spigot ends of the pipe.

The two cylinders, with joints flush, are set on end, the one centrally inside the other, and on the bottom "ring," which in turn rests on a firm board bottom. The concrete, made of first-class cement and well-screned gravel in the proportion of one of cement to three of gravel, is then tamped firmly but lightly into the space or mould between the two cylinders. The tamping-iron used to press the concrete into place is so shaped as to fit closely to the cylinders.

The concrete is allowed to stand in the mould for a short time, when the cylinders are removed; the outer and larger cylinder by removing the clamps, and allowing the edges to spring apart; the inner cylinder, by removing the fastenings, so as to allow the edges to again overlap, returning to the shape of a coil. The outer cylinder having thus been made larger and the inner one smaller, they can readily be taken away, and the concrete pipe is then left until thoroughly hardened. For the larger sizes, the two halves of the outer cylinder are usually hinged, and can be more carefully removed than when allowed to "spring" from the concrete.

Just such a number of pipe as are actually required for the season's work need be manufactured; the implements required are inexpensive, and the pipe may be made by the municipality for actual cost, which, after a little experience, can be reduced to a very small amount.

If cement concrete pipe are employed, they must be of first-class quality. They must be well shaped, as with sewer pipe, and all the rules for making a good concrete

must be observed—that is, the material composing the concrete (cement, and gravel) must be of good quality, and properly mixed. The making of good concrete is not a difficult matter, but it is sometimes hard to find men who will follow directions. Dirty sand or gravel, too much water, careless and insufficient mixing, neglect to see that the materials are used in the right proportions, are the defects most commonly found. Concrete cannot be mixed like common mortar, and an attempt to do so is far too often made. It is affirmed by cement manufacturers that masons are the greatest offenders in this respect; that it is almost impossible to get them to follow any system other than that to which they have been accustomed in the use of common lime; and that, therefore, an entirely inexperienced but practical man, who will follow directions, will often make the best concrete.

To meet with success in the use of tile culverts they must be put in place properly. They should be laid with a good fall on a regular grade to a free outlet, in such a way that water will not stand in them.

The tile should be laid with the spigot end down grade, and the joints made tight with cement mortar. If the joints are open, water will work its way along the outside of the culvert, and finally make a considerable channel, which will allow the culvert to get out of line and finally result in a "cave-in." To prevent the water finding its way along the outside of the pipe, it is advisable to protect the ends with concrete, stone or brick head-walls.

Care should be taken to excavate a concave bed for the pipe, with depressions for the bell of the pipe to rest in, thus securing an even bearing, without which a heavy load passing over before the culvert has properly settled into place may burst the tile. Tile cannot be used in very shallow culverts, but must have a sufficient depth of earth over them to protect them from the direct pressure of heavy loads. The depth of covering necessary increases with the size of the pipe. At least a foot of earth over the top is advisable in every case; but for culverts of two feet in diameter or over this should be increased to at least eighteen inches.

The earth should be well packed and rammed around the tile to secure a firm bearing, and light soils should not be used immediately over or around the culvert. A heavy clay, a firm gravel, or a compact sand or gravel will answer, but vegetable mould, water sand, and light loams are subject to wash-outs.

At the outlet the culvert should be set nearly flush with the surface of the ground. If set higher than the surface, the fall of water will wash out a depression, and in time will undermine the end of the culvert. A too rapid grade will have the same effect, and it is well to cobble-pave an outlet where this undermining action is likely to occur.

Culverts, in many townships, are very numerous, and necessarily so. Water should be disposed of in small quantities, along natural watercourses, otherwise if gathered in large bodies along the roadside, it gathers force and headway, resulting in extensive wash-outs, and is in every way more costly to handle. Water should be taken away from the roads as quickly as possible, for it is excess water that is the great destroyer of roads.

Culverts, in addition to being a matter of considerable expense to municipalities, are too often in a bad state of repair, sometimes dangerous, and when not level with the roadway, are an annoyance and interruption to traffic. Good road-making is largely a matter of good drainage, and culverts are a detail of drainage upon which municipal councils should bestow a great deal of attention, with a view to greater permanency, increased efficiency and a reduction of cost.

## CONCRETE ARCH CULVERTS.

The concrete arch culvert is, in a number of municipalities, replacing the old form of timber structure. Greater in first cost, the concrete culvert, if rightly constructed, is a permanent work, and as such will, in a term of years, effect a considerable saving in road expenditure. The greater portion of the annual road appropriation is, in many townships, spent in repairing and rebuilding wooden culverts and sluiceways. The life of timber in this work is very short. Wooden culverts are quickly upheaved by frost, warped by the sun, and decayed by moisture. Wherever concrete culverts have been fairly tested they give satisfaction, and their general use by a township will mean, in the course of a few years, a marked reduction in the cost of this branch of roadwork.

The stone arch is designed on the principle that it will remain in place without the use of mortar. The concrete arch, on the other hand, is a monolith, dependent upon its cohesive strength. That the concrete arch is dependent upon cohesive strength points to the necessity, in construction, of a generous proportion of cement, very great care in mixing the concrete, and a good quality of all materials employed.

A concrete can best be regarded as a mixture of mortar and broken stone, the mortar being formed from a mixture of sand and cement. Given a sample of broken stone in a vessel, the requisite quantity of mortar can be gauged by pouring water into the vessel until the stone is submerged. The quantity of water used will indicate the amount of mortar required to completely fill the voids in the stone. The proportionate amount of cement needed to fill the voids in the sand can be gauged in the same way. The proportions of cement, sand and broken stone obtained in this way would provide, with perfect mixing, a mortar in which the voids in the sand are filled with cement, and each particle of sand coated with cement; it would provide a concrete in which the interstices of the stone are filled with this mortar, and each stone coated with mortar. This would be the case with perfect mixing, and would provide a theoretically perfect concrete. Perfect mixing is not possible, however, and it is necessary to provide an amount of cement in excess of the voids in the sand, and an amount of mortar in excess of the voids in the stone.

With proper mixing and good materials, a satisfactory concrete for bridge abutments can be formed from cement and broken stone, in the proportions of one, three and six. It is recognized that the greatest strength in concrete can be obtained by making the mortar rich in cement, rather than lessening the quantity of stone, but beyond providing for a strong adhesion of mortar and stone, little is gained by making the mortar materially stronger than the stone. This applies to crushing strength, however, rather more than to the tensile strength required to some extent in the arch. For the arch proper, it will be well to use a richer concrete, in, say, the proportions of one of cement, two of sand, and three of broken stone.

The cost of the abutments may be lessened, where they are of sufficient thickness, by the use of rubble concrete. The casing or curbing must be built up as the laying of the concrete proceeds. Within the casing and firmly tamped against it, there should be placed fine concrete to a thickness of about six inches. This will form a shell for the abutment, inside of which large stones may be placed in rack-and-pinion order, ends up. There should be a space of at least two inches between the stones, filled with fine concrete, and all firmly rammed. The outer shell of fine concrete should always be kept built up six inches or so in advance of the rubble work. The rubble should be laid in layers, and each layer well flushed with a layer of fine concrete.

The lumber used in making the curbing or casing should be dressed, tightly fitted and firmly braced, so that the concrete may be well rammed into place. The framework should be closely boarded up against the work as it proceeds. The centering for the arch should be well formed. The ribs should not be farther than three feet apart. The lagging should be three inches thick and dressed to the intrados of the arch. All the framework, centering and supports should be substantial and well constructed. This framework is a considerable item of expense in the building of a culvert, but it can be

used as often as it may be required for arches of similar span. The exterior of the culvert when finished should have a smooth face, free from holes, and a surface grouting, which is of little use, should not be necessary.

There is some difference of opinion as to the relative strengths of gravel and broken stone in concrete. The natural inference is to suppose that a rough, irregular surface will secure greater adhesion than one that is smooth. However that may be, there is little reason to doubt that gravel will make a good concrete, but there is a right and wrong way of using gravel. It is not uncommon to find cement and gravel, just as it is taken from the pit, mixed to form a concrete. Remembering the proper composition of a concrete and placing beside this the fact that gravel usually contains sand, but not in any definite proportions, and that some pockets of "gravel" may be almost completely sand, while in the layers adjoining there may be little if any sand, and that many gravel beds contain much clay or earthy material, it will be readily understood why it is that, in some cases, concrete mixed in this way may be successful, yet it will always be uncertain and hazardous. The only safe method is to separate the stone and sand composing the gravel by screening, then to mix cement, sand and clean stone uniformly and in their right proportions.

A cause of poor cement is the excessive amount of water used when mixing. The tendency very often is to bring concrete to the same consistency as common mortar. Concrete, when ready to be placed in the work, should have the appearance of freshly dug earth. Where an excessive amount of water is used, the hardened concrete will have an open, spongy texture.

The concrete should be mixed at a point convenient to the work, in a box which is sometimes specified as water-tight, but the concrete will quickly make it so. It should be mixed in just such quantity as is required, and a constant stream kept passing to the work. It should be laid in layers, and each layer thoroughly rammed until moisture appears on the surface.

It is very necessary to see that the sand and stone used in making the concrete are clean, that it is free from clay, loam, vegetable or other matter which will act as an adulterant, and result in a weak and friable concrete. If such matter is intermixed with the stone it is well to flush it away with a good stream of water. Large stone used in rubble concrete should be also treated in this way. It is well, particularly in hot weather, to dampen the stone before mixing it with the mortar. The heat of the stone in hot weather causes the moisture of the mortar to evaporate, causes it to set too quickly, and at all times there is more or less absorption from the mortar in immediate contact with the stone, unless the stone, as intimated, has been dampened.

When the work ceases for the day, or is for other reasons interrupted, the surface of concrete should be kept damp until work is resumed. When work is in progress in hot weather, any exposed surfaces should be kept damp and protected from the rays of the sun; otherwise the surface will, in setting too rapidly, be interlaced with hairlike cracks which, filling with water in winter, and freezing, will cause the surface to scale off. The same scaling sometimes results from laying concrete in frosty weather.

Arch culverts of masonry or concrete fail frequently from settlement caused by an insecure foundation. The foundation should always be of at least sufficient depth to be free from any danger of undermining by the action of the water, and of sufficient further depth to be safe from settlement.

### SPECIFICATION FOR CONCRETE ABUTMENT.

(1) The abutments shall be built in accordance with the dimensions indicated Plans upon the plans and drawings hereunto attached and forming part of these specifications.

(2) Concrete referred to in this specification shall be known as "fine concrete" "Fine" and "rubble concrete." Unless rubble concrete is definitely specified, fine concrete shall be used. "Rubble" Concrete.

- Framework.** (3) The abutments are to be erected within a substantial and well constructed framework of well fitted lumber, closely boarded up against the work as it proceeds. Care shall be taken to make a smooth regular surface such that moisture will not find lodgment. The concrete shall be perfectly rammed into place so that all surfaces shall be smooth, without cavities, when the casing is removed. The framework shall not be removed in less than fourteen days from the completion of the work.
- Fine Concrete.** (4) Fine concrete shall be composed of one part by measure of Portland cement, three parts by measure of sand, and six parts by measure of broken stone. The concrete shall be mixed in a water-tight box or platform placed close to the work, by first spreading evenly a layer of sand; upon this shall be evenly spread the proportionate quantity of cement, and the two thoroughly mixed in a dry state. To this water shall be added and the whole thoroughly mixed and brought to the consistency of a stiff mortar. The proportionate amount of stone shall then be spread evenly over the mortar, and thoroughly intermixed therewith. The concrete, when mixed as described, shall be immediately put in place and thoroughly pounded and rammed until it is perfectly and uniformly solid, moisture appearing on the surface.
- Rubble Concrete.** (5) Within the body of the abutments, but not nearer than six inches to the surface in any direction, large stones may be placed by hand in layers. These stones shall be in "rack and pinion" order, and not less than two inches apart. Concrete shall be carefully inserted between the stones thus placed and thoroughly packed and rammed so as to fill all voids. Concrete shall cover each layer of stones to a thickness of half the depth of the stones, when another layer of stones may be placed. A facing of concrete is at all times to be kept at least six inches higher than the rubble concrete; and shall be united with the rubble concrete so as to form a continuous and solid mass. This outer rim of concrete shall precede the placing of the rubble work within, and shall be placed around the interior of the casing to a height of nine inches and a thickness of six inches. It is to be thoroughly pounded so that no cavities shall remain when the outside casing is removed. In no instance is the rubble concrete to extend higher than one foot below the top of the abutment, which top of the abutment shall be finished with fine concrete.
- Cement.** (6) All cement employed in the work must be of a favorably known brand of Portland Cement, and approved by the superintendent in charge of the work. It shall be delivered in barrels or equally tight receptacles, and after delivery must be protected from the weather by storing in a tight building or by suitable covering. The packages shall not be laid directly on the ground but shall be placed on boards raised a few inches from it.
- Stone Sand and Water.** (7) The stone used shall be granite, quartzite, fine-grained limestone or other equally strong and durable stone, care being taken to exclude soft limestone, friable sandstone, and stone affected by the atmosphere. It shall be broken into varying sizes, the largest to pass, any way, through a two-inch ring. The sand used shall be clean, sharp, silicious, and of varying sized grain. The water used shall be clean and care shall be taken not to use an excessive amount, the concrete when mixed and ready for the work to have the consistency of freshly dug earth.
- Gravel in Concrete.** (8) When gravel is used in making "fine" concrete, it shall be clean, free from clay, loam, or vegetable matter, nor shall it contain stones, any diameter of which exceeds two inches. It shall first be thoroughly mixed in a dry state, with Portland cement, in the proportion of six parts by measure of gravel and one of cement. To this water shall be added and the whole again thoroughly intermixed, the consistency and manner of placing in the work to be in accordance with all portions of this specification applicable thereto.
- Where the gravel contains an excessive amount of sand, loam or other objectionable material, it shall be screened to remove all sand and earthy matter; if necessary it shall be well flushed, the dirty water being allowed to run off. The gravel so treated may then be mixed, instead of broken stone, with sand and cement as prescribed in section four (4) of this specification.
- Manner of doing work.** (9) While the work is in progress, it shall be so arranged that a steady supply of mixed concrete shall pass from the mixing box to the point where it is to be placed. At any time when the work is interrupted before its completion, or at the end of the day, a wet covering shall be placed over the last layer of concrete; before the work of depositing the concrete is resumed, this surface shall be thoroughly flushed with water to remove any foreign material which may have gathered thereon. No concrete shall be laid in wet or freezing water.

## SNOW ROADS.

The obstruction of roads in winter by snowdrifts is of yearly occurrence in many parts of the Province. Snowdrifts are caused by obstructions to the drifting snow, close to the ground, where the winds are sweeping it along.

Fences along roadways should either be entirely open or very high and close. The intermediate stage, found in the rail fence, offers an obstruction to the wind, but permits the drifting snow to pass through, subside, and pile up on the sheltered side of the fence. This is one of the most common causes of blockades. High board fences have been built by railway companies at certain points to prevent drifting, and have proven very effective, but the cost is prohibitive for ordinary highways. The drifting snow is close to the ground, and such fences obstruct the velocity and change the current of the wind, causing the snow to fall beside the fence, before passing over into the roadway.

Open wire fences along the roads have been encouraged by many municipalities, the council frequently providing the wire or giving a bonus of from 25 cents to 40 cents a rod. Wire fences prevent the snow from accumulating so as to form banks and pitch holes, and make a decided improvement, but are not a complete preventative. The uninterrupted current of the wind constantly moves the loose snow into the beaten sleigh track, making travel heavy, and gradually raising the centre of the road to such a height as to make it difficult for loaded sleighs to pass one another.

Where the forest covers the ground, the winds have not sufficient strength to carry the snow, so that it lies evenly and with a uniform depth. The completeness with which the country is being stripped of trees is largely responsible for the blocked condition of our roads in winter.

Tree planting can be done so as to break the current of the wind, and to prevent the sweep across wide clearings in which it gathers a large amount of snow; not trees along the roadway only, but also along the division fences on the farms to interrupt the velocity of the wind before it reaches the roadway. Observation will show, wherever the plan had been adopted, or where orchards, groves or hedges exist near the road on the side from which the prevailing winds blow, that banking occurs to a much less extent. Hedges of cedar, spruce or other evergreen, in place of fences along the road, are a complete preventative.

Snow roads are kept open under the statute labor system by pathmasters. Under a system of commutation, or where statute labor is abolished the council may continue to appoint men as pathmasters for this purpose alone, the men employed to be paid in cash by the council at a fixed rate per day. If preferred, it may be left to the road-overseer for each road division to arrange with suitable men to take charge of keeping snow roads open, but when appointed by the council they are required to act as in the case of any other municipal office.

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## COLONIZATION ROADS.

In the early history of this Province the building of wagon roads was looked upon as being one of the most important problems with which the early settlers had to deal. The land being entirely covered with heavy, deep-rooted timber, the task of clearing, stumping, grading and draining was a very difficult one. This encouraged early settlement along the margins of lakes and streams, where access to markets and mills could be had by water. The land along these streams was not always the most desirable, or was quickly occupied, and soon the settlers ventured to explore farther back, with special regard to the future value of their location. While the settlement was scattered for many years, these men endured all difficulties and privations in their efforts to establish homes and to improve their possessions.

Much of the travel was by canoe, when in the direction of streams, and often by the more difficult land route across the country, where the trail or the blazed line was the only road, and where personal strength was the only means of conveyance. History

records many instances of long travel, carrying heavy burdens of grist to mill, or simple articles of food and apparel for the family. The duty of building roads was realized to be a difficult and trying one, requiring years of honest toil to accomplish, yet they faced it manfully in addition to all the other duties of early settlement, and with little or no assistance, so that we marvel at what has been accomplished in one brief century.

Municipal appropriations and Government aid were not available in those days, and nothing but the strength and application of man could be resorted to. Thanks to the efforts of these pioneers and their successors, the forests have been driven back, the lands have been brought into successful cultivation, roads have been formed, and much done to make them good through what is known as the older part of Ontario.

Not satisfied, however, with the development of one portion of the country, efforts are now being put forth to colonize what may fairly be looked upon as the larger, and in many respects the wealthier portion. With immense areas of rich agricultural soil, well timbered and watered, with an excellent climate, no good reason can be offered for not opening it up to receive the surplus population of the older settlements, rather than to have them drift to other Provinces and other countries. Much has been done to attract the attention of settlers to this new section of Ontario, and some localities are now fast filling up.



BUILDING A COLONIZATION ROAD IN NEW ONTARIO.

There are, scattered through each of these communities, what may be justly called pioneer settlers, who for years have been trying to attract their fellows, and these have experienced many of the troubles of early settlement. But by those who are now pouring into New Ontario very little of the genuine pioneer life is experienced. Where it is desirable that a section should be opened up, it is the duty of the Government to do all in its power to remove obstacles from the way of the settlers, so that they may devote their time and energy to clearing the land. The more rapidly this is done, the more quickly will these hidden treasures be cultivated for the benefit of the whole Province.

For the older part of the Province, much has been done by moneys realized from the lakes, forests and mines of New Ontario, and it is only just that a fair proportion of the revenue of that section should be used in aid of its substantial development. Opportunities are now provided for doing this more easily, cheaply and perfectly than before, and for this reason much of the attention of the Provincial Road Department is being turned to the important matter of building proper colonization roads.

A careful examination of the whole section is first made, comprehensive plans are laid down for securing lines that will best accommodate communities for the future as



well as the present. Due regard is being paid to location so as to secure the straightest and shortest lines, at the same time having due regard to grades, hills, and easy crossing of streams. A study of the experience of the older townships is of the greatest benefit in the framing of such a plan.

The ruling principle of older Ontario seemed to be to follow, as nearly as possible, the fixed lines of survey, regardless of hills, grades or crossings. The result has been that much extra cost is involved in building expensive bridges and keeping up troublesome hills, in addition to the constant annoyance and loss of energy in hauling loads over difficult grades. These might have been removed by slight deviations from the straight line, with little, if any, difference in length.

The new system provides for clearing the road the width of the allowance, and forming the roadbed, in however elementary a way, so as to provide a uniform width of grade, as far as possible making the width in accordance with the demands of travel. Thorough and systematic drainage is being resorted to, and strict attention is given to the building of drains sufficient to carry the water to outlets in the adjoining land.

The excavated earth is used in forming the roadway, and no more corduroy is used than is indispensable. The drainage of the road and the making of top drains, in addition to securing a firm foundation, relieves the land of surface water and provides outlets for the drainage of the settler's first clearing. The value of this is fully appreciated by all who are enjoying its benefits.

Modern machinery for doing this work easily and quickly is being adopted wherever practicable, and as fast as means will permit, new roads are being opened, with the result that settlement in New Ontario cannot be styled pioneer life, as compared with the first occupation of older Ontario.

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## WIDE TIRES.

To make roads and repair them is not all. To relieve the roads of unnecessary wear is equally important. In this connection "wide tires" are a first consideration.

Vehicles for carrying loads of a ton or more should have tires at least four, or, better, five inches wide. With expensively built stone roads the ruts made by narrow tires may be so repaired as to keep the road in a fairly good condition though at increased cost. But broad tires are particularly necessary on roads such as are commonly constructed in this country. Narrow wagon tires are the greatest destroyers of such gravel and broken stone roads as are built and maintained in Ontario. Even with traffic which is not excessive, our country roads will not be kept in a moderately good condition so long as they are subjected to the strain placed upon them by narrow-tired waggons. There are two aspects of the question of tire widths to be considered. (1) The relation of the tire to the amount of horse power needed to move the load; (2) The effect of different widths of tires on the roads.

## Traction.

With respect to the first of these, the tractive force required, the effect of the width of tires varies with the condition of the roads. On a smooth, hard, unyielding pavement there is practically no difference, except that the broader base takes the firmer hold of the road, and the wheel revolves more easily and perfectly.

With soft roads, deep with semi-liquid mud, the advantage is slightly in favor of the narrow tire, since the wide face has a tendency to carry the mud with it. It is with the intermediate stage, such as exists on a good gravel or dirt country road, that the chief benefit arises. Through such surfaces narrow tires cut, and the load is, in effect, being constantly drawn up hill; but broad tires roll smoothly along the top. A wagon having tires wide enough to keep the wheels from cutting into the road will plainly draw more easily than one which plows through the mud instead of running

over it. Experiments have shown that the loads which, on narrow tires, sink to the axles, can be drawn without difficulty when broad tires are used. It is admittedly the case that wide tires are an advantage on farms, but there appears to be a hesitancy as to their use on the roads.

It is urged against wide tires that they do not roll freely in the ruts made by narrow tires. So long as narrow tires are commonly used this will be the case to some extent; but, on the other hand, if wide tires were generally used the ruts would not exist. In any case, with narrow tires the bottom of the ruts made by the narrow tires are uneven, and the narrow rims are constantly grinding against the sides of the ruts, creating the greatest friction, so that the objectionable difference is not so great as it appears on first sight, if it exists at all.

It is further contended that the wide tires come in contact with more loose stones than do those with a narrow tread. The greater resistance offered in this way is more than counterbalanced, however, by the loose stones dropping into the narrow ruts. In the one case the wheel goes to the stone, in the other the stone gets in front of the wheel. The irregular bottom of the ruts, and the stones in the narrow ruts keep up a constant vibration of the wagon, which transmits a swinging motion to the tongue, galling and annoying the horses, and destructive to conveyances.

### Benefits to Roads.

Broad tires actually improve a road by rolling it down hard, and leaving it smooth, so that water runs off without doing injury. Narrow tires cut and grind, burst and plow their way into the road, leaving ruts and holes to catch and hold water. The difference between the two is on a par with the difference between a pick and a pounder. The one tears up, the other consolidates.

The narrow tire is a rut producer. With a load of 2,000 pounds each wheel must support 500 pounds. Thus a narrow straight line, the width of the tire, must support 500 pounds. With macadam, gravel and dirt roads the narrow tires commonly used must have a greater bearing, and so, the width of the tire being fixed, the wheel sinks into the road so as to extend the bearing along its circumference. In this manner the rut is commenced. Other narrow wheels follow, deepening the rut and loosening the earth around it. After a rain, water lies in the hollow to assist the work of destruction.

Broad tires, on the contrary, are a benefit rather than a detriment to the road. They do very largely the work of a roller. Instead of a bearing of one and a half or two inches, the width of a narrow tire, this is increased to four, five or more inches. The advantage is at once apparent. The broad tires do not sink at all so deeply into the road as do the narrow, but distribute their weight across the road as well as lengthways. Their broad bases do not slip from protuberances so readily, and the consequent jolting is avoided. They do not push loose stones before them, tearing up the road, as do narrow tires, but pass over them, pressing them into the road. Grinding, upheaving and fracturing do not take place as with narrow tires, the road is compacted and compressed, and rendered thereby less pervious to moisture. This means that at all times the road is better, while the cost of maintenance is very greatly reduced. Were the benefit of broad tires better understood in Ontario our unimproved roads would be very much less cut up, and improved roads would be more cheaply kept in repair.

In descending hills with heavy loads, it is a frequent practice with teamsters to lock one or more wheels. It is evident that the injury to the road, which is very great in any case, is much increased when the load is supported by cutting tires. Hills, even under ordinary traffic, are expensive to maintain, and the width of the tire used with locked wheels becomes a very important consideration. In nearly every part of the Province this is the case to some extent. But there are districts where hills, many of them steep, are of constant occurrence. In such localities the practice of locking wheels is very common, and the necessity for wide tires is of the utmost consequence.

### Wide Tire Laws.

While a width of four or five inches is very satisfactory on farm wagons, the drays and tonnage wagons used for the transportation of excessively heavy freight in towns could reasonably be twice this. England and all the progressive European countries have laws regulating the width of tires according to the load vehicles are designed to draw. Sometimes the width is regulated by the size of the axle. In France, a country which presents some of our most perfect models in road making, tires on market wagons range from three to ten inches, the majority being from four to six. The gauge of the wheels is sometimes set so that the track of the front wheels comes inside the track of the rear wheels. In New York State the turnpike law grants reduced rates of toll to vehicles with broad tires. The Michigan road law provides that users of wide tires are entitled to a rebate of half their road tax.

Obviously the use of wide tires cannot be made immediately compulsory, without working injustice. Provision could be made, however, that a by-law regulating the matter would come into force after a term of years; fair warning would thereby be given and little inconvenience would be felt; before the time for enforcing the by-law arrived the use of wide tires would, in anticipation, have gradually become more common. The beneficial effect of wider tires would then be apparent to all, and public opinion would demand and sustain the enactment. The people are competent to judge in this matter, as in others affecting personal and public interests. The great reason that wide tires are not now used is that the public have not had an opportunity to judge of their merits in a practical manner. Further, the users of the road have in the past looked at the matter of draught only. They prefer wide tires on the farms because the fields and lanes are not cut up by them. The roads, however, have been regarded as public property, and the users have not felt a personal interest in their condition.

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### ELECTRIC RAILWAYS.

The use of highways by electric railways is creating new problems with regard to the maintenance of roads. The number of charters now being sought indicates that this use of the highway will increase very largely in the near future. This means of travel and transportation is beneficial to the district through which the railway passes, especially the property immediately adjacent to the line of railway. In fruit districts the advantage is marked, in that perishable and tender products can be conveyed to the market with rapidity and careful handling. In other respects the advantages of the town, through this convenient means of transportation, become a part of country life; so much so, that suburban residences of business men are found considerable distances from the town, wherever electric railways exist. With these advantages come certain disadvantages and there are details connected with the maintenance of highways upon which electric railways have been constructed that require the attention of municipalities.

#### Location.

The natural location for an electric railway would appear to be, in most cases, along the public highways. Here it is most convenient for the public using the cars, and the railway companies naturally benefit by the greater amount of traffic which thereby arises. One of the chief merits of the electric railway is that it passes close to one's door, and that the cars can be stopped at any point to let passengers on and off. From this occupation of the common road by electric cars the principal difficulties arise.

When these railways, as is commonly the case, are laid on the graded and travelled portion of the highway, the width of roadway for ordinary traffic is confined to a narrow strip. Surface drainage, from the road to the side drain, is interrupted by the railway track, and the expense of maintaining the road is increased.

During the time of snow roads, when the roads are drifted and the snow is deep, the snow thrown from the railway track by the snow plow is piled high on the sleigh road and difficulties are experienced, varying with the nature of the snow drifts. Where wire fences exist the tendency at all times is for the sleigh road to pile up to an inconvenient height. When, along side this, the snow from the railway track has been plowed out, down to the surface of the rails, the sleigh road is left in a dangerous condition.

The rails in the roadway, the poles and wiring at times cause a certain obstruction to the free use of the highway, from which accidents occur. An element of danger arises from the frightening of horses by electric cars, interfering much with the ordinary use of the highway.

In some cases, as road improvement progresses, the grade of the road may have to be altered, necessitating the raising or lowering of the railway tracks. Openings may be needed under the track for culverts or drainage.

All of these are details which are more or less affected by the location of the tracks. As has been pointed out, the roadway offers mutual advantages both to the company and to the public. Moreover, property owners would, as a rule, object to placing the railway to the rear of their residences, across the farms, thereby cutting up the fields.

It has been suggested that the railway companies could purchase a narrow strip in front of the farms and adjacent to the highway, so that the present fences might be moved back the necessary distance, the railway thereby being on its own right of way. By this means certain difficulties are lessened if not removed. The maintenance of the common road is not interfered with.<sup>3</sup> Responsibility for accident is definitely removed from the municipality, danger of accident is lessened, and the ordinary use of the highway is less interrupted. On the other hand, the sale of such a strip from the farms changes their boundaries, to which there might be a feeling of opposition, while the control of the road would be less definitely within the jurisdiction of the municipality.

The roadside, between the open ditch and the fence is in many cases the location best adapted to all interests.

### Scope of Agreements.

Local circumstances will in all cases suggest the scope to be covered in regulating the use of highways by electric railways. In general, the roads which may be occupied should be specified.

The location of the tracks on the highway should be distinctly specified, as a rule, by stating the distance the inner rail shall be placed from the centre of the road allowance. The placing of switches or turnouts, the laying of tracks across the road, the obstruction of the road in construction or in making repairs, should be regulated.

The company should make provision for private crossings, present and future, so that property owners may have free access to their land.

The class of construction to be adopted should be specified, the weight and kind of rail to be used, etc.

The company should construct and operate the railway so as not to interfere with ditches or watercourses, nor prevent their future construction under the Ditches and Watercourses Act, or by the municipality. In certain cases the cost of the necessary work under the track should be borne by the company.

A company will frequently select the side of a road least subject to interruption by snow drifts. Provision should be made for the removal of snow and ice from the railway tracks, and for the method of disposing of it.

The maintenance of the roadway between the company's tracks, and adjacent to them should be considered.

The erection of poles, wiring, etc., should be within the control of the municipality,

and accidents therefrom, as obstructions to the highway, should be definitely assumed by the company.

The municipality should be relieved from responsibility for accident of all kinds arising from the construction of the railways and the operation of cars thereon.

Provision should be made for the strengthening, construction and maintenance of new culverts and bridges.

Provision should be made for opening the roadway when necessary under and adjacent to the track, by the municipality, by a property owner, and by the company.

Agreements between electric railway companies and municipalities should be made as perfect as possible. All possible contingencies should be provided for by the municipality. Good judgment is needed in discriminating between what is necessary to safeguard present and future public interests, and that which may reasonably be omitted, as an unnecessary restriction. Much care should be exercised in drawing up these documents to see that all essential conditions are clearly and fully covered. In dealing with these matters the experience of other municipalities should be sought.

### PURCHASE OF ROAD MACHINERY.

Section 637 of the Municipal Act, by the Municipal Amendment Act, 1902, was amended by adding the following paragraphs, after paragraph number 10, providing that county, township, city, town and village councils may pass by-laws:

10a. For contracting for the purchase, conditionally or otherwise, or for the rental for a term of years, or otherwise, of roadmaking machinery and appliances for public uses within the municipality, and such contract may provide that payment for such roadmaking machinery and appliances may be made in instalments extending over a period not exceeding five years.

10b. For issuing debentures payable in not more than five years from the date of issue and for applying the proceeds of such debentures to paying for such roadmaking machinery and appliances, and it shall not be necessary to obtain the assent of the electors to any such by-law.

### AN ACT TO AMEND THE TOLL ROADS EXPROPRIATION ACT, 1901.

*Assented to March 17th, 1902.*

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. Sections 3, 4 and 5 of the Toll Roads Expropriation Act, 1901, are repealed and the following substituted therefor:

3.—(1) In the case of any toll road lying wholly within one township the municipal council of such township, and in the case of any such road lying wholly within one or more municipalities of the same county the municipal council of such county may agree with the owners of any such road as to the amount to be paid in order that the tolls on such road may be abolished, and, in the event of their failing so to agree, the same may at the instance of the municipal council of the township or county, as the case may be, be determined by arbitration as hereinafter provided, and if thereto required by a petition signed by fifty ratepayers the municipal council shall within three months take the necessary proceedings for that purpose and pass a by-law appointing an arbitrator.

Where road lies wholly in one township or in two or more municipalities in the same county.

(2) On the appointment of an arbitrator, as hereinbefore mentioned, either by a township or by a county, the clerk of the township or of the county, as the case may be, shall notify the owners of the road of such ap-

Appointment of arbitrator.

pointment. On the receipt of such notice the owners of such road may appoint an arbitrator, and in default of their doing so within 21 days of the receipt of such notice, the Judge of the County Court shall appoint an arbitrator or to act in their behalf. The two arbitrators so appointed shall, within fourteen days of the appointment of the last person appointed, meet and appoint a third arbitrator, and in default of their doing so from any cause then the Judge of the County Court shall ex-officio act as a third arbitrator, unless before the expiration of such fourteen days' notice in writing be given by the municipality or the owner to one or both of the two arbitrators requiring that in default of their agreeing on a third arbitrator some person other than the Judge of the County Court shall be the third arbitrator, in which case such appointment shall be made by the President of one of the divisions of the High Court of Justice on the application of either party on seven days' notice to the other.

4.—(1) The municipal council of any county (herein called the initiating county) may also in the case of any toll road where it lies partly in one or more municipalities of such county and partly in a city or separated town, or where it lies partly in one or more municipalities of such county and partly in one or more municipalities of another county, with the consent of the municipal council of the other county, or the city or town, as the case may be, agree with the owners or lessees of any such road as to the amount to be paid in order that the tolls on such road may be abolished, and may also agree with such other county or such city or town, as the case may be, on the proportions in which the amount shall be contributed by them respectively, and in the event of failure to agree on such amount the same, as well as the proportions of contribution, may, at the instance of the municipal council of the initiating county, be determined by arbitration as herein provided.

(2) In case of any such arbitration the municipal council of the initiating county shall appoint by by-law some member of the council or some officer thereof to act on their behalf in the appointment of an arbitrator on behalf of the municipalities, and a copy of such by-law shall be served on the clerk of the other county or city or town, as the case may be, and such other municipality shall within twenty-one days thereafter, by by-law, appoint some member of the council or some officer thereof to act on their behalf in the appointment of such arbitrator, and cause a copy of the by-law to be served on the clerk of the initiating county.

If such two persons, within seven days thereafter, agree and appoint an arbitrator by writing signed by them, he shall be the arbitrator on behalf of both municipalities, and in default of their agreement within that time or in default of such other municipality within said twenty-one days appointing a person to act in their behalf, the Judge of the county court of the initiating county shall appoint an arbitrator to act on behalf of the two municipalities, and the clerk of the initiating county shall notify the owners of the road of the appointment, whether by agreement or by the judge. On the receipt of such notice, the owners of such road may appoint an arbitrator, and in default of their doing so within twenty-one days of the receipt of such notice the Judge of the county court of the initiating county shall appoint an arbitrator to act in their behalf. The two arbitrators so appointed shall, within fourteen days of the appointment of the last person appointed, meet and appoint a third arbitrator, and in default of their doing so from any cause, then the judge of the county court shall, ex-officio, act as a third arbitrator, unless before the expiration of such fourteen days' notice in writing be given by the municipality to one or both of the two arbitrators, requiring that in default of their agreeing on a third arbitrator some person other than the judge of the county court shall be the third arbitrator, in which case such appointment shall be made by the President of one of the divisions of the High Court of Justice on the application of either party on seven days' notice to the other.

(3) The three arbitrators so appointed, or a majority of them, shall determine and award the amount to be paid to the owners, and shall determine and award the proportions in which such amount is to be contributed by them respectively.

5. In any case falling under sections 3 and 4 the municipality or municipalities, and the owners of the road may agree together that the judge of the county court of the initiating county, or any other person agreed on, may be the sole arbitrator, or any other person agreed on, may be the sole arbitrator, and the provisions of this Act shall apply in such case, and such sole arbitrator shall, in any case coming under subsections 3 of section 4, determine

Where road lies partly within a city or separated town or in another county.

Appointment of arbitrators.

Award to determine proportions in which municipalities to contribute.

Agreement upon sole arbitrator.

and award the proportions of contribution.

2. Section 9 of the said Act is repealed and the following section substituted therefor:—

9. After the award has become absolute or settled on appeal, or after an agreement has been arrived at between the municipality or municipalities as the case may be, and the owners of any road as to the amount to be paid in order that tolls on any such roads may be abolished, the municipal council of any municipality may, in the manner provided for in the Municipal Act, without submitting the same for the assent of the electors, pass a by-law for borrowing the amount required to be paid by such municipality to purchase the said roads, in accordance with the award of the arbitrators or arbitrator or the agreement made as aforesaid, by the issue of debentures of the municipality payable in not more than thirty years. A county council may provide by such by-law for raising any amount required to pay, and may pay to any municipality or municipalities which are not materially or are only slightly benefited by the purchase of the road or roads such a sum by way of bonus, as may be deemed a fair or partial equivalent for the amount which any such municipality will be required to pay towards the said purchase, or any part thereof.

3. Section 10 of the said Act is amended by inserting the following words after the word "liable" in the sixteenth line:—"Such by-law shall provide for assessing and levying upon all the ratable property in such respective municipalities or portions of municipalities, the annual sums necessary to meet the debentures and the interest thereon as the same fall due, and, if necessary, to form a sinking fund for that purpose, and may be passed by the county council without submitting the same for the assent of the electors."

4. Subsection 8 of section 8 of the said Act is amended by adding thereto the following:—

In any case falling under section 4 the road shall be taken and the amount agreed on or awarded shall be paid within one year as aforesaid unless both municipalities elect that the road shall not be taken and so notify the owner and in that case the costs to which the owner has been put shall be paid by the municipalities in equal shares.

5. Section 14 of the said Act is amended by inserting the words "two next" before the word "preceding" in the second line.

6. Section 15 of the said Act is repealed and the following substituted therefor:—

15. On the completion of the purchase of the roads by any county and upon the removal of tolls therefrom, all tolls shall be removed from the portions of such roads lying within the limits of any city or town.

Upon the removal by the county of the tolls from any road under this Act, such road so far as it lies within the county shall thenceforward be a county road within the meaning and provisions of the Municipal Act.

7.—(1) Subsection 1 of section 2 of the Toll Roads Expropriation Act, 1901, is repealed and the following substituted therefor:—

(1) "Owner" or "owners" shall include any person or persons, joint stock company or municipality having any legal, equitable or leasehold estate or interest in a road.

(2) Subsection 6 of section 8 of the said Act is amended by striking out the words "proprietor or proprietors" in the said subsection and inserting in lieu thereof the words "owner or owners."

(3) Subsection 9 of section 8 of the said Act is amended by striking out the words "preceding section" and inserting in lieu thereof the words "next preceding section."

1 Edw. VII.,  
c. 33, s. 9,  
repealed.

Borrowing  
amount neces-  
sary to free  
roads.

1 Edw. VII.,  
c. 33, s. 10,  
amended.

Provisions in  
by-law for  
special rates.

1 Edw. VII.,  
c. 33, s. 8,  
ss. 8, amended.

When municip-  
ality must  
elect to take  
road or abandon  
purchase.

2 Edw. VII.,  
c. 33, s. 14,  
amended.

1 Edw. VII.,  
c. 33, s. 15,  
repealed.

Removal of  
tolls in cities  
or towns on  
purchase by  
county.

1 Edw. VII.,  
c. 33, s. 2,  
ss. 1, repealed.

S. 8, ss. 6,  
amended.

S. 8, ss. 9,  
amended.





# ANNUAL REPORT

OF THE

# BUREAU OF INDUSTRIES

FOR THE

## PROVINCE OF ONTARIO

1901.

PART I.—AGRICULTURAL STATISTICS.

PART II.—CHATTEL MORTGAGES

*(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)*

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# ONTARIO BUREAU OF INDUSTRIES.

## PART I.—AGRICULTURAL STATISTICS.

### THE WEATHER.

The success of a crop depends upon the suitability of the plant to its environment, the quality of the seed, the nature of the soil, and the system of tillage practised; also upon the weather conditions prevailing during the period of growth. The records of temperature, rainfall, snowfall, and sunshine in the Province for a series of years are, therefore, full of interest and instruction to those who would study the agricultural conditions of the country.

TEMPERATURE. The following table gives the average temperature of the Province by months, and for the six months April-September inclusive—practically the growing season—for the past ten years, and also the average for the twenty years 1882-1901:

Month.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1882-1901.
January . . . . .	19.0	21.9	18.7	20.2	19.5	18.4	17.3	23.1	10.3	17.0	17.7
February . . . . .	13.0	17.1	15.2	22.0	21.8	19.2	14.5	16.9	14.7	21.9	17.9
March . . . . .	26.9	20.5	25.8	35.6	29.0	21.2	21.5	34.9	26.4	25.2	25.4
April . . . . .	45.0	44.8	44.5	42.1	42.7	46.3	43.3	44.3	38.7	40.3	41.8
May . . . . .	54.6	54.6	55.7	55.5	52.9	60.1	56.9	53.7	52.2	52.2	53.7
June . . . . .	65.8	64.1	64.8	65.6	60.9	64.8	68.0	66.1	67.6	65.4	64.3
July . . . . .	71.9	68.2	67.5	70.2	71.9	68.8	65.5	69.1	68.3	68.3	67.9
August . . . . .	67.5	70.9	68.5	67.7	64.2	67.2	65.3	64.0	66.1	66.6	65.9
September . . . . .	60.1	62.3	56.2	61.8	60.8	56.8	60.5	61.1	56.0	58.8	58.6
October . . . . .	48.5	55.2	50.0	48.7	50.1	43.4	41.4	48.8	48.2	46.6	46.7
November . . . . .	31.9	35.3	38.0	34.9	34.9	37.8	34.5	31.6	35.1	33.1	34.8
December . . . . .	22.7	24.7	25.1	22.8	24.6	24.1	25.8	27.7	20.7	21.8	24.2
Annual mean . . . . .	43.9	45.0	44.2	45.6	44.4	44.0	42.9	45.1	42.0	43.1	43.2
Mean for six months, } April to September }	60.8	60.8	59.5	60.5	58.9	60.7	59.9	59.7	58.2	58.6	58.7

The mean annual temperature was 43.9°, or 1.1° below that of 1900, and .7° above that of the twenty years 1882-1901. The mean for the six months April-September was 60.8°, or exactly the same as that of the preceding year, although 2.1° above that of the twenty years period. February, November, and December were the only months which showed a relatively low range of temperature, the other nine months going more or less over their respective averages. The mean temperature for July was 71.9°, or 4° above its average for the twenty years. This high average temperature, while equalled by that of July in 1897, has never been reached by any other month in the years comprising the table. April also showed an unusually high increase in temperature compared with its average for the twenty years.

PRECIPITATION. The fall of rain and snow in the winter months is given in the following table for ten years, together with an average for the twenty years 1882-1901. An inch of rain is the equivalent of ten inches of snow :

Year.	November.		December.		January.		February.		March.		Total for five months	
	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1901.....	2.99	10.4	0.51	8.6	0.58	18.8	R	17.6	1.60	13.1	5.68	68.5
1900.....	1.13	1.0	2.15	14.5	0.72	15.8	1.68	26.8	0.53	18.8	6.21	76.9
1899.....	1.67	9.6	0.74	24.6	1.50	13.2	0.76	8.0	1.78	22.1	6.45	77.5
1898.....	3.40	8.9	1.73	17.5	1.47	18.2	0.60	18.9	2.42	1.0	9.62	64.5
1897.....	2.51	6.2	0.37	9.6	1.15	17.3	0.89	14.1	1.52	12.7	6.44	59.9
1896.....	2.47	7.7	2.22	13.2	0.65	17.1	0.46	24.5	0.74	11.4	6.54	73.9
1895.....	0.78	11.4	1.49	6.6	0.77	31.3	0.08	12.0	0.41	10.8	3.53	72.1
1894.....	1.97	9.9	1.85	26.2	0.91	14.0	0.59	15.1	1.15	4.8	6.47	70.0
1893.....	2.09	10.8	0.68	11.6	0.43	25.5	0.73	24.3	1.19	5.4	5.12	77.6
1892.....	3.91	7.4	1.84	6.4	0.44	21.7	0.66	16.7	0.50	7.7	7.35	59.9
1882-1901.....	2.17	8.5	1.31	15.0	1.03	20.2	0.91	16.8	1.10	11.9	6.52	72.4

The rainfall of the Province for the five months averaged 5.68 inches, or .84 inch less than the average for 1882-1901, and the snowfall was 68.5 inches, or 3.9 inches less than the average. The most striking feature of the table is that during the three consecutive months December, January, and February the rainfall was only about one-third that of the normal, being but 1.09 inch as compared with an average of 3.25 inches for the twenty years. While December experienced the lightest snowfall since 1895, practically all the precipitation of February was snow.

The growing season for most crops, however, is limited to the six months April-September, and the following table shows the rainfall for the past ten years, and also the averages for the twenty years 1882-1901 :

Months	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1882-1901
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
April.....	2.26	1.44	1.10	1.45	2.52	1.26	1.49	0.99	2.61	1.15	1.56
May.....	3.67	2.03	3.43	2.43	3.38	2.10	2.36	5.72	3.35	3.64	2.88
June.....	2.14	2.83	2.46	2.83	2.83	2.39	1.37	2.32	3.15	4.54	2.77
July.....	3.90	3.96	2.78	1.11	5.36	2.79	2.02	1.72	2.44	2.73	2.69
August.....	2.78	2.15	0.81	2.64	2.62	2.86	2.81	0.84	2.67	4.26	2.52
September.....	2.78	2.73	3.72	2.94	0.83	4.47	2.67	3.73	1.94	3.84	2.63
Total for six months.....	17.53	15.14	14.30	13.40	17.54	15.87	12.72	15.32	16.16	20.16	15.05

The total precipitation for the six months was 17.53 inches, which was 2.38 inches more than the average for the twenty years. June is the only month in the table showing a decrease

in rainfall compared with its own average. June is also credited with the least rainfall for the year, although April is by far the driest month of the six for the twenty years.

**SUNSHINE.** In the following table the averages of sunshine are, as usual, derived from the records of the weather stations at Woodstock, Toronto, Barrie, Lindsay and Kingston.

Months.	Sun above horizon.	1901	1900	1899	1898	1897	1396	1895	1894	1893	1892	1882- 1901
	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
January .....	285.7	59.7	77.1	90.8	76.2	70.4	52.3	73.0	74.5	64.0	72.8	68.7
February .....	291.4	115.7	109.8	112.8	69.3	93.7	104.0	110.2	124.2	93.8	93.6	94.9
March .....	369.9	96.9	161.4	133.2	157.5	148.3	188.1	179.6	127.5	150.4	174.9	148.7
April .....	406.4	154.5	214.0	223.2	230.2	174.2	180.3	195.1	212.9	148.5	215.2	193.0
May .....	461.1	177.3	247.9	210.9	196.3	196.9	262.1	252.1	181.7	211.1	165.4	211.9
June .....	465.7	265.5	305.3	278.2	237.1	219.8	302.1	286.3	244.6	247.8	201.4	252.8
July .....	470.9	268.2	266.3	302.2	307.8	258.7	237.8	232.4	276.2	284.2	315.1	272.6
August .....	434.5	203.0	271.4	262.1	225.2	262.4	262.6	228.0	207.3	259.0	231.6	240.8
September .....	376.3	199.7	190.0	164.4	202.4	237.1	168.0	194.2	156.4	177.8	218.2	193.4
October .....	340.2	163.0	164.0	141.7	118.2	161.0	135.5	149.0	129.4	150.0	145.6	134.8
November .....	236.9	80.3	82.4	78.6	89.0	60.8	69.8	79.3	64.7	81.3	35.1	68.1
December .....	274.3	62.9	46.6	60.2	56.6	40.6	80.8	57.1	65.5	55.8	56.6	56.8
Total for the year	4463.3	1852.7	2136.2	2058.3	1665.8	1923.9	2043.4	2036.3	1864.9	1921.7	1925.5	1936.5
Total for 6 months April-Sept. ....	2614.9	1274.2	1494.9	1441.0	1599.0	1349.1	1412.9	1388.1	1279.1	1356.4	1346.9	1264.5

There were only 1852.7 hours of sunshine registered in 1901, or 283.5 hours less than in the preceding year, which was one of unusual brightness, and 83.8 hours less than the average for 1882-1901. The sunshine for the six growing months April-September amounted to 1274.2 hours, or 90.3 hours less than the average for the twenty years, and 220.7 hours less than were registered in 1900. The harvest months of July and August did not equal their averages.

#### VEGETATION.

Correspondents who wrote a few days before the the 1st of May considered the season as rather backward, but those who sent in their reports after that date spoke of rapid growth in both field and forest, which had brought vegetation rather more forward than usual. The eastern portion of the Province appeared to have been relatively more advanced in this respect than the west. Meadows in the beginning of May afforded excellent pasturage for sheep, and a fair bite for other live stock. An Essex correspondent writing on May 6th, stated that peach trees were then in profuse bloom.

**SPRING SEEDING.** Taking the Province over, spring sowing may be described as being about half done on the first of May, although in a few localities it was claimed that the work was practically completed by that time. Early sown grains found an excellent seed-bed, more especially on high and well drained lands; but a heavy snow and rain storm, ranging from the 19th to the 21st of April, gave spring operations a decided set back by flooding low-lying places, and not only preventing further sowing for a week or so, but in some instances drowning out a portion of the crop already put in. Notwithstanding this drawback, the prospects for spring

crops were on the whole encouraging on May 1st. A few correspondents reported potatoes a having been planted, which was somewhat earlier than usual for that crop.

### THE GRAIN CROPS.

**FALL WHEAT.** The reports regarding the newly planted fall wheat were thus summarized in the bulletin issued in November, 1900: "Correspondents in the fall wheat counties of the western part of the Province are divided as to the area of new wheat compared with last year, although it is probable that decreases and increases will about balance themselves, and give an average acreage. In the eastern part of the Province there is a decided gain in the area grown. The period of sowing ranged from the last week of August to the third week of October, the bulk of the crop being put in about the middle of September. While some complain of a dry seed bed, the majority of reports speak of a good catch, and in a number of instances the growth has been so rank that cattle have had to be turned into the fields to eat off the tops of the plants. In the western half of the Province the Hessian fly has been attacking the new wheat, but in the counties east of York little or no mention is made of this pest. Over forty different sorts of fall wheat are mentioned as growing, the favorite varieties being Dawson's Golden Chaff, Clawson, and Genesee Giant."

In the Annual Report of the Agricultural College for 1900, Prof. W. Lochhead thus referred to the visitation of the Hessian fly: "Many complaints reach us regarding the prevalence of the Hessian fly, and observations show that it is prevalent in all the counties along Lake Erie, viz.: Essex, Kent, Elgin, Norfolk, Haldimand, Welland, and Lincoln. The wheat crop of Middlesex, Lambton, Huron, Oxford and Brant have also been badly attacked, and occasional complaints have come from Perth and Simcoe, Bruce, Grey, Wellington, Waterloo, Dufferin, but the counties east of Toronto are practically free. The long open falls of the past two years have been very favorable to the breeding of Hessian flies. Reports of the dates of sowing of the fall wheat in the infected districts make it quite clear that the time of the sowing of the seed should be postponed till the last week in September. Where such late sowing has been done the crop has escaped the fly. It is often maintained that seed sown after the first week in September does not produce a yield equal to that produced from seed sown prior to that date; but, on the other hand, it does not take many Hessian flies to make a material reduction in the yield of an infested field."

But for the injury done by the Hessian fly in the southwestern part of the Province, fall wheat could be classed as a most promising crop in May. Unfortunately every county south of a line drawn from Hamilton to Sarnia had suffered considerably from the fly, and a few townships a little to the north had also been visited by the pest. Some fields had to be plowed up on that account, but not so large an acreage as the poor condition of the wheat would warrant, on account of the grain having been "seeded down" with grass. Outside the counties affected by the Hessian fly, fall wheat was then looking well. Some injury was done by ice on low-lying or poorly drained lands, but as a rule the crop presented a luxuriant appearance—the growth having been almost too rank in places in the fall—and several counties were expected to give yields well up to the record.

The August bulletin contained the following: "Returns just to hand show that the injury done by the Hessian fly in the Lake Erie group of counties has been so great that in many instances the yield per acre is as low as only five bushels per acre, although in the same localities larger yields per acre have also been returned. The fly has done comparatively little damage in the Georgian Bay counties, in Bruce, and in the central and eastern portions of the Province. There has been more or less just complained of, the hot, damp weather prevailing at times being favorable for its development. In the reports as to the quality of the grain,



frequent mention is made of the kernel being shrunken, the intense heat of the early part of July, it is averred, causing premature ripening. Harvesting took place rather earlier than usual. While a number of correspondents speak of the crop being cut and housed in excellent condition, others complain that the rains prevailing at the latter part of harvesting, together with the great heat, caused some of the grain to sprout in the shock. Very little threshing had been done as correspondents wrote, but it is expected that returns will range from 5 to 40 bushels per acre."

According to November reports, the crop was a good deal below the average from various causes. In the west the ravages of the Hessian fly did great injury, and much of the surviving grain was light in weight on account of the extreme heat and drouth of June and July. Rust, cockle, and chess were also mentioned as among the season's drawbacks, and in some western localities the grain was spoiled by wet before it could be harvested. Reports from the eastern section—which was free from the Hessian fly—were somewhat more favorable, especially as regards the Ottawa valley and East Midland counties, where the crop was a fair one, the principal causes of injury being the excessive early rains and drouth before harvest, owing to which much of the grain was shrunken. There had been no noticeable damage from frost, but a devastating hail storm destroyed a large area of grain in Carleton county.

**THE NEW FALL WHEAT.** "The bulletin sent out in November, 1901, said: "There has been a very considerable and well nigh universal decrease in the acreage devoted to fall wheat, owing to the ravages of the Hessian fly. In order to secure the new crop against the pest, sowing has been deferred by many farmers to a later period than usual. While the bulk of the seeding was done during the first three weeks of September, a large number postponed the work until the following month. The condition of the ground was generally good, although dry in many localities, and where the young plants are visible they present as a rule a healthy appearance. Rain, however, is badly needed in some neighborhoods. In several western counties, more especially in those bordering on Lake Erie, the earlier sown wheat has been attacked by the Hessian fly which occasioned much injury. The principal varieties of fall wheat sown were Dawson's Golden Chaff, Red Clawson, and Genesee Giant."

**SPRING WHEAT.** This crop is grown chiefly in the eastern half of the Province, correspondents in the western counties having comparatively little to say about it. According to the August returns the yield was a variable one, although a large number of correspondents spoke of good returns. The crop, like fall wheat, suffered considerably from rust, and from an insect which did a good deal of injury by cutting the stock at the joint. Some also complained of the Hessian fly. Only a few had cut their spring wheat as correspondents wrote, but the bulk of the standing crop was then reported to be in fair condition.

November reports stated that but little spring wheat was grown this year in the western part of the Province, and where cultivated, the crop was a light one, owing to the same causes as injured other cereals. The yield in the eastern section was fair in most neighborhoods, but the grain was frequently small and shrivelled owing to the drouth.

**BARLEY.** The August bulletin had the following: "As in the case of other cereals, correspondents are not nearly agreed regarding the yield and quality of barley, although it is likely that it will be a better crop relatively than either fall or spring wheat. It has suffered but little from insect pests, and while some correspondents report the grain as discolored by rains during harvesting, others claim that the color is good, although the berry is rather small in size. The wet weather of May, and the excessive heat during a portion of July, are given as the chief causes of drawback to the crop. The straw is reported as short in length in various localities. Harvesting was general from the 15th to the end of July, although some fields were being cut as correspondents wrote during the first week of August."

November reports as to the barley crop were very variable. It suffered somewhat from the Hessian fly, and to a greater extent from the drouth, which resulted in premature ripening, rendering the grain light and the straw short. There was considerable difference in the sample, which many described as bright in color, while, in other neighborhoods, it was badly colored and of a low grade.

**OATS.** August returns regarding this crop were far from being unanimous. In various sections of the Province, more particularly in some of the Lake Ontario counties, large returns per acre were reported, but in some other localities the reverse was claimed. The crop also suffered from the abnormal heat of July, which hastened ripening, and in many cases prevented the heads from filling out thoroughly. Correspondents in eastern Ontario spoke of the crop as having ripened very unevenly, which delayed harvesting in some instances. Only a few had cut oats up to the first week of August. The straw in many cases reported was not as long as usual.

According to November statements the oat crop was unfavorably affected, especially in low lying ground, by the heavy rains in the spring, and injured by the extreme heat of midsummer and, as a consequence, much of it was light in the grain with short straw. The early sown crops as a rule yielded much better than those sown later in the season. In some cases injury was caused by rust. This crop appeared to have done slightly better in the Lake Erie and East Midland districts than elsewhere.

**PEAS.** The August reports regarding peas varied considerably, except on the one point, that the crop was more or less injured by the "weevil" or "bug," although where grass peas were sown they escaped attack. Yields were expected to range from 10 to 30 bushels per acre. While some spoke of the straw as being of good quality, though rather short, others complained that it had been blackened by rain and heat. A good deal of the crop had yet to ripen as correspondents wrote.

The November bulletin had the following concerning peas: "Owing to the ravages of the pea bug in past years, a much smaller area was devoted to this crop than usual, and the injury done by the pest, together with the damage done by dry weather, have resulted in a small yield. Reports vary little as to locality, being generally unsatisfactory as regards the ordinary varieties. Grass peas, however, which have been largely raised in many neighborhoods, have as a rule done well."

**BEANS.** Outside the county of Kent beans are not largely grown as a field crop. The beans were beginning to pod when correspondents wrote on the 1st of August, were in good condition owing to timely rains, and gave promise of an excellent yield.

According to November returns beans were, on the whole, a fairly good crop, though, owing to dry weather, the yield was a good deal decreased in many parts, the pods not being well filled.

**RYE.** Judging by the reports of correspondents in May, very little rye was being raised for the grain, most of the crop being cut for green food. Where grown, however, winter rye was described as looking well.

The August bulletin said: "Comparatively little rye is raised for the grain in this Province, the crop being used largely for soiling and other purposes. Where allowed to mature, it has turned out well in most cases, both as regards grain and straw, although in some instances affected by the great heat occurring in July."

The November reports were to the effect that rye appeared to have done better than the other cereals, the yield being generally fair though somewhat light in grain in many localities owing to drouth.

**BUCKWHEAT.** The yield and quality of buckwheat varied considerably, and the general result was about an average. The crop was generally well harvested, though in some places injured by rains.

**CORN.** The August bulletin said of corn: "Several correspondents lay stress upon the fact that this crop has become a most important factor in connection with cattle feeding. The advent of the silo has made corn one of the staple fodder crops of Ontario. Despite the fact that planting was delayed in many quarters owing to wet weather then prevailing, the crop has made good headway, and taken as a whole gives promise of doing well should early frosts not appear. Complaints are made of injury by crows and blackbirds, but otherwise the crop appears to have escaped damage."

According to November reports the season was, on the whole, a favorable one for corn, notwithstanding the drawbacks of cold, wet weather in the spring and subsequent drouth. The yield was large wherever this crop was grown, and the quality generally good both for husking and fodder purposes. In but few localities were there any losses by frost reported, the crop, having, as a rule, been saved in good condition, though there were exceptional cases of damage by smut.

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#### HAY AND CLOVER.

As correspondents wrote under date of May 1st, it was generally considered that clover had come out of the winter in about the same condition as it had entered it, the damage done by "heaving" and ice being very small. No mention was made by injury to the crop from insects. Clover fields had been given a good start by timely rains and warm weather, and were then presenting an excellent appearance.

The August bulletin had the following regarding hay and clover: "This is, without doubt, the most successful crop of the season, both as to quantity and quality. The average yield for the Province will be much above the average, particularly in the St. Lawrence and Ottawa counties, where, many correspondents assert, the hay crop is the heaviest ever cut in that part of the Province. As a whole, the crop has been well saved, ensuring an abundance of excellent fodder, although, in a few sections, more especially in the Northern Districts, rain did more or less damage. Several correspondents speak of the splendid form in which some old meadows showed up. Clover did better than timothy, and the second crop is looking well. Cutting extended from the last of June to the third week of July."

**CLOVER SEED.** The following appeared in the November bulletin: "Both red and alsike clover have done well, the yield of seed being unusually good. The stalks are generally short, but the heads are well filled and the seed plump. The drouth is responsible for a shortage in some quarters, while the midge has affected the crop injuriously in a small percentage of instances. Very little damage was occasioned by frost."

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#### FIELD ROOTS.

**POTATOES.** Judging by the number of correspondents who reported in August "one of the worst years yet for potato bugs," the beetle must have done a lot of injury. This coupled with the dry weather prevailing during the previous month or more, told greatly against the chances of the crop; and while some correspondents then spoke of a fair, and even a good prospect, the bulk of those reporting described the tubers as small in size and likely to be considerably below the average in yield. This was especially so in the case of early planted potatoes. It was pointed out, however, that recent rains had greatly improved the outlook for the crop. No blight had been reported up to August, and several correspondents referred to this act with much satisfaction.

November returns were thus summarized in the bulletin issued early in that month: "The report of correspondents as to the potato crop are very variable. In the eastern section the yield is a light one in most neighborhoods, a great proportion having been destroyed by rot, especially on clay soils and low-lying lands. More favorable accounts come from the west, where this kind of disease is not nearly so prevalent. In that part of the Province, late sown potatoes have generally yielded well, while those put in early in the season have suffered from dry weather or frost, and the bug has been in evidence as usual. The crop has practically all been secured."

**CARROTS.** This class of roots was seldom referred to by correspondents in the reports sent in at the beginning of August, although what little was said indicated that they were doing well where grown. November returns were to the effect that the season had been a good one for carrots, and that the crop had been housed in excellent condition.

**MANGEL WURZELS.** This crop did well, and the opinion was expressed that mangels appeared to be growing in favor, it being claimed for them that they were better able to withstand the drouth than turnips. The yield was a large one, and the crop was gathered without any drawbacks.

**TURNIPS.** Reports concerning turnips varied considerably during the early history of the crop. In many quarters there was poor germination of seed, and the fly also threatened loss, but in other sections a large crop was promised. November returns were generally favorable, although many of the turnips were considered to be small in size. Most of the crop was put by in good condition by the 1st of November.

**SUGAR BEETS.** In only a comparatively few localities have sugar beets been produced, but if the results continue to be as favorable as those of the season of 1901 they are certain to be more extensively sown. The output has been good as regards both bulk and quality in almost every case.

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### FRUIT AND FRUIT TREES.

The early part of the season opened rather auspiciously for fruit, as will be seen by the following from the May bulletin: "In the western portion of the Province, where most of the orchards are to be found, fruit trees have come through the winter in splendid condition. In the counties along the St. Lawrence, however, an "ice storm" in the spring had the effect of breaking off many of the branches, and in some cases killing the trees. A number of fruit trees in the northern districts are also reported to have died, although the cause has not been given. Orchards were coming into bloom as correspondents wrote, and nearly every class of fruit was giving promise of a generous yield should frost and heavy rains keep off during the period of "setting," although some state that it will be a comparatively "off year" for apples. A number of correspondents in various parts of the Province refer to the presence of the tent caterpillar, but this pest does not appear to be as common as it was a year ago. Odd mention was made of injury to fruit trees by field mice."

August returns showed that it was going to be an "off year" indeed for apples and cherries, notwithstanding their excellent prospects at the time of blossoming. The midsummer bulletin said: "Reports regarding apples are far from satisfactory. Although there was plenty of bloom in many localities during spring, much of the fruit did not set, and later on most of the apples fell off before maturing. There is not likely to be half an average yield. Several correspondents, however, point out that the Spy is doing better than any other of the winter varieties. Pears may be ranked as fair in quality and about an average in yield. Only one correspondent speaks of blight. Peaches will be a fair crop in the western Lake Erie Section, but will hardly do so well in the Niagara district. No mention has been made of disease in this connection. Plums range in yield from an average to failure, according to locality and care. The cur-

culio has been very active, and some of the crop has rotted before ripening. Cherries have suffered from rotting on the tree, and complaints of black-knot are also made, but in some of the western counties this fruit did very well. Grapes promise a good yield, notwithstanding the poor start in the spring owing to the cold and wet conditions then existing. Small fruits as a class did well, although raspberries suffered from the dry weather of July."

The November bulletin said: "Fruit trees are in good condition generally, and there has been an unusually heavy growth of wood. The season has been a poor one for fruit, more especially for apples, the staple orchard crop, of which there is a shortage everywhere. This appears to be due to a combination of causes, the principal enumerated being wet weather during the blossoming season, heavy winds, and the attacks of the tent caterpillar, codling moth, borer, and other insect pests. Shipments have consequently been light, many localities not having enough for local consumption. Insects also have proved injurious to the other fruits, but many correspondents note a plentiful supply of plums, pears, and peaches. Cherries and small fruits did fairly well in many places, though the quality was very variable. Grapes were in the main a good crop. The reports emphasize the need of spraying, as, wherever this process was followed, the losses by insect pests were considerably lessened."

#### MISCELLANEOUS.

**FLAX.** This crop has done well where raised, but it is not so largely grown as formerly. It has succeeded better this season in the Lake Huron counties than in the West Midland group.

**HOPS.** Correspondents had very little to say about hops. The few observations made were to the effect that where grown the crop is in good condition.

**LUCERNE.** This crop is increasing in favor, more especially in Western Ontario, where it is used as green feed to supplement pastures during June, July, and August.

**RAPE.** A large number of farmers are growing rape every year. Sheep and young cattle, it is claimed, do well upon it, and some also feed it to hogs with good results. The season was a favorable one for the crop.

**THRESHING AND MARKETING.** The following is from the November bulletin: "Threshing has been carried on actively and in many sections the work has practically been completed. Peas were marketed early on account of the bug, and a large quantity of oats have been disposed of; but wheat has not been moving very lively, and much of the barley is now fed on the farm."

**FARM IMPROVEMENTS.** November reports regarding farm improvements were to the following effect: "Good progress has been made in underdraining, more especially in the west, and some of the Ottawa River counties. In many localities where little advance is noted, many of the farms have been previously drained. In nearly all neighborhoods the supply of tile was sufficient. The supply of skilled labor was generally adequate to the requirements, as in most cases the work was done without engaging special help. Tile draining machines are very little used, and are not considered as satisfactory as hand labor. Almost everywhere wire fencing is rapidly taking the place of rail and other wooden fences, and in most localities, considerable improvements in the character of houses and barns are noted."

**FALL PLOWING.** The dry weather which characterized the fall in most parts of the Province considerably interfered with the progress of fall plowing, rendering the soil hard and dry, more especially in the Lake Erie counties, where the work was reported as backward. In other localities, greater advances had been made, many farmers having nearly or quite completed their plowing at the time correspondents wrote, under date of November 1st. Apart from the prevalent drouth, the weather was highly favorable for the work.

## LIVE STOCK AND THE DAIRY.

May returns were to the following effect: "All classes of live stock came through the winter in good condition. Horses especially look well, although there have been many cases of coughs and other light forms of distemper reported. Cattle were rather thin, but on the whole are healthy. A few cases of trouble in calving have been reported, together with an odd mention of "blackleg" in Leeds and Renfrew, and of lumpy-jaw in Huron. Sheep are reported to be in particularly fine form. Scab has disappeared, and lambs are plentiful and vigorous. Swine have commanded more attention than ever before, owing to encouraging prices; but while litters have been large there have been heavy losses among these young pigs, and during the latter part of the winter many hogs suffered from a form of rheumatism or "stiffening," which, however, appeared to wear off when the animals were turned out in the spring. In most parts of the Province there was an abundance of fodder for live stock during the winter, although a few farmers are said to have been compelled to buy feed in order to supplement their supplies. Some correspondents claim that the bacon industry has somewhat lessened the number of beefing animals raised by Ontario farmers; yet it would also appear as if all classes of live stock are receiving better care than ever before."

Pastures were in prime condition in the early part of the season, but fell off about the second week in July, when the warm weather began to dry up the grass. However, heavy rains were falling as correspondents wrote, about the beginning of August, and the prospects were that pastures would soon pick up again. It was then thought that the milk supply, which had fallen off correspondingly with the condition of pastures, would likely be materially improved. The decline in the milk flow was not attributable to the dry pastures only, but also to the teasing of the horn fly, which was most annoying during the warm term, and helped to get cattle somewhat out of condition. Prices for both cheese and butter were most encouraging to dairymen, and the bulk of correspondents were cheerful as to the outlook for fall and winter supplies, there being an abundance of hay, an excellent promise of corn, and a fair chance yet for roots, although straw, it was estimated, would be a short crop indeed.

The November bulletin thus described the situation: "Pastures were in good condition during the early fall in the eastern portion of the Province, although in the more western counties comparatively bare fields were common. Live stock of all kinds are in an unusually healthy state, an odd case of cholera in hogs being the only disease reported. While a few correspondents describe cattle as being rather thin, most of those reporting consider them to be in good average condition. In some localities the horn-fly was annoying. Some correspondents state that sheep are not kept in as large numbers as formerly, but they appear to be in good shape where raised. Swine are being fed in large numbers, and are being turned off more or less steadily the year around at weights ranging from 180 to 220 pounds. One correspondent characteristically refers to the hog as the "farmer's Klondike." The supply of fodder is said to be ample for the winter, hay, corn, and roots being abundant, although there has been a general shortage of straw. The silo is still growing in favor, an unusual number having been built in the West Midland district this year. Several correspondents speak approvingly of the husker and shredder as a means of preparing corn for fodder. Taking them all together, reports concerning live stock may be considered as satisfactory."

**POULTRY.** Judging by the remarks of correspondents it would seem that farmers are taking much more interest in poultry raising. More care is now being taken in the selecting, feeding, housing, and the general handling of fowl, and the question of profit and loss is being more carefully studied. The Plymouth Rock appears to be the most popular breed of hens. Turkeys are also being raised in larger numbers than ever. Several correspondents point to the fact that more poultry are being disposed of than in former years. The general condition of all classes of fowl may be described as good, although a correspondent in Wellington referred to a disease

resembling blind staggers and another correspondent in Prince Edward described a disease, which he said was not hen cholera, where the fowl were attacked, got "dumpish," and died within forty-eight hours.

**VALUES PER HEAD.** The statistics of live stock will be found on pages 35-41. The following table gives the average value per head of stock on hand for the past ten years :

Classes of live stock.	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892
<b>Horses :</b>	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Working horses .....	85	79	72	65	61	63	66	74	80	89
Breeding mares .....	87	81	74	68	64	64	68	76	83	93
Colts .....	57	53	49	44	41	41	44	48	52	55
Stallions .....	346	368	332	303	283	263	265	328	356	407
<b>Cattle :</b>										
Working oxen .....	41	42	46	43	42	43	45	46	47	48
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Milch cows .....	31 74	31 01	30 31	28 28	26 13	26 13	29 74	31 02	31 63	29 95
Store cattle .....	29 25	29 38	29 27	26 49	23 89	24 0	25 36	26 75	27 45	27 42
Other cattle .....	14 14	13 67	13 09	11 9	10 62	11 19	12 14	12 91	13 40	13 37
<b>Sheep :</b>										
Over one year .....	5 31	5 17	5 01	4 76	4 37	4 41	4 62	5 14	5 62	5 58
Under one year .....	3 37	3 31	3 15	2 91	2 62	2 65	2 85	3 26	3 56	3 56
<b>Hogs :</b>										
Over one year .....	14 34	12 69	12 23	12 63	11 40	11 13	11 87	13 08	13 97	10 59
Under one year .....	4 81	4 24	3 92	3 91	3 67	3 70	3 98	4 30	4 48	3 96
<b>Poultry :</b>										
Turkeys .....	65	65	65	63	61	65	65	67	69	66
Geese .....	60	59	57	55	56	56	56	57	58	57
Ducks .....	31	30	29							
Other fowls .....	24	23	22	22	21	22	22	23	25	24

**BEES AND HONEY.** The August bulletin had the following regarding the apiary : " Little or no disease has been reported among bees. There has been plenty of swarming, and stocks have been strong and active. But for the dry weather of July, an immense yield would have been recorded, and some apiarists did remarkably well. The average yield, however, will not go over 50 pounds per hive. Some excellent basswood honey is reported, while a fair share of clover honey was also gathered. Eastern apiaries did better than those in the west."

November reports were to the effect that very little disease of any kind had been reported among bees. The average yield of honey was estimated at about fifty pounds per colony, a considerable addition of buckwheat honey having been made in some sections of the Province to the clover and basswood stock already on hand. Bees were expected to go into winter quarters with a fair amount of stores, and as prices have been good, owing to the scarcity of fruit, the season of 1901 may be regarded as having been a good average one for the apiary.

**THE DAIRY.** The following also appeared in the November bulletin : " The season of 1901 has been a fair one for dairying, although some correspondents complain of the low price prevailing for cheese. Creamery plants have been put into a number of cheese factories, cheese being made from May to October, and butter during the winter months. The cream separator is said to be of great assistance to those making home-made butter. Both creamery and home-made butter are described as having been of good quality as a whole, and prices as a rule have been satisfactory. Many farmers engaged in dairying are now systematically putting in ice in order to meet conditions of temperature during mid-summer. Shorthorn grades are still most commonly found in Ontario dairies, although Holstein and Jerseys are coming into favor; while Ayrshires retain supremacy in the cheese-producing counties along the St. Lawrence."

**CHEESE FACTORIES.** The statistics of the cheese made in factories are given by counties in Table xxvii (page 44), together with totals for the Province for ten years. There was a slight decrease in the number of factories operated but the make of cheese was 134,942,517 lbs., or over seven million pounds greater than in 1900. The value, however, was less by \$750,000,

owing to a falling off of \$1.10 per 100 lbs. in the market price. The amount paid to patrons for milk, including delivery to the factory, was \$10,811,538, or 75.4 cents per 100 lbs.

CREAMERIES. The following comparative table gives the statistics of the creameries operated in Ontario for the nine years 1893-1901, showing the quantity and value of butter made, the average number of patrons, the average price of butter per pound, and the amount paid to patrons for milk or cream supplied :

Year.	No. of creameries in operation.	Butter made.		Average No. of patrons.	Average price of butter per pound.	Amount paid to patrons for milk or cream delivered.
		Quantity.	Value.			
		lb	\$		cts.	\$
1901	286	9,047,260	1,798,264	19,896	19.88	1,548,576
1900	308	9,041,468	1,819,290	21,809	20.12	1,589,291
1899	323	9,113,964	1,746,362	22,090	19.16	1,448,411
1898	282	9,008,992	1,632,234	22,741	18.12	1,294,220
1897	214	7,708,265	1,403,619	18,909	18.21	1,139,463
1896	170	6,033,241	1,101,232	12,245	18.25	.....
1895	135	4,553,718	878,382	9,664	19.07	.....
1894	115	3,162,650	662,297	8,293	20.94	.....
1893	74	2,707,670	574,156	7,852	21.21	.....

#### TOBACCO.

This crop is confined chiefly to Essex and Kent, the former county having about two-thirds of the acreage of the Province, although even in these counties it is not grown to a large extent. Correspondents reporting on the 1st of August spoke of the plant having done well, although some complained of "worms" being very bad. Much of the tobacco was planted rather late this year on account of the rain.

Only a few correspondents made reference to tobacco in the November returns. Where mention of it was made, however, the crop appeared to have matured well and to have escaped serious injury, except in a few instances.

The following table gives the acreages for the six years 1896-1901, and the yields for the last four years :

Year.	Essex.			Kent.			The Province.		
	Acres.	Total yield.	Yield per acre.	Acres.	Total yield.	Yield per acre.	Acres.	Total yield.	Yield per acre.
		lbs.	lbs.		lbs.	lbs.		lbs.	lbs.
1901	1,968	2,290,752	1,164	584	564,728	967	2,936	3,113,580	1,061
1900	1,620	2,065,500	1,275	449	583,700	1,300	2,477	2,854,900	1,140
1899	1,411	1,636,760	1,160	338	415,402	1,229	2,206	2,241,562	1,016
1898	5,086	7,095,970	1,395	2,140	3,013,120	1,408	7,871	10,560,590	1,342
1897	422	.....	.....	28	.....	.....	994	.....	.....
1896	315	.....	.....	21	.....	.....	667	.....	.....

There was a sudden boom in the growing of tobacco in Essex and Kent in 1898, but a decided shrinkage in the area occurred in the following year. There has been a steady increase in acreage in 1900 and 1901, however, and the rather satisfactory showing in Essex this year should add to the popularity of the crop. The average yield per acre of the Province has not varied greatly during the last three years.



"FRENCHING" OF TOBACCO. In the August crop returns one of our correspondents referred to the "Frenching" of some tobacco that he was growing. As no other complaints were received, it would appear that the disease was local rather than general in the Essex district.

Prof. Wm. Lochhead, Biologist at the Ontario Agricultural College, has furnished the Department with the following notes regarding the disease :

This disease of tobacco is known under different names in different sections. It is known as "Frenching" in the South, as "Mosaic Disease," "Brindle," and "Mongrel Disease" in the Northern tobacco districts, and "Calico Spot" in Connecticut and elsewhere. It is not yet quite certain that the disease known as "Frenching" in Essex is the same as that known under the same name in the South, for the characteristic feature of the disease in Essex is the yellowing of the main leaves and the production of tufts of rigid, worthless leaves on the larger leaves, while in the South the chief characteristic of the disease is a mottling and stiffening of the leaves.

The cause of the disease is not definitely known. Some investigators attribute the cause to an unknown parasite, probably bacterial; while others consider it a disease arising from purely physiological causes, associated either with movements of reserve protoids during growth, or with sudden changes of atmospheric conditions and unsuitable soil conditions.

The disease may occur quite early in the life of the tobacco plant—even in the seed-bed—and usually attacks the older leaves first. Apparently the disease is not contagious, and is not rapidly propagated through the soil of the field, nor will seeds from diseased plants necessarily produce unhealthy plants. In some regions diseased plants are more abundant on close, clayey soils than on open, porous soils.

The conditions which favor "Frenching" are: Unsuitable soil nourishment: very moist soil with little light; atmospheric conditions promoting rapid growth, and poor seed. It is a fact well known to most practical tobacco growers that "Frenching" is very liable to occur whenever a rapid production of sprouts on moist soil takes place.

Along the line of prevention, it has been recommended to keep the plants in the seed-bed cool (not too warm); to change the seed-bed; to practice rotation of crops; to remove the stubs of diseased plants after the crop is harvested; the use of chemical fertilizers instead of stable manure; the addition of lime, or some other substance, to the soil which will render it more porous; and the protection of plants at critical seasons from too sudden exposure to sunlight.

It is evident that a more detailed study of this disease is necessary before the real cause is discovered, and definite remedies or preventives can be applied.

#### LABOR AND WAGES.

The following was contained in the May bulletin: "The remarks of correspondents regarding farm labor and wages are deserving of careful consideration. The rush to the towns and cities continues, and it would appear as if urban attractions are drawing away a majority of the more ambitious and energetic young men and women from the farm. A considerable number of strong and active young men also leave agricultural pursuits for river driving and other lumbering operations just when the land is most in need of their services. Many complaints are made as to the inferior quality of most of the work now offering on our farms, and some correspondents assert that rates of wages are so high that a number of farmers will have to let a portion of their farms go untilled rather than hire hands at prevailing prices. A correspondent in the county of Grey mentions that the ten hour a day system has been introduced into his neighborhood with beneficial effect, both man and beast benefitting thereby, while just as

much work is done as under the old plan of working until sundown. Some correspondents also speak of the benefit resulting from 'tenant houses' being built on farms, and married men being given employment all the year around. Domestic servants on the farm are said to be even scarcer than ever."

August returns were thus summarized: "While a few correspondents state that there was a sufficiency of labor during harvest most of those reporting speak of the scarcity of laborers, some saying that it was necessary to get boys to attempt the work, while one correspondent in Oxford tells of women driving binders, rakes, etc., in order to save the crops. As a rule no reasons were given for the lack of assistance on the farm, although a few correspondents refer to the attractions of Manitoba and the mining regions. Wages by the day during harvest ranged from \$1 to \$1.50, \$1.25 being common. Domestic servants, as usual, are hard to procure for work on the farm."

The question of labor and wages was thus dealt with in the November bulletin: "The great majority of correspondents report that the supply of farm labor was inadequate to meet the demand. The reasons given are temporary or permanent departures for Manitoba and the North-west, the high wages paid in the lumbering industry, and the migration to the cities and larger towns. Those correspondents who consider any change in the rate of wages likely nearly all predict an increase, but a large number express the opinion that the farmers cannot afford to pay more than present rates. Domestic help continues exceedingly scarce, the variety of other callings and employments now open to women attracting girls away from the farm. Immigration is the remedy generally suggested, often coupled with the proviso that the new arrivals must be of the 'right sort,' and disparaging criticisms on the immigrants who have been brought out."

The following table gives the average rate of wages paid farm laborers by the year and by the month, with and without board, for ten years, together with the average for twenty years; also the monthly wages paid domestic servants on the farm:

Farm Laborers.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1882-1901.
Per year in yearly engagements:	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
With board.....	165	155	149	148	144	144	150	156	160	156	157
Without board..	263	248	243	246	236	243	246	247	255	253	250
Per month for working season:	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	c.	\$ c.	\$ c.	c.	c.	\$ c.
With board ...	17 78	16 57	15 38	15 31	14 29	14 57	15 38	16 55	17 13	16 52	16 78
Without board..	27 05	25 73	24 93	25 44	24 47	24 11	25 45	25 61	25 97	25 92	26 19
Domestic servants per month.....	6 90	6 65	6 19	6 09	5 97	6 11	6 07	6 23	6 47	6 21	6 26

## TEMPERATURES OF 1901.

TABLE I. Showing for each month the highest, lowest, mean highest, mean lowest and mean temperature at the principal stations in Ontario in 1901; also the annual mean for each station.

MONTHS.		Saugeen	Birnam.	London.	Woodstock.	Stoney Creek.	Toronto.	Lindsay.	Gravenhurst.	Ottawa.	Rockliffe.
		°	°	°	°	°	°	°	°	°	°
January	Highest	43.8	43.2	43.0	42.2	48.0	45.4	39.6	41.0	40.0	38.0
	Lowest	-3.0	-7.0	-6.0	-6.0	-8.0	-10.9	-21.3	-27.5	-24.0	-38.0
	Mean highest	30.2	28.6	30.4	29.2	33.0	31.5	25.3	25.3	21.6	17.7
	Mean lowest	15.2	17.2	15.6	14.8	19.2	16.7	7.6	5.0	1.8	-7.7
	Monthly mean	22.7	22.9	23.0	23.0	26.5	23.9	16.5	15.2	11.7	5.0
February	Highest	37.0	34.5	33.0	33.0	37.0	34.0	31.6	31.0	34.0	32.0
	Lowest	-2.0	-14.0	-11.0	-4.0	-2.0	-2.4	-12.7	-19.0	-10.0	-30.0
	Mean highest	24.1	22.4	22.9	21.7	26.7	24.3	20.8	20.1	20.8	19.6
	Monthly mean	16.7	13.5	13.7	14.7	18.2	16.9	11.0	8.7	11.4	5.4
March	Highest	47.8	61.3	60.5	52.0	50.0	45.6	42.2	43.0	40.0	46.0
	Lowest	2.0	-4.7	-5.5	-5.0	0.0	0.0	-5.3	-7.0	-8.0	-29.0
	Mean highest	34.9	36.6	38.8	36.6	38.1	36.8	33.9	33.4	32.9	31.5
	Monthly mean	26.7	30.0	30.2	28.6	31.5	29.9	25.1	24.0	24.3	18.3
April	Highest	69.0	80.7	80.0	77.0	82.0	75.6	80.6	78.0	81.0	82.0
	Lowest	25.1	24.5	24.0	22.0	28.0	30.2	23.7	18.0	27.0	11.0
	Mean highest	51.8	52.5	56.6	54.4	53.4	54.8	55.6	55.6	55.8	57.3
	Monthly mean	43.2	43.9	45.8	45.1	44.9	45.8	45.6	44.9	46.4	44.4
May	Highest	79.2	78.6	79.0	78.0	82.0	79.2	80.1	82.0	81.0	83.0
	Lowest	30.1	30.0	30.0	31.0	35.0	33.0	31.0	28.0	39.0	26.0
	Mean highest	61.4	64.4	66.4	63.5	62.8	63.9	66.4	66.1	67.2	67.7
	Monthly mean	52.1	54.9	55.5	54.1	52.7	54.0	55.9	55.0	57.2	54.2
June	Highest	89.4	95.0	93.0	91.0	93.0	97.1	94.7	91.0	96.8	98.0
	Lowest	36.0	32.5	33.0	37.0	40.0	40.5	37.7	36.0	44.0	30.0
	Mean highest	73.2	78.8	78.6	75.1	79.1	77.1	77.1	80.0	78.4	78.6
	Monthly mean	63.4	67.5	66.8	65.2	67.3	65.1	65.4	66.3	67.5	63.7
July	Highest	92.4	98.7	98.0	93.0	100.0	94.0	94.7	95.0	98.3	99.4
	Lowest	51.3	48.0	49.5	50.0	56.0	53.3	49.9	50.0	50.0	37.0
	Mean highest	78.2	84.7	86.3	82.6	87.0	84.2	82.7	81.3	82.3	81.9
	Monthly mean	69.8	74.0	74.1	71.4	75.2	73.5	71.6	70.2	71.8	67.0
August	Highest	87.2	90.7	88.0	86.0	88.0	87.4	88.8	86.0	96.8	88.0
	Lowest	47.0	44.7	43.0	42.0	50.0	49.7	47.3	46.0	44.0	35.0
	Mean highest	74.3	79.0	80.0	78.0	80.3	78.2	77.9	77.6	78.3	77.8
	Monthly mean	66.7	68.9	68.6	68.1	69.7	68.3	66.4	66.5	68.3	64.4
September	Highest	81.0	87.3	87.0	84.0	91.0	86.0	87.0	85.0	95.8	91.0
	Lowest	38.2	33.3	33.5	34.8	37.0	35.6	33.2	30.0	31.0	23.0
	Mean highest	67.9	70.7	71.8	69.6	73.5	70.7	70.2	69.4	71.1	70.2
	Monthly mean	59.9	61.4	61.3	60.2	63.0	60.8	59.7	58.7	60.7	55.7
October	Highest	72.0	72.4	73.0	69.0	76.0	72.0	70.5	71.0	71.0	74.0
	Lowest	24.6	26.3	22.0	25.0	26.0	27.8	23.0	25.0	26.5	12.0
	Mean highest	58.0	58.6	61.0	57.1	64.6	53.1	56.6	55.7	55.9	56.3
	Monthly mean	49.8	49.8	49.4	47.8	52.6	48.2	46.9	47.1	48.3	44.6
November	Highest	56.3	59.5	60.0	55.0	65.0	60.8	58.9	53.0	53.0	60.0
	Lowest	17.0	16.0	8.0	15.0	18.0	14.5	4.3	8.0	-2.0	-15.0
	Mean highest	41.0	39.7	41.0	39.3	43.4	41.0	37.0	35.4	33.8	32.7
	Monthly mean	31.7	31.7	34.2	33.6	35.8	34.6	29.4	29.3	28.1	25.1
December	Highest	48.8	46.9	57.0	57.0	62.0	56.2	50.6	48.0	52.0	40.0
	Lowest	1.0	-5.0	-4.5	-3.0	-2.0	0.3	-7.1	-12.0	-12.0	-35.0
	Mean highest	32.1	29.8	32.0	31.5	35.3	33.2	28.4	28.7	25.9	22.6
	Monthly mean	25.5	23.7	24.8	24.6	28.1	26.8	21.4	21.1	18.5	12.6
Annual mean		41.3	45.4	45.6	44.7	47.1	45.6	42.9	42.3	42.9	33.3

## AVERAGE OF TEMPERATURES FOR TWENTY YEARS.

TABLE II. Showing for each month the annual average of the highest, lowest, mean highest, mean lowest and mean temperature at the principal stations in Ontario, derived from the twenty years, 1882-1901; also the annual mean at each station for the same period.

MONTHS.	Saugeen.	Birnam.	London.	Wood- stock.	Stoney Creek.	Toronto.	Lindsay.	Graven- hurst.	Ottawa.	Rockhills.	
	o	o	o	o	o	o	o	o	o	o	
January....	Highest.....	44.6	46.5	46.7	46.3	51.4	45.0	41.6	41.8	40.3	37.8
	Lowest.....	-7.2	-9.9	-9.5	-4.9	-4.6	-8.1	-20.9	-27.0	-22.3	-33.4
	Mean highest.....	27.9	26.9	28.6	27.8	32.9	28.7	24.1	23.8	19.8	18.3
	Mean lowest.....	13.1	14.6	13.7	11.1	19.0	14.0	6.4	4.0	1.3	-5.9
	Monthly mean.....	20.6	20.7	22.1	20.7	23.3	21.9	15.5	14.6	11.0	6.3
February....	Highest.....	44.9	47.4	46.4	45.6	48.1	44.1	42.0	42.4	40.0	41.7
	Lowest.....	-10.9	-13.5	-11.9	-12.0	-6.4	-8.3	-18.4	-25.6	-21.9	-34.6
	Mean highest.....	27.7	27.2	28.6	28.3	31.8	28.8	25.6	25.3	22.0	22.0
	Mean lowest.....	11.5	13.0	12.3	10.5	16.3	13.4	6.0	4.1	3.1	0.8
	Monthly mean.....	19.2	20.1	21.2	20.7	23.1	21.6	16.1	15.3	13.1	8.8
March.....	Highest.....	51.4	56.2	56.1	54.5	57.5	51.9	48.5	48.1	45.3	49.1
	Lowest.....	-4.7	-4.8	3.4	-4.2	-4.5	-2.5	-8.5	-14.8	-10.1	-25.3
	Mean highest.....	33.9	34.9	36.2	35.3	39.1	35.0	32.9	32.8	31.4	31.9
	Mean lowest.....	16.8	19.7	19.1	17.5	24.3	20.5	14.6	11.7	13.3	5.6
	Monthly mean.....	25.1	27.0	28.4	27.1	30.4	27.9	23.5	22.6	22.6	18.9
April.....	Highest.....	73.2	77.7	76.6	75.8	78.0	71.1	74.8	71.2	74.2	75.1
	Lowest.....	14.5	17.4	18.4	16.9	23.6	21.0	13.3	10.8	13.9	5.6
	Mean highest.....	49.6	53.1	53.2	53.2	54.2	50.8	52.2	50.2	51.0	51.4
	Mean lowest.....	31.3	33.9	32.6	32.0	36.7	33.9	30.6	29.0	30.9	16.2
	Monthly mean.....	39.8	43.5	44.7	43.1	44.1	42.2	40.9	39.6	41.4	38.3
May.....	Highest.....	79.6	82.3	81.8	80.7	83.8	78.2	82.1	81.0	82.8	85.1
	Lowest.....	28.9	29.1	30.3	29.3	34.7	32.4	28.7	28.2	31.5	24.7
	Mean highest.....	60.9	65.6	66.2	64.6	65.8	62.5	65.6	63.9	66.2	65.8
	Mean lowest.....	41.2	44.0	44.2	42.4	45.8	43.9	42.0	41.9	44.1	38.6
	Monthly mean.....	50.5	54.8	56.3	54.3	54.8	53.1	53.6	52.8	55.4	51.9
June.....	Highest.....	85.6	88.8	88.3	87.8	92.3	87.2	89.3	87.6	88.7	89.9
	Lowest.....	37.6	37.4	38.8	38.7	43.9	42.8	38.9	37.4	42.0	34.0
	Mean highest.....	71.2	76.1	76.8	76.3	78.9	74.2	76.6	75.4	76.4	76.0
	Mean lowest.....	51.0	53.6	53.8	52.0	57.2	54.0	51.7	51.5	54.4	47.9
	Monthly mean.....	60.8	65.1	66.5	65.1	66.7	63.9	64.0	63.5	65.8	61.9
July.....	Highest.....	87.5	92.9	91.9	90.8	95.5	90.1	91.8	89.7	91.2	91.2
	Lowest.....	42.9	42.0	43.9	43.7	49.7	47.9	43.2	43.3	45.8	40.1
	Mean highest.....	77.9	80.5	80.3	79.9	83.5	78.5	80.1	78.4	79.1	78.3
	Mean lowest.....	55.4	56.6	57.6	55.2	61.3	58.2	54.9	55.4	57.7	52.7
	Monthly mean.....	64.9	68.7	70.0	68.4	71.4	68.2	67.2	66.9	68.6	64.8
August.....	Highest.....	86.6	91.4	90.5	89.8	95.4	88.2	90.4	88.6	89.3	89.0
	Lowest.....	41.8	41.0	40.3	41.1	47.2	46.3	39.9	40.3	43.0	37.4
	Mean highest.....	74.0	77.6	77.9	77.8	81.6	76.4	77.8	76.3	76.3	75.4
	Mean lowest.....	55.0	55.3	54.5	51.5	59.6	52.1	53.2	53.6	55.1	50.5
	Monthly mean.....	66.2	66.3	67.3	65.9	69.9	66.4	64.8	64.5	66.0	61.5
September....	Highest.....	84.9	87.7	86.6	86.5	91.0	84.8	86.8	84.4	85.3	85.0
	Lowest.....	32.8	33.1	31.8	31.3	36.7	36.6	30.6	30.7	32.1	28.8
	Mean highest.....	68.3	70.9	71.2	70.4	74.4	68.8	69.5	68.8	68.5	67.7
	Mean lowest.....	49.2	50.3	49.4	46.9	53.2	50.4	46.3	46.8	47.4	43.2
	Monthly mean.....	57.7	60.6	60.8	59.2	62.3	59.5	57.2	57.3	57.9	53.6
October.....	Highest.....	74.2	76.4	75.1	74.5	77.1	72.3	73.8	72.6	70.8	72.9
	Lowest.....	24.5	24.2	23.4	23.0	26.8	26.2	20.8	21.9	23.4	18.2
	Mean highest.....	56.2	57.2	57.6	56.4	61.6	55.7	55.1	55.5	53.7	53.2
	Mean lowest.....	39.3	40.3	38.2	36.8	42.2	39.9	36.0	37.1	36.3	33.3
	Monthly mean.....	46.8	48.8	48.3	47.1	50.1	47.9	44.8	45.6	45.2	42.2
November....	Highest.....	61.2	63.1	62.1	61.6	65.1	59.5	59.8	59.2	57.9	56.8
	Lowest.....	13.6	13.2	12.0	10.8	17.3	14.0	4.6	7.2	5.3	0.7
	Mean highest.....	48.0	42.5	43.7	42.6	46.9	43.1	40.3	40.4	38.3	36.8
	Mean lowest.....	29.9	30.6	29.3	27.7	32.8	30.5	25.8	25.9	25.0	21.7
	Monthly mean.....	35.8	36.6	36.9	35.8	39.3	36.9	32.8	33.1	31.7	28.8
December....	Highest.....	50.4	49.9	57.0	50.2	55.3	48.5	45.4	45.4	43.1	41.8
	Lowest.....	-0.7	2.2	-3.0	-4.4	0.6	-2.2	-13.7	-13.9	-16.3	-25.2
	Mean highest.....	33.4	32.2	33.6	32.5	37.1	33.9	29.4	29.7	25.3	24.7
	Mean lowest.....	20.8	21.1	20.1	18.0	23.7	21.0	13.8	13.7	9.4	5.3
	Monthly mean.....	27.0	26.7	27.4	26.2	30.4	27.8	22.0	22.2	17.8	14.8
Annual mean.....	42.9	44.9	45.8	44.5	47.2	44.8	41.9	41.5	41.4	37.6	

## RAIN AND SNOW.

TABLE III. Summary of the total fall of rain and snow, and the number of days on which rain and snow fell in Ontario during the year 1901 at stations reporting for the whole year, and the average for the Province.

Station.	Rain.		Snow.		Station.	Rain.		Snow.	
	Inches.	Days.	Inches.	Days		Inches.	Days.	Inches.	Days.
ALGOMA—					MIDDLESEX—				
Port Arthur .....	20.27	66	224.0	27	London .....	15.10	80	95.4	58
White River .....	16.03	77	112.5	87	Hubrey .....	24.96	70	47.0	26
Providence Bay .....	26.06	96	114.0	58	MUSKOKA—				
Bruce Mines .....	25.31	79	80.5	23	Beatrice .....	31.72	84	99.0	47
Cockburn Island .....	27.99	79	64.2	35	Emsdale .....	29.95	106	91.1	56
BRANT—					Gravenhurst .....	29.18	85	88.8	58
Paris .....	25.51	91	45.0	21	NIPISSING—				
Brantford .....	22.54	63	56.5	29	Haileybury .....	20.97	98	94.2	94
BRUCE—					NORFOLK—				
Lucknow .....	23.73	94	127.2	76	Port Dover .....	18.79	78	96.7	38
N. Bruce .....	18.98	97	99.5	63	Lynedoch .....	21.27	61	49.4	36
Point Clark .....	13.31	23	67.5	22	NORTHUMBERLAND—				
Saugeen .....	23.23	112	127.3	94	Wooler .....	26.20	79	52.0	24
CARLETON—					ONTARIO—				
Ottawa .....	24.06	93	92.5	36	Uxbridge .....	23.14	68	85.2	37
DUFFERIN—					OXFORD—				
Orangeville .....	30.05	76	97.6	49	Woodstock .....	26.13	61	67.2	30
DURHAM—					Princeton .....	25.57	65	84.0	44
Port Hope .....	23.56	77	93.7	34	PARRY SOUND—				
ESSEX—					Parry Sound .....	28.11	91	141.7	79
Cottam .....	31.57	83	21.3	15	Uplands .....	21.75	85	149.3	60
Windsor .....	29.41	94	45.8	23	PEEL—				
ELGIN—					Alton .....	25.78	82	72.1	55
Port Stanley .....	23.00	100	95.0	70	PERTH—				
Cowal .....	18.32	44	31.5	17	Listowel .....	22.99	56	90.1	34
FRONTENAC—					PETERBOROUGH—				
Arden .....	30.32	116	64.0	33	Jernyn .....	25.77	63	69.0	27
Kingston .....	30.23	164	51.2	60	Peterborough .....	24.11	89	84.9	41
GREY—					Lakefield .....	24.68	84	92.5	29
Owen Sound .....	26.58	103	141.7	71	RAINY RIVER				
Meaford .....	24.20	67	124.7	53	Rat Portage .....	13.29	56	52.0	35
HALDIMAND—					RENFREW—				
Cayuga .....	20.04	47	48.5	24	Clontarf .....	28.04	92	139.2	64
Dunnville .....	27.14	87	48.5	24	Rockcliffe .....	19.49	79	72.7	67
HALIBURTON—					SIMCOE—				
Haliburton .....	29.46	124	72.9	59	Barrie .....	22.15	92	157.5	56
HALTON—					Orillia .....	25.24	91	94.7	48
Georgetown .....	26.39	103	93.8	73	Midland .....	26.94	81	58.0	30
HASTINGS—					VICTORIA—				
Deseronto .....	34.17	88	52.9	36	Kimmount .....	24.80	86	76.4	38
HERON—					Lindsay .....	24.72	103	122.0	51
Goderich .....	17.39	43	87.5	35	WELLAND—				
Sunshine .....	19.33	74	99.4	57	Welland .....	18.60	83	159.1	51
KENT—					WELLINGTON—				
Ridgetown .....	21.38	81	63.0	34	Guelph .....	22.75	71	56.4	34
Deatow .....	21.20	80	29.4	22	Era-mus .....	25.32	101	103.5	71
Chatham .....	18.48	70	69.5	29	WENTWORTH—				
LAMETON—					Stony Creek .....	29.85	76	54.1	23
Wyoming .....	18.51	45	47.5	18	YORK—				
Birnaw .....	23.70	65	99.5	43	Aurora .....	23.42	87	87.6	43
Sarnia .....	11.63	27	36.5	11	Scarboro' .....	23.63	77	52.3	36
LANARK—					Deer Park .....	23.71	83	56.9	27
Montague .....	28.46	52	37.5	19	Toronto .....	25.20	102	70.7	54
Kitley .....	25.14	61	53.8	36	Agincourt .....	21.69	71	62.0	30
LEEDS—					Average for the Pro-				
Lansdowne .....	17.82	53	54.2	25	vince, 1901 .....	24.12	79	76.3	43
LENNOX—					1900 .....	25.28	81	64.6	34
Parma .....	26.03	68	135.0	34	1882-1901 .....	24.10	87	76.3	47

## RAIN AND SNOW.

TABLE IV. Monthly summary of inches of rain and snow precipitation in the several districts of Ontario in 1901; also the average derived from the twenty years, 1882-1901.

Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total for the year.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
<i>West and south west—</i>													
Rain .... { 1901 .....	0.78	R	1.72	1.85	2.59	1.76	3.06	1.98	2.48	1.22	1.59	2.21	21.24
{ 1882-01 .....	1.19	1.36	1.29	1.79	3.30	2.97	2.60	2.48	2.55	2.73	2.45	1.58	26.29
Snow .... { 1901 .....	11.4	19.3	5.6	4.9	...	...	...	...	0.1	...	...	12.9	57.5
{ 1882-01 .....	15.4	13.1	9.6	2.6	0.1	...	...	...	0.2	...	6.2	12.5	59.7
<i>North west and north—</i>													
Rain .... { 1901 .....	0.30	0.00	1.24	1.41	3.16	2.26	4.44	3.11	3.01	2.49	1.15	1.26	23.83
{ 1882-01 .....	0.84	0.56	0.86	1.43	2.64	2.74	2.78	2.78	3.00	2.93	1.98	1.10	23.64
Snow .... { 1901 .....	24.4	16.3	19.8	1.7	...	...	...	...	1.0	13.1	15.1	91.4	91.4
{ 1882-01 .....	27.1	20.9	14.6	3.5	0.3	...	...	...	1.6	13.3	21.4	102.7	102.7
<i>Centre—</i>													
Rain .... { 1901 .....	0.67	0.00	1.50	3.12	1.25	1.98	4.15	3.28	2.90	0.49	1.06	1.90	25.30
{ 1882-01 .....	1.15	1.07	1.21	1.64	2.83	2.70	2.54	2.26	2.47	2.25	2.19	1.42	23.83
Snow .... { 1901 .....	18.3	19.7	16.4	8.0	...	...	...	...	0.3	5.0	13.9	81.6	81.6
{ 1882-01 .....	17.5	15.2	10.6	3.0	0.1	...	...	...	0.4	6.0	11.5	64.3	64.3
<i>East and north east—</i>													
Rain .... { 1901 .....	0.55	0.00	1.93	2.68	4.37	2.55	3.95	2.76	2.74	1.05	1.21	2.03	25.82
{ 1882-01 .....	0.92	0.67	1.03	1.38	2.76	2.68	2.86	2.54	2.49	2.18	1.88	1.23	22.62
Snow .... { 1901 .....	20.9	15.2	10.8	2.2	...	...	...	...	0.1	10.8	14.8	74.8	74.8
{ 1882-01 .....	20.7	18.1	12.9	3.5	0.1	...	...	...	0.6	8.3	14.2	78.4	78.4
<i>The Province—</i>													
Rain ... { 1901 .....	0.58	R	1.60	2.28	3.67	2.14	3.90	2.78	2.78	1.31	1.25	1.85	24.12
{ 1882-01 .....	1.03	0.91	1.10	1.56	2.88	2.77	2.69	2.52	2.63	2.55	2.13	1.33	24.10
Snow .... { 1901 .....	18.8	17.6	13.1	4.2	...	...	...	...	0.4	8.0	14.2	76.3	76.3
{ 1882-01 .....	20.2	16.8	11.9	3.2	0.1	...	...	...	0.7	8.5	14.9	76.3	76.3

## SUNSHINE.

TABLE V. Monthly summary of bright sunshine at the principal stations in Ontario in 1901, showing the number of hours the sun was above the horizon, the hours of registered sunshine, the total for the year, and the average derived from the twenty years, 1882-1901.

Station.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.	
Sun above horizon .....	hrs. 285.7	hrs. 291.4	hrs. 369.9	hrs. 406.4	hrs. 461.1	hrs. 465.7	hrs. 470.9	hrs. 434.5	hrs. 376.3	hrs. 340.2	hrs. 286.9	hrs. 274.3	hrs. 4463.3	
Woodstock .... { 1901 .....	37.9	81.9	67.9	152.3	170.1	266.7	291.1	206.9	187.8	169.0	89.8	58.0	1779.4	
{ 1882-01 .....	60.5	84.4	125.7	181.6	203.6	246.5	275.5	235.7	184.2	134.8	68.5	54.7	1855.7	
Toronto .....	{ 1901 .....	71.6	136.3	114.8	157.6	171.3	288.2	271.8	216.2	207.6	182.1	83.5	80.6	1981.6
{ 1882-01 .....	78.0	103.2	156.4	199.2	218.4	265.9	284.2	251.7	212.6	147.8	77.8	62.9	2058.1	
Barrie .....	{ 1901 .....	43.0	110.7	105.9	156.5	185.6	265.6	272.5	211.5	204.8	150.4	73.7	47.8	1828.0
{ 1882-01 .....	53.8	77.6	140.6	183.2	202.3	239.4	264.5	225.7	177.5	115.0	52.1	41.2	1772.9	
Lindsay .....	{ 1901 .....	63.9	137.3	115.4	161.2	177.5	244.3	251.0	205.9	205.2	147.3	85.4	61.2	1855.6
{ 1882-01 .....	74.4	102.9	161.1	205.1	217.7	258.3	269.2	247.1	199.2	136.6	68.1	56.6	1996.3	
Kingston .....	{ 1901 .....	81.9	112.4	80.3	144.7	182.1	267.6	254.6	199.5	193.1	166.3	69.1	66.8	1818.4
{ 1882-01 .....	77.0	106.5	159.9	196.0	217.4	253.7	269.7	243.8	193.4	139.7	73.9	68.8	1999.8	
Average of five stations .....	{ 1901 .....	59.7	115.7	96.9	154.5	177.3	266.5	268.2	208.0	190.7	163.0	80.3	62.9	1852.7
{ 1900 .....	77.1	109.8	161.4	214.0	247.9	305.3	266.3	271.4	190.0	164.0	82.4	46.6	2136.2	
{ 1882-01 .....	68.7	94.9	148.7	193.0	211.9	252.8	272.6	240.8	193.4	134.8	68.1	56.8	1936.5	

## TORONTO OBSERVATORY REGISTER.

TABLE VI. Comparative Meteorological Register for the seven years, 1895-1901, at Toronto Observatory in Lat. 43° 39.4' N., and Long. 5 hrs. 17 m. 34.65s. W. Height above the sea 350 feet.

	1901.	1900.	1899.	1898.	1897.	1896.	1895.
Average temperature . . . . .	45.55	46.89	45.83	47.15	45.93	45.36	44.28
Difference from average (61 years) . . .	+1.18	+2.52	+1.46	+2.78	+1.56	+0.99	-0.09
Thermic anomaly (lat. 40° 40') . . . . .	-5.47	-4.13	-5.19	-3.87	-5.09	-5.66	-6.74
Highest temperature . . . . .	97.1	98.0	93.1	97.1	93.3	91.3	93.4
Lowest temperature . . . . .	-10.9	-9.6	-12.0	-15.0	-7.2	-17.9	-21.2
Monthly and annual ranges . . . . .	108.0	107.6	104.1	112.1	100.5	109.2	114.6
Average daily range . . . . .	16.90	16.70	17.51	17.48	16.21	17.58	17.26
Greatest daily range . . . . .	43.0	37.6	35.0	34.4	36.0	38.9	36.9
Average height of barometer at 32° Fahr . .	29.5988	29.6213	29.6368	29.6216	29.6319	29.6382	29.6171
Difference from average (60 years) . . . .	-.0211	+.0014	+.0169	+.0017	+.0120	+.0183	-.0028
Highest barometer . . . . .	30.328	30.224	30.403	30.218	30.353	30.422	30.240
Lowest barometer . . . . .	28.868	28.802	28.657	28.730	28.779	28.734	28.746
Monthly and annual ranges . . . . .	1.460	1.422	1.746	1.486	1.574	1.688	1.494
Average humidity of the air . . . . .	77	76	76	76	76	75	75
Difference from average . . . . .	+ 1	0	0	0	0	- 1	- 1
Average elasticity of aqueous vapour . . . .	0.291	0.295	0.279	0.289	0.274	0.254	0.253
Average temperature of dew point . . . . .	44.3	44.6	43.1	44.1	42.7	38.9	41.3
Average of cloudiness . . . . .	0.61	0.57	0.56	0.58	0.61	0.60	0.57
Difference from average (47 years) . . . .	.00	-.04	-.05	-.03	.00	-.01	-.04
Resultant direction of wind . . . . .	N 55 W	S 88 W	S 77 W	N 65 W	N 89 W	N 88 W	S 78 W
Resultant velocity of wind . . . . .	2.99	3.09	2.66	1.78	2.42	0.75	1.36
Average velocity (miles per hour) . . . .	10.26	10.67	10.14	10.12	12.33	8.44	5.60
Highest velocity in month and year . . . .	45.0	44.0	50.0	55.0	51.0	50.0	60.0
Total amount of rain in inches . . . . .	25.200	22.130	25.795	23.800	27.737	21.770	22.532
Difference from average (61 years) . . . .	-1.866	-4.936	-1.271	-3.266	+0.671	-5.296	-4.534
Number of days of rain . . . . .	102	99	105	98	110	104	101
Total amount of snow in inches . . . . .	70.7	74.6	31.8	71.3	47.4	73.3	54.8
Difference from average (61 years) . . . .	+ 3.15	+ 7.05	-35.75	+ 3.75	-20.15	+ 5.75	-12.75
Number of days of snow . . . . .	54	42	40	53	43	43	48
Number of fair days . . . . .	183	187	185	196	173	174	196
Number of days completely clouded . . . .	58	51	44	56	58	55	48
Number of auroras observed . . . . .	2	3	10	7	3	18	11
Possible to see aurora (No. of nights) . . .	201	224	226	210	179	194	195
Number of hours bright sunshine . . . . .	1981.6	2305.0	2148.2	2128.9	1987.6	2146.7	2159.7
Number of hours of possible sunshine . . . .	4463.3	4463.3	4463.3	4463.3	4463.3	4474.4	4463.3

## RURAL AREAS ASSESSED.

TABLE VII. Showing by County Municipalities the rural area of Ontario as returned by Municipal assessors for 1901; also the comparative totals for the Province for the ten years 1892-1901.

Counties and districts.	Acres of assessed land.			Acres cleared.	Acres woodland.	Acres in swamp, marsh or waste land.	Per cent. cleared.
	Resident.	Non-resident.	Total.				
Algoma	327,046	92,424	419,470	39,320	328,205	51,945	9.2
Brant	211,777	3,969	215,686	179,578	14,960	21,148	83.3
Bruce	845,403	71,275	916,678	435,287	181,796	199,595	58.4
Carleton	560,635	3,778	564,413	308,244	84,898	171,271	54.6
Dufferin	352,172	3,369	355,541	246,814	42,087	65,640	69.4
Dundas	236,106	650	236,756	156,654	41,561	38,541	66.2
Durham	396,955	4,981	371,936	295,083	36,544	40,309	79.3
Elgin	435,732	105	435,837	331,118	96,648	8,071	76.0
Essex	426,826	4,112	430,938	285,223	134,386	11,329	66.2
Frontenac	629,147	61,261	690,408	265,811	234,000	190,597	38.5
Glengarry	288,617	817	289,434	185,344	87,847	16,243	64.0
Grenville	263,047	8,334	271,381	172,499	44,897	53,985	63.6
Grey	1,059,707	4,772	1,064,479	659,244	186,827	218,408	61.9
Haldimand	278,273	1,736	280,009	230,445	46,134	3,460	82.3
Haliburton	552,846	10,367	563,213	37,814	326,008	199,391	6.7
Halton	224,794	773	225,567	172,513	33,635	19,389	76.5
Hastings	949,099	87,026	1,036,125	403,925	465,969	166,231	39.0
Huron	796,624	1,900	798,524	631,985	83,957	82,582	79.1
Kent	556,744	7,937	564,684	431,797	114,806	18,111	76.5
Lambton	654,937	3,751	658,708	407,962	213,008	37,738	61.9
Lanark	646,493	25,925	672,418	318,393	192,908	161,117	47.4
Leeds	467,241	3,331	470,572	283,011	126,676	60,885	60.1
Lennox & Addington	431,984	7,527	439,511	282,796	93,800	62,915	64.4
Lincoln	184,300	7,299	191,599	164,117	26,439	1,043	85.7
Manitowlin	209,524	15,042	224,566	41,074	111,131	72,361	18.3
Middlesex	749,037	8,864	757,901	591,176	155,574	11,151	78.0
Muskoka	508,902	35,912	544,814	61,808	395,517	87,489	11.3
Nipissing	252,094	53,169	305,263	29,090	222,325	53,848	9.5
Norfolk	396,362	2,658	399,020	261,253	107,123	30,644	65.5
Northumberland	433,605	1,200	434,925	341,591	46,879	46,455	78.5
Ontario	493,668	6,962	500,630	380,391	43,029	97,210	72.0
Oxford	471,732	276	472,008	381,399	66,405	24,204	80.8
Parry Sound	524,956	46,228	571,184	65,778	410,688	94,748	11.5
Peel	284,475	3,992	288,377	258,377	20,491	14,099	88.0
Perth	517,431	2,388	519,819	425,909	46,418	47,492	81.9
Peterborough	551,395	19,960	571,356	247,499	198,243	125,614	43.3
Prescott	288,520	3,244	291,764	168,817	111,783	11,164	57.9
Prince Edward	224,823	9,292	234,115	193,886	23,833	14,396	83.5
Rainy River	74,921	14,131	89,052	5,387	79,803	3,262	6.7
Renfrew	934,308	48,254	982,562	305,331	452,151	225,080	31.1
Russell	234,184	17,889	252,053	102,139	149,229	667	40.5
Simcoe	942,933	22,579	965,512	596,893	247,164	121,455	61.8
Stormont	246,166	2,721	248,887	143,322	88,297	17,265	57.6
Thunder Bay	192,002	58,548	250,550	5,522	159,503	85,525	2.1
Victoria	556,235	43,054	599,289	275,077	124,424	190,788	45.9
Waterloo	303,909	2,907	306,816	249,598	34,037	21,181	81.3
Welland	219,945	7,769	227,714	181,899	40,783	5,032	79.9
Wellington	627,018	772	627,790	475,625	62,961	89,204	75.8
Wentworth	265,771	6,532	272,303	214,393	33,733	24,177	78.7
York	533,260	2,756	536,016	432,236	44,382	59,398	80.6
The Province:							
1901	22,781,710	854,468	23,636,178	13,436,482	6,716,872	3,483,824	56.8
1900	22,728,082	840,022	23,568,104	13,297,206	7,127,363	3,143,535	56.4
189	22,670,958	780,134	23,451,092	13,111,292	7,149,404	3,190,396	55.9
	22,492,838	899,746	23,392,584	12,993,614	7,198,905	3,200,665	55.5
	22,403,060	957,369	23,360,428	12,853,081	7,294,026	3,213,321	55.0
	22,174,899	947,568	23,122,468	12,671,851	7,264,167	3,236,390	54.7
	22,131,895	981,420	23,113,315	12,426,992	7,777,451	2,908,872	53.8
894	22,032,709	1,006,175	23,038,974	12,292,610	7,859,714	2,886,650	53.4
11893	21,940,726	1,018,554	22,959,280	12,131,564	8,133,229	2,694,487	52.8
892	21,923,424	962,040	22,885,464	11,900,140	8,264,881	2,630,443	52.4



## FALL WHEAT AND SPRING WHEAT.

TABLE VIII. Showing by County Municipalities of Ontario the area, produce and market value of the crops of Fall Wheat and Spring Wheat for the year 1901, together with the totals for the Province for the past ten years and the average for the twenty years 1882-1901; also the averages per acre.

Counties and districts.	Fall wheat.					Spring wheat.				
	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.
*Algoma ....	258	6,450	25 0	8 4,263	% c. 16 53	2,257	41,980	18.6	\$ 28,043	% c. 12 42
Braut .....	28,259	361,715	12 8	239,094	8 46	413	7,021	17.0	4,690	11 36
Bruce .....	38,664	912,470	23 6	603,143	15 60	3,767	47,464	12.6	31,706	8 42
Carleton .....	417	10,008	24 0	6,615	15 86	12,580	212,602	16.9	142,018	11 29
Dufferin .....	7,418	171,356	23 1	113,266	15 27	10,791	152,153	14.1	101,648	9 42
Dundas .....	144	3,096	21.5	2,046	14 21	2,080	38,688	18.6	25,844	12 42
Durham .....	6,653	123,081	18 5	81,357	12 23	19,255	284,974	14 8	190,363	9 89
Elgin .....	35,752	493,378	13.8	326,124	9 12	34	680	20 0	454	13 36
Essex .....	26,200	500,120	19 1	339,778	12 63	339	6,780	20 0	4,529	13 36
Frontenac .....	997	18,744	18.8	12,390	12 43	8,686	119,867	13 8	80,071	9 22
Glengarry .....	26	567	21.8	375	14 41	6,099	118,321	19 4	79,038	12 96
Grenville .....	149	2,682	18 0	1,773	11 90	2,538	36,298	14.3	24,244	9 55
Grey .....	31,875	828,750	26 0	547,804	17 19	10,126	147,840	14.6	98,757	9 75
Haldimand .....	36,480	339,264	9.3	224,253	6 15	1,718	14,088	8.2	9,411	5 48
Haliburton .....	280	4,232	18 4	2,797	12 16	1,142	15,988	14 0	10,680	9 35
Halton .....	24,706	370,590	15 0	241,960	9 91	4,081	55,502	13.6	37,075	9 08
Hastings .....	7,652	145,388	19 0	96,10	12 56	17,263	245,134	14.2	163,749	9 49
Huron .....	60,992	1,207,642	19 8	798,251	13 09	1,911	26,563	13.9	17,744	9 29
Kent .....	56,455	942,798	16.7	623,189	11 04	431	5,603	13 0	3,743	8 68
Lambton .....	46,313	676,170	14 6	446,948	9 65	864	11,923	13.8	7,958	9 22
Lanark .....	1,893	32,560	17 2	21,522	11 37	12,909	180,726	14 0	120,725	9 35
Leeds .....	3,326	57,872	17 4	38,253	11 50	4,676	63,594	13 6	42,481	9 08
Lennox & Ad.	2,085	35,654	17 1	23,567	11 30	9,187	124,025	13.5	82,849	9 02
Lincoln .....	20,300	158,340	7.8	104,683	5 16	832	6,240	7.5	4,168	5 01
Manitowlin .....	456	10,042	22 0	6,631	14 54	2,293	39,440	17.2	26,346	11 49
Middlesex .....	59,922	790,970	13.2	522,831	8 73	643	8,873	13 8	5,927	9 22
Muskoka .....	132	2,178	16.5	1,440	10 91	1,108	17,950	16.2	11,991	10 82
Nipissing .....	111	2,997	27 0	1,981	17 85	922	17,702	19 2	11,825	12 83
Norfolk .....	33,305	273,101	8.2	180,520	5 42	175	2,625	15 0	1,753	10 02
Northumb'nd	13,672	250,198	18 3	165,381	12 10	23,959	335,426	14 0	224,064	9 35
Ontario .....	12,982	275,218	21 2	181,919	14 01	30,131	533,319	17.7	356,257	11 82
Oxford .....	40,224	639,562	15.9	422,751	10 51	589	7,421	12 6	4,957	8 42
Parry Sound .....	45	810	18 0	536	11 90	1,610	25,760	16 0	17,208	10 69
Peel .....	22,973	379,055	16.5	250,555	10 91	11,875	167,438	14 1	111,849	9 42
Perth .....	47,150	1,178,750	25 0	779,154	16 52	1,274	20,639	16 2	13,787	10 82
Peterborough .....	9,409	209,821	22 3	138,692	14 74	11,523	159,017	13.8	106,223	9 22
Prescott .....	21	357	17 0	236	11 24	6,244	107,307	17 2	71,741	11 49
Prince Edward .....	5,960	94,168	15 8	62,245	10 44	9,793	127,309	13 0	85,042	8 68
Renfrew .....	345	6,989	20 2	4,620	13 35	29,561	481,844	16 3	321,872	10 89
Russell .....	71	1,775	25 0	1,173	16 52	2,429	43,479	17.9	29,014	11 96
Simcoe .....	70,963	1,688,919	23 8	1,116,375	15 73	18,885	271,944	14.4	181,658	9 62
Stormont .....	258	3,947	15.3	2,609	10 11	3,144	47,160	15 0	31,503	10 02
Victoria .....	5,001	117,524	23 5	77,683	15 53	23,068	364,474	15.8	243,469	10 55
Waterloo .....	43,725	896,392	20 5	592,495	13 55	547	9,080	16 6	6,065	11 09
Welland .....	23,622	259,842	11 0	171,755	7 27	445	3,788	8 5	2,527	5 68
Wellington .....	18,751	401,271	21 4	265,240	14 15	7,619	123,914	16 2	82,774	10 82
Wentworth .....	29,610	343,476	11 6	227,038	7 67	1,951	19,315	9 9	12,902	6 61
York .....	35,634	712,680	20 0	471,081	13 22	34,251	599,393	17 5	400,394	11 63
The Province:										
1901 .....	911,587	15,943,229	17 4	10,538,474	11 56	358,048	5,498,751	15 4	3,673,166	10 26
1900 .....	1,068,640	23,399,737	21 9	15,517,505	14 52	376,903	6,940,333	18 4	4,684,725	12 43
1899 .....	1,049,691	14,439,827	13 8	9,641,365	9 18	398,726	7,041,317	17 7	4,682,476	11 74
1898 .....	1,048,183	23,158,713	24 0	17,460,147	16 66	389,205	6,873,785	17.7	3,756,659	12 22
1897 .....	959,222	23,988,051	25 2	18,758,656	19 74	323,305	4,868,101	15 1	3,826,327	11 84
1896 .....	876,955	15,078,441	17 2	10,705,693	12 21	256,361	3,519,322	13 3	2,484,641	9 73
1895 .....	743,199	14,155,282	19 0	9,809,610	13 20	233,957	3,472,543	15 5	2,423,835	10 82
1894 .....	778,992	16,512,106	21 2	9,081,658	11 66	230,016	3,367,854	14 6	1,869,159	8 13
1893 .....	913,954	17,545,248	19 2	10,509,604	11 50	356,721	4,186,063	11 7	2,486,521	6 97
1892 .....	965,522	20,492,497	21 2	14,488,195	14 99	651,302	8,290,395	12 7	5,620,888	8 63
1882-1901	916,820	18,363,774	20 0	14,450,487	15 76	459,951	7,144,422	15 5	5,805,073	12 62

\* Including Rainy River and Thunder Bay in this and succeeding tables.

## BARLEY AND OATS.

TABLE IX. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Barley and Oats for the year 1901, together with the totals for the Province for the past ten years and the average for the twenty years, 1882-1901; also the averages per acre.

Counties and districts.	Barley.					Oats.				
	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.
				\$					\$	
Algonia .....	1,429	42,870	30.0	19,291	13 50	9,669	377,091	39 0	136,507	14 12
Brant .....	13,617	349,957	25 7	157,481	11 57	23,167	768,131	33 3	2,8,063	12 05
Bruce .....	16,366	402,604	24 6	181,172	11 07	94,191	2,929,340	31 1	1,060,421	11 26
Carleton .....	9,053	222,704	24 6	100,277	11 07	75,075	2,252,250	30 0	815,314	10 88
Dufferin .....	15,046	413,765	27 5	186,191	12 37	65,698	2,243,452	34 2	812,130	12 38
Dundas .....	2,909	75,925	26 1	34,166	11 74	33,781	1,023,764	30 3	370,530	10 97
Durham .....	28,555	719,686	25 2	323,814	11 34	47,315	1,585,053	33 5	573,789	12 13
Elgin .....	11,458	308,220	26 9	138,699	12 10	47,054	1,609,247	34 2	582,547	12 38
Essex .....	10,381	280,287	27 0	126,199	12 15	52,426	1,924,034	36 7	696,500	13 29
Frontenac .....	5,815	112,220	19 3	50,563	8 69	43,535	1,114,496	25 6	403,447	9 27
Glengarry .....	4,386	108,773	24 8	48,948	11 16	41,796	1,274,778	30 5	461,470	11 04
Greenville .....	2,872	64,620	22 5	29,079	10 13	32,443	681,303	21 0	246,632	7 60
Grey .....	22,935	582,549	25 4	262,147	11 43	138,080	4,225,248	30 6	1,5,9,540	11 08
Haldimand .....	7,250	129,060	17 8	58,072	8 01	32,400	942,840	29 1	341,308	10 53
Haliburton .....	409	8,916	21 8	4,042	9 81	6,309	162,772	25 8	58,924	9 34
Halton .....	8,609	221,987	25 2	95,894	11 34	22,450	707,175	31 5	255,998	11 40
Hastings .....	23,350	558,065	23 9	251,129	10 76	63,747	1,727,544	27 1	625,371	9 81
Huron .....	29,354	792,558	27 0	356,651	12 15	122,046	4,210,587	34 5	1,524,233	12 49
Kent .....	18,131	534,865	29 5	240,689	13 28	51,846	2,115,317	40 8	765,745	14 77
Lambton .....	20,021	548,575	27 4	246,859	12 33	71,913	2,696,079	36 1	939,773	13 07
Lanark .....	4,092	96,162	23 5	43,273	10 67	44,148	1,214,070	27 5	439,493	9 95
Leeds .....	4,352	92,698	21 3	41,714	9 58	45,886	1,238,099	27 2	451,813	9 85
Lennox & Ad. ....	19,899	457,677	23 0	205,985	10 35	41,559	1,047,287	25 2	379,118	9 12
Lincoln .....	2,033	31,308	15 4	14,089	6 93	21,361	566,067	26 5	204,916	9 59
Manitowlin .....	889	27,559	31 0	12,401	13 95	5,183	187,106	36 1	67,732	13 07
Middlesex .....	21,518	602,404	28 0	271,082	12 60	92,282	3,322,152	36 0	1,202,619	13 03
Muskoka .....	857	19,711	23 0	8,870	10 35	11,528	327,395	28 4	118,517	10 28
Nipissing .....	337	9,099	27 0	4,095	12 15	4,622	153,913	33 3	55,716	12 05
Norfolk .....	6,492	124,471	18 6	56,012	8 37	32,311	823,931	25 5	298,263	9 23
Northumb'rd .....	17,683	429,697	24 3	193,368	10 93	46,616	1,398,480	30 0	506,250	10 86
Ontario .....	29,793	816,121	28 4	380,754	12 78	76,141	2,870,516	37 7	1,039,127	13 65
Oxford .....	18,539	532,069	28 7	239,431	12 91	74,795	2,782,374	37 2	1,007,219	13 47
Parry Sound .....	1,022	24,119	23 6	10,854	10 62	12,898	380,491	29 5	137,738	10 68
Peel .....	28,469	700,122	26 7	342,055	12 01	40,837	1,461,965	35 8	529,231	12 96
Perth .....	23,415	709,475	30 3	319,264	13 63	98,314	3,893,234	39 6	1,409,351	14 34
Peterborough .....	8,533	206,499	24 2	92,925	10 89	41,273	1,234,063	29 9	446,731	10 82
Prescott .....	2,722	63,423	23 3	28,540	10 48	37,700	1,006,590	26 7	364,376	9 67
Prince Edward .....	15,179	323,131	21 3	145,491	9 58	18,560	488,128	32 3	176,702	9 52
Renfrew .....	2,787	56,019	20 1	25,208	9 01	49,642	1,280,764	25 8	463,636	9 34
Russell .....	2,729	67,582	21 1	25,912	9 49	23,564	582,031	24 7	210,695	8 94
Simcoe .....	43,460	1,186,458	27 3	533,906	12 28	96,291	3,167,974	32 9	1,146,807	11 91
Stemont .....	3,352	81,118	24 2	36,503	10 89	27,736	851,495	30 7	308,241	11 11
Victoria .....	16,148	403,770	25 0	181,665	11 25	62,084	1,881,145	30 3	680,975	12 97
Waterloo .....	19,759	574,987	29 1	258,744	13 09	58,443	2,039,661	24 9	738,357	10 63
Welland .....	2,103	39,116	18 6	17,602	8 37	24,357	606,075	27 1	238,947	9 81
Wellington .....	33,693	1,000,682	29 7	450,307	13 36	122,856	4,274,693	34 8	1,547,439	12 60
Wentworth .....	10,468	250,905	24 2	112,908	10 89	33,810	1,152,921	34 1	417,357	12 34
York .....	41,632	1,276,475	28 6	574,414	12 87	88,746	3,567,589	40 2	1,291,467	14 55
The Province:										
1901 .....	637,201	16,761,076	26 3	7,542,484	11 84	2,408,264	78,334,490	32 5	28,357,085	11 77
1900 .....	577,810	16,909,751	29 3	6,577,893	11 38	2,398,834	89,693,327	37 4	23,768,732	9 91
1899 .....	490,374	14,830,891	30 2	5,858,021	11 95	2,363,778	89,897,724	38 0	24,901,670	10 53
1898 .....	438,784	12,663,668	28 9	4,812,194	10 97	2,376,360	86,858,293	36 6	22,409,440	9 43
1897 .....	451,615	12,021,779	26 6	3,245,880	7 19	2,432,491	86,318,128	35 5	19,502,897	8 02
1896 .....	462,792	12,663,744	27 4	4,003,639	8 65	2,425,107	82,979,922	34 2	16,595,998	6 84
1895 .....	478,046	12,090,507	25 3	4,844,565	10 22	2,373,309	84,697,566	35 7	24,646,992	10 39
1894 .....	486,261	10,980,404	22 6	4,447,064	9 15	2,342,766	70,172,516	30 0	21,613,135	9 23
1893 .....	467,315	9,806,088	21 0	3,932,241	8 41	1,936,644	58,584,529	20 3	19,450,064	10 04
1892 .....	499,225	12,274,318	24 6	5,069,293	10 15	1,861,469	64,758,053	34 8	19,945,480	10 71
1882-1901 .....	621,089	16,225,087	26 1	7,792,218	12 55	1,977,553	68,820,032	34 8	21,568,571	10 91

## PEAS AND BEANS.

TABLE X. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Peas and Beans for the year 1901, together with the totals for the Province for the past ten years and the average for the twenty years, 1882-1901, also the averages per acre.

Counties and districts.	Peas.					Beans.				
	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.
Algoma .....	2,697	59,334	22.0	34,745	14 37	15	225	15.0	281	18 75
Brant .....	5,785	67,105	11.6	44,820	7 57	329	4,869	14.8	6,086	18 50
Bruce .....	52,452	1,057,078	19.2	657,622	12 54	33	561	17.0	701	21 25
Carleton .....	5,138	83,236	16.2	54,353	10 58	190	3,952	20.8	4,940	26 00
Duff-rin .....	13,591	239,202	17.6	156,199	11 49	49	980	20.0	1,225	25 00
Dundas .....	1,088	19,693	18.1	12,860	11 82	164	2,755	16.8	3,444	21 00
Durham .....	27,975	469,989	16.8	306,897	10 97	3 6	5,372	17.0	6,715	21 25
Elgin .....	5,222	71,019	13.6	46,375	8 88	4,915	89,945	18.3	112,431	22 88
Essex .....	2,932	56,294	19.2	36,760	12 54	793	14,908	18.8	18,635	23 50
Frontenac .....	5,278	63,864	12.1	41,703	7 90	238	4,046	17.0	5,058	21 25
Glengarry .....	2,890	49,130	17.0	32,082	11 10	113	2,260	20.0	2,825	25 00
Greenville .....	885	18,320	20.7	11,963	13 52	56	924	16.5	1,165	20 63
Grey .....	52,135	865,441	16.6	565,143	10 84	322	5,216	16.2	6,520	20 25
Haldimand .....	13,232	222,298	16.8	145,161	10 97	119	1,547	13.0	1,934	16 25
Haliburton .....	1,476	18,450	12.5	12,048	8 16	7	112	16.0	140	20 00
Halton .....	8,908	122,040	13.7	79,692	8 95	61	978	16.0	1,220	20 00
Hastings .....	14,507	192,943	13.3	125,992	8 68	401	6,015	15.0	7,519	18 75
Huron .....	35,569	594,002	16.7	387,883	10 91	240	4,800	20.0	6,000	25 00
Kent .....	3,353	57,336	17.1	37,440	11 17	37,145	531,174	14 3	663,968	17 88
Lambton .....	6,410	103,201	16.1	67,390	10 51	9-6	18,537	18.8	23,171	23 50
Lanark .....	8,829	141,264	16.0	92,245	10 45	115	2,070	18.0	2,588	22 50
Leeds .....	2,5 4	43,570	17.4	28,451	11 36	292	5,840	20.0	7,300	25 00
Lennox & Add.	9,981	134,744	13.5	87,988	8 82	254	4,064	16.0	5,080	20 00
Lincoln .....	5,777	87,810	15.2	57,340	9 93	206	3,296	16.0	4,120	20 00
Manitoulin .....	4,353	86,189	19.8	56,241	12 93	10	150	15.0	187	18 75
Middlesex .....	11,310	179,829	15.9	117,428	10 38	814	16,117	19.8	20,146	24 75
Muskoka .....	3,097	55,746	18.0	36,402	11 75	9	149	16.6	186	20 75
Nipissing .....	1,433	30,917	21.5	20,189	14 04	3	45	15.0	56	18 75
North .....	4,7-1	53,705	11.4	35,069	7 44	1,146	20,628	18.0	25,785	22 50
Northumberland	24,993	384,892	15.4	251,335	10 06	663	11,138	16.8	13,923	21 00
Ontario .....	20,515	379,528	18.5	247,832	12 08	170	2,720	16.0	3,400	20 00
Oxford .....	6,859	117,975	17.2	77,038	11 23	431	9,353	21.7	11,691	27 13
Perry Sound .....	3,428	73,018	21.3	47,679	13 91	49	980	20.0	1,225	25 00
Peel .....	9,510	158,817	16.7	103,708	10 91	99	1,386	14.0	1,733	17 50
Peterborough .....	22,486	479,266	21.7	312,961	14 17	11	220	20.0	275	25 00
Peterborough .....	19,785	348,216	17.6	227,385	11 49	67	958	14.3	1,198	17 88
Prescott .....	2,644	44,778	17.0	29,240	11 10	225	4,118	18.3	5,147	22 88
Prince Edward .....	9,945	141,219	14.2	92,216	9 27	430	7,095	16.5	8,869	20 63
Renfrew .....	21,920	271,808	12.4	177,491	8 10	258	3,173	12.3	3,968	15 38
Russell .....	1,356	22,374	16.5	14,610	10 77	118	2,183	18.5	2,729	23 13
Simcoe .....	53,591	921,765	17.2	601,913	11 23	110	1,892	17.2	2,365	21 50
Stormont .....	1,245	21,663	17.4	14,146	11 36	78	1,590	20.0	1,950	25 00
Victoria .....	21,199	345,544	16.3	225,640	10 64	204	3,264	16.0	4,080	20 00
Waterloo .....	9,126	135,065	14.8	88,198	9 66	231	4,389	19.0	5,456	23 75
Welland .....	4,657	69,855	15.0	45,615	9 79	936	13,291	14.2	16,614	17 75
Wellington .....	32,547	583,846	18.0	382,557	11 75	10	190	19.0	237	23 75
Wentworth .....	8,369	131,393	15.7	85,800	10 25	63	1,088	16.0	1,360	20 00
York .....	15,436	262,412	17.0	171,355	11 10	189	3,591	19.0	4,489	23 75
The Province:										
1901 .....	602,724	10,089,173	16.7	6,588,230	10 93	53,688	824,122	15.4	1,030,153	19 19
1900 .....	661,592	14,058,198	21.2	8,027,231	12 13	44,053	820,373	18.6	817,912	18 67
1899 .....	743,139	15,140,790	20.4	8,675,673	11 67	40,485	651,009	16.1	703,090	17 37
1898 .....	863,951	13,521,263	15.6	7,058,099	8 15	45,220	759,657	16.8	831,760	11 76
1897 .....	896,735	13,867,093	15.5	5,838,016	6 51	50,591	981,349	19.4	639,834	12 65
1896 .....	824,601	17,493,148	21.1	7,696,985	9 24	68,369	1,197,535	17.5	819,114	11 9
1895 .....	799,963	15,566,103	19.5	8,531,320	10 66	72,747	1,494,179	20.5	1,414,988	19 4
1894 .....	785,007	14,022,888	17.9	7,516,268	9 57	59,281	827,514	14.0	913,575	15 4
1893 .....	738,741	14,168,955	19.2	7,651,236	10 36	48,858	664,310	14.6	783,836	16 14
1892 .....	774,732	14,494,430	18.7	8,551,714	11 04	33,249	535,931	16.1	529,506	15 4
1882-1901 .....	719,300	14,075,531	19.6	8,093,491	11 25	38,927	672,495	17.3	681,734	17 51

## RYE AND BUCKWHEAT.

TABLE XI. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Rye and Buckwheat for the year 1901, together with the totals for the Province for the past ten years, and the average for the twenty years, 1882-1901; also the averages per acre.

Counties and districts.	Rye.					Buckwheat.				
	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.	Acres.	Bu-hels.	Yield per acre.	Market value.	Market value per acre.
Algoma	152	2,736	18.0	1,349	8 87	84	2,100	25.0	1,016	12.10
Brant	3,215	53,691	16.7	26,470	8 23	1,452	28,750	19.8	13,915	9 58
Bruce	866	15,242	17.6	7,514	8 68	681	13,620	20.0	6,592	9 68
Carleton	727	11,777	16.2	5,806	7 99	3,252	59,512	18.3	28,804	8 86
Dufferin	4,442	93,726	21.1	46,207	10 40	733	18,325	25.0	8,869	12.10
Dundas	719	12,654	17.6	6,238	8 68	2,186	45,906	21.0	22,218	10.16
Durham	10,007	148,104	14.8	73,015	7 30	2,613	52,260	20.0	25,294	9 68
Elgin	2,722	46,546	17.1	22,947	8 43	3,541	69,788	19.7	33,763	9 53
Essex	1,610	27,370	17.0	13,493	8 38	692	13,840	20.0	6,699	9 68
Frontenac	4,765	71,952	15.1	35,472	7 44	1,464	25,766	17.6	12,471	8 52
Glengarry	307	7,675	25.0	3,784	12 33	1,231	33,237	27.0	16,087	13.07
Greenville	1,594	28,054	17.6	13,831	8 68	3,213	61,047	19.0	29,547	9 20
Grey	1,700	25,500	15.0	12,571	7 40	2,267	54,408	24.0	26,333	11.62
Haldimand	4,914	74,101	15.1	36,532	7 44	647	9,705	15.0	4,697	7 26
Haliburton	299	5,681	19.0	2,801	9 37	204	3,590	17.6	1,738	8 52
Halton	749	11,984	16.0	5,908	7 89	170	3,570	21.0	1,728	10.16
Hastings	11,636	188,503	16.2	92,932	7 99	4,313	78,497	18.2	37,993	8 81
Huron	1,333	24,934	17.4	12,293	8 58	820	17,712	21.6	8,573	10.45
Kent	654	12,818	19.6	6,319	9 66	853	15,354	18.0	7,431	8 71
Lambton	743	13,597	18.3	6,703	9 02	323	7,235	22.4	3,502	10.84
Lanark	1,341	27,625	20.6	13,619	10.16	3,249	59,457	18.3	28,777	8 86
Leeds	2,384	37,190	15.6	18,335	7 69	3,693	75,337	20.4	36,463	9 87
Lennox & Add.	6,445	101,815	15.7	50,196	7 74	3,507	70,149	20.0	33,948	9 68
Lincoln	2,583	38,487	14.9	18,974	7 33	433	7,664	17.7	3,709	8 57
Manitoulin	105	1,995	19.0	984	9 37	66	1,650	25.0	799	12.10
Middlesex	740	16,280	22.0	8,026	10 85	1,040	23,712	22.8	11,477	11.03
Muskoka	254	3,785	14.9	1,866	7 35	151	2,597	17.2	1,257	8 32
Nipissing	58	986	17.0	486	8 38	15	240	16.0	116	7 74
Norfolk	10,638	144,677	13.6	71,326	6 70	7,892	141,906	18.2	68,726	8 81
Northumberland	17,033	227,242	13.4	112,030	6 61	6,155	118,176	19.2	67,197	9 29
Ontario	6,799	121,702	17.9	59,999	8 82	3,804	79,884	21.0	38,664	10.16
Oxford	2,331	32,614	14.0	16,089	6 90	1,218	27,770	22.8	13,441	11.03
Parry Sound	330	5,775	17.5	2,847	8 63	109	2,289	21.0	1,108	10.16
Peel	7,010	129,685	18.5	63,935	9 12	914	14,024	16.0	7,078	7 74
Perth	123	2,460	20.0	1,213	9 86	193	3,860	20.0	1,868	9 68
Peterborough	4,741	84,390	17.8	41,604	8 78	1,839	34,757	18.9	16,822	9 15
Prescott	131	1,507	11.5	743	5 67	1,355	24,661	18.2	11,936	8 81
Prince Edward	12,380	181,986	14.7	89,719	7 25	4,853	78,133	16.1	37,816	7 79
Renfrew	3,612	65,558	18.1	32,320	8 92	789	12,782	16.2	6,186	7 84
Russell	186	3,162	17.0	1,559	8 38	707	13,806	18.0	6,682	8 71
Simcoe	6,967	114,259	16.4	56,329	8 09	4,988	104,748	21.0	50,698	10.16
Stormont	16	227	14.2	112	7 00	2,564	69,228	27.0	33,506	13.07
Victoria	3,862	59,475	15.4	29,321	7 59	2,305	50,710	22.0	24,544	10.65
Waterloo	1,900	35,150	18.5	17,329	9 12	412	12,360	30.0	5,982	14.52
Welland	2,329	38,196	16.4	18,831	8 09	1,671	26,492	15.8	12,779	7 65
Wellington	1,773	30,318	17.1	14,947	8 43	1,043	27,118	26.0	13,125	12.58
Wentworth	3,485	60,988	17.5	30,067	8 63	1,158	22,928	19.8	11,097	9 58
York	5,376	101,069	18.8	49,827	9 27	1,434	35,830	25.0	17,351	12.10
The Province:										
1901	158,236	2,545,268	16.1	1,254,817	7 93	88,266	1,757,071	19.9	850,422	9 63
1900	142,213	2,357,635	16.6	1,143,453	8 04	102,570	1,874,261	18.3	819,052	7 98
1899	137,824	2,284,846	16.6	1,142,432	8 29	132,022	2,203,299	16.7	1,002,501	7 59
1898	165,089	2,673,231	16.2	1,162,857	7 04	150,394	2,373,645	15.8	906,732	6 03
1897	187,785	3,382,005	18.0	1,275,016	6 79	151,669	3,464,186	22.8	1,039,256	6 85
1896	148,680	2,230,873	15.0	816,500	5 49	145,606	2,693,669	17.9	794,119	5 45
1895	120,350	1,900,117	15.8	866,453	7 20	135,262	2,791,749	20.6	1,027,364	7 60
84	90,144	1,386,606	15.4	612,880	6 80	145,268	2,524,335	17.4	993,450	6 84
83	68,486	9,477,114	14.5	4,725,516	6 90	134,828	1,380,466	17.8	995,031	7 44
1892	73,073	1,132,504	15.5	631,937	8 65	125,104	2,521,214	20.2	1,063,952	8 50
1882-1901	116,112	1,885,998	16.2	973,971	8 37	100,117	1,932,144	19.3	767,830	7 67

## CORN.

TABLE XII. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of corn for husking and for fodder for the year 1901, together with the totals for the Province for the past ten years, and the average for the ten years 1892-1901; also the averages per acre.

Counties and districts.	Corn for husking.				Corn for silo and fodder.					
	Acres.	Bu.-bels.	Yield per acre.	Market value.	Acres.	Tons green.	Tons per acre.	Market value.	Market value per acre.	
			\$	%				\$	\$ c.	
Algoma .....	57	2,850	50.0	1,083	19 00	79	869	11.00	1,738	22 00
Brant .....	6,234	448,848	72.0	170,562	27 36	4,170	46,245	11.09	92,490	22 18
Bruce .....	980	73,500	75.0	27,930	28 50	3,345	39,404	11.78	78,808	23 56
Carleton .....	1,460	51,100	35.0	19,418	13 30	8,582	124,139	14 50	248,878	29 00
Dufferin .....	112	4,480	40.0	1,702	15 20	505	5,555	11.00	11,110	22 00
Dundas .....	3,135	206,910	66.0	78,626	25 08	7,849	107,060	13 64	214,120	27 28
Durham .....	2,180	163,500	75.0	62,130	28 50	4,086	42,413	10.88	84,826	20 76
Elgin .....	28,636	2,405,424	84.0	914,061	31 92	4,394	35,504	8.08	71,008	16 16
Essex .....	64,883	5,644,821	87.0	2,145,032	33 06	1,840	12,880	7.00	25,760	14 00
Frontenac .....	2,579	162,477	63.0	61,741	23 94	4 314	58,929	13.66	117,858	27 32
Glengarry .....	1,133	67,980	60.0	25,832	22 80	4,599	68,985	15.00	137,970	30 00
Grenville .....	3,391	27,716	76.0	97,932	28 88	6,778	99,365	14 66	198,730	29 32
Grey .....	766	32,938	43.0	12,517	16 34	4,362	51,908	11.90	103,816	23 80
Halimand .....	3,522	239,496	68.0	91,009	25 84	2,258	19,916	8.82	39,832	17 64
Haliburton .....	141	6,345	45.0	2,411	17 10	144	2,016	14.00	4,032	28 00
Halton .....	1,253	112,770	90.0	42,853	34 20	3,677	38,094	10.36	76,188	20 72
Hastings .....	7,361	412,216	56.0	156,642	21 28	6,855	68,139	9.94	136,278	19 88
Huron .....	1,984	132,928	67.0	50,513	25 46	7,663	94,178	12 29	188,356	24 58
Kent .....	57,239	4,636,859	81.0	1,761,816	30 78	3,277	23,791	7 26	47,582	14 52
Lambton .....	19,088	1,584,304	83.0	602,036	31 54	3,829	31,781	8.30	63,562	16 60
Lanark .....	1,824	105,792	58.0	40,201	22 04	5,898	76,674	13 00	153,348	26 00
Leeds .....	5,895	442,125	75.0	168,008	28 50	7,646	102,303	13.38	204,600	26 76
Lennox & Add.	4,923	324,918	66.0	123,469	25 08	3,278	36,682	11.16	73,164	22 32
Lincoln .....	7,803	561,816	72.0	213,490	27 36	2,271	19,167	8.44	38,331	16 88
Manitoulin .....	67	3,350	50.0	1,273	19 00	212	2,296	10 83	4,592	24 65
Middlesex .....	19,151	1,512,929	79.0	574,913	30 02	8,665	93,322	10 77	186,644	21 54
Muskoka .....	198	8,514	43.0	3,235	16 34	219	2,300	10.50	4,600	21 00
Nipissing .....	52	1,560	30.0	693	11 40	20	120	6 00	240	12 00
Norfolk .....	21,593	1,468,824	68.0	557,963	25 84	3,900	36,543	9.37	73,086	18 74
Northumberland	5,122	338,052	66.0	128,460	25 08	5,058	60,696	12 00	121,392	24 00
Ontario .....	2,798	221,042	79.0	83,996	30 02	5,467	68,338	12.50	136,676	25 00
Oxford .....	13,012	949,876	73.0	360,953	27 74	9,475	107,362	11 33	214,704	22 66
Perry Sound .....	122	4,880	40.0	1,854	15 20	117	1,170	10.00	2,340	20 00
Peel .....	809	46,922	58.0	17,830	22 04	3,547	42,138	11.88	84,276	23 76
Perth .....	519	38,925	75.0	14,792	28 50	7,961	105,642	13.27	211,284	26 00
Peterborough .....	460	31,280	68.0	11,886	25 84	2,932	41,048	14 00	82,096	28 54
Proscott .....	2,517	188,775	75.0	71,734	28 50	1,830	24,248	13 25	48,496	26 50
Prince Edward .....	8,962	555,644	62.0	211,145	23 56	4,482	39,442	8 80	78,884	17 60
Renfrew .....	563	19,705	35.0	7,488	13 30	2,909	29,334	10 29	59,868	20 58
Russell .....	730	32,850	45.0	12,483	17 10	2,208	23,659	10 67	47,118	21 34
Simcoe .....	1,694	106,722	63.0	40,554	23 94	3,941	52,021	13 20	104,042	26 40
Stormont .....	1,845	99,630	54.0	37,859	20 52	4,942	70,819	14 33	141,638	28 66
Victoria .....	198	9,504	48.0	3,612	18 24	2,629	33,810	12 86	67,620	25 72
Waterloo .....	1,348	88,968	66.0	33,808	25 08	5,277	74,300	14 08	148,600	28 16
Welland .....	9,482	616,330	65.0	234,205	24 70	1,793	13,752	7 67	27,504	15 34
Wellington .....	308	17,864	58 0	6,788	22 04	4,675	58,988	12 10	117,976	24 20
Wentworth .....	4,376	328,200	75 0	124,716	28 50	5,361	55,969	12 44	111,938	20 88
York .....	1,418	66,646	47.0	25,326	17 86	8,413	115,510	13 73	231,020	27 46
The Province :										
1901 .....	323,923	24,838,105	76.7	9,458,480	29 14	197,932	2,359,514	11.92	4,719,028	23 84
1900 .....	330,772	27,093,561	81.9	8,588,659	25 97	179,798	2,147,532	11.94	4,295,064	23 89
1899 .....	333,590	21,673,234	65.0	4,291,300	12 86	171,935	1,697,757	9 87	3,395,510	19 75
1898 .....	339,748	23,442,593	70.9	4,711,961	14 25	180,948	2,128,073	11 20	4,256,146	22 41
1897 .....	335,030	24,663,998	73 6	4,858,808	14 50	209,005	2,669,822	12 77	5,339,644	25 55
1896 .....	317,667	24,071,364	75 8	4,717,987	14 85	178,962	1,948,780	10 89	3,897,560	21 78
1895 .....	302,929	24,819,899	81.9	5,609,296	18 52	149,899	1,775,654	11 85	3,551,368	23 69
1894 .....	267,348	16,275,352	60.9	4,247,867	15 89	111,361	1,049,765	9 43	2,099,530	18 85
1893 .....	217,294	14,072,961	64.8	3,729,335	17 16	95,865	1,049,524	10 95	2,099,048	21 90
1892 .....	181,463	11,229,498	61.9	2,953,358	16 28	91,403	948,907	10 38	1,897,814	20 76
1892-1901....	*294,076	21,218,057	72.2	5,314,705	18 07	*157,611	1,777,533	11 28	3,555,065	22 56

\*The combined average area for corn for the twenty years 1882-1901, is 323,783 acres, the average value of the produce for the same period being \$6,287,192.

## POTATOES AND CARROTS.

TABLE XIII. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Potatoes and Carrots for the year 1901, together with the totals for the Province for the past ten years and the average for the twenty years, 1882-1901 also the averages per acre.

Counties and districts.	Potatoes.					Carrots.				
	Acres.	Bushels.	Yield per acre.	Market	Market	Acres.	Bushels.	Yield per acre.	Market	Market
				value.	value				value.	value
				\$	% c.				\$	% c.
Algonia .....	1,050	137,550	131	58,596	55 81	61	18,300	300	2,287	37 50
Brant .....	2,261	293,930	130	125,214	55 38	130	50,050	385	6,256	48 13
Bruce .....	4,005	556,695	139	237,152	59 21	442	177,242	401	22,155	50 13
Carleton .....	5,031	523,224	104	222,893	44 30	213	76,254	358	9,532	44 75
Dufferin .....	2,982	432,390	145	184,98	61 77	194	71,640	360	8,955	45 00
Dundas .....	2,001	110,075	55	46,883	23 43	137	38,497	281	4,812	35 13
Durham .....	2,837	363,810	130	157,113	55 38	185	67,155	363	8,394	43 38
Elgin .....	2,909	305,445	105	130,119	44 73	150	55,950	373	6,994	46 63
Essex .....	3,493	209,580	60	89,281	25 56	174	32,712	188	4,089	23 50
Frontenac .....	3,917	329,028	84	140,166	35 78	225	56,250	250	7,031	31 25
Glengarry .....	2,495	234,530	94	99 9 0	40 04	144	43,200	300	5,400	37 50
Greenville .....	2,840	252,760	89	107,676	37 91	133	46,590	3 0	5,819	43 75
Grey .....	5,993	934,908	156	398,271	66 46	407	130,240	320	16,280	40 00
Haldimand .....	1,448	112,944	78	48,114	33 23	75	18,9 0	252	2,343	31 50
Haliburton .....	583	50,721	87	21,607	37 06	44	8,624	196	1,078	24 50
Halton .....	1,642	155,990	95	66,452	40 47	94	31,678	337	3,9 0	42 13
Hastings .....	5,425	721,525	133	307,370	56 66	390	119,340	306	14,917	38 25
Huron .....	4,236	593,040	140	252,635	59 64	307	109,292	3 6	13,662	44 50
Kent .....	3,497	241,293	69	102,791	29 39	113	29,719	263	3,715	32 88
Lambton .....	3,551	369,304	104	157,323	41 30	216	67,824	314	8,478	39 25
Lanark .....	2,856	334,152	117	142,349	49 84	129	42,699	331	5,338	41 38
Leeds .....	3,086	330,202	107	140,666	45 58	181	49,282	272	6,154	34 00
Lennox & Add..	4,029	447,219	111	190,515	47 79	181	47,965	265	5,996	33 13
Lincoln .....	1,937	180,141	93	76,740	39 62	95	34,010	358	4,251	44 75
Manitoulin .....	548	90,420	165	38,519	70 29	48	14 400	300	1,800	37 50
Middlesex .....	5,699	626,890	110	267,055	46 86	283	93,673	331	11,709	41 38
Muskoka .....	1,170	177,840	152	75,760	64 75	75	16,875	225	2,109	28 13
Nipissing .....	781	135,113	173	57,558	73 70	15	4,500	300	564	37 50
Norfolk .....	3,064	257,376	84	109,642	35 78	297	56,724	292	10,840	36 50
Northumberland	5,123	691,605	135	294,624	67 51	430	182,320	424	22,790	53 00
Ontario .....	4,445	582,295	131	248,055	55 81	252	111,384	442	13,924	55 25
Oxford .....	3,037	403,921	133	172,070	56 66	114	37,596	329	4,6 8	41 13
Parry Sound .....	1,179	199,251	169	84,881	71 99	83	31,623	381	3,953	47 63
Peel .....	3,690	332,100	90	141,475	38 34	242	105,995	438	13,250	54 75
Perth .....	3,179	521,356	164	222,098	69 86	198	65,538	331	8,192	41 38
Peterborough .....	2,7 8	385,9 6	142	164,417	60 49	302	146,168	484	18,271	60 50
Prescott .....	2,116	260,268	123	110,874	59 40	130	35,360	272	4,420	34 00
Prince Edward .....	2,122	220,688	104	94,013	44 30	103	30,900	300	8,863	37 50
Renfrew .....	3,593	377,265	105	160,7 5	44 73	137	23,838	174	2,980	21 75
Russell .....	1,138	97,868	86	41,692	36 64	74	22,200	300	2,775	37 50
Simcoe .....	7,953	1,169,091	147	498,033	62 62	497	164,507	331	20,563	41 38
Stormont .....	2,079	247,401	119	105,393	60 69	205	56,785	277	7,098	34 63
Victoria .....	3,031	404,185	135	174,313	57 51	188	84,788	451	10,599	56 38
Waterloo .....	3,141	442,881	141	188,667	60 07	289	130 0 0	450	16,256	56 25
Welland .....	2,540	207,360	81	88,335	34 51	51	10,759	203	1,345	25 38
Wellington .....	5,540	819,920	148	349,286	63 05	247	99,788	404	12,473	50 50
Wentworth .....	3,457	383,727	111	163,468	47 29	138	51,474	373	6,434	46 63
York .....	8,688	851,424	98	362,707	41 75	396	169,488	428	21,186	53 50
The Province:										
1901 .....	154,155	18,116,637	118	7,717,687	50 06	9,221	3,199,967	347	399,996	43 38
1900 .....	163,754	21,476,439	131	5,695,351	34 23	10,320	3,469,123	336	4,3 610	42 02
1899 .....	168,148	19,933,366	119	6,538,144	38 88	11,891	3,674,035	309	459,254	38 62
1898 .....	169,946	14,3 8,625	84	6,382,154	37 26	12,418	4,313,861	347	589,233	43 42
1897 .....	169,333	16,101,797	95	6,424,218	37 94	12,025	4,483,628	369	554,201	46 09
1896 .....	178,965	21,305,477	119	5,582,086	31 19	12,333	4,6 8,441	374	577,305	46 81
1895 .....	184,647	29,390,884	159	5,936,959	32 15	13,002	4,581,373	352	572,672	44 04
1894 .....	167,253	17,163,130	103	6,076,748	36 83	11,186	3,716,140	332	464,518	41 53
1893 .....	142,601	12,911,212	91	5,099,929	35 76	9,288	2,971,450	320	371,431	39 99
1892 .....	145,703	12,289,817	84	6,194,068	42 81	9,941	3,827,361	385	478,420	43 13
1882-1901 .....	159,950	18,572,661	116	7,313,397	45 72	10,793	3,769,942	349	471,243	43 66

## MANGEL-WURZELS AND TURNIPS.

TABLE XIV. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Mangel Wurzels and Turnips for the year 1901, together with the totals for the Province for the past ten years and the average for the twenty years, 1882-1901; also the averages per acre.

Counties and districts.	Mangel-Wurzels.					Turnips.				
	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.	Acres.	Bushels.	Yield per acre.	Market value.	Market value per acre.
				\$	\$ c.				\$	\$ c.
Albama .....	57	17,100	300	1,368	24 00		206,250	375	20,625	37 50
Brant .....	1,467	702,693	479	56,215	38 32	3,857	1,920,786	498	192,079	49 80
Bruce .....	2,457	1,240,785	505	99,263	40 40	8,544	4,2-0,544	501	428,054	50 10
Carleton .....	1,046	589,944	564	47,196	45 12	1,863	862,569	463	86,257	46 30
Dufferin .....	539	284,592	528	22,767	42 24	5,106	2,267,061	444	226,706	44 40
Dundas .....	280	96,040	343	7,643	27 44	226	77,292	342	7,729	34 20
Durham .....	1,955	1,057,655	541	84,612	43 28	5,657	2,705,259	487	270,626	48 70
Elgin .....	1,226	649,484	509	51,9-9	40 72	430	229,190	533	22,919	53 30
Essex .....	824	243,904	296	19,512	23 68	169	33,800	200	3,380	20 00
Frontenac .....	312	109,200	350	8,735	28 00	578	215,016	372	21,502	37 20
Glengarry .....	273	122,8-0	450	9,828	36 00	389	148,987	383	14,899	38 30
Grenville .....	261	114,840	440	9,187	35 20	172	51,500	300	5,160	30 00
Grey .....	2,606	1,248 274	479	99,862	34 32	12,230	5,833 710	477	583,471	47 70
Haldimand .....	498	151,392	304	12,111	24 32	182	50,414	277	5,041	27 70
Hamburton .....	37	7 807	211	624	16 88	195	49,335	253	4,933	25 30
Halton .....	1,477	768,400	520	61,443	41 60	1,931	795,572	412	79,557	41 20
Hastings .....	1,054	378,386	3 9	30,271	28 72	2,371	896,298	378	89,624	37 80
Huron .....	4,844	2,596,384	536	207,711	42 88	9,252	4,265,172	461	426,517	46 10
Kent .....	816	250,512	307	20,041	24 56	116	34,800	300	3,480	30 00
Lambton .....	1,822	781,638	429	62,531	34 32	181	62,083	343	6,208	34 30
Lanark .....	498	190,734	383	15,259	30 64	1,189	419,7 7	353	41,972	35 30
Leeds .....	622	2,302,006	373	18,590	29 84	556	179,032	322	17,903	32 20
Lennox & Add. .....	434	154,504	356	12,360	28 48	335	103,850	310	10,385	31 00
Lincoln .....	444	192,696	434	15,416	34 72	370	148,370	401	14,837	40 10
Manitowlin .....	39	11,700	300	936	24 00	313	109,550	350	10,955	35 00
Middlesex .....	3,091	1,353,858	438	103,309	35 04	2,208	940,608	426	94,061	42 60
Muskoka .....	73	21,900	300	1,752	24 00	649	208,978	322	20,898	32 20
Nipissing .....	32	16,000	500	1,2-0	40 00	159	79 500	500	7,950	50 00
Norfolk .....	1,078	361,872	359	24,950	28 72	1,343	506,311	377	50,631	37 70
Northumberland .....	1,055	625 390	493	42,031	39 84	5,226	2,336 022	447	233,602	44 70
Ontario .....	2,467	1,339,581	543	107,167	43 44	12,291	6,059 433	493	605,946	49 30
Oxford .....	3,154	1,810,396	574	144,832	45 92	6,8-8	3,501,056	512	350,106	51 20
Parry Sound .....	66	31,020	470	2,481	37 60	1,013	419,382	414	41,938	41 40
Peel .....	945	461,160	448	36,893	39 04	1,745	834,110	478	83,411	47 80
Perth .....	4,401	2,213,703	503	177,096	40 24	6,037	2,764 946	458	276,495	45 80
Peterborough .....	961	512,213	533	40,977	42 64	2,396	1,116,536	466	111,654	46 60
Prescott .....	249	99,600	400	7,963	32 00	192	64,7 4	337	6,470	33 70
Prince Edward .....	323	133,722	414	10,698	33 12	157	56,619	367	5,662	36 70
Renfrew .....	587	138,532	236	11,083	18 88	832	248 768	299	24,877	29 90
Russell .....	332	112,880	340	9,030	27 20	813	252,030	310	25,203	31 00
Simcoe .....	2,733	1,317,305	482	103,384	38 56	9,236	4,313,212	467	431,321	46 70
Stormont .....	258	84,444	343	7,080	27 44	154	52,668	342	5,267	34 20
Victoria .....	1,787	914,944	512	73,193	40 96	5,316	2,200,824	414	220,082	41 40
Waterloo .....	1,875	945,000	504	75,600	40 32	6,411	3,179,856	496	317,986	49 60
Welland .....	269	57,024	212	4,562	16 95	283	84,202	294	8,420	29 40
Wellington .....	3,261	1,777,245	545	142,180	43 60	15,536	8,482,656	546	848,266	54 60
Wentworth .....	1,920	1,052,160	548	84,173	43 84	2,866	1,484 588	518	148,459	51 80
York .....	4,360	2,206,160	506	176,493	40 48	7,546	3,154,228	418	315,423	41 80
The Province :										
1901 .....	61,095	29 683,324	486	2,374,666	38 87	145,909	68,287,467	468	6,828,747	46 80
1900 .....	54,543	24,728,525	453	1,978,282	36 27	156,583	59,330,395	379	5,933,040	37 90
1899 .....	53,401	20,898,387	391	1,671,871	31 31	153,440	53,078,390	379	5,807,839	37 85
1898 .....	47,923	21,957,564	458	1,756 605	36 65	151,601	64 727,882	427	6,472,788	42 70
1897 .....	41,175	18,103,387	440	1,444,271	35 17	149,336	68,297,148	457	8,829,715	45 73
1896 .....	36,101	16,849,401	467	1,347,952	37 34	148 234	69,814 841	471	6,981,484	47 10
1895 .....	34,383	15,961,502	464	1,276,920	37 14	151,806	63,496 702	418	6,349,670	41 83
1894 .....	27,670	11,532,127	417	927,570	33 34	147,657	61,694,487	418	6,164,449	41 78
1893 .....	21,519	8 582,568	399	686,606	31 91	136,604	56 975,355	417	5,697,535	41 71
1892 .....	22,026	10,350,474	470	828,038	37 69	129,627	63,541,641	490	6,354,164	49 02
1882-1901.	29,765	13,201,411	444	1,066,113	35 48	126,011	53,202,856	422	5,320,286	42 22

## HAY AND CLOVER—ALL FIELD CROPS.

TABLE XV. Showing by County Municipalities of Ontario, the area, produce and market value of the crop of Hay and Clover for the year 1901, together with the totals for the Province for the past ten years and the averages for the twenty years 1882-1901; also the averages per acre. It also shows the aggregate area and market value of all the field crops enumerated in Table VIII-XV.

Counties and districts.	Hay and clover.					All field crops.		
	Acres.	Tons	Yield per acre.	Market value.		Acres.	Market value.	Market Value per acre.
				\$	\$ c.			
Algoma . . . . .	19,215	31,897	1.66	254,857	13 26	37,630	570,049	15 15
Braet . . . . .	28,874	56,882	1.97	454,487	15 74	123,130	1,866,922	15 16
Bruce . . . . .	102,963	155,474	1.51	1,242,237	12 06	329,756	4,684,470	14 21
Carleton . . . . .	67,889	147,998	2.18	1,182,504	17 42	192,516	2,974,745	15 45
Dufferin . . . . .	40,760	82,743	2.03	661,117	16 22	167,871	2,542,293	15 14
Dundas . . . . .	36,367	75,280	2.07	601,487	16 54	93,066	1,438,686	15 46
Durham . . . . .	42,119	61,494	1.46	491,337	11 67	201,608	2,740,282	13 59
Elgin . . . . .	60,445	108,137	1.79	864,494	14 30	208,888	3,324,894	15 92
Essex . . . . .	40,617	70,267	1.73	561,433	13 82	207,373	4,082,010	19 68
Frontenac . . . . .	67,786	117,270	1.73	936,987	13 82	150,489	1,935,136	12 86
Glengarry . . . . .	48,118	104,897	2.18	888,127	17 42	113,999	1,776,575	15 58
Grenville . . . . .	38,591	77,182	2.00	616,684	15 98	95,916	1,399,412	14 59
Grey . . . . .	133,389	212,089	1.59	1,694,591	12 70	419,193	5,957,513	14 21
Haldauid . . . . .	50,331	93,616	1.86	747,992	14 86	155,074	1,767,830	11 40
Haliburton . . . . .	12,849	18,246	1.42	145,786	11 35	24,069	273,611	11 37
Halton . . . . .	23,715	49,624	1.67	396,496	13 34	109,723	1,453,424	13 25
Hastings . . . . .	86,942	155,626	1.79	1,243,452	14 30	253,267	3,379,340	13 34
Huron . . . . .	110,985	170,917	1.54	1,365,627	12 30	391,636	5,616,649	14 34
Kent . . . . .	60,700	124,435	2.05	994,286	16 38	294,626	5,282,185	17 96
Lambton . . . . .	69,171	121,741	1.76	972,711	14 06	245,431	3,615,153	14 73
Lanark . . . . .	59,218	123,766	2.09	988,890	16 70	148,188	2,149,599	14 51
Leeds . . . . .	67,317	129,249	1.92	1,032,699	15 34	152,416	2,253,406	14 78
Lennox & Addington . . . . .	65,265	120,088	1.84	959,503	14 70	171,402	2,244,092	13 09
Lincoln . . . . .	38,347	63,273	1.65	605,551	13 18	104,792	1,280,598	12 22
Manitoulia . . . . .	16,969	18,045	1.13	144,180	9 03	30,551	373,616	12 23
Middlesex . . . . .	95,523	182,449	1.91	1,457,767	15 26	322,839	4,859,994	15 05
Muskoka . . . . .	23,268	29,783	1.28	237,966	10 23	42,788	526,849	12 31
Nipissing . . . . .	12,433	15,293	1.23	122,191	9 83	20,998	284,839	13 57
Norfolk . . . . .	42,021	77,739	1.85	621,135	14 78	170,006	2,189,701	12 88
Northumberland . . . . .	54,067	92,455	1.71	738,715	13 66	226,855	3,105,158	13 69
Ontario . . . . .	56,964	95,700	1.68	764,643	13 42	265,019	4,268,361	16 11
Oxford . . . . .	62,528	128,182	2.05	1,021,174	16 38	243,144	4,064,144	16 71
Parry Sound . . . . .	24,960	38,946	1.36	271,229	10 87	47,031	627,871	13 35
Peel . . . . .	34,746	63,933	1.84	510,825	14 70	167,411	2,298,104	13 73
Perth . . . . .	76,382	150,472	1.97	1,202,271	15 74	291,243	4,950,101	17 00
Peterborough . . . . .	42,501	71,827	1.69	573,898	13 50	149,440	2,074,779	13 88
Prescott . . . . .	48,683	104,688	2.15	836,297	17 18	106,749	1,698,928	14 97
Prince Edward . . . . .	36,922	57,206	1.85	457,076	14 78	124,171	1,559,441	12 56
Renfrew . . . . .	74,479	146,724	1.97	1,172,323	15 74	192,025	2,474,635	12 89
Russell . . . . .	27,516	60,810	2.21	485,872	17 66	64,031	916,577	14 31
Simcoe . . . . .	86,594	156,735	1.81	1,232,313	14 46	407,903	6,142,261	15 06
Storment . . . . .	36,482	66,397	1.82	530,512	14 54	84,358	1,263,417	14 98
Victoria . . . . .	47,166	91,030	1.93	727,330	15 42	194,186	2,744,129	14 13
Waterloo . . . . .	42,078	82,052	1.95	655,595	15 58	194,562	3,149,168	16 19
Welland . . . . .	45,517	66,820	1.49	533,892	11 91	120,077	1,422,834	11 85
Wellington . . . . .	88,096	161,216	1.83	1,288,116	14 62	336,165	5,521,711	16 43
Wentworth . . . . .	41,259	75,917	1.84	606,577	14 70	148,956	2,144,294	14 47
York . . . . .	69,136	130,667	1.89	1,014,029	15 10	325,655	5,156,562	15 83
The Province:								
1901 . . . . .	2,557,263	4,632,317	1.81	37,012,213	14 47	8,667,512	128,325,648	14 81
1900 . . . . .	2,526,566	3,133,045	1.24	26,568,222	10 52	8,794,953	114,758,761	13 05
1899 . . . . .	2,505,422	3,498,705	1.40	27,010,003	10 78	8,753,926	105,771,321	12 08
1898 . . . . .	2,453,503	4,399,063	1.79	27,362,172	11 15	8,835,272	110,528,947	12 51
1897 . . . . .	2,341,488	3,811,518	1.63	27,366,699	11 69	8,701,705	106,952,471	12 29
1896 . . . . .	2,426,711	2,260,240	.93	21,879,123	9 02	8,511,444	88,900,135	10 44
1895 . . . . .	2,537,674	1,849,914	.73	22,753,942	8 97	8,321,173	99,665,895	11 98
1894 . . . . .	2,576,943	3,575,200	1.39	27,028,512	10 49	8,227,153	94,055,392	11 43
1893 . . . . .	2,766,894	4,963,657	1.79	37,921,575	13 71	8,054,612	101,886,557	12 65
1892 . . . . .	2,515,367	4,381,838	1.74	35,955,672	14 29	8,080,206	110,562,493	13 68
1882-01 . . . . .	2,405,639	3,376,786	1.40	30,586,129	12 71	8,006,200	111,167,735	13 89



RATIOS OF AREAS UNDER CROP.

TABLE XVI. Showing by County Municipalities of Ontario the number of acres under the various crops in 1901 per 1,000 acres of cleared land; together with the average for the Province for the past ten years and the average of the twenty years 1882-1901.

Counties and districts.	Fall wheat.	Spring wheat.	Barley.	Oats.	Rye.	Peas.	Corn.	Buckwheat.	Beans.	Potatoes.	Mangel wurzels.	Carrots.	Turnips.	Hay and clover.	Total.	
Algoma	5.1	44.4	28.1	190.2	3.0	53.1	2.7	1.6	.3	20.7	1.1	1.2	10.8	378.0	740.3	
Brant	157.4	2.3	75.8	128.5	17.9	32.2	57.9	8.1	1.8	12.6	8.2	.7	21.5	160.8	685.7	
Bruce	72.2	7.0	30.6	175.9	1.6	98.0	8.1	1.3	.1	7.5	4.6	.8	16.0	192.3	616.0	
Carlton	1.4	40.8	29.4	243.5	2.4	16.7	32.6	10.6	.6	16.3	3.4	.7	6.0	220.2	624.6	
Dufferin	30.1	43.7	61.0	265.7	18.0	55.1	2.5	3.0	.2	12.1	2.2	.8	20.7	165.1	680.2	
Dundas	.9	13.3	18.6	215.6	4.6	6.9	7.0	14.0	1.1	12.8	1.8	.9	1.4	232.1	594.1	
Unrham	22.5	65.2	96.8	160.4	33.9	94.8	21.2	8.9	1.1	9.6	6.6	.6	18.8	142.8	683.1	
Elgin	108.0	.1	34.6	142.1	8.2	15.7	99.8	10.7	14.8	8.8	3.7	.5	1.3	182.6	630.9	
Essex	91.9	1.2	36.4	183.8	5.6	10.3	233.9	2.4	2.8	12.3	2.9	.6	.6	142.4	727.1	
Frontenac	3.8	32.7	21.9	163.8	17.9	19.9	25.9	5.5	.9	14.7	1.2	.8	2.2	255.0	566.2	
Glengarry	1.32	.9	23.7	225.6	1.7	15.6	30.9	6.6	.6	13.5	1.5	.8	2.1	259.5	615.1	
Grenville	.9	14.7	16.6	188.1	9.2	5.1	50.0	18.6	3.1	6.5	1.5	.8	1.0	223.7	556.0	
Grey	48.3	15.4	34.8	209.4	2.6	79.1	7.8	3.4	.5	9.1	4.0	.6	18.6	202.3	635.9	
Haldimand	158.3	7.5	31.4	140.6	62.1	3.7	4.4	25.1	2.8	.5	6.3	2.2	.3	8.218.4	672.9	
Haliburton	6.1	30.2	10.8	165.8	7.9	39.0	7.5	5.4	.2	15.4	1.0	1.2	5.2	339.8	636.6	
Halton	143.2	23.7	51.0	130.1	4.3	51.6	28.6	1.0	.3	9.5	8.6	.6	11.2	172.2	635.9	
Hastings	19.0	42.8	57.8	157.6	28.8	35.9	35.2	10.7	1.0	13.4	2.6	1.0	5.9	215.3	627.0	
Huron	.9	6.5	46.4	193.1	2.3	56.3	15.3	1.3	.4	6.7	7.7	.5	14.6	175.6	619.7	
Kent	130.7	1.0	42.0	120.1	1.5	7.8	140.1	2.0	86.0	8.1	1.9	.3	3.140.6	682.4		
Lambton	113.5	2.1	49.1	176.3	1.8	15.7	56.2	.8	2.4	8.7	4.5	.5	4.169.6	601.6		
Lanark	5.9	40.5	12.9	138.6	4.2	27.7	24.3	10.2	.4	9.0	1.6	.4	3.7	186.0	465.4	
Leeds	11.8	16.5	15.4	162.1	8.4	8.8	47.8	13.1	1.0	10.9	2.2	.6	2.0	237.9	538.5	
Lennox & Addington	7.4	32.5	70.4	147.0	22.9	35.3	29.0	12.4	.9	14.2	1.5	.6	1.2	220.8	606.1	
Lincoln	123.7	5.1	12.4	130.2	15.7	35.2	61.4	2.6	1.3	11.8	2.7	.6	2.2	233.6	638.5	
Manitowlin	11.1	55.8	21.6	126.2	2.6	106.0	6.8	1.6	.3	13.3	.9	1.2	7.6	388.8	743.8	
Middlesex	101.4	1.1	36.4	156.1	1.3	19.1	47.0	1.8	1.4	9.6	5.2	.5	3.7	161.6	646.2	
Mu-koka	2.1	17.9	13.9	186.5	4.1	50.1	6.8	2.4	.2	18.9	1.2	1.2	10.5	576.5	692.3	
Nipissing	3.8	31.7	11.6	158.9	2.0	49.4	2.5	.5	.1	26.8	1.1	.5	5.1	427.4	721.8	
Norfolk	127.4	.7	25.6	123.7	40.7	18.0	97.6	29.9	4.4	11.7	3.9	1.1	5.1	160.9	650.7	
Northumberland	40.0	70.1	51.8	136.4	49.9	73.2	29.8	18.0	1.9	15.0	3.1	1.3	15.3	158.3	664.1	
Ontario	36.0	83.6	82.7	121.3	18.9	56.9	22.9	10.6	.5	12.3	6.8	.7	34.1	158.1	735.4	
Oxford	105.5	1.5	48.5	196.1	6.1	18.0	59.0	3.2	1.1	8.0	8.3	.3	17.9	163.9	637.5	
Parry Sound	7.24	.5	15.5	196.1	5.0	52.1	3.6	1.6	.7	17.9	1.0	1.3	15.4	379.5	714.9	
Peel	90.5	46.8	112.2	160.9	27.6	37.5	17.2	3.6	.4	14.6	3.7	1.6	6.9	136.7	659.6	
Perth	110.7	3.0	55.0	230.8	.3	51.8	19.9	.5	.1	7.5	10.3	.5	14.2	179.3	683.8	
Peterborough	38.0	46.5	34.5	166.8	19.2	79.9	13.7	7.4	.3	11.0	3.9	1.2	9.7	171.7	603.8	
Prescott	1.37	0.0	16.1	223.3	.8	15.6	25.8	8.0	1.3	12.5	1.5	.8	1.1	288.4	632.3	
Prince Edward	30.7	50.5	78.3	95.7	63.9	51.3	69.4	25.0	2.2	10.9	1.7	.5	.8	159.5	640.4	
Renfrew	1.1	96.8	9.1	162.6	11.9	71.8	11.4	2.6	.8	11.8	1.9	.5	2.7	243.9	628.9	
Russell	7.23	.8	26.6	230.7	1.8	13.3	28.8	7.5	1.2	11.1	3.2	.7	8.0	269.4	626.8	
Simcoe	118.9	31.6	72.8	161.3	11.7	89.8	9.4	8.4	.2	13.3	4.6	.8	15.5	145.1	683.4	
Stormont	1.82	1.9	23.4	193.5	1.1	8.7	47.1	7.9	.5	14.5	1.8	1.4	1.1	254.6	588.6	
Victoria	18.2	83.9	58.7	225.6	14.0	77.1	10.3	8.4	.7	11.0	6.5	.7	19.3	171.5	705.9	
Waterloo	175.2	2.2	79.2	234.1	7.6	36.6	26.5	1.7	.9	12.6	7.5	1.2	25.7	168.5	779.5	
Welland	129.8	2.4	11.6	133.9	12.8	25.6	62.0	9.2	5.1	14.1	1.5	.3	1.6	250.2	660.1	
Wellington	39.4	16.1	70.8	258.3	3.7	68.5	10.9	2.2	.1	11.6	6.9	.5	13.2	185.2	706.8	
Wentworth	133.1	9.1	48.4	157.7	16.3	39.0	45.4	5.4	.3	16.1	9.0	.6	13.4	192.4	691.2	
York	82.5	79.2	103.3	205.3	12.4	35.7	22.7	3.3	.4	20.1	10.1	.9	17.5	160.0	753.4	
The Province	1901	67.8	26.6	47.4	179.3	11.8	44.9	38.8	6.6	4.0	11.5	4.5	.7	10.9	190.3	645.1
1900	80.4	23.3	43.4	180.4	10.7	49.8	38.4	7.7	3.3	12.3	4.1	.8	11.8	190.0	661.4	
1899	80.1	30.4	37.4	180.3	10.5	56.7	38.6	10.1	3.1	12.8	4.0	.9	11.7	191.1	667.7	
1898	80.7	30.0	33.8	182.9	12.7	66.6	40.1	11.5	3.4	13.1	3.7	1.0	11.7	188.8	680.0	
1897	73.9	25.2	35.1	189.3	14.6	69.8	42.3	11.8	3.9	13.2	3.2	.9	11.1	168.2	2167.0	
1896	69.2	20.2	36.5	191.4	11.7	65.5	39.2	11.5	5.4	14.1	2.8	.9	11.7	191.5	671.6	
1895	59.8	18.0	38.5	191.0	9.7	64.4	36.4	10.9	5.8	14.9	2.8	1.0	12.2	204.2	2669.6	
1894	63.4	18.7	39.6	190.6	7.3	63.9	30.8	11.8	4.8	13.6	2.3	.9	12.0	209.6	639.3	
1893	75.5	29.4	38.6	159.9	5.6	61.0	25.9	11.0	4.0	11.8	1.8	.8	11.3	228.4	665.0	
1892	80.6	54.3	41.7	165.3	6.1	64.6	22.8	10.4	2.8	12.2	1.8	.8	10.8	209.8	674.0	
1882-1901	77.1	38.7	52.2	166.3	9.8	60.5	27.2	8.4	3.3	13.5	2.5	.9	10.6	202.3	673.3	

## PASTURE—ORCHARD—VINEYARD—APPLES.

TABLE XVII. Showing by County Municipalities of Ontario the area in pasture (cleared land), orchard and garden, and vineyard, for the year 1901, together with the totals for the Province for the past ten years; also the number of apple trees and the yield.

Counties and districts.	Pasture.	Orchard and garden.	Vineyard.	Apple trees.			No. of trees under 15 years.
				15 years and over.			
				No. of trees.	Bushels.	Bush. per tree.	
	acres.	acres.	acres.				
Algoma .....	7,320	829	3	2,083	7,686	3.69	17,154
Brant .....	25,946	6,461	79	116,324	207,057	1.78	35,363
Bruce .....	127,711	9,840	52	250,220	730,642	2.92	88,235
Carleton .....	85,172	3,230	26	43,095	159,452	3.70	64,144
Dufferin .....	40,497	2,942	53	60,130	108,234	1.80	43,813
Dundas .....	42,825	2,891	32	81,084	267,577	3.30	40,772
Durham .....	50,400	7,600	25	189,028	223,053	1.18	106,143
Elgin .....	73,837	10,673	181	202,015	553,541	2.75	94,509
Essex .....	30,348	12,338	1,797	179,449	261,996	1.46	77,840
Frontenac .....	73,804	4,234	11	83,705	144,810	1.73	59,346
Glengarry .....	54,028	2,182	10	43,021	138,528	3.22	38,808
Grenville .....	54,017	2,648	21	67,224	204,361	3.64	50,392
Grey .....	138,743	14,769	98	362,229	1,180,867	3.26	186,225
Haldimand .....	35,557	6,988	81	152,053	164,217	1.08	38,157
Haliburton .....	8,978	487	16	3,564	11,797	3.31	9,463
Halton .....	28,506	10,082	323	220,117	202,508	.92	51,938
Hastings .....	94,406	10,753	57	189,853	463,241	2.41	179,080
Huron .....	157,731	14,126	193	350,910	748,929	2.12	136,321
Kent .....	55,280	16,643	461	309,829	396,581	1.28	154,403
Lambton .....	87,181	12,375	157	249,443	593,674	2.38	124,749
Leamington .....	115,531	2,872	20	50,685	108,466	2.14	47,196
Leeds .....	93,165	6,674	11	55,146	271,616	3.19	55,544
Lennox & Addington .....	67,633	6,505	12	88,901	200,127	2.25	101,560
Lincoln .....	21,925	16,849	3,740	242,457	283,780	1.17	19,394
Manitoulin .....	7,039	599	8	4,379	15,852	3.62	15,035
Middlesex .....	173,060	16,151	263	290,216	754,822	2.60	137,190
Muskoka .....	11,975	873	9	3,229	8,525	2.64	15,872
Nipissing .....	5,442	270	10	574	574	1.00	2,950
Norfolk .....	35,377	10,543	152	196,782	342,401	1.74	30,743
Northumberland .....	66,292	13,342	147	334,978	917,840	2.74	235,751
Ontario .....	55,418	9,377	80	218,883	365,535	1.67	127,749
Oxford .....	83,451	10,786	74	206,115	426,658	2.07	43,908
Parry Sound .....	12,691	585	3	1,186	4,104	3.46	7,322
Peel .....	37,932	6,240	236	123,864	218,001	1.76	44,578
Perth .....	87,114	7,489	42	157,757	422,789	2.68	49,710
Peterborough .....	60,880	3,776	49	66,619	241,827	3.63	54,435
Prescott .....	37,840	1,577	27	32,152	108,995	3.39	33,330
Prince Edward .....	37,197	9,260	42	188,192	434,724	2.31	149,830
Renfrew .....	78,582	2,332	60	20,671	46,683	2.21	41,206
Russell .....	23,352	700	36	8,616	11,890	1.38	15,717
Simcoe .....	87,170	11,845	100	222,653	585,577	2.63	192,489
Stormont .....	42,369	2,178	44	58,844	223,607	3.80	30,574
Victoria .....	51,158	3,593	30	71,496	165,156	2.31	57,462
Waterloo .....	26,772	5,859	9	114,082	126,631	1.11	41,928
Welland .....	27,018	8,838	920	186,988	299,181	1.60	18,935
Wellington .....	78,033	7,824	92	170,018	355,338	2.09	54,662
Wentworth .....	29,324	15,645	2,245	233,225	396,483	1.70	54,782
York .....	51,967	12,142	93	243,761	329,077	1.35	109,998
The Province:							
1901 .....	2,777,983	346,915	12,227	6,777,935	14,490,650	2.13	3,392,701
1900 .....	2,694,600	339,411	10,687	6,518,048	36,993,017	5.68	3,430,670
1899 .....	2,710,268	338,073	10,802	6,324,842	19,126,439	3.02	3,445,135
1898 .....	2,708,043	335,420	10,118	6,221,324	.....	.....	3,458,820
1897 .....	2,678,345	326,341	11,100	6,102,399	13,343,720	2.19	3,435,018
1896 .....	2,661,744	*320,122	.....	5,913,906	55,895,755	945	3,548,058
1895 .....	2,728,655	*312,787	.....	5,835,915	.....	.....	3,362,401
1894 .....	2,703,241	.....	.....	.....	.....	.....	.....
1893 .....	2,682,180	.....	.....	.....	.....	.....	.....
1892 .....	2,562,040	.....	.....	.....	.....	.....	.....

\* Including vineyard.

## HORSES.

TABLE XVIII. Showing by County Municipalities of Ontario the number and value of horses on hand on July 1, 1901, together with the totals for the Province for the past ten years; also the number and value of horses sold during the year ending June 30.

Counties and districts.	On hand July 1.					Sold in year.		
	Working horses.	Breeding mares.	Other horses.	Totals.		No.	Value.	Value per head.
				No.	Value.			
					\$	\$	%	
Algonia .....	1,590	331	421	2,342	233,006	216	21,168	98
Braut .....	6,210	942	1,321	8,473	622,322	554	42,104	76
Bruce .....	13,269	3,583	5,187	22,039	1,841,674	2,114	183,918	87
Carleton .....	8,396	1,878	2,401	12,675	1,111,576	908	81,720	90
Dufferin .....	6,209	1,829	2,445	10,483	835,264	1,005	81,405	81
Dundas .....	4,861	1,058	1,445	7,364	544,762	712	53,400	75
Durham .....	9,249	1,862	3,126	14,237	1,139,786	1,037	87,108	84
Elgin .....	11,042	2,167	3,322	16,531	1,259,426	1,201	99,683	83
Essex .....	11,060	2,258	3,740	17,058	1,310,632	1,195	93,210	78
Frontenac .....	6,948	1,041	1,531	9,560	692,787	781	61,699	79
Glenora .....	6,004	1,635	2,409	10,048	712,708	419	34,358	82
Grenville .....	4,742	896	1,367	7,005	510,769	427	32,025	75
Grey .....	16,883	4,267	6,294	27,444	2,163,256	2,520	214,200	85
Haldimand .....	6,785	1,701	2,677	11,163	814,391	795	69,625	75
Haliburton .....	1,114	219	400	1,733	124,326	146	9,490	65
Halton .....	5,749	868	1,349	7,966	626,702	399	32,319	81
Hastings .....	12,459	1,843	3,376	17,678	1,261,185	1,506	105,420	70
Huron .....	16,604	4,594	6,636	27,834	2,424,562	3,476	316,316	91
Kent .....	14,505	3,263	4,990	22,758	1,823,452	1,684	148,192	88
Lambton .....	11,054	3,033	4,709	18,796	1,531,002	1,785	141,015	79
Lanark .....	6,610	1,248	1,756	9,614	802,826	1,016	84,328	83
Leeds .....	7,383	1,262	1,777	10,422	783,142	840	67,200	80
Lennox & Addington .....	7,965	1,341	2,138	11,444	806,736	1,114	84,664	76
Lincoln .....	6,202	830	1,278	8,330	645,043	606	47,874	79
Manitowlin .....	1,218	305	393	1,916	164,874	229	17,175	75
Middlesex .....	16,534	4,451	7,022	28,007	2,307,120	2,730	256,620	94
Muskoka .....	2,176	437	610	3,223	280,924	249	20,169	81
Nipissing .....	890	175	252	1,317	114,670	47	4,324	92
Norfolk .....	9,033	1,579	2,697	13,309	955,473	1,033	73,343	71
Northumberland .....	10,532	2,033	3,481	16,046	1,171,021	1,199	98,318	82
Ontario .....	11,132	3,057	4,087	18,276	1,649,179	1,464	146,400	100
Oxford .....	11,879	2,651	4,545	18,975	1,543,488	1,530	143,820	94
Parry Sound .....	1,334	438	497	2,869	269,432	262	20,960	80
Peel .....	7,434	1,719	2,392	11,545	1,051,180	903	90,300	100
Perth .....	12,317	3,864	4,903	21,084	1,863,721	2,133	200,972	94
Peterborough .....	7,184	1,445	2,019	10,648	842,863	623	51,086	82
Prescott .....	4,851	1,290	1,605	7,246	591,935	668	56,780	85
Prince Edward .....	6,039	1,093	2,130	9,261	628,941	656	49,856	76
Renfrew .....	7,991	1,896	2,208	12,098	1,107,392	867	75,429	87
Russell .....	2,858	1,020	988	4,866	424,226	288	22,050	98
Simcoe .....	18,166	4,554	6,783	29,503	2,473,917	2,626	233,714	89
Stormont .....	4,006	1,138	1,582	6,726	477,490	553	35,392	64
Victoria .....	7,806	2,041	2,645	12,495	1,048,517	797	64,557	81
Waterloo .....	8,724	1,707	2,043	12,474	975,750	702	66,566	83
Welland .....	6,282	833	1,679	8,814	664,721	600	50,400	84
Wellington .....	14,110	3,675	4,578	22,363	1,813,230	1,906	177,258	93
Wentworth .....	8,442	1,415	2,198	12,045	991,456	682	54,652	86
York .....	14,394	3,433	4,405	22,237	1,997,630	1,510	151,000	100
The Province:								
1901 .....	398,358	90,148	131,837	620,343	50,038,465	50,755	4,347,582	86
1900 .....	405,833	90,136	121,290	617,309	46,916,999	47,926	3,774,480	79
1899 .....	418,490	86,614	110,420	615,524	42,713,557	45,367	3,204,306	71
1898 .....	430,504	77,846	102,851	611,241	38,659,896	44,414	2,884,107	65
1897 .....	436,921	69,940	106,809	613,670	36,111,805	43,511	2,700,479	62
1896 .....	434,384	66,893	123,482	624,749	37,185,693	44,458	2,712,888	61
1895 .....	423,873	72,156	151,867	647,696	40,283,754	40,346	2,616,391	65
1894 .....	395,686	88,962	190,129	674,777	46,245,644	41,516	3,222,500	77
1893 .....	373,615	100,553	211,019	685,187	50,527,472	47,897	4,001,524	84
1892 .....	358,668	109,865	220,281	688,814	55,812,220	46,955	4,280,133	91

## CATTLE.

TABLE XIX. Showing by County Municipalities of Ontario the number and value of cattle on hand on July 1, 1901, together with the totals for the Province for the past ten years; and also the number and value of cattle sold or slaughtered during the year ending June 30.

Counties and districts.	On hand July 1.					Sold or slaughtered in year.		
	Milch cows.	Store cattle over 2 years.	Young and other cattle.	Total.		No.	Value.	Value per head.
				No.	Value.			
					\$	\$	\$ c.	
Algoma .....	3,687	1,960	5,938	11,585	246,523	2,585	72,380	28 00
Braut .....	11,673	3,728	13,277	28,678	665,927	6,832	186,719	27 33
Bruce .....	29,518	26,312	48,103	103,933	2,634,073	29,959	1,167,802	38 98
Carlton .....	32,327	11,871	27,024	71,222	1,693,089	14,593	456,031	31 25
Dufferin .....	12,561	10,145	18,774	41,480	962,150	8,582	301,228	35 10
Dundas .....	24,835	2,570	12,509	39,914	951,186	5,394	131,883	24 45
Durham .....	15,852	7,290	19,500	42,642	1,047,230	9,458	326,868	34 56
Elgin .....	25,418	11,027	29,092	65,537	1,700,658	18,206	594,426	32 65
Essex .....	16,304	7,300	20,580	44,184	1,324,318	12,203	344,613	28 24
Frontenac .....	26,003	6,838	19,654	52,495	1,083,071	8,060	220,000	27 50
Glengarry .....	28,460	4,169	16,341	48,960	1,040,842	6,383	135,958	21 30
Grenville .....	21,167	3,891	10,402	35,450	823,103	5,659	135,363	23 92
Grey .....	39,044	26,995	64,129	130,168	2,987,160	33,522	1,230,257	36 70
Haldimand .....	13,299	4,025	15,776	33,100	800,241	8,094	225,175	27 82
Haliburton .....	3,492	1,400	5,470	10,362	181,169	2,412	45,225	18 75
Halton .....	9,867	5,587	11,081	26,535	697,226	6,808	251,215	36 90
Hastings .....	45,489	9,341	35,840	90,670	1,806,990	14,640	293,823	20 07
Huron .....	34,184	32,885	58,159	125,228	3,319,440	37,756	1,442,279	38 20
Kent .....	20,452	16,581	30,311	67,344	1,718,527	18,239	636,176	34 88
Lambton .....	21,233	20,008	35,799	77,040	1,937,043	23,568	786,700	33 38
Lanark .....	24,392	8,933	22,946	56,271	1,241,192	10,910	321,518	29 47
Leeds .....	34,934	6,464	18,840	60,288	1,330,666	8,425	206,160	24 47
Lennox & Addington .....	22,813	7,673	18,711	49,197	961,378	9,769	217,849	22 30
Lincoln .....	8,618	2,011	8,353	18,942	454,274	5,468	151,682	27 74
Manitoulin .....	3,137	1,622	5,433	10,192	205,867	2,715	74,418	27 41
Middlesex .....	36,787	32,969	53,112	122,868	3,651,598	42,388	1,696,368	40 02
Muskoka .....	5,751	3,062	8,623	17,436	336,574	3,786	86,889	22 95
Nipissing .....	2,145	888	3,203	6,236	108,584	1,330	28,090	21 72
Norfolk .....	17,806	4,092	16,255	38,153	818,957	9,580	207,373	21 76
Northumberland .....	24,636	6,771	23,003	54,410	1,129,208	9,869	220,079	22 30
Ontario .....	20,322	11,923	29,816	62,061	1,567,144	16,603	623,775	37 57
Oxford .....	40,174	14,067	31,886	86,127	2,378,196	24,313	924,380	38 02
Parry Sound .....	5,334	2,654	8,172	16,160	307,437	3,209	74,192	23 12
Peel .....	13,549	6,788	14,310	34,627	950,808	7,988	303,943	38 05
Perth .....	33,458	17,530	43,169	94,157	2,352,767	23,081	840,379	36 41
Peterborough .....	20,511	7,461	22,753	50,725	997,175	9,301	245,732	26 42
Prescott .....	19,900	3,595	12,035	35,530	764,603	4,577	108,109	23 62
Prince Edward .....	14,558	2,662	10,023	27,243	516,404	4,372	89,888	20 56
Renfrew .....	24,259	13,861	31,232	69,352	1,305,193	16,613	401,204	24 15
Russell .....	12,484	2,487	8,833	23,804	537,222	3,801	77,350	20 35
Simcoe .....	32,708	19,647	45,327	97,682	2,190,563	24,344	790,450	32 47
Stormont .....	22,448	2,309	9,759	34,516	752,028	4,398	103,309	23 49
Victoria .....	17,424	11,934	27,181	56,589	1,151,972	10,121	319,014	31 52
Waterloo .....	15,294	4,345	18,557	38,196	961,305	17,816	768,048	43 11
Welland .....	9,469	3,136	10,130	22,735	523,361	6,795	189,241	27 85
Wellington .....	27,414	20,665	42,976	91,045	2,348,204	29,294	1,326,725	45 29
Wentworth .....	14,623	3,915	15,030	33,568	868,729	7,955	246,605	31 00
York .....	24,209	8,511	20,323	53,043	1,462,744	19,216	660,070	34 35
The Province :								
1901 .....	984,012	445,868	1,077,740	2,507,620	59,527,119	610,880	20,286,963	33 21
1900 .....	976,124	392,665	1,060,541	2,429,330	56,320,810	560,893	18,017,989	32 12
1899 .....	974,474	356,505	987,376	2,318,355	52,938,500	555,583	17,303,426	31 14
1898 .....	965,021	345,695	905,227	2,215,943	47,286,254	552,485	16,121,559	29 18
1897 .....	940,236	365,406	876,684	2,182,326	42,683,557	503,007	13,350,223	26 54
1896 .....	920,346	370,409	891,203	2,181,956	44,348,638	436,451	12,381,218	28 37
1895 .....	888,228	365,644	896,251	2,150,103	46,708,017	418,131	13,272,127	31 74
1894 .....	834,237	376,809	888,258	2,099,301	47,577,587	441,698	15,219,256	34 46
1893 .....	803,598	378,014	876,270	2,067,882	47,718,025	461,501	16,671,021	36 12
1892 .....	787,836	366,705	874,599	2,029,140	45,548,475	436,352	15,979,135	36 62

## SHEEP.

TABLE XX. Showing by County Municipalities of Ontario the number and value of sheep on hand on July 1, 1901, together with the totals for the Province for the past ten years; also the number and value of sheep sold or slaughtered during the year ending June 30.

Counties and districts.	On hand July 1.				Sold or slaughtered in year.		
	Over 1 year.	Under 1 year.	Total.		No.	Value.	Value per head.
			No.	Value.			
			§	§ c.			
Algoma	6,139	4,558	10,697	46,149	3,402	13,64	4 01
Brant	11,613	8,967	20,580	117,177	9,354	52,569	5 62
Bruce	58,219	53,006	111,225	550,676	43,625	206,346	4 73
Carleton	15,545	13,914	29,459	115,998	12,501	42,628	3 41
Dufferin	21,773	19,037	40,810	180,749	13,883	50,558	4 29
Dundas	5,425	5,299	10,724	42,906	5,838	24,8 2	4 25
Durham	24,574	18,355	42,929	192,729	15,329	65,532	4 14
Elgin	25,826	24,910	50,744	216,384	24,497	97,988	4 00
Essex	10,865	9,166	20,031	72,852	7,999	28,396	3 55
Frontenac	14,947	13,939	28,886	104,546	12,146	44,090	3 63
Glengarry	9,139	7,379	16,518	63,727	6,363	25,070	3 94
Grenville	6,012	5,89	11,903	47,327	6,377	22,51	3 53
Grey	72,207	64,504	136,711	611,793	51,690	220,199	4 26
Haldimand	12,418	12,371	24,789	111,102	10,760	46,268	4 30
Haliburton	6,666	5,133	11,799	42,119	3,301	10,464	3 17
Hastings	11,280	10,449	21,729	113,653	9,848	50,914	5 17
Huron	27,161	21,966	49,127	173,512	17,635	55,903	3 17
Kenora	46,587	44,283	90,870	429,997	37,758	172,932	4 58
Keeweenaw	22,642	21,104	43,746	186,087	20,981	90,428	4 31
Lambton	22,671	22,406	45,077	195,011	21,849	94,388	4 32
Lanark	27,923	23,787	51,710	193,415	20,199	74,1 0	3 67
Leeds	9,211	8,616	17,827	70,446	9,045	34,823	3 85
Lennox and Addington	13,779	12,080	25,859	100,069	12,343	46,657	3 78
Lincoln	7,872	6,927	14,799	67,811	8,067	33,478	4 15
Manitowlin	12,615	10,937	23,552	85,893	6,611	21,492	3 25
Middlesex	30,571	16,696	47,267	296,927	25,140	134,750	5 36
Muskoka	12,366	10,173	22,539	90,602	8,327	28,728	3 45
Nipissing	951	804	1,755	6,268	755	3,2 4	4 27
Norfolk	14,765	13,072	27,837	111,463	12,358	47,578	3 85
Northumberland	14,582	12,979	27,561	113,337	11,596	49,747	4 29
Ontario	33,463	25,409	58,872	289,870	23,053	99,589	4 32
Oxford	9,473	8,963	18,436	86,488	8,946	39,273	4 39
Parry Sound	13,924	11,052	24,976	96,192	7,653	28,132	3 48
Peel	11,563	9,649	21,212	104,616	7,871	36, 07	4 60
Perth	21,580	20,732	42,312	203,616	19,443	99,353	5 11
Peterborough	16,983	13,758	30,741	132,501	10,538	45,810	4 35
Prescott	8,364	6,540	14,904	56,992	6,362	20,549	3 23
Prince Edward	4,095	3,641	7,736	31,170	5,100	19,788	3 88
Renfrew	40,120	31,301	71,421	247,272	24,502	80,367	3 28
Russell	8,354	5,487	13,841	61,948	4,181	16,264	3 89
Simcoe	58,977	46,240	105,217	442,069	43,604	184,057	4 28
Stormont	5,331	4,066	9,397	38,981	3,361	12,637	3 73
Victoria	32,008	22,820	54,828	240,840	23,521	95,260	4 05
Waterloo	13,820	12,076	25,896	116,466	12,002	57,970	4 83
Welland	9,846	9,423	19,269	82,642	9,757	39,711	4 07
Wellington	48,692	42,455	91,147	473,445	36,243	175,779	4 85
Wentworth	10,135	9,019	19,154	97,900	9,808	43,351	4 42
York	24,622	18,838	43,460	224,521	23,724	111,740	4 71
The Province :							
1901	947,614	814,185	1,761,799	7,772,793	729,148	3,103,513	4 26
1900	949,597	847,616	1,797,212	7,711,496	690,058	2,872,609	4 16
1899	930,314	842,290	1,772,604	7,315,729	665,2 8	2,629,201	3 95
1898	877,872	799,142	1,677,014	6,499,695	664,239	2,460,379	3 70
1897	897,645	792,665	1,690,310	6,003,194	732,872	2,538,171	3 46
1896	995,616	853,732	1,849,348	6,652,202	766,896	2,646,709	3 45
1895	1,095,995	926,740	2,022,735	7,708,442	632,315	2,484,612	3 64
1894	1,086,635	929,170	2,015,805	8,606,671	616,446	2,552,267	4 14
1893	1,032,069	903,869	1,935,938	9,015,118	616,237	2,784,288	4 52
1892	979,962	870,511	1,850,473	8,569,557	575,934	2,640,190	4 58

## HOGS.

TABLE XXI. Showing by County Municipalities of Ontario the number and value of Hogs on hand July 1, 1901, together with the totals for the Province for the past ten years; also, the number and value of hogs sold or slaughtered during the year ending June 30.

Counties and districts.	On hand July 1.				Sold or slaughtered in year.		
	Over 1 year.	Under 1 year.	Totals.		No.	Value.	Value per head.
			No.	Value.			
Algoma	1,127	3,981	5,108	\$ 30,825	5,471	\$ 44,534	8 14
Brant	3,502	23,169	26,671	163,035	37,258	324,890	8 72
Bruce	7,318	41,757	49,075	310,862	70,789	604,598	8 54
Carleton	4,450	23,659	28,109	169,617	30,529	267,129	8 75
Dufferin	3,054	22,957	26,011	143,155	34,156	326,190	9 55
Dundas	3,466	18,866	22,322	134,811	26,718	205,729	7 70
Durham	3,251	12,254	15,505	105,672	39,242	321,784	8 20
Elgin	7,668	52,735	60,403	366,029	76,379	699,632	9 16
Essex	15,316	77,899	93,215	543,602	94,644	842,332	8 90
Frontenac	3,362	13,326	16,628	110,948	18,763	168,867	9 00
Glengarry	4,023	14,661	18,684	114,179	19,644	183,082	9 32
Grenville	2,356	14,115	16,471	99,537	18,939	167,800	8 86
Grey	8,290	50,410	58,700	359,733	89,653	796,119	8 88
Haldimand	2,935	17,011	19,946	122,913	28,243	248,821	8 81
Haliburton	588	1,933	2,521	14,129	2,671	22,383	8 38
Halton	2,421	16,537	18,758	114,781	28,712	248,359	8 65
Hastings	8,037	31,602	39,639	267,850	49,200	433,944	8 82
Huron	7,857	53,848	61,705	415,456	97,072	848,904	9 22
Kent	14,563	87,697	102,260	619,094	107,599	959,783	8 92
Lambton	5,273	35,202	40,475	244,256	53,609	470,151	8 77
Lanark	3,638	17,455	21,093	121,764	21,370	179,935	8 42
Leeds	4,774	21,802	26,576	164,073	29,785	271,977	9 13
Lennox & Addington	3,008	14,585	17,593	116,801	25,959	247,130	9 52
Lincoln	2,064	13,323	15,387	95,144	19,929	169,795	8 52
Manitoulin	985	3,590	4,575	25,475	5,285	40,219	7 61
Middlesex	7,634	47,213	54,847	350,495	81,489	730,958	8 97
Muskoka	837	3,515	4,152	25,324	5,929	40,614	6 85
Nipissing	667	1,910	2,577	13,792	1,573	15,352	9 76
Norfolk	5,074	30,871	35,945	219,318	47,965	450,871	9 40
Northumberland	4,235	22,743	26,978	166,439	38,596	312,628	8 10
Ontario	5,569	38,943	44,512	271,798	66,179	563,846	8 52
Oxford	6,585	50,713	57,298	361,808	86,729	797,004	9 19
Parry Sound	1,362	3,605	4,967	31,548	5,390	43,120	8 00
Peel	3,320	19,234	22,554	147,372	32,250	233,813	7 25
Perth	6,187	44,081	50,268	345,165	68,278	643,862	9 43
Peterborough	3,227	17,827	21,054	129,574	29,365	276,325	9 41
Prescott	3,148	9,080	12,228	82,399	9,779	105,222	10 76
Prince Edward	1,690	8,400	10,090	66,791	15,953	127,145	7 97
Renfrew	7,298	18,537	25,835	157,013	20,264	186,024	9 18
Russell	2,400	6,299	8,699	56,366	9,889	106,603	10 78
Simcoe	10,487	66,950	77,437	430,064	96,951	831,285	9 09
Stormont	2,227	12,521	14,748	94,730	17,252	150,615	8 68
Victoria	4,552	23,226	27,778	166,542	32,166	301,074	9 36
Waterloo	4,584	27,832	32,416	220,896	19,966	447,828	9 09
Welland	1,883	12,307	14,190	88,470	19,748	154,429	7 82
Wellington	7,550	51,753	59,303	393,065	91,582	872,628	9 31
Westworth	3,160	22,232	25,392	165,130	38,616	324,374	8 40
York	5,984	45,203	51,187	314,872	81,477	763,850	8 70
The Province:							
1901	222,916	1,268,969	1,491,885	9,298,712	1,973,405	17,548,490	8 89
1900	265,457	1,506,184	1,771,641	9,598,153	2,056,049	15,800,799	7 69
1899	295,349	1,675,721	1,971,070	10,180,338	1,875,466	14,157,394	7 55
1898	265,048	1,375,739	1,640,787	8,720,242	1,592,697	11,852,535	7 44
1897	235,479	1,049,484	1,284,963	6,533,210	1,399,967	10,083,827	7 20
1896	243,756	1,025,875	1,269,631	6,505,227	1,304,359	10,022,575	7 68
1895	244,185	1,054,887	1,299,072	7,101,211	1,159,972	10,067,667	8 63
1894	227,878	942,255	1,142,133	6,909,262	1,030,567	10,168,978	9 86
1893	220,366	791,626	1,012,022	6,622,129	975,355	10,296,828	10 56
1892	231,320	765,654	996,974	5,479,093	928,791	8,775,852	8 97

POULTRY.

TABLE XXII. Showing by County Municipalities of Ontario the number and value of Poultry on hand July 1, 1901, together with the totals for the Province for the past ten years; also, the number and value of Poultry sold or killed during the year ending June 30.

Counties and districts.	On hand July 1.				Totals.		Sold or killed in year.	
	Turkeys.	Geese.	Ducks.	Other fowl.	Totals.		No.	Value.
					No.	Value.		
Albema .....	2,849	1,385	1 484	33,093	38,811	\$ 13,317	14,056	\$ 4,777
Brant .....	6,261	3,230	3,964	104,541	117,996	33,940	49,811	16,438
Bruce .....	25,414	15,856	20,968	250,595	312,633	93,955	81,861	31,926
Carleton .....	23,435	12,441	12,992	191,179	240,047	75,356	97,461	37,035
Dufferin .....	11,641	11,758	5,759	106,047	135,204	40,024	44,225	16,065
Dundas .....	15,300	6,260	5,285	133,478	160,323	47,703	46,839	20,141
Durham .....	18 789	10,038	8,047	190 428	227,302	70,114	77,582	26,514
Elgin .....	30,206	5,435	7,201	259,142	301,983	84,959	118,920	45,190
Essex .....	30,856	9,803	16,162	287,641	344,462	91,628	142,185	46,921
Frontenac .....	16,728	7,606	8,438	109,725	141,897	50,274	77,335	29,387
Glengarry .....	10,023	4,429	6,075	129,331	149,558	41,312	53,445	18,171
Greenville .....	12,414	4,237	5,447	96,538	118,636	35,309	39,914	12,772
Grey .....	30,444	18,231	23,164	327,073	398 912	113,866	136,848	50,634
Haldimand .....	16,009	4,984	8,230	142,676	171,899	50,343	75,081	26,278
Haliburton .....	2,774	868	525	17,119	21,286	6,072	7,041	2,464
Halton .....	10 597	5,136	5 330	115,728	136,791	41,751	58,396	23,358
Hastings .....	18,554	10,159	12,447	228,000	269,160	77,860	100,282	39,110
Huron .....	44,147	19,422	27,451	370,705	461,725	127,075	133,773	54,831
Kent .....	27,062	8,114	15,723	342,528	393,427	102,196	122,753	36,826
Lambton .....	36,407	8,635	17,160	297,751	359,953	99,603	126,343	50,537
Lararak .....	16,115	8,425	4,772	134,881	164,193	50,296	50,135	20,555
Leeds .....	19,784	5,186	5,058	123,619	153 677	48,016	65,886	29,649
Lennox and Add'n .....	9,549	4,835	7,577	137,866	149,827	42,182	63,638	27,364
Lincoln .....	8,118	2,575	5,204	107,194	123 691	36,330	63,176	25,402
Manitoulin .....	2,401	1,740	1,031	21,326	26,568	7,691	9,939	3,976
Middlesex .....	66,807	13,347	17,205	418 392	515,751	157,926	177,864	71,146
Muskoka .....	3,467	701	1,188	43,205	48,661	13,965	18,571	7,428
Nipissing .....	545	644	530	19 544	21,263	6,835	11,266	3,267
Norfolk .....	18,374	4,805	8,349	192,948	224,436	62,057	86,793	26,038
Northumberland .....	17,573	5,773	12,049	192,455	227,250	67,696	71,846	25,865
Ontario .....	16,664	10,335	9,927	218,347	255,273	76,337	93,974	33,831
Oxford .....	21,591	5 604	11,409	241,109	279,713	82,247	95,710	36,370
Par y Sound .....	3,700	1,888	760	39,208	45,656	14 853	14,588	4,376
Peel .....	19,310	8,709	11 847	157,329	197,195	69,900	88,896	35,558
Perth .....	18,731	14,780	16,396	276,077	325,984	88,338	83,340	33,336
Peterborough .....	23,727	10,418	9 124	148,796	192,065	59,285	53,177	21,271
Prescott .....	8,668	4,058	5,938	94,428	113,292	38,816	62,236	21,783
Prince Edward .....	9,068	3,166	5,586	100,439	118,229	34,202	40,963	13,514
Renfrew .....	15,398	8,737	6,278	122,219	152 632	49,748	51,693	17,555
Russell .....	6,916	2,446	3,679	48,214	61,255	20,539	30,535	11,917
Simcoe .....	31,559	21,204	19,821	352,646	425,130	121,225	134,125	54,991
Storment .....	8 653	4,194	1,766	89,081	103,694	29,155	35,366	12,035
Victoria .....	18,686	8,100	9,950	171,465	207,601	61,563	58,761	24,680
Waterloo .....	4,339	3,733	6,889	156,387	171,348	45,025	58,854	18,245
Welland .....	8,842	3,238	6,752	134,816	153,648	43,991	73,840	23,629
Wellington .....	27,524	17,937	15,898	276,621	337,990	102,131	102,637	39,002
Wentworth .....	9,716	3,883	6,073	135 272	154,944	46,186	78,745	25,073
York .....	20,529	12,590	12,156	237,520	282,795	85,880	119,560	47,824
The Province :								
1901 .....	825,823	360,278	435,094	8,124,041	9,745,236	2,859,172	3,495,999	1,305,555
1900 .....	890 933	398,890	457,072	7,794,346	9,541,241	2,727,363	3,164,287	1,176,740
1899 .....	927,456	421,830	458,497	7,536,241	9,344,024	2,658,321	3,102,614	1,162,991
1898 .....	1,024,285	454,335	7 605 653		9,084,273	2,578,136	3,072,767	1,131,923
1897 .....	890,228	409,715	7 135,398		8,435,341	2 818,038	2,965,221	1,083,914
1896 .....	715,770	391,547	6,626,850		7,734,167	2,130,807	2,711,771	985,629
1895 .....	696,604	490 022	6,636,214		7,752 840	2,156,623	2,392,458	890,334
1894 .....	689,205	438,208	6,425,249		7,552,662	2,208,618	2,131,222	782,588
1893 .....	638,527	439,482	6,036,427		7,114,436	2,187,158	2,017,507	753,695
1892 .....	628,504	445,154	6,005,315		7,078,973	2,091,450	1,966,409	778,308

## WOOL.—BEES.

TABLE XXIII. Showing by County Municipalities of Ontario the number, weight and value of fleeces of the wool clip in 1901, together with the totals for the Province for the past ten years; also the number of colonies of bees and the value of apiaries.

Counties and districts.	Clip of wool.				Colonies of bees.		
	No.	Pounds.	Lb. per fleece.	Value.	No.	Value (including outfit).	Value per hive.
				\$		\$	\$ c.
Algonia	6 299	37,797	6 00	5,065	241	1,446	6 00
Brant	11,893	78,170	6 58	10 475	3,363	23,339	6 94
Bruce	57,676	377,768	6 53	50,621	5,658	33,015	5 94
Carleton	16,707	95,864	5 74	12,846	6,199	30,945	5 00
Dufferin	21,754	133,227	6 12	17,852	2 9 5	15,770	5 41
Dundas	5 5 2	34,254	6 17	4,590	4,997	22,736	4 55
Durham	24 131	172,166	7 13	23,070	3,638	16,589	4 56
Elgin	25,779	161,589	6 23	21,653	6,461	35,536	5 50
Essex	11,127	70,056	6 29	9,387	6 745	38,716	5 74
Frontenac	14,833	81,746	5 51	10,954	4,508	26,687	5 92
Glengarry	9,703	55,898	5 76	7,490	6,165	32 825	5 00
Greenville	6,189	31,839	5 18	4,265	4,114	17,896	4 35
Grey	73,245	434 272	5 93	58,192	8,927	65,437	6 21
Halidmand	12,259	78,921	6 44	10,575	5,456	24 988	4 58
Haliburton	6,721	34 40	5 12	4,610	360	2,059	5 72
Halton	11 108	79,563	7 16	10,661	1,114	6,328	5 68
Hastings	27,093	141,327	5 22	18,938	6,248	33,489	5 36
Huron	46,929	287,322	6 12	38,501	6 145	38 221	6 23
Kent	22 038	147,891	6 71	19,817	5,955	33 616	5 65
Lambton	23,094	148,131	6 41	19,849	7,221	37,260	5 16
Lansark	27,433	139,973	5 10	18 756	6,717	35,131	5 23
Leeds	9,222	50,713	5 50	6,745	6,684	36,094	5 40
Lennox and Addington	13,597	70,845	5 21	9,493	3,344	19,061	5 70
Lincoln	7,621	41,704	5 47	5,588	1,806	11,522	6 38
Manitowlin	12,753	75,276	5 99	10,087	797	3,520	4 45
Middlesex	30,545	213,595	6 99	28,622	11,160	62,161	5 57
Muskoka	12,231	62,559	5 11	8,883	756	4 249	5 62
Nipissing	942	4,893	5 19	675	122	763	6 25
Norfolk	14,743	86 073	5 84	11,534	4,857	22,488	4 63
Northumberland	14,076	86,897	6 17	11,644	5,206	25,874	4 97
Ontario	34,455	252,267	7 32	33,804	4,692	25,452	6 22
Oxford	9,964	61,018	6 12	8,176	3,341	21,516	6 44
Perry Sound	13,308	75,905	5 70	10,171	318	1,803	5 67
Perth	11,306	83,354	7 37	11,169	1,333	8,198	6 15
Peterborough	20,963	127,821	6 00	17,128	3,442	17,003	4 94
Peterborough	17,280	98,219	5 68	13,161	3,652	16,799	4 60
Prescott	8,324	49,745	5 98	6,666	5,690	36,473	6 41
Prince Edward	4,311	23,338	5 41	3,127	2,691	9,221	4 41
Renfrew	40,4 9	194,777	4 81	26,100	6,013	30,546	5 08
Russell	8,975	58,117	6 47	7,787	2,644	14,436	5 46
Simcoe	58,375	375,279	6 43	50,297	4,282	26,120	6 10
Stormont	5,743	29,253	5 09	3,920	2,946	13,758	4 67
Victoria	31,779	185,355	5 83	24,837	6,316	37,138	5 88
Waterloo	13,846	84,486	6 08	11,321	1,447	8,406	5 85
Walla	9,929	53,345	5 37	7,148	2,620	20,887	5 77
Wellington	48,314	320,914	6 64	43,002	2,498	15,588	6 24
Wentworth	9,917	66,737	6 73	8,943	3,340	20,741	6 21
York	25,698	179,430	6 98	24,043	7,029	42,174	6 00
The Province :							
1901	950,229	5,834,097	6 14	781,769	202,247	1,114,099	5 51
1900	957,307	5,805,921	6 06	894,112	216,734	1,139,559	5 26
1899	928,184	5,625,122	5 95	790,092	203,343	1,053 454	5 18
1898	863,179	5,104 686	5 90	847,378	190,080	998,049	5 25
1897	887,003	5,130,984	5 79	945,757	166,811	885,196	5 31
1896	991,371	5,581,387	5 63	1,626,975	160,076	854,408	5 34
1895	1,109,140	6,214,811	5 60	1,242,962	173 173	938,678	5 42
1894	1,092,467	6 245,036	5 71	1,033,721	200,094	1,051,574	5 26
1893	1,015,497	5,896,891	5 81	1,073,234	205,168	1,162,915	5 67
1892	961,160	5,643,706	5 87	1,027,154	195,822	.....	.....
1882-1901	984,089	5,574,695	5 66	999,488	.....	.....	.....



## FARM PROPERTY, IMPLEMENTS, AND LIVE STOCK.

TABLE XXIV. Showing by County Municipalities of Ontario the values of farm lands, buildings implements and live stock for the year 1901, together with the totals for the Province for the past ten years; also, the aggregate value of live stock sold or slaughtered as determined from Tables xviii-xxii.

Counties and districts.	Value of farm property.					Value of live stock sold.
	Land.	Buildings.	Implements.	Live stock.	Total.	
	\$	\$	\$	\$	\$	
Algonia	2,559,350	640,145	227,385	569,820	3,946,700	166,501
Brant	8,759,832	4,078,797	820,779	1,602,401	15,201,809	622,720
Bruce	21,447,260	7,813,399	2,122,223	5,431,240	36,614,115	2,194,530
Carleton	17,020,663	5,799,732	1,563,516	3,165,636	27,549,577	884,543
Dufferin	9,049,253	3,061,370	907,334	2,161,342	15,179,299	784,446
Dundas	7,297,991	2,968,520	850,676	1,721,368	12,838,535	435,965
Durham	12,536,765	5,067,873	1,222,537	2,555,531	21,377,706	827,806
Elgin	16,491,100	6,340,461	1,715,834	3,627,456	28,174,851	1,536,919
Essex	16,463,354	5,502,047	1,665,525	3,043,032	26,636,958	1,355,472
Frontenac	8,552,014	3,248,511	1,013,467	2,041,606	14,855,598	524,043
Glengarry	7,255,972	3,283,889	947,817	1,972,768	13,460,446	396,639
Grenville	6,853,936	3,020,223	687,244	1,516,045	12,077,448	370,471
Grey	21,434,017	8,717,430	2,709,653	6,226,808	39,087,498	2,511,409
Haldimand	7,767,054	3,920,873	1,079,766	1,898,990	14,661,683	606,167
Haliburton	1,105,955	317,146	117,518	367,855	1,908,474	90,026
Halton	9,533,103	4,075,343	900,288	1,594,113	16,102,847	606,165
Hastings	14,736,714	5,626,805	1,703,027	3,590,397	23,656,943	928,202
Huron	28,690,145	10,643,091	2,699,316	6,716,530	48,640,114	2,835,262
Kent	23,382,531	7,385,148	2,215,490	4,449,356	37,432,528	1,871,405
Lambton	18,874,172	6,089,998	1,780,991	4,006,915	30,752,075	1,542,791
Linark	10,137,060	3,884,975	1,008,733	2,469,493	17,440,241	680,466
Leeds	10,820,131	4,215,428	1,057,316	2,396,343	18,499,218	609,769
Lennox and Addington	8,828,102	3,992,501	1,024,174	2,030,166	15,874,943	623,664
Lincoln	9,684,224	4,202,040	928,558	1,298,692	16,113,514	428,731
Manitowlin	980,443	397,986	149,918	489,800	2,018,147	157,280
Middlesex	30,064,632	10,902,886	2,636,290	6,764,066	50,367,864	2,889,840
Muskoka	2,070,369	836,926	302,207	747,389	3,956,89	183,828
Nipissing	1,131,604	306,756	127,634	250,149	1,816,143	54,257
Norfolk	11,214,086	4,788,487	1,268,499	2,167,268	19,438,240	806,203
Northumberland	12,737,862	5,343,995	1,399,791	2,617,701	29,049,349	7,66,637
Ontario	16,839,288	6,461,214	1,586,096	3,851,328	28,240,924	1,467,440
Oxford	20,376,116	8,148,412	1,822,453	4,487,227	34,784,208	1,940,883
Parry Sound	1,875,169	757,316	259,321	79,462	3,611,268	169,280
Peel	11,491,239	4,870,119	1,046,297	2,324,876	19,731,531	699,821
Perth	20,679,382	8,119,714	2,076,581	4,878,607	35,734,284	1,817,903
Peterborough	9,396,049	3,051,628	907,307	2,161,308	15,516,382	640,254
Prescott	6,936,970	2,790,304	822,695	1,534,745	12,084,714	312,448
Prince Edward	6,774,314	3,173,798	872,736	1,307,508	12,128,356	300,191
Renfrew	10,460,574	3,929,940	1,285,076	2,866,618	18,501,208	760,579
Russell	5,046,460	1,519,225	569,177	1,100,30	8,279,163	234,184
Simcoe	24,843,424	9,202,524	2,672,842	5,658,438	42,377,228	2,144,497
Stormont	5,762,220	2,893,567	777,383	1,387,384	10,820,554	313,888
Victoria	10,451,510	3,774,464	1,093,326	2,668,931	17,988,274	804,585
Waterloo	12,131,997	5,380,685	1,276,202	2,379,442	21,108,326	1,358,575
Welland	7,989,488	3,846,020	842,007	1,403,185	13,880,701	477,410
Wellington	19,660,935	8,122,514	2,021,884	5,130,075	31,835,468	2,571,392
Wentworth	13,071,779	5,411,156	1,281,866	2,169,401	21,934,182	698,055
York	24,816,634	9,114,891	1,939,820	4,085,646	39,986,991	1,679,484
The Province:						
1901	585,854,294	226,575,228	59,897,513	129,496,261	1,001,323,296	46,592,103
1900	574,727,610	219,488,370	57,324,130	123,274,821	974,814,931	41,642,617
1899	563,271,777	213,440,281	54,994,857	115,806,445	947,513,360	38,457,018
1898	556,246,569	210,074,396	52,977,232	103,744,223	923,022,420	34,450,583
1897	554,054,552	206,090,159	51,290,098	93,649,804	905,093,613	29,763,599
1896	557,468,270	205,235,429	50,730,358	96,857,566	910,291,623	28,748,995
1895	572,938,472	204,144,670	50,914,345	103,958,047	931,989,574	29,301,131
1894	587,246,117	204,071,666	51,530,172	111,547,632	954,393,570	31,935,589
1893	602,664,361	200,89,888	51,435,979	116,070,902	970,367,070	34,510,356
1892	615,828,471	195,644,258	51,003,020	117,501,495	979,977,244	32,453,617

## FARM VALUES AND RENTALS.

TABLE XXV. Showing by county Municipalities of Ontario, average values per acre of farm property in 1901 and rentals of leased farms based upon (1) the total acreage occupied, and (2) the area cleared, together with the averages for the Province for the past ten years.

Counties and Districts.	Farm values, average per acre, occupied.					Value build-ings, imple-ments and live stock per acre cleared.	Rent per acre on land—	
	Land.	Build-ings.	Imple-ments.	Live Stock.	Total.		Occu-pied.	Cleared.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.		\$ c.	\$ c.
Algoma	3 38	84	30	75	5 27	28 28	60	1 95
Brant	40 61	18 63	3 81	7 43	70 48	35 87	2 52	2 98
Bruce	23 40	8 31	2 30	5 33	39 94	28 33	1 53	2 01
Carleton	30 15	10 28	2 77	5 61	48 81	34 16	1 98	2 60
Duff rin	25 45	8 61	2 55	6 08	42 69	24 84	1 82	2 22
Dur.das	30 83	12 54	3 59	7 27	54 23	35 37	1 96	2 70
Durham	33 71	13 61	3 29	6 87	57 48	29 96	2 33	2 77
Elgin	37 84	14 55	3 94	8 32	64 65	35 29	2 36	2 94
Essex	38 12	12 77	3 86	7 06	61 81	35 80	2 40	2 92
Frontenac	12 39	4 70	1 47	2 96	21 62	23 71	1 10	1 70
Glengarry	25 07	11 34	3 28	6 82	46 51	33 48	1 55	2 19
Grenville	25 25	11 13	2 53	5 59	44 50	30 28	1 37	1 75
Grey	20 13	8 19	2 55	5 85	36 72	26 78	1 27	1 75
Haldimand.	27 72	14 00	3 86	6 78	52 36	29 94	1 77	2 21
Haliburton.	1 97	5 6	2 1	6 5	3 39	21 22	42	1 07
Halton	42 26	18 07	3 99	7 07	71 59	38 08	2 16	2 88
Hastings	14 22	5 43	1 64	3 47	24 76	27 04	1 35	2 14
Huron	35 80	13 33	3 37	8 41	60 91	31 73	2 09	2 46
Kent	41 41	13 08	3 92	7 88	66 29	32 54	2 80	3 43
Lambton	28 65	9 25	2 70	6 08	46 68	29 12	1 76	2 33
Lanark	15 08	5 78	1 50	3 58	25 94	22 94	95	1 59
Leeds	23 01	8 96	2 25	5 09	39 31	27 10	1 43	2 12
Lenn x & Addington	20 09	9 08	2 33	1 62	36 12	24 92	1 38	1 81
Lincoln	50 54	21 93	4 85	6 78	84 10	39 17	2 32	2 92
Manitoulin	4 36	1 77	67	2 19	8 99	25 26	51	1 39
Middlesex	39 67	14 39	3 48	8 92	66 46	34 34	2 15	2 62
Muskoka	3 80	1 54	55	1 37	7 26	30 52	44	1 70
Nipissing	3 71	1 00	42	82	5 95	23 53	48	2 11
Norfolk	28 11	12 00	3 18	5 43	48 72	31 48	2 02	2 53
Northumberland.	29 29	12 29	3 03	6 09	50 70	27 26	1 81	2 26
Ontario	32 63	12 91	3 17	7 70	56 41	33 02	2 31	2 73
Oxf. rd.	43 06	17 26	3 86	9 51	73 69	37 91	2 51	3 12
Parry Sound	3 28	1 33	45	1 26	6 82	26 39	44	1 73
Peel	39 84	16 89	3 63	8 06	68 42	32 47	2 35	2 78
Perth	39 78	15 62	4 00	9 35	68 75	35 35	2 15	2 53
Peterborough.	16 45	5 31	1 59	3 78	27 16	24 73	1 20	2 11
Prescott	23 78	9 56	2 82	5 26	41 42	30 49	1 49	2 07
Prince Edward	29 19	13 67	3 76	5 63	52 25	27 61	1 80	2 15
Renfrew	10 65	4 00	1 26	2 92	18 43	26 80	1 30	2 40
Russell	20 19	6 03	2 26	4 37	32 85	31 21	1 70	2 28
Simcoe	25 73	9 53	2 77	5 86	43 89	29 38	1 89	2 48
Stormont	23 15	11 63	3 12	5 58	43 48	35 29	1 42	2 12
Victoria	17 44	6 30	1 83	4 45	30 02	27 40	1 61	2 21
Waterloo	39 54	17 54	4 16	7 56	68 80	35 96	2 20	2 62
Welland	35 09	16 01	3 70	6 16	60 96	32 39	1 75	2 04
Wellington	31 16	12 94	3 22	8 17	55 49	32 11	1 90	2 38
Wentworth	48 00	19 87	4 71	7 97	80 55	41 34	2 52	3 05
York	46 30	17 00	3 68	7 62	74 60	35 10	2 82	3 25
The Province:								
1901	24 76	9 59	2 53	5 48	42 36	30 96	1 77	2 46
1900	24 37	9 31	2 43	5 23	41 34	30 09	1 80	2 48
1899	24 02	9 10	2 34	4 94	40 40	29 31	1 77	2 51
1898	23 78	8 98	2 26	4 44	39 46	28 23	1 76	2 50
1897	23 72	8 82	2 20	4 01	38 75	27 31	1 73	2 44
1896	24 06	8 85	2 19	4 18	39 28	27 84	1 88	2 54
1895	24 79	8 83	2 20	4 50	40 32	28 89	1 87	2 59
1894	25 49	8 86	2 23	4 84	41 42	29 86	1 88	2 65
1893	26 25	8 72	2 24	5 05	42 26	30 31	2 00	2 72
1892	26 91	8 55	2 23	5 13	42 82	30 38	1 98	2 74

## MARKET PRICES.

TABLE XXVI. The following table is compiled from thirty-two well distributed market points. The figures for the six months, July-December, 1901, are also given, together with the average price for the past ten years, and the average for twenty years.

Markets.	Fall wheat, per bush.	Spring wheat, per bush.	Barley, per bush.	Oats, per bush.	Peas, per bush.	Beans, per bush.	Rye, per bush.	Buckwheat, per bush.	Corncorn, per bush.	Hay, per ton.	Potatoes, per bush.	Wool, per lb.
	cts.	cts.							cts.			
Barrie	63 7	41.3	35.1	69.3	46 3	47.3	3 17	33 3	12.5			
Belleville	62.2	62.2	48 2	34 4	65 0	48 9	7 73	37.8	11.1			
Bowmanville	64.3	64.3	47 1	35.1	61 6	51 2	8 79	33.1				
Brampton	65 6	45 0	35.3	63 2	8 46	42.2						
Brantford	63.1	63.1	42 5	34 7	58 5	46.9	47 8	36 7	7 19	47.1		
Brockville	80 0	39 1			57 7	52.5	43 8	8 03	40.0	17.0		
Cayuga	64 3	42 1	34 3	60.7	45 2							
Chatham	67.2	43.5	34.3		112 9	46.5	41 5	34.1	6 50	68 0	13.6	
Cobourg	66.1	66.1	46 9	34 7	69 0	49.8	47.2		8 55	33 3		
Essex	64 0	40 8	34 8	36 7				35 1	9 00	45.3		
Forest	64 0	42 8	33 7	54 0	70.0	40.0		28 5	5 78			
Galt	65 9	65.9	42 5	34 0	61.7				7 71	35.9	16 5	
Goderich	63 8	40 6	34 6	64.0	46 9	48 3		9 27	33.9			
Guclob.	67.1	48 7	37 8	67.7	51 8		43.9	7 50	35.9	12.0		
Hamilton	70 8	47.8	39.3	64.8	49 6			7 27	47.5	12.3		
Kingston.	64 5	65.0	47 5	32.6	66 5	50 0	48.0	11 50	51.1	13.0		
Liud-ay	65.3	65.3	43.2	35.0	68.2	46.0	47 3	6 13	35.7	13.5		
London	68.7	68 7	47 4	37.3	63.4	111.8	55 7	48 7	40 2	7 83	46.6	13.6
Orangeville.	64 6	64 6	44 8	35.9	68 6	47 6	47.5	7 02	33.6	11.5		
Ottawa.	60.9	52.4	41 4	66 0	158.8	57.1	52 8	47.1	8 50	49 7	13.5	
Owen Sound	65.9	65 1	46 8	38 5	67.3		45.8	7 49	47.2	12 0		
Pembrok.	72 5	72 5	45 0	38 8	66 6	166.7	50 8	7 79	45 9	16.4		
Perth	70 2	69.6	41 0	35.6	62 1	45 0	47 0		37.2	14 5		
Peterborough.	66 2	66.0	44 5	36 1	71.6	47.1	50.3	8 00	37 8			
St. Thomas.	67.1	40 6	34 0	55.0				30 9	7 07	49 7	11.8	
Simcoe	66 5	45 3	37 0	66.7	49.9	50.3	37.1	6 67	45 3			
Stratford	63.6	40 8	34.0	61.9				7 17	40.5			
Toronto	70 1	68 1	51 1	41.2	71.1	52.1	52.7	11 03	44 3	12 8		
Walkerton	64 0	64 0	40 7	36 1	67.4			7 00	37 8	14.0		
Waterloo.	65.0	48 0	36.1	58 1				7 76				
Whitby	62.0	62 0	45.1	33 7	64.7	50.0	48.0	8 50	45.5	13.5		
Woodstock	67.0	43.2	36.7	62 8	49 8		40.5	7 20	42.5	12.5		
The Province :												
July	64.0	65 8	41 0	31.5	61.5	47.0		8 07		13.7		
August.	64 3	65 8	41 8	33 6	62.4	47 7		7 70		13.6		
September	65.1	66.4	43 7	34.1	64 0	49 0		7 83		13 3		
October	65 4	66 2	45 4	35 0	65.1	131.7	49 4	46 6	37 7	7 96	42.9	13.1
November	66 9	67 0	47 5	39.7	67.2	123 0	50 0	48 5	36 7	8 17	41.3	13.2
December	71.0	69.5	49.9	43.4	71.4	118.5	52.4	49.9	39.8	8 24	43 7	13 2
Average for six months:												
1901	66.1	66 8	45.0	36 2	65.3	125.0	49.3	48.4	38 0	7 99	42.6	13.4
1900	66.4	67 5	38.9	26.5	57.1	99.7	48 5	43.7	31.7	8 48	26.1	15.4
1899	65.7	66.5	39 5	27 7	57.3	108 0	50.0	45.5	19.8	7 72	32.8	14.3
1898	69.4	69.2	38 0	25 8	52.2	70 0	43.5	38 2	20 1	6 22	44.1	16.6
1897	78.2	78.6	27 0	22 6	42.1	65.2	37 7	30 0	19 7	7 18	39 9	18.4
1896	71.0	70.6	31 6	20 0	44 0	68.4	36 6	30 5	19 6	9 68	26 2	18.4
1895	69 3	69 8	40 0	29 1	54 8	94.7	45 6	36 8	22 6	12 30	20 2	20.0
1894	55.0	55.5	40.5	30 8	53.6	110.4	44.2	39.2	26.1	7 56	35.4	16.9
1893	59 9	59.4	40 1	33 2	54 0	118 0	47 5	41 8	26.5	7 64	39.5	18.2
1892	70.7	67.8	41.3	30 8	59 0	98 8	55 8	42.2	26.3	8 20	50 4	18.2
1882-1901	78.7	81 2	48 0	31.3	57.5	101.4	51 6	39.7	*25.0	9 06	39.4	17.9

\* Average for the ten years, 1892-1901.

## CHEESE FACTORIES.

TABLE XXVII. Showing by county Municipalities of Ontario the number of cheese factories in operation, the quantity and value of cheese made, the number of patrons and the amount paid to patrons by milk delivered at the factories in 1901, together with the totals for the Province for the past ten years.

Counties and districts.	Factories in operation.	Quantity of—		Gross value of cheese.	Average number of patrons.	Milk to make 1 lb. of cheese.	Value of cheese per 100 lb.	Amount paid to patrons for milk at the factory.	
		Milk used.	Cheese made.					Total.	Per 100 lb. milk.
Algoma & Manitoulin.	3	976,878	94,512	8,643	102	10.34	9.14	7,608	77.8
Brant	9	9,952,249	901,654	81,108	542	11.04	9.00	70,598	70.9
Bruce	15	17,456,809	1,588,919	144,266	1,193	10.99	9.08	129,477	74.2
Carlton	58	55,548,700	5,345,879	492,94	2,808	10.39	9.21	430,153	77.4
Dufferin	3	3,523,149	322,068	29,083	209	10.94	9.03	25,247	71.7
Dundas	58	73,107,461	7,044,181	644,711	1,819	10.36	9.15	570,274	78.0
Durham	13	14,305,622	1,300,386	117,650	990	11.00	9.05	103,474	72.3
Elgin	20	43,096,116	3,924,891	350,516	1,748	10.98	8.93	311,851	72.4
Esex	5	2,090,650	188,865	17,110	239	11.07	9.06	15,333	73.3
Frontenac	70	64,803,597	6,195,526	564,310	2,302	10.46	9.11	497,518	76.8
Glengarry	70	55,740,691	5,359,861	488,771	1,956	10.40	9.12	427,308	76.7
Greenville	38	56,232,860	5,257,520	482,724	1,881	10.70	9.18	410,652	73.3
Grey	7	4,524,834	422,650	38,072	382	10.70	9.01	32,778	72.4
Haldimand	11	10,866,400	1,000,833	89,221	948	10.86	8.91	78,623	72.4
Haliburton	6	1,963,191	188,316	17,036	121	10.42	9.05	13,600	69.3
Hastings	94	118,283,603	11,132,286	1,009,048	4,159	10.63	9.06	900,013	76.1
Huron	14	15,318,576	1,401,103	126,061	1,182	10.93	8.99	113,430	74.0
Kent	4	2,908,256	264,312	23,661	253	11.00	8.95	20,032	68.9
Lambton	15	12,872,979	1,181,319	105,801	1,163	10.90	8.96	91,362	71.0
Lanark	44	60,380,346	5,688,763	524,287	2,451	10.61	9.22	465,266	77.1
Leeds	80	109,565,709	10,373,751	944,269	2,622	10.56	9.10	836,898	76.4
Lennox & Addington	33	53,931,687	5,194,147	465,848	2,476	10.38	8.97	409,093	75.9
Lincoln	4	3,780,868	347,268	30,873	370	10.74	8.89	27,095	72.6
Middlesex	32	57,228,869	5,267,130	475,908	2,116	10.96	9.04	423,406	73.3
Muskoka	3	958,574	88,830	8,235	75	10.79	9.27	6,906	72.0
Norfolk	24	29,217,745	2,673,756	238,814	2,009	10.92	8.93	210,744	72.1
Northumberland	40	62,497,523	5,710,642	513,014	2,874	10.94	8.98	448,816	71.8
Ontario	5	1,290,926	121,328	12,258	160	10.64	10.10	10,436	80.8
Oxford	45	106,872,242	9,766,553	887,217	3,326	10.94	9.08	796,054	74.5
Parry Sound and Nipissing.	4	1,127,043	106,363	9,943	96	10.59	9.35	8,300	74.4
Peel and Halton	4	1,803,005	169,832	15,218	75	10.62	8.99	13,158	73.0
Perth	25	49,566,136	4,520,767	411,502	2,378	10.96	9.10	363,902	73.8
Peterborough	38	47,382,928	4,361,693	399,106	2,185	10.86	9.15	349,868	73.8
Prescott	68	54,924,734	5,418,784	490,394	2,050	10.14	9.05	425,169	77.4
Prince Edward	22	37,005,624	3,501,840	318,853	1,705	10.57	9.10	280,699	75.9
Refrere	26	22,450,815	2,144,511	194,769	1,298	10.46	9.07	167,761	74.7
Russell	50	42,018,468	4,178,801	383,801	1,636	10.06	9.18	335,549	79.9
Simcoe	11	5,412,234	496,806	44,734	491	10.89	9.00	37,931	70.1
St. Catharines	49	71,619,727	6,935,673	636,185	2,252	10.33	9.17	566,617	79.1
Victoria	20	20,460,336	1,905,352	175,394	1,218	10.74	9.20	154,744	75.6
Waterloo	7	7,317,412	673,898	60,755	425	10.56	9.02	52,891	72.3
Welland	3	2,671,495	246,315	22,098	264	10.85	8.97	19,247	72.2
Wellington	9	13,535,631	1,237,893	113,079	764	10.93	9.10	100,424	74.8
Wentworth	6	6,264,814	571,816	51,282	473	10.96	8.97	45,012	71.8
York	2	1,292,338	120,904	11,248	91	10.69	9.30	9,134	70.7
The Province:									
1901	1,167	1,434,540,520	134,942,517	12,269,073	59,377	10.63	9.09	10,814,538	75.4
1900	1,173	1,346,433,199	127,789,543	13,023,025	59,294	10.61	10.19	11,682,470	85.5
1899	1,203	1,311,530,947	123,324,928	12,120,887	60,443	10.63	8.83	10,682,193	81.4
1898	1,187	1,374,399,489	128,116,924	10,252,240	65,121	10.73	8.00	8,417,585	61.2
1897	1,161	1,455,937,148	137,362,916	11,719,468	66,104	10.60	8.53	9,709,004	66.6
1896	1,147	1,108,124,619	104,393,985	8,646,735	57,635	10.62	8.28	7,040,927	63.5
1895	1,164	1,174,008,592	109,230,340	8,607,389	65,061	10.75	7.88	6,932,962	59.0
1894	1,011	1,027,577,831	97,284,547	9,441,247	54,839	10.56	9.70	7,931,022	77.2
1893	897	911,791,204	86,166,719	8,338,709	50,870	10.58	9.68	.....	.....
1892	856	984,356,441	93,848,948	8,959,939	48,601	10.49	9.65	.....	.....

## AGRICULTURAL STATISTICS OF THE UNITED STATES.

## FARMS AND FARM ACREAGE, 1850 TO 1900.

Year.	Number of farms.	Number of acres in farms.				Per cent. of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900 .....	5,739,657	841,201,546	414,793,191	426,408,355	146.6	49.3
1890 .....	4,564,641	623,218,619	357,616,755	265,601,864	136.5	57.4
1880 .....	4,008,907	536,081,835	284,771,042	251,310,793	133.7	53.1
1870 .....	2,659,985	407,735,041	184,921,099	218,813,942	153.3	46.3
1860 .....	2,044,077	407,212,538	163,110,720	244,101,818	199.2	40.1
1850 .....	1,449,073	293,560,614	113,032,614	180,528,000	202.6	38.5

## VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF FARM PRODUCTS, 1850 TO 1900.

Year.	Total value of farm property.	Land improvements and buildings.	Implements and machinery.	Live stock.	* Farm products.
	\$	\$	\$	\$	\$
1900.....	20,514,001,838	16,674,690,247	761,261,550	†3,078,050,041	4,739,118,752
1890.....	15,982,267,689	13,279,252,649	494,247,467	†2,208,767,573	2,460,107,454
1880.....	12,104,001,538	10,197,096,776	406,520,055	1,500,384,707	2,212,540,927
1870.....	†11,124,958,747	9,262,803,861	336,878,429	1,525,276,457	\$2,447,738,658
1860.....	7,980,493,063	6,645,045,007	246,118,141	1,089,329,915	
1850.....	3,967,343,580	3,271,575,426	151,587,638	544,180,516	

\* For year preceding that designated.

† Exclusive of the value of live stock on ranges.

‡ Values for 1870 were reported in depreciated currency. To reduce to specie basis of other years they must be diminished one-fifth.

§ Includes betterments and additions to stock.

The following figures for the United States are furnished by the Statistician of the Department of Agriculture at Washington. (May 23, 1902.)

## WHEAT.

	Acres.	Bushels.	Farm value.
			\$
1901.....	40,895,514	748,460,218	467,350,156
1900.....	42,495,385	522,229,505	323,525,177
1899.....	44,532,516	547,303,846	319,545,259
1898.....	44,055,278	675,148,705	392,770,320
1897.....	39,465,066	530,149,168	428,547,121
18'6.....	34,618,646	427,684,346	310,602,539
1895.....	34,047,332	467,102,947	237,938,998
1894.....	34,882,436	460,267,416	225,902,025
1893.....	34,629,418	396,131,725	213,171,381
1892.....	38,554,490	515,949,000	322,111,881
1891.....	39,916,897	611,780,000	513,472,711

## CORN.

	Acres.	Bushels	Farm value.
			\$
1901.....	91,349,928	1,522,519,891	921,555,768
1900.....	83,320,872	2,105,102,526	751,220,034
1899.....	82,108,587	2,078,143,933	629,210,110
1898.....	77,721,781	1,924,184,660	552,024,428
1897.....	80,095,051	1,902,967,933	501,071,952
1896.....	81,027,156	2,283,875,165	491,406,967
1895.....	82,075,830	2,151,138,580	544,985,534
1894.....	62,582,269	1,212,770,052	554,719,162
1893.....	72,036,465	1,619,496,131	591,625,627
1892.....	70,626,658	1,628,464,000	644,146,640
1891.....	76,204,515	2,060,154,000	836,439,228
1881*.....	64,262,025	1,194,916,000	759,482,170

\* Most serious crop failure of the generation.

## OTHER CROPS, 1901.

	Acres.	Bushels.	Farm value.
			\$
Oats.....	28,541,476	736,808,724	293,658,777
Barley.....	4,295,744	109,932,924	49,705,163
Rye.....	1,987,505	30,344,830	16,909,742
Buckwheat.....	811,164	15,125,941	8,523,318

In the preparation of the report for 1901, all proper weight has been given to the recently published census report on the crops of 1899.

## CROPS IN THE NORTHWEST TERRITORIES.

Year.	Wheat.		Oats.		Barley.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
1898.....	307,580	5,542,478	105,077	3,040,307	17,092	449,512
1899.....	363,523	6,915,623	134,938	4,686,036	14,276	337,421
1900.....	412,864	4,028,294	175,439	4,226,152	17,044	353,216
1901.....	504,697	12,808,447	226,568	9,716,132	24,702	795,100
1902.....	584,988	.....	276,152	.....	29,772	.....

## CROPS IN MANITOBA.

Year.	Wheat.		Oats.		Barley.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
1898.....	1,488,232	25,313,745	514,824	17,308,252	158,058	4,277,927
1899.....	1,629,995	27,922,230	593,136	22,388,378	189,912	5,379,156
1900.....	1,457,396	13,025,252	429,108	8,843,312	155,111	2,939,477
1901.....	2,011,835	55,502,085	689,951	27,796,588	191,009	6,536,155
1902.....	2,039,940	.....	725,060	.....	329,799	.....

## PART II.—CHATTEL MORTGAGES.

Table showing by County Municipalities of Ontario the total number and amount of Chattel Mortgages on record and undischarged on December 31st, 1901, against (1) all occupations; (2) farmers; together with totals for the Province for the past ten years.

Counties and Districts.	CHATTEL MORTGAGES AGAINST ALL OCCUPATIONS.				CHATTEL MORTGAGES AGAINST FARMERS.			
	To secure existing debt.		For future indorsation.		To secure existing debt.		For future indorsation.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
				\$		\$		\$
Algoma	182	133,244			98	23,972		
Brant	339	266,025			112	76,235		
Bruce	633	251,954			422	117,362		
Carleton	656	377,836	7	5,126	89	31,519	1	700
Dufferin	180	73,687			152	60,445		
Elgin	474	196,217			209	68,052		
Essex	355	110,990	2	1,125	158	29,653		
Frontenac	359	160,725			192	76,814		
Grey	780	281,391	1	500	595	154,515		
Haldimand	153	55,153			127	37,843		
Haliburton	56	17,040	1	10,000	47	5,449		
Halton	106	80,782	4	690	55	32,494		
Hastings	669	266,712	41	9,380	512	150,619	29	3,622
Huron	331	219,198	7	1,974	179	74,567	2	933
Kent	1,038	332,241			792	183,414		
Lambton	401	178,842	73	23,995	233	61,109	58	11,716
Lanark	198	89,184	15	6,043	95	37,986	7	2,884
Leeds and Grenville	332	126,546	9	11,834	200	48,856	6	3,618
Lennox and Addington	210	89,748	4	4,200	122	58,562	2	500
Lincoln	220	125,172	8	6,638	86	26,680	3	277
Manitowlin	97	41,531			80	18,778		
Middlesex	620	298,484			224	103,163		
Mn-koka	188	84,148	3	4,000	113	21,104	1	1,000
Nipissing	308	487,866	1	151	145	25,956	1	151
Norfolk	246	58,280			152	35,752		
Northumberland and Durham	235	87,919			164	46,899		
Ontario	333	382,678	6	1,272	214	255,169	4	1,210
Oxford	245	182,626	2	6,417	106	42,101		
Parry Sound	136	445,997			72	13,460		
Peel	152	99,145	4	742	96	65,234	3	645
P Perth	187	147,000			93	51,446		
Peterborough	271	140,068	2	26,059	149	54,299		
Prescott and Russell	168	47,907			112	31,530		
Prince Edward	164	117,606	3	394	115	40,923	2	260
Rainy River	88	109,896			16	5,430		
Ren'rew	227	87,405	8	13,061	159	58,411	3	791
Simcoe	501	887,909			302	182,669		
Stormont, Dundas and Glengarry	246	90,173	18	3,104	135	40,854	8	1,392
Thunder Bay	48	45,275	6	40,634	9	3,308	1	134
Victoria	201	122,776			150	63,975		
Waterloo	239	219,633	2	8,400	57	29,676		
Welland	266	122,479	2	9,858	89	18,058		
Wellington	322	184,410			146	82,151		
Wentworth	818	354,056	9	25,505	139	69,429	2	374
York	2,341	2,335,605	9	16,340	245	121,608	1	
The Province:								
1901	16,299	10,613,564	247	237,445	7,757	2,854,759	131	30,207
1900	17,321	11,669,806	307	499,184	8,440	3,110,543	121	30,840
1899	18,216	11,067,664	291	324,628	9,392	2,988,553	124	34,798
1898	19,526	12,091,075	283	281,142	10,514	3,547,554	117	32,943
1897	21,144	13,004,342	382	377,853	11,902	3,889,190	201	44,410
1896	21,402	13,180,205	387	381,511	11,638	3,826,582	206	51,416
1895	22,018	10,555,922	373	456,398	12,121	3,711,938	167	56,258
1894	21,276	10,603,393	483	616,819	11,447	3,378,079	240	68,805
1893	19,342	8,973,118	380	360,267	10,489	3,003,109	195	56,748
1892	18,927	9,215,753	455	829,724	10,576	3,062,349	198	65,628

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ANNUAL REPORT  
OF THE  
BUREAU OF INDUSTRIES

FOR THE  
PROVINCE OF ONTARIO

1901.

PART III.—MUNICIPAL STATISTICS

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*(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)*

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THE LEGISLATIVE ASSEMBLY OF ONTARIO.



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# PART III.—MUNICIPAL STATISTICS.

The following statement is compiled from the summarized tables and gives population, total assessment, amount of taxes imposed for 1901, the amount of debenture and floating debt, together with the amount paid each year by all municipalities of the Province for interest for the fifteen years 1886-1900.

Year.	Population.	Total assessment.	Taxes imposed for all purposes.			Debenture debt.		Floating debt.	Interest paid on loans and debentures.
			Total.	Rate per head.	Mills on the dollar	Total.	Rate per head.		
		\$	\$	\$ c.	16.0	\$	\$ c.	\$	\$
1901.....	2,028,889	835,697,607	13,341,355	6 58	16.0				
1900.....	2,013,860	822,435,670	12,992,821	6 45	15.8	57,172,802	28 39	7,768,033	2,652,749
1899.....	2,010,748	816,765,473	12,535,284	6 23	15 35	56,389,603	28 04	6,302,266	2,508,955
1898.....	2,001,350	809,184,833	12,222,966	6 10	15.11	54,506,372	27 11	6,883,735	2,633,762
1897.....	1,990,977	803,623,377	12,206,325	6 13	15.19	53,577,475	26 91	6,482,953	2,553,988
1896.....	1,972,286	814,917,633	12,122,785	6 15	14.88	52,948,275	26 85	6,261,394	2,588,759
1895.....	1,957,390	821,466,166	12,316,429	6 29	14.99	51,895,991	26 51	5,834,129	2,378,220
1894.....	1,936,219	826,179,370	12,320,312	6 36	14 91	49,724,587	25 68	6,669,567	2,552,607
1893.....	1,910,059	825,530,052	12,512,660	6 56	15.17	48,083,243	25 17	6,796,422	2,508,621
1892.....	1,909,527	825,211,127	11,803,570	6 18	14.30	47,166,962	24 70	6,469,899	2,482,156
1891.....	1,922,121	818,847,394	11,767,748	6 12	14.37	43,888,853	22 83	7,629,730	2,498,294
1890.....	1,917,544	798,616,271	10,897,485	5 68	13 65	40,720,985	21 24	8,387,186	2,240,692
1889.....	1,906,901	761,905,816	10,249,198	5 37	13.45	38,988,332	20 44	6,493,519	2,057,938
1888.....	1,880,145	748,654,570	9,919,992	5 28	13.25	34,729,527	18 47	6,437,363	1,999,760
1887.....	1,848,457	717,311,938	9,300,113	5 03	12.97	31,943,320	17 28	5,645,208	1,820,590
1886.....	1,828,495	694,380,659	9,009,385	4 93	12.97	29,924,863	16 37	4,841,717	1,715,620

\* Statistics of debts for 1901 are not yet complete.

The following tables show the variations in population, assessment, taxation and debenture debt according to the various classes of municipalities, since the Bureau has been receiving returns direct from municipalities :

### POPULATION.

Year.	Townships.	Towns.	Villages.	Cities.	Total.
1901.....	1,092,181	330,412	126,836	479,460	2,028,889
1900.....	1,095,222	326,041	124,637	467,960	2,013,860
1899.....	1,109,896	318,145	133,921	448,876	2,010,748
1898.....	1,110,894	314,820	134,747	440,889	2,001,350
1897.....	1,113,530	312,947	133,560	430,940	1,990,977
1896.....	1,112,900	306,001	132,451	420,934	1,972,286
1895.....	1,109,631	300,655	130,889	416,215	1,957,390
1894.....	1,103,828	297,194	126,387	408,810	1,936,219
1893.....	1,096,984	292,285	123,125	397,665	1,910,059
1892.....	1,102,467	291,706	121,690	393,664	1,909,527
1891.....	1,116,347	287,854	122,691	395,229	1,922,121
1890.....	1,118,252		410,530	388,762	1,917,544
1889.....	1,130,060		400,890	375,951	1,906,901
1888.....	1,133,046		393,461	353,638	1,880,145
1887.....	1,140,138		377,889	330,930	1,848,457
1886.....	1,148,656		360,005	319,634	1,828,495

In 1900 there were 501 township municipalities, 102 towns, 136 villages, 14 cities and 38 counties.

" 1901 " 505 " " 104 " 135 " 14 " 38 "

## TOTAL ASSESSED VALUE.

Year.	Townships.	Towns.	Villages.	Cities.	Totals.
	\$	\$	\$	\$	\$
1901	458,811,926	99,921,377	29,849,933	247,114,371	697,697,607
1900	454,187,053	96,816,673	29,082,283	242,349,661	822,435,670
1899	450,952,948	95,008,798	30,973,357	239,825,370	816,760,473
1898	448,810,060	93,529,372	30,768,025	236,077,376	809,184,833
1897	444,722,478	91,438,546	30,497,707	236,966,646	803,625,377
1896	447,117,383	91,269,208	30,005,839	246,525,203	814,917,633
1895	448,417,259	93,646,835	29,711,010	249,691,062	821,466,166
1894	451,476,103	93,065,465	29,007,928	252,629,874	826,179,370
1893	451,629,103	94,213,304	28,463,366	251,224,279	825,530,052
1892	452,065,658	93,867,423	28,043,948	251,234,098	825,211,127
1891	454,070,364	92,555,035	27,820,773	244,401,222	818,847,394
1890	452,467,088	115,402,233		230,746,950	798,616,271
1889	450,977,220	106,453,798		204,474,798	761,905,816
1888	460,615,822	100,413,029		187,625,719	748,654,570
1887	456,170,163	93,337,566		167,804,179	717,311,938
1886	452,097,645	88,078,093		154,204,921	694,380,659

## TAXES IMPOSED FOR ALL PURPOSES.

Year.	Townships.	Towns.	Villages.	Cities.	Total.
	\$	\$	\$	\$	\$
1901	4,862,630	2,330,691	589,798	5,558,236	13,341,355
1900	4,696,255	2,180,238	564,750	5,551,578	12,992,821
1899	4,621,803	2,106,178	585,376	5,221,947	12,535,284
1898	4,461,474	2,095,791	570,912	5,004,789	12,222,966
1897	4,407,005	2,069,444	569,884	5,160,592	12,206,925
1896	4,292,741	2,005,133	557,003	5,267,909	12,122,785
1895	4,473,269	2,021,455	544,111	5,277,594	12,316,429
1894	4,579,044	1,955,980	526,813	5,258,475	12,320,312
1893	4,629,028	1,944,221	505,231	5,444,180	12,522,660
1892	4,599,442	1,876,420	499,575	4,828,133	11,803,570
1891	4,544,291	1,811,517	493,508	4,918,432	11,767,748
1890	4,473,108	2,161,644		4,262,733	10,897,485
1889	4,507,717	1,993,623		3,746,858	10,248,198
1888	4,494,780	1,884,918		3,540,264	9,919,962
1887	4,431,720	1,759,248		3,109,145	9,300,113
1886	4,388,401	1,670,848		2,950,136	9,009,385

## DEBENTURE DEBT OUTSTANDING.

Year.	Townships.	Towns.	Villages.	Cities.	Counties.	Total.
	\$	\$	\$	\$	\$	\$
1900	2,554,167	11,690,536	1,187,919	40,022,189	1,717,991	57,172,802
1899	2,616,584	10,815,169	1,159,898	40,026,264	1,771,688	56,389,603
1898	2,649,698	10,344,650	1,224,440	33,506,528	1,781,056	54,506,372
1897	2,917,091	9,850,615	1,160,285	37,846,377	1,803,107	53,577,475
1896	2,866,904	9,598,063	1,163,096	37,471,230	1,848,982	52,948,275
1895	2,992,643	9,090,368	1,175,803	36,452,914	2,184,263	51,895,991
1894	2,942,267	8,611,052	1,132,942	34,778,154	2,260,172	49,724,587
1893	3,039,823	8,222,289	1,082,476	33,399,063	2,339,592	48,083,243
1892	3,089,430	7,491,878	1,067,468	32,966,371	2,531,815	47,165,962
1891	3,118,639	6,775,715	993,945	30,253,043	2,747,511	43,888,853
1890	3,366,617	7,099,648		27,110,712	3,144,008	40,720,985
1889	3,299,557	6,371,763		26,096,152	3,229,860	38,988,332
1888	3,409,744	6,146,561		21,769,261	3,403,961	34,729,527
1887	3,154,428	5,261,078		20,080,923	3,446,891	31,943,320
1886	3,153,646	4,795,580		18,469,893	3,505,744	29,924,863

FINANCIAL STATEMENT—ONTARIO MUNICIPALITIES.

Summary statement showing for all Municipalities in Ontario (including counties, townships, cities, towns and villages), the total of the several items of receipts, disbursements, assets and liabilities for the ten years ending December 31st, 1891-1900.

Schedule.	1900	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>RECEIPTS.</b>										
Balance from previous year.....		1,849,739	1,641,559	1,728,747	1,648,455	1,314,226	1,356,761	1,698,895	1,613,373	1,361,843
<i>Ordinary municipal revenue:</i>										
Municipal and school taxes:										
<i>a</i> 19,203,140		12,669,127	12,217,687	12,178,312	11,881,641	12,159,570	12,148,097	11,975,445	11,820,733	11,377,659
<i>b</i> 388,142		338,142	331,603	337,530	334,559	344,036	336,158	356,329	341,789	336,564
<i>c</i> 575,683		533,076	501,409	483,134	514,408	480,160	486,329	481,789	481,789	481,789
<i>d</i> 1,349,866		1,401,458	1,289,755	1,292,235	1,187,751	1,151,102	1,118,410	995,429	894,858	955,259
<i>e</i> 16,131		11,716	10,957	13,292	16,351	13,626	13,851	16,365	19,636	20,270
<i>f</i> 1,039,357		1,110,356	1,047,924	1,007,689	1,111,043	1,243,939	1,258,660	1,231,039	1,372,862	1,303,572
<i>Subsidies and refunds:</i>										
Received from Government on account of—										
Schools.....		149,361	142,418	149,606	142,717	142,095	142,180	139,714	140,461	143,050
Administration of justice.....		147,437	144,298	146,726	150,877	161,820	141,868	122,241	120,658	144,545
Refund of loans, investments and special deposits.....		1,444,024	2,695,613	2,451,302	2,232,984	1,790,130	1,721,963	1,240,663	949,153	1,714,189
Interest and dividends.....		514,873	500,273	493,578	451,873	432,287	391,064			
<i>a</i> 6,807,547		5,525,298	5,205,349	4,892,579	4,516,049	4,592,405	5,483,286	5,711,833	6,108,802	7,161,248
Money borrowed for current expenses.....		165,842	156,105	388,993	162,866	366,686	214,074	223,697	571,416	369,205
School purposes.....		3,031,113	4,079,658	4,207,653	3,785,949	3,953,322	5,759,403	4,266,435	4,145,788	5,181,465
Other purposes.....		42,540	55,524	73,120	81,235	71,176	89,459	95,026	103,997	107,513
Non-resident taxes collected.....		89,910	81,535	79,175	97,267	107,562	102,615	96,147	97,839	94,891
Towns or cities separated from counties.....		458,722	567,932	677,370	660,422	672,585	568,275	743,355	1,024,334	2,075,473
Miscellaneous.....										
<i>a</i> 31,056,555		31,869,141	30,921,578	29,776,603	28,987,549	28,175,046	30,953,960	29,413,263	29,826,654	32,726,826
Totals.....										
<b>DISBURSEMENTS.</b>										
<i>Expenses of municipal government:</i>										
Attendance at meetings of council and committees.....		39,616	44,548	38,934	43,443	42,772	67,512	67,100	63,959	67,920
Allowances, salaries and commissions.....		773,736	772,441	1,490,169	717,526	719,371	673,268	693,808	687,239	684,306
Lighting of streets, water supply, fire protection.....		1,623,999	1,419,982	1,346,008	1,347,612	1,377,712	1,369,531	1,271,427	1,160,242	1,179,794
Law costs (including salaries).....		157,984	137,966	149,569	136,287	143,877	176,121	163,230	154,639	158,250
Other expenses of municipal government.....		529,808	503,775	467,339	445,967	465,008	614,722	632,230	548,639	536,250
<i>Construction works:</i>										
Roads, bridges, streets and parks.....		3,764,935	3,346,476	2,675,774	2,680,976	2,446,801	2,683,713	3,168,127	3,259,808	3,334,087
Water and electric light works.....		1,358,820	1,196,405	824,418	783,365	847,599	1,238,794	1,392,689	1,455,008	1,683,716
Buildings and other works.....		334,133	529,596	713,208	719,966	697,881	377,010	227,692	237,215	275,551
Drainage works.....		284,553	327,578	311,311	275,869	238,919	297,286	275,941	237,215	275,551

Schedule.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
Administration of justice, gaols, police, etc .....	\$ 1,084,909	\$ 1,056,071	\$ 1,066,077	\$ 1,066,077	\$ 1,054,505	\$ 1,077,891	\$ 1,045,597	\$ 997,080	\$ 1,017,392	\$ 1,021,520
Support of the poor and other charities .....	f 405,953	363,071	363,606	363,437	383,433	321,965	323,288	298,040	308,137	311,567
County treasurer for levy .....	a 1,083,298	1,043,123	1,093,505	1,093,505	1,117,906	1,298,046	1,292,835	1,291,824	1,355,698	1,279,609
Payments on account of schools and education ..	a 4,934,876	4,484,194	4,258,084	4,258,084	4,277,038	4,296,862	4,289,625	4,269,723	4,228,004	4,141,117
Sinking Fund investments and deposits .....	a 1,265,082	2,675,969	2,473,960	2,501,517	1,969,068	1,699,407	1,846,747	1,813,254	1,462,747	1,231,320
Other investments and special deposits .....	a 753,507	501,007	436,681	393,364	545,255	290,121				
<i>Loans repaid:</i>										
Debentures redeemed (principal) .....	a 181,157	163,722	216,858	183,014	215,984	187,526				
Interest on loans, advances and debentures .....	a 2,231,993	2,188,816	3,463,746	3,121,278	3,129,832	1,966,061	4,424,647	3,574,353	1,437,070	2,408,097
Refund of money borrowed for current expenses ..	a 2,052,749	2,633,762	2,633,762	2,553,988	2,578,290	2,578,290	2,562,607	2,508,691	2,482,156	2,498,294
Non-resident taxes paid .....	a 5,429,438	6,057,300	4,689,474	4,301,229	4,411,498	5,201,588	5,952,779	4,952,828	7,320,328	7,806,602
Board of Health .....	a 42,272	70,386	66,343	83,313	75,338	112,915	94,583	95,820	112,247	98,056
Board of Health .....	a 128,250	118,111	100,750	102,430	92,312	97,534	952,200	813,502	1,011,270	2,555,377
Miscellaneous .....	a 821,020	691,539	714,200	893,234	906,026	796,930				
Totals .....	29,643,088	30,223,996	29,071,839	28,135,044	27,258,802	26,526,591	29,639,734	28,056,102	28,127,159	31,113,453
<b>ASSETS.</b>										
Cash in treasury .....	a 1,413,467	1,645,145	1,849,739	1,641,559	1,728,747	1,648,455	1,314,225	1,856,761	1,698,895	1,613,373
Taxes in arrears .....	b 4,252,611	4,329,972	4,614,387	4,652,431	4,617,196	4,597,668	4,111,047	4,232,438	3,740,979	3,772,078
Rates due from local municipalities .....	d 489,635	533,858	531,222	550,055	587,538	663,043	668,960	654,171	550,787	609,513
Shaking Fund investments and deposits .....	a 10,104,879	9,821,918	9,395,774	8,994,790	8,350,555	7,932,668	10,325,356	9,870,539	8,976,898	8,046,071
Other investments and special deposits .....	a 3,741,275	3,593,175	3,567,079	3,542,472	3,604,475	3,277,020				
Waterworks and electric light plant .....	a 16,203,624	15,312,773	16,085,883	14,137,268	13,730,675	13,464,113	32,694,526	31,042,202	29,316,472	27,728,476
Other buildings and property .....	a 21,985,863	21,600,123	19,974,122	20,912,711	20,736,483	20,635,943				
Miscellaneous .....	a 7,004,484	6,584,596	5,918,589	5,745,394	5,901,072	4,882,280	5,296,549	6,365,119	6,767,117	6,120,479
Totals .....	65,196,538	63,421,570	61,926,795	60,176,880	59,246,691	57,101,240	61,710,664	63,461,230	61,051,148	47,889,990
<b>LIABILITIES.</b>										
County levy .....	g 437,388	466,965	478,835	491,415	529,512	631,502	617,942	606,103	592,111	568,817
School rates and grants unpaid .....	a 565,055	536,240	589,389	562,262	621,842	602,998	570,344	561,264	647,917	554,130
Debentures outstanding (principal) for—										
Aid to railways .....	a 3,689,546	3,837,041	3,944,744	4,523,719	4,616,120	4,589,187	4,805,897	5,079,604	5,334,129	5,510,114
Schools .....	a 4,164,382	4,180,573	4,194,564	4,072,628	4,201,547	4,164,156	3,990,317	3,885,401	3,890,726	3,840,726
All other purposes .....	a 49,313,874	48,371,889	46,397,074	44,981,128	44,130,008	43,192,648	40,998,373	39,118,238	38,001,848	34,949,013
Loans for current expenses and interest due on same	a 4,602,804	3,491,709	3,750,682	3,219,885	2,682,520	2,546,343	3,151,628	3,639,384	2,857,182	4,100,387
Local municipalities for non-resident taxes .....	d 11,295	11,027	25,889	19,112	21,540	30,070	18,518	19,717	20,510	18,840
Miscellaneous .....	a 2,151,431	2,696,325	2,068,990	2,190,311	2,405,980	2,023,216	2,311,136	1,969,954	2,522,179	2,377,536
Totals .....	64,940,835	62,691,869	61,390,107	60,060,428	59,209,689	57,730,120	56,394,154	54,879,665	63,636,861	51,518,588

+ Exclusive of school property. (a) All municipalities; (b) townships, cities, towns and villages; (c) cities, towns and villages; (d) counties; (e) townships; (f) counties, cities, towns and villages; (g) townships, towns and villages.



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STATISTICS OF  
ONTARIO MUNICIPALITIES.

1899-1900

AND

1900-1901.

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STATISTICS OF ONTARIO TOWNSHIP MUNICIPALITIES.

POPULATION, AREA, ASSESSMENT AND TAXATION—1900.  
RECEIPTS, DISBURSEMENTS, ASSETS AND LIABILITIES—1899.

No.	Township Municipalities and Counties in which located.	Population 1900.	No. of acres assessed 1900.	Assessed value of real and personal property, 1900.	Taxes imposed for all purposes, 1900.			Receipts, 1899.										
					Total.	Per head.	Mills on \$.	Balance from 1898.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.*	Total receipts.		
1	Adelaide, Middlesex.	2,047	44,218	869,749	11,715	5 72	13.5	5,703	11,544	37	.....	12	1,490	.....	.....	6	18,792	
2	Adjlaia, Simcoe.	2,108	46,915	803,240	8,281	3 93	9.7	1,000	8,758	113	.....	.....	300	.....	.....	191	10,362	
3	Admaston, Kennew	2,215	70,263	742,835	5,364	2 42	7.2	466	5,175	37	.....	.....	800	.....	.....	171	6,649	
4	Adolphustown, Lennox and Addington	487	11,495	842,304	2,738	5 62	8.0	260	2,972	300	.....	.....	.....	.....	.....	.....	3,676	
5	Albemarle, Bruce	1,335	55,128	175,719	4,109	3 08	23.4	347	5,377	88	.....	.....	1,600	.....	.....	189	8,551	
6	Alberton, Rainy River.	153	16,614	43,160	857	5 60	19.9	30	726	.....	.....	.....	.....	.....	.....	.....	756	
7	Albion, Peel	2,751	55,855	1,107,600	11,837	4 80	10.7	257	11,038	122	.....	.....	1,323	2,900	.....	4	16,244	
8	Aldborough, Elgin	4,488	74,880	1,660,310	29,910	5 77	15.5	748	25,078	401	.....	.....	.....	.....	.....	1,042	47,186	
9	Alfred, Prescott	3,034	48,976	327,275	7,477	2 46	22.8	19	7,694	151	.....	.....	1,350	.....	.....	11	9,825	
10	Algonia S, Kennew	930	31,012	38,945	1,271	3 37	32.6	55	1,086	.....	.....	.....	.....	.....	.....	.....	1,161	
11	Allice and Fraser, Kennew	1,940	60,961	118,825	3,573	1 84	30.1	41	3,387	.....	.....	.....	.....	.....	.....	.....	3,428	
12	Alnwick, Northumberland	1,031	16,603	327,850	3,202	3 14	9.8	88	3,219	216	.....	.....	300	.....	.....	39	3,632	
13	Amarabel, Bruce	3,230	64,228	634,138	10,799	3 34	17.0	3,384	13,816	124	.....	.....	1,500	.....	.....	424	18,251	
14	Amaranth, Dufferin	2,575	63,433	1,071,760	15,473	6 01	14.4	78	15,005	20	.....	.....	.....	.....	.....	77	16,680	
15	Ameliasburg, Prince Edward	2,965	43,282	1,129,710	11,470	3 83	10.2	127	10,713	63	.....	.....	713	2,016	.....	12	13,644	
16	Ancherst Island, Lennox and Addington.	834	14,521	349,080	3,403	4 08	9.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,473	
17	Ancaster, Wentworth.	3,788	45,606	1,650,438	15,650	4 13	7.0	924	16,961	3,575	.....	.....	755	.....	.....	24	23,583	
18	Anderson, Essex	1,906	22,925	630,045	8,707	4 57	13.8	835	10,164	61	.....	.....	2,039	.....	.....	33	18,243	
19	Ansion and Hindon, Haldimont	279	12,892	35,149	935	3 35	26.6	126	869	.....	.....	.....	6,632	518	.....	.....	221	1,216
20	Armar, Parry Sound	811	36,326	179,143	2,397	2 96	13.4	366	2,385	.....	.....	.....	.....	.....	.....	.....	3	2,754
21	Arran, Bruce	2,517	54,102	1,450,920	8,628	3 43	5.9	2,633	12,140	13	.....	.....	129	.....	.....	.....	16,589	
22	Artemesia, Grey	3,495	69,015	1,023,300	13,110	3 75	12.8	230	14,355	155	.....	.....	2,929	.....	.....	307	18,051	
23	Arthur, Wellington	2,802	64,438	1,419,250	12,179	4 35	8.6	194	13,149	30	.....	.....	2,300	1,050	.....	.....	17,214	
24	Ashfield, Huron	3,175	63,871	1,684,445	13,522	4 26	8.0	182	14,456	167	.....	.....	1,500	.....	.....	124	16,529	
25	Asphodel, Peterborough	1,762	37,780	843,970	7,789	4 42	9.2	64	7,627	.....	.....	.....	76	1,000	.....	11	8,802	
26	Assiginack, Manitoulin	1,103	37,305	145,304	2,455	2 28	16.9	457	3,645	75	.....	.....	.....	.....	.....	.....	4,177	
27	Athol, Prince Edward	1,093	23,042	477,215	3,677	3 36	7.7	260	3,378	.....	.....	.....	123	.....	.....	.....	3,858	
28	Augusta, Grenville	3,649	71,572	1,299,860	12,570	3 44	9.7	3,595	10,776	747	.....	.....	632	.....	.....	116	16,337	

\* Miscellaneous receipts include premiums on debentures sold, receipts from other municipalities as share of debt, county road grants, etc.

STATISTICS OF ONTARIO TOWNSHIP MUNICIPALITIES.—Continued.  
 POPULATION, AREA, ASSESSMENT AND TAXATION—1900.  
 RECEIPTS, DISBURSEMENTS, ASSETS AND LIABILITIES—1899.

No.	Disbursements, 1899.												Assets on December 31, 1899.					Liabilities on December 31, 1899.					
	Allowances, salaries and commissions.	Other expenses of municipal gov't.	Roads and bridges.	Construction of buildings, waterworks, &c.	Charities.	County levy.	Payment of account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interests on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Miscellaneous*.	Total assets.	County levy and school rates due.	Debentures outstanding.	Temporary loans.	Miscellaneous.
1	668	648	2,746	6	92	3,777	3,818	101	1,490	36	13,443	5,349	16	1,510	6,875	3,494	2,900	31	2,900	31	2,900	100	3,594
2	586	131	2,121			2,510	3,733		300	8	9,570	792	2,297	1,510	2,999	2,906			2,999	85		85	2,991
3	424	234	1,188			1,289	3,162			86	6,531	118	3,246	3,830	4,303	1,705	221	800	4,303	225	800	225	2,951
4	184	70	211			1,289	1,072		300	75	3,280	386	3,000	515	3,901	81			3,901				81
5	553	345	732			1,688	400	400	3,091	79	8,213	338	4,673	617	5,628	1,606			5,628			1,637	4,107
6	154	41	30			2,795	7,893	400		47	16,244	125	215	700	700				700				4,107
7	670	731	2,192			3,783	7,038	1,506	1,892	47	17,040	146	19,560	6,283	26,352	6,131	35,488	16,063	6,131	35,488	16,063	31	2,931
8	1,009	728	5,568			3,783	7,038	1,506	2,788	17,742	2,365	801	47,040	9,818	440	7	4,682	26,352	52,341	6,131	590	2,300	58,636
9	612	278	1,546			309	4,754	754		118	284	57	420	9,818	7	4,682	630	440	5,429	2,866	590	40	1,055
10	134	31	22			160	701			70		15	15	1,815		876	630	440	1,803	735	280	20	1,055
11	231	214				650	1,795	205			48	15	15	3,328	100	748	465	490	1,803	350	930	317	1,597
12	414	99	807			589	4,418		300		8	141	3,776	86	218	218		1,036	1,340				2,931
13	733	210	2,084			1,251	4,012			4,365	1,316	526	14,638	3,613	3,936	2,220	4,036	13,804	618	24,911			25,529
14	530	117	2,172			3,417	4,238		2,006		861	165	13,621	51	5,672	2,200	2,200	15,993	517	14,295	520	661	15,993
15	700	258	1,977			2,354	6,194	710	1,041	794	214	23	17,775	32,973	4,908	39,579		39,579	15,000	2,016	100	17,116	17,116
16	138	72	176			219	1,356	1,475	843		33	314	22,468	1,115	1,814	48,217	5,616	56,762	5,056	60			5,056
17	1,054	1,017	6,381			649	4,913	979	7,716	437	689	17,787	456	9,178	1,000	10,634	1,108	10,634	1,108	2,721	7,138	748	11,715
18	760	1,547	2,228			254	1,060	1,977	709	410	586	8	1,161	55	651	259	259	965	558	267			815
19	145	46	127			10	109			109	21	160	2,028	726	2,801	20	20	3,547	1,731				3,191
20	297	146	46			1,358	146			5,000	443	142	14,376	2,213	200	1,441	989	4,853	1,460	267			3,191
21	749	236	1,693			2,191	3,859				453	224	17,829	252	427	3,700	810	5,889	15	7,900			25
22	930	856	2,365			2,052	6,215	601	2,929	463	224	53	16,553	661	3,408	825	1,047	810	15	7,900			7,915
23	821	146	1,764			3,323	5,656	55	2,300	113	53	108	15,704	825	3,408	409	1,604	1,047	1,708	15	7,900		7,915
24	825	521	3,354			2,199	6,064		1,000	198	108	234	8,893	409	313	2,392	3,895	7,009	2,249	1,504			3,883
25	449	40	1,411			1,768	3,064		1,000	219	234	4	15,704	825	3,408	409	1,604	1,047	1,708	15	7,900		3,883
26	302	79	257			2,416	2,770	39				4	3,648	230	141	2,250	576	1,111	3,732	2,249	1,504		3,883
27	159	80	47			1,005	2,069					72	3,648	230	141	2,250	576	1,111	3,732	2,249	1,504		3,883
28	914	333	800	470	4	2,771	7,136	68	125	240	224	13,285	3,059	2,684	19,202	3,028	27,966	2,890	3,200	2,000			8,090

\* Miscellaneous assets include lands, buildings and other property, advances on local improvements, etc.

No.	Township Municipalities and Counties in which located.	Population, 1900.	No. of acres assessed, 1900.	Assessed value of real and personal property, 1900.	Taxes imposed for all purposes, 1900.			Receipts, 1899.																
					Total.	Per head.	Mills on \$	Balance from 1898.		Municipal and school taxes.		Licenses, fees, rents, fines, etc.		Returns from Sinking Funds and other investments.		Interest and dividends.		Borrowed for current expenses.		Borrowed on debentures.		Miscellaneous.		Total receipts.
								\$	c.	¢	\$	¢	\$	¢	\$	¢	\$	¢	\$	¢	\$	¢	\$	
29	Bagot and Blithfield, Renfrew	1,397	58,664	152,738	3,184	2 28	20 3	800	3,407	97	1,063	378	1,010	401	14,100	18,867	1,673							
30	Balfour, Algoma	598	20,913	77,326	1,972	3 30	25 5	55	3,065	147	1,250	20	1,115	260	2,032	4,642	4,307							
31	Bancroft, Wicklow & McClure, Hastings	1,013	33,716	41,542	2,075	2 05	49 7	25	1,637	20	1,365	35	225	23	1,673	2,900	2,632							
32	Barrie, Frontenac	521	24,442	14,470	1,470	2 82	36 7	0	3,899	228	1,745	11,212	133	47	7,404	24,552	7,404							
33	Barton, Wentworth	3,441	13,089	1,950,816	12,294	3 55	9 0	0	5,992	30	5,462	8	390	48	8,080	5,615	5,615							
34	Basford and Burgess S. Leeds	2,684	66,246	744,265	10,274	3 83	13 8	0	18,757	143	18,757	143	48	72	24,552	8,080	8,080							
35	Bathurst, Elgin	2,440	61,712	806,480	7,857	3 22	9 7	589	6,772	3	5,493	22	100	48	5,615	6,809	6,809							
36	Bayham, Lennox	3,496	56,498	1,067,775	18,790	5 37	17 6	110	18,757	143	18,757	143	8	72	24,552	8,080	8,080							
37	Beckwith, Lennox	1,955	56,904	500,220	5,230	3 62	12 0	1,880	5,992	30	5,462	8	390	48	8,080	5,615	5,615							
38	Belford, Frontenac	1,446	63,886	179,166	1,972	2 70	27 2	66	6,625	22	6,625	22	100	48	5,615	6,809	6,809							
39	Belmont and Methuen, Peterborough	1,988	80,932	1,088,090	11,929	5 63	11 0	2,376	13,345	194	9,383	303	1,175	635	27,411	15,440	15,440							
40	Bentick, Grey	3,284	73,613	1,666,345	13,448	4 42	8 1	1,867	12,363	463	1,901	6,227	120	72	18,640	5,044	5,044							
41	Berthie, Welland	3,040	34,156	1,397,926	14,136	3 59	7 1	901	3,925	68	600	48	2,919	46	18,526	1,196	1,196							
42	Beverly, Wentworth	3,941	70,196	1,218,815	10,404	4 43	8 5	2,246	13,094	171	287	892	12	5	1,196	7,678	7,678							
43	Bexley, Victoria	804	39,285	70,570	1,281	2 97	18 2	699	6,812	7	160	7	47	100	12,177	18,640	18,640							
44	Biddulph, Middlesex	2,350	22,876	972,750	5,963	4 32	6 1	699	6,812	7	160	7	47	100	12,177	18,640	18,640							
45	Billings, Mantoulin	432	22,876	972,750	5,963	4 32	6 1	699	6,812	7	160	7	47	100	12,177	18,640	18,640							
46	Binbrook, Wentworth	1,380	26,423	1,081,265	13,674	4 98	7 1	2,166	8,054	210	13,746	5	2,890	473	21,535	2,477	2,477							
47	Blansford, Oxford	1,542	29,675	1,099,350	13,644	5 32	6 5	4,411	13,746	5	2,890	473	2,890	473	21,535	2,477	2,477							
48	Blanshard, Perth	2,563	45,911	2,293,350	20,464	4 79	8 9	1,070	20,276	763	1,700	304	1,700	304	24,114	2,376	2,376							
49	Blenheim, Ox. ord	4,269	66,907	2,293,350	20,464	4 79	8 9	1,070	20,276	763	1,700	304	1,700	304	24,114	2,376	2,376							
50	Blind River, Algoma (organized in 1901)																							
51	Bonfield, Nipissing	1,275	33,512	153,264	3,497	2 74	22 8	150	2,563	135	100	2	2,950	2	2,950	19,206	19,206							
52	Bosquet, Lambton	2,488	70,982	1,625,604	13,458	5 41	8 8	1,218	13,026	53	18	1,800	2,344	747	19,206	19,206								
53	Brant Bruce	3,991	69,998	1,987,325	17,281	4 33	8 7	1,279	15,175	175	7,718	269	1,888	188	24,804	46,816	46,816							
54	Brantford, Brant	5,342	71,680	3,751,041	24,642	4 61	6 6	2,985	24,234	120	16,000	2,567	400	12	10,786	20,786	20,786							
55	Brighton, Northumberland	2,659	48,449	1,178,970	8,904	3 47	7 6	1,989	6,783	2	17,335	70	3,000	76	10,786	10,786	10,786							
56	Brook, Ontario	3,528	66,380	2,017,045	14,937	4 23	7 4	688	3,322	224	24,906	87	134	693	43,220	4,234	4,234							
57	Bromley, Renfrew	2,001	50,439	1,817,800	26,789	8 17	14 7	4,023	24,906	87	827	40	113	693	43,220	4,234	4,234							
58	Brooke, Lambton	3,278	73,999	1,817,800	26,789	8 17	14 7	4,023	24,906	87	827	40	113	693	43,220	4,234	4,234							
59	Brougham, Renfrew	3,778	31,675	806	806	1 39	25 4	1,170	13,508	87	1,206	68	3,000	777	25,616	1,016	1,016							
60	Bruce, Bruce	2,960	67,471	1,385,435	13,003	4 39	9 4	1,170	13,508	87	1,206	68	3,000	777	25,616	1,016	1,016							
61	Brudenell and Lynedoch, Renfrew	1,339	50,773	70,825	2,115	1 58	29 9	71	2,367	39	2,183	46	2,183	46	2,376	2,477	2,477							
62	Brunel, Muskoka	735	40,924	77,370	2,097	2 85	27 1	147	2,183	46	2,183	46	2,183	46	2,376	2,477	2,477							

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.										Assets on December 31, 1899.						Liabilities on December 31, 1899.						
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks &c.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments.	Debtors redeemed.	Current loans repaid.	Interest on loans and advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments.	Miscellaneous.	Total assets.	County levy and unpaid school rates.	Debentures outstanding.	Temporary loans.	Miscellaneous.
29	315	98	299	41	396	1,784	24	500	24	21	3,478	829	919	800	2,548	460	460	460	460	324	50	834	
30	383	44	481	16	1,227	1,036	123	1,770	123	310	4,370	272	917	410	1,699	702	1,699	702	1,699	465	300	2,238	
31	271	65	237	10	1,056	827	10	201	10	20	2,032	1,791	1,791	300	2,141	1,473	1,473	1,473	300	225	300	684	
32	212	15	10	10	458	827	10	201	10	20	1,628	45	1,078	400	1,523	376	376	376	376	83	130	9,866	
33	1,133	992	3,065	105	2,112	5,075	380	400	380	403	14,749	4,108	19,015	2,443	9,388	28,929	236	9,000	9,388	9,000	500	300	23,800
34	689	143	685	1	1,492	4,785	1,150	271	1,407	601	12,173	1,927	95	26,864	2,600	31,476	2,600	31,476	23,000	23,000	300	300	9,866
35	458	176	626	12	1,714	4,005	56	7,047	357	780	7,047	357	553	600	31,476	2,600	31,476	2,600	31,476	23,000	300	300	9,866
36	943	2,733	3,551	195	2,217	6,101	434	4,000	1,945	302	24,552	7,202	7,202	2,791	9,993	4,008	35,018	4,008	35,018	1,468	916	41,410	
37	503	1,874	1,874	14	1,285	3,174	5	6,855	1,225	5	6,855	1,225	8,236	9,461	9,993	4,008	35,018	4,008	35,018	1,468	916	41,410	
38	243	30	646	101	983	2,566	101	448	23	333	5,304	311	942	500	1,753	448	456	1,753	448	456	98	1,002	
39	494	68	1,175	107	696	2,991	115	600	123	430	6,799	10	3,296	1,604	4,910	628	1,604	4,910	628	1,604	278	2,510	
40	671	754	2,776	190	2,275	6,056	500	1,704	1,118	162	26,298	1,113	8,892	1,604	5,005	2,403	2,297	5,005	2,403	2,297	631	5,241	
41	639	363	2,334	48	3,048	5,921	673	339	833	324	18,646	94	2,425	15,669	15,669	15,669	15,669	15,669	15,669	5,892	153	6,045	
42	936	414	2,903	502	5,088	6,546	30	1,753	600	304	18,646	94	2,425	15,669	15,669	15,669	15,669	15,669	15,669	5,892	153	6,045	
43	292	44	302	20	289	1,745	30	676	600	304	18,646	94	2,425	15,669	15,669	15,669	15,669	15,669	15,669	5,892	153	6,045	
44	684	220	4,351	26	1,846	4,151	247	35	315	2,919	14,813	3,713	671	2,334	5,816	1,321	7,500	1,321	7,500	100	8,921		
45	167	44	181	11	1,581	491	11	491	95	267	3,229	267	771	1,038	1,038	339	1,038	339	1,038	80	5,194		
46	375	201	899	163	1,923	2,648	163	1,923	95	267	3,229	267	771	1,038	1,038	339	1,038	339	1,038	80	5,194		
47	472	103	2,745	5	1,942	2,863	744	1,600	133	298	10,905	1,095	432	460	1,927	285	1,557	1,927	285	1,105	2,329	2,329	
48	710	122	4,579	24	4,061	4,209	24	4,061	294	2,850	17,119	4,416	894	1,494	4,061	4,061	4,061	4,061	4,061	308	155	4,524	
49	1,282	300	4,747	256	5,028	6,538	79	1,700	893	1,700	23,539	575	79	9,218	9,872	9,872	9,872	9,872	9,872	9,502	155	9,502	
50	294	112	204	1	1,911	8	8	300	1,104	300	2,930	20	4,059	127	4,206	2,189	4,206	2,189	4,206	513	166	2,808	
51	358	274	3,694	254	2,263	4,361	2,960	1,800	1,404	1,800	18,632	574	100	5,481	4,206	2,189	4,206	2,189	4,206	513	166	2,808	
52	906	654	2,514	71	3,045	6,434	3,760	5,000	200	216	18,632	574	100	5,481	4,206	2,189	4,206	2,189	4,206	513	166	2,808	
53	783	654	2,514	71	3,045	6,434	3,760	5,000	200	216	18,632	574	100	5,481	4,206	2,189	4,206	2,189	4,206	513	166	2,808	
54	2,079	1,053	3,189	1,068	4,766	13,204	6,16,000	210	5,000	411	568	44,514	4,374	78,726	78,726	78,726	78,726	78,726	78,726	4,374	2,982	12,177	
55	550	219	1,428	125	92	1,759	4,008	400	7	319	9,307	1,479	18	850	2,347	2,347	2,347	2,347	2,347	7,076	2,982	12,177	
56	1,105	410	2,881	744	2,736	7,257	56	4,377	110	1,000	20,316	165	278	2,785	3,228	57	1,413	3,228	57	1,413	258	1,728	
57	350	80	463	423	425	2,125	101	4,377	110	1,000	20,316	165	278	2,785	3,228	57	1,413	3,228	57	1,413	258	1,728	
58	716	1,030	4,602	300	431	2,453	8,101	7,802	5,624	1,670	41,840	574	100	5,481	4,206	2,189	4,206	2,189	4,206	513	166	2,808	
59	199	38	140	121	342	1,000	2	18	100	2	960	56	56	200	2,443	600	12,443	600	12,443	81,843	2,500	400	37,743
60	581	1,646	4,043	101	2,425	7,721	721	3,000	100	2	960	56	56	200	2,443	600	12,443	600	12,443	81,843	2,500	400	37,743
61	331	54	103	30	291	1,409	103	3,000	100	2	960	56	56	200	2,443	600	12,443	600	12,443	81,843	2,500	400	37,743
62	258	41	202	10	1,101	1,401	100	1,401	100	2	960	56	56	200	2,443	600	12,443	600	12,443	81,843	2,500	400	37,743



TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.											Assets on December 31, 1899.					Liabilities on December 31, 1899.							
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks &c.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
63	875	286	6,436	...	662	3,836	7,984	270	141	737	...	95	533	21,855	4,113	113	2,141	500	6,754	...	1,140	...	1,520	2,660
64	284	84	172	...	17	480	1,306	...	...	206	...	164	60	2,376	186	113	...	600	899	...	1,924	...	52	52
65	277	154	29	...	...	183	980	...	41	...	...	...	4	2,351	46	969	...	1,086	2,091	...	2,000	...	800	3,497
66	148	63	8	...	...	1,666	573	...	...	...	...	102	102	6,498	757	651	126	1,021	848	...	2,000	...	103	2,373
67	322	125	423	...	...	...	2,770	...	...	67	...	37	4	1,381	315	1,650	...	769	3,909	...	669	...	...	1,568
68	169	120	123	...	...	3,397	7,795	...	...	3,000	...	101	150	18,636	370	934	...	2,000	2,734	...	...	...	288	1,906
69	898	312	2,989	...	46	1,045	2,932	...	...	214	...	100	22	7,337	416	1,655	...	1,075	5,240	...	860	...	2,307	7,449
70	589	66	80	...	...	1,768	4,313	...	...	100	...	43	35	1,645	89	1,189	...	600	1,758	...	...	...	...	935
71	139	61	117	...	...	1,601	7,601	...	...	482	...	403	79	13,066	11	5,897	...	1,275	7,183	...	5,007	...	612	11,925
72	573	328	3,103	...	51	1,768	4,313	...	...	3,239	...	403	31	21,632	11	5,897	...	1,467	10,300	...	2,377	...	237	27,493
73	809	278	2,179	...	406	1,601	7,601	...	...	1,877	...	328	431	25,622	1,125	1,283	...	1,049	33,292	...	30,540	...	1,220	31,760
74	1,044	659	2,669	...	6	592	6,265	...	4,277	180	...	1,877	328	25,622	1,125	1,283	...	1,049	33,292	...	...	...	...	...
75	80	26	34	...	...	...	322	...	...	112	...	112	574	574	15	609	...	624	200	...	...	...	...	251
76	175	42	324	...	77	69	1,133	...	...	200	...	5	144	3,833	473	17	...	490	490	...	209	...	...	209
77	1,019	504	3,983	...	92	4,166	6,140	...	1,055	2,262	...	464	531	20,156	8,859	1,539	...	5,997	16,895	...	8,990	...	...	13,089
78	207	67	262	...	...	299	1,100	...	...	50	...	39	52	2,076	63	655	...	650	1,378	...	660	...	...	938
79	216	55	187	...	...	...	1,073	...	...	33	...	200	215	2,016	4	1,942	...	387	2,283	...	337	...	...	2,597
80	244	54	107	...	...	...	638	...	...	280	...	24	6	1,352	970	800	...	650	1,770	...	67	...	...	164
81	94	48	25	...	...	...	210	...	...	100	...	...	...	477	127	521	...	10	658	...	...	...	...	113
82	222	35	241	...	...	129	946	...	...	131	...	43	39	1,786	462	988	...	479	1,929	...	604	...	...	1,652
83	174	50	113	...	...	...	1,604	...	...	130	...	44	77	2,192	114	477	...	1,000	3,491	...	902	...	...	1,906
84	599	374	846	...	57	2,760	6,290	...	331	360	...	360	102	13,199	2,097	17	3,211	5,169	10,494	...	7,200	...	...	7,200
85	409	116	1,123	...	167	1,219	2,928	...	...	150	...	83	181	7,311	157	43	...	3,211	8,411	...	...	...	...	...
86	882	160	2,286	...	109	2,469	4,468	...	...	...	...	413	181	11,757	1,321	415	...	6,493	8,029	...	871	...	...	871
87	326	113	280	...	16	1,862	2,928	...	...	...	...	27	27	6,552	521	...	...	521	1,959	...	...	...	...	...
88	140	51	106	...	31	1,799	1,081	...	...	1	...	20	20	3,183	329	410	...	1,220	1,959	...	...	...	...	...
89	268	193	378	...	...	...	1,252	...	...	236	...	106	24	2,991	356	3,172	...	...	3,528	...	211	...	...	1,977
90	382	68	123	...	95	225	1,147	...	...	...	...	140	140	2,180	445	1,275	...	...	1,720	...	1,000	...	...	1,636
91	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
92	283	120	202	...	70	...	654	...	...	...	...	46	46	1,375	510	1,015	...	337	1,862	...	475	...	...	521
93	22	16	...	...	...	...	...	...	...	...	...	...	...	38	...	...	...	...	...	...	...	...	...	...
94	964	240	3,194	...	17	2,000	14,968	...	...	926	...	707	479	27,567	...	6,884	...	4,666	11,550	...	4,640	...	...	21,013
95	683	113	1,690	...	256	3,560	5,357	...	1,761	1,036	...	604	205	17,364	985	3,471	...	600	13,820	...	1,738	...	...	15,154
96	2,933	2,013	4,017	...	944	4,561	9,608	...	18,033	11,314	...	33,291	4,110	2,267	93,151	90,800	996	...	58,170	...	6,745	...	...	112,997

Township Municipalities and Counties in which located.

No.	Township Municipalities and Counties in which located.	Population, 1900.	No. of acres assessed, 1900.	Assessed value of real and personal property, 1900.	Taxes imposed for all purposes, 1900.			Receipts, 1899.									
					Total.	Per head.	Mills on %	Balance from 1898.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	
97	Chingacousy, Peel.	3,888	80,132	2,921,300	18,010	4 63	6.2	292	19,035	180	3,114	1,461	2,880	161	27,123		
98	Christie, Parry Sound.	305	19,888	78,092	1,492	4 89	19.1	310	1,188	69	..	..	..	41	2,308		
99	Clarence, Russell.	4,820	363,504	363,504	12,184	2 53	33.5	297	12,229	344	..	..	1,500	15	14,315		
100	Clarendon and Miller, Frontenac.	874	46,064	79,697	2,241	2 56	28.2	246	1,767	..	..	..	..	..	2,013		
101	Clarke, Durham.	3,705	68,232	1,798,467	15,401	4 16	8.6	121	18,298	239	..	..	2,095	154	20,828		
102	Clinton, Lincoln.	1,831	24,716	1,043,823	9,784	5 34	9.4	340	10,214	..	9	..	1,200	32	11,756		
103	Cockburn Island, Manitowlin.	170	10,691	98,927	804	4 73	28.7	36	662	..	..	..	..	..	698		
104	Collborne, Huron.	1,802	34,063	1,077,200	7,291	4 02	6.7	57	7,638	134	..	..	1,200	17	9,046		
105	Colchester N., Essex.	1,848	36,612	537,353	14,274	7 72	23.9	1,321	13,680	..	53	13,675	8,346	1,219	38,264		
106	Colchester S., Essex.	2,761	34,480	1,007,318	17,837	6 46	17.7	348	23,513	23	..	43	5,171	189	29,287		
107	Collingwood, Grey.	3,636	68,000	1,378,016	16,024	4 41	11.6	435	17,129	21	5,318	161	7,750	123	30,437		
108	Cornwall, Stormont.	5,674	64,039	1,067,398	15,117	2 66	14.3	213	20,821	383	..	..	..	122	21,639		
109	Gramabe, Northumberland.	2,437	46,568	1,062,360	9,111	3 74	8.3	311	6,947	92	..	..	2,120	20	9,430		
110	Grosby N., Leeds.	1,805	43,284	375,264	6,882	8 81	18.3	217	5,383	140	80	1,071	5,000	5	11,896		
111	Grosby S., Leeds.	1,591	36,733	337,876	6,260	3 93	16.1	1,222	5,914	73	..	..	155	7,939			
112	Groviand, W. elland.	967	13,217	388,067	4,953	5 12	5.8	410	6,472	69	..	..	300	60	7,301		
113	Currose, Bruce.	3,007	56,756	1,721,650	9,659	3 21	12.6	895	9,312	87	..	..	7 600	15	10,916		
114	Cumberland, Russell.	3,587	74,696	429,994	12,966	3 60	30.2	459	11,157	239	..	..	..	26	11,881		
115	Dalhousie and Sherbrooke N., Lanark.	1,729	72,558	292,263	4,484	2 59	17.8	330	4,221	20	..	..	..	39	4,610		
116	Dalton, Victoria.	488	29,032	370,048	1,134	2 32	24.3	435	1,281	..	..	..	..	76	1,792		
117	Darling, Lanark.	720	45,310	69,098	1,679	2 33	24.3	..	1,640	..	14	..	..	2	1,656		
118	Darlington, Durham.	4,102	68,586	2,411,429	18,822	4 59	7.8	1,023	18,767	86	34	..	..	50	19,950		
119	Dawn, Lambton.	3,389	65,024	889,106	21,663	6 39	24.4	1,817	19,552	51	..	..	..	139	25,227		
120	Delaware, Middlesex.	1,628	23,455	588,625	7,120	4 66	12.1	1,872	7,649	18	807	110	..	299	10,755		
121	Denbigh, Ab. & Ash., Lennox & Addington.	1,043	44,278	53,999	1,878	1 80	34.8	..	1,807	..	..	..	..	10	1,817		
122	Derby, Grey.	1,886	40,236	776,260	10,646	4 06	9.9	528	7,285	87	..	..	1,500	78	9,478		
123	Dereham Oxford.	3,711	65,068	2,411,200	25,105	6 77	10.4	73	22,855	743	31	..	..	4,970	39,014		
124	Dorchester N., Middlesex.	3,515	124,616	1,701,300	16,778	4 77	9.9	6,222	16,591	90	288	..	..	205	23,366		
125	Dorchester S., Elgin.	1,474	30,558	1,095,790	10,646	7 22	10.0	..	11,721	..	..	..	..	205	23,366		
126	Douro, Peterborough.	2,007	38,658	776,400	7,133	3 56	9.3	2,220	6,485	1	..	..	1,216	15	10,321		
127	Dover, Kent.	4,231	68,068	1,740,724	29,063	6 87	16.7	4,024	19,843	233	126	..	5,484	1,082	42,648		
128	Downie, Perth.	2,716	48,571	2,037,150	13,341	4 91	6.5	1,930	13,577	126	..	..	3,202	431	19,266		
129	Draper, Muskoka.	941	38,010	91,709	2,346	2 49	25.6	462	2,434	131	..	..	..	828	3,855		
130	Drummond Lanark.	1,904	57,787	709,124	7,326	3 85	10.3	234	7,628	64	..	..	394	20	9,240		



No.	Disbursements, 1899.												Assets on December 31, 1899.						Liabilities on December 31, 1899.					
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks &c.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debt redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debt outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
97	1,160	1,615	7,749	3,361	240	9,866	7,747	3,361	240	240	109	203	27,123	810	729	32,760	2,954	36,413	45	1,870	2,880	30	4,825	
98	286	74	1,199	1,419	351	5,834	5,834	1,419	351	610	136	710	13,119	1,396	1,492	7,741	1,363	3,165	700	1,794	1,500	25	10,261	
99	761	183	2,326	588	351	1,073	96	588	351	2,025	157	559	20,705	1,336	1,382	75	718	9,655	7,002	1,794	1,500	25	10,261	
100	193	56	70	1,073	303	4,300	6,702	1,073	303	1,200	42	291	11,544	251	1,906	350	6,425	8,122	2,147	1,868	375	...	1,341	
101	967	388	2,879	2,130	151	3,203	3,986	2,130	151	1,200	42	291	11,544	251	1,906	350	6,425	8,122	2,147	1,868	375	...	1,341	
102	570	123	1,963	3,000	151	3,203	3,986	3,000	151	1,200	42	291	11,544	251	1,906	350	6,425	8,122	2,147	1,868	375	...	1,341	
103	166	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
104	458	169	1,783	3,703	1,200	1,613	3,703	3,703	1,200	1,200	40	79	9,040	6	443	...	59	508	500	...	...	...	...	
105	785	698	2,288	2,921	4,918	1,919	2,921	2,921	4,918	14,000	1,500	3,000	38,254	1,792	14,842	...	1,926	17,970	3,295	31,716	2,687	1,518	39,216	
106	780	1,102	1,438	823	6,349	1,886	8,793	948	6,349	3,006	1,648	1,488	27,495	1,792	14,842	...	5,507	22,141	6,426	26,405	1,300	2,604	35,435	
107	934	833	3,284	3,127	3,411	3,127	6,940	5,879	3,411	7,460	6,921	3,761	30,807	1,160	2,927	...	3,000	7,827	...	9,225	1,300	1,300	10,655	
108	749	540	2,240	516	208	2,181	19,218	56	208	3,000	246	395	20,379	1,160	2,927	...	4,715	7,930	1,493	1,769	1,300	1,467	4,729	
109	662	270	1,644	1,119	1,479	4,995	...	...	...	...	...	...	9,490	3,215	3,215	...	4,715	7,930	1,493	1,769	1,300	1,467	4,729	
110	451	578	843	8,119	...	878	3,447	451	...	550	588	234	11,839	57	1,649	7,520	610	9,736	1,132	16,000	3,370	59	20,561	
111	406	86	516	181	215	400	400	181	215	600	14	78	10,783	1,250	314	6,604	1,400	9,301	1,286	4,783	612	...	5,395	
112	267	164	569	2,345	...	1,980	2,345	...	...	...	...	...	6,051	1,250	314	...	1,772	2,336	1,286	217	...	250	2,560	
113	526	312	2,669	4,369	253	2,211	4,369	508	253	600	14	78	10,783	1,250	314	...	117	280	5,247	1,591	...	2,511	9,749	
114	850	283	2,333	2,633	20	1,655	5,312	508	20	529	139	50	4,374	1,751	236	3,559	400	9,889	5,247	1,591	...	2,511	9,749	
115	369	111	594	2,714	...	529	2,714	...	...	...	...	...	1,824	468	427	...	500	1,282	1,282	1,591	...	2,511	9,749	
116	167	38	258	674	...	125	674	...	...	...	...	...	1,824	468	427	...	500	1,282	1,282	1,591	...	2,511	9,749	
117	159	82	268	68	...	159	550	...	...	485	30	80	1,656	276	1,089	200	60	807	253	550	315	45	910	
118	861	360	3,659	8,824	...	878	3,447	...	...	...	...	...	14,674	5,276	1,089	...	625	6,990	3,608	8,385	16,383	125	3,733	
119	780	3,018	18	5,324	4,250	1,510	5,324	5,893	4,250	985	2,376	14,674	379	16,968	...	15,621	32,868	8,385	16,383	2,797	27,565	4,308		
120	646	788	2,457	121	582	2,011	5,824	121	582	15	162	473	10,946	709	3,714	582	1,940	6,895	1,849	2,459	...	180	4,308	
121	177	60	58	1,359	...	1,359	1,359	...	...	...	...	...	1,706	111	173	...	825	1,106	180	300	...	86	386	
122	718	191	1,951	2,989	160	1,500	2,989	43	160	1,500	47	119	9,240	238	173	...	825	1,106	254	300	...	86	386	
123	1,357	947	5,971	7,396	2,737	4,886	7,396	13,209	2,737	841	528	38,049	965	3	5,000	5,000	1,527	7,495	25,141	26,141	...	26,141	52,282	
124	856	249	4,943	6,183	659	4,200	6,183	430	659	841	89	245	18,041	5,325	3,060	6,400	307	15,092	3,886	1,149	...	5,035	20,127	
125	745	175	2,307	3,057	731	3,293	3,057	2,427	731	81	124	12,963	709	...	...	1,082	1,791	...	3,886	...	1,615	5,500		
126	513	141	1,317	3,012	137	1,000	3,012	2,427	137	1,000	81	76	12,963	83	476	...	1,074	1,633	...	600	1,615	136	743	
127	1,203	773	905	5,048	9,341	3,164	5,048	18,280	9,341	3,202	2,659	710	42,344	301	18,310	4,111	22,795	3,915	52,920	5,484	...	62,319	58,803	
128	828	59	4,553	4,610	100	4,876	4,610	76	100	3,202	12	46	18,819	447	1,966	...	900	1,521	1,077	100	...	158	158	
129	298	34	1,265	1,272	...	1,272	1,272	...	...	...	...	...	3,062	793	1,966	...	27	2,785	1,077	100	...	158	158	
130	538	183	753	4,124	370	1,771	4,124	...	370	393	46	34	8,435	805	154	...	730	1,679	1,077	720	...	158	720	

TOWNSHIP MUNICIPALITIES, 1899-1900—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1900.			No. of assesses, 1900.		Assessed value of real and personal property, 1900.		Taxes imposed for all purposes, 1900.			Receipts, 1899.										
		Population, 1900.	No. of assesses, 1900.	Assessed value of real and personal property, 1900.	Total.	Per head.	Mills on %	Balance from 1898.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.						
																	%	%	%	%	%	%
131	Drury, Denison and Graham, Algoma	231	39,052	96,289	2,223	9.62	23.1	6	1,703	140	140	8	700	301	301	8,858						
132	Dumfries N., Waterloo	2,059	44,315	1,471,170	9,575	4.70	5.2	1,052	8,226	104	104	14,467	20	20	10,869							
133	Dumfries S., Brant	2,570	46,670	2,314,892	18,536	5.27	5.8	1,357	13,088	90	90	14	1,500	55	55	16,104						
134	Dummer, Peterborough	2,056	68,773	6,177,075	6,389	8.11	10.4	791	5,841	8	8	11	1,837	464	464	6,680						
135	Dungannon, Hastings	682	33,941	49,699	2,373	3.48	4.7	11	1,837	4	4	3	10,500	52	52	2,316						
136	Dunn, Haldimand	826	14,858	397,770	3,365	4.07	8.5	433	3,288	46	46	3	10,500	52	52	3,769						
137	Dunwich, Elgin	3,197	69,331	1,736,495	22,169	6.93	12.8	1,058	21,791	60	60	347	10,500	1,881	1,881	35,689						
138	Dymond, Nipissing	900	366,522	193,303	4,854	4.90	36.4	964	4,945	350	350	500	450	25	25	7,243						
139	Dygart, Guilford, etc., Haliburton	2,194	43,105	1,932,420	11,770	5.36	6.1	3,917	12,729	72	72	14	2,363	414	414	19,509						
140	Easthope N., Perth	1,917	23,816	1,144,415	8,525	4.45	7.4	1,522	7,483	374	374	8	400	215	215	10,002						
141	Eastnor, Bruce	1,512	50,041	324,496	4,751	3.14	14.6	39	6,175	333	333	202	2,125	879	879	9,403						
142	Edwardsburg, Grenville	3,784	69,538	1,169,375	12,497	3.30	10.7	493	12,161	27	27	699	102	13	13	13,446						
143	Egmont, Grey	3,190	72,685	1,543,130	12,103	8.79	7.8	1,284	12,568	44	44	21	896	230	230	15,043						
144	Egmont, Middlesex	2,646	53,428	2,012,300	16,583	6.27	8.2	201	19,192	48	48	600	3,518	750	750	24,309						
145	Elderslie, Bruce	2,248	54,418	1,292,050	10,634	4.46	7.8	8	9,308	8	8	187	1,690	1,176	1,176	22,288						
146	Eldon, Victoria	2,913	61,984	755,030	11,033	3.79	14.4	1,904	8,816	163	163	187	1,500	85	85	15,877						
147	Elizabethown, Leeds	3,849	78,000	1,996,338	15,275	3.97	10.9	817	15,276	1,253	1,253	187	1,253	17,543	17,543	44,310						
148	Ellice, Perth	3,027	54,511	1,626,124	20,602	6.81	12.7	11,218	20,419	117	117	77	9,109	3,290	3,290	50,189						
149	Elma, Perth	3,357	67,291	1,611,665	21,665	6.45	13.4	6,869	20,296	112	112	524	17,633	4,755	4,755	50,189						
150	Elmsley N., Lanark	1,065	22,228	375,630	3,277	3.08	8.7	510	3,377	38	38	8	38	38	38	8,925						
151	Elmsley S., Leeds	745	22,258	485,050	2,880	3.87	6.3	855	3,129	181	181	72	720	300	300	4,246						
152	Elzevir and Grimsthorpe, Hastings	1,296	64,555	971,743	10,150	4.95	10.7	484	3,797	31	31	657	1,800	657	657	5,505						
153	Emily, Victoria	2,051	59,984	123,335	2,182	5.25	17.7	812	9,905	83	83	50	6,150	6	6	12,995						
154	Emo, Rainy River	4,614	81,891	1,404,855	30,320	6.57	20.7	8,123	31,276	83	83	200	1,226	1,226	46,858							
155	Emiskillen, Lambton	1,379	17,379	358,080	2,664	3.76	7.1	28	2,751	8	8	5	261	261	261	2,987						
156	Ennismore, Peterborough	2,647	44,064	1,856,705	10,682	4.04	5.8	527	10,535	169	169	8	189	189	189	11,323						
157	Eramosa, Wellington	3,196	70,498	2,020,900	13,330	4.17	6.6	268	12,896	159	159	5	5	5	5	18,527						
158	Erin, Wellington	3,196	70,498	2,020,900	13,330	4.17	6.6	268	12,896	159	159	5	5	5	5	18,527						
159	Ernestown, Lennox and Addington	3,160	61,236	1,446,980	14,419	4.56	9.9	1,111	14,686	33	33	725	1,311	191	191	17,207						
160	Ereosing, Halton	3,718	67,217	2,288,280	16,285	4.38	7.1	1,288	13,921	137	137	1,040	1,933	20	20	22,377						
161	Essa, Simcoe	4,250	67,532	1,989,494	12,633	2.94	9.7	1,119	15,026	123	123	842	1,900	228	228	18,696						
162	Essa, Simcoe	4,250	67,532	1,989,494	12,633	2.94	9.7	1,119	15,026	123	123	842	1,900	228	228	18,696						
163	Etoicoke, York	3,603	29,932	1,368,085	20,566	5.82	11.4	1,422	18,495	209	209	678	2,000	350	350	30,856						
164	Euphemis, Lambton	2,210	39,172	936,552	9,606	4.35	9.7	144	9,305	99	99	1,500	1,500	1,500	1,500	11,048						

TOWNSHIP MUNICIPALITIES, 1899-1900. -Continued.

No.	Disbursements, 1899.										Assets on December 31, 1899.						Liabilities on December 31, 1899.							
	Allowances and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks &c.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Stinking Fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
131	457	131	190			398	78	53		314	86	451	2,158	700	2,430	1,136	192	308	3,630	532	500	900		1,932
132	698	220	1,078			4,426				1,900	17	378	10,869	15,192	4,317	286	2,421	1,103	8,307	1,707	755	500		3,072
133	900	279	786			5,631				1,500	360	27	15,491	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
134	457	72	941			2,832	17			90	27	118	6,068	612	408	408	262	807	3,538	1,748	807		7,050	
135	270	70	205			1,157		252		51	51	21	2,191	1,225	2,354	1,000	1,000	1,528	4,558	11,290	5,359	14,188	1,857	21,904
136	214	54	156			1,550				1,073	67	67	34,237	1,452	5,280	1,625	1,485	3,236	6,936	1,707	755	500		3,072
137	1,133	781	4,766			5,559	2,217			2,442	12,800	793	34,237	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
138										155	39	188	5,618	1,625	1,485	1,625	1,485	3,236	6,936	1,707	755	500		3,072
139	412	267	855			2,416				2,028	287	216	15,192	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
140	687	217	2,236			3,708	211			616	105	237	8,510	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
141	538	133	2,033			2,702	31	1,046		2,100	883	837	13,493	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
142	406	251	690			2,440	94			3,000	896	36	14,286	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
143	619	266	1,341			3,841	73			3,000	896	36	14,286	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
144	431	211	1,922			4,294	4,705			10,000	1,890	885	215	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
145	750	422	4,249			4,294	4,705			10,000	1,890	885	215	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
146	556	197	2,008			4,164	46			3,284	1,500	745	120	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
147	693	904	1,617			3,443				3,284	1,500	745	120	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
148	941	349	2,136			7,446	601			453	645	209	17,136	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
149	980	680	3,253			4,178	10,630			4,321	1,859	1,871	35,214	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
150	869	680	3,516			5,053	4,411			2,339	1,216	6,739	29,434	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
151	320	135	620			1,580	13			725	1,423	37	3,441	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
152	231	201	254			1,645				1,423	1,645	10	3,441	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
153	443		685			2,655				100	681	26	5,505	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
154	739	94	2,635			4,998				87	1,800	68	12,765	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
155	42	6												1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
156	1,686	1,000	5,007			9,041	7,935			7,669	2,109	1,292	33,186	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
157	260	93	258			4,428				900	7	47	2,918	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
158	664	137	1,463			4,739	12			785	10,302	67	13,276	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
159	707	127	1,238			5,629				150	165	237	16,851	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
160	639	304	1,813			6,549				4,038	46	443	21,761	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
161	995	231	5,401			6,693				587	71	173	17,576	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
162	891	224	2,166			7,805	28			805	1,565	228	22,025	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
163	1,526	2,463	6,712			1,968				3,153	515	1,565	228	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469
164	524	167	1,775			4,050	353			1,000	1,000	93	10,439	1,492	22	84	4,613	4,866	4,410	13,973	1,068	14,938	1,446	17,469



Liabilities on December 31, 1899.

Assets on December 31, 1899.

Disbursements, 1899.

No.	Disbursements, 1899.										Assets on December 31, 1899.					Liabilities on December 31, 1899.								
	Allowances, salaries and commissions.	Other expenses of municipal govern-ment.	Roads and bridges.	Construction of build-ings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and edu-cation.	Drainage work.	Sinking fund and other investments.	Debt-redeemed.	Current loans re-paid.	Interest on loans, advances and de-bentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debt-rentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
165	804	2,069	1,277		66	394	5,056		96	2,000	46	195	12,608	228	4,977		824	6,029	3,386	825		90	4,301	
166	377	70	369		17	113	2,064		261	80	31	3,385	402	2,324	38	1,473	4,287	3,268	1,723	4,411		5	3,139	
167	442	183	1,170		238	2,092	4,544		94	850	44	384	10,141	528	3,743		317	4,688	3,253	317	200	350	4,120	
168	353	348	204			965			23	347	17	241	2,265	569	3,161		555	4,285	918	555	1,616	75	2,164	
169	672	261	1,678	59	20	1,037	5,986	7,902	1,531		1,141	241	20,598	2,166	2,660		2,678	6,904	1,256	24,278	1,240	2,203	26,977	
170	791	99	2,273		20	3,632	3,470				20	127	10,432	218	7,845		1,800	8,863	5,149		800	245	6,949	
171	788	1,776	1,747		316	2,832	3,974					223	11,466	571	3,469		1,900	6,310	2,229		1,025	245	3,509	
172	735	2,133	1,428		608	2,854	5,175		957	1,250	176	199	15,515	33	2,399	15,256	6,007	23,755	5,845	530	3,388		3,918	
173	2,653	551	1,747	13	174	2,080	7,478	277	1,551	3,281	1,559	54	20,053	1,886	10,777	887	9,461	14,496	8,445	30,796	2,115	79	38,885	
174	256	71	130		11	535							1,043	1,043			1,141	1,141	384			22	406	
175	422	109	1,205		141	3,031	2,617		700	1,420	159	73	9,395	1,314	1,496	3,500	168	6,310	469	350	1,288		2,107	
176	261	135	758		170	2,061	1,782	90	350	2,000	45	240	6,783	58	993	2,439	800	6,350			1,079		1,079	
177	585	120	4,907			3,767	5,635	157		2,000			17,356	1,834			800	2,634						
178	418	129	994			2,676	3,891			500	9	355	8,922	183	993		30	2,634						
179	168	33	8		6	218	1,231						51	1,714		44	2,084		1,180					
180	451	303	6,627		40	2,034	3,207	80	490	5,000	194	111	18,537	985	4,088		119	1,104		6,257			6,257	
181	845	159	4,938			2,436	6,165	7	113	6,800	112	30	22,105	1,340	4,038		750	6,128	1,611				4,824	
182	389	67	743		10	1,398	2,358		588	200	74	246	6,073	199	1,340		300	499		1,078			1,078	
183	168	172	1,82		3	211	679		38		16	107	1,630	291	2,427	54	631	3,141		629		49	1,547	
184	442	89	904		136	2,189	2,633		42			170	6,605	177	883	7,842	297	8,669						
185	597	181	1,843		20	3,154	3,613		185	1,900	51	179	11,726	1,478	200		1,000	2,918			1,500	120	20,043	
186	1,749	1,017	2,183		35	3,975	13,083	1,071	84	3,380	360	425	25,752	960	18,568	1,063	3,750	24,321	12,098	6,325			20,043	
187	564	179	2,893		16	2,205	3,635		185	1,450	31	18	11,051	2,447	821		3,750	3,268	2,254				2,254	
188	240	25	250			2,205	3,635						50	1,885			173	1,815	525				525	
189	413	248	987	2	154	1,193	2,594	9,594	1,778	500	666	27	18,463	352	1,290		173	14,040	1,875	15,976	2,295		20,146	
190	642	1,347	2,184		293	3,645	4,259	2,973	2,938	3,200	1,445	302	21,428	3,290	7,520		1,520	14,040	1,875	15,976	4,325	2,705	34,991	
191	568	126	1,154		43	2,988	4,560		2,938	3,200	1,445	302	21,428	2,677	11,014		1,520	14,040	1,875	15,976	4,325	2,705	34,991	
192	634	212	1,907		57	1,432	4,192	13	176	1,100	55	88	10,163	1,814	1,937	7,691	5,538	11,980	5,535			1,029	3,564	
193	309	43	230		8	723	1,268						7,776	560	3,602	191	2,500	6,853	1,566	1,210		25	2,501	
194	646	207	1,353			2,822	3,412			300	4	151	2,610	886	420		1,305	7,551	755				755	
195	346	39	94			658	1,602			400	14	159	8,745	329	2,611		2,943	2,943	2,642			60	2,702	
196	783	217	2,103		58	2,109	4,461	92	220	550	97	71	10,991	877	645		423	1,788	889				889	
197	755	435	2,097		162	3,714	4,681	6,603	2,008	4,376	923	95	25,830	922	1,736	11,087	3,473	17,218	764	19,350			20,194	
198	167	27	28		9	70	655					15	967	25	325			350	415					482

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1900.	No. of acres assessed, 1900.	Assessed value of real and personal property and income taxable, 1900.	Taxes imposed for all purposes, 1900.			Receipts, 1899.								
					Total.	Per head.	Mills on \$.	Balance from 1898.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.
199	Grimsby N., Lincoln	1,205	15,085	833,425	7,101	5 89	8 5	476	7,220	123	15	1,400	319	9,430		
200	Grimsby S., Lincoln	1,323	18,134	580,050	6,569	4 97	11 3	622	6,204	133	7	1,400	7	6,966		
201	Guelph, Wellington	2,198	36,161	1,512,150	9,373	4 26	6 2	71	9,805	82	1,592	1,400	208	13,755		
202	Gwillimbury E., York	3,083	58,486	1,271,790	12,583	4 08	9 9	1,738	11,207	34	1,203	682	7	14,831		
203	Gwillimbury N., York	1,315	31,577	756,100	5,434	4 13	7 2	308	5,555	71	1,203	682	7	5,934		
204	Gwillimbury W., Simcoe	2,330	46,860	1,045,184	10,108	4 34	9 7	937	11,572	32	1,551	750	131	12,658		
205	Hagerman, Parry Sound	2,750	76,044	75,000	4,000	1 45	53 3	.....	7,827	294	30	300	39	8,460		
206	Hagerman, Parry Sound	607	18,000	48,701	1,036	2 04	21 3	624	1,144	26	.....	4,500	3	1,496		
207	Haldimand, Northumberland	3,895	76,390	1,726,370	14,973	3 85	8 7	455	11,137	57	67	1,400	2	16,151		
208	Hallam, Algoma	310	14,327	93,122	2,049	6 61	22 0	67	1,400	271	.....	1,000	.....	1,738		
209	Hallowell, Prince Edward	2,846	43,864	1,123,950	9,595	3 37	8 5	34	9,805	17	50	200	204	10,856		
210	Hamilton, Northumberland	3,952	62,115	1,927,830	13,275	3 36	6 9	1,887	16,059	152	.....	200	204	18,581		
211	Harvey, Peterborough	1,063	69,044	176,133	3,230	3 04	18 4	136	2,917	16	.....	26	117	3,212		
212	Harwich, Kent	4,603	88,808	3,076,571	28,010	6 22	7 6	8,641	23,643	274	168	3,000	160	41,148		
213	Hawkesbury E., Prescott	4,846	56,338	450,295	10,907	2 25	24 2	1,209	9,665	139	.....	200	844	12,529		
214	Hawkesbury W., Prescott	1,338	28,767	264,107	5,634	4 21	21 3	1,025	3,710	26	.....	1,500	12	5,805		
215	Hay, Huron	3,452	52,601	1,789,860	13,373	3 87	7 5	278	14,942	281	.....	1,300	340	17,704		
216	Head, Caledonia, Renfrew	359	14,638	35,075	1,299	3 62	37 0	171	773	144	12	400	563	13,013		
217	Hibbert, Perth	2,117	41,432	1,606,976	11,198	5 29	8 0	1,554	10,336	140	.....	27	394	10,992		
218	Hilber, Prince Edward	1,537	32,248	737,005	6,486	4 22	8 8	1,259	8,342	30	45	350	206	10,840		
219	Hilton, Algoma	372	27,710	54,877	1,377	3 70	25 1	481	1,072	84	.....	2	13	2,440		
220	Hinaworth N., Parry Sound	590	16,232	66,592	1,779	3 02	26 7	646	1,657	134	.....	.....	400	3,772		
221	Hinaworth S., Parry Sound	1,398	50,133	213,340	3,643	2 61	17 1	212	2,967	163	.....	300	37	5,004		
222	Hinchinbrooke, Frontenac	1,219	68,929	189,916	4,758	3 90	25 1	56	4,523	125	.....	.....	.....	8,920		
223	Holland, Grey	3,127	63,918	783,215	8,107	2 59	10 4	708	8,067	108	1,551	750	131	13,802		
224	Hope, Durham	3,268	63,018	2,288,182	10,668	3 26	4 7	440	4,172	2	.....	653	.....	4,614		
225	Horton, Renfrew	1,431	38,057	497,681	3,926	2 74	7 9	.....	6,263	39	.....	.....	.....	6,960		
226	Houghton, Norfolk	2,031	38,350	439,170	6,458	3 18	14 1	896	19,747	76	.....	192	318	26,236		
227	Howard, Kent	3,604	68,449	2,451,060	19,379	5 70	8 2	523	1,268	.....	.....	.....	.....	1,781		
228	Howe Island, Frontenac	342	8,025	52,755	1,480	4 33	28 1	.....	13,324	138	150	1,660	174	17,289		
229	Howick, Huron	3,781	67,575	2,144,276	13,379	3 70	6 5	1,605	13,324	.....	.....	.....	.....	2,269		
230	Howland, Eldwell and Sheg., Manitoulin	1,110	39,879	141,900	2,424	2 42	17 1	174	2,181	50	.....	.....	.....	15		
231	Hullett, Huron	2,838	53,658	1,966,210	12,387	4 36	6 3	53	12,105	68	2,222	29	1,000	15,639		
232	Humberstone, Welland	2,948	31,051	876,625	8,867	3 01	10 1	456	8,510	298	.....	.....	1,524	10,847		

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.											Assets on December 31, 1899.						Liabilities on December 31, 1899.							
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	
	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%	%%
199	411	70	1,596	2,186	323	2,823	427	79	1,400	92	188	8,501	929	3,050	1,721	3,050	4,154	921	1,067	4,154	921	670	5,891	921	
200	358	174	1,229	3,166	59	3,582	427	427	1,400	223	82	6,088	858	2,152	967	2,152	1,067	4,154	1,067	4,154	2,400	283	5,837	4,154	
201	814	219	2,263	4,559	1	3,030	1,495	1,495	75	74	131	13,027	1,804	7,052	7,406	14,534	115	4,198	4,198	4,198	1,851	260	1,851	4,198	
202	763	197	1,852	5,661	33	3,004	1,203	1,203	75	26	215	5,497	437	2,900	2,900	12,974	300	15,078	15,078	2,900	697	260	1,851	2,900	
203	380	637	416	2,545	33	3,559	2,545	2,545	260	26	215	5,497	437	2,900	2,900	12,974	300	15,078	15,078	2,900	697	260	1,851	2,900	
204	631	202	1,026	316	68	4,780	5,441	5,441	345	345	1,182	2,632	36	868	868	2,632	1,004	1,004	1,004	1,004	825	268	5,048	1,004	
205	741	273	736	4,144	68	494	4,144	4,144	345	345	1,182	2,632	36	868	868	2,632	1,004	1,004	1,004	1,004	825	268	5,048	1,004	
206	198	77	74	983	42	2,639	6,497	6,497	48	500	27	389	14,708	1,443	7,682	7,682	1,443	7,682	7,682	7,682	4,545	99	7,164	7,682	
207	1,079	446	2,276	3,86	412	2,639	6,497	6,497	48	500	27	389	14,708	1,443	7,682	7,682	1,443	7,682	7,682	7,682	4,545	99	7,164	7,682	
208	323	83	154	470	40	2,814	4,958	4,958	48	500	27	389	14,708	1,443	7,682	7,682	1,443	7,682	7,682	7,682	4,545	99	7,164	7,682	
209	327	203	2,209	3,715	450	3,715	6,339	6,339	1,000	1,000	19	161	10,541	739	469	3,856	3,856	3,856	3,856	3,856	2,207	200	100	2,507	3,856
210	885	248	2,436	5,339	254	3,715	6,339	6,339	1,000	1,000	19	161	10,541	739	469	3,856	3,856	3,856	3,856	3,856	2,207	200	100	2,507	3,856
211	430	25	334	1,607	82	420	1,607	1,607	134	420	60	330	3,242	2,524	2,524	400	400	400	400	400	2,207	200	100	2,507	3,856
212	1,786	1,276	4,471	1,294	753	5,725	9,744	3,063	1,000	3,000	785	348	37,934	6,217	1,157	1,000	1,000	1,000	1,000	1,000	2,207	200	100	2,507	3,856
213	493	194	302	1,074	5	2,118	1,074	1,074	1,000	1,000	33	1,275	12,494	6,217	1,157	1,000	1,000	1,000	1,000	1,000	2,207	200	100	2,507	3,856
214	251	172	246	1,819	5	19	1,819	1,819	1,121	200	838	81	4,752	1,033	1,022	1,033	1,022	1,022	1,022	1,022	1,401	519	250	2,170	1,022
215	578	333	2,660	5,391	64	4,023	5,391	270	1,121	200	838	81	4,752	1,033	1,022	1,033	1,022	1,022	1,022	1,022	1,401	519	250	2,170	1,022
216	69	2	4	762	121	121	762	83	83	450	36	1,011	11,594	1,419	23	998	513	513	513	513	348	600	136	8,342	513
217	558	175	2,200	3,542	50	3,888	3,542	197	83	450	36	1,011	11,594	1,419	23	998	513	513	513	348	600	136	8,342	513	
218	443	108	378	925	309	1,843	3,624	23	23	950	48	21	8,862	2,130	2,152	89	1,000	1,000	1,000	1,000	305	17	1,322	1,000	
219	187	70	335	585	9	1,576	585	76	76	950	80	1	2,258	182	1,183	89	1,000	1,000	1,000	1,000	305	17	1,322	1,000	
220	265	73	175	1,576	28	1,576	1,576	264	264	950	80	1	2,258	182	1,183	89	1,000	1,000	1,000	1,000	305	17	1,322	1,000	
221	319	72	106	2,464	9	2,464	2,464	264	264	950	80	1	2,258	182	1,183	89	1,000	1,000	1,000	1,000	305	17	1,322	1,000	
222	335	327	712	3,282	76	1,056	3,282	50	50	950	80	1	2,258	182	1,183	89	1,000	1,000	1,000	1,000	305	17	1,322	1,000	
223	728	151	871	4,344	76	2,876	4,344	369	369	1,079	96	62	8,415	139	2,778	119	1,719	1,719	1,719	1,719	311	401	1,379	1,719	
224	891	203	2,276	1,22	76	2,876	4,344	369	369	1,079	96	62	8,415	139	2,778	119	1,719	1,719	1,719	1,719	311	401	1,379	1,719	
225	320	117	101	2,081	110	923	2,081	110	110	1,079	96	62	8,415	139	2,778	119	1,719	1,719	1,719	1,719	311	401	1,379	1,719	
226	535	104	1,035	3,882	13	800	3,882	14	14	1,079	96	62	8,415	139	2,778	119	1,719	1,719	1,719	1,719	311	401	1,379	1,719	
227	1,121	179	2,704	8,229	169	3,716	8,229	4,505	1,437	1,079	96	62	8,415	139	2,778	119	1,719	1,719	1,719	1,719	311	401	1,379	1,719	
228	109	70	79	625	99	564	625	215	215	1,079	96	62	8,415	139	2,778	119	1,719	1,719	1,719	1,719	311	401	1,379	1,719	
229	836	129	2,163	6,769	99	2,547	6,769	21	1,067	1,067	1,329	279	16,919	370	3,642	5,777	2,139	11,919	11,919	2,608	14,700	660	225	17,968	2,608
230	21	32	182	2,414	10	2,414	2,414	20	1,922	1,922	381	240	15,523	116	966	1,922	1,922	1,922	1,922	1,922	7,450	150	1,851	1,922	
231	777	246	3,516	4,404	19	2,414	4,404	20	1,922	1,922	381	240	15,523	116	966	1,922	1,922	1,922	1,922	1,922	7,450	150	1,851	1,922	
232	537	273	1,216	4,025	3	2,102	4,025	1,955	408	1,000	73	139	10,316	531	966	1,922	4,101	5,598	5,598	1,851	63	63	17,968	1,851	

TOWNSHIP MUNICIPALITIES, 1890-1900.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1900.		No. of acres assessed, 1900.	Assessed value of real and personal property, 1900.	Taxes imposed for all purposes, 1900.		Receipts, 1899.						Total receipts.		
		Population, 1900.	No. of acres assessed, 1900.			Total.	Per head.	Receipts, 1899.								
								Mills on \$	Per head.	\$	%	\$	%		\$	%
233	Humbrey, Parry Sound	490	27,807	121,843	1,547	3 16	12.7	197	63	3,342	3	1,000	32	1,916	51	2,653
234	Hungerford, Hastings	3,492	93,380	743,465	11,567	3 31	15.6	11,429	261	11,429	1,601	1,000	325	13,076	325	7,886
235	Huntingdon, Hastings	2,462	53,849	431,397	7,133	2 89	16.5	1,622	20	6,956	1,000	1,000	248	8,686	248	8,686
236	Huntley, Carleton	2,142	67,869	450,940	7,087	3 31	15.7	1,717	60	6,409	1,000	1,000	89	15,705	89	15,705
237	Hurcn, Bruce	3,308	57,442	1,497,936	15,669	4 74	10.5	733	260	13,601	32	1,000	1,435	20,088	1,435	20,088
238	Innisfil, Simcoe	3,547	67,964	1,386,174	13,430	3 79	9.8	1,684	106	16,863	100	1,000	7	1,916	7	1,916
239	Jocelyn, Algoma	463	36,181	56,143	1,235	2 73	22.0	187	3	1,627	50	1,000	17	1,893	17	756
240	Jochnon, Tarbutt, etc., Algoma	908	36,086	117,169	1,460	1 61	12.5	108	33	496	150	1,000	80	3,056	80	4,942
241	Joly, Parry Sound	264	16,686	39,850	637	2 41	16.0	93	33	2,862	33	1,000	11	4,942	11	3,986
242	Kaladar and Ang, Lennox and Addington	1,257	57,756	71,811	2,821	2 24	39.3	81	45	4,415	527	1,000	4	4,942	4	4,942
243	Keewatin, Rainy River	1,976	2,650	269,850	5,941	6 09	22.0	310	35	2,000	45	1,000	110	33,986	110	33,986
244	Kennebec, Frontenac	1,363	40,278	90,886	2,753	2 02	30.3	310	228	11,294	32	4,289	305	10,221	305	10,221
245	Kenyon, Glengarry	3,866	78,610	739,410	10,961	2 84	14.8	976	26	9,221	32	4,289	77	33,646	77	33,646
246	Kippal, Grey	3,563	89,298	697,285	11,352	3 19	16.3	1,322	32	9,221	32	4,289	19	8,543	19	8,543
247	Kincardine, Bruce	2,986	59,200	1,501,430	11,501	3 71	7.1	806	26	2,485	549	7,696	14	10,946	14	10,946
248	King, York	5,100	87,656	2,817,925	14,078	4 28	12.9	7,650	66	12,225	119	2,600	85	20,710	85	20,710
249	Kingston, Frontenac	2,480	51,831	1,089,986	11,878	5 68	6.9	1,528	66	6,915	66	15	19	8,543	19	8,543
250	Kinloss, Bruce	2,264	46,275	1,139,585	7,845	3 47	6.9	2,787	118	7,966	118	1,000	14	10,946	14	10,946
251	Kitley, Leeds	1,893	47,012	1,037,850	7,476	3 95	7.2	2,787	118	7,966	118	1,000	14	10,946	14	10,946
252	Laird, Algoma	370	15,822	89,395	1,273	3 44	14.2	107	1,130	1,130	72	1,000	20	1,983	20	1,983
253	Lanark, Lanark	1,698	57,798	440,130	5,228	3 08	11.9	546	85	4,389	85	1,000	20	1,983	20	1,983
254	Lancaster, Glengarry	3 533	57,101	923,883	10,660	3 00	11.5	1,056	180	10,443	180	1,000	124	11,803	124	11,803
255	Lavant, Lanark	485	44,753	56,100	1,693	3 49	30.2	210	112	1,429	112	1,000	11	1,751	11	1,751
256	Laxton, Digby and Longford, Victoria	761	72,806	74,329	2,293	3 01	30.8	521	9	2,673	9	497	412	4,012	412	4,012
257	Leeds and Lansdowne Front, Leeds	2,671	56,350	1,019,790	12,871	4 82	14.5	1,616	135	13,677	135	10,500	53	17,891	53	17,891
258	Leeds and Lansdowne Rear, Leeds	2,262	44,472	575,070	8,348	3 69	14.5	2,379	131	7,840	131	78	10	10,946	10	10,946
259	Limerick, Hastings	558	44,443	54,303	1,186	2 13	21.8	192	20	3,389	20	1,000	282	1,818	282	1,818
260	Lindsay and St. Edmunds, Bruce	969	106,159	98,324	2,470	3 51	35.3	190	3,585	3,585	46	1,300	260	6,391	260	6,391
261	Lobo, Middlesex	2,666	47,284	1,753,180	15,049	5 60	8.6	7,247	187	21,253	187	1,000	258	28,990	258	28,990
262	Lochiel, Glengarry	4,391	71,459	1,062,075	11,537	2 63	11.5	27	415	11,449	415	1,000	161	11,753	161	11,753
263	Logan, Perth	2,961	53,774	1,898,145	17,031	5 75	9.0	2,142	67	13,510	67	818	21	3,84	21	3,84
264	London, Middlesex	8,512	99,833	4,149,410	41,549	4 88	10.0	18,430	457	35,852	457	276	3,000	2,927	3,000	2,927
265	Longuenil, Prescott	941	17,494	140,675	2,656	2 82	15.6	58	28	2,475	28	100	606	58,623	606	58,623
266	Loughborough, Frontenac	1,688	50,509	383,452	7,463	4 42	19.5	58	60	5,941	60	100	2,623	6,159	2,623	6,159



TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.												Assets on December 31, 1899.						Liabilities on December 31, 1899.					
	Allowances and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and education.	Drairage work.	Sinking fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
232	285	93	234	...	43	983	...	...	...	...	44	...	...	1,824	829	1,037	...	668	2,634	838	611	...	55	1,504
234	711	137	1,886	...	278	3,481	...	...	...	1,234	35	222	...	13,676	750	7,590	...	3,389	10,989	3,648	399	1,661	60	6,208
235	547	191	273	...	85	2,060	...	...	...	...	36	...	...	7,313	73	4,292	...	960	4,265	3,167	400	...	500	3,627
236	831	102	1,289	...	120	1,787	...	...	...	...	29	...	...	7,344	1,342	1,781	...	1,400	4,523	1,940	416	...	43	2,399
237	769	428	3,294	...	15	2,635	...	...	...	...	79	...	...	14,171	1,534	1,455	...	800	3,789	...	2,140	...	...	2,140
238	1,385	461	6,094	...	175	6,759	...	...	...	...	105	...	...	18,363	1,726	1,978	...	360	4,058	...	1,424	...	170	1,594
239	298	54	333	...	733	...	...	...	...	...	42	...	...	1,398	518	368	...	1,031	2,131	...	600	...	...	1,600
240	288	63	666	...	100	666	...	...	...	...	30	...	...	1,595	297	1,138	...	1,000	1,935	...	563	...	48	1,313
241	152	49	61	...	...	1,629	...	...	...	100	7	...	...	559	197	394	...	...	591	...	355	...	166	61
242	283	124	247	...	...	1,629	...	...	...	...	7	...	...	2,370	686	1,564	...	...	2,893	...	355	...	61	372
243	401	121	618	...	105	2,604	...	...	...	...	325	...	...	4,695	247	395	...	643	2,893	...	300	...	200	14
244	252	72	365	...	155	1,892	...	...	...	...	...	...	...	3,063	193	2,610	...	600	1,243	...	6,661	...	...	2,077
245	599	240	1,236	...	44	1,402	...	...	...	...	...	...	...	13,412	574	2,019	...	600	3,403	...	...	...	...	200
246	768	345	1,779	...	318	3,911	...	...	...	...	...	...	...	13,412	574	2,019	...	600	3,403	...	...	...	...	176
247	651	229	1,927	...	331	2,546	...	...	...	...	...	...	...	15,461	393	3,087	...	1,500	4,093	...	...	...	...	176
248	1,242	561	8,963	...	163	102	5,815	...	...	4,728	336	...	...	33,642	288	312	...	65	10,180	...	2,305	...	373	12,907
249	603	440	683	...	415	326	7,046	...	...	...	...	...	...	23,642	648	2,578	...	46	1,006	...	...	...	...	671
250	611	129	1,112	...	32	1,660	...	...	...	...	...	...	...	14,222	6,488	1,650	...	38	1,947	...	972	...	...	2,743
251	531	175	1,195	...	5	3,326	...	...	...	...	...	...	...	9,894	1,894	15	...	2,000	3,672	...	1,711	...	...	681
252	155	71	466	...	155	946	...	...	...	...	...	...	...	9,260	936	136	...	38	1,947	...	...	...	...	...
253	418	123	279	...	20	925	...	...	...	...	...	...	...	1,876	107	178	...	1,130	1,570	...	710	...	...	1,010
254	795	81	1,274	...	46	1,725	...	...	...	...	...	...	...	6,245	563	1,179	...	1,800	3,542	...	1,200	...	...	391
255	186	53	104	...	...	132	1,263	...	...	...	...	...	...	11,065	738	1,703	...	1,800	3,542	...	...	...	...	1,770
256	282	158	124	...	...	249	1,285	...	...	...	...	...	...	1,750	1	156	...	...	157	...	...	...	...	...
257	712	260	3,735	...	83	3,994	...	...	...	2,500	74	...	...	3,280	732	305	...	6,107	6,839	...	5,000	...	...	5,000
258	539	133	705	...	10	2,538	...	...	...	...	...	...	...	17,156	1,138	204	...	5,000	6,040	...	...	...	...	80
259	282	83	324	...	5	96	...	...	...	...	...	...	...	1,603	210	1,090	...	285	4,046	...	5,000	...	...	80
260	342	254	930	...	274	1,091	...	...	...	...	...	...	...	5,112	279	4,154	...	985	1,685	...	...	...	...	154
261	862	432	5,631	...	284	4,704	...	...	...	...	...	...	...	17,122	11,868	36	...	4,728	16,632	...	3,423	...	...	478
262	794	365	1,696	...	99	1,311	...	...	...	...	...	...	...	11,761	22	11,426	...	70	11,589	...	...	...	...	223
263	853	1,048	3,968	...	240	1,617	...	...	...	...	...	...	...	24,909	483	2,260	...	869	4,612	...	12,866	...	...	8
264	1,750	595	14,730	...	578	10,168	...	...	...	3,000	95	...	...	44,449	14,174	9,232	...	3,460	26,866	...	9,752	...	...	13,258
265	149	41	56	...	3	727	...	...	...	...	...	...	...	4,449	1,240	...	...	3,460	26,866	...	1,460	...	...	11,212
266	431	130	615	...	39	2,313	...	...	...	...	...	...	...	6,156	3	4,101	...	...	4,104	...	860	...	...	439

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1900.		No. of acres assessed, 1900.		Assessed value of real and personal property, 1900.		Taxes imposed for all purposes, 1900.		Receipts, 1899.		Total receipts.
257	Louth, Lincoln	1,685	18,896	717,195	7,798	4 63	10.9	184	8,925	55	26	9,432
258	Luther E., Duffrin	1,379	38,037	561,015	8,593	5 44	15.3	1,033	7,989	1,350	1,800	12,739
259	Luther W., Wellington	2,056	849,644	949,225	9,400	4 49	11.1	2,632	10,077	600	1,900	13,681
260	Lutherworth, Haliburton	424	23,834	35,963	1,368	3 23	38.1	288	1,332	2	63	3,173
271	McDonnell, Parry Sound	469	29,964	66,228	1,769	3 77	26.7	387	1,361	317	317	2,082
272	McGillivray, Middlesex	3,096	65,772	2,006,275	15,199	4 91	7 6	1,753	14,274	29	13	17,186
273	McGrive (Fort Frances), Rainy River	307	5,400	169,204	4,620	15 05	27.3	75	1,283	405	1,768	3,626
274	McKellar, Parry Sound	545	32,377	75,550	2,167	3 98	28.7	75	2,117	41	60	2,793
275	McKillop, Huron	2,653	52,110	2,000,700	11,261	4 24	5 6	2,283	11,180	44	751	19,518
276	McKim, Nipissing	1,893	17,486	118,698	4,462	2 36	37 6	1,370	3,308	36	19	4,733
277	McLean and Ridout, Muskoka	700	39,835	100,030	1,723	2 46	17 2	425	1,465	62	425	2,045
278	McMurrich, Parry Sound	652	46,785	116,771	1,904	2 88	16.3	44	1,411	25	300	1,730
279	McNab, Renfrew	3,383	62,616	1,124,970	8,654	5 56	7 7	981	8,292	135	16	11,774
280	Macaulay, Muskoka	633	39,456	98,674	2,176	3 44	22.1	260	2,059	23	12	2,354
281	Macdonald, Menzies & Aberdeen, Algoma	630	23,039	59,901	1,233	2 05	21 6	106	1,413	3	6	1,527
282	Macfar, Parry Sound	770	36,222	104,494	2,059	2 72	20.1	510	1,884	29	31	2,454
283	Madoc, Hastings	2,652	67,747	491,675	10,459	3 94	21.3	1,319	9,863	47	1,138	61,008
284	Madoc, Essex	2,846	44,547	806,370	17,082	6 00	21 2	1,141	14,068	93	3,500	22,694
285	Malshide, Elgin	3,715	62,353	1,920,610	24,319	6 55	12 7	6,028	21,859	60	1,500	32,960
286	Malden, Essex	1,290	20,962	713,045	7,063	5 47	9 9	342	7,623	218	1,900	10,087
287	Manvers, Durham	2,860	69,645	1,219,240	10,363	3 62	8 5	175	13,107	68	3,495	15,086
288	Mar, Ontario	2,836	61,472	951,060	10,476	3 69	11 0	661	10,015	167	3,465	15,948
289	March, Carleton	1,127	28,029	366,756	3,336	2 96	9 1	517	3,835	33	48	4,444
290	Mariposa, Victoria	3,910	74,843	2,590,110	19,693	5 04	7 6	9,866	19,016	41	193	29,569
291	Markham, York	5,302	66,634	3,209,070	22,237	4 19	6 9	8,670	23,150	401	443	32,221
292	Marlborough, Carleton	1,541	56,971	456,655	4,838	3 14	10 6	423	5,265	30	5	5,718
293	Marmora and Lake, Hastings	1,878	103,517	305,778	7,897	4 21	25 8	320	6,604	140	1,678	9,014
294	Maryborough, Wellington	2,964	66,455	1,731,000	14,728	4 97	8 5	5,092	14,274	74	1,000	20,983
295	Marysburg, N. Prince Edward	1,182	23,571	473,625	4,097	3 47	8 7	1,050	4,363	15	18	5,778
296	Marysburg S., Prince Edward	1,187	23,280	354,640	3,721	3 14	10 5	286	3,876	1	163	5,236
297	Mattawan, Nipissing	266	11,998	23,856	518	2 03	21 7	61	395	150	683	866
298	Matchedash, Simcoe	456	19,672	54,680	1,002	2 20	18 3	379	1,256	69	14	1,939
299	Matilda, Dundas	3,846	62,602	1,336,336	18,810	4 89	14 1	1,225	19,225	107	14	27,619
300	Mayo, Hastings	557	19,035	27,140	1,411	2 53	52 0	145	1,879	800	7,545	2,241

	Disbursements, 1899.											Assets on December 31, 1899.						Liabilities on December 31, 1899.					
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks, &c.	Charters.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.
267	409	99	1,433	3,483	3,177	300	300	300	300	300	35	230	9,231	201	1,247	1,971	523	1,971	345	845	75	75	420
268	348	568	1,219	1,399	1,800	1,800	1,800	1,800	1,800	1,800	537	125	11,801	988	639	1,032	365	1,032	10,194	10,194	133	133	10,327
269	599	606	920	1,065	1,403	1,403	1,403	1,403	1,403	1,403	399	175	11,041	2,640	720	300	548	4,108	2,861	7,566	228	228	10,055
270	163	37	213	269	814	50	50	50	50	50	6	6	4,983	220	876	1,698	502	1,698	634	634	320	33	554
271	198	44	468	468	576	300	300	300	300	300	40	300	1,901	181	1,756	1,100	50	1,367	634	634	320	33	987
272	736	182	5,069	2,696	6,253	2,100	2,100	2,100	2,100	2,100	44	214	17,525	871	1,777	1,100	1,100	2,148	1,120	2,462	898	136	4,615
273	342	186	856	62	587	38	38	38	38	38	169	122	3,212	414	4,338	4,872	200	4,872	580	600	20	20	4,700
274	212	88	280	1,884	1,884	1,000	1,000	1,000	1,000	1,000	18	96	2,693	1,000	1,234	2,000	200	1,634	1,250	1,042	2,933	2,933	4,700
275	730	524	4,489	2,349	3,960	2,500	3,461	2,500	2,500	2,500	102	223	18,472	1,046	14,582	2,355	17,983	17,983	2,028	687	68	68	2,783
276	490	62	1,077	2,092	702	115	72	115	115	115	48	98	4,254	479	3,424	1,102	5,005	1,200	1,645	1,042	1,042	1,042	1,042
277	240	80	271	155	613	155	155	155	155	155	139	83	1,600	445	1,177	1,200	1,200	1,200	1,097	505	200	30	1,692
278	199	96	99	194	798	798	798	798	798	798	45	89	1,473	307	2,704	271	271	3,282	1,097	505	200	30	1,692
279	646	184	606	1,510	4,910	2,000	482	2,000	2,000	2,000	106	42	10,084	1,190	2,165	1,188	1,188	4,533	710	638	200	30	1,896
280	291	99	422	1,315	1,315	7	7	7	7	7	22	74	2,211	1,433	728	30	30	501	477	477	200	30	707
281	146	31	282	3	646	62	62	62	62	62	86	55	2,167	287	1,743	650	650	2,623	72	72	200	30	72
282	185	64	140	1,559	4,860	37,914	2,886	639	274	51,008	639	274	51,008	287	1,743	650	650	2,623	72	72	200	30	72
283	679	685	486	2,955	8,800	2,955	4,860	2,955	2,955	2,955	459	540	22,405	989	20,125	1,655	22,069	32,000	32,000	1,388	200	33,338	
284	1,454	446	2,104	1,854	4,866	5,140	4,866	5,140	4,866	4,866	2,413	2,954	22,405	989	20,125	1,655	22,069	32,000	32,000	1,388	200	33,338	
285	860	516	7,749	5,788	6,715	4,400	4,860	4,400	4,400	4,400	167	167	28,731	4,229	1,467	3,650	3,650	6,066	13,180	13,180	1,388	200	14,568
286	599	151	2,122	49	1,384	84	1,384	84	1,384	1,384	132	315	9,849	238	5,153	1,096	6,066	1,096	2,622	318	1,963	188	5,111
287	824	200	1,070	328	1,815	868	1,070	868	1,070	1,070	23	364	14,126	960	967	57	1,984	1,984	1,148	1,148	76	76	1,224
288	1,024	173	2,515	119	1,050	5,786	620	1,050	1,050	1,050	152	271	15,230	718	1,277	3,998	4,716	3,998	4,716	2,687	465	60	3,062
289	330	96	504	819	2,088	28	28	28	28	28	455	394	3,882	562	1,277	1,000	1,000	3,239	889	889	465	60	889
290	1,060	298	1,823	567	9,133	1,079	1,079	1,079	1,079	1,079	114	157	18,947	10,612	84	8,541	19,237	8,541	19,237	4,871	9,357	54	14,282
291	688	1,728	9,683	6,397	3,993	209	400	400	400	400	114	167	24,557	7,961	1,399	1,801	1,801	10,614	7,698	7,698	465	60	889
292	499	90	682	70	1,073	141	136	136	136	136	18	460	5,473	245	1,841	4,504	4,504	2,086	1,198	1,198	306	306	9,862
293	642	112	750	189	3,866	366	982	177	273	8,991	23	4,364	8,991	23	4,364	4,504	4,504	2,086	1,198	1,198	321	321	6,361
294	879	170	2,677	17	3,590	1,051	190	1,051	1,051	1,051	41	240	16,975	6,008	692	478	6,173	4,974	4,974	1,360	124	20	6,458
295	191	163	75	237	2,142	2,685	159	159	159	159	70	82	5,724	54	115	1,075	1,075	8,143	8,143	1,360	124	20	6,458
296	218	287	115	124	971	2,960	192	2,960	192	2,960	14	14	4,948	288	224	1,065	1,065	11,429	518	1,949	170	211	1,949
297	154	41	85	145	615	80	145	80	145	145	16	29	793	63	481	90	90	634	518	1,949	170	211	1,949
298	140	15	264	145	615	106	106	106	106	106	16	29	1,230	709	212	264	264	1,185	566	265	170	211	831
299	743	1,569	1,923	398	4,919	7,302	199	4,919	2,946	6,520	1,110	33	27,619	215	1,175	768	768	5,009	1,515	16,226	2,500	1,401	22,142
300	357	85	288	76	1,013	1,46	146	146	146	146	33	29	2,026	215	1,175	29	29	2,026	1,670	868	280	190	1,338

No.	Township Municipalities and Counties in which located.	Population, 1900.	No. of acres assessed, 1900.	Assessed value of real and personal property, 1900.		Taxes imposed for all purposes, 1900.			Receipts, 1899.									
				\$	%	Total.	Per head.	Mills on %	Balance from 1898.									
									\$	%	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments	Interest and dividends.	Borrowed for current purposes.	Borrowed on debentures.	Miscellaneous.	Total receipts.
301	Medonte, Simcoe	3,954	65,568	561,028	11,462	2.90	20.4	1,669	12,960	198	16	638	71	15,549				
302	Medora and Wood, Muskoka	920	59,002	4,418	4.80	13.9	400	3,961	36	36	60	107	4,564					
303	Melancthon, Dufferin	3,281	74,615	825,076	12,421	3.82	15.1	400	15,828	21	62	475	50	19,417				
304	Mersea, Essex	4,172	62,025	28,742	6.89	15.9	3,217	30,257	114	1,322	3,485	856	39,251					
305	Metcalf, Middlesex	1,517	36,192	1,001,820	10,771	7.10	10.8	1,301	12,500	16	600	899	69	15,285				
306	Middleton, Norfolk	2,689	45,334	757,568	3,843	3.66	13.0	13	10,912	46	18	1,357	505	12,851				
307	Minden, Haliburton	1,166	36,506	85,540	3,376	2.89	39.5	128	8,381	3	400	90	4,452					
308	Minto, Wellington	2,974	69,403	1,848,315	13,611	4.59	7.4	188	17,181	41	572	69	19,161					
309	Monaghan N., Peterborough	903	13,950	603,350	4,729	5.24	7.8	214	5,927	46	1,200	35	7,422					
310	Monaghan S., Northumberland	850	18,358	536,585	3,654	4.30	6.8	280	4,752	55	52	1	5,140					
311	Monck, Muskoka	886	28,377	197,811	2,713	3.06	13.7	588	2,937	11	407	84	3,020					
312	Monmouth, Haliburton	508	25,017	30,579	2,227	4.38	72.8	33	1,664	33	3,000	6	2,004					
313	Mono, Dufferin	3,133	69,136	1,592,905	12,146	3.88	7.6	22	13,801	45	7	262	7,878					
314	Montague, Lanark	2,208	62,022	583,265	6,724	3.05	11.5	283	7,963	25	345	970	38,355					
315	Montague and Herschel, Hastings	1,813	67,052	70,949	3,101	1.71	43.7	3,108	44	44	3,000	5,181	27,409					
316	Moore, Lambton	4,463	73,260	1,808,715	17,104	6.07	15.0	4,000	24,731	413	3,722	3,615	492	27,409				
317	Mornington, Perth	2,913	50,065	1,735,775	16,763	9.75	9.7	720	18,552	308	5	1,100	61	12,269				
318	Morris, Huron	2,485	55,090	1,745,285	8,943	3.60	5.1	2,543	8,519	41	40	24	2,198					
319	Morrison, Muskoka	840	23,074	78,044	1,463	1.74	18.7	135	1,999	11	500	869	221	18,952				
320	Moss, Middlesex	2,534	47,214	580,589	11,942	4.71	20.6	17,351	11	196	851	266	7,863					
321	Moulton, Haldimand	1,818	27,000	391,880	5,981	3.29	10.1	1,684	6,550	334	103	1,600	13	15,655				
322	Mountain, Dundas	3,311	56,648	1,343,648	13,156	3.97	9.8	3,900	11,774	52	200	1,300	11	13,527				
323	Mulmur, Dufferin	2,910	70,221	1,301,325	12,669	4.36	9.7	390	11,774	52	200	1,300	11	13,527				
324	Murray, Northumberland	2,708	48,479	1,183,875	9,304	3.44	7.9	1,888	8,668	52	200	1,300	11	13,527				
325	Mus-koka, Muskoka	730	32,457	96,625	1,942	2.66	20.7	157	2,187	1	10	213	2,558					
326	Nairn and Lorne, Algoma	186	11,837	43,262	940	5.05	21.7	10	1,069	64	488	38	8,046					
327	Naesagaweya, Halton	3,274	44,795	1,005,735	7,489	3.30	7.5	127	7,346	47	28	794	51	4,777				
328	Needing, Thunder Bay	2,254	123,213	1,053,730	3,806	16.26	22.9	195	3,681	28	1,697	70	13,972					
329	Nelson, Halton	2,656	46,346	1,774,120	11,652	4.34	6.6	811	11,441	253	798	476	20,509					
330	Nepesin, Carleton	4,859	57,908	2,305,461	17,016	3.54	7.4	1,371	17,069	195	8	700	9,855					
331	Niagara, Lincoln	1,762	22,344	931,655	11,498	6.53	12.3	88	9,058	89	10	168	7,821					
332	Nichol, Wellington	1,686	26,693	1,031,305	6,959	4.13	6.4	12	6,418	95	10	81	1,338					
333	Nipissing, Parry Sound	4,389	29,199	101,392	1,086	2.47	10.7	12	1,209	36	23	1,000	10	14,676				
334	Nisour E., Oxford	2,388	46,426	2,126,125	12,276	5.14	5.8	1,162	12,428	52	23	1,000	10	14,676				

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.										Assets on December 31, 1899.					Liabilities on December 31, 1899.							
	Allowances, salaries and commissions	Other expense of municipal government	Roads and bridges	Construction of buildings, waterworks &c	Charities	County levy	Payment on account of schools and education	Drainage work	Sinking fund and other investments	Debtures redeemed	Current loans repaid	Interest on loans, advances and debtures	Miscellaneous	Total disbursements	Balance on hand	Taxes in arrears	Sinking fund and other investments	Miscellaneous	Total assets	Duety levy and school rates unpaid	Debtures outstanding	Temporary loans	Miscellaneous
301	836	832	1,792	86	124	3,900	455	620	626	137	10	13,518	2,031	2,071	2,786	463	4,790	2,786	918	2,827	60	940	3,745
302	312	299	700	700	109	2,415	654	358	200	81	34	4,101	463	4,790	675	1,905	1,350	6,078	2,636	1,150	60	940	4,846
303	533	303	1,882	700	473	2,507	4,598	7,922	607	9,989	558	19,417	1,905	1,954	675	1,954	5,131	6,078	2,961	6,676	60	940	6,371
304	1,445	565	4,598	37	473	2,507	8,278	7,922	10,056	3,445	226	39,251	20,810	20,810	7,042	7,042	27,852	29,852	2,907	54,004	1,322	4,748	62,981
305	656	283	2,189	263	65	1,913	2,893	1,673	228	2,000	93	12,868	2,417	2,502	1,974	1,974	6,893	6,893	2,453	6,762	1,502	366	6,981
306	645	341	2,825	263	65	1,913	3,451	406	770	2,000	227	12,168	683	3,401	2,900	2,900	6,984	6,984	1,838	4,216	1,502	366	6,054
307	282	261	300	300	34	771	2,807	502	99	1,100	24	18,146	1,015	2,800	1,085	2,800	3,902	3,902	2,946	950	300	71	3,967
308	904	661	2,098	300	34	818	4,927	502	41	1,300	35	43,961	1,461	609	1,411	3,056	2	121	2	1,224	41	119	121
309	362	73	1,522	43	11	1,224	1,850	370	41	1,300	118	4,502	638	89	1,224	2,228	1,297	2,758	1,224	2,000	...	...	2,000
310	264	519	524	45	640	1,807	1,449	370	229	...	106	9	2,395	625	45	1,480	21	2,228	...	...	...	...	2,000
311	281	91	525	36	15	600	860	36	229	...	118	15	4,502	638	89	1,480	21	2,228	...	...	...	...	2,000
312	214	126	36	36	5	4,057	5,873	102	107	71	67	7,115	763	726	460	460	2,516	670	1,878	...	...	...	2,000
313	784	327	2,711	327	56	1,334	3,381	102	107	71	67	7,115	763	726	460	460	2,516	670	1,878	...	...	...	2,000
314	401	759	903	381	56	1,334	3,381	102	107	71	67	7,115	763	726	460	460	2,516	670	1,878	...	...	...	2,000
315	335	60	507	29	29	1,571	2,902	102	107	71	67	7,115	763	726	460	460	2,516	670	1,878	...	...	...	2,000
316	1,448	725	4,733	400	591	2,504	9,404	7,918	7,191	3,722	1,336	36,301	2,054	19,004	3,200	3,200	4,489	4,489	2,063	998	345	420	3,826
317	824	332	3,827	400	58	4,933	4,947	11	7,191	3,722	1,336	25,464	2,054	19,004	3,200	3,200	4,489	4,489	2,063	998	345	420	3,826
318	713	1,705	1,705	400	22	1,948	3,682	536	1,526	3,722	1,336	10,484	1,785	1,785	600	600	3,564	65,088	5,881	36,587	3,160	2,749	46,377
319	209	89	215	207	207	1,155	1,155	2	1,526	3,722	1,336	10,484	1,785	1,785	600	600	3,564	65,088	5,881	36,587	3,160	2,749	46,377
320	684	222	2,026	...	207	3,168	4,073	1,242	1,622	2,902	341	17,841	1,111	5,299	1,394	1,394	1,945	1,945	2,147	34,418	...	...	34,418
321	389	883	538	...	56	997	2,632	63	1,622	2,902	341	17,841	1,111	5,299	1,394	1,394	1,945	1,945	2,147	34,418	...	...	34,418
322	417	81	1,729	1,000	137	1,034	6,932	216	1,615	700	229	12,235	3,330	3,330	4,626	4,626	4,526	1,355	3,127	6,559	851	507	10,821
323	735	195	1,579	44	22	1,948	4,930	216	1,615	700	229	12,235	3,330	3,330	4,626	4,626	4,526	1,355	3,127	6,559	851	507	10,821
324	769	253	1,379	56	20	2,115	4,841	1,307	1,500	1,300	321	19,373	554	4,324	9,000	9,000	14,478	4,850	4,418	3,200	1,000	600	6,630
325	303	45	222	20	20	1,318	1,318	...	250	338	41	8,205	715	2,297	2,514	2,514	5,466	5,466	1,566	500	...	...	2,066
326	399	50	2	...	56	1,318	1,318	...	250	338	41	8,205	715	2,297	2,514	2,514	5,466	5,466	1,566	500	...	...	2,066
327	601	176	2,136	...	312	1,106	3,532	...	490	490	24	968	175	1,781	1,956	1,956	1,956	1,956	3,127	6,559	300	40	300
328	631	209	578	225	34	478	4,788	880	1,615	700	229	12,235	3,330	3,330	4,626	4,626	4,526	1,355	3,127	6,559	851	507	10,821
329	1,154	173	1,980	...	709	1,974	6,076	...	762	762	638	253	4,188	589	4,166	1,485	761	7,001	10,500	10,500	932	1,033	12,465
330	1,263	459	2,799	...	65	3,693	3,356	...	265	16	70	13,075	897	191	26,579	26,579	26,579	34,033	12,698	2,925	...	...	19,164
331	566	227	1,878	...	13	2,653	2,960	...	325	1,053	163	18,426	2,083	16,571	9,500	9,500	6,879	34,033	12,698	2,925	...	...	4,948
332	658	134	2,917	...	13	2,201	2,941	...	27	1,053	27	6,228	227	4,913	3,840	3,840	4,400	4,400	3,050	670	...	...	3,177
333	221	45	32	...	30	30	637	...	50	50	6	1,049	289	867	...	...	35	1,181	630	...	50	20	700
334	578	137	3,735	...	420	3,650	4,050	74	1,000	1,000	11	13,862	823	143	...	...	4	970	1,224	...	...	...	814

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1900.	No. of acres assessed, 1900.	Assessed value of real and personal property, 1900.	Taxes imposed for all purposes, 1900.			Receipts, 1899.									
					Total.	Per head.	Mills on %	Balance from 1898.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	
335	Nisour W., Middlesex.....	2,700	49,500	1,400,950	14,920	5 53	10.2	4,689	11,544	71	4,700	61	21,665				
336	Normanby, Grey.....	4,412	68,144	1,475,135	14,244	3 23	9.7	1,090	13,349	262	456	15,157					
337	Norwich N., Oxford.....	2,207	33,864	1,615,360	12,001	5 44	7.9	1,585	11,200	10	2,000	201	15,068				
338	Norwich S., Oxford.....	2,317	35,661	1,063,976	9,879	4 26	9.8	2,089	3,686	86	766	1,449	14,082				
339	Notawasaga, Simcoe.....	5,399	90,048	2,073,855	19,318	3 58	9.3	485	2,253	269	1,500	1,283	30,892				
340	Oakland, Brant.....	685	10,364	335,782	3,372	4 92	8.5	446	3,214	17	128	10	3,815				
341	Oakley, Muskoka.....	325	22,544	38,195	1,021	3 13	26.7	40	979	4	.....	14	1,047				
342	Olden, Frontenac.....	976	51,569	103,779	1,972	4 22	37.5	715	4,156	6	.....	82	4,876				
343	Oliver, Thunder Bay.....	405	38,561	101,324	1,972	4 87	18.0	686	1,082	73	.....	77	1,873				
344	Onesida, Haldimand.....	1,466	32,577	948,810	6,844	4 67	7.2	2,090	7,967	.....	800	6	10,863				
345	Onondaga, Brant.....	1,198	20,564	704,301	5,072	4 58	7.2	951	5,017	59	.....	77	6,104				
346	Ops, Victoria.....	2,171	36,885	1,660,490	14,120	6 50	9.0	7,963	13,432	.....	.....	169	21,640				
347	Orford, Kent.....	2,764	49,665	1,480,280	15,749	5 70	11.0	971	17,205	94	5,500	2,250	26,040				
348	Orillia, Simcoe.....	3,468	72,701	580,181	11,927	3 47	20.6	1,271	10,084	24	2,500	359	14,988				
349	Oro, Simcoe.....	3,893	73,227	1,062,675	10,539	2 71	9.9	1,904	12,292	114	.....	349	14,642				
350	Osgoode, Carleton.....	4,699	91,170	1,524,825	16,973	3 61	11.1	2,015	14,791	1,064	31	110	19,222				
351	Osnabrock, Stormont.....	4,721	62,042	1,192,942	15,933	3 37	13.4	1,013	16,322	232	1,000	1,305	18,572				
352	Oso, Frontenac.....	969	42,411	91,688	3,540	3 65	38.6	5	3,461	119	.....	176	3,761				
353	Osprey, Grey.....	3,083	70,669	830,570	9,009	2 37	10.8	285	7,085	58	664	1,726	9,983				
354	Otonabee, Peterborough.....	3,278	49,689	1,979,786	14,719	4 49	7.4	1,755	14,486	58	7	166	16,306				
355	Oxford-on-Rideau, Grenville.....	2,735	34,058	787,535	9,557	3 49	12.1	1,400	10,059	100	11	600	12,269				
356	Oxford E., Oxford.....	1,883	34,548	1,480,605	9,431	5 01	6.4	1,954	9,737	29	34	500	12,262				
357	Oxford N., Oxford.....	1,242	21,130	877,222	7,105	6 72	8.1	946	5,190	180	2	363	6,790				
358	Oxford W., Oxford.....	2,046	35,882	1,060,090	8,666	4 24	7.9	2,582	7,524	546	51	275	10,378				
359	Pakenham, Lanark.....	1,915	56,291	618,924	7,060	3 69	11.4	527	6,998	180	1,070	30	8,805				
360	Painepelon and Caonoto, Frontenac.....	1,076	55,155	64,356	2,655	2 11	35.2	303	3,098	27	.....	5	3,488				
361	Papineau Nipissing.....	593	23,834	57,575	842	1 42	14.6	265	620	.....	.....	.....	650				
362	Peel, Wellington.....	3,854	74,244	1,839,410	17,637	4 58	9.3	498	18,158	236	2,600	249	21,747				
363	Pelee Island, Essex.....	620	9,787	283,602	7,652	12 18	26.6	1,294	5,643	53	2,500	.....	9,490				
364	Pelham, Welland.....	2,333	28,927	1,008,415	9,311	3 99	9.2	1,778	7,921	1	3,622	241	15,678				
365	Pembroke, Renfrew.....	7,119	8,359	182,723	1,464	3 04	8.0	547	1,086	8	833	.....	1,591				
366	Percy, Northumberland.....	2,998	51,488	969,900	11,212	3 74	11.6	86	11,088	230	2,515	51	15,070				
367	Perry, Parry Sound.....	1,449	44,221	221,010	3,702	2 55	16.8	1,199	4,007	93	.....	.....	5,259				
368	Petawawa, Renfrew.....	947	28,572	43,999	1,778	1 88	40.4	17	1,551	15	.....	2	1,585				

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

Disbursements, 1899.

No.	Disbursements, 1899.													Assets on December 31, 1899.					Liabilities on December 31, 1899.					
	Allowances, salaries and commission.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debt retired.	Current loans repaid.	Interests on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Stinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
335	487	185	5,533	49	4,837	4,866	54	.....	.....	4,000	55	147	20,813	252	6,054	.....	.....	6,306	4,489	.....	2,763	.....	7,252	
336	932	378	2,823	91	2,896	6,631	.....	.....	.....	2,000	44	399	14,080	1,077	8	.....	1,000	2,085	.....	.....	.....	.....	.....	
337	640	171	3,691	31	2,663	3,551	482	.....	.....	2,000	65	176	13,450	1,568	.....	200	2,500	4,880	.....	.....	.....	.....	1,081	
338	437	237	2,481	5	1,936	4,373	1,756	.....	.....	1,500	122	879	11,894	2,198	55	127	.....	4,880	.....	.....	.....	.....	1,081	
339	1,597	444	9	87	7,540	1,136	.....	.....	.....	1,500	250	50	28,803	2,089	4,183	.....	6,272	5,060	.....	1,671	1,121	1,500	2,013	6,305
340	269	83	142	78	611	1,310	.....	.....	.....	500	.....	21	3,323	492	24	4,644	.....	5,060	.....	.....	4,500	.....	4,600	
341	267	87	274	35	1,436	.....	.....	.....	.....	.....	2	21	1,021	16	809	.....	.....	825	.....	316	.....	.....	316	
342	387	47	370	86	1,442	2,221	.....	.....	.....	.....	100	173	4,766	110	2,547	.....	1,000	3,657	.....	2,511	.....	.....	2,550	
343	243	59	244	10	700	.....	.....	71	.....	800	.....	25	1,452	421	2,070	1,455	1,000	5,046	.....	.....	2,000	.....	2,000	
344	428	114	881	49	3,941	3,114	.....	.....	.....	.....	20	87	9,434	1,429	110	.....	1,000	2,639	.....	.....	.....	.....	.....	
345	447	98	791	223	1,211	2,117	.....	14	.....	.....	.....	171	5,072	1,032	130	14	3,000	4,176	.....	.....	.....	.....	.....	
346	852	177	4,374	175	3,509	4,178	1,570	.....	686	.....	173	266	14,400	7,240	157	.....	4,486	11,883	.....	3,094	3,465	.....	6,560	
347	934	498	2,180	223	2,132	4,731	1,570	.....	1,487	5,632	297	2,828	22,888	3,152	6,907	.....	4,000	14,069	.....	4,615	13,117	.....	18,632	
348	938	537	2,345	64	1,655	6,091	.....	.....	821	2,000	297	224	14,872	116	3,949	.....	525	4,590	.....	2,079	3,925	1,000	1,060	
349	706	276	1,927	79	3,198	5,759	.....	.....	189	.....	24	8	11,856	2,786	4,037	.....	1,363	8,186	.....	4,872	200	50	5,122	
350	860	900	2,070	56	3,847	7,253	446	618	.....	1,096	1,133	1,058	17,689	1,183	2,702	15,618	3,790	20,191	.....	7,836	515	150	8,501	
351	542	303	3,261	242	8,413	4,039	.....	409	1,603	.....	.....	12	3,749	12	1,315	.....	3,194	7,079	.....	2,080	18,282	1,600	21,962	
352	324	96	467	38	429	5,563	.....	.....	51	295	.....	83	9,983	.....	4,858	.....	500	1,827	.....	1,770	149	86	1,405	
353	727	272	1,273	121	1,619	6,693	.....	.....	56	600	.....	23	13,398	2,908	4,477	.....	3,500	10,886	.....	4,858	369	646	5,417	
354	538	163	2,649	383	4,429	5,144	.....	.....	.....	600	60	511	11,357	532	3,225	.....	6,000	9,370	.....	4,379	392	4,871		
355	714	83	487	30	2,017	4,988	26	1,841	.....	500	5	97	10,901	1,361	1,331	.....	6,000	9,370	.....	2,104	832	11	2,947	
356	538	62	3,257	.....	2,725	3,646	191	.....	.....	600	.....	79	6,790	833	17	.....	605	3,297	.....	.....	.....	.....	.....	
357	500	116	1,704	7	1,685	2,268	514	17	.....	.....	.....	52	10,085	893	574	.....	1,681	3,148	.....	.....	353	240	563	
358	628	178	2,658	28	4,376	3,290	1,313	.....	400	1,070	185	187	8,857	448	655	.....	3,800	4,903	.....	2,800	.....	.....	2,944	
359	432	68	1,690	94	1,160	2,965	.....	.....	200	.....	91	167	3,224	264	489	.....	100	853	.....	9	1,600	.....	1,630	
360	390	78	283	15	855	1,145	.....	.....	.....	.....	.....	39	537	.....	13	641	.....	664	.....	.....	.....	.....	2,944	
361	155	23	7	.....	.....	351	.....	.....	.....	62	.....	209	21,317	430	22	.....	5	457	.....	374	43	11	4,432	
362	891	122	3,857	78	6,712	6,731	.....	.....	330	2,600	292	182	9,280	210	7,433	.....	33,370	41,323	.....	4,334	.....	98	4,432	
363	402	156	914	.....	1,303	3,116	.....	.....	1,368	500	3,349	124	14,765	913	969	18,000	5,493	25,365	.....	1,127	20,328	4,300	26,710	
364	608	178	1,050	15	3,908	4,668	4,047	.....	.....	250	7	124	14,765	913	969	18,000	5,493	25,365	.....	.....	1,657	6	1,663	
365	207	76	70	.....	244	934	.....	.....	.....	.....	.....	28	1,659	32	1,152	.....	1,175	1,359	.....	657	.....	53	710	
366	532	257	3,420	49	1,628	6,872	.....	.....	500	1,400	104	299	15,070	.....	816	.....	9,375	10,191	.....	975	1,132	.....	2,107	
367	297	115	394	.....	2,685	.....	.....	.....	291	.....	151	99	3,993	1,268	2,307	.....	65	3,638	.....	1,651	2,244	.....	3,996	
368	342	18	28	.....	61	815	.....	.....	100	.....	24	2	1,440	145	523	.....	318	986	.....	251	318	.....	563	

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1900.	No. of acres assessed, 1900.	Assessed value of real and personal property, 1900.		Taxes imposed for all purposes, 1900.		Receipts, 1899.									
				\$	%	Total.	Per head.	Mills on %	Balance from 1898.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interests and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.
369	Pickering, Ontario	5,338	71,375	3,383,604	25,814	4.84	7.6	23,328	846	1,000	186	13,226	69	38,153			
370	Pikington, Wellington	1,306	29,132	1,043,306	7,750	6.55	7.4	8,080	30	8,833	94	650	76	18,001			
371	Pittsburg, Frontenac	2,106	48,116	810,663	12,860	6.11	15.9	12,494	132	2,389	61	76	12,464				
372	Plantagenet N., Prescott	3,774	50,521	406,630	10,160	2.69	25.0	921	11,055	390	300	205	8,262				
373	Plantagenet S., Prescott	8,312	48,769	391,566	8,979	2.71	22.9	170	7,386	181	200	205	3,217				
374	Plummer's Addition, Algoma	617	16,681	99,180	1,741	2.69	17.6	2,617	203	2,000	2,818	275	23,132				
375	Plympton, Lambton	3,342	75,015	2,047,555	21,021	6.29	10.3	1,681	8,318	99	2,000	5	10,509				
376	Portland, Frontenac	2,147	52,958	462,308	8,508	3.96	18.4	9,318	87	1,000	99	528	10,509				
377	Prince, Algoma	1,163	15,244	40,029	628	3.85	15.7	3	625	79	165	204	11,839				
378	Proton, Grey	2,978	80,107	833,175	9,870	3.31	11.8	2,064	9,251	79	15	294	18,676				
379	Puslinch, Wellington	3,321	58,506	1,440,646	11,023	3.32	7.7	1,047	12,086	163	501	59	18,676				
380	Radcliffe and Maglan, Renfrew	945	40,171	78,383	2,233	3.36	28.5	5,073	62	4,820	75	28	2,246				
381	Racnam, Haldimand	1,639	25,659	543,200	6,349	3.87	11.7	1,101	5,660	102	250	95	7,434				
382	Raleigh, Kent	4,459	71,869	2,494,321	33,243	3.39	13.3	1,027	32,526	35	233	6,183	9,593				
383	Rama, Ontario	1,189	33,708	148,875	3,393	2.85	23.2	3,735	22	1,722	124	600	143	6,568			
384	Ramsay, Lanark	2,084	61,408	680,750	9,925	4.76	14.6	2,964	8,586	174	344	2,000	34	14,112			
385	Ratier and Dunnett, Nipissing	690	20,527	62,500	2,500	3.62	40.0	374	1,601	219	60	1,000	11	3,205			
386	Rawdon Hastings, Renfrew	3,143	66,129	1,180,220	12,772	4.06	10.8	3,553	13,553	50	378	338	14,319				
387	Rayade, Algoma	747	19,134	60,681	1,937	2.62	32.3	21	1,661	36	287	94	2,099				
388	Reay, Ontario	3,481	63,518	1,973,924	12,851	3.69	6.5	142	13,402	70	3,900	169	17,683				
389	Richmond, Lennox and Addington	2,176	49,891	800,985	10,535	4.84	12.2	1,694	11,078	32	961	381	15,398				
390	Rochester, Essex	2,550	32,392	948,205	11,189	4.39	11.8	796	11,078	109	1,728	5,778	17,942				
391	Rolph, Buchanan and Wylie, Renfrew	1,036	40,625	57,141	2,040	1.97	35.7	115	1,895	29	7	1,400	3,447				
392	Romey, Kent	1,850	26,397	746,813	17,426	9.42	23.3	3,041	13,038	60	2,000	890	19,029				
393	Ross, Renfrew	2,801	52,146	632,600	6,060	2.16	9.6	866	5,284	293	918	11,882	6,337				
394	Roxborough, Stormont	4,197	709,870	1,742,368	16,901	4.03	22.0	451	13,384	369	4	293	28,290				
395	Russell, Russell	3,104	71,515	663,306	11,742	3.78	17.7	252	11,933	246	30	25	12,480				
396	Ryde, Muskoka	565	22,447	45,442	1,148	2.03	25.3	199	991	1,093	81	30	1,220				
397	Ryerson, Parry Sound	731	13,877	132,877	1,868	2.56	14.1	324	1,756	68	800	1,350	2,080				
398	St. Joseph, Algoma	1,008	28,078	111,719	2,410	2.87	25.9	109	2,229	50	800	1,350	2,487				
399	St. Vincent, Grey	2,811	63,340	1,389,320	12,819	4.42	8.9	3,625	11,704	68	800	1,350	17,850				
400	Salter, May and Harrow, Algoma	766	32,807	107,138	1,965	2.59	18.5	194	2,640	50	68	144	3,028				
401	Saltfleet, Wentworth	3,038	28,290	1,475,737	14,336	4.74	8.2	2,063	13,638	136	302	2,983	420	19,610			
402	Sandfield, Manitoulin	250	13,506	31,676	452	1.80	14.3	974	3,973	104	204	4	1,078				



TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.												Assets on December 31, 1899.						Liabilities on December 31, 1899.					
	Allowances, salaries, and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks, &c.	Charters.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
369	1,510	416	4,410	860	4,925	9,657	413	38,153	1,247	14,038	677	413	38,153	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
370	506	133	1,468	15	2,553	3,600	56	8,576	1,445	200	56	145	8,576	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
371	694	201	1,639	35	5,124	4,595	102	12,330	5,611	2,227	5,219	2,178	10,016	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
372	606	144	1,317	60	1,320	6,970	437	12,231	850	425	244	645	12,231	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
373	706	132	1,437	51	901	3,632	323	8,291	246	425	70	334	8,291	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
374	180	41	90	130	1,097	1,097	130	1,998	3,682	2,000	8	252	1,998	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
375	856	503	3,691	412	1,554	3,600	3,100	23,922	3,682	2,000	884	3,252	23,922	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
376	536	181	1,088	179	3,713	3,208	65	9,440	1,082	522	100	13	9,440	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
377	57	15	118	65	118	65	65	360	1,082	100	133	142	10,972	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
378	652	197	1,561	137	1,793	5,079	196	14,372	8,914	824	234	18	6,472	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
379	808	189	1,474	60	5,302	5,508	295	18,335	1,700	824	234	18	6,472	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
380	303	42	167	60	3,389	3,389	60	9,267	8,914	824	234	18	6,472	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
381	378	141	716	87	1,991	2,868	250	6,497	371	511	190	61	13,441	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
382	1,146	2,913	2,338	462	1,391	6,983	17,807	50,292	8,914	824	234	18	6,472	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
383	522	117	464	38	27	1,915	1,236	13,055	1,700	824	234	18	6,472	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
384	707	1,097	4,964	53	1,721	4,460	60	9,267	1,700	824	234	18	6,472	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
385	183	438	359	53	1,721	4,460	60	9,267	1,700	824	234	18	6,472	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
386	686	245	626	357	4,453	5,938	479	18,635	371	511	190	61	13,441	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
387	372	44	139	44	1,399	979	82	2,099	371	511	190	61	13,441	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
388	1,275	445	1,736	802	2,430	6,358	82	17,682	4,278	205	121	248	17,682	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
389	536	88	1,658	208	4,036	4,914	1,798	16,896	1,840	1,840	186	114	13,398	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
390	649	160	1,627	201	1,649	4,759	5,516	16,896	1,840	1,840	186	114	13,398	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
391	183	70	22	20	5	3,998	1,307	3,441	1,505	230	4	142	3,441	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
392	636	315	1,640	195	92	1,044	3,713	2,954	4,943	332	2,625	64	18,281	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
393	351	198	969	9	1,146	3,296	297	8,290	2,431	100	36	59	6,169	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
394	663	961	1,980	119	1,146	6,701	12,791	28,290	2,431	100	36	59	6,169	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
395	888	456	1,426	126	1,140	6,196	138	12,438	430	500	564	372	12,438	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
396	192	66	110	12	1,140	607	106	1,046	36	500	18	6	1,046	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
397	198	91	84	80	1,103	607	106	1,046	36	500	18	6	1,046	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
398	268	115	644	44	975	975	55	1,760	169	52	63	146	1,760	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
399	794	292	1,884	456	2,420	7,028	322	18,769	800	15	81	13,769	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328		
400	253	39	167	5	1,411	1,108	108	2,345	1,000	100	112	150	2,345	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
401	905	1,005	3,866	310	2,829	4,852	611	18,698	2,883	100	198	390	18,698	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	
402	101	12	27	24	24	200	200	403	2,883	100	198	390	403	2,277	1,069	3,202	4,250	6,077	1,100	8,832	226	180	10,328	

TOWNSHIP MUNICIPALITIES, 1899-1900. — *Continued.*

No.	Township Municipalities and County in which located.	Population, 1900.	No. of acres assessed, 1900.	Assessed value of real and personal property, 1900.	Taxes imposed for all purposes, 1900.		Receipts, 1899.											
					Total.	Per head.	Mills on \$	Balance from 1898.	Municipal and school		License fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total Receipts.	
									\$	%								\$
403	Sandwich E., Essex	2,238	18,717	628,895	13,448	6.01	21.4	534	12,997	504	504	19	3,710	5,028	876	23,668		
404	Sandwich S., Essex	1,633	23,532	588,618	10,691	6.55	18.2	94	12,421	50	14,746	17	1,800	2,574	17	14,746		
405	Sandwich W., Essex	2,476	23,338	687,406	13,440	6.43	19.6	786	12,466	373	15,315	15	2,000	2,287	15	15,315		
406	Sarawak, Grey	1,261	10,922	283,979	4,476	3.58	17.6	786	4,707	1,454	1,454	16	440	1,350	47	8,799		
407	Sarnia, Lambton	2,064	38,347	775,029	16,348	7.92	21.1	350	15,105	63	18,424	387	1,547	954	387	18,424		
408	Saugeen, Bruce	1,391	36,059	840,270	7,673	4.08	6.8	772	5,084	36	7,673	7	7	7	72	6,971		
409	Sault Ste. Marie, Algoma	726	46,718	376,632	5,367	10.14	20.6	1,082	7,222	79	3,023	539	539	31	8,414			
410	Scarborough, York	3,711	42,875	2,087,757	16,840	4.54	8.1	1,322	16,580	436	3,023	68	200	2,100	68	21,958		
411	Seabrook, Ontario	2,185	49,237	1,036,560	9,330	4.27	9.1	849	8,419	64	849	200	100	100	8	10,833		
412	Seabrook, Ontario	473	9,244	287,600	1,880	3.97	6.5	165	1,719	34	1,719	34	100	100	8	2,016		
413	Sebastopol, Renfrew	729	30,062	54,491	1,137	1.56	20.9	82	1,298	17	1,419	22	22	22	1	9,688		
414	Seneca, Holland	1,816	41,746	884,900	8,286	4.57	9.4	1,263	8,286	136	136	23	5,395	840	20,925			
415	Seymour, Northumberland	2,945	66,920	1,125,175	12,870	3.47	11.4	1,226	13,451	13	13	840	840	840	20,925			
416	Sheffield, Lennox and Addington	2,025	68,978	671,972	7,024	3.47	10.5	109	7,842	136	4,481	925	925	925	12,568			
417	Sherbourne, McClintock, etc., Haliburton	214	10,116	19,198	1,946	3.48	38.8	117	617	7	788	67	67	67	2,447			
418	Sherbourne, McClintock, etc., Haliburton	383	4,680	151,346	1,341	3.50	8.9	24	1,395	39	154	7	7	7	1,655			
419	Sherbrooke S., Lanark	815	36,980	91,006	1,735	2.13	19.1	21	1,759	8	1,759	8	1,695	4	1,759			
420	Shuniah, Thunder Bay	139	95,439	136,711	2,393	17.22	17.5	287	3,214	115	3,220	115	254	254	3,820			
421	Sidney, Hastings	3,973	69,570	2,049,540	19,818	4.99	9.7	3,519	18,042	103	19,922	670	1,107	670	19,922			
422	Smith, Peterborough	2,565	57,738	1,443,710	11,668	4.55	8.0	3,519	11,487	135	15,259	37	37	37	15,259			
423	Snowdon, Haliburton	726	33,016	69,451	3,249	4.48	4.68	69	2,802	59	2,802	59	53	53	3,881			
424	Sombra, Lambton	3,749	72,017	1,012,120	21,632	5.77	21.4	2,586	22,711	275	275	56	2,988	498	29,116			
425	Somersville, Victoria	1,843	62,887	202,645	5,815	3.16	28.7	128	5,701	57	376	194	194	302	6,768			
426	Sophsisburg, Prince Edward	1,854	43,318	989,634	7,292	3.90	7.3	164	7,251	55	55	100	500	500	8,075			
427	Southwood, Elgin	3,703	72,575	2,498,528	23,727	6.41	9.5	6,221	23,838	183	1,281	46	1,991	1,425	34,985			
428	Springer, Nipissing	885	30,312	65,038	1,969	2.16	29.4	82	2,686	183	2,686	350	350	350	3,117			
429	Stafford, Renfrew	1,073	21,318	75,435	2,605	2.43	34.5	593	1,919	298	2,988	14	264	264	2,766			
430	Stamford, Welland	1,968	21,241	805,956	9,995	6.10	12.4	227	10,382	238	238	14	300	300	11,859			
431	Stanhope, Haliburton	486	15,704	24,501	1,251	2.57	51.1	5	1,413	105	1,413	13	300	300	2,146			
432	Stanley, Huron	2,146	43,313	1,655,755	9,477	4.42	5.7	350	9,890	105	2,000	13	3,400	1,000	12,362			
433	Stephen, Huron	4,098	56,721	1,802,405	14,308	3.49	8.0	1,139	15,389	410	2,000	3	3,400	1,000	21,803			
434	Stephenson, Muskoka	1,039	48,262	136,657	3,171	3.05	23.2	416	1,819	106	250	12	216	216	3,586			
435	Stiebel, Muskoka	616	40,691	106,022	1,886	3.05	17.8	416	1,819	8	8	8	8	8	2,243			
436	Storrington, Frontenac	1,726	56,005	417,705	8,593	4.98	20.6	152	8,222	21	8,222	10	100	100	8,505			

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.										Assets on December 31, 1899.						Liabilities on December 31, 1899.						
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction, buildings, waterworks, &c.	Charities.	County levy.	Payment of schools and education.	Drainage work.	Sinking fund and other investments.	Debtors redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debtors outstanding.	Temporary loans.	Miscellaneous.
403	872	231	2,297	270	270	1,231	3,962	5,287	3,110	4,000	1,631	1,384	23,665	1,662	13,698	8,309	13	13,795	5,043	17,383	3,767	1,547	27,790
404	572	346	808	85	85	937	2,213	3,057	761	1,000	732	846	14,367	379	10,838	8,309	41	7,876	3,301	12,880	1,800	1,590	19,671
405	776	211	2,452	36	36	1,410	5,262	2,365	1,958	4,400	421	327	15,218	955	12,961	1,677	1,436	14,717	6,390	8,421	200	2,574	17,585
406	448	283	4,045	49	49	407	3,189	1,599	4,927	440	1,499	340	49	966	1,602	1,602	18,791	1,436	4,926	8,850	240	55	9,145
407	929	629	2,712	338	338	1,244	3,318	2,694	4,297	500	38	70	18,494	811	10,602	13	553	20,393	28,383	1,547	30,480	62	30,480
408	524	128	862	79	79	1,310	2,004	293	293	500	316	211	6,752	1,662	8,309	465	3,022	12,993	2,071	497	52	549	
409	762	546	6,650	69	69	4,249	6,589	3,000	169	2,332	316	319	21,398	465	1,329	13,142	6,470	21,406	5,570	5,570	297	2,368	
410	1,400	305	5,337	874	874	1,466	3,795	3,000	169	2,332	100	4	10	1,802	214	41	1,500	1,755	2,225	785	785	5,570	
411	680	175	1,392	374	374	351	941	16	169	100	100	4	10	1,802	214	41	1,500	1,755	2,225	785	785	5,570	
412	164	83	138	6	6	158	941	16	169	100	100	4	10	1,802	214	41	1,500	1,755	2,225	785	785	5,570	
413	194	23	48	6	6	158	941	16	169	100	100	4	10	1,802	214	41	1,500	1,755	2,225	785	785	5,570	
414	487	104	1,342	251	251	2,446	3,678	4,447	487	487	102	8,410	1,278	1,278	78	521	19	618	463	463	141	141	
415	779	385	5,420	268	268	1,827	4,574	4,889	5,735	5,735	185	405	19,578	1,347	374	374	50	1,300	2,578	1,920	282	2,212	
416	586	323	536	125	125	1,933	2,976	4,889	5,735	5,735	185	405	19,578	1,347	374	374	50	1,300	2,578	1,920	282	2,212	
417	212	52	783	5	5	22	378	601	601	1,099	1,099	27	12,444	124	4,539	8,470	2,600	15,133	3,079	15,000	2,295	637	21,011
418	134	45	93	43	43	333	654	131	131	75	75	78	2,131	124	4,539	8,470	2,600	15,133	3,079	15,000	2,295	637	21,011
419	256	57	175	9	9	209	555	131	131	75	75	78	2,131	124	4,539	8,470	2,600	15,133	3,079	15,000	2,295	637	21,011
420	907	253	323	225	225	849	6,257	254	193	1,468	264	358	19,909	1,520	7,488	1,720	4,524	15,252	654	7,600	1,720	136	690
421	820	402	927	725	725	849	6,257	254	193	1,468	264	358	19,909	1,520	7,488	1,720	4,524	15,252	654	7,600	1,720	136	690
422	525	115	2,693	235	235	6,853	4,108	98	98	98	98	98	14,632	13	11,258	13	1,912	13,183	9,429	912	307	1,100	10,320
423	248	86	237	36	36	382	1,802	2,398	144	1,440	29	417	3,331	647	2,689	2,689	238	3,484	38	38	37	68	68
424	971	631	2,913	464	464	6,780	2,398	1,072	1,702	2,685	2,685	351	28,404	13	22,013	260	33,679	56,554	8,220	39,467	53	174	3,768
425	478	108	659	237	237	565	2,679	1,072	1,702	2,685	2,685	351	28,404	13	22,013	260	33,679	56,554	8,220	39,467	53	174	3,768
426	482	265	468	128	128	2,313	3,700	656	1,743	1,991	334	486	26,706	163	308	3,416	3,500	7,387	2,406	10,000	143	143	12,549
427	907	561	5,480	18	18	5,730	7,800	656	1,743	1,991	334	486	26,706	163	308	3,416	3,500	7,387	2,406	10,000	143	143	12,549
428	338	77	269	19	19	1,080	1,480	385	385	512	259	134	3,073	136	4,521	5,251	1,681	13,967	7,416	6,523	908	908	14,817
429	187	19	189	264	264	516	1,480	385	385	512	259	134	3,073	136	4,521	5,251	1,681	13,967	7,416	6,523	908	908	14,817
430	529	333	1,879	59	59	2,028	4,745	333	324	1,480	338	529	10,764	1,095	3,156	3,156	254	1,342	533	264	139	326	9413
431	80	168	102	5	5	134	1,129	2,000	145	1,450	25	302	2,083	487	1,231	1,231	10,227	14,478	6,030	300	318	275	1,468
432	669	236	2,252	15	15	2,063	4,543	2,000	145	1,450	25	302	2,083	487	1,231	1,231	10,227	14,478	6,030	300	318	275	1,468
433	799	242	3,194	725	725	2,139	6,173	283	1,790	3,400	540	653	20,014	1,789	526	293	4,421	21,888	8,236	318	275	1,468	10,424
434	287	116	463	68	68	1,161	1,613	328	250	573	43	38	3,382	204	1,807	1,252	1,938	5,201	1,121	2,090	570	192	3,973
435	253	39	353	18	18	1,353	2,40	90	90	100	43	23	2,172	71	240	390	1,568	2,269	626	810	810	810	810
436	395	232	580	378	378	3,180	3,180	99	99	100	43	23	2,172	71	240	390	1,568	2,269	626	810	810	810	810

No.	Township Municipalities and Counties in which located.	Population, 1900.	No. of assessed, 1900.	Assessed values of real and personal property, 1900.	Taxes imposed for all purposes, 1900.		Receipts, 1899.									
					Total.	Per head.	Mills on %	Balance from 1898.	Municipal and school taxes.	License fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.
437	Strong, Parry Sound	708	38,506	132,175	1,912	2 70	14 5	173	1,506	1	150	14	1,843			
438	Sullivan, Grey	3,259	13,630	10,646	3 23	9 1	231	10,834	29	1,400	189	12,683				
439	Sunnidale, Simcoe	2,217	54,945	836,584	7 841	3 54	9 4	1,894	8,225	197	2,000	331	13,747			
440	Sydenham, Grey	3,400	73,207	1,192,800	13,086	3 85	11 0	12,045	65	356	179	12,645				
441	Tay, Simcoe	4,215	45,529	574,533	10,275	2 44	17 9	11,542	51	109	560	171	13,587			
442	Tecumseh, Simcoe	3,921	65,955	1,683,755	15,720	4 88	9 3	3,754	18,301	117	1,500	693	34,485			
443	Tekumnah, Manitowlin	440	19,631	53,090	1,064	2 42	20 1	127	729	.....	5	861				
444	Thessalon, Algoma	626	56,071	1,483	2 82	26 4	570	1,398	.....	.....	.....	1,968				
1,316	Thorah, Ontario	32,059	536,218	4,998	3 80	9 3	9 3	5,061	31	426	1,535	60	7,521			
446	Thorold, Welland	1,679	22,851	6,061	3 97	10 5	459	6,955	49	.....	1,473	8,936				
447	Thurlow, Hastings	4,194	53,468	1,220,400	17,512	4 18	9 0	1,768	26,903	130	21	671				
3,329	Thurley E., Kent	4,471	51,073	30,182	9 07	20 0	1,716	25,986	.....	.....	26	2,416				
449	Tilbury N., Essex	2,048	26,743	646,710	11,663	5 69	18 0	952	11,687	100	3,500	2,804				
2,160	Tilbury W., Essex	22,355	636,125	16,096	7 45	25 3	2,685	13,898	348	.....	1,000	26,629				
3,748	Tin*, Simcoe	11,748	78,048	373,923	3,118	3 13	12 1	522	13,433	23	.....	451				
482	Torbolton, Carleton	800	29,067	143,700	3,779	3 63	21 7	522	3,048	.....	.....	4,068				
5,087	Toronto, Peel	453,393	2,718,045	19,779	3 89	7 3	3,048	20,700	351	4,442	1,163	48				
454	Toronto Gore, Peel	970	19,000	734,010	5,418	5 59	7 4	205	5,655	27	78	147				
1,615	Toronto, Simcoe	456,797	738,823	6,115	3 79	8 3	1,719	7,666	150	500	2	304				
455	Toronto, Simcoe	3,675	64,954	2,374,500	17,416	4 74	7 3	15,901	.....	.....	6,041	11,041				
3,405	Towansend, Norfolk	2,457	66,384	2,454,394	10,428	4 53	6 3	200	15,483	96	6,792	867				
456	Trafalgar, Halton	2,457	1,361,885	10,764	4 38	5 5	2,147	11,042	.....	.....	170	82				
458	Tuckersmith, Huron	843	59,352	67,098	2,576	3 06	38 4	559	2,443	49	.....	298				
459	Tudor and Cashel, Hastings	2,161	35,538	1,232,780	7,482	3 46	6 1	1,498	6,632	42	.....	13				
3,734	Turaberry, Huron	77,048	1,416,210	16,051	4 46	11 8	501	16,326	158	.....	7	9,192				
461	Tyendinaga, Hastings	2,326	42,678	1,809,575	11,116	4 78	6 1	2,877	10,204	34	600	571				
462	Uxborne, Huron	2,727	51,719	993,895	10,593	3 88	10 7	565	10,814	115	200	80				
463	Uxbridge, Ontario	302	8,840	36,345	924	3 06	25 4	67	8,146	.....	231	18,395				
464	Van Horns, Rainy River	4,342	67,192	2,913,535	22,008	5 07	7 6	13,003	21,727	421	200	82				
465	Vaughan, York	1,794	55,010	521,665	7,929	4 45	15 3	3,138	8,783	.....	1,204	497				
466	Verulam, Victoria	2,956	62,060	489,210	9,879	3 28	20 1	199	10,269	12	.....	4				
467	Vespra, Simcoe	2,675	51,000	873,500	10,729	4 01	12 3	410	11,631	.....	40	12,865				
468	Wainfleet, Welland	2,675	49,873	1,953,661	14,101	5 07	7 2	31	11,092	65	1,250	172				
2,779	Wallace, Perth	4,186	6,652	1,949,680	19,687	4 70	10 1	650	19,842	130	1,100	352				
470	Walpole, Haldimand	4,186	6,652	1,949,680	19,687	4 70	10 1	650	19,842	130	3,667	14				

TOWNSHIP MUNICIPALITIES, 1899-1900. — Continued.

Disbursements, 1899.

No.	Disbursements, 1899.											Assets on December 31, 1899.						Liabilities on December 31, 1899.						
	Allowances and commission.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debits on loans redeemed.	Current loans re-paid.	Advances on loans and deposits.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due.	Outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
437	198	34	340	54	32	1,123	46	95	150	1,400	73	221	1,832	21	2,090	2,379	77	2,118	1,125	750	150			1,275
438	497	128	1,716	54	264	2,185	3,879	221	150	2,000	130	165	12,613	70	59	2,250	2,950	2,379	3,146	750	150			750
439	763	610	1,744		71	1,682	3,327	190	173	2,000	108	143	10,645	3,082	1,405	750	500	5,237	3,146	3,073	356			6,943
440	891	239	3,287	143	162	2,214	5,423	208	170	6	108	143	12,645	878	8,683	75	500	9,586	2,248	727	356			1,083
441	780	280	1,503	209	209	2,683	7,020	26	173		40	208	12,709	2,152	62	2,094	75	9,586	2,248	550	300			3,048
442	673	286	3,422	280	106	6,650	6,379	4,177		1,500	40	50	32,382	878	52	2,094	75	4,307	8,000	8,000	2,970			3,048
443	124	52	110	7	7	509	8,949	4,177				49	851	10	766	104	200	776	104	8,000	2,970			338
444	205	110	333	31	31	924	9,949	4,177				49	851	10	766	104	200	776	104	8,000	2,970			338
445	593	459	1,922	155	155	691	1,864	1,000	1,000	388	600	319	1,603	365	469	2,000	2,000	55,035	2,262	9,000	408			9,408
446	537	220	670	1	23	246	3,523	1,000	1,000	500	14	150	8,862	74	3,556	2,216	2,000	3,680	2,262	9,000	408			3,478
447	757	359	1,613	1	273	3,507	6,111	832	98	1,600	77	126	19,543	27	7,308	2,000	2,000	9,335	4,924	9,000	973			5,020
448	1,215	1,457	4,260	323	323	2,115	7,752	16,897	8,352	2,060	5,885	4,015	61,821	333	30,806	9,798	9,798	40,935	5,925	117,389	19,203			152,133
449	985	333	1,899	304	304	912	3,852	3,881	1,306	3,500	947	1,829	19,829	2,331	8,707	575	11,613	4,096	28,252	1,987	3,191			34,346
450	667	463	1,437	389	389	949	3,255	3,881	1,306	3,500	2,101	1,078	25,606	1,021	6,695	10,248	10,248	21,267	1,086	42,180	2,970			46,236
451	775	207	1,498	111	81	1,668	4,849	8,916	6,350	2,000	2,063	327	14,408	1,021	6,695	16,091	16,091	25,422	2,542	48,755	1,000			52,297
452	282	60	297			462	2,338		839	342		67	3,843	923	1,955	2,178	2,178	38,776	907	4,000	3,000			1,054
453	1,125	807	5,273	259	265	5,560	7,841	4,455	967	3,000	402	529	30,214	2,538	2,733	28,213	5,290	38,776	4,000	3,000	3,000			7,000
454	456	79	2,579		51	1,332	1,900	6	1,000	830	77	126	6,857	211	31	3,506	1,440	5,188	4,900	4,900	3,000			490
455	546	148	610		69	2,408	3,610	34	502	1,600	98	234	8,856	1,185	1,185	2	150	1,455	1,455	9,000	729			729
456	985	223	2,342		5	687	7,116		178	5,833	198	224	22,817	280	5,154	5,154	813	1,455	1,455	9,000	3,191			4,958
457	979	497	6,155	233	233	4,472	7,108	6,732	200	3,150	1,321	1,115	31,270	280	3,882	45,173	5,127	64,462	380	5,982	5,700			6,200
458	638	891	1,989		33	2,164	5,461	2,575	387	2,000	149	484	14,280	2,744	113	17,814	800	21,471	1,224	5,982				5,982
459	338	41	567		9	178	1,424		8			8	2,665	784	2,268	2,268	3,052	3,052	1,224	5,982				1,749
460	594	143	1,118		5	1,223	3,476	112	200	1,000	25	131	7,821	1,371	573	1,65	2,109	2,109	1,224	5,982				1,749
461	1,160	170	1,199		330	6,541	7,376	112	200	200	38	43	17,057	1,099	1,847	1,65	2,109	2,109	1,224	5,982				1,749
462	623	151	3,475		2	2,164	4,251	56	200	200	2	139	11,057	2,338	56	425	2,819	2,819	2,266	400	1,178			2,854
463	876	832	1,542		237	1,048	4,095	1,091	200	1,100	1,219	400	12,640	267	1,050	5,690	1,909	8,916	19,800	19,800	200			19,800
464	144	144	22		150	160	150		200	1,100	1,219	400	12,640	267	1,050	5,690	1,909	8,916	19,800	19,800	200			19,800
465	1,550	399	9,543		15	6,019	8,717	2,105	500	1,100	1,219	400	12,640	267	1,050	5,690	1,909	8,916	19,800	19,800	200			19,800
466	454	222	444		307	1,793	4,636	188	500	1,100	1,219	400	12,640	267	1,050	5,690	1,909	8,916	19,800	19,800	200			19,800
467	798	212	1,671		52	1,725	4,702	1,422	408	92	100	107	11,339	467	2,599	3,532	2,574	7,757	2,158	2,750	3,191			4,364
468	689	324	389	453	8	3,410	4,166	876	1,686	500	400	132	13,637	579	2,739	25,000	8,848	36,924	2,630	2,019	2,750			4,897
469	702	146	1,544		41	2,560	4,373	155	3,888	2,175	919	83	16,585	378	4,575	3,888	778	9,619	3,460	20,000	60			7,192
470	860	284	4,395		881	5,149	8,363	430	500	3,236	224	430	24,322	10	10	600	610	610	2,700	2,700	431			23,520

TOWNSHIP MUNICIPALITIES, 1899-1900.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1900.		No. of acres assessed, 1900.	Assessed value of real and personal property and income taxable, 1900.		Taxes imposed for all purposes, 1900.			Receipts, 1899.		Total receipts.							
		Population, 1900.	No. of acres assessed, 1900.		Assessed value of real and personal property and income taxable, 1900.	Total.	Per head.	Mills on %		Balance from 1898.			Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.
								%	%	%	%								
471	Walsingham N., Norfolk	2,240	40,244	555,920	8,954	4 00	16 1	144	7 210	15	300	142	7,811						
472	Walsingham S., Norfolk	1,724	53,920	692,528	9,935	5 76	14 3	459	10 210	18	392	388	11,467						
473	Warwick, Lambton	3,087	70,129	2,013,000	15,944	5 04	7 7	576	17 383	52	100	162	21,983						
474	Waterloo, Waterloo	7,016	82,175	3,669,550	23,646	4 21	8 2	2,360	26,360	390	1,843	860	35,264						
475	Watt, Muskoka	926	34,983	127,700	2,304	2 49	18 0	352	2 459	18	143	59	3,681						
476	Wawanosh E., Huron	1,941	41,734	1,427,960	6,649	3 43	4 7	1,463	6,916	6	900	120	9,434						
477	Wawanosh W., Huron	4,058	61,695	1,123,500	7,889	3 84	7 0	425	5,967	29	515	23	6,936						
478	Wellesley, Waterloo	2,968	2,148,330	21,583	4 40	10 4	5 8	16,965	434	2,050	794	45	22,705						
479	Westneath, Kennewick	3,419	70,443	293,777	9,436	2 76	32 1	332	8 908	204	800	56	10,289						
480	Westminster, Middlesex	4,179	63,097	2,982,430	19,957	4 78	6 7	13,479	13,624	153	191	45	34,043						
481	Whitby E., Ontario	2,526	31,175	1,626,235	10,165	4 02	6 3	600	9 462	182	160	596	12,104						
482	Whitby, Ontario	2,064	30,735	1,434,045	11,363	5 51	7 6	651	10 115	68	1,250	39	12,123						
483	Whitechurch, York	3,605	60,116	1,617,885	11,832	3 38	7 3	1,073	11,488	28	354	70	14,460						
484	Widdifield, Nipissing	638	45,060	69,575	2,045	3 21	29 4	16	1 580	32	13	25	1,641						
485	Wilberforce and Alcona N., Renfrew	2,159	68,537	134,350	4,012	1 86	29 9	491	4 957	5	5	25	5,478						
486	Williams E., Middlesex	1,464	38,603	1,230,810	10,402	7 11	8 5	1,047	13,193	58	16	112	14,931						
487	Williams W., Middlesex	1,516	35,176	893,640	8,828	5 63	9 5	161	7 377	10	505	102	13,510						
488	Williamsburg, Dundas	3,725	59,689	1,464,742	16,825	4 52	11 5	204	16,046	10	2,899	25	18,684						
489	Willoughby, Welland	931	18,798	3,952	3 24	9 5	235	4,588	119	39	50	40	4,987						
490	Wilmot, Waterloo	5,126	60,809	2,693,350	19,868	3 88	7 7	2,689	19,553	516	950	118	23,826						
491	Winchester, Dundas	3,141	67,048	1,341,535	21,417	6 82	16 0	285	19,675	13	2,500	443	24,254						
492	Windham, Norfolk	3,786	66,719	1,569,465	14,197	7 75	9 0	285	13,113	57	92	52	13,589						
493	Wolfe Island, Frontenac	1,606	30,768	595,400	8,308	5 17	14 0	45	8 586	62	43	8	8,706						
494	Wolford, Grenville	1,694	46,428	536,754	6,379	3 77	6 8	190	6 865	31	1,200	582	8,758						
495	Wollaston, Hastings	722	62,391	64,105	2,219	3 07	34 6	1,879	11	1	286	2	2,257						
496	Woodhouse, Norfolk	1,869	34,500	1,113,684	9,366	5 01	8 4	710	9 531	200	760	82	11,693						
497	Woodwich, Waterloo	4,336	53,539	2,561,695	19,362	4 47	7 6	3,689	21,302	9	490	268	26,158						
498	Yarmouth, Elgin	4,729	69,595	2,682,087	28,025	5 94	10 4	1,121	28,154	169	22	137	35,003						
499	Yonge and Escott Front, Leeds	2,191	54,902	12,214	5 57	17 1	120	11,256	163	632	360	457	12,148						
500	Yonge and Escott Rear, Leeds	1,025	27,334	399,410	5,972	5 83	15 0	19	6 901	122	390	1,312	110,685						
501	York, York	8,600	58,000	5,722,710	81,527	9 48	14 2	167	94,450	797	12,379	1,461	12,801						
502	Zone, Kent	1,197	25,167	699,520	6,430	5 37	10 7	1,365	7 515	10	1,350	161	30,925						
503	Zorra E., Oxford	3,867	7,925,460	22,282	5 76	8 2	4,190	22,254	429	18	2,500	130	30,925						
504	Zorra W., Oxford	2,125	55,013	2,562,720	15,259	7 18	6 0	6,580	15,789	44	550	9	27,042						

TOWNSHIP MUNICIPALITIES, 1899-1900. — Continued.

No.	Disbursements, 1899.										Assets on December 31, 1899.					Liabilities on December 31, 1899.						
	Other expenses of municipal govern-ment.	Roads and bridges.	Construction of build-ings, waterworks, etc.	Charities.	County levy.	Payment on account of schools and edu-cation.	Drainage work.	Sinking fund and other investments.	Debentures redeemed.	Current loans re-paid.	Interest on loans, advances and de-bentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.
471	409	1,711	1,711	11	1,315	3,630	3	180	7,478	333	3,694	1,105	7,132	3,537	400	3,537	1,105	3,537	400	3,537	3	3,940
472	469	2,212	2,212	42	1,823	3,591	3	178	11,268	199	2,212	3,319	21,268	1,244	20,739	1,244	3,319	2,212	20,739	840	2,212	21,983
473	636	4,346	4,346	77	4,137	6,124	329	349	3,993	2,888	2,050	2,888	11,905	28	1,984	2,050	645	2,657	2,050	840	216	6,926
474	610	786	4,500	149	4,911	1,351	2,069	2,069	1,033	752	35,264	752	35,264	36,928	36,928	36,928	4,214	41,142	21,338	863	2,220	22,201
475	239	48	192	15	1,351	1,597	148	100	66	18	2,467	18	2,467	404	808	471	3,700	4,142	1,000	863	1,631	2,220
476	515	129	947	9	1,424	3,522	...	...	...	...	7,470	1,964	259	1,964	259	2,223	2,223	2,223	1,472	1,472	1,472	1,472
477	459	1,604	1,604	45	800	2,860	236	35	515	17	1,604	17	6,889	47	2,130	4,470	900	3,077	1,371	240	145	1,706
478	367	313	4,725	16	3,941	5,604	3,080	673	1,148	269	2,701	1,148	10,280	4	4,470	13,306	1,700	17,780	4,284	1,151	2,153	7,598
479	377	180	1,290	53	1,781	4,283	300	300	1,781	139	1,290	139	10,280	9	1,290	13,306	3,781	3,790	2,796	1,151	2,153	7,598
480	1,198	441	6,796	389	6,535	7,283	300	300	1,781	139	1,290	139	10,280	9	1,290	13,306	3,781	3,790	2,796	1,151	2,153	7,598
481	812	238	2,352	268	1,783	4,623	300	300	1,781	139	1,290	139	10,280	9	1,290	13,306	3,781	3,790	2,796	1,151	2,153	7,598
482	820	135	1,877	194	1,747	3,984	1,317	1,317	1,700	28	1,700	28	11,858	246	49	3,200	1,544	5,039	6,047	1,700	80	80
483	843	2,314	5,684	54	3,535	5,684	176	320	1,000	64	1,000	64	14,297	163	314	61	608	1,273	35	5,152	121	5,808
484	405	20	366	22	891	2,147	749	560	560	95	1,641	95	1,641	287	314	61	608	1,273	35	5,152	121	5,808
485	342	86	550	22	891	2,147	749	560	560	95	1,641	95	1,641	287	314	61	608	1,273	35	5,152	121	5,808
486	524	158	2,713	104	3,377	3,043	188	377	505	84	547	163	4,201	1,277	1,039	3,769	350	4,471	522	13	84	619
487	630	97	3,175	90	2,447	3,115	79	79	505	84	547	163	4,201	1,277	1,039	3,769	350	4,471	522	13	84	619
488	458	269	4,075	445	2,659	2,312	384	495	1,800	224	1,353	18	13,252	985	5,195	462	368	6,648	2,806	2,850	290	3,327
489	204	71	659	14	1,420	2,621	384	495	1,800	224	1,353	18	13,252	985	5,195	462	368	6,648	2,806	2,850	290	3,327
490	1,073	339	4,404	24	3,637	9,951	376	376	950	306	411	21,710	4,721	266	795	56	2,098	2,465	3,373	900	25	3,972
491	935	334	2,750	132	1,000	7,654	2,076	4,194	2,900	1,426	2,230	24,231	2,116	266	795	56	2,098	2,465	3,373	900	25	3,972
492	814	418	1,222	59	3,852	2,960	503	4,194	2,900	1,426	2,230	24,231	2,116	266	795	56	2,098	2,465	3,373	900	25	3,972
493	415	86	610	68	3,350	3,830	36	36	846	58	846	58	12,920	679	2,011	23	3,456	3,369	1,507	22,821	764	25,863
494	390	101	319	68	2,907	3,072	71	71	144	9	1,295	36	8,465	241	5,122	241	2,774	5,284	4,763	92	16	108
495	235	45	580	25	112	1,127	83	59	144	9	1,295	36	8,465	241	5,122	241	2,774	5,284	4,763	92	16	108
496	638	81	2,172	107	2,720	3,586	181	181	510	3	1,295	36	8,465	241	5,122	241	2,774	5,284	4,763	92	16	108
497	1,114	372	7,478	47	3,276	8,062	94	1,960	510	1,039	365	23,907	9,342	1,151	226	5,010	1,277	12,643	20,070	774	20,070	20,070
498	1,558	246	9,581	57	7,711	7,938	205	6,000	2,069	544	34,019	1,584	23,807	2,351	5	9,010	1,335	4,486	74	3,079	296	3,499
499	577	225	3,016	75	1,642	3,338	544	731	6,000	439	1,05	11,248	1,584	1,500	5,080	5,080	2,000	8,788	1,032	8,788	296	9,290
500	353	137	208	...	1,257	2,659	731	2,659	801	5	7,667	882	235	8,693	235	8,693	2,932	12,148	15,586	1,032	15,586	15,586
501	526	3,668	20,874	444	9,709	21,900	5,616	21,514	6,948	7,630	6,052	110,241	444	64,117	30,274	117,293	212,128	24,197	10,583	23,848	14,829	173,457
502	549	31	3,305	95	784	3,064	2,148	607	2,600	211	105	110,241	444	64,117	30,274	117,293	212,128	24,197	10,583	23,848	14,829	173,457
503	839	146	8,203	70	4,508	6,788	2,439	2,425	2,600	585	620	28,818	12,181	620	2,919	2,919	1,717	5,256	4,723	1,612	1,495	6,741
504	762	390	6,401	60	4,310	4,971	3,176	18	1,000	308	340	23,008	23,008	4,004	1,353	14,541	5,331	7,860	13,060	6,650	1,495	14,561

STATISTICS OF VILLAGE MUNICIPALITIES OF ONTARIO, 1899-1900.

No.	Village Municipalities and Communes in which located.	Population, 1900.	Assessed values of real and personal property and income tax-able, 1900.			Taxes imposed for all purposes, 1900.			Receipts, 1899.										Disbursements, 1899.			
			%	Total.	Per head.	Mills on %	Balance from 1898.	Municipal and school taxes.		Licenses, fees, rents, fines, etc.	Water, gas and electric light	Funds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Alliances, salaries and commissions.	Laying of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	
								1898	1900													1898
1	Acton, Halton	1,376	289,980	5,738	4.17	19.8	9	4,330	5,786	464	1,095	94	2,166	.....	817	15,842	619	1,417	284	22	22	
2	Ailsa-Craig, Middlesex	714	127,655	2,894	3.35	18.8	36	2,523	2,75	478	2	23	.....	14	3,360	102	96	80	26	26		
3	Alexandria, Glengarry	1,670	299,262	6,478	3.88	28.3	35	7,301	5,69	2,901	.....	16,572	.....	35	27,414	183	2,912	249	174	174		
4	Alvinston, Lambton	1,000	205,120	4,737	4.74	23.1	.....	4,792	539	.....	.....	3,568	.....	252	9,151	345	925	84	16	16		
5	Arkona, Lambton	473	83,275	1,064	2.25	12.8	193	1,254	177	.....	.....	250	.....	62	1,986	152	.....	84	13	13		
6	Arthur, Wellington	1,442	252,755	5,319	3.69	21.0	125	5,280	645	3,000	123	2,400	.....	57	11,630	454	170	123	50	50		
7	Ashburnham, Peterborough	1,715	436,059	8,108	4.72	18.6	681	6,801	638	59	12	2,131	.....	275	10,594	370	915	219	322	322		
8	Athens, Leeds	965	180,000	3,688	3.82	20.0	643	3,187	65	10	577	.....	4	3,155	120	66	123	31	31			
9	Ayr, Waterloo	832	260,301	4,213	5.06	16.2	.....	4,741	84	200	200	.....	6	2,882	178	40	182	21	21			
10	Bath, Lennox & Addington	345	117,083	1,685	4.88	14.4	344	1,741	.....	.....	.....	250	.....	11	2,713	212	130	33	6	6		
11	Bayfield, Huron	570	89,126	1,302	2.28	14.6	162	4,068	238	414	49	250	.....	86	6,952	135	883	185	.....	.....		
12	Beansville, Lincoln	763	185,000	3,842	5.04	20.8	800	3,270	192	1,776	250	500	.....	105	5,117	199	230	224	.....	.....		
13	Beaverton, Ontario	726	158,268	2,650	3.65	16.7	25	3,333	332	.....	.....	3,602	3,500	667	13,245	538	1,645	200	.....	.....		
14	Beeton, Simcoe	765	152,265	3,107	4.06	20.3	429	1,285	183	.....	.....	7	.....	7	1,904	140	.....	58	.....	.....		
15	Belle River, Essex	880	208,955	4,001	4.55	19.2	143	3,974	291	3,477	105	4,226	.....	22	12,238	311	670	535	37	37		
16	Blyth, Huron	460	62,695	1,178	2.56	19.2	3,432	3,459	312	3,000	.....	.....	9	10,418	176	271	213	313	313			
17	Bocayzeon, Victoria	863	151,711	3,082	3.57	20.3	173	2,828	356	.....	.....	750	.....	107	4,214	150	52	183	16	16		
18	Bolton, Peel	596	158,050	2,370	3.98	15.0	.....	5,793	194	.....	.....	1,051	.....	.....	7,049	603	474	392	30	30		
19	Bradford, Simcoe	913	247,783	5,421	5.94	21.9	11	6,132	194	17	.....	.....	653	10,849	219	66	159	6	6			
20	Bridgeburg, Welland	1,206	479,280	6,242	5.18	13.2	1,955	6,132	206	.....	.....	2	1,396	.....	239	8,534	343	481	395	50		
21	Brighton, Northumberland	1,387	345,360	6,889	4.95	13.2	1,533	5,804	639	2,400	231	1,782	.....	79	19,454	433	1,130	341	100	100		
22	Brussels, Huron	1,228	314,340	7,469	6.08	23.8	1,680	6,316	881	3,252	149	13	1,500	2,000	642	8,537	192	321	165	30	30	
23	Burk's Falls, Parry Sound	704	142,843	3,948	5.61	27.6	241	4,914	376	.....	.....	105	3,400	.....	63	9,059	310	245	363	12	12	
24	Burlington, Halton	1,233	353,950	4,680	3.50	13.0	241	4,914	376	.....	.....	6	.....	23	4,554	365	22	258	73	73		
25	Caledonia, Haldimand	936	175,904	3,861	3.92	21.9	548	3,785	391	627	70	1,700	.....	203	28,306	467	325	446	615	615		
26	Campbellford, Northumberland	2,460	762,265	13,858	5.63	18.2	11,483	13,127	596	.....	.....	.....	.....	89	7,434	271	357	116	31	31		
27	Cannington, Ontario	1,250	279,055	4,184	3.35	15.0	.....	3,924	246	.....	.....	1,000	.....	78	6,059	175	673	368	404	404		
28	Cardinal, Grenville	1,238	314,925	3,935	3.18	12.5	34	4,864	576	.....	.....	1,400	.....	.....	1,000	163	.....	.....	.....	.....		
29	Caselman, Russell	581	41,442	1,466	4.22	35.4	47	1,373	79	.....	.....	.....	.....	.....	6,522	175	673	368	404	404		
30	Cayuga, Haldimand	1,204	174,400	3,573	2.37	20.5	443	3,221	368	.....	8	650	.....	179	4,810	183	226	116	14	14		



VILLAGE MUNICIPALITIES, 1899-1900.—Continued.

Disbursements, 1899.—Continued.

Assets on December 31, 1899.

Liabilities on December 31, 1899.

3

No.	Disbursements, 1899.—Continued.										Assets on December 31, 1899.						Liabilities on December 31, 1899.						
	Streets, bridges and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	
1	563	8,156	64	...	1,520	629	405	800	937	140	15,556	286	463	3,247	8,000	20,200	32,196	1,040	20,885	1,799	48	23,724	
2	832	1,306	9	191	2,366	32	485	32	32	179	3,360	82	112	112	37,900	1,465	41,659	1,659	35,104	4,222	200	39,526	
3	2,020	1,442	28	234	2,268	924	14,650	2,315	2,315	15	27,414	1,162	474	1,350	1,350	2,775	41,787	6,542	1,814	1,068	200	2,882	
4	478	...	360	217	2,404	600	2,714	230	230	674	9,151	474	...	...	...	990	1,205	1,814	1,068	...	...	...	
5	126	...	31	119	915	250	250	10	10	21	1,721	215	...	...	...	3,060	5,614	1,106	15,500	605	132	17,343	
6	778	600	12	437	1,962	689	1,900	1,113	1,113	155	11,343	287	822	1,345	9,000	6,932	17,379	1,106	16,816	2,131	2,652	21,699	
7	462	2,569	108	815	2,307	417	...	543	543	502	10,594	622	954	825	9,000	6,932	17,379	1,106	16,816	2,131	2,652	21,699	
8	401	99	3	258	1,835	95	...	543	543	502	3,438	471	954	825	9,000	6,932	17,379	1,106	16,816	2,131	2,652	21,699	
9	707	4	19	348	1,805	457	48	702	702	170	5,155	807	4,206	4,206	9,000	5,980	11,083	12,504	577	7	1,553	13,081	
10	267	...	93	350	1,247	...	...	48	48	6	2,382	121	2,000	2,000	9,000	1,707	3,828	12,504	577	7	1,553	13,081	
11	846	...	4	89	1,200	...	...	256	256	6	2,340	368	2,000	2,000	9,000	1,707	3,828	12,504	577	7	1,553	13,081	
12	589	...	43	...	1,650	...	...	799	799	6	2,340	368	2,000	2,000	9,000	1,707	3,828	12,504	577	7	1,553	13,081	
13	535	...	19	246	817	116	700	304	304	97	4,013	1,104	128	2,816	15,000	2,786	18,168	374	12,980	1,060	8	14,422	
14	388	3,741	63	...	744	...	...	3,692	3,692	551	13,109	136	102	816	36,000	8,490	12,638	781	4,925	1,170	100	6,876	
15	310	...	2	143	722	...	...	3,692	3,692	166	1,631	373	359	425	735	7,422	43,660	376	19,603	1,000	100	21,079	
16	396	...	19	153	1,316	325	4,201	625	625	181	12,106	132	125	425	735	4,470	9,707	872	10,039	3,360	10	14,300	
17	411	...	51	298	1,200	429	...	225	225	383	6,587	3,831	202	1,566	785	5,847	11,436	2,161	3,000	3,360	10	14,300	
18	794	...	17	163	1,605	136	750	750	44	210	4,122	32	2	1,566	785	5,847	11,436	2,161	3,000	3,360	10	14,300	
19	425	...	44	308	2,350	551	1,374	259	259	130	7,035	32	2	1,566	785	5,847	11,436	2,161	3,000	3,360	10	14,300	
20	1,636	...	2	825	2,473	16	381	381	134	1,114	4,407	14	4,530	16	1,386	1,436	14,472	1,862	4,123	1,051	600	5,161	
21	745	415	116	369	3,600	...	...	1,610	1,610	47	8,634	1,942	678	16	1,386	1,436	14,472	1,862	4,123	1,051	600	5,161	
22	8,172	1,614	9	247	1,574	3,957	1,610	1,610	47	8,634	1,942	678	16	1,386	1,436	14,472	1,862	4,123	1,051	600	5,161	5,603	10,395
23	235	48	237	394	1,606	74	175	2,100	405	25	18,786	688	709	8,330	140	15,415	25,122	246	41,309	6,667	172	48,222	
24	1,624	...	197	318	1,900	74	254	3,200	180	62	4,012	542	375	2,000	1,359	8,638	11,961	1,600	8,348	600	384	10,332	
25	2,237	7,998	158	568	4,402	2,719	2,950	2,156	285	285	25,776	2,530	1,480	30,000	30,000	6,800	7,717	1,500	1,148	600	2,109	5,600	
26	2,237	7,998	158	568	4,402	2,719	2,950	2,156	285	285	25,776	2,530	1,480	30,000	30,000	6,800	7,717	1,500	1,148	600	2,109	5,600	
27	1,238	...	36	343	1,690	361	2,779	190	112	74	7,434	39	159	760	760	7,392	41,402	40,058	5,500	820	3,348	43,406	
28	860	...	58	247	1,590	163	1,000	213	260	260	6,013	39	159	760	760	7,392	41,402	40,058	5,500	820	3,348	43,406	
29	125	...	58	247	1,590	163	1,000	213	260	260	6,013	39	159	760	760	7,392	41,402	40,058	5,500	820	3,348	43,406	
30	695	33	53	225	1,450	488	650	172	172	316	4,621	189	437	350	350	3,400	3,598	258	3,015	1,228	185	3,393	
																4,500	5,126	695	2,812	200	200	185	3,012

VILLAGE MUNICIPALITIES, 1899-1900.—Continued.

No.	Village Municipalities and Counties in which located.	Population, 1900.	Assessed values of real and personal property and income taxable, 1900.	Taxes imposed for all purposes, 1900.			Receipts, 1899.										Disbursements, 1899.				
				Total.	Per head.	Mills on %	Balance from 1898	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice.	
31	Chesley, Bruce	1,658	365,600	8,322	4.99	22.7	4,318	7,836	264	17	1,900	1,900	603	14,568	484	626	704	362	...		
32	Chippewa, Dundas	847	152,610	2,572	3.04	16.9	2,997	2,997	286	...	300	300	54	5,109	120	13	166	...	...		
33	Clifford, Wellington	446	129,115	1,618	3.63	13.2	399	1,573	354	4	500	500	309	2,830	128	13	103	...	...		
34	Clifford, Wellington	615	123,212	1,698	2.73	13.1	889	1,659	231	730	22	...	...	4,010	250	...	149	18	...		
35	Colborne, Renfrew	1,004	298,370	5,098	5.08	17.1	725	5,771	182	...	1,900	1,900	28	8,606	135	930	87	41	...		
36	Creemore, Simcoe	629	127,260	3,026	4.82	28.8	418	2,279	250	...	300	300	43	3,290	167	129	116	45	...		
37	Dalhousie, Norfolk	826	164,956	3,009	3.64	18.2	665	3,275	155	...	200	200	228	4,523	183	8	114	10	...		
38	Drayton, Wellington	790	163,110	3,665	4.64	22.7	110	3,717	409	88	1,400	1,400	246	5,894	173	189	262	34	...		
39	Dundas, Grey	745	127,315	3,146	3.96	24.7	121	2,737	252	...	1,400	1,400	246	5,894	173	189	262	34	...		
40	Dundas, Grey	815	198,045	3,790	4.65	19.1	280	3,009	166	...	1,000	1,000	250	4,705	369	44	120	17	...		
41	Dutton, Elgin	1,504	459,465	12,323	8.19	24.2	732	16,754	137	3,828	415	1,563	230	24,229	1,069	1,674	869	118	...		
42	East Toronto, York	1,009	273,785	3,053	3.06	11.3	345	3,367	501	500	11	...	...	4,713	106	81	45	8	...		
43	Eganville, Keefew	1,089	310,249	3,904	3.58	12.6	96	3,501	245	...	1,900	1,900	52	4,404	199	168	70	47	...		
44	Elmira, Waterloo	1,186	313,265	7,179	6.05	22.9	2,231	7,051	575	...	2,800	2,800	81	10,284	768	504	323	16	...		
45	Elora, Wellington	593	193,363	2,563	4.31	13.2	1,652	2,669	251	...	1,400	1,400	246	5,894	173	189	262	34	...		
46	Embro, Oxford	518	111,760	1,367	2.64	12.2	99	1,508	128	...	1,400	1,400	246	5,894	173	189	262	34	...		
47	Erin, Wellington	1,846	593,900	10,533	5.71	20.7	4,435	8,622	492	...	2,800	2,800	342	18,127	622	1,457	297	33	...		
48	Exeter, Huron	1,301	411,675	4,645	4.11	14.9	39	5,461	388	125	...	1,400	1,400	246	5,894	173	189	262	34		
49	Feneton Falls, Victoria	1,365	316,023	8,721	6.39	21.0	283	8,676	699	100	59	972	17	11,413	427	713	250	400	...		
50	Fergus, Wellington	825	245,980	5,107	6.19	20.8	25	4,608	320	...	2,800	2,800	342	18,127	622	1,457	297	33	...		
51	Fort Erie, Welland	260	54,200	1,488	5.72	27.5	...	1,489	...	...	...	...	...	5,942	317	...	354	11	...		
52	Garden Island, Frontenac	1,438	343,280	7,065	4.91	20.6	7,040	281	2,212	...	2,672	2,672	194	12,419	222	784	248	159	...		
53	Georgetown, Halton	945	283,400	6,025	6.38	21.3	277	5,903	767	5,258	...	4,300	546	17,111	347	64	136	6	...		
54	Georgetown, Middlesex	763	141,300	2,826	3.70	20.0	578	3,082	179	...	1,200	1,200	592	5,631	143	...	286	...			
55	Grand Valley, Dufferin	915	227,435	4,874	5.33	21.4	241	4,481	127	6	2,900	2,900	315	7,829	165	620	280	11	...		
56	Grimsby, Lincoln	908	207,250	3,753	4.17	18.3	241	3,436	97	...	1,100	1,100	...	4,874	197	...	122	14	...		
57	Hagersville, Haldimand	1,522	186,450	4,053	2.66	21.7	417	4,070	336	...	506	506	...	4,874	197	...	122	14	...		
58	Hanover, Grey	769	171,120	3,270	4.25	19.1	417	4,070	336	...	506	506	...	4,874	197	...	122	14	...		
59	Hastings, Northumberland	1,025	150,069	3,019	2.95	20.1	210	3,043	318	...	1,100	1,100	2	5,323	167	400	253	120	...		
60	Havelock, Peterborough	1,025	150,069	3,019	2.95	20.1	210	3,043	318	...	1,100	1,100	2	5,323	167	400	253	120	...		



VILLAGE MUNICIPALITIES, 1899-1900.—Continued.

No.	Village Municipalities and Counties in which located.	Population, 1900.	Assessed values of real and personal property and income taxable, 1900.	Taxes imposed for all purposes, 1900.				Receipts, 1899.										Disbursements, 1899.			
				Total.	Per head.	Mills on %	Balance from 1898.	Municipal and school taxes.	Licenses, fees, rents.	Water, gas and electric light rates.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Commission.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	
61	Hensall, Huron	881	214,635	2,267	2 57	10 6	340	3,374	152	400	3,000	60,000	3	4,266	97	104	645	24			
62	Hintonburg, Carleton	2,254	607,124	11,608	5 15	28 5	549	8,140	357	1,036	3,000	3,000	12	73,085	643	462	686	368			
63	Holland Landing, York	443	68,860	1,015	2 23	14 7	191	1,024	29					1,556	130			86			
64	Iroquois, Dundas	1,203	328,400	5,935	4 93	18 5	2,044	6,347	483	112	3,000	5,000	2	16,988	263	108	1,198	270			
65	Kemptville, Grenville	1,410	347,050	7,003	4 97	20 2	1,865	6,295	465	250	1,400		313	10,528	273	221	496	84			
66	Lakefield, Peterborough	1,119	320,395	4,493	4 02	14 0	55	4,467	551	167	3,000		91	8,271	345	649	211	163			
67	Lanark, Lanark	913	178,850	3,811	4 17	21 3	132	4,117	308		1,200		17	5,774	376	313	115	165			
68	Lancaster, Glengarry	585	77,470	1,768	3 30	22 8	31	1,858	267		200		10	2,375	207	203	34	13			
69	L'Orignal, Prescott	1,123	121,075	2,350	2 07	19 2	163	2,172	160					4,728	185			37	9		
70	Lucan, Middlesex	820	177,145	3,367	4 11	19 0	1,051	3,186	317	164				10,598	990	1,515	168	97			
71	Luquon, Bruce	1,108	289,321	6,435	5 81	22 2	1,380	7,148	613	1,132	4,590	14,000	615	32,296	349	277	311	94			
72	Madoc, Hastings	1,083	319,359	6,041	5 58	18 9	303	6,322	514	6,222	5,626		648	9,699	158	226	242	23			
73	Markdale, Grey	870	180,250	3,034	3 49	16 8	928	2,875	247		1,800		10	10,365	189	1,934	237	30			
74	Markham, York	1,055	237,430	5,539	5 25	23 3		7,189	191	835											
75	Marmora, Hastings	237	37,430	5,539	5 25	23 3		7,189	191	835											
76	Maxville, Glengarry	683	57,225	1,354	1 98	23 7	4	1,684	4												
77	Merrickville, Grenville	1,080	296,050	4,646	4 30	15 7	395	5,421	374		800			6,990	485	309	362	7			
78	Merriton, Lincoln	1,681	642,035	15,273	9 03	23 8	14,333	4,446	2,940	445	1,712		60	19,956	1,028	3,219	549	38			
79	Millbrook, Durham	874	186,730	3,167	3 62	17 0	85	5,151	556		650			136	6,578	307	760	167	25		
80	Morrisville, Perth	686	144,160	2,667	3 89	18 5	337	2,371	86					4	2,835	130					
81	Morrisburg, Dundas	1,610	543,025	10,668	6 63	19 6	470	10,037	503	1,875				13,368	173	1,333	199	127			
82	Newboro, Leeds	408	90,655	1,740	4 26	19 2	573	1,812	98					2,579	65	1	31	5			
83	Newburg, Lennox and Add.	631	112,210	3,376	5 35	30 1	112	3,793	31					6,636	212	66	77	7			
84	Newbury, Middlesex	436	63,610	1,148	2 63	18 0	329	1,241	126	2,686	500			5,874	254	119	288	81			
85	Newcastle, Durham	525	190,406	3,870	7 37	20 3	583	5,666	110					8,349	254	251	251	96			
86	New Hamburg, Waterloo	1,214	341,258	6,691	4 69	16 7	391	5,304	648	500	1,365		46	15,437	301	983	359	8			
87	Nisagara Falls South, Welland	1,356	330,480	6,926	5 11	21 0	2,035	6,695	66	795				17,546	249	1,483	304	416			
88	Norwich, Ontario	1,374	319,925	7,403	5 39	23 4	2,035	6,695	448	1,360				7,047	165	572	157	33			
89	Norwood, Peterborough	980	226,865	4,760	4 86	21 0	201	4,919	305					6,489	214	572	157	33			
90	Oil Springs, Lambton	975	249,910	5,083	5 21	20 8		4,837	466		2,600		227	8,080	347						

VILLAGE MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.—Continued.										Assets on December 31, 1899.							Liabilities on December 31, 1899.				
	Streets, bridges and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Payments on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
61	1,362	61	17	169	1,358	400	4	124	4,265	1	98	1,205	75,600	365	459	3,176	77,854	200	58	96,646	58	
62	1,589	48,860	391	3,049	3,049	300	16	1,461	62,097	10,988	6,757	3,318	3,473	548	6,733	100,683	134	100	200	15,610	26	
63	1,124	3,786	730	3,000	2,883	3,000	436	374	14,845	2,143	1,066	2,318	3,473	6,027	12,708	13,951	2,368	11,593	450	13,951	17,004	
65	5,504	549	229	50,462	3,000	1,775	202	187	8,252	2,296	922	2,318	229	13,058	18,594	17,004	462	16,554	200	17,004	17,004	
67	518	18	344	1,835	1,200	224	224	170	5,529	245	100	3,968	229	10,375	14,752	10,912	462	10,000	200	10,912	8,421	
68	313	33	112	734	1,011	648	225	871	1,648	225	871	1,648	765	1,861	7,445	3,421	817	3,421	203	44	1,064	
69	607	8	100	1,119	76	2,163	212	415	2,163	212	415	2,163	212	8,291	627	301	301	9,000	213	514	9,133	
70	643	9	153	1,937	1,937	436	200	450	57	3,496	1,232	3,487	10,000	3,672	8,391	309	19,900	4,076	309	23,885	23,885	
71	1,143	54	46	628	2,641	338	7,894	12,587	5,928	32,296	2,231	2,092	15,768	6,404	10,444	10,444	2,287	18,567	462	365	21,661	
72	860	14	473	1,090	1,090	338	600	276	657	9,222	477	253	8,038	8,768	520	4,323	5,425	800	5,425	800	10,568	10,568
73	5,200	12	391	1,299	1,187	1,800	1,026	44	9,881	1,074	738	14,100	14,100	4,103	20,015	802	18,416	222	19,440	19,440	19,440	19,440
75	342	12	81	675	43	1,281	311	296	43	1,281	311	296	43	47	594	594	4,100	188	4,643	4,643	4,643	4,643
76	342	12	81	675	43	1,281	311	296	43	1,281	311	296	43	47	594	594	4,100	188	4,643	4,643	4,643	4,643
77	1,100	340	1,531	1,300	800	590	590	33	240	6,957	53	240	73,407	5,000	5,273	355	4,100	188	4,643	4,643	4,643	4,643
78	2,017	18,089	4,946	412	1,963	2,783	259	19,956	2,090	412	2,090	412	73,407	12,558	88,327	61,724	61,012	712	114	61,724	61,724	61,724
79	625	10	138	1,910	244	650	217	297	6	2,243	592	20	2,243	7,860	9,240	514	3,695	114	3,695	114	3,695	3,695
80	867	182	500	1,82	500	297	6	2,243	592	20	2,243	592	20	2,243	592	20	2,243	592	20	2,243	592	592
81	2,360	167	726	4,419	1,503	1,580	129	280	17	1,989	640	217	2,512	3,693	34,621	28,004	5,325	28,004	5,325	28,004	28,004	28,004
82	271	19	350	1,409	200	3,000	220	10	6,195	511	3,258	4,120	11,000	1,263	3,849	3,849	2,000	511	280	5,825	5,825	
83	375	13	134	459	400	400	300	87	67	2,018	844	868	2,956	3,135	5,070	1,771	1,000	200	1,771	1,771	1,771	
84	372	408	227	1,000	167	600	104	38	3,939	1,935	3,939	1,935	3,939	3,135	5,070	1,771	1,000	200	1,771	1,771	1,771	
85	420	478	210	4,200	217	286	620	8,349	2,470	3,000	4,120	4,120	11,000	8,635	14,105	10,74	7,874	1,365	237	9,478	9,478	
86	1,005	54	6	410	4,200	1,417	706	15,437	4,120	3,000	4,120	4,120	11,000	1,550	16,670	17,841	15,825	2,173	21,996	21,996	21,996	
87	6,654	795	170	391	2,489	734	4,407	596	827	16,273	1,273	3,019	5,612	10,389	15,825	10,389	444	9,572	5,500	186	10,604	10,604
88	6,393	17	511	1,592	1,808	596	127	791	95	6,118	971	386	4,335	5,595	10,887	10,887	444	9,572	5,500	186	10,604	10,604
89	1,137	19	210	2,073	380	879	2,040	541	963	7,577	503	4,011	4,200	4,200	8,714	9	12,709	2,500	186	13,218	13,218	
90	552	26	6	210	1,582	879	2,040	541	963	7,577	503	4,011	4,200	4,200	8,714	9	12,709	2,500	186	13,218	13,218	

## VILLAGE MUNICIPALITIES, 1899-1900.—Continued.

No.	Village Municipalities and Counties in which located.	Assessed values of real and personal property and income taxable, 1900.		Taxes imposed for all purposes, 1900			Receipts, 1899.										Disbursements, 1899.			
		Population, 1900.	\$	Total.	Per head.	Mills on \$	Balance from 1898.	Municipal and school taxes.	Licenses fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous	Total receipts	Allowances, salaries and commission.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.
91	Omeenee, Victoria.	614	106,438	2,006	3 27	18 8	186	2,070	201	29	1,127	1,86	3,534	182	35	27				
92	Ottawa East, Carleton.	1,108	294,495	4,155	3 75	14 1	329	3,826	89	24	1,799	4,79	4,244	457	51	12				
93	Paisley, Bruce.	1,036	292,805	5,270	5 09	18 0	1,904	4,467	992	92	1,205	700	8,754	218	834	377				
94	Poinc Edward, Lambton.	983	185,815	2,737	2 78	14 7	170	3,583	153	42	700	700	4,606	309	100	206				
95	Port Carling, Muskoka.	325	55,302	986	3 03	17 8	148	650	42	645	250	1,182	87	108	10	34				
96	Port Colborne, Welland.	1,132	322,415	5,422	4 79	16 8	2,464	6,040	367	37	5,000	3,000	17,553	714	254	232				
97	Port Dalhousie, Lincoln.	859	282,129	5,218	6 07	18 5	1,423	4,226	615	4,700	3,000	3,000	9,264	241	10	121				
98	Port Dover, Norfolk.	1,106	257,215	5,845	4 83	20 8	730	5,068	356	82	500	3,000	6,656	191	444	175				
99	Port Elgin, Bruce.	1,365	292,596	6,196	4 54	21 2	475	5,622	939	4,700	82	2,666	131	14,514	179	498	255			
100	Port Perry, Ontario.	1,446	373,780	9,270	6 41	24 7	475	8,795	564	4,700	82	2,666	23	10,114	580	827	182			
101	Port Rowan, Norfolk.	648	133,720	2,848	4 40	21 2	188	2,733	85	4,700	82	2,666	4	4,804	103	348	103			
102	Port Stanley, Elgin.	506	145,585	2,231	4 41	15 3	157	1,888	372	4,700	82	2,666	8	3,550	298	108	227			
103	Portsmouth, Frontenac.	654	118,265	2,405	3 85	20 3	701	2,823	67	4,700	82	2,666	33	3,624	220	108	227			
104	Richmond, Carleton.	377	72,325	1,692	4 49	23 4	238	2,385	58	4,700	82	2,666	78	2,521	203	81	12			
105	Richmond Hill, York.	625	157,375	2,205	3 53	14 0	259	2,448	446	4,700	82	2,666	202	3,621	149	151	457			
106	Rockland, Russell.	1,183	74,825	4,443	2 81	59 4	250	5,182	132	4,700	82	2,666	6,404	235	142	35				
107	Shelburne, Dufferin.	1,121	351,365	6,631	5 92	18 9	268	7,216	690	4,700	82	2,666	1,600	8,500	579	14,157	530	256		
108	Southampton, Bruce.	1,641	284,209	5,115	3 12	18 0	1,001	4,355	566	4,700	82	2,666	693	10,000	556	17,170	310	553	251	
109	Springfield, Elgin.	481	91,675	1,611	3 41	17 9	121	1,733	96	4,700	82	2,666	740	700	58	2,637	100	40	147	
110	Stirling, Hastings.	776	174,066	4,038	5 20	23 2	121	3,360	134	712	6	760	127	5,220	189	20	43	13		
111	Stouffville, York.	1,285	331,775	5,386	4 19	16 2	662	4,594	182	224	6	200	189	5,851	370	306	263	6	4	
112	Streetsville, Peel.	528	157,750	2,321	4 40	14 7	565	2,009	184	4,700	82	2,666	200	2,000	1	2,959	367	160	162	4
113	Sturgeon Point, Victoria.	330	18,500	370	1 12	20 0	58	366	129	4,700	82	2,666	160	160	155	596	25	40	17	18
114	Sundridge, Parry Sound.	460	63,595	1,914	4 16	30 1	58	1,820	129	4,700	82	2,666	666	666	155	2,823	198	60	53	15
115	Sutton, York.	605	132,925	1,440	2 38	10 8	802	1,634	60	4,700	82	2,666	802	1,634	92	2,108	99	60	53	15
116	Tara, Bruce.	706	216,250	3,027	4 29	14 0	679	2,861	449	4,700	82	2,666	366	8,000	207	12,231	164	19	317	6
117	Teaswater, Bruce.	854	240,000	4,353	5 10	18 1	1,350	4,240	248	4,700	82	2,666	72	350	53	6,514	285	465	116	13
118	Thamesville, Kent.	883	215,300	5,727	6 49	26 6	2,614	4,674	222	222	869	869	140	869	140	2,709	291	432	194	335
119	Thedford, Lambton.	631	98,950	1,724	2 73	17 4	2,614	1,674	103	4,700	82	2,666	950	950	25	8,518	127	26	59	14
120	Tilbury, Kent.	1,031	207,580	6,431	6 24	31 0	14	5,700	222	1,066	83	10,700	87	17,831	285	1,875	185	165	165	6

VILLAGE MUNICIPALITIES, 1889-1900.—Continued.

No.	Disbursements, 1889.—Continued.										Assets on December 31, 1899.										Liabilities on December 31, 1899.				
	Streets, bridges and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interests on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.			
91	668	.....	16	199	1,029	.....	1,050	3%	157	3,334	.....	1,321	.....	.....	.....	900	.....	1,466	4,881	77	.....	77			
92	396	.....	.....	245	400	.....	265	284	31	2,688	.....	1,556	500	.....	3,456	3,033	1,466	4,881	16	.....	5,863				
93	1,047	.....	.....	399	1,571	.....	519	1,205	130	6,764	.....	1,990	315	.....	17,900	20,205	1,466	1,719	.....	.....	1,719				
94	283	.....	29	.....	1,598	.....	.....	1,300	168	4,033	.....	2,023	.....	.....	1,472	4,268	1,681	1,719	.....	.....	1,681				
95	133	.....	18	.....	217	.....	.....	275	173	1,033	.....	449	908	.....	364	1,418	280	.....	225	884	1,399				
96	806	1,800	6	429	5,109	.....	297	6,490	782	16,980	.....	573	157	21,050	.....	1,743	23,523	18,418	.....	.....	18,418				
97	1,200	541	398	390	1,815	.....	358	3,000	349	8,375	.....	889	1,969	.....	900	3,298	1,825	5,977	.....	231	7,541				
98	819	.....	26	513	2,270	.....	673	500	1,815	6,123	.....	533	869	.....	4,500	5,902	690	6,851	.....	.....	8,033				
99	880	363	41	420	3,027	4,770	1,861	213	1,191	14,409	105	2,240	2,270	.....	10,100	14,715	690	17,915	234	.....	18,149				
100	632	.....	56	250	3,694	.....	1,417	1,000	1,575	96	9,770	341	2,379	.....	13,584	16,907	74	31,911	3,375	30	38,316				
101	419	.....	7	490	844	.....	134	2,075	65	4,804	.....	291	.....	.....	30	321	.....	.....	442	109	49	674			
102	622	.....	.....	137	767	.....	.....	1,075	26	3,445	.....	105	900	.....	1,590	2,695	190	.....	.....	104	348	642			
103	603	.....	.....	1,150	1,080	.....	.....	35	36	3,326	.....	298	1,140	.....	3,109	4,547	976	.....	.....	.....	.....	1,018			
104	400	134	18	.....	646	6	48	120	193	1,916	.....	605	757	.....	2,480	4,628	1,145	3,364	500	42	5,009				
105	464	.....	33	297	1,054	.....	51	246	138	3,251	.....	370	63	.....	4,394	4,890	1,145	3,364	500	.....	2,900				
106	1,474	.....	140	200	3,272	.....	.....	400	19	6,113	.....	291	1,586	.....	1,000	2,877	622	2,900	.....	.....	.....	2,900			
107	416	303	23	513	4,875	.....	1,720	2,000	1,139	18,569	588	592	.....	12,000	12,670	25,850	622	2,900	799	605	2,926				
108	1,237	87	44	268	2,921	10,000	460	643	485	173	16,555	615	3,843	10,000	.....	6,800	21,258	1,625	20,150	553	22,328				
109	768	.....	2	172	465	.....	.....	834	21	2,565	.....	72	212	.....	1,576	1,860	.....	18,662	.....	.....	18,662				
110	180	.....	150	783	1,600	418	280	256	224	4,225	.....	985	2,406	212	.....	1,860	.....	.....	.....	315	315				
111	544	885	14	522	1,225	.....	783	1,099	1,099	4,875	.....	976	523	25,000	3,126	6,728	2,336	3,720	760	.....	7,216				
112	415	230	6	175	1,080	.....	.....	200	4	2,912	47	699	.....	.....	1,695	2,441	237	25,116	.....	4	26,741				
113	269	.....	.....	25	.....	.....	.....	.....	.....	183	482	44	11	.....	.....	55	30	241	164	7	241				
114	52	.....	.....	.....	767	166	.....	497	360	2,511	.....	1,176	5,498	.....	335	7,321	479	5,000	1,998	11	7,488				
115	598	.....	5	209	617	.....	.....	201	287	1,857	251	25	.....	.....	4,054	4,330	.....	.....	.....	.....	.....	.....			
116	488	.....	6	242	5,186	4,809	.....	397	240	11,883	348	.....	6,523	.....	4,000	10,871	.....	9,600	.....	.....	9,600				
117	595	117	111	292	1,476	598	.....	350	518	4,391	1,523	196	3,023	8,873	7,072	20,693	.....	10,500	.....	510	11,010				
118	1,719	.....	13	.....	1,225	.....	689	869	271	246	6,243	116	.....	1,000	8,800	12,191	1,854	4,806	.....	150	6,810				
119	372	30	7	128	962	.....	.....	553	30	25	2,520	188	15	.....	80	263	797	.....	618	.....	618				
120	2,395	.....	36	229	1,592	148	1,958	7,607	1,286	227	17,810	21	5,525	437	16,969	6,327	797	20,864	6,377	567	23,205				

VILLAGE MUNICIPALITIES, 1899-1900.—Continued.

No.	Village Municipalities and Counties in which located.	Taxes imposed for all purposes, 1900.			Receipts, 1899.							Disbursements, 1899.								
		Assessed value of real and personal property and income taxable, 1900.	Population, 1900.	Total.	Per head.	Mills on %	Balance from 1898.	Municipal and school taxes.	License fees, rents, fines, etc.	Water, gas and electric light rates.	Refund from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.
121	Tiverton, Bruce .....	457	74,805	1,526	3 34	30.4	304	1,191	161	.....	.....	.....	.....	.....	1,656	129	189	23	.....	.....
122	Tottenham, Simcoe .....	574	131,796	3,025	5 27	22.9	303	2,397	215	.....	.....	.....	.....	.....	3,568	113	98	14	.....	.....
123	Tweed, Hastings .....	1,128	229,285	4,619	4 09	20.1	1,661	3,772	270	.....	.....	.....	.....	.....	6,039	266	454	225	.....	.....
124	Vienna, Elgin .....	349	76,790	1,564	4 48	20.4	159	1,368	61	.....	.....	.....	.....	.....	1,806	154	.....	.....	.....	.....
125	Wardsville, Middlesex .....	327	60,076	1,230	3 76	20.5	130	1,544	10	.....	.....	.....	.....	.....	1,736	172	.....	.....	.....	.....
126	Wardowen, Wentworth .....	600	165,891	1,623	2 71	9.8	542	1,782	127	.....	.....	.....	.....	.....	2,472	156	.....	.....	.....	.....
127	Waterford, Norfolk .....	1,060	268,150	6,762	6 38	25.2	431	5,959	781	.....	.....	.....	.....	.....	7,741	350	84	52	.....	.....
128	Waford, Lambton .....	1,381	290,712	6,450	4 63	25.7	189	4,482	162	.....	.....	.....	.....	.....	11,496	460	520	207	.....	.....
129	Wellington, Prince Edward .....	612	199,674	2,230	3 84	11.2	1,301	4,948	207	.....	.....	.....	.....	.....	2,348	103	.....	.....	.....	.....
130	Weston, York .....	1,004	277,349	6,996	6 97	25.2	1,433	4,323	306	.....	.....	.....	.....	.....	13,799	230	.....	.....	.....	.....
131	Winchester, Dundas .....	1,078	231,985	5,607	5 20	24.2	822	1,627	123	.....	.....	.....	.....	.....	6,490	108	.....	.....	.....	.....
132	Woodbridge, York .....	641	107,560	1,648	2 56	15.3	72	1,604	118	.....	.....	.....	.....	.....	3,244	172	.....	.....	.....	.....
133	Woodville, Victoria .....	586	84,900	1,149	2 14	13.5	272	1,317	196	.....	.....	.....	.....	.....	2,144	115	.....	.....	.....	.....
134	Wroxeter, Huron .....	438	112,247	1,169	2 67	10.4	709	2,881	336	.....	.....	.....	.....	.....	2,098	187	.....	.....	.....	.....
135	Wyoming, Lambton .....	732	130,145	3,041	4 10	23.4	1,479	7,219	550	.....	.....	.....	.....	.....	5,458	248	.....	.....	.....	.....
Town municipalities and county in which located.																				
1	Alliston, Simcoe .....	1,798	323,311	7,077	3 94	21.9	1,479	7,219	550	171	240	.....	.....	.....	10,142	851	798	218	.....	.....
2	Almonte, Lanark .....	8,141	814,510	17,709	5 64	21.7	817	17,486	1,485	.....	.....	.....	.....	.....	29,118	553	1,697	1,355	.....	.....
3	Amherstburg, Essex .....	2,058	462,760	13,214	6 97	28.6	79	13,963	645	3,060	.....	.....	.....	.....	74,759	1,129	1,896	1,074	.....	.....
4	Arnprior, Kent .....	3,733	737,077	15,832	4 24	31.5	5,362	17,919	1,332	50	.....	.....	.....	.....	36,536	637	1,953	967	.....	.....
5	Aurora, York .....	1,801	438,874	8,432	4 68	19.2	382	9,028	315	597	.....	.....	.....	.....	15,969	305	1,617	296	.....	.....
6	Aylmer, Elgin .....	2,204	701,410	17,720	8 03	25.3	.....	17,213	989	53	.....	.....	.....	.....	36,385	704	3,578	504	.....	.....
7	Barrie, Simcoe .....	6,014	1,536,938	38,428	6 39	25.0	.....	42,069	14,629	7,088	.....	.....	.....	.....	115,394	1,315	17,713	1,511	.....	.....
8	Berlin, Waterloo .....	9,696	3,319,545	60,346	6 22	18.2	.....	60,155	3,189	8,008	.....	.....	.....	.....	136,559	3,226	11,988	2,778	.....	.....
9	Blenheim, Kent .....	1,676	429,085	9,316	5 56	31.7	190	8,658	1,187	.....	.....	.....	.....	.....	20,213	684	1,471	843	.....	.....
10	Bothwell, Kent .....	900	216,995	4,226	4 70	19.5	594	4,958	1,073	438	.....	.....	.....	.....	18,556	992	588	570	.....	.....
11	Bowmanville, Durham .....	2,843	1,090,160	21,488	7 56	19.7	232	29,805	1,232	28	.....	.....	.....	.....	68,780	1,035	3,969	908	.....	.....
12	Bracebridge, Muskoka .....	2,304	415,310	8,023	5 48	19.3	1,644	9,212	883	5,434	2,430	.....	.....	.....	22,225	1,339	1,901	1,594	.....	.....



No.	Disbursements, 1899.—Continued.										Assets on December 31, 1899.						Liabilities on December 31, 1899.					
	Streets, bridges and parks.	Construction of buildings, waterworks, etc.	Charities.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debtures redeemed.	Current loans repaid.	Interest on loans, advances and debtures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates	Debtures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
121	261	...	1	132	675	...	...	165	30	1,605	51	687	1,500	...	2,000	4,238	...	3,000	...	...	...	3,000
122	617	...	6	269	1,114	...	...	300	35	3,348	220	190	3,350	...	3,350	3,760	...	3,317	329	...	...	3,646
123	557	829	23	407	1,352	...	...	651	70	5,241	798	2,077	5,000	...	4,950	12,825	...	1,989	...	138	...	15,526
124	206	...	12	...	475	91	...	80	...	1,246	560	1,021	364	...	1,061	3,445	...	1,869	...	12	...	3,720
125	32	468	2	105	660	...	...	18	63	1,539	196	202	202	...	1,061	1,459	...	694	...	90	...	784
126	635	...	48	242	819	...	...	...	30	1,957	515	929	...	...	1,002	2,446	...	...	...	...	...	...
127	1,506	...	57	674	2,022	...	...	361	226	7,734	7	151	...	...	1,000	1,198	...	...	...	241	...	10,955
128	1,251	...	51	294	2,300	500	...	706	200	11,284	212	222	200	...	6,784	7,418	...	206	1,550	3	...	11,923
129	1,922	...	98	227	646	...	...	180	205	2,061	284	377	...	...	1,030	1,958	...	1,396	...	...	...	3,556
130	907	1,035	172	502	1,855	...	...	338	325	6,984	7,815	543	...	...	6,781	15,999	...	1,396	...	3,094	...	22,441
131	492	...	14	...	1,397	...	...	706	1,475	5,791	155	888	...	...	4,204	5,092	...	1,396	...	702	...	10,764
132	521	...	5	197	711	...	...	400	435	33	2,890	354	443	...	3,121	7,472	...	176	...	6	...	7,278
133	599	...	41	201	505	...	...	250	6	2,099	45	84	...	...	850	979	...	176	...	307	...	483
134	270	...	15	...	413	587	...	75	240	1,934	164	259	3,786	...	3,679	7,888	...	...	...	...	...	4,075
135	1,130	...	186	175	1,545	...	...	315	131	5,458	...	90	...	...	1,450	1,540	...	...	...	106	...	640
1	478	...	24	524	1,387	1,619	...	698	202	9,228	914	1,492	9,509	19,341	11,111	42,867	1,852	...	...	...	...	64,724
2	2,022	188	141	350	8,159	...	...	2,800	222	28,680	438	403	...	...	59,300	60,141	...	...	...	50	...	44,350
3	6,763	7,273	277	450	3,052	...	...	1,925	341	74,463	296	8,396	...	...	15,360	67,552	...	3,375	...	300	...	91,678
4	7,413	...	38	2,001	9,830	549	...	1,246	597	33,006	3,529	6,162	33,544	43,500	27,644	70,879	4,370	...	...	325	...	54,093
5	1,225	...	...	777	3,000	...	...	1,236	76	15,049	420	1,532	200	...	16,800	28,952	...	1,000	...	114	...	25,925
6	5,152	1,153	93	903	4,407	...	...	3,584	12	368	1,647	188	1,170	16,800	15,677	36,916	...	...	...	287	...	36,203
7	4,489	32,277	473	2,356	13,395	14,704	...	7,562	5,612	9,088	1,504	115,399	...	...	129,909	203,796	...	3,871	...	6,217	...	237,000
8	26,435	17,872	1,212	3,900	34,430	...	...	8,808	22,990	11,889	1,536	136,559	...	...	2,601	5,000	...	...	...	17,104	...	391,681
9	2,866	...	37	650	2,772	...	...	1,448	7,875	19,426	...	287	...	...	23,350	29,052	...	604	...	3,800	...	28,759
10	1,316	6,602	70	255	1,693	...	...	577	4,001	281	1,196	1,666	...	...	8,300	9,022	...	...	...	...	...	28,759
11	4,371	1,731	548	1,922	5,960	...	...	1,466	413	17,358	1,196	1,666	...	...	23,350	29,052	...	...	...	...	...	28,759
12	2,915	3,582	131	...	2,647	4,229	...	4,585	3,973	68,729	51	2,567	10,127	44,500	24,330	26,948	...	...	...	...	...	79,413
12	2,915	3,582	131	...	2,647	4,229	...	4,585	3,973	68,729	51	2,567	10,127	44,500	24,330	26,948	...	...	...	...	...	79,413
12	2,915	3,582	131	...	2,647	4,229	...	4,585	3,973	68,729	51	2,567	10,127	44,500	24,330	26,948	...	...	...	...	...	79,413



TOWN MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.—Continued.										Assets on December 31, 1899.										Liabilities on December 31, 1899.				
	Streets, bridges and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.			
13	5,623	1,171	357	1,207	6,200	7,242	11,800	7,692	372	47,816	2,480	2,319	20,000	120,000	14,408	159,313	4,100	148,085	2,797	.....	.....	154,992			
14	36,640	10,724	1,377	.....	23,917	617	196,445	23,651	6,033	396,152	274	30,455	113,902	180,480	178,132	503,243	547,140	64,300	24,460	.....	.....	571,602			
15	1,624	183	180	1,681	5,200	2,600	8,500	2,980	862	28,408	8,914	3,400	3,500	.....	54,383	66,757	5,000	61,500	3,700	.....	6,783	60,848			
16	1,688	3,312	97	596	2,058	1,800	1,800	1,762	1,264	19,682	12,264	709	32,451	.....	24,500	69,927	610	54,500	.....	.....	.....	63,848			
17	7,827	5,201	525	1,375	12,310	146,769	11,633	10,858	1,751	212,194	263	1,179	3,820	.....	158,616	170,048	1,418	206,563	13,500	.....	441	221,992			
18	4,610	2,866	743	.....	10,039	8,824	16,100	12,509	2,383	72,047	2,174	560	3,820	.....	90,855	208,701	2,825	239,166	.....	.....	793	242,784			
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
20	14,533	6,843	1,018	1,733	10,202	8,454	16,057	8,477	2,686	85,354	37,100	17,315	17,315	94,000	49,504	197,719	12,390	260,490	12,678	.....	.....	285,558			
21	1,878	4,116	102	1,183	6,598	1,784	3,030	3,030	1,523	23,806	.....	1,119	.....	41,444	8,866	50,929	67,755	68,427	.....	.....	663	68,427			
22	1,090	.....	389	.....	.....	2,089	15,928	866	144	26,725	2,326	.....	.....	.....	35,950	38,276	557	19,776	419	.....	.....	20,745			
23	2,070	1,102	524	1,919	5,395	2,139	1,500	4,088	13,399	44,312	2,449	19,644	21,522	45,454	79,414	168,288	3,000	82,739	5,317	.....	75	86,143			
24	5,448	.....	606	1,440	3,700	771	4,775	955	665	22,937	4,888	8,892	.....	13,500	8,805	31,227	3,000	27,919	3,489	.....	635	23,907			
25	3,576	.....	108	960	1,768	1,448	6,273	1,568	615	17,960	12	1,112	1,112	.....	7,100	13,271	2,838	27,919	144	.....	102	28,165			
26	6,224	.....	35	404	2,138	2,124	6,100	2,907	370	17,763	12	4,300	.....	32,931	6,907	43,150	2,838	44,955	3,900	.....	656	52,348			
27	6,827	.....	223	372	3,000	650	3,544	278	863	24,332	1,233	283	.....	.....	16,050	17,315	1,011	13,858	600	.....	.....	14,468			
28	7,796	42,388	374	.....	16,217	14,216	56,033	9,697	32,571	198,029	2,256	22,804	37,373	51,270	129,109	242,872	1,011	183,253	111,026	.....	1,907	267,197			
29	23,577	1,716	1,265	3,536	18,968	4,225	45,000	19,233	13,945	1,679	168,046	4,613	42,044	152,100	69,132	268,189	.....	257,719	2,584	.....	1,896	262,199			
30	2,714	.....	127	1,331	6,500	2,855	14,500	3,108	904	37,739	1,792	1,328	16,690	30,000	30,622	80,432	.....	66,536	4,500	.....	380	71,416			
31	4,374	3,818	1,881	.....	7,897	8,033	1,222	156,500	10,740	1,006,205	7,463	5,997	68,563	107,001	56,675	245,699	.....	169,513	49,000	.....	.....	218,513			
32	32	425	13	.....	1,558	98	256	206	93	8,598	.....	1,210	1,363	.....	2,154	5,022	693	1,850	969	.....	164	3,676			
33	1,114	20	203	.....	4,579	1,640	7,200	1,928	4,484	25,705	533	6,720	.....	.....	11,632	17,885	.....	25,549	5,900	.....	266	34,409			
34	3,139	259	18	.....	3,738	2,324	6,032	1,383	772	22,209	2,691	2,884	.....	.....	13,000	18,575	1,002	30,826	2,805	.....	45	34,633			
35	1,372	279	.....	.....	3,893	.....	2,960	154	7,728	17,876	918	2,970	.....	.....	11,478	12,790	.....	7,915	1,790	.....	241	9,856			
36	1,907	.....	30	625	3,026	815	8,050	548	153	16,959	169	1,533	.....	35,844	11,886	89,234	2,400	31,963	3,800	.....	19	38,182			
37	1,253	1,202	34	.....	3,247	983	6,613	1,825	514	20,225	1,638	4,784	.....	.....	74,766	129,244	.....	151,046	22,270	.....	.....	173,316			
38	17,476	1,000	484	2,325	10,996	92	6,986	5,301	1,168	63,358	903	8,261	14,769	56,918	84,800	114,641	3,480	75,211	2,556	.....	262	81,508			
39	1,685	.....	269	319	5,363	6,050	8,060	2,835	1,295	33,854	1,218	4,023	.....	50,000	11,881	66,625	.....	46,217	3,400	.....	969	61,969			
40	413	3,768	22	.....	1,790	6,050	8,060	2,835	632	17,049	1,218	4,023	.....	50,000	11,881	66,625	.....	82,409	19,676	.....	261	107,192			
41	4,626	5,971	541	1,045	4,510	3,672	36,334	4,910	637	166,632	3,672	3,018	.....	.....	58,652	94,387	.....	4,576	82,409	.....	2,701	242,852			
42	21,486	1,506	1,091	2,968	13,928	3,018	10,124	9,917	1,590	106,369	633	16,134	45,488	.....	60,214	122,409	.....	211,229	26,300	.....	.....	242,852			
43	1,245	.....	136	685	4,140	13,214	6,722	4,967	799	38,632	1,524	1,983	.....	8,000	11,475	28,540	400	101,073	1,677	.....	972	104,122			

TOWN MUNICIPALITIES, 1899-1900.—Continued.

No.	Town Municipalities and Counties in which located.	Population, 1900.	Assessed values of real and personal property and income taxable, 1900.			Taxes imposed for all purposes, 1900.			Receipts, 1899.										Disbursements, 1899.				
			§	¢	¢	§	¢	¢	§	¢	¢	§	¢	¢	§	¢	¢	§	¢	¢	§	¢	¢
44	Little Current, Manitoulin	525	1,988	3	79	18	3	570	1,843	114	921	973	2,834	25,000	28	33,921	2,527	186	677	27	Administration of justice, including police service.		
45	Mattawa, Nipissing	1,096	268,664	5,869	5	86	21	58	4,107	921	111	973	2,834	25,000	28	33,921	2,527	186	677	27	Administration of justice, including police service.		
46	Meaford, Grey	1,889	540,374	13,517	7	16	25	0	3,859	10,615	824	1,151	9,075	181	22,635	131	22,635	1,273	1,338	1,388	54	Other expenses of municipal government.	
47	Midland, Simcoe	2,647	544,435	13,704	5	17	25	2	25,235	12,878	845	67	13,800	7	52,911	86	52,911	546	1,081	459	293	Lighting of streets, water supply and fire protection.	
48	Milton, Halton	1,280	413,314	7,593	5	63	18	4	3,466	7,167	495	945	200	8	13,274	7	13,274	581	1,139	405	149	Lighting of streets, water supply and fire protection.	
49	Michel, Perth	2,088	681,615	14,379	6	89	21	1	6,148	1,188	946	1,955	334	200	8	13,274	7	13,274	581	1,139	405	149	Lighting of streets, water supply and fire protection.
50	Mount Forest, Wellington	2,180	631,630	14,527	6	66	23	0	296	14,734	1,064	1,955	40,775	7,026	560	65,475	1,064	3,761	348	602	Other expenses of municipal government.		
51	Napanee, Lennox and Add	2,940	949,293	23,360	8	62	25	4	213	29,744	2,160	2,750	60,000	14,587	524	96,273	725	3,143	566	71	Lighting of streets, water supply and fire protection.		
52	Newmarket, York	2,296	514,835	11,596	5	05	22	5	1,185	11,469	770	26	2,467	20,000	261	53,929	1,433	3,859	924	708	Lighting of streets, water supply and fire protection.		
53	Niagara, Lincoln	1,230	503,410	10,167	8	28	20	2	54	11,367	959	3,370	6,200	5,000	223	27,400	756	4,521	442	31	Lighting of streets, water supply and fire protection.		
54	Niagara Falls, Welland	4,074	2,098,316	44,225	10	84	21	8	6,518	45,696	1,467	8,397	3,840	45,676	4,761	114,441	2,772	6,895	1,415	713	Lighting of streets, water supply and fire protection.		
55	North Toronto, York	1,765	852,545	18,134	6	50	33	9	231	18,656	1,559	1,621	87,026	71,000	5,384	227,084	4,794	13,754	3,478	1,082	Lighting of streets, water supply and fire protection.		
56	North Bay, Nipissing	2,387	448,643	15,202	6	02	22	5	478	11,283	1,158	3,267	13,350	4,500	2,872	40,020	1,350	3,827	942	400	Lighting of streets, water supply and fire protection.		
57	Oakville, Halton	1,704	456,427	10,262	6	59	25	0	16	20,540	1,371	1,447	4,000	26,801	134	16,754	422	1,639	244	350	Lighting of streets, water supply and fire protection.		
58	Orangeville, Dufrain	4,074	765,680	19,126	6	23	22	7	5,645	29,251	2,349	1,187	15,000	45,676	516	8,000	26,801	8,000	2,825	600	Lighting of streets, water supply and fire protection.		
59	Orillia, Simcoe	4,667	1,381,180	31,469	6	73	22	7	5,645	29,251	2,349	1,187	15,000	45,676	516	8,000	26,801	8,000	2,825	600	Lighting of streets, water supply and fire protection.		
60	Oshawa, Ont.	4,464	1,099,370	24,148	5	41	22	0	22,121	11,168	3,001	9,349	3,840	45,676	516	8,000	26,801	8,000	2,825	600	Lighting of streets, water supply and fire protection.		
61	Owen Sound, Grey	8,854	2,660,335	67,883	7	67	25	5	17,488	59,180	3,001	9,349	3,840	45,676	516	8,000	26,801	8,000	2,825	600	Lighting of streets, water supply and fire protection.		
62	Palmerston, Wellington	1,784	458,315	11,678	6	55	25	5	1,138	10,165	469	1,488	25,000	48,441	383	27,432	904	2,755	1,076	690	Lighting of streets, water supply and fire protection.		
63	Paris, Brant	3,411	1,044,450	22,154	6	69	21	2	267	19,094	964	3,965	25,000	48,441	383	27,432	904	2,755	1,076	690	Lighting of streets, water supply and fire protection.		
64	Parkhill, Middlesex	3,301	350,620	6,847	6	89	19	3	1,375	7,145	631	3,965	25,000	48,441	383	27,432	904	2,755	1,076	690	Lighting of streets, water supply and fire protection.		
65	Perry Sound, Parry Sound	2,559	421,577	13,622	5	32	32	3	15	16,662	736	1,698	13,039	11,000	328	49,655	498	49,655	6,111	759	805	Lighting of streets, water supply and fire protection.	
66	Pembroke, Renfrew	5,015	1,175,850	27,657	5	31	23	5	508	26,544	2,339	3,184	18,700	11,000	337	12,336	239	715	561	212	Lighting of streets, water supply and fire protection.		
67	Penetanguishene, Simcoe	2,391	486,965	11,585	4	85	23	5	1,966	9,909	872	2,035	18,700	11,000	337	12,336	239	715	561	212	Lighting of streets, water supply and fire protection.		
68	Perth, Lanark	1,277	960	23,788	6	46	18	7	4,914	27,985	2,081	32	1,000	5,000	268	16,082	696	1,068	497	325	Lighting of streets, water supply and fire protection.		
69	Peterborough, Peterborough	10,879	3,393,395	76,741	7	05	17	5	14,416	75,917	11,619	9,500	32,442	35,884	1,521	171,068	4,005	16,401	2,807	6,901	Lighting of streets, water supply and fire protection.		
70	Petrolia, Lambton	4,336	1,289,745	38,175	8	30	30	8	327	22,740	1,392	4,182	58,055	4	786	124,162	2,807	16,019	2,396	1,368	Lighting of streets, water supply and fire protection.		
71	Pictou, Prince Edward	3,602	1,287,403	24,457	6	79	13	0	337	22,740	1,392	4,182	58,055	4	786	124,162	2,807	16,019	2,396	1,368	Lighting of streets, water supply and fire protection.		
72	Port Arthur, Thunder Bay	2,799	1,079,913	30,337	6	84	28	1	1,519	27,650	2,915	3,325	44	3,475	14	31,220	821	4,616	1,496	3,779	Lighting of streets, water supply and fire protection.		
73	Port Hope, Durham	4,479	1,445,150	28,415	6	34	19	7	2,568	27,072	5,693	2,486	34,000	3,475	3,653	96,561	2,803	5,297	2,920	855	Lighting of streets, water supply and fire protection.		
74	Prescott, Grenville	2,807	873,796	22,537	8	03	25	8	1,379	18,979	2,763	2,103	5,207	100,000	3,987	137,364	1,575	4,422	767	760	Lighting of streets, water supply and fire protection.		

TOWN MUNICIPALITIES, 1899-1900.—Continued.

Disbursements, 1899—Continued.

Assets on December 31, 1899.

Liabilities on 31 December, 1899.

No.	Disbursements, 1899—Continued.										Assets on December 31, 1899.					Liabilities on 31 December, 1899.						
	Streets, bridges and parks.	Construction of buildings, waterworks, etc.	Charities.	County levy.	Payment on account of schools and education.	Stinking Fund and other investments.	Debtures redeemed.	Current loans repaid.	Interest on loans, advances and debtures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Stinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	Court levy and school rates.	Debtures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
44	525	.....	40	.....	1,225	.....	176	.....	158	102	2,516	11	607	4,000	.....	2,590	3,208	.....	2,431	2,000	.....	2,462
45	1,491	.....	30	.....	3,583	4,000	15,442	4,512	1,743	102	33,740	181	9,776	4,000	.....	11,032	24,986	.....	28,959	2,000	.....	33,687
46	1,486	291	839	.....	3,790	.....	1,608	8,175	1,845	359	22,528	107	1,067	.....	20,000	26,722	47,896	.....	29,989	2,500	.....	32,489
47	3,047	.....	231	665	4,395	.....	1,740	8,800	2,281	25	49,796	3,113	1,156	.....	12,140	16,408	16,408	.....	38,362	5,000	.....	42,724
48	770	.....	20	404	860	774	1,592	2,006	2,181	17	9,019	4,255	1,653	3,804	23,640	8,430	14,340	41,272	1,755	11,469	.....	43,038
49	2,389	290	97	870	4,968	.....	1,203	46,805	1,983	452	64,711	1,632	205	.....	24,000	14,836	32,104	870	39,686	1,700	797	104,088
50	9,624	3,009	165	1,377	4,681	1,453	3,377	62,000	4,331	1,864	94,111	4,900	14,557	10,452	82,000	5,000	53,225	.....	103,208	1,500	.....	104,688
51	4,220	476	428	2,100	7,400	.....	22,324	.....	3,911	1,192	43,329	4,900	14,557	.....	22,571	41,728	64,011	8,050	64,129	1,500	11	73,690
52	976	.....	62	795	3,675	145	3,630	2,467	3,482	5,345	26,324	1,074	561	1,906	40,250	20,850	64,011	2,339	57,124	.....	.....	59,463
53	1,454	382	814	.....	10,800	.....	1,623	5,500	2,730	465	21,928	116	2,626	.....	51,500	22,128	74,270	1,513	41,129	8,500	363	64,505
54	24,768	47,316	176	.....	3,906	2,725	7,747	69,680	12,054	2,137	199,019	28,065	13,039	.....	194,150	197,988	433,302	.....	281,756	35,145	25,375	342,926
55	2,619	.....	136	.....	3,771	.....	2,055	13,200	4,195	5,199	39,994	26	13,817	15,000	45,639	65,180	92,279	.....	76,634	6,050	4,142	86,887
56	3,101	.....	186	.....	8,900	.....	689	4,979	1,582	614	25,833	1,826	10,256	.....	47,720	5,574	65,180	3,681	57,965	5,800	8	67,454
57	816	146	168	531	3,700	5,004	8,948	15,000	7,661	513	62,807	551	3,468	.....	47,829	19,086	44,724	2,138	25,500	3,029	.....	30,667
58	3,944	441	111	2,246	6,320	.....	1,516	17,225	1,823	769	27,432	29,930	9,660	.....	103,059	50,801	193,480	11,186	180,645	.....	.....	126,453
59	4,066	18,490	395	1,253	16,430	.....	8,948	15,000	7,661	513	62,807	551	3,468	.....	47,829	19,086	44,724	2,138	25,500	3,029	.....	30,667
60	5,141	.....	871	1,124	3,008	.....	1,516	17,225	1,823	769	27,432	29,930	9,660	.....	103,059	50,801	193,480	11,186	180,645	.....	.....	126,453
61	2,274	5,603	1,060	2,952	20,248	26,405	26,468	3,000	2,848	859	157,020	15,434	35,323	96,035	115,949	120,897	383,558	19,396	498,237	40,123	785	559,141
62	334	1,082	33	700	2,712	25,422	2,816	8,050	3,651	980	48,146	26	4,006	.....	7,028	17,815	21,492	.....	35,010	3,800	.....	38,870
63	10,835	2,368	525	1,325	4,810	750	1,812	13,000	2,719	1,571	49,655	1,374	4,000	10,000	58,197	61,360	122,897	2,162	51,903	89	.....	93,661
64	869	.....	8	475	2,909	584	400	2,700	834	392	10,952	1,374	1,245	.....	34,345	11,298	18,141	411	14,600	.....	.....	54,104
65	2,076	769	259	.....	5,000	.....	4,504	21,700	2,689	418	37,533	452	3,342	.....	34,345	11,298	18,141	411	14,600	.....	.....	54,104
66	4,612	.....	3,886	.....	4,642	.....	4,504	6,642	5,477	481	61,028	.....	3,342	.....	34,345	11,298	18,141	411	14,600	5,200	61	40,735
67	811	13,522	144	678	3,027	32	912	1,000	3,247	481	61,028	.....	3,342	.....	34,345	11,298	18,141	411	14,600	.....	.....	54,104
68	6,735	.....	259	775	12,865	.....	3,100	.....	1,500	474	33,264	6,903	7,061	.....	38,100	15,563	65,475	1,615	184,437	1,182	3,193	160,828
69	34,110	12,098	2,565	.....	28,121	20,755	.....	32,497	10,289	2,489	171,058	.....	27,061	.....	38,100	15,563	65,475	1,615	184,437	4,575	7,437	68,839
70	7,252	4,434	520	1,101	10,437	.....	6,649	65,111	4,497	696	124,027	135	29,028	.....	186,727	67,739	273,629	11,186	215,818	13,640	19,788	262,275
71	5,091	2,944	1,212	.....	7,418	.....	3,406	.....	2,082	596	90,791	.....	2,182	.....	49,000	13,564	65,245	.....	34,738	1,937	211	40,412
72	5,580	2,344	403	.....	3,672	12,305	.....	29,563	12,854	20,768	91,970	1,591	20,382	27,061	128,260	13,564	65,245	.....	34,738	1,937	211	40,412
73	3,824	2,225	403	1,418	4,435	35,000	1,435	35,000	1,092	1,318	74,333	646	9,730	.....	60,154	192,823	281,710	2,452	230,337	8,300	698	289,276
74	3,807	56,100	461	.....	5,613	1,036	800	1,500	1,607	1,607	80,202	57,162	9,759	.....	56,160	56,336	179,419	3,254	131,984	5,207	775	141,220

TOWN MUNICIPALITIES, 1899-1900.—Continued.

No.	Town Municipalities and Counties in which located.	Population, 1900.		Assessed values of real and personal property and income tax-able, 1900.		Taxes imposed for all purposes, 1900.		Receipts, 1899.										Disbursements, 1899.				
		Total.	Per head.	Mills on \$	Balance from 1898.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refrs from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commission.	Lighting and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.				
75	Preston, Waterloo.....	2,280	10,717	4 70	15 9	181	10,438	470	301	10,700	6,500	862	30,442	1,900	1,900	682	177					
76	Rat Portage, Rainy River.....	5,454	60,180	9 21	30 0	354	61,671	5,876	1,000	168,661	45,000	6,646	353,538	7,922	12,738	8,212	2,426					
77	Renfrew, Renfrew.....	3,054	1,046,425	7 12	20 8	1,309	18,779	1,177	115	15,533	8,400	260	49,606	650	1,181	2,838	525					
78	Ridgeway, Kent.....	2,928	654,949	15 28	65 3	1,914	11,370	1,970	1,159	30,500	2,575	1,592	50,496	549	1,864	364	454					
79	St. Marys, Perth.....	3,327	1,194,325	25 49	64 21	318	24,652	1,424	1,401	24,271	10,000	2,116	94,157	689	2,314	1,015	837					
80	Sandwich, Essex.....	1,338	440,355	7 86	9 40	4	7,308	336	1,997	6,779	.....	266	14,990	637	2,665	579	126					
81	Sarnia, Lambton.....	7,734	2,143,575	6 87	24 8	97	54,953	3,207	822	100,588	4,618	1,702	196,143	3,390	18,991	3,973	2,445					
82	Sault Ste. Marie, Algoma.....	4,199	1,935,627	8 22	12 7	37	3338	757	15,172	2,542	23,000	1,547	80,366	2,219	11,710	705	711					
83	Seaford, Huron.....	2,426	623,520	15 05	21 4	1,116	15,160	1,087	560	7,407	18,000	836	46,018	831	2,435	162	373					
84	Simcoe, Norfolk.....	2,925	924,492	20 95	7 12	22,177	992	5,644	829	5,294	.....	288	34,724	1,009	8,680	419	617					
85	Smith's Falls, Lanark.....	6,180	1,179,521	24 77	4 78	21	144	2,358	.....	14,250	.....	1,239	45,432	1,061	3,881	2,545	509					
86	Steyner, Simcoe.....	1,160	315,910	4 88	4 16	22	4,066	1,122	95	19,808	24,000	2,389	32,394	616	562	405	28					
87	Stratroy, Middlesex.....	3,001	950,050	19 85	6 31	20 9	804	21,329	.....	19,808	.....	344	43,407	1,117	2,865	562	417					
88	Sturgeon Falls, Nipissing.....	1,617	280,676	5 81	3 33	19 2	1,406	3,485	903	700	6,566	.....	13,110	228	117	133	18					
89	Sudbury, Nipissing.....	1,524	324,490	9 67	6 28	23 5	587	10,060	1,812	15,418	.....	737	33,184	929	8,575	670	12					
90	Thessalon, Algoma.....	838	183,525	4 23	5 28	24 1	1,159	5,090	397	15,562	13,067	.....	36,169	413	1,224	291	14					
91	Thornbury, Grey.....	739	228,626	4 57	6 19	30 0	1,320	3,930	109	600	.....	8	5,967	312	.....	385	50					
92	Thorold, Welland.....	1,897	600,312	15 57	8 21	25 9	594	16,306	605	7,000	.....	499	26,512	721	3,233	1,439	638					
93	Tilsonburg, Oxford.....	2,074	742,950	17 24	10 31	23 2	6,786	16,204	1,600	663	628	619	29,536	688	1,997	663	690					
94	Toronto Junction, York.....	5,756	2,423,165	57 86	10 01	25 8	21,833	61,738	1,540	1,605	.....	1,733	98,719	2,525	12,946	5,863	3,316					
95	Trenton, Hastings.....	3,996	1,176,163	27 96	7 00	23 8	948	30,075	1,940	381	.....	5,183	108,590	1,711	3,173	2,329	1,493					
96	Uxbridge, Ontario.....	1,684	512,400	11 87	7 03	23 1	76	12,128	725	188	.....	205	26,322	514	946	374	449					
97	Vankleek Hill, Prescott.....	1,291	424,435	5 10	3 35	12 3	2,065	3,370	568	1,150	.....	.....	7,153	383	1	141	12					
98	Walkerton, Bruce.....	3,116	680,171	17 61	6 63	25 9	15,585	4,433	1,863	35	3,345	1,589	77,989	2,798	3,089	587	364					
99	Walkerville, Essex.....	1,368	1,970,171	29 08	2 13	14 8	8,352	28,748	440	40,500	.....	24	78,064	676	1,114	2,765	1,005					
100	Wallaceburg, Kent.....	2,861	516,335	13 09	4 58	25 4	1,025	12,574	1,283	7,081	.....	486	22,419	1,114	2,060	1,005	476					
101	Waterloo, Waterloo.....	3,671	1,391,090	21 86	6 96	17 9	151	22,306	1,358	455	10,404	46,094	84,616	1,442	4,080	1,700	300					
102	Welland, Welland.....	1,842	633,517	15 45	8 39	24 4	3,144	14,263	663	940	1,616	116	73,026	1,351	2,434	1,067	190					
103	Whitby, Ontario.....	2,230	861,386	17 30	7 95	20 8	656	18,816	842	155	42,000	708	73,026	1,351	2,434	1,067	190					
104	Whitton, Bruce.....	2,294	407,825	10 17	4 44	25 0	6,075	10,355	623	155	9,228	4,000	33,524	536	2,320	761	337					
105	Wingham, Huron.....	2,183	567,614	12 83	5 88	22 6	4,380	12,513	1,259	187	7,500	23,125	70,430	684	1,750	414	455					

TOWN MUNICIPALITIES, 1899-1900.—Continued.

No.	Disbursements, 1899.—Continued.										Assets on December 31, 1899.										Liabilities on December 31, 1899.				
	Streets, bridges and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric lights plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.			
75	3,579	700	822	7,700	1,639	838	29,389	1,043	40	6,461	20,242	1,321	31,591	3,000	3,000	35,912	1,321	31,591	3,000	3,000	3,798	35,912			
76	6,133	87,598	774	184,000	10,860	4,380	353,481	57	13,823	4,249	130,516	696	176,198	97,661	30,999	176,198	97,661	176,198	97,661	3,798	208,553				
77	5,332	12,240	1,197	5,175	5,123	960	49,606	2,306	87,382	15,320	122,237	4,538	166,749	15,484	15,320	166,749	15,484	166,749	15,484	3,798	126,841				
78	997	87	218	30,500	3,639	3,036	50,144	382	3,201	1,830	10,212	3,201	30,500	3,639	3,036	10,212	15,936	66,847	15,936	3,798	67,347				
79	4,163	26,486	238	7,081	15,517	3,818	25,800	3,705	2,434	94,157	28,101	2,434	25,800	3,705	37,128	83,288	83,288	66,847	1,971	3,136	88,340				
80	2,166	1,466	221	3,613	508	411	14,990	.....	6,718	15,517	.....	6,718	15,517	.....	37,128	83,288	83,288	66,847	1,971	3,136	88,340				
81	15,889	14,736	1,545	2,163	14,918	7,272	76,360	13,172	1,864	190,841	5,304	25,660	30,701	120,000	19,056	11,275	37,044	24,312	5,186	273	32,383				
82	2,541	.....	32	9,969	13,445	2,681	80,866	.....	13,341	27,101	24,421	314,863	.....	390,847	2,542	12,311	405,700	.....	244,022	25,318	4,714	274,054			
83	83	3,722	60	7,407	2,217	1,758	34,724	.....	1,110	42,900	.....	77,183	.....	890,847	2,542	12,311	405,700	.....	244,022	25,318	4,714	274,054			
84	1,720	814	255	9,506	3,704	1,509	34,724	.....	2,529	42,900	.....	77,183	.....	890,847	2,542	12,311	405,700	.....	244,022	25,318	4,714	274,054			
85	8,186	3,199	49	9,506	3,704	1,509	34,724	.....	2,529	42,900	.....	77,183	.....	890,847	2,542	12,311	405,700	.....	244,022	25,318	4,714	274,054			
86	1,036	25,729	66	1,845	2,988	2,603	41,575	.....	3,857	57,878	.....	3,100	.....	50,825	58,260	.....	74,445	5,294	1,008	80,747	.....				
87	1,193	32	15	14,800	400	374	7,466	12,273	885	1,430	12,487	.....	25,000	2,604	2,604	23,572	.....	58,462	18,047	1,811	75,310	.....			
88	2,003	89	303	16,056	939	622	35,914	255	797	208	4,698	.....	15,154	29,071	15,154	29,071	.....	35,182	6,017	24	42,375	.....			
89	653	13,811	9	5,981	5,668	226	32,569	615	3,739	.....	3,739	.....	34	34	34	34	.....	6,088	1,800	446	59,859	.....			
90	1,305	.....	31	16,056	939	622	35,914	255	797	208	4,698	.....	15,154	29,071	15,154	29,071	.....	6,088	1,800	446	59,859	.....			
91	1,305	.....	31	16,056	939	622	35,914	255	797	208	4,698	.....	15,154	29,071	15,154	29,071	.....	6,088	1,800	446	59,859	.....			
92	1,305	.....	31	16,056	939	622	35,914	255	797	208	4,698	.....	15,154	29,071	15,154	29,071	.....	6,088	1,800	446	59,859	.....			
93	902	462	222	1,345	5,000	2,190	24,924	1,568	4,140	632	19,068	.....	17,000	18,500	18,500	18,500	.....	45,936	13,477	208	16,639	.....			
94	6,318	258	886	2,500	4,779	436	23,976	5,560	632	19,068	.....	17,000	18,500	18,500	18,500	18,500	.....	45,936	13,477	208	16,639	.....			
95	2,974	900	808	4,000	11,277	4,734	66,712	32,047	45,865	8,190	15,000	.....	174,000	15,000	127,379	188,718	.....	46,988	13,477	446	59,859	.....			
96	1,570	321	22	12,700	2,867	1,208	26,377	45	3,387	7,927	10,000	.....	14,805	14,805	14,805	14,805	.....	46,988	13,477	446	59,859	.....			
97	185	.....	13	12,700	2,867	1,208	26,377	45	3,387	7,927	10,000	.....	14,805	14,805	14,805	14,805	.....	46,988	13,477	446	59,859	.....			
98	4,867	.....	45	51,617	4,408	684	77,619	370	10,622	28,221	35,000	.....	35,000	35,000	35,000	35,000	.....	46,988	13,477	446	59,859	.....			
99	4,867	.....	45	51,617	4,408	684	77,619	370	10,622	28,221	35,000	.....	35,000	35,000	35,000	35,000	.....	46,988	13,477	446	59,859	.....			
100	3,017	.....	203	40,500	2,583	1,445	66,908	1,445	3,955	.....	11,161	.....	40,000	16,500	25,841	684	43,118	40,000	2,172	1,132	44,149	.....			
101	7,553	41,468	1,575	40,500	2,583	1,445	66,908	1,445	3,955	.....	11,161	.....	40,000	16,500	25,841	684	43,118	40,000	2,172	1,132	44,149	.....			
102	2,717	1,834	52	892	4,650	1,678	26,553	10,742	1,088	14,500	.....	36	18,369	36	18,369	36	18,369	36	18,369	36	18,369	.....			
103	2,073	.....	188	804	6,245	1,074	10,742	1,088	14,500	.....	36	18,369	36	18,369	36	18,369	36	18,369	36	18,369	36	18,369	.....		
104	966	7,734	30	318	3,247	1,088	14,500	3,467	910	33,524	.....	1,518	8,000	28,500	7,045	45,063	.....	57,650	3,428	25	61,477	.....			
105	2,999	8,393	47	390	3,350	10,660	20,572	15,351	3,168	.....	1,452	1,103	10,225	19,700	19,322	51,802	.....	77,126	.....	2,705	79,831	.....			

No.

STATISTICS OF CITY MUNICIPALITIES OF ONTARIO.

POPULATION, AREA, ASSESSMENT AND TAXATION, 1900.

RECEIPTS, DISBURSEMENTS, ASSETS AND LIABILITIES, 1899.

No.	City Municipalities and Counties in which located.	Population taken in 1900.	Assessed values of real and personal property and income taxable for 1900.	Taxes imposed for all purposes, 1900.			Receipts, 1899.							Disbursements, 1899.			
				Total.	Per head.		Municipal and school taxes.	Licenses, fees, rents, fines, water and electric light rates, etc.	Refunds from Sinking Funds and other investments; interest and dividends.	Borrowed for current expenses and debentures.	Miscellaneous, including balance from 1898.	Total receipts.	Lighting of streets, water supply and fire protection.	Salaries of officers, and other expenses of civic government.	Administration of justice, including police service.		
					\$.	¢.										\$.	\$.
1	Belleveille.....	Hastings .....	10,313	3,913,171	93,741	9 09	23.9	78,375	11,596	5,890	282,355	15,871	394,085	28,147	10,709	5,476	
2	Brantford .....	Brant .....	15,276	7,271,025	136,414	8 38	18.8	132,116	38,556	15,033	87,992	10,064	283,761	43,329	13,185	7,300	
3	Chatham .....	Kent .....	8,777	3,603,695	104,217	11 87	28.9	95,704	17,080	1,827	139,760	9,994	264,365	16,832	8,636	6,666	
4	Guelph .....	Wellington .....	11,087	3,783,780	99,970	9 02	26.4	96,483	20,167	10,473	8,393	6,329	142,445	17,223	6,419	7,442	
5	Hamilton .....	Wentworth .....	52,055	28,866,986	536,862	10 19	20.0	538,930	229,728	24,458	208,076	38,459	1,039,651	71,801	55,875	67,139	
6	Kingston .....	Frontenac .....	18,167	7,596,560	149,399	8 22	19.7	151,056	43,612	4,835	83,490	26,103	309,096	27,788	17,483	14,776	
7	London .....	Middlesex .....	39,059	16,907,889	430,107	11 01	25.4	404,118	113,501	123,734	404,792	70,287	1,116,432	77,188	46,858	47,688	
8	Ottawa .....	Carleton .....	58,143	24,482,600	573,133	9 53	23.6	538,194	228,399	246,769	1,021,725	35,244	2,070,331	112,411	52,528	50,002	
9	St. Catharines.....	Lincoln .....	10,361	4,479,485	96,529	9 32	21.5	102,892	35,022	30,119	57,954	4,822	230,809	28,957	9,846	5,693	
10	St. Thomas.....	Elgin .....	11,908	4,525,666	113,053	9 49	25.0	111,194	22,169	4,123	238,415	16,756	392,657	24,100	12,728	4,285	
11	Stratford.....	Perth .....	10,758	4,039,175	101,113	9 40	25.0	98,407	3,931	49,841	96,801	3,176	252,156	13,225	7,023	4,155	
12	Toronto .....	York .....	199,043	126,795,699	2,903,080	14 59	22.9	2,723,792	845,074	2,053,368	1,872,933	822,585	8,317,752	468,818	224,168	319,564	
13	Windsor .....	Essex .....	12,129	5,318,380	148,225	12 23	27.9	147,097	40,689	51,028	81,747	2,368	322,919	31,956	9,137	7,764	
14	Woodstock .....	Oxford .....	9,224	2,765,550	60,635	6 57	21.9	62,569	23,385	8,107	31,172	19,128	144,361	18,903	7,264	2,752	



STATISTICS OF CITY MUNICIPALITIES OF ONTARIO. — *Continued.*  
 POPULATION, AREA, ASSESSMENT AND TAXATION, 1900.  
 RECEIPTS, DISBURSEMENTS, ASSETS AND LIABILITIES, 1899.

No.	Disbursements, 1899. — <i>Continued.</i>										Assets on December 31, 1899.					Liabilities on December 31, 1899.			
	Streets, bridges, parks, buildings, waterworks and electric light plant.	Payment on account of schools and education.	Sinking Fund and other investments.	Repayment of debentures, temporary loans and interest.	Board of Health expenses, miscellaneous charities, etc.	Total disbursements.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous, including balance on hand.	Total assets.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.				
1	\$ 185,702	\$ 17,371	\$ 13,493	\$ 94,497	\$ 27,630	\$ 388,025	\$ 81,625	\$ 64,765	\$ 180,725	\$ 510,381	\$ 447,164	\$ 282,353	\$ .....	\$ .....	\$ 729,517				
2	466,002	30,554	57,804	44,532	15,917	278,623	3,810	324,565	263,768	1,053,140	976,598	65,618	190	190	1,042,406				
3	30,414	19,918	.....	170,081	8,311	260,861	29,116	1,103	192,000	501,042	602,803	78,419	3,202	3,202	684,424				
4	13,239	24,099	19,088	39,080	8,589	128,179	12,808	343,927	116,918	704,129	610,060	16,000	9,785	9,785	636,855				
5	207,890	126,271	55,839	328,109	122,161	1,035,065	363,462	353,305	1,753,700	4,356,991	3,584,436	145,067	30,000	22,914	1,036,940				
6	35,473	36,911	6,130	122,794	5,804	267,159	48,646	55,432	312,189	766,656	484,626	30,000	.....	.....	3,741,750				
7	201,218	107,374	177,062	416,685	41,436	1,115,508	45,535	1,365,460	786,164	2,799,989	2,834,481	41,170	75,697	75,697	2,971,848				
8	307,425	117,516	301,023	1,049,968	48,881	2,069,751	532,638	1,441,836	2,000,000	5,287,311	4,540,068	462,508	180,696	180,696	5,243,272				
9	22,731	23,358	25,573	104,425	11,331	228,917	34,685	195,269	368,907	881,703	883,016	24,400	8,517	8,517	915,933				
10	82,146	32,378	4,945	209,321	8,019	377,922	25,033	89,155	152,000	620,781	576,194	62,855	16,979	16,979	66,428				
11	45,855	20,750	37,919	118,145	11,826	251,898	27,160	80,579	.....	263,287	459,438	32,031	2,590	2,590	494,059				
12	1,304,488	498,975	\$1,874,210	3,020,353	192,738	7,968,314	831,668	5,651,452	4,349,385	23,453,691	22,293,996	289,789	1,253,410	1,253,410	23,747,225				
13	21,169	29,018	34,943	177,749	11,966	322,832	50,592	218,902	275,000	775,731	780,569	53,225	1,937	1,937	885,731				
14	22,878	16,943	15,916	37,633	5,348	126,031	10,543	171,802	167,007	443,224	473,075	24,488	8,278	8,278	505,781				

\* Including \$20,550 bonus to rolling mills.  
 † Including waterworks contractors' deposits, \$10,023 and waterworks cash balance, \$8,348.  
 ‡ Including \$100,000 short dated debentures secured by taxes in arrears.  
 § Including \$167,850 contractors' guarantee and other special deposits.  
 ¶ Including \$16,000 mortgages on city real estate and \$37,992 contractors' guarantee deposits.

## FINANCIAL STATEMENT.—

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

No.	Counties.	Receipts, 1899.											
		Balance from 1898.	Rates from local municipalities.	Licenses.	Fees, rents, tolls, fines, etc.	Surplus fees from Registrar.	Interest and dividends.	From Legislature for schools.	From Legislature for Administration of Justice.	Refund moneys loaned or invested.	Money borrowed for current expenses.	Money borrowed on debentures.	Non-resident taxes collected
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1	Brant	9,830	14,861	150	220	29	160	1,942	3,554				189
2	Bruce	6,849	30,504	1,212	148	1,006	85	5,889	2,164	12,000	6,000		2,831
3	Carleton		24,402	285	736	309	1,064	3,648	5,279	15,000	11,758		2,721
4	Dufferin	154	18,455	434	189		490	2,584	1,397		7,000		1,599
5	Elgin	19,805	29,434	490		156	715	4,480	3,624		9,000	40,000	957
6	Essex	2,064	24,669	190	236	1,100	12	4,036	5,182		13,000		5,073
7	Frontenac	113	32,048	264	3,274		1	3,027	1,851		3,050		1,426
8	Grey		34,774	706	72	339	711	6,913	3,798				2,048
9	Haldimand	243	23,091	140	284			2,048	2,363		3,400		204
10	Haliburton	1,193	3,665	62	55			2,828	150		4,500		537
11	Halton	3,709	11,992	90	14		60	1,902	1,171		3,000		270
12	Hastings	58	44,089	417	128	390	2,538	4,945	7,029	1,450	35,017		753
13	Huron	594	34,976	1,072	66	1,125	1,136	6,573	1,701	3,995	3,000		321
14	Kent	4,865	31,631	360	2,061	1,013	228	4,066	4,954	19,000	12,589	12,000	1,278
15	Lambton	6,181	26,395	197	61	1,203	241	3,749	1,877		10,000		5,790
16	Lanark	1,103	18,547	90	46			3,245	1,865		14,097		85
17	Leeds and Grenville	123	36,016	312	47		168	4,823	3,221				581
18	Lennox and Addington	7,187	28,167	380	122		138	2,698	2,433				849
19	Lincoln	4,797	22,751	460	68	155	442	1,696	3,244				1,100
20	Middlesex	17,430	64,762	276	37	108	1,935	6,009	7,409		20,000		1,100
21	Norfolk		25,788	126	132		23	2,961	1,493				1,229
22	Northumberland and Durham	4,832	34,778	642	3	12	92	5,972	3,814		8,000		405
23	Ontario	16,495	19,331	324	6	116		3,967	1,964		33,000		720
24	Oxford	25,089	41,772	483	125	425	414	4,262	1,701				347
25	Peel	80	21,797	240	30		5	2,293	2,641		17,104		146
26	Perth	15,775	44,894	473	96	2	227	3,850	2,454		5,500		133
27	Peterborough	1,360	23,833	306	91		205	2,537	2,518	95	13,513		1,365
28	Prescott and Russell	763	13,399	320	62		247	2,418	869		16,007		4,577
29	Prince Edward	4,561	10,315	85	32		37	1,862	2,122				54
30	Renfrew	2,959	18,908	482	113	417	226	5,323	2,821				673
31	Simcoe	3,671	61,657	881	652	1,750	56	7,855	5,940		85,000		4,563
32	Stormont, Dundas and Glengarry	2,030	21,225	906	54	9	79	6,129	3,254		4,900	638	1,920
33	Victoria	1,160	23,006	555	203	420		3,607	2,560		16,000		1,346
34	Waterloo	1,058	29,208	240	67	648		2,845	2,421		24,899		41
35	Welland	1,620	26,058	190	36	395		2,452	1,750		9,146		1,356
36	Wellington	11,887	54,159	630	167	2	119	4,790	4,243		28,000		332
37	Wentworth		27,000	207	1,320	587	265	3,150	5,041	3,866	20,000		815
38	York		57,999	594	613			4,807	21,873		40,792		5,208

\* Special deposit.

COUNTY MUNICIPALITIES, 1899.

of the county municipalities of Ontario, for the year ending December 31, 1899.

Receipts.—Continued.			Disbursements, 1899.										
Towns or cities separated from county, for various services.	Miscellaneous.	Total receipts.	Attendance at meetings of council and committees.	Allowances, salaries and commissions.	Printing, advertising, postage and stationery.	Insurance, heating, lighting and care of buildings.	Law costs (including salaries).	Other expenses.	Roads and bridges.	Grants to local municipalities for roads and bridges.	Buildings and other works.	No.	
\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	No.	
3,378	284	34,587	691	1,421	437	1,590	200	173	290	42	1,881	1	
5,023	73,711	1,345	2,606	1,069	988	272	371	3,065	500	.....	.....	2	
5,000	650	70,852	1,068	2,908	822	230	888	818	3,063	.....	.....	3	
.....	98	32,500	452	1,191	346	225	250	235	1,352	.....	1,916	4	
.....	1,242	109,903	819	2,605	423	1,397	158	.....	10,062	128	432,172	5	
.....	765	56,327	665	2,824	1,029	1,568	100	575	1,731	.....	.....	6	
4,453	4,834	54,341	1,085	1,785	442	310	33	702	1,821	.....	.....	7	
.....	905	50,266	1,723	2,205	583	1,550	23	255	3,842	1,061	2,789	8	
.....	370	32,143	783	1,000	271	692	.....	264	766	.....	3,799	9	
.....	106	13,096	290	705	98	101	9	38	130	.....	.....	10	
.....	2	22,210	223	1,060	417	456	.....	448	699	.....	.....	11	
6,860	577	104,251	1,298	3,310	383	425	90	330	16,165	7,611	.....	12	
.....	840	55,399	928	3,190	817	1,096	57	58	6,973	.....	.....	13	
2,231	14,320	110,596	1,828	2,089	325	1,892	645	125	15,334	900	9,524	14	
.....	964	57,658	803	2,917	619	1,344	212	184	734	24	913	15	
.....	394	40,275	843	1,575	828	684	200	256	399	.....	255	16	
.....	.....	45,594	1,064	2,190	889	1,472	67	868	150	.....	2,834	17	
.....	44	42,018	802	1,005	630	1,551	55	306	88	.....	.....	18	
3,142	1,177	38,809	1,079	1,370	212	1,480	11	303	5,733	.....	350	19	
13,990	1,122	134,237	910	2,862	608	552	.....	215	5,753	\$140	.....	20	
.....	2,406	34,158	719	1,419	474	706	.....	476	549	.....	1,454	21	
.....	1,477	60,027	1,816	2,135	753	924	210	2,195	375	330	.....	22	
.....	1,599	77,522	1,226	1,530	693	1,572	58	285	767	.....	.....	23	
.....	1,054	75,762	1,289	3,021	614	962	123	122	3,170	.....	269	24	
.....	64,835	49,221	484	1,569	473	458	41	77	2,660	.....	2,544	25	
1,289	17	74,710	664	2,218	257	525	.....	183	294	4,961	.....	26	
2,887	423	49,133	1,168	1,680	613	1,243	167	117	3,112	1,259	.....	27	
.....	645	39,307	653	1,121	515	281	.....	5	381	.....	.....	28	
.....	.....	19,068	284	750	486	359	.....	530	530	.....	.....	29	
.....	283	32,205	665	1,805	447	728	84	179	681	.....	.....	30	
.....	4,999	177,024	2,741	3,790	814	675	551	510	3,247	544	10,786	31	
.....	4,127	45,271	723	1,850	462	911	107	513	126	.....	279	32	
600	666	50,123	1,090	2,578	1,067	1,023	24	1,127	3,125	375	1,632	33	
.....	55	61,482	1,193	1,394	870	1,386	32	154	5,825	24	.....	34	
1,453	758	45,223	630	1,380	209	1,341	.....	210	482	117	41	35	
3,282	480	108,091	1,569	2,403	623	260	851	729	19,982	2,554	1,915	36	
8,537	1,918	72,706	2,003	2,170	654	2,611	40	1,426	7,282	.....	2,031	37	
24,424	8,852	164,952	6,332	3,423	1,261	1,496	1,086	4,051	14,024	50	1,263	38	

\* Including \$4,000 Government Grant for House of Refuge.  
 † New Court House.  
 ‡ Including \$4,750 from Bothwell, Orford and Zone, proceeds of their debentures for share of Moravian bridge, and \$5,546 from Special Trust Funds.  
 § Including \$119 to adjoining counties.  
 ¶ Including \$1,186 witness fees in Ponton case.  
 a Including \$1,450 for rent paid Cobourg Town Trust.  
 b Including \$4,000 from Government for House of Refuge.  
 c For House of Refuge.  
 d Including \$4,000 for adjustment of Bills Payable Account.

## FINANCIAL STATEMENT.—

No.	Counties.	Disbursements, 1899.—Continued.										
		Support of the poor and other charities.	Administration of Justice, gaol maintenance, etc.	Grants to schools and other payments on education.	Sinking Fund and other investments and deposits	Debentures redeemed.	Interest paid on debentures.	Refund of money borrowed for current expenses.	Interest or discount on loans and advances.	Non-resident taxes paid local municipalities.	Miscellaneous.	Total disbursements.
		£	£	£	£	£	£	£	£	£	£	
1	Brant	192	9,176	3,475		1,628	314			189	809	22,808
2	Bruce	9,352	8,822	13,180	*12,000	672	800	6,000	85	2,831	2,908	66,866
3	Carleton	2,482	20,892	5,557	3,147	15,000	3,150	5,952	61	2,721	1,493	70,852
4	Dufferin	46	7,222	5,500	664	4,100	1,122	6,230	130	904	496	32,431
5	Elgin	4,228	10,498	10,274		1,380	563	24,000	609	826	879	101,021
6	Essex	632	12,849	10,274		930	983	10,000	762	5,073	3,646	53,641
7	Frontenac	1,550	9,638	5,908			4,470	14,743	261	2,649	8,807	54,204
8	Grey	310	14,502	14,225	1,917		1,100			2,239	1,944	30,266
9	Haldimand	207	7,604	9,200				4,965	338	342	500	30,717
10	Haliburton		865	3,555		1,000	180	6,000	74	537	18	12,600
11	Halton		9,057	3,647				3,000	39		440	16,466
12	Hastings	125	14,681	11,377	4,810	667	3,338	36,906	1,451	752	1,658	104,177
13	Huron	5,082	9,394	14,519	7,400		2,943	995	26	706	609	54,803
14	Kent	3,389	17,107	13,029	10,000	7,965	1,782	10,000	607	2,188	2,480	110,407
15	Lambton	3,553	10,772	13,219		695	572	10,000	6	6,823	2,82	55,541
16	Lanark	675	8,756	8,978				13,000	350	887	2,609	40,275
17	Leeds and Grenville	4,857	9,326	12,776	2,010		1,325	3,781	614	545	605	45,403
18	Lennox and Addington	300	7,719	8,655		5,40	5,340		17	586	107	32,561
19	Lincoln	4,381	9,164	6,364		2,211	195	1,000	290	749	2,078	36,970
20	Middlesex	12,053	23,687	13,711	7,473	20,000	17,085			1,961	607	107,617
21	Norfolk	3,956	8,876	9,324				3,988	418	1,229	451	34,040
22	Northumberland											
23	Ontario	40	17,196	14,989	2,000		700	12,000	482	739	634	57,518
24	Oxford	481	8,618	10,687		1,241	179	33,000	306	954	283	62,481
25	Peel	5,068	9,402	8,021		6,333	5,072			389	1,445	45,300
26	Perth	1,539	8,106	6,309		1,536	261	21,000	533	155	1,473	49,218
27	Peterborough	3,238	10,704	9,548	8,431	780	9,170	3,500	58	102	601	55,234
28	Prescott and Russell	45	9,618	5,905	1,013	1,698	1,779	9,000	541	1,978	1,329	42,265
29	Prince Edward		5,857	7,245				16,193	770	4,577	927	38,525
30	Renfrew	82	5,195	4,761		5,000	450		141	54		18,622
31	Simcoe	275	6,376	9,604	976	2,077	1,762			406	303	26,368
32	Stormont, Dundas and Glengarry	5,857	14,126	16,603		12,679	2,297	80,000	2,270	4,548	4,269	166,307
33	Victoria	14	8,560	16,439		4,691	1,962	5,400	320	1,920	612	44,885
34	Waterloo	746	7,393	7,944				17,500	550	1,279	1,685	49,458
35	Welland	7,581	8,477	8,321		1,210	998	23,000	375	41	535	61,416
36	Wellington	4,115	9,694	9,819		1,851	92	9,146	140	1,356	360	40,933
37	Wentworth	7,680	13,135	10,932				21,000	387	532	2,914	87,468
38	York	400	11,578	7,843	7,072		660		412	815	2,501	49,498
		7,784	53,719	12,232		3,052	778	34,159	1,914	16,014	2,317	164,952

\* Special deposit.

COUNTY MUNICIPALITIES, 1899.—Continued.

Assets on December 31, 1899.						Liabilities on December 31, 1899.						No.	
Cash in treasury.	Rates due from local municipalities.	Sinking Fund and other investments in stocks, mortgages, debentures, etc., special deposits, etc.	Land, buildings, furniture, etc.	Miscellaneous.	Total assets.	School grant unpaid.	Railway debentures outstanding (principal).	All other debentures outstanding (principal).	Loans for current expenses and interest due on same.	Local municipalities for non-resident taxes collected	Miscellaneous.		Total liabilities.
¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢
11,779	3,324	6,000	106,000		117,779			7,949			1,146	9,095	1
6,845	3,324	6,000	80,000	3,067	99,236	682		19,328			3,603	23,613	2
	25,142	15,761	180,000		220,903			45,000	11,758		1,561	58,319	3
69	6,132	9,504	40,000	716	56,421	1,200		13,000	2,550	828	1,648	19,176	4
8,882	23,636		171,000	2,950	206,468	587		49,860	9,000	131		59,578	5
2,686	23,374		*70,000	3,562	99,622			23,638	23,000			46,638	6
137	27,147	2,000	117,000	10,356	156,640	15	149,000		3,050	979	4,470	157,514	7
	14,035	+24,945	87,638	708	127,326	125		26,000		829	13	26,967	8
1,426	997		30,000		32,423				1,600		340	1,940	9
496	4,394			38	4,928				1,500		1,010	3,510	10
5,744	1,466		50,000		57,210	1,137					270	1,407	11
74	39,487	61,259	60,000		160,820	700	30,000	28,093	40,017	1	25,537	104,348	12
596	21,810	20,562	77,000		119,968			73,000	7,096	632		80,728	13
189	15,083		\$141,500	3,755	160,527			50,556	12,589	54		63,199	14
2,117	15,992		54,500		72,609			13,718	5,000	1,450	141	20,309	15
			54,000	454	54,454				1,097			1,097	16
191	15,129	17,534	138,000	1,062	171,916	50		45,000	15,791	172	500	61,513	17
9,457	14,502		55,000		78,959			86,300		303		86,603	18
1,839	11,357		101,500	2,769	117,465	464		6,686	2,000	461	70	9,681	19
26,620	59,469	a54,135	84,000	13,200	237,424			486,260		164	b31,445	517,869	20
118	3,403		59,000	409	62,930								21
2,509	19,222	4,000	50,500	45	76,276			20,000	6,000	405		26,405	22
15,041	3,729		50,000		68,770			14,361	12,086	548	169	27,164	23
30,462	6,649		190,000	706	227,817	205		120,474		322	2,493	123,494	24
3			76,356	1,444	77,833			4,957	104		1,400	6,491	25
19,476	9,357	8,431	125,000		162,264		120,000	83,470	3,500	83	936	207,989	26
6,868	9,214	7,465	93,355	2,156	119,038	1,043		40,305	17,648	656	4,355	64,067	27
782	11,944		20,000		32,726				17,058			17,058	28
446	5,492		33,500		39,438			5,000				5,000	29
5,837	15,940	6,753	50,000		78,530	152		33,404		762	669	34,987	30
10,717	31,903	18,600	c168,000	d23,317	252,537	1,200		48,321	85,000	15	7,692	92,228	31
386	14,439		61,000	506	76,331			33,634	3,500		577	37,711	32
665	17,534		68,564	1,684	88,467	115		19,000		465	211	19,791	33
66			85,000	1,114	86,180			23,726	1,899			25,625	34
4,240	67		128,884	242	133,433	110						110	35
20,625	35,969		80,000	2,660	139,274	3,400			28,000	312	13,785	45,497	36
23,208		12,372	92,000	5,176	132,756	220		31,000			1,710	32,930	37
	26,510		100,000	46,052	172,562	180		38,558	40,792	1,185	3,948	84,663	38

\* Reduced \$14,000, Windsor share of buildings.

† Including \$14,995 deposited to credit of general account.

‡ Including \$1,676 formerly described as "Bills Payable," but which cannot be traced in later returns

§ Including \$61,700 for iron bridges.

|| Including \$1,700 previously omitted from debenture liabilities for Court House.

a Including \$7,800 Hospital Trust Funds.

b Including \$15,776 to City of London for Victoria Hospital.

c Including \$20,000 for iron bridges.

d Including \$19,325 ex-treasurer's estate and bonds.

STATISTICS OF TOWNSHIP MUNICIPALITIES OF ONTARIO  
POPULATION, AREA, ASSESSMENT AND TAXATION—1901.  
RECEIPTS, DISBURSEMENTS, ASSETS AND LIABILITIES—1900.

No.	Township Municipalities and Counties in which located.	Population 1901.	No. of acres assessed 1901.	Assessed value of real and personal property and income taxable, 1901.	Total.	Per head.	Taxes imposed for all purposes, 1901.		Receipts, 1900.									
							Mills on %	Balance from 1899.	Municipal and School taxes.	License fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.		
																	%	%
1	Adelaide, Middlesex	1,472	44,263	\$74,845	12,467	6 17	13 9	5,349	11,737	68	27	1,000	1,300	125	19,546			
2	Adjals, Simcoe	2,087	45,987	563,240	8,833	4 23	10 4	792	9,681	153	24	1,054	1,300	24	11,704			
3	Admaston, Renfrew	2,243	70,091	742,725	4,089	2 31	7 7	118	6,453	72	263	3,246	4	3,246				
4	Adolphustown, Lennox and Addington	486	11,597	343,161	2,773	5 71	8 1	386	2,735	56	120	1,300	14	6,281				
5	Albemarle, Bruce	1,431	55,188	176,887	4,276	2 95	24 2	338	4,573	58	884	1,820	111	13,951				
6	Alberton, Rainy River	193	19,154	42,795	832	4 31	19 4	125	11,895	109	152	5,432	40	36,680				
7	Albion, Peel	2,715	55,250	1,112,200	11,007	4 05	9 9	146	28,279	372	1,659	400	1	8,159				
8	Aldborough, Elgin	4,426	74,450	1,673,310	25,804	5 83	15 4	7	7,573	179	442	1	2,069					
9	Alfred, Prescott	3,025	43,907	398,050	8,151	2 70	24 9	100	3,221	12	21	550	42	3,406				
10	Algonia S., Renfrew	3,389	31,586	38,125	1,461	1 34	33 1	3,251	3,340	89	31	550	80	4,145				
11	Alice and Fraser, Renfrew	1,978	57,383	118,820	3,480	1 76	29 3	86	3,340	125	31	3,000	496	14,748				
12	Alnwick, Northumberland	491	16,510	323,850	3,104	3 13	9 6	3,613	8,296	125	2,187	8	10	20,081				
13	Amabel, Bruce	3,331	61,288	639,060	10,887	3 27	17 0	51	17,012	10	948	632	10	14,180				
14	Amaranth, Duferin	2,643	63,290	1,127,985	14,370	5 44	12 7	28	12,611	47	700	20	20	4,187				
15	Amaranthburg, Prince Edward	2,403	43,158	1,130,630	11,076	3 82	9 8	64	3,384	29	1,103	6,000	28	21,629				
16	Amherst Island, Lennox and Addington	2,825	14,649	348,900	3,727	4 52	10 7	1,115	14,375	3,613	38	1,927	59	18,068				
17	Ancaster, Wentworth	3,612	45,928	2,221,752	14,976	4 15	6 7	496	9,376	237	58	1,927	246	1,293				
18	Anderdon, Essex	1,688	23,235	634,210	7,426	4 40	11 9	55	967	25	269	1,293	3,547					
19	Anson and Hindon, Haliburton	297	12,963	35,269	955	3 62	27 4	736	2,809	12	88	3,285	5	11,207				
20	Armour, Parry Sound	855	38,975	178,793	2,054	2 40	11 5	2,213	3,373	28	53	1,800	368	18,198				
21	Arran, Bruce	2,359	64,120	1,454,410	7,616	3 26	5 2	661	12,186	26	2	1,700	157	17,236				
22	Artesesia, Grey	3,553	68,185	1,033,790	12,983	3 65	12 6	825	14,408	160	54	1,200	174	9,821				
23	Arthur, Wellington	2,850	64,446	1,423,550	11,790	4 17	8 3	409	7,927	27	102	2,300	37	3,424				
24	Ashtfield, Huron	3,264	64,012	1,687,650	13,733	4 18	8 1	627	2,706	91	1	4,072	37	15,352				
25	Asphodel, Peterborough	1,767	37,780	844,655	7,852	4 48	9 3	230	3,739	1	368	1	1	4,072				
26	Assignack, Manitowish	1,131	38,123	165,126	2,677	2 37	17 3	230	3,739	1	102	2,300	37	15,352				
27	Athol, Prince Edward	1,110	23,394	471,195	3,343	3 01	7 1	3,052	10,665	743	487	1	1	4,072				
28	Augusta, Grenville	3,798	74,525	1,289,735	13,050	3 44	10 1	3,052	10,665	743	487	1	1	4,072				

STATISTICS OF TOWNSHIP MUNICIPALITIES OF ONTARIO.—Continued.  
POPULATION, AREA, ASSESSMENT AND TAXATION—1901.  
RECEIPTS, DISBURSEMENTS, ASSETS AND LIABILITIES—1900.

No.	Disbursements, 1900.											Assets on December 31, 1900.											Liabilities on December 31, 1900.				
	Allowance, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.			
1	712	270	2,668	..	..	8	494	5,123	127	261	1,000	59	206	13,920	5,676	3,330	2,549	8,225	3,430	1,039	..	..	100	4,569			
2	589	154	1,748	..	81	2,306	4,315	..	..	1,034	16	48	10	10,911	1,383	1,195	2,549	2,549	2,518	1,733	..	..	..	1,733			
3	348	155	649	..	57	1,249	2,909	..	..	800	14	53	6,341	562	2,166	3,000	817	3,545	1,650	111	..	..	302	2,033			
4	195	64	173	..	102	1,086	1,140	..	..	..	..	1	2,761	481	4,619	3,000	500	3,984	3,984	..	1,350	..	813	3,605			
5	555	133	732	..	74	623	2,084	..	..	1,637	68	259	6,245	36	4,619	764	764	5,419	1,462	..	..	..	47	47			
6	85	29	265	..	..	..	..	..	..	..	..	36	685	149	669	..	..	800	1,178	2,900	..	..	..	2,900			
7	647	166	2,043	..	..	2,282	6,470	..	..	1,851	54	10	13,573	378	17,308	5,766	25,268	48,842	6,360	32,425	13,876	1,424	54,085				
8	1,168	681	5,256	..	130	4,703	7,610	2,977	1,142	8,000	51	595	36,180	507	4,506	1,900	3,683	10,040	3,556	472	2,890	280	7,198				
9	586	82	600	..	33	1,087	3,853	645	..	118	20	17	7,992	167	4,506	1,002	1,002	1,527	468	652	..	..	30	1,150			
10	127	49	35	..	15	270	1,119	..	..	70	..	..	2,039	30	446	33	446	2,065	460	930	..	..	358	1,748			
11	230	144	141	85	..	500	1,361	..	226	..	..	48	3,347	33	1,042	691	273	2,065	460	930	..	..	..	1,748			
12	389	57	736	..	..	562	1,339	..	..	550	12	116	3,761	381	353	353	974	1,451	..	..	..	..	..	2,900			
13	744	263	1,646	..	62	674	4,277	13	..	1,215	..	..	10,838	3,910	2,414	33	3,683	10,040	1,163	23,696	..	..	..	24,859			
14	485	160	1,463	..	19	2,463	4,932	2,417	..	3,503	1,464	480	16,838	180	4,129	1,900	3,000	6,209	1,427	10,792	..	..	467	12,686			
15	668	240	1,710	..	371	2,198	5,170	..	892	2,016	841	71	14,177	3	676	33,865	6,127	40,671	1,427	15,000	642	63	15,705				
16	225	90	267	6	212	1,143	1,255	..	..	755	38	75	4,064	121	1,090	121	1,090	1,141	290	..	700	..	980				
17	1,100	1,404	6,077	618	280	3,571	7,354	3,107	..	..	120	240	23,591	1,088	3,065	46,959	6,314	57,376	4,380	8,156	5,060	..	5,060				
18	744	1,225	1,736	..	280	1,287	3,083	417	..	565	7,755	131	776	17,959	94	8,001	2,000	9,095	1,379	1,327	1,327	1,687	14,950				
19	163	33	107	..	..	109	616	..	..	114	..	16	45	1,158	135	625	619	1,379	1,114	143	..	..	1,257				
20	280	58	354	..	5	1,663	3,452	..	..	..	..	..	..	2,405	2,434	73	3,649	3,649	1,731	..	..	1,368	3,039				
21	584	213	1,248	..	11	2,646	6,352	..	..	1,000	3,285	456	104	9,045	1,142	1,441	852	4,455	4,361	6,900	..	..	6,900				
22	962	344	3,083	..	266	2,029	6,169	399	..	250	1,800	117	77	15,745	498	6	3,099	866	1,964	2,408	..	..	2,408				
23	891	167	1,788	58	6	4,067	6,322	..	..	331	1,200	46	143	15,977	1,279	2,655	1,270	5,204	2,257	1,170	508	179	4,114				
24	717	584	3,969	..	..	2,249	6,627	58	..	233	1,200	239	149	9,694	127	212	2,667	3,680	6,626	196	3,166	..	4,823				
25	307	52	1,291	..	174	2,815	2,329	215	..	..	..	..	..	3,634	482	370	600	1,352	3,676	..	..	..	1,461				
26	381	212	346	..	..	938	1,916	..	..	..	..	..	..	2,942	382	270	600	1,352	3,676	..	..	..	4,823				
27	162	164	148	3	280	938	2,137	..	..	..	..	..	..	3,838	234	67	2,250	1,025	3,676	..	..	..	..				
28	865	361	1,443	592	30	2,890	6,958	196	..	500	240	221	13,289	1,063	3,610	18,715	3,030	27,418	3,321	3,200	1,500	..	8,021				

## TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1901.	No. of acres assessed 1901.	Assessed value of real and personal property and income taxable, 1901.	Taxes imposed for all purposes, 1901.			Receipts, 1900.									
					Total.	Per head.	Mills on %.	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Funds from Sinking Funds and other investments.	Interests and dividends.	Borrowed for expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	
29	Bagot and Blythfield, Renfrew	1,397	55,543	145,490	3,046	2 19	21 1	829	3,458	62	62	1,605	25	4,374			
30	Balfour, Algona	629	21,655	78,846	2,600	3 97	31 7	272	1,208	158	158	1,605	140	3,083			
31	Barrie, Wicklow and McClure, Hastings	9,52	34,453	41,065	2,246	2 36	54 7		1,020	32	32	71	347	2,070			
32	Barrie, Frontenac	558	24,913	51,641	2,413	2 53	27 4	45	1,416	30	30	23	19	1,633			
33	Barton, Wentworth	3,639	13,142	1,409,997	11,955	3 38	8 5	4 08	10,375	289	373	1,011	175	16,931			
34	Bastard and Burgess S., Leeds	2,296	56,693	738,765	11,498	5 01	15 6	1,927	9,446	146	146	1,050	11	12,583			
35	Bathurst, Lanark	2,378	61,786	800,820	7,380	3 10	9 2	357	7,804	10	10	35	25	8,231			
36	Bayham, Elgin	3,540	56,967	1,075,350	21,215	5 94	19 7	1,225	5,987	123	123	13,855	400	32,378			
37	Beckwith, Lanark	1,615	56,553	500,025	6,566	4 07	13 1	1,225	5,987	123	123	380	16	7,681			
38	Beaufort, Frontenac	1,466	63,866	178,752	5,693	3 84	31 5	311	5,427	43	43	250	518	5,995			
39	Belmont and Methuen, Peterborough	1,953	83,850	135,023	6,383	3 27	32 6	10	5,467	10	10	9	189	14,263			
40	Beutnick, Grey	2,971	74,826	1,072,040	10,386	3 47	9 7	1,113	12,839	53	53	48	224	14,441			
41	Bertie, Welland	2,891	34,575	1,489,610	15,853	5 48	9 4	586	13,937	486	486	724	135	15,202			
42	Beverly, Wentworth	3,837	69,991	2,000,981	14,820	3 86	7 4	94	13,627	66	66	556	432	4,612			
43	Boxley, Victoria	871	28,476	128,653	3,587	4 06	27 5	124	3,984	37	37	65	67	4,612			
44	Bridlepath, Middlesex	2,357	39,285	1,219,065	11,046	4 71	9 1	3,713	10,790	150	150	3,500	18	20,000			
45	Billings, Manitoulin	342	18,490	110,394	1,054	3 08	9 5	267	864	8	8	4	4	1,243			
46	Binbrook, Wentworth	1,229	26,400	967,300	5,946	4 84	6 1	1,095	6,076	7	7	7	7	7,178			
47	Blandford, Oxford	1,596	29,678	1,083,560	8,436	5 30	7 8	1,272	7,639	207	207	24	6	10,808			
48	Blanshard, Perth	2,618	43,511	2,094,500	14,770	5 87	7 1	4,416	14,071	18	18	2,426	580	21,511			
49	Blenheim, Oxford	4,186	66,839	2,303,890	22,576	5 39	9 8	575	20,529	778	778	2,800	278	24,960			
50	Blind River, Algoma	490	7,366	148,140	1,322	2 31	7 6										
51	Bonfield, Nipissing	1,338	31,112	151,749	2,930	2 23	19 7	20	3,347	89	89	500	71	4,027			
52	Bosanquet, Lambton	2,530	70,982	1,625,658	13,481	5 33	8 8	574	13,457	57	57	11	889	14,269			
53	Brant, Brant	3,794	69,640	1,992,785	15,933	4 20	8 0	1,895	16,271	174	174	1,467	26,305	30,000			
54	Brantford, Brant	5,235	17,705	3,814,948	24,472	4 67	6 4	1,272	24,350	69	69	3,043	507	62,791			
55	Brighton, Northumberland	2,434	48,818	1,179,333	9,083	3 73	7 7	1,479	8,924	2	2	800	50	11,255			
56	Brock, Ontario	3,592	66,219	2,080,290	14,900	4 15	7 2	1,655	15,687	117	117	4,000	82	20,055			
57	Bromley, Renfrew	2,025	50,654	1,69,966	5,506	2 42	32 6	574	5,351	195	195	4,000	47	6,167			
58	Brooks, Lambton	3,383	74,048	1,825,140	28,979	8 48	15 7	1,880	25,887	76	76	4,500	404	38,194			
59	Brougham, Renfrew	568	19,400	31,615	979	1 72	31 1	56	952	26	26	1,000	344	1,634			
60	Bruce, Bruce	2,970	66,811	1,385,335	11,824	3 98	8 5	1,057	11,988	88	88	93	344	16,079			
61	Brudenell and Lyndoch, Renfrew	1,417	52,553	69,310	2,318	1 64	33 4	259	3,076	62	62	1,000	16	3,397			
62	Brnel, Muskoka	774	40,465	137,030	1,863	2 41	13 6	465	2,769	12	12	1,000	56	3,302			



No.	Disbursements, 1900.													Assets on December 31, 1900.						Liabilities on December 31, 1900.				
	Allowances and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, water works, &c.	Charters.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debtors redeemed.	Current loans repaid.	Interests on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates and unpaid.	Debtors outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
29	337	139	326	326	62	394	1,881	...	...	321	7	3,467	907	611	800	2,318	48	2,318	410	...	...	48	488	
30	281	57	285	...	14	985	...	...	1,080	33	292	3,040	293	2,112	290	2,042	148	2,042	950	...	600	148	1,638	
31	393	6	346	...	102	1,073	...	...	115	29	2,070	...	...	331	2,443	331	2,443	650	...	421	360	2,349		
32	208	58	26	...	10	69	900	...	83	...	29	1,383	150	622	311	1,083	40	1,083	474	...	265	40	779	
33	1,319	774	2,496	...	156	2,048	4,461	401	1,000	340	13,434	3,497	865	15,271	8,332	27,965	70	27,965	206	8,006	500	70	8,665	
34	692	130	682	...	6	1,507	4,172	87	1,447	1,150	211	10,384	2,196	386	28,301	2,600	34,033	400	23,006	1,168	...	400	24,568	
35	508	1,907	701	...	18	1,715	4,378	518	...	...	7,592	696	615	780	2,553	10,985	3,774	33,618	3,774	33,618	5,858	1,187	44,432	
36	1,14	1,907	1,900	...	41	1,286	3,213	...	1,805	9,462	2,171	739	32,578	8,432	2,563	10,985	3,774	33,618	3,774	33,618	5,858	1,187	44,432	
37	673	...	...	...	33	539	3,300	...	43	...	42	4,840	1,171	862	500	2,533	1,342	668	1,342	668	...	93	2,098	
38	261	45	503	...	38	583	2,934	...	122	96	371	5,811	184	3,415	1,482	5,111	933	1,482	933	...	330	2,745		
39	461	127	1,036	40	38	477	5,142	...	2,5	...	43	250	14,161	102	2,819	11,605	14,834	2,921	1,908	...	48	1,968		
40	580	207	2,957	62	204	4,77	6,027	23	876	...	296	437	14,441	3,829	13,850	3,200	19,871	2,921	1,908	...	556	506		
41	678	394	2,479	...	67	3,098	6,027	...	...	...	281	15,202	6	2,127	2,311	780	6,224	1,186	1,766	...	...	50	8,448	
42	992	449	2,389	...	23	253	2,436	539	...	...	375	187	4,636	281	15,202	6	2,127	2,311	1,186	1,766	...	...	50	8,448
43	357	139	327	...	23	253	2,436	539	...	...	375	187	4,636	281	15,202	6	2,127	2,311	1,186	1,766	...	...	50	8,448
44	693	205	4,293	...	5	1,619	3,783	631	...	4,000	218	12	15,418	2,80	721	1,710	4,838	1,534	900	...	1,500	65	3,999	
45	188	36	180	...	5	492	...	...	696	...	46	956	287	1,14	29	1,448	322	1,448	322	...	...	...	1,065	
46	408	127	773	...	129	1,405	2,679	15	100	1,600	55	5,730	1,458	431	155	400	2,144	2,144	1,065	...	...	...	1,065	
47	683	143	1,627	...	78	1,834	4,129	...	563	1,600	106	254	3,467	1,341	252	1,693	1,693	1,766	...	...	...	1,766		
48	727	182	4,958	...	64	4,061	4,362	...	308	2,426	68	227	16,683	186	1,186	6,170	4,061	1,766	...	...	...	1,766		
49	1,231	282	4,774	22	243	4,750	8,835	...	860	2,800	531	175	24,563	397	37	8,737	9,171	8,642	...	...	...	8,642		
50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
51	430	264	206	...	32	2,387	...	...	400	400	5	3,759	268	3,068	111	3,447	2,098	2,098	...	...	627	134	2,863	
52	907	364	2,934	...	118	2,263	4,989	2,515	1,553	2,000	265	35	18,162	1,107	27	7,444	6,316	6,316	...	...	...	972	6,160	
53	843	469	8,344	...	13	3,706	5,347	4,363	...	...	482	23,987	2,338	1,664	4,363	8,365	191	8,365	...	...	...	191	14,459	
54	2,051	756	4,183	...	935	4,652	13,545	30,950	811	800	767	1,176	59,806	2,923	3,907	68,742	12,163	87,727	712	8,265	...	5,482	14,459	
55	563	163	1,781	...	129	1,676	4,524	...	107	800	16	187	9,829	1,426	23	850	2,259	2,259	...	...	...	269	1,718	
56	1,106	380	2,564	...	623	2,606	6,708	...	107	4,000	203	785	19,072	979	46	3,036	4,061	4,061	...	...	...	269	1,718	
57	455	127	300	...	312	1,589	2,858	85	...	...	168	5,559	608	1,265	...	3,036	4,061	4,061	...	...	...	269	1,718	
58	797	978	4,908	...	312	2,439	6,722	8,068	107	4,000	1,731	208	37,481	1,013	11,312	699	13,024	336	32,167	4,500	400	37,403	300	
59	198	147	1,366	...	...	121	222	...	8,648	2,500	19	927	106	106	546	164	164	164	...	...	...	34	298	
60	609	149	3,886	...	5	3,037	4,481	1,906	115	1,000	300	236	15,724	355	1,030	1,906	1,223	4,514	1,680	5,796	...	196	5,991	
61	268	109	137	...	20	291	1,610	...	100	...	18	2,435	962	1,370	650	2,982	2,982	2,982	...	...	...	...	1,680	
62	290	60	728	275	5	922	...	...	100	...	61	2,429	873	1,716	...	800	800	3,383	842	200	...	...	1,042	

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Township Municipalities and Counties in which located.	Population 1901.	No. of acres assessed, 1901.	Assessed value of real and personal property, 1901.	Taxes imposed for all purposes, 1901.			Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Returns from Sinking Funds and other investments.	Receipts, 1900.		Borrowed on debentures.	Miscellaneous.	Total receipts.
					Total.	Per cent.	Mills on %.					Interest and dividends.	Borrowed for current expenses.			
63	Burford, Brant	4,104	66,350	2,143,941	19,079	4 65	8 7	4,113	14,773	29	83	650	73	24,721		
64	Burgess N., Lanark	824	32,548	185,775	2,675	3 25	14 4	186	2,167	14	6	200	243	2,351		
65	Burlough and Anstruther, Peterborough	692	29,283	89,948	2,448	3 54	27 2	46	1,662	14	6	59	850	2,165		
66	Burpee, Manitowlin	274	14,322	96,103	716	2 61	27 4	71	773	9	6	20	7,403	850		
67	Caister, Lincoln	1,705	32,769	665,290	6,002	3 52	30 2	1,757	5,578	181	1	2,310	29	7,403		
68	Caldwell, Nipissing	853	29,665	107,202	2,161	2 53	20 2	315	1,436	181	1	2,310	29	1,932		
69	Caledon, Peel	3,880	68,197	1,778,845	17,270	4 45	9 7	370	14,446	206	1	2,310	29	17,442		
70	Caldoma, Prescott	1,771	45,269	284,451	7,317	4 13	25 7	370	7,590	98	1	2,310	29	8,483		
71	Calvin, Nipissing	455	25,046	60,628	1,118	2 46	18 4	89	1,104	190	1	2,310	29	1,318		
72	Cambridge, Russell	3,147	59,646	433,182	11,309	3 59	25 8	11	9,050	190	1	2,310	29	10,781		
73	Camden, Kent	2,550	40,765	1,013,675	14,977	5 87	14 8	11	16,009	66	1,116	1,212	184	18,567		
74	Camden East, Lennox and Addington	5,321	86,356	1,890,455	20,151	3 79	11 1	1,125	22,309	264	814	1,500	15	56,027		
75	Cameron, Nipissing	165	10,589	32,150	450	2 71	14 0	15	613	628	150	150	15	628		
76	Canborough, Haldimand	842	21,238	354,250	3,792	4 50	10 7	473	3,868	8	150	150	232	29,045		
77	Caradoc, Middlesex	3,898	61,969	1,203,040	18,880	4 84	15 7	8,859	18,582	83	1,249	232	50	4,497		
78	Carleton Place, York	690	44,957	62,738	2,295	3 33	36 6	63	2,248	63	1,051	400	50	3,581		
79	Carden, Victoria	6 9	23,807	31,532	2,026	2 98	64 3	2,127	2,248	5	1,051	400	50	3,581		
80	Carduff, Haldimand	446	30,468	74,180	1,234	2 77	16 6	970	1,349	5	3	3	638	2,394		
81	Cardwell, Muskoka	296	28,537	35,473	1,284	4 34	36 2	127	508	5	3	3	638	2,394		
82	Carlow, Hastings	594	20,108	19,210	2,309	3 89	46 9	462	1,273	9	15	210	1	1,946		
83	Carravon, Manitowlin	698	35,881	395,022	1,835	2 63	19 3	114	1,685	9	15	210	1	1,946		
84	Carrick, Bruce	4,667	59,497	2,090,237	13,560	2 91	6 5	2,097	14,212	365	202	27	27	16,904		
85	Cartwright, Durham	1,702	37,006	730,020	5,968	3 51	8 2	157	6,961	77	1,205	6,961	11	8,411		
86	Cavan, Durham	2,418	63,286	1,555,525	11,448	4 73	7 4	1,321	10,852	93	246	182	12	12,691		
87	Cayuga N., Haldimand	1,476	32,761	731,060	5,952	4 03	8 1	521	5,650	47	8	75	5	6,231		
88	Cayuga S., Haldimand	701	13,072	394,100	2,691	4 27	7 6	329	2,370	13	75	75	1	2,700		
89	Chafley, Muskoka	1,033	43,416	143,695	3,045	2 95	21 2	356	2,949	13	75	128	3,521	2,276		
90	Chandos, Peterborough	778	42,220	56,110	2,109	2 71	37 6	445	1,850	13	75	128	3,521	2,276		
91	Chapleau, Algona	725	6,760	97,760	1,960	2 73	20 3	445	1,850	13	75	128	3,521	2,276		
92	Chapman, Parry Sound	750	38,146	143,059	1,282	1 71	9 0	510	1,430	95	146	48	2	2,083		
93	Chapman, Parry Sound	344	23,049	154,317	1,775	5 16	11 5	510	1,430	95	146	48	2	2,083		
94	Charlotteburg, River	4,896	82,388	1,176,050	18,778	3 84	16 0	985	16,388	321	606	119	138	19,965		
95	Charlotteville, Norfolk	3,233	60,151	917,363	12,941	3 86	13 6	985	16,388	321	606	119	138	19,965		
96	Chatham, Kent	4,743	84,482	1,976,818	45,463	9 78	23 5	90	42,413	86	28,774	13,302	343	85,008		

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.										Assets on December 31, 1900						Liabilities on December 31, 1900.						
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges	Constructing waterworks, etc.	Charters.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments and deposits	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements	Balance on hand.	Taxes in arrears.	Sinking fund and other investments	Miscellaneous.	Total assets	County levy and school rates due	Debentures outstanding.	Temporary loans.	Miscellaneous.
63	316	249	5,530	611	3,736	7,936	1,430	640	88	574	21,739	2,982	272	2,141	550	5,073	1,150	1,449	2,589				
64	252	85	103	480	4,800	1,281	1,430	640	88	574	2,239	52	272	2,141	600	324	1,150	1,449	2,589				
65	295	19	24	630	3,630	630	850	218	139	181	1,603	556	850	896	2,442	1,313	1,705	900	3,969				
66	101	41	14	369	1,08	369	500	218	120	108	816	34	743	194	971	2,000	1,705	50	2,859				
67	331	181	1,068	1,568	2,719	2,719	2,719	70	34	43	6,091	1,312	50	1,000	1,000	2,362	2,000	1,568	1,568				
68	113	108	274	1,568	2,719	2,719	2,719	70	34	43	1,780	162	1,616	937	2,639	723	599	155	1,477				
69	880	356	2,959	1,608	4,486	25	1,800	217	246	43	8,386	97	2,987	2,000	2,948	668	1,084	2,000	1,477				
70	553	181	332	1,608	4,486	25	1,800	217	246	43	8,386	97	2,987	2,000	2,948	668	1,084	2,000	1,477				
71	143	23	18	825	3,705	680	3,705	100	125	34	1,289	19	1,153	193	400	1,572	1,93	60	653				
72	798	907	2,093	123	3,392	3,392	3,392	100	125	34	1,289	19	1,153	193	400	1,572	1,93	60	653				
73	809	263	3,624	346	1,601	4,620	1,623	4,254	237	391	167	10,702	79	5,021	1,689	6,789	4,149	381	12,264				
74	1,120	728	5,623	37	410	5,576	5,576	105	30,000	1,500	1,045	18,587	8,007	8,007	1,196	9,203	1,88	128	25,472				
75	186	6	21	265	8,507	8,507	8,507	105	30,000	1,500	1,045	18,587	8,007	8,007	1,196	9,203	1,88	128	25,472				
76	260	62	355	125	1,133	1,718	1,718	2,165	350	15	47	4,065	432	2	431	412	175	975	1,515				
77	1,031	317	4,890	18	4,079	6,817	1,638	2,165	427	912	22,327	6,678	1,629	6,678	5,743	14,050	4,004	8,074	12,078				
78	247	43	405	18	262	1,866	1,866	60	36	18	2,267	94	454	271	600	1,148	262	34	896				
79	190	43	61	500	1,800	500	500	60	508	101	115	3,395	187	2,236	271	2,694	1,090	94	2,854				
80	237	53	215	71	500	510	800	32	5	5	1,180	1,144	800	996	1,944	900	35	236	1,171				
81	143	46	4	406	995	406	995	100	27	106	1,935	10	1,314	429	1,753	1,226	504	45	183				
82	187	38	261	832	3,347	832	832	238	360	123	15,278	1,626	2,604	862	3,609	1,110	762	42	1,772				
83	243	82	261	832	3,347	832	832	238	360	123	15,278	1,626	2,604	862	3,609	1,110	762	42	1,772				
84	653	852	1,389	41	3,347	8,082	8,082	451	158	1,205	78	110	8,127	284	42	3,662	5,100	10,438	1,872				
85	416	220	608	156	1,163	3,363	3,363	158	78	110	8,127	284	42	3,662	5,100	10,438	1,872	7,200					
86	817	13	1,840	98	2,357	4,900	4,900	246	6	480	10,914	1,750	257	218	3,053	3,379	94	713					
87	363	101	637	13	1,862	2,872	2,872	247	200	82	197	3,521	429	1,288	6,015	441	400	1,437					
88	145	23	37	22	900	1,296	1,296	247	200	82	197	3,521	429	1,288	1,200	2,092	75	400					
89	422	249	511	67	1,254	1,613	1,613	247	200	82	197	3,521	429	1,288	1,200	2,092	75	400					
90	317	20	67	671	1,254	1,613	1,613	247	200	82	197	3,521	429	1,288	1,200	2,092	75	400					
91	317	20	67	671	1,254	1,613	1,613	247	200	82	197	3,521	429	1,288	1,200	2,092	75	400					
92	220	95	94	5	671	202	202	146	4	102	1,120	993	509	609	1,707	416	11	427					
93	217	20	25	115	3,312	190	733	129	1,146	190	733	129	16,996	8	890	361	49	416					
94	812	338	1,016	98	3,796	5,891	294	183	1,349	5,600	633	23,019	502	7,512	4,478	6,099	14,858	19,957					
95	765	101	2,457	98	3,796	5,891	294	183	1,349	5,600	633	23,019	502	7,512	4,478	6,099	14,858	19,957					
96	3,226	1,485	3,433	505	4,596	9,654	14,561	15,683	24,948	4,943	1,431	84,965	43,36	205	100,317	136,563	6,191	72,972,28,774	4,436	112,373			

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Township Municipalities and Counties in which located.	Population 1901.	No. of acres assessed 1901.	Assessed value of real and personal property, 1901.	Taxes imposed for all purposes, 1901.			Receipts, 1900.									
					Total.	Per head.	Mills on \$.	Balance from 1	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	
97	Chingacousy, Peel.	3,853	80,099	2,916,115	\$ 16,808	4 88	6.4	.....	17,676	214	10,778	1,478	.....	.....	.....	30,473	
98	Christie, Parry Sound.	459	21,966	83,183	1,538	3 35	18.5	310	1,563	53	.....	.....	.....	.....	327		
99	Clarence, Russell	5,203	69,985	381,177	13,851	2 57	35.0	1,196	12,613	249	.....	2,000	.....	.....	410		
100	Clarendon and Miller, Frontenac.	825	47,603	76,888	1,899	2 30	24.9	336	2,543	.....	25	.....	.....	.....	.....		
101	Clarke, Durham.	3,610	69,415	15,219	422	8.5	8.5	123	14,053	233	469	.....	.....	.....	.....		
102	Clinton, Lincoln	1,882	24,818	1,046,656	10,468	5 77	10.4	251	9,906	.....	.....	7	.....	.....	.....		
103	Cockburn Island, Manitoulin	181	14,998	40,409	813	4 49	20.1	217	319	.....	.....	.....	.....	.....	582		
104	Colborne, Huron	1,756	34,202	1,081,350	7,269	4 11	6.7	6	6,918	88	.....	1,200	.....	.....	8,271		
105	Colchester, N. Essex.	1,894	30,436	596,729	15,071	7 95	25.3	.....	15,563	.....	.....	7,500	.....	.....	24,606		
106	Colchester, S. Essex.	2,803	34,470	1,025,274	17,161	6 12	16.7	1,792	18,410	100	.....	.....	.....	.....	1,543		
107	Collingwood, Grey.	3,728	68,000	1,380,075	16,331	4 38	11.8	130	16,267	70	5,879	186	7,200	.....	.....		
108	Corwall, Stormont	6,594	46,416	1,102,045	9,427	5 90	8.6	1,160	15,645	308	.....	.....	620	.....	.....		
109	Cramahe, Northumberland.	2,418	42,480	377,615	7,914	4 46	21.0	57	7,830	122	.....	175	1,000	.....	.....		
110	Crosby N., Leeds.	1,775	35,916	384,616	6,450	4 06	16.8	1,297	6,291	73	1,036	390	.....	.....	.....		
111	Crosby S., Leeds.	1,588	32,857	385,515	5,108	6 23	13.3	1,250	4,819	38	.....	.....	300	.....	.....		
112	Crowland, Wetland.	819	19,857	9,756	3 49	5.6	6.6	183	9,797	94	.....	2	700	.....	.....		
113	Culross, Bruce.	2,793	56,627	1,750,225	9,756	3 39	23.0	130	12,453	217	.....	.....	.....	4,287	.....		
114	Cumberland, Russell.	3,790	74,972	432,640	12,556	3 69	18.4	235	14,751	71	.....	.....	.....	.....	.....		
115	Dalhousie and Sherbrooke N., Lanark	1,125	73,065	252,088	4,636	2 13	29.4	468	1,179	.....	.....	.....	.....	.....	.....		
116	Dartmouth, Victoria.	509	29,130	36,885	1,084	2 77	31.1	.....	1,767	.....	.....	.....	.....	.....	.....		
117	Darton, Lanark.	714	43,311	63,015	1,875	2 77	31.1	.....	1,767	.....	.....	.....	.....	.....	.....		
118	Darlington, Durham.	3,956	68,605	18,854	4 77	7 8	7.8	5,276	37	.....	.....	16	2,079	1,350	.....		
119	Dawn, Lambton.	3,363	65,636	892,970	22,100	6 57	24.7	379	18,310	66	.....	.....	1,208	8,213	.....		
120	Delaware, Middlesex.	1,439	23,452	591,175	6,694	4 67	11.3	709	7,785	43	532	.....	.....	.....	.....		
121	Denbigh, Ab. & Ash, Lennox & Addington	1,011	43,951	54,292	2,110	2 09	38.9	111	1,607	.....	.....	.....	.....	.....	.....		
122	Derry, Grey.	1,772	40,309	772,800	8,240	4 65	10.7	238	7,654	75	.....	.....	2,200	.....	.....		
123	Dereham, Oxford	3,585	65,070	2,410,765	25,698	7 17	10.7	465	25,139	696	.....	955	11,892	.....	.....		
124	Dorchester N., Middlesex.	3,471	51,579	1,711,227	17,635	5 05	10.2	5,325	17,454	101	.....	.....	.....	.....	.....		
125	Dorchester S., Eglw.	1,265	30,576	1,072,975	10,112	7 99	9.4	83	7,248	.....	.....	20	1,000	.....	.....		
126	Douro, Peterborough.	4,220	38,622	766,558	6,865	3 40	9.0	304	38,685	316	.....	.....	.....	.....	.....		
127	Dover, Kent.	4,210	68,041	31,731	31,731	7 54	18.0	304	7,293	.....	.....	.....	.....	.....	.....		
128	Downie, Perth.	2,704	48,360	2,064,750	17,824	6 59	8.6	447	12,795	118	.....	.....	2,810	.....	.....		
129	Draper, Muskoka	950	38,944	93,241	2,315	2 44	24.8	793	2,226	.....	.....	.....	.....	.....	.....		
130	Drummond, Lanark.	1,916	57,787	705,514	7,112	3 71	10.1	805	7,236	54	.....	.....	775	.....	.....		

TOWNSHIP MUNICIPALITIES, 1900-1901. Continued.

No.	Disbursements, 1900.													Assets on December 31, 1900.							Liabilities on December 31, 1900.						
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construct'n of buildings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debtors redeemed.	Current loans repaid.	Interest on loans, advances and deposits.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due.	Leventures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.			
97	1,034	523	2,342	7,713	85	5,406	7,713	10,846	241	1,622	180	277	36,473	1,023	32,828	2,625	36,476	1,625	1,268	1,268	13	2,896					
98	195	88	426	810	100	1,966	6,600	385	100	2,000	42	421	1,735	1,376	601	1,314	668	2,645	600	1,625	1,268	13	2,896				
99	700	187	1,619	4,398	36	4,816	6,388	385	100	2,000	120	886	14,744	1,314	8,128	577	10,619	7,258	1,339	1,500	1,500	23	10,697				
100	139	15	96	1,498	398	3,273	6,856	469	312	485	101	367	15,068	2,18	1,656	50	1,925	1,925	1,339	1,500	1,500	90	3,900				
101	939	262	1,981	6,856	10	2,670	3,899	155	312	485	337	11,678	400	864	25	635	250	9,364	130	1,556	1,300	1,086	1,086				
102	502	124	2,041	3,856	5	1,200	3,388	107	155	1,300	40	58	607	25	864	40	1,614	1,614	1,500	1,556	1,300	1,086	1,086				
103	77	12	2,035	3,388	86	618	3,388	107	155	1,300	40	58	607	25	864	40	1,614	1,614	1,500	1,556	1,300	1,086	1,086				
104	400	214	2,035	3,388	86	618	3,388	107	155	1,300	40	58	607	25	864	40	1,614	1,614	1,500	1,556	1,300	1,086	1,086				
105	834	117	2,064	2,721	4,138	7,675	1,614	2,236	4,138	7,675	1,614	2,236	24,320	286	15,527	2,188	18,301	18,301	4,275	2,532	2,532	1,443	32,657				
106	1,027	578	2,572	6,388	251	2,177	3,237	1,043	4,548	7,400	1,378	409	14,215	1,146	14,319	2,188	18,053	18,053	6,747	2,532	2,532	1,797	36,406				
107	1,001	925	3,245	150	439	2,421	6,389	6	206	7,400	661	497	29,808	44	319	6,464	1,595	8,422	8,422	3,019	1,100	1,100	1,32	10,251			
108	731	864	2,870	275	452	2,711	8,113	2,291	217	2,740	84	280	18,888	5,295	2,621	3,000	10,916	10,916	505	8,307	8,307	2,030	10,842				
109	656	217	1,493	4,722	167	1,413	4,722	217	217	2,740	8	209	11,625	49	1,503	4,715	6,357	6,357	782	3,352	3,352	75	75				
110	832	130	402	3,632	68	752	3,632	647	89	1,060	783	240	8,463	370	1,246	8,007	5,000	10,183	10,183	15,911	3,352	75	30,045				
111	396	67	409	3,746	6	1,340	3,746	1,416	116	599	293	14	7,902	1,185	976	7,014	1,500	9,399	9,399	4,667	3,352	75	20,045				
112	292	49	652	2,411	6	1,340	2,411	1,416	217	700	28	28	5,843	1,089	976	7,014	1,500	9,399	9,399	4,667	3,352	75	20,045				
113	586	172	1,329	4,311	31	2,691	4,311	454	217	700	21	57	10,352	696	696	117	813	813	1,225	6,109	6,109	250	250				
114	850	369	1,261	7,043	10	1,720	7,043	1,393	169	122	957	16,544	16,544	753	11,631	3,050	15,434	15,434	4,616	6,109	1,819	1,819	12,444				
115	376	108	832	2,764	34	529	2,764	1,393	169	122	957	16,544	16,544	753	11,631	3,050	15,434	15,434	4,616	6,109	1,819	1,819	12,444				
116	198	40	257	674	16	169	674	1,416	217	700	21	57	10,352	696	696	117	813	813	1,225	6,109	6,109	250	250				
117	156	68	178	1,340	48	159	1,340	1,416	217	700	21	57	10,352	696	696	117	813	813	1,225	6,109	6,109	250	250				
118	862	611	3,557	3,608	289	3,608	10,271	3,486	125	2,079	82	296	21,840	4,370	2,610	688	7,698	8,444	1,225	3,019	433	173	908				
119	869	223	2,611	6,516	383	1,632	6,516	3,486	125	2,079	82	296	21,840	4,370	2,610	688	7,698	8,444	1,225	3,019	433	173	908				
120	492	369	1,926	2,617	103	1,819	2,617	404	612	1,300	708	2,408	23,433	5,019	21,056	10,630	36,659	8,011	26,894	1,208	7,152	7,152	37,265				
121	210	41	1,847	3,970	27	353	3,970	1,416	217	700	21	57	10,352	696	696	117	813	813	1,225	6,109	6,109	250	250				
122	518	132	2,842	2,650	53	1,317	2,842	1,416	60	2,200	57	188	10,653	189	47	1,050	1,286	1,286	2,40	2,40	300	300	540				
123	122	518	132	2,842	53	1,317	2,842	1,416	60	2,200	57	188	10,653	189	47	1,050	1,286	1,286	2,40	2,40	300	300	540				
124	936	231	4,726	7,491	111	3,886	6,246	378	3,153	1,997	1,197	150	35,028	5,434	56	5,000	1,402	12,112	16	33,880	9,634	43,530					
125	693	289	1,604	3,074	718	1,000	72	341	718	1,000	72	341	30,528	2,420	2,420	6,400	1,071	13,510	3,815	431	1,071	293	1,938				
126	515	184	1,272	3,074	61	2,293	3,074	115	109	1,000	53	34	7,973	521	299	944	1,734	2,559	3,815	431	1,071	293	1,938				
127	1,316	660	858	7,504	577	3,163	9,654	7,504	109	1,000	53	34	7,973	521	299	944	1,734	2,559	3,815	431	1,071	293	1,938				
128	264	297	2,806	4,532	189	3,882	4,532	2,168	10,695	5,484	2,795	621	43,128	5,495	8,916	7,281	21,692	3,478	6,061	3,176	6,061	96	60,954				
129	292	332	611	1,577	5	1,340	1,577	1,416	100	2,810	6	28	18,314	1,501	1,127	850	3,478	3,478	3,176	3,176	450	96	3,272				
130	596	201	1,753	3,116	298	1,774	3,116	1,416	180	2,810	46	34	7,908	874	268	510	1,682	2,902	1,102	540	775	775	1,315				

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Disbursements, 1900

Assets on December, 31, 1900.

Liabilities on December 31, 1900.

No.	Disbursements, 1900													Assets on December, 31, 1900.					Liabilities on December 31, 1900.					
	Allowances, salaries and commissions.	(Other expenses of municipal govern-ments.	Roads and bridges.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account of schools and educational.	Drainage work.	Sinking fund and other investments.	Debt-redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.
%	%	%	%	%	%	%	%	%	%	%	%	%	\$	%	\$	%	%	%	\$	%	%	%	%	\$
131	400	25	289	418	...	2,544	4,308	98	...	1,300	109	167	2,816	406	2,598	290	210	3,594	...	500	...	...	...	500
132	709	231	1,146	...	...	1,717	50	245	10,950	442	756	16,019	756	442	472	...	914	125	125	...	...	...	...	125
133	869	237	842	113	325	3,082	6,128	113	291	2,500	389	333	16,019	756	410	...	706	100	6,799	...	6,799	...	...	6,799
134	521	92	826	1,015	171	1,382	2,608	...	551	800	43	194	7,722	520	...	...	476	100	3,860	...	3,860	...	...	484
135	84	37	211	...	...	122	1,609	...	...	...	48	12	2,674	223	1,498	262	...	276	197	1,360	...	...	...	1,753
136	240	54	229	...	...	1,073	1,650	...	2,122	7,500	659	382	30,555	524	6,861	...	3,907	1,524	...	5,217	13,111	3,185	930	22,443
137	975	792	6,024	1,351	8	5,217	5,525	1,351	...	...	...	...	30,555	2,305	...	...	3,907	1,524	...	5,217	13,111	3,185	930	22,443
138	...	171	1,635	...	145	1,128	1,865	...	218	500	76	80	6,339	1,583	1,215	...	4,024	6,822	...	1,558	487	1,000	105	3,150
139	431	230	2,325	...	229	3,382	3,910	1,064	2,393	...	297	155	14,664	2,093	56	2,421	1,744	6,314	...	5,914	...	...	154	6,068
140	679	250	3,215	...	...	2,028	3,049	...	643	1,200	107	193	11,168	593	37	340	970	...	7,762	...	...	...	2,706	
141	551	182	3,215	...	...	2,028	3,049	...	643	1,200	107	193	11,168	593	37	340	970	...	7,762	...	...	...	2,706	
142	431	324	998	98	70	231	2,213	329	1,647	5,150	578	117	12,186	...	4,805	1,758	3,635	10,950	...	2,815	9,785	205	12,805	
143	659	304	1,701	...	85	2,651	7,729	448	...	102	100	78	13,857	...	7,472	17,877	193	29,642	...	2,495	2,705	145	5,349	
144	435	951	476	...	52	2,398	4,872	...	3,000	148	120	5	11,752	1,418	6,969	...	4,523	11,492	...	3,753	8,431	753	845	14,302
145	841	369	3,398	...	142	3,824	4,779	914	2,522	950	467	252	18,448	...	20	...	245	...	6,822	...	1,618	10,646	...	12,464
146	571	116	2,443	...	24	2,728	4,321	...	2,110	30	30	68	12,411	225	20	4,906	...	245	...	3,060	12,000	...	...	15,060
147	744	288	1,993	...	414	1,618	4,058	4	2,357	1,600	560	85	13,963	1,634	4,367	7,518	2,403	15,897	...	3,060	12,000	...	...	39,298
148	1,024	697	2,453	1,569	23	1,777	7,215	686	5,214	8,000	1,946	1,441	38,773	2,206	396	...	10,378	13,380	...	3,091	24,407	11,800	...	53,713
149	1,036	2,105	4,151	...	244	3,091	4,415	7,132	3,288	2,185	2,165	37,282	10,363	383	383	47,582	58,308	...	100	43,615	...	...	9,948	...
150	851	2,330	8,159	...	66	3,700	5,024	9,299	...	...	11	29	3,324	532	52	...	400	984	...	55	...	200	...	...
151	291	424	330	...	2	726	1,511	...	...	...	...	...	2,929	610	1,935	...	460	1,010	...	607	200	471	10	...
152	210	52	283	...	29	678	1,675	...	200	720	31	3	4,935	462	800	...	1,000	2,935	...	607	200	471	10	1,278
153	509	65	659	...	41	642	2,055	...	90	...	29	21	78	985	304	...	623	1,194	...	475	623	3,412	...	4,035
154	769	80	5,563	...	201	2,590	4,459	...	7,046	...	1,812	1,248	34,259	10,806	29,189	...	23,082	69,077	...	5,747	34,641	3,550	5,002	45,390
155	254	97	60	...	371	2,556	8,706	4,309	...	50	21	78	985	304	800	...	2,063	1,085	...	475	34,641	3,550	5,002	45,390
156	1,555	1,108	5,589	...	15	280	1,088	...	7,046	...	1,812	1,248	34,259	10,806	29,189	...	23,082	69,077	...	5,747	34,641	3,550	5,002	45,390
157	197	44	110	...	60	4,330	4,340	...	...	...	...	467	11,548	425	2,619	...	4	7,491	...	1,579	...	...	...	4,825
158	569	174	1,568	...	9	5,120	6,326	...	...	...	...	46	14,099	139	7,462	...	...	6,311	...	1,579	...	...	...	13
159	679	202	1,512	100	388	5,663	6,628	...	2,375	437	149	281	20,252	259	6,177	...	...	6,311	...	1,579	...	...	...	13
160	654	1,140	1,952	...	442	2,612	6,623	...	1,150	3,636	48	387	21,769	2,531	4,991	...	1,124	29,196	...	3,676	...	...	...	3,680
161	1,057	306	5,408	...	63	2,725	5,306	...	678	500	129	196	12,686	1,059	782	...	1,890	47,709	...	3,223	189	2,250	37	5,699
162	906	109	1,861	...	95	3,477	5,758	...	896	...	1,576	324	23,663	3,905	7,681	...	1,890	47,709	...	3,223	189	2,250	37	5,699
163	1,904	1,030	5,472	...	51	1,288	4,103	...	845	...	204	289	9,858	1,148	3,561	...	16,908	48,445	...	6,306	26,512	5,529	1,534	36,712
164	622	494	1,655	...	51	1,288	4,103	...	845	...	204	289	9,858	1,148	3,561	...	16,908	48,445	...	6,306	26,512	5,529	1,534	36,712

TOWNSHIP MUNICIPALITIES, 1900-1901. *Continued.*

No.	Township Municipalities and Counties in which located.	Population 1901.	No. of acres assessed 1901.	Assessed value of real and personal property, 1901.	Total	Per head.	Mills on %	Taxes imposed for all purposes, 1901.						Receipts, 1900.						
								Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and div. lends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.				
165	Euphrasia, Grey	3,149	71,970	1,262,670	12,029	3.82	9.5	228	14,097	24	2,400	119	500	900	36	14,885				
166	Faraday, Hasings	1,250	51,891	87,650	3,723	2.98	42.5	402	3,010	165	1,360	125	500	900	221	3,798				
167	Fenelon, Victoria	9,221	167,432	743,670	8,862	3.99	11.9	628	8,748	49	2,400	456	1,000	900	173	11,398				
168	Ferris Nipissing	795	35,936	65,883	1,744	2.19	26.5	569	2,460	392	1,150	125	3,750	900	140	3,109				
169	Finch, Stormont	2,912	51,722	666,060	16,879	5.74	25.3	2,166	13,423	58	1,150	125	3,750	900	102	12,986				
170	Fitzroy, Carleton	2,331	60,322	754,144	9,151	3.83	12.1	218	11,702	58	2,400	456	900	900	166	14,897				
171	Framboro W., Wentworth	2,428	33,995	1,602,120	9,762	4.02	6.8	971	8,424	285	2,400	456	900	900	102	12,986				
172	Framboro E., Wentworth	2,715	31,025	1,275,020	9,978	3.68	7.8	33	10,880	161	2,400	456	900	900	35	9,884				
173	Flores, Quebec	3,353	63,726	980,098	16,485	1.92	16.8	1,886	23,845	115	1,150	125	1,500	1,400	128	15,283				
174	Foley, Parry Sound	503	31,618	81,848	1,163	2.19	13.5	688	6,825	79	1,150	125	1,500	1,400	990	29,764				
175	Friederichsburg N., Lennox & Addington	1,393	23,634	714,840	6,563	4.70	9.2	1,314	6,781	125	1,150	125	1,360	900	21	1,368				
176	Friederichsburg S., Lennox & Addington	2,817	20,330	561,750	7,665	7.06	10.2	98	5,468	98	1,150	125	1,360	900	1	8,220				
177	Fullarton, Perth	2,150	40,283	1,904,650	13,640	6.31	7.2	1,831	12,825	61	1,150	125	3,800	900	517	19,046				
178	Gainsborough, Lincoln	2,219	39,334	1,053,710	7,618	3.39	7.2	1,833	8,744	61	1,150	125	2,600	900	21	9,158				
179	Galway and Cavendish, Peterborough	1,130	47,960	58,030	1,451	1.28	25.0	44	1,375	44	1,150	125	2,600	900	337	1,756				
180	Garafaxa W., Durham	1,777	39,850	1,116,000	9,665	5.44	8.7	985	10,631	67	1,150	125	2,500	900	67	14,088				
181	Garafaxa W., Wellington	2,305	47,632	1,610,470	11,272	4.89	7.0	1,340	10,751	50	1,150	125	1,700	900	24	13,300				
182	Georgina, Wellington	1,629	35,109	616,630	6,017	3.69	9.3	199	6,174	50	1,150	125	1,700	900	22	6,945				
183	Glenora, Haliburton	470	19,017	41,499	1,296	2.76	31.2	29	1,356	38	1,150	125	1,700	900	127	1,566				
184	Glanford, Wentworth	1,490	23,620	1,062,020	5,558	3.73	5.2	147	6,428	48	1,150	125	1,700	900	127	1,566				
185	Glencel, Grey	2,721	47,956	696,377	8,723	3.21	13.1	1,718	8,751	42	1,150	125	1,700	900	477	10,988				
186	Gloucester, Carleton	6,584	84,984	1,417,275	26,785	4.07	18.9	969	20,765	474	1,150	125	1,700	900	388	30,176				
187	Goderich, Huron	2,399	52,235	1,483,125	9,200	3.83	6.2	2,447	10,202	474	1,150	125	1,700	900	15	13,861				
188	Gordon, Manitowlin	580	34,423	111,387	2,831	4.88	25.4	352	2,013	352	1,150	125	1,700	900	15	13,861				
189	Gosfield N., Essex	1,984	27,995	744,905	11,752	5.92	15.8	1,295	12,217	14	1,150	125	300	6,695	1,213	21,848				
190	Gosfield S., Essex	2,134	30,010	1,040,320	13,908	6.52	13.4	267	16,123	275	1,150	125	400	1,759	926	23,392				
191	Goulbourn, Carleton	2,447	65,125	840,680	11,381	4.65	13.5	1,814	10,587	76	1,150	125	456	3,750	30	13,338				
192	Gower N., Carleton	2,003	33,218	887,875	8,495	4.24	9.6	560	9,794	91	1,150	125	300	300	48	10,793				
193	Gower S., Grenville	802	21,682	313,830	3,074	3.83	9.8	886	2,299	91	1,150	125	300	300	8	3,193				
194	Grantham, Lincoln	1,812	19,209	1,280,810	9,561	5.27	7.5	329	9,114	65	1,150	125	400	600	25	9,932				
195	Grattan, Renfrew	1,992	60,206	204,290	3,387	1.70	16.6	720	3,888	3	1,150	125	400	600	80	5,241				
196	Greenock, Bruce	2,740	64,918	1,411,006	12,649	1.58	8.9	877	10,632	152	1,150	125	1,000	1,000	839	13,170				
197	Grey, Huron	3,343	64,887	1,752,625	13,868	4.15	7.9	922	12,946	94	1,150	125	1,700	1,700	473	22,142				
198	Griffith and Matawatsban, Renfrew	720	23,900	21,400	1,172	1.63	54.8	25	1,176	25	1,150	125	1,700	1,700	134	1,385				



No.	Disbursements, 1900.											Assets on December, 31, 1900.						Liabilities on December, 31, 1900.					
	Allowance and commissions, %	Other expenses of municipal gov't. \$	Roads and bridges. %	Construction of buildings, waterworks, &c. %	Charities. %	County levy. %	Payments of schools and education. %	Drainage work. %	Stinking fund and other investments. %	Debentures redeemed. %	Current loans repaid. %	Interest on loans, advances and debentures. %	Miscellaneous. %	Total disbursements. %	Balance on hand. %	Taxes in arrears. %	Stinking fund and other investments. %	Miscellaneous. %	Total assets. %	County levy and school rates due. %	Debentures outstanding. %	Temporary loans. %	Miscellaneous. %
165	765	476	2,165	242	3,983	6,405	102	500	47	162	14,847	38	2,214	38	2,214	38	2,214	723	2,975	701	723	90	1,514
166	303	30	354	...	232	2,000	...	310	77	16	3,337	461	2,103	47	1,368	3,979	1,368	3,979	1,688	1,101	1,101	37	2,826
167	418	124	1,475	...	1,718	4,910	...	1,000	46	340	10,293	1,105	3,690	...	1,242	6,037	1,242	6,037	3,627	3,627	200	5,299	
168	344	143	219	...	605	3,552	...	215	29	47	1,624	1,483	1,284	...	1,437	4,156	1,437	4,156	784	533	436	193	1,386
169	673	324	3,948	...	1,256	5,326	1,757	1,625	1,156	80	19,794	103	1,771	...	4,794	6,668	4,794	6,668	1,155	22,491	3,365	1,011	28,022
170	763	11	2,176	...	2,660	5,625	...	1,200	22	101	12,683	237	6,401	...	800	7,498	800	7,498	4,938	4,938	500	...	4,344
171	602	255	1,615	...	2,258	3,493	...	1,025	358	372	3,039	102	3,039	...	2,100	5,211	2,100	5,211	2,653	2,653	152	186	4,910
172	730	592	1,401	300	588	2,110	513	2,487	265	134	14,668	615	1,517	15,343	6,100	23,675	6,100	23,675	8,802	265	3,588	87	3,940
173	1,004	609	2,001	...	6,474	8,077	677	173	1,951	3,615	25,712	4,052	3,205	1,060	485	8,802	485	8,802	2,003	30,245	379	290	32,538
174	242	56	324	...	77	624	...	15	15	569	14	1,290	373	3,999	400	872	400	872	1,103	1,103	...	147	1,108
175	228	131	1,027	...	2,369	2,473	...	350	49	124	8,116	104	1,747	3,600	400	400	400	400	5,751	1,103	...	...	1,185
176	258	40	680	...	2,406	2,030	...	1,220	96	66	6,775	52	2,240	2,499	800	6,591	800	6,591	1,260	1,260	1	...	1,185
177	568	103	6,328	...	3,771	3,718	12	3,800	94	184	18,560	460	855	...	1,3	1,793	1,3	1,793	2,860	2,860	...	...	90
178	418	113	1,056	...	2,276	3,951	...	200	4	215	8,233	9,25	855	...	599	599	599	599	5,975	1,235	...	125	5,331
179	186	52	1	...	315	1,040	...	2,500	340	120	13,203	880	4,432	...	752	977	752	977	4,001	4,001	...	213	4,214
180	499	322	2,649	...	1,891	3,721	...	1,769	31	35	13,109	701	4,432	...	97	977	97	977	5,975	5,975	...	164	783
181	827	130	1,925	...	1,35	4,968	1,165	2,905	53	127	6,760	185	1,962	...	24	2,600	24	2,600	3,238	3,238	...	246	245
182	442	94	1,036	...	81	3,899	2,776	2,905	14	60	1,506	24	2,600	...	1,566	91	7,800	668	3,618	824	589	...	1,377
183	191	39	87	...	1,003	2,736	...	55	40	...	119	505	1,566	...	1,566	91	7,800	668	3,618	824	589	...	1,377
184	445	204	2,439	...	1,603	4,093	...	1,000	...	...	20	9,187	1,566	...	1,566	91	7,800	668	3,618	824	589	...	1,377
185	662	204	3,598	...	4,283	10,825	5,062	86	605	...	27,435	2,751	19,182	1,139	3,750	26,822	12,091	12,091	12,091	12,091	2,500	270	27,085
186	1,656	517	3,598	...	13	2,255	3,937	34	...	...	10,750	3,114	106	...	35	3,220	35	3,220	2,655	2,655	...	...	27,085
187	611	196	2,418	...	13	2,255	3,937	34	...	...	10,750	3,114	106	...	35	3,220	35	3,220	2,655	2,655	...	...	27,085
188	277	166	209	...	1,250	...	...	1,200	31	35	10,750	3,114	106	...	35	3,220	35	3,220	2,655	2,655	...	...	27,085
189	717	1,156	716	...	1,377	3,135	9,277	2,362	300	809	20,301	1,547	8,822	...	5,817	14,186	5,817	14,186	807	30,369	...	1,365	22,571
190	781	493	1,664	...	2,899	4,595	2,574	2,397	4,325	1,286	313	22,220	1,172	3,667	...	1,195	12,034	1,195	12,034	899	24,883	4,000	31,350
191	876	165	1,515	...	73	2,535	4,834	375	...	...	10,612	2,726	843	...	2,500	11,460	2,500	11,460	2,020	2,020	...	976	2,996
192	628	418	382	...	70	1,565	1,151	40	182	...	9,838	955	2,034	231	2,500	5,720	2,500	5,720	2,128	2,128	...	304	2,680
193	349	326	2,922	...	52	715	1,202	36	...	...	2,736	457	784	...	8	1,241	8	1,241	1,241	1,241	...	...	714
194	729	326	1,092	...	3,210	3,075	...	400	9	216	9,057	885	1,116	...	8	3,009	8	3,009	2,674	2,674	...	125	2,532
195	169	28	271	...	658	2,846	...	1,000	88	141	4,151	1,090	561	...	1,023	617	1,023	617	617	617	...	125	1,342
196	687	109	2,854	...	22	2,562	4,438	228	1,000	801	12,369	801	404	240	...	1,445	801	1,445	1,000	1,000	...	80	1,128
197	812	150	2,631	290	102	2,028	4,807	5,659	1,717	1,700	21,704	375	1,861	5,239	8,054	15,582	8,054	15,582	1,000	17,628	...	70	18,713
198	201	78	146	...	160	709	...	1,700	765	293	1,294	41	569	...	41	569	41	569	523	523	...	...	593

## TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1901.	No. of acres assessed 1901.	Assessed value of real and personal property, 1901.	Total.		Mills on %		Receipts, 1900.									
					\$	%	Per head.	on %	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinks for investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	
199	Grimsby N., Lincoln	1,174	15,687	847,458	7,413	6.31	8.7	929	7,417	4	1,600	176	10,126					
200	Grimsby S., Lincoln	1,359	18,128	584,928	7,618	5.61	13.0	868	6,475	125	1,150	25	8,633					
201	Guelph, Wellington	2,236	36,697	1,594,760	9,208	4.12	6.1	1,952	9,722	141	4,384	534	18,700					
202	Guelph, Wellington	3,166	58,992	1,276,400	12,600	3.98	9.9	1,804	11,830	68	568	618	14,888					
203	Gwillimbury N., York	1,244	31,577	760,400	5,630	4.53	7.4	437	5,835	58	800	.....	6,080					
204	Gwillimbury W., Simcoe	2,196	46,890	1,044,599	9,486	4.32	36	10,292	26	36	.....	.....	11,151					
205	Hagerly, Jones, etc., Renfrew	2,828	85,267	79,655	4,560	6.61	57.2	100	4,944	232	36	227	5,539					
206	Hagerman, Parry Sound	470	18,000	49,768	832	1.77	16.7	345	932	25	.....	132	1,494					
207	Haldimand, Northumberland	3,862	76,826	1,731,870	15,226	3.94	8.7	1,433	19,163	137	1,000	206	21,949					
208	Hallam, Prince Edward	320	15,597	100,950	2,012	6.38	20.2	739	2,465	280	.....	.....	3,484					
209	Hallowell, Prince Edward	2,846	43,808	1,131,590	6,750	2.39	6.0	315	9,792	20	439	.....	10,566					
210	Hamilton, Northumberland	3,758	62,183	1,935,970	13,725	3.65	7.1	371	14,856	121	26	142	15,540					
211	Harvey, Peterborough	1,095	69,356	176,635	3,718	3.40	21.0	6,217	30,304	277	1,000	24	3,632					
212	Barwich, Kent	4,534	88,285	88,285	11,633	2.42	25.4	31	11,348	223	.....	107	41,161					
213	Hawkesbury E., Prescott	4,813	56,532	457,400	11,633	4.40	19.4	1,053	5,007	25	2,200	3,152	14,815					
214	Hawkesbury W., Prescott	1,162	28,723	263,447	5,111	4.40	19.4	1,053	5,007	25	2,200	1,000	8,850					
215	Hay, Huron	3,000	52,497	1,897,150	13,560	3.78	7.5	228	13,124	167	8	245	14,991					
216	Head, Clara and Maria, Renfrew	364	14,483	35,975	978	2.69	27.2	23	1,278	74	600	16	2,036					
217	Hibbert, Perth	2,005	41,432	1,605,395	10,872	5.42	6.8	1,419	11,471	128	.....	497	16,325					
218	Hillery, Prince Edward	1,501	31,541	742,451	6,299	4.20	8.5	2,130	6,543	21	33	101	9,146					
219	Hilton, Algona	380	27,345	62,128	1,510	3.97	24.3	320	1,409	27	.....	.....	1,750					
220	Hinsworth N., Parry Sound	562	16,311	65,742	1,889	3.36	28.7	182	1,984	118	.....	11	2,805					
221	Hinsworth S., Parry Sound	1,518	44,526	240,845	3,592	2.63	18.9	119	4,734	354	.....	19	7,216					
222	Hinchinbrooke, Frontenac	1,265	68,673	1,827,797	5,231	4.14	28.6	139	5,439	60	350	.....	5,988					
223	Holland, Grey	3,102	68,330	794,330	9,064	3.22	11.4	605	8,423	148	.....	111	9,187					
224	Holc, Durham	3,250	63,925	2,272,128	10,679	3.29	4.7	158	11,028	40	20	10	12,800					
225	Horton, Renfrew	1,316	38,241	501,691	3,834	2.91	7.6	920	4,544	.....	.....	110	5,604					
226	Houghton, Norfolk	1,957	33,546	462,345	6,668	3.41	14.4	.....	6,593	36	.....	769	7,215					
227	Howard, Kent	3,453	58,890	2,453,705	20,005	5.79	8.2	3,077	21,451	45	586	621	26,028					
228	Howe Island, Frontenac	329	8,281	52,843	1,500	4.66	28.4	251	1,661	.....	25	40	1,937					
229	Howick, Huron	3,838	67,474	2,145,040	16,330	4.25	7.6	370	15,856	118	1,067	6,500	26,339					
230	Howland, Bidwell and Sheg., Manitowlin	1,138	46,182	1,435,040	2,580	2.27	19.3	552	2,370	59	250	.....	3,491					
231	Hullett, Huron	2,700	53,378	1,907,560	13,369	4.93	7.0	116	12,302	159	3,397	24	17,506					
232	Hunberstone, Welland	2,866	30,807	908,400	8,911	3.11	9.8	531	8,483	290	.....	32	9,336					

TOWNSHIP MUNICIPALITIES, 1900-1901 —Continued.

No	Disbursements, 1900.										Assets on December 31, 1900.					Liabilities on December 31, 1900.								
	Allowances, salaries and commissions.	Other expenses of municipal gov't.	Roads and bridges.	Construction buildings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking Fund and other investments and deposits.	Debtors redeemed.	Current loans repaid.	Interests on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrear.	Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debtors outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
199	517	108	2,314	57	2,324	2,433	84	1,600	85	285	9,807	319	250	1,902	2,471	837	3,700	3,700	3,700	3,700	3,700	3,700	3,700	837
200	424	57	901	46	1,988	3,878	447	1,580	225	96	8,125	588	86	1,902	3,135	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	837
201	742	229	1,765	100	4,198	4,019	4,206	2,400	19	438	18,116	584	7,161	14,406	741	14,406	741	22,396	3,468	2,700	200	4,368	4,368	
202	749	998	2,905	5	2,994	5,781	568	81	59	157	13,448	300	125	12,974	300	12,974	300	14,847	3,468	1,851	200	1,851	1,851	
203	402	97	637	64	1,555	2,469	200	800	13	157	5,664	306	777	378	378	378	378	1,448	3,468	80	80	80	80	
204	522	1,156	761	118	2,014	4,841	36	639	145	133	10,377	19	681	10,377	10,377	10,377	10,377	1,448	3,468	200	200	200	200	
205	410	107	329	64	820	2,143	38	639	145	133	4,924	10	681	4,924	4,924	4,924	4,924	1,448	3,468	200	200	200	200	
206	195	93	62	455	5,327	6,555	50	639	60	301	1,124	19	681	1,124	1,124	1,124	1,124	1,902	3,468	3,350	350	350	350	
207	1,109	203	2,905	74	4,300	848	206	4,500	358	90	21,525	424	3,492	3,156	7,072	494	233	7,072	3,468	233	1,026	99	1,358	
208	229	24	367	430	2,626	5,012	131	200	54	97	2,256	169	425	2,256	1,238	4,425	3,656	5,309	3,468	3,381	10	3,431	3,431	
209	338	214	1,440	189	4,207	6,412	376	200	200	429	10,224	354	155	2,046	6,122	374	2,046	497	497	439	439	439	439	
210	873	303	2,623	10	371	1,791	1809	26	26	54	8,137	28	395	395	395	395	395	6,122	870	439	439	439	439	
211	273	157	225	10	371	1,791	1809	26	26	54	8,137	28	395	395	395	395	395	6,122	870	439	439	439	439	
212	1,602	303	4,417	884	1,728	11,738	3,746	1,500	73	491	33,182	181	2,913	16,007	26,839	3,470	16,007	3,470	3,470	1,499	817	250	2,666	
213	565	603	1,004	1,728	8,665	11,738	3,746	1,500	73	491	33,182	181	2,913	16,007	26,839	3,470	16,007	3,470	3,470	1,499	817	250	2,666	
214	319	398	302	706	654	1,184	1,184	300	778	50	6,616	181	2,913	16,007	26,839	3,470	16,007	3,470	3,470	1,499	817	250	2,666	
215	587	282	3,049	47	1,500	5,246	468	1,420	1,219	469	14,628	363	1,155	3,292	4,780	3,292	3,292	4,780	534	6,786	300	871	16,269	
216	295	43	44	50	3,388	8,827	87	600	112	328	1,958	78	722	800	800	800	800	800	214	214	214	214	214	
217	568	143	2,987	353	1,675	3,757	519	300	519	107	14,727	112	328	1,958	2,921	2,921	2,921	2,921	214	2,921	214	214	214	
218	389	98	328	353	1,675	3,757	519	300	519	107	14,727	112	328	1,958	2,921	2,921	2,921	2,921	214	2,921	214	214	214	
219	233	60	376	144	880	480	81	300	519	107	7,042	5	107	7,042	2,104	75	1,600	3,779	1,664	1,600	20	1,531	1,531	
220	230	56	107	144	880	480	81	300	519	107	7,042	5	107	7,042	2,104	75	1,600	3,779	1,664	1,600	20	1,531	1,531	
221	348	110	500	72	1,056	3,773	370	300	519	107	1,316	52	134	1,316	444	1,749	120	3,968	571	1,600	20	1,531	1,531	
222	335	418	972	4	1,056	2,453	402	311	114	231	5,518	39	558	5,518	1,698	1,649	10	3,357	780	1,249	169	5,332	5,332	
223	679	88	859	100	1,709	4,511	402	311	114	231	5,518	39	558	5,518	1,698	1,649	10	3,357	780	1,249	169	5,332	5,332	
224	925	286	1,736	130	2,744	5,066	402	311	114	231	5,518	39	558	5,518	1,698	1,649	10	3,357	780	1,249	169	5,332	5,332	
225	337	110	411	5	856	2,929	110	608	63	77	12,024	68	77	12,024	776	2,056	84,368	3,600	1,548	977	361	105	466	
226	502	116	824	45	1,066	3,014	124	608	63	77	12,024	68	77	12,024	776	2,056	84,368	3,600	1,548	977	361	105	466	
227	1,114	300	3,126	350	3,716	7,187	1,587	1,903	192	445	20,796	221	463	1,326	2,282	1,430	9,961	4,600	1,629	433	758	400	758	
228	109	24	59	22	2,605	7,45	26	608	194	221	7,215	11	5	4,107	1,497	1,172	1,460	1,129	1,664	758	758	758	758	
229	842	224	2,566	59	2,605	7,45	26	608	194	221	7,215	11	5	4,107	1,497	1,172	1,460	1,129	1,664	758	758	758	758	
230	246	49	307	30	2,414	1,988	628	1,500	363	91	17,385	121	935	1,922	692	1,766	8,630	463	505	463	463	463	463	
231	751	128	3,307	50	2,414	1,988	628	1,500	363	91	17,385	121	935	1,922	692	1,766	8,630	463	505	463	463	463	463	
232	622	377	1,102	21	2,266	2,820	429	1,500	363	91	17,385	121	935	1,922	692	1,766	8,630	463	505	463	463	463	463	



TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.										Assets on December 31, 1900.					Liabilities on December 31, 1900.						
	Allowances, salaries and commissions.	Other expenses of municipal govern-ment.	Roads and bridges.	Constructional build-ings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and drainage work.	Sinking Fund and other investments and deposits.	Debtors re-deemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disburse-ments.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debtors out-standing.	Temporary loans.	Miscellaneous.
233	332	117	142	..	83	1,123	..	139	..	37	262	2,285	607	763	..	969	2,339	588	472	..	..	1,060
234	803	199	1,009	246	3,755	6,322	..	143	1,661	24	199	13,731	279	5,940	..	3,206	9,425	5,165	266	..	..	5,818
235	616	53	966	28	73	3,667	..	100	..	24	19	8,273	224	3,222	..	700	4,246	2,623	300	..	..	2,923
236	862	82	1,315	41	..	3,049	..	67	..	25	560	7,378	1,229	1,113	..	1,400	3,919	1,546	349	..	..	1,970
237	776	472	5,439	..	31	3,206	..	397	400	126	183	16,876	389	2,221	..	800	3,810	1,546	1,743	..	..	1,743
238	1,011	329	2,369	237	2,881	6,001	..	350	..	84	72	13,524	2,612	1,246	..	..	3,818	..	1,074	..	..	1,074
239	190	117	491	..	..	912	28	..	..	42	..	17,800	417	162	242	858	1,679	56	600	..	..	656
240	258	78	252	..	..	684	..	100	800	38	170	1,880	403	1,246	..	400	2,009	600	400	200	..	1,250
241	142	40	34	..	5	370	..	..	156	5	24	776	48	562	..	..	616	284	..	31	28	343
242	235	194	151	..	..	1,606	..	..	200	28	233	3,045	411	1,869	..	408	2,628	1,903	..	100	69	1,772
243	448	232	2,616	..	448	2,345	..	448	..	354	213	6,578	366	1,877	..	..	1,138	600	6,218	173	82	6,473
244	335	37	250	..	..	1,791	..	..	1,363	..	72	3,177	..	..	..	..	3,163	2,427	..	..	..	2,596
245	634	294	1,929	..	78	7,044	265	591	1,000	404	329	13,298	584	2,574	..	1,578	4,152	2,427	..	1,844	18	1,862
246	377	224	2,873	..	185	1,246	..	..	2,000	50	100	12,927	43	7,554	1,073	48	9,254	2,666	8,678	..	..	11,581
247	648	150	2,942	..	57	2,607	4,344	281	2,000	50	100	13,179	436	870	..	406	1,662	505	335	..	..	840
248	235	624	4,692	..	69	8,814	9,860	142	1,800	142	257	34,801	7,098	2,185	41,153	2,548	45,886	505	573	4,119	156	4,848
249	579	11	1,319	167	143	7,046	29	389	1,800	..	..	14,176	1,646	2,207	1,650	1,646	12,601	7,046	..	473	..	7,519
250	677	342	1,768	..	47	2,020	4,718	130	..	17	62	10,039	1,646	12	..	..	3,849	1,170	..	..	..	1,170
251	600	159	1,546	..	52	1,622	..	..	..	..	..	7,965	723	43	..	..	2,191	1,170	..	..	..	1,170
252	143	85	39	..	5	650	..	..	300	62	19	7,965	723	43	..	..	2,191	1,170	..	..	..	1,170
253	374	144	468	..	15	927	..	80	300	62	19	7,965	723	43	..	..	2,191	1,170	..	..	..	1,170
254	764	115	1,753	..	17	1,741	5,802	217	1,741	60	95	6,278	1,297	448	..	1,066	1,507	1,507	680	..	121	751
255	289	56	161	..	..	133	..	..	..	..	..	10,620	671	4,957	..	1,800	3,540	1,505	988	..	370	1,353
256	209	58	337	..	..	1,371	..	..	..	..	84	1,851	25	105	..	..	5,628	1,505	..	..	..	1,505
257	744	235	4,709	..	34	6,887	..	..	..	..	..	4,017	569	251	..	..	130	1,505	..	..	..	1,505
258	673	52	1,388	..	11	1,213	..	..	2,800	..	..	16,232	305	340	7,001	..	7,600	5,000	5,000	..	..	5,000
259	124	50	358	..	..	620	284	..	250	255	188	1,250	297	1,345	..	..	3,926	879	..	..	..	80
260	386	262	960	11	10	2,006	620	..	900	53	735	5,747	115	4,425	160	46	1,897	879	5,000	..	..	5,000
261	881	213	3,815	..	181	4,363	4,670	277	900	157	625	15,343	12,374	6,111	138	285	3,926	879	5,000	311	311	1,190
262	748	1,128	1,177	..	170	1,500	7,143	..	20	616	616	12,548	1,386	6,111	138	4,462	16,836	4,283	3,146	2,369	239	3,688
263	939	336	5,231	..	5	3,561	4,300	4,606	6,900	683	159	26,944	1,386	221	..	2,838	17,779	8,571	680	..	..	7,429
264	875	742	21,823	..	522	9,405	11,329	226	14,730	250	2,138	63,065	9,265	10,018	..	3,234	22,517	14,564	14,564	..	..	14,749
265	172	161	151	..	..	1,227	132	..	120	6	11	2,655	..	..	..	..	1,523	2,171	1,234	..	..	10,792
266	456	160	781	..	79	3,657	..	258	..	44	105	7,948	23	3,853	..	..	3,876	2,171	602	152	..	3,232

TOWNSHIP MUNICIPALITIES, 1900-1901. — *Continued.*

No.	Township Municipalities and Counties in which located.	Population 1901.		No. of acres assessed 1901.	Assessed value of real and personal property, 1901.	Taxes imposed for all purposes, 1901.				Receipts 1900.									
		Total.	Per head.			Mills on \$.	Balance from 1899.	Municipal taxes.	License, fees, rents, fines, etc.	Refunds from Sinks and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.				
267	Louth, Lincoln	1,694	18,573	730,565	9,510	5.61	13.0	201	7,938	30	56	1,000	1,256	189	8,414				
268	Luther E., Dufferin	1,631	38,527	817,153	8,432	5.17	10.3	938	8,590	26	127	1,000	702	130	11,934				
269	Luther W., Wellington	2,068	49,737	861,950	9,321	4.51	10.8	2,640	10,539	31	49	1,000	702	795	15,767				
270	Lutonworth, Haliburton	402	23,040	36,540	1,265	3.15	3.4	220	1,618	15	11	1,176	900	26	1,887				
271	McDonnell, Parry Sound	474	27,372	66,263	1,754	3.70	26.5	181	1,618	15	11	3,500	900	105	3,561				
272	McGillivray, Middlesex	2,862	66,772	2,029,350	16,575	5.79	8.2	871	15,369	30	11	3,500	900	20,786					
273	Melville (Fort Frances), Rainy River	386	3,941	152,594	3,798	9.84	24.9	414	4,769	586	84	500	.....	7	6,353				
274	McCollar, Parry Sound	607	27,935	773,310	1,994	3.29	25.5	100	1,901	28	706	1,028	4,884	410	13,424				
275	McKillop, Huron	2,615	52,162	2,004,400	10,583	4.05	5.3	1,046	11,316	34	18	4,884	.....	18	4,681				
276	McKinn, Nipissing	2,519	13,154	140,245	7,871	3.12	56.1	479	3,983	151	101	1,000	702	101	2,168				
277	McLean and Ridout, Muskoka	715	43,778	402,076	1,725	2.41	16.9	445	1,499	58	230	2,000	.....	111	2,737				
278	McMurrich, Parry Sound	613	39,708	110,162	2,056	3.35	18.7	307	2,166	34	26	230	.....	15	2,330				
279	McNab, Renfrew	3,445	62,496	1,125,562	8,891	2.58	7.9	1,190	9,130	81	26	230	.....	15	2,330				
280	Macaulay, Muskoka	626	37,112	95,367	2,693	4.30	28.2	143	1,931	21	.....	.....	.....	.....	1,609				
281	Macdonald Meredith, & Aberdeen, Algoma	700	19,850	70,221	1,769	2.53	25.2	288	1,321	42	.....	.....	.....	.....	2,766				
282	Macfar, Parry Sound	805	35,795	93,615	2,191	2.72	23.4	287	2,401	.....	.....	.....	.....	.....	13,419				
283	Madoc, Hastings	2,231	67,747	495,119	11,387	5.10	23.0	.....	13,116	.....	16	3,500	2,533	135	24,225				
284	Maldstone, Essex	3,012	44,443	826,117	16,917	5.62	20.5	289	17,558	210	5	6,000	1,059	717	36,792				
285	Malabide, Elgin	3,592	62,381	1,922,560	21,936	6.11	11.4	4,229	24,761	41	.....	.....	.....	.....	9,673				
286	Maldeu, Essex	1,369	20,855	710,370	7,295	5.28	10.2	238	7,785	29	.....	.....	.....	.....	12,893				
287	Manvers, Durham	2,933	69,675	851,268	10,773	3.67	12.7	960	11,221	165	.....	.....	.....	52	14,612				
288	Mara, Ontario	2,931	61,472	954,480	9,834	3.36	10.3	718	10,696	198	.....	.....	.....	.....	3,770				
289	March, Carleton	849	27,865	370,055	4,147	4.88	11.2	562	3,183	16	24	.....	.....	35	30,796				
290	Mariposa, Victoria	3,795	74,985	2,990,641	19,909	5.25	7.7	10,612	19,612	12	127	.....	.....	433	23,857				
291	Marckham, York	5,278	66,037	3,203,270	24,667	4.67	7.7	7,861	22,173	175	145	.....	.....	145	5,529				
292	Marlborough, Carleton	1,524	56,997	484,265	6,314	4.16	13.1	243	4,341	24	.....	.....	.....	405	10,753				
293	Marjora and Lake, Hastings	1,577	106,860	244,874	5,623	3.57	23.0	248	9,126	239	.....	.....	.....	214	22,761				
294	Maryborough, Wellington	2,999	56,445	1,732,820	15,812	5.27	9.1	5,008	14,852	83	4	2,000	600	.....	4,466				
295	Marysburg N., Prince Edward	1,219	23,769	452,400	8,788	3.11	8.4	54	4,112	.....	.....	.....	.....	.....	4,956				
296	Marysburg S., Prince Edward	1,177	23,494	349,875	3,583	3.00	10.1	288	3,818	.....	524	170	.....	156	2,537				
297	Mattawa, Nipissing	269	12,398	24,385	4,479	1.85	19.8	63	472	.....	.....	.....	.....	13	1,423				
298	Matchedash, Simcoe	439	19,130	56,495	1,115	2.54	19.7	709	582	.....	108	.....	.....	64	31,465				
299	Matilda, Dundas	3,833	62,602	1,325,625	18,200	4.75	13.7	21,829	21,829	2	.....	.....	.....	.....	1,827				
300	Mayo, Hastings	510	19,731	27,450	1,465	2.87	53.4	215	1,390	.....	.....	.....	.....	222	.....				

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.										Assets on December, 31, 1900.						Liabilities on December, 31, 1900.					
	%	%	%	%	%	%	%	%	%	%	Balance on hand.	Taxes in arrears.	Sinking fund and other investments	Miscellaneous.	Total assets.	County levy and unpaid school rates	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.		
267	398	131	1,551	...	...	3,027	...	...	17	192	41	1,600	147	1,788	201	10,074	...	...	75	276		
268	393	538	1,497	...	3,135	338	...	547	121	10,858	1,076	680	524	2,230	303	7,634	...	...	28	10,102		
269	606	173	1,009	290	3,358	630	50	58	184	13,182	2,625	799	250	3,874	389	6,671	...	...	75	8,012		
270	180	44	126	141	845	1,419	...	41	414	473	667	1,115	50	1,543	...	...	300	...	21	410		
271	239	90	169	...	1,176	1,415	...	100	193	20,516	270	31	2,000	2,000	2,901	900	...	...	...	300		
272	779	208	6,232	...	6,948	1,320	584	40	860	10,133	1,213	8,003	860	5,180	...	2,422	548	...	277	3,217		
273	563	152	1,188	...	1,302	1,320	...	36	30	1,837	1,919	1,463	282	1,896	814	500	...	...	39	1,403		
274	240	64	270	...	4,600	1,496	...	293	194	15,652	3,772	3	6,330	21,687	6,240	6,240	...	...	1,918	8,178		
275	811	281	4,286	...	1,925	1,447	...	41	108	8,908	673	4,110	1,000	5,710	2,514	565	...	...	...	8,079		
276	654	156	8,27	...	872	1,347	...	36	108	1,827	276	2,591	1,009	3,615	1,059	522	...	...	...	830		
277	191	85	202	...	1,147	1,464	...	31	47	8,794	1,743	1,641	1,184	4,569	866	425	...	...	214	1,505		
278	206	171	251	...	4,164	1,953	...	73	213	2,068	262	871	243	1,376	637	418	...	...	122	1,207		
279	658	126	1,953	...	930	81	675	5	68	1,170	439	561	25	1,025	805	1,312	...	...	253	2,370		
280	309	81	675	...	728	2	...	...	...	1,959	807	1,040	235	6,216	...	30,864	...	...	...	30,864		
281	135	26	221	...	1,270	...	...	88	48	12,429	990	4,656	650	4,656	...	6,488	12,959	3,556	...	23,003		
282	176	43	212	...	4,448	1,136	...	...	...	1,629	1,571	24,086	1,778	18,583	6,488	12,959	3,556	...	...	13,304		
283	547	121	378	...	4,638	2,950	...	401	323	20,316	371	1,478	1,000	3,277	886	8,427	...	...	...	13,304		
284	850	245	2,408	...	5,688	2,450	...	166	218	28,959	5,898	1,798	1,565	8,611	7,054	1,565	...	...	525	9,144		
285	1,263	8,000	7,207	...	7,782	1,454	...	86	127	5,529	4,898	1,798	261	2,051	1,972	2,289	960	...	340	2,252		
286	620	171	2,134	...	2,709	1,454	...	1,678	226	10,390	963	3,781	2,239	6,383	1,109	1,565	...	...	163	5,865		
287	758	384	1,916	...	3,747	1,454	...	365	2,000	18,740	4,021	678	388	5,687	63	1,565	...	...	2	65		
288	934	279	3,243	...	5,299	102	...	300	300	14,714	1,214	111	1,100	10,561	63	1,565	...	...	1,265	1,265		
289	345	86	408	...	1,563	81	...	293	3,465	12,061	832	177	21	1,033	...	2,294	...	...	...	1,265		
290	1,138	198	3,474	...	8,292	183	...	930	147	3,371	399	1,478	1,000	3,277	886	8,427	...	...	76	888		
291	1,234	556	4,370	...	2,377	48	...	219	147	20,316	10,480	146	7,722	18,348	4,871	8,427	...	...	66	13,307		
292	655	51	373	...	2,537	48	...	147	86	5,529	4,898	1,798	1,565	8,611	7,054	1,565	...	...	525	9,144		
293	615	112	1,122	...	4,083	30	...	323	365	10,390	963	3,781	2,239	6,383	1,109	1,565	...	...	340	2,252		
294	791	173	2,983	...	7,116	30	...	300	300	14,714	1,214	111	1,100	10,561	63	1,565	...	...	239	5,410		
295	251	136	147	...	2,175	...	...	684	70	18,740	4,021	678	388	5,687	63	1,565	...	...	163	5,865		
296	210	147	378	...	1,103	...	...	55	684	10,390	963	3,781	2,239	6,383	1,109	1,565	...	...	...	5,865		
297	89	23	42	...	1,833	...	...	108	108	3,371	399	1,478	1,000	3,277	886	8,427	...	...	2	65		
298	151	48	233	...	340	...	...	...	...	14,714	1,214	111	1,100	10,561	63	1,565	...	...	...	1,265		
299	456	223	2,055	...	8,427	4,514	...	340	156	3,386	386	3,866	3,516	6,902	3,080	14,639	2,631	...	878	21,238		
300	253	120	279	...	901	...	...	110	20	1,797	30	1,196	170	1,396	797	170	...	...	230	1,197		

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1901.	No. of acres assessed, 1901.	Assessed value of real and personal property and income taxable, 1901.	Taxes imposed for all purposes, 1901.		Receipts, 1900.										Total receipts.
					Total.	Per head.	Mills on \$.	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.		
																§	
301	Medonte, Simcoe	3,917	68,244	564,019	12,258	3 38	23 5	2,031	11,756	139	139	53	1,000	4,293	265	18,853	14,421
302	Medora and Wood, Muskoka	909	58,300	233,759	4,824	5 31	20 6	463	3,917	143	150	4	1,300	4,293	265	18,853	14,421
303	Melancthon, Dufrin	3,747	74,063	1,789,490	13,288	3 81	8 0		33,681				3,500	2,694	139	17,320	4,928
304	Mersa, Essex	4,159	61,898	1,822,502	28,076	6 75	15 4		30,862	96			4,500	2,694	288	38,440	38,440
305	Metcalf, Middlesex	1,516	36,194	1,002,995	10,287	7 43	11 2	2,417	7,330	21	310	18		1,659	479	12,244	12,244
306	Middleton, Norfolk	2,485	45,053	757,905	10,127	4 08	13 4	683	9,542	30	28	28		2,104	584	12,971	12,971
307	Minden, Haliburton	1,170	35,770	85,884	3,351	2 86	39 0	17	4,037	12			600		206	4,874	4,874
308	Minto, Wellington	2,994	69,386	1,848,865	13,256	4 43	7 2	1,015	12,135	88	21	36	1,000	4,293	265	18,853	18,853
309	Monaghan N., Peterborough	911	13,950	596,225	4,136	4 53	6 9	1,461	4,795	109			1,300		109	7,655	7,655
310	Monaghan S., Northumberland	855	18,330	508,695	3,338	3 90	6 6	638	3,526	37	1,850	27	400		16	6,494	6,494
311	Monck, Muskoka	935	28,431	200,216	3,135	3 35	15 7	625	2,616	33			400		163	3,467	3,467
312	Monmouth, Haliburton	538	22,327	28,025	2,021	3 76	72 1	61	1,913						3	1,977	1,977
313	Mono, Dufrin	3,480	63,825	1,535,595	11,546	3 32	7 5	288	12,849	45			1,500		5	14,682	14,682
314	Montague, Lanark	1,833	62,056	583,893	6,890	3 76	11 8	763	6,571	7			270		5	7,616	7,616
315	Monteagle and Herschel, Hastings	1,961	67,332	70,024	3,892	1 73	48 4		2,583	50					387	3,020	3,020
316	Moore, Lambton	4,401	73,395	1,830,365	27,328	6 21	14 9	2,094	21,674	323					78	32,362	32,362
317	Morrington, Perth	2,966	50,030	1,738,900	18,286	6 17	10 5	1,945	16,789	304		22	905	228	565	20,758	20,758
318	Morris, Huron	2,407	53,136	1,803,041	9,411	3 91	5 2	1,785	10,481	34		11	1,500		42	13,553	13,553
319	Morrison, Muskoka	813	25,428	80,040	1,594	1 96	19 9	6	1,790	26		1			151	1,974	1,974
320	Moss, Middlesex	2,476	47,226	581,920	13,328	5 38	22 9	1,111	12,228						86	15,392	15,392
321	Moulton, Haldimand	1,825	27,000	596,305	6,517	3 57	10 9	3,330	5,326		132	221	2,091	967	85	7,855	7,855
322	Moulton, Dundas	2,931	58,107	1,342,665	16,412	5 60	12 2	3,330	12,220	305			2,667		83	18,905	18,905
323	Mulmur, Dufrin	2,752	69,886	1,331,650	12,552	4 56	9 4	554	14,336	13			1,000		2	15,905	15,905
324	Murray, Northumberland	2,755	46,570	1,178,675	10,446	3 79	8 9	715	9,202	72			150		83	10,139	10,139
325	Muskoka, Muskoka	799	31,354	96,265	1,912	2 43	20 2	648	1,775						10	643	643
326	Nairn and Lorne, Algoma	186	11,041	46,521	1,129	6 07	24 3	175	3,678	100		559			79	9,087	9,087
327	Nassagaweya, Halton	2,269	44,794	1,010,320	7,672	3 38	7 6	30	8,756	43			2,030		708	7,576	7,576
328	Neelburg, Thunder Bay	218	126,909	190,315	4,294	19 37	22 2	589	4,171	35		43			53	13,828	13,828
329	Nelson, Halton	2,688	46,341	1,790,530	12,963	4 82	7 2	897	11,501	50	352	975			313	20,648	20,648
330	Nepesin, Carleton	5,282	58,031	2,349,394	18,864	3 57	8 0	2,083	16,828	248			272		31	12,019	12,019
331	Nipagan, Lincoln	1,697	22,471	913,025	9,803	5 78	10 7	227	4,905	90		4	2,662		131	9,348	9,348
332	Niagara, Wellington	1,691	26,692	1,082,375	7,019	4 15	6 5	560	7,773	67		17	800		31	12,019	12,019
333	Nipissing, Parry Sound	3,803	28,707	1,033,915	1,376	4 54	13 2	289	931	39					1	1,259	1,259
334	Nissouri E., Oxford	2,374	46,476	2,123,125	12,913	5 44	6 1	823	12,183	190		9	1,500	5,500	668	20,373	20,373



TOWNSHIP MUNICIPALITIES, 1900-1901. - Continued.

No.	Disbursements, 1900.												Assets on December 31, 1900.						Liabilities on Dec. 31, 1900.					
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
301	925	231	2,270	423	269	2,773	5,512	423	484	60	136	12,064	1,457	2,062	2,062	8,040	3,559	6,559	2,708	2,343	80	2,423		
302	328	357	977	376	14	5,600	3,767	67	350	60	69	4,067	361	4,879	4,879	200	5,440	2,708	800	2,343	80	2,423		
303	561	340	1,607	512	14	5,600	3,767	67	350	60	69	4,067	361	4,879	4,879	200	5,440	2,708	800	2,343	80	2,423		
304	864	876	3,688	3,883	588	2,896	8,111	4,383	974	1,322	2,875	16,736	581	1,274	2,049	1,272	6,179	3,678	6,034	2,000	1,110	4,918		
305	579	377	1,790	3,322	56	3,463	3,332	378	689	500	119	266	11,815	399	6,028	6,006	6,606	3,097	16,494	4,700	3,450	5,971		
306	652	434	1,739	3,913	44	2,158	3,913	700	370	370	185	144	11,267	1,714	3,804	2,795	8,243	3,733	5,970	173	4,232			
307	324	72	379	2,148	7	1,733	2,148	370	84	1,000	57	65	4,869	2,352	3,298	8,243	3,733	5,970	173	4,232				
308	964	301	2,730	964	17	3,925	2,925	964	7	1,000	22	112	15,554	3,298	2,277	1,282	8,243	1,621	4,866	600	33	3,120		
309	333	117	1,310	1,415	55	1,224	1,415	1,415	41	1,300	34	30	5,859	3,298	2,277	1,282	8,243	1,621	4,866	600	33	3,120		
310	274	23	605	1,651	55	1,224	1,415	1,415	41	1,300	34	30	5,859	3,298	2,277	1,282	8,243	1,621	4,866	600	33	3,120		
311	306	81	658	1,651	55	1,224	1,415	1,415	41	1,300	34	30	5,859	3,298	2,277	1,282	8,243	1,621	4,866	600	33	3,120		
312	195	186	8	901	5	471	901	901	41	1,300	45	110	6,295	1,999	217	1,999	830	3,235	1,356	3	4,283	128	1,464	
313	773	251	1,671	2,624	25	2,624	6,480	4,226	230	2,000	93	90	2,708	759	71	2,708	830	3,235	1,356	3	4,283	128	1,464	
314	414	152	932	1,334	25	1,334	4,533	42	108	345	60	6	3,000	202	796	1,000	1,998	2,944	1,381	500	400	16	2,297	
315	291	71	261	1,881	8	1,881	7,095	42	108	345	60	6	3,000	202	796	1,000	1,998	2,944	1,381	500	400	16	2,297	
316	291	71	261	1,881	8	1,881	7,095	42	108	345	60	6	3,000	202	796	1,000	1,998	2,944	1,381	500	400	16	2,297	
317	759	423	3,644	4,226	38	3,678	5,287	83	1,888	905	2,076	258	29,757	2,605	18,759	2,843	31,301	6,040	31,484	3,060	1,450	32,758		
318	761	96	1,496	174	6	1,392	4,104	870	1,888	1,500	29	156	11,184	2,659	743	970	3,832	1,992	32,758	3,060	1,450	32,758		
319	183	76	306	43	6	1,392	4,104	870	1,888	1,500	29	156	11,184	2,659	743	970	3,832	1,992	32,758	3,060	1,450	32,758		
320	740	211	2,087	29	3,107	3,780	1,066	1,950	1,350	851	326	1,021	14,917	475	5,975	12	1,353	813	1,992	813	1	1,992		
321	382	196	368	75	75	997	2,691	2,001	1,350	851	326	1,021	14,917	475	5,975	12	1,353	813	1,992	813	1	1,992		
322	424	129	3,341	108	3,406	6,951	2,567	1,600	1,600	1,000	221	150	18,076	829	1,836	4,394	94	4,763	6,040	2,031	2,031	2,031		
323	763	361	1,629	407	3,406	6,951	2,567	1,600	1,600	1,000	221	150	18,076	829	1,836	4,394	94	4,763	6,040	2,031	2,031	2,031		
324	735	119	1,150	66	1,566	4,686	2,567	1,600	1,600	1,000	221	207	14,805	1,183	2,406	9,000	600	12,598	2,618	2,969	50	1,795		
325	287	82	604	60	60	1,566	4,686	2,567	1,600	1,000	221	207	14,805	1,183	2,406	9,000	600	12,598	2,618	2,969	50	1,795		
326	275	59	200	249	249	1,566	4,686	2,567	1,600	1,000	221	207	14,805	1,183	2,406	9,000	600	12,598	2,618	2,969	50	1,795		
327	610	131	2,138	249	249	1,566	4,686	2,567	1,600	1,000	221	207	14,805	1,183	2,406	9,000	600	12,598	2,618	2,969	50	1,795		
328	1,065	256	1,025	70	70	282	282	427	2,816	2,816	637	915	7,493	83	4,988	1,912	1,900	14,220	212	10,500	146	679	11,583	
329	1,042	228	2,286	427	427	1,974	5,710	561	325	2,816	57	300	3,061	767	243	2,816	3,300	30,574	1,023	2,650	272	7	13,902	
330	428	676	3,271	626	4,416	1,879	9,474	561	325	2,816	57	300	3,061	767	243	2,816	3,300	30,574	1,023	2,650	272	7	13,902	
331	551	334	2,622	10	3,294	1,879	9,474	561	325	2,816	57	300	3,061	767	243	2,816	3,300	30,574	1,023	2,650	272	7	13,902	
332	713	66	745	5	3,060	3,667	3,667	79	150	2,600	79	466	12,019	1,040	3,253	145	6,987	6,247	1,023	800	62	117	3,436	
333	177	34	106	5	3,060	3,667	3,667	79	150	2,600	79	466	12,019	1,040	3,253	145	6,987	6,247	1,023	800	62	117	3,436	
334	632	106	3,950	3,447	3,447	10,291	10,291	106	32	1,500	32	71	19,929	944	1,225	5,500	6,669	5,500	5,500	5,500	84	84	5,500	



TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

Disbursements, 1900.

No.	Assets on December 31, 1900.															Liabilities on December 31, 1900.														
	Allowances, salaries and commissions.	Other expenses of municipal gov't.	Roads and bridges.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account education.	Drainage work.	Sinking fund and other deposits.	Debentures redeemed.	Current loans.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.						
335	840	144	2,402	...	54	4,474	4,831	37	...	340	69	188	16,088	3,956	5,308	1,000	9,273	4,397	...	3,838	...	...	8,233							
336	945	539	2,229	...	27	2,785	7,318	...	...	1,000	102	170	14,208	1,439	308	1,000	2,577	...	...	...	...	...	3,601							
337	645	73	3,353	...	181	2,511	4,545	3,361	413	1,000	70	325	16,197	2,522	177	303	2,949	2,505	...	...	...	1,986	801							
338	453	324	3,749	...	346	1,900	2,235	4,700	804	4,700	82	608	13,187	866	40	2,722	3,628	802	...	...	...	696	3,179							
339	453	492	4,818	...	55	4,610	7,765	319	2,500	2,500	225	658	22,753	4,136	1,171	880	1,681	802	...	...	...	4,000	4,000							
340	273	49	1,369	...	65	596	1,369	...	500	...	225	44	818	308	69	709	4,914	709	5,312	...	...	...	412							
341	185	21	248	...	...	...	...	...	...	...	...	...	...	...	...	308	810	1,116	412	...	...	...	412							
342	346	113	240	...	68	719	2,714	138	...	...	100	359	4,677	1,775	810	1,318	3,123	1,861	2,000	...	...	151	2,036							
343	276	74	334	...	10	354	540	74	...	...	...	238	1,534	414	1,310	1,100	4,353	1,861	2,000	...	...	21	2,000							
344	437	76	2,458	...	233	1,970	3,073	...	...	...	...	238	7,485	950	...	500	1,470	...	...	...	...	...	250							
345	437	90	1,311	...	203	2,189	2,821	10	...	...	...	372	19,599	807	36	3,250	4,102	...	...	...	...	250	1,103							
346	683	380	3,794	...	248	3,070	4,242	4,577	804	4,700	325	726	24,882	7,556	93	1,104	12,568	3,043	7,349	...	...	5,000	11,545							
347	1,092	547	2,684	...	393	2,132	7,758	1,911	...	...	608	736	13,658	4,400	7,304	4,869	16,564	1,600	11,228	...	...	3,000	38,428							
348	1,115	433	3,784	...	80	1,901	3,859	364	...	...	329	76	13,658	3,438	8,048	1,124	8,610	2,917	3,559	...	...	3,700	131							
349	810	203	1,218	...	8	4,872	5,645	200	...	...	12	36	13,010	1,934	2,907	1,368	6,209	2,525	7,446	...	...	1,700	2,625							
350	889	334	3,378	...	31	4,000	7,969	680	178	1,190	437	736	20,287	300	15,796	3,700	19,796	575	7,446	...	...	465	9,721							
351	576	537	2,789	...	320	2,080	8,415	4,250	1,499	500	1,239	635	22,668	139	3,416	1,479	5,034	1,887	16,783	...	...	4,700	23,845							
352	342	119	1,179	...	52	736	1,930	...	52	...	83	634	4,046	96	936	500	1,222	776	...	...	...	...	190							
353	764	207	1,337	...	249	3,170	5,185	...	213	669	93	276	12,163	2,931	4,872	3,500	11,525	1,862	1,512	...	745	500	4,008							
354	505	233	8,363	...	401	4,429	5,652	...	501	500	8	37	15,029	949	1,297	6,000	8,656	2,003	832	...	...	477	5,839							
355	735	731	936	...	20	2,104	5,161	382	15	1,011	65	118	11,382	222	2,940	608	3,780	2,003	832	...	...	...	64							
356	561	73	2,321	...	...	2,575	3,580	148	...	...	13	87	9,348	1,870	12	1,700	3,116	2,666	...	...	...	...	2,666							
357	518	93	1,418	...	32	1,497	4,136	...	...	...	853	68	11,226	3,291	604	2,596	6,494	5	3,398	...	...	5	3,403							
358	588	1,086	1,275	...	50	1,867	3,377	2,909	300	291	142	67	6,913	988	610	3,500	5,098	21	2,500	...	...	129	2,641							
359	535	290	2,101	...	60	1,176	3,011	...	100	...	80	129	2,188	402	502	138	1,042	234	1,500	...	...	...	1,734							
360	295	58	189	...	86	142	1,109	...	...	...	43	1	763	59	593	17	1,255	32	3,988	...	...	...	140							
361	154	28	1	...	9	5,545	7,535	...	346	2,000	257	386	19,192	1,225	13	37	1,255	3,988	4,522	...	...	...	572							
362	909	200	2,005	...	...	...	1,797	3,407	1,037	2,500	1,357	386	12,243	5,098	6,578	37	500	24,478	784	24,246	...	...	4,136							
363	568	260	931	...	...	2,554	1,797	...	...	1,038	24	96	15,035	1,135	853	18,000	4,500	49,488	...	...	4,522	2,400	31,952							
364	604	219	2,725	...	51	2,554	1,797	...	3,490	...	...	...	...	...	...	...	...	...	...	...	...	1,359	5	1,364						
365	207	13	87	...	...	244	939	...	...	1,038	...	...	...	...	...	...	...	...	...	...	...	...	...	898						
366	644	201	2,613	...	206	1,555	4,867	...	209	3,754	...	195	14,322	543	721	150	1,414	898	...	...	...	...	898							
367	370	103	453	...	...	45	2,068	...	311	...	134	219	3,703	1,128	2,953	3	4,084	835	1,933	...	...	...	...	2,811						
368	243	63	135	...	...	150	639	...	118	...	...	16	1,364	403	628	200	1,231	243	200	...	...	...	...	443						

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Township Municipalities and Countries in which located.	Population, 1901.	No. of acres assessed, 1901.	Assessed value of real and personal property and income taxable, 1901.	Taxes imposed for all purposes, 1901.			Receipts, 1900.									
					Total.	Per head.	Mill on %	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from sinking funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	
369	Pickering, Ontario	9,211	71,482	\$ 379,585	26,093	5 01	7.7	26,531	404	404	8,800	8,800	77	85,812			
370	Pilkington, Wellington	1,353	29,189	1,043,486	7,875	5 82	7.5	262	19	19	1,500	1,500	138	10,276			
371	Pittsburg, Frontenac	2,159	48,182	810,972	13,345	6 18	16.5	6,111	128	128	26	26	318	18,202			
372	Plantagenet N., Prescott	4,116	51,161	418,930	11,173	2 71	26.7	233	313	313	700	700	318	12,002			
373	Plantagenet S., Prescott	3,365	48,971	385,450	9,013	2 68	23.4	61	236	236	300	300	8	11,282			
374	Plummer Additional, Algoma	643	16,681	117,919	4,003	1 87	33.9	1,270	257	257	1,000	1,000	3	3,349			
375	Plympton, Lambton	3,806	75,015	2,047,620	20,596	6 23	10.1	1,270	102	102	1,000	1,000	391	24,615			
376	Portland, Frontenac	2,104	52,933	461,901	8,611	4 09	18.4	1,069	81	500	68	68	122	10,821			
377	Prince, Algoma	204	26,255	46,573	972	4 76	20.9	168	455	455	860	860	219	12,251			
378	Proton, Grey	2,931	81,182	829,075	9,786	3 31	11.8	867	81	81	490	490	201	14,188			
379	Psalinet, Wellington	2,739	68,516	1,461,145	10,596	3 87	7.3	34	186	186	2,189	2,189	9	2,251			
380	Radcliffe and Kegan, Renfrew	1,185	39,927	83,550	2,367	2 00	28.3	28	31	31	2,158	2,158	81	8,529			
381	Rainham, Haldimand	1,676	25,682	539,450	5,757	3 43	10.1	957	89	89	211	211	292	44,207			
382	Raleigh, Kent	4,597	71,425	2,520,440	34,449	7 49	13.7	3,450	191	191	4,073	4,073	379	47,098			
383	Rama, Ontario	1,297	34,081	150,130	3,332	2 69	22.2	86	22	22	3,826	3,826	11	31,112			
384	Ramsay, Lanark	2,096	61,421	679,890	10,301	4 91	16.2	1,057	69	69	8,000	8,000	11	31,112			
385	Ratter and Dunneth, Nipissing	890	22,000	46,433	2,695	3 03	58.0	3	908	908	19	19	368	2,580			
386	Rawdon, Hastings	3,160	65,500	1,169,153	13,504	4 27	11.6	878	170	170	24	24	388	15,223			
387	Rayside, Algoma	760	20,500	72,091	1,634	2 16	22.7	...	42	42	400	400	10	2,505			
388	Reich, Ontario	3,439	63,363	1,974,461	13,044	3 79	6.6	1	26	26	3,800	3,800	204	17,797			
389	Richmond, Lennox and Addington	2,251	49,858	859,340	10,691	4 73	12.4	1	29	29	591	591	38	21,642			
390	Roche ter, Essex	2,486	32,497	953,780	10,947	4 41	11.5	1,016	219	219	460	460	124	14,455			
391	Rolph, Buchanan and Wylie, Renfrew	1,029	41,910	58,811	2,118	2 06	36.0	...	16	16	1,800	1,800	124	3,199			
392	Romney, Kent	1,752	24,778	737,785	15,917	9 09	21.6	748	4	4	2,000	2,000	1,415	23,883			
393	Ro-s, Renfrew	2,254	51,348	592,830	6,103	2 71	11.0	248	149	149	400	400	5	7,872			
394	Roxborough, Stormont	4,274	71,515	771,055	17,142	4 01	22.2	...	324	324	265	265	420	27,360			
395	Russell, Russell	2,958	47,450	659,125	12,715	4 30	19.3	22	250	250	802	802	420	29,853			
396	Ryde, Muskoka	576	23,666	48,128	1,215	2 11	25.2	174	1,109	1,109	19	19	5	7,872			
397	Ryerson, Parry Sound	743	42,107	135,014	2,108	2 84	15.6	174	1,120	1,120	15,540	15,540	1,294	27,360			
398	St. Joseph, Algoma	1,099	28,116	119,070	2,946	2 68	24.7	252	2,282	2,282	2,320	2,320	13	5,657			
399	St. Vincent, Grey	2,823	63,647	1,387,831	14,182	5 02	10.2	4,081	70	70	1,800	1,800	103	18,674			
400	Salter, May and Harrow, Algoma	736	42,815	207,155	2,248	3 05	10.9	683	140	140	1,835	1,835	31	3,219			
401	Saltfleet, Wentworth	3,110	28,302	1,791,999	14,946	4 81	8.4	912	153	153	383	383	454	23,810			
402	Sandfield, Manitoulin	255	13,908	51,161	687	2 69	22.1	675	578	578	3,000	3,000	20	1,273			

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.											Assets on December 31, 1900.					Liabilities on December 31, 1900.						
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, waterworks, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Debtures redeemed.	Current loans repaid.	Interest on loans, advances and debtures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due.	Debtures outstanding.	Temporary loans.	Miscellaneous.
369	1,485	450	7,983	93	1,026	3,298	9,486	1,250	8,226	625	1,236	35,107	705	1,762	2,740	3,750	1,000	15,567	1,851	7,693	800	178	10,422
370	646	173	1,269	3	20	3,428	3,006	483	1,488	79	121	10,127	148	1,835	1,939	1,406	284	5,464	1,700	1,700	1,305	239	3,681
371	632	132	3,376	24	3	1,284	4,564	353	2,097	45	53	13,905	2,097	2,004	5,909	2,519	2,519	9,479	4,793	4,793	1,305	110	5,352
372	687	176	1,666	130	130	1,086	5,681	353	9,998	50	174	9,998	2,004	4,013	4,013	950	950	10,046	8,538	8,538	1,164	1,164	7,678
373	863	183	1,682	130	222	1,273	5,290	34	609	50	169	10,573	709	1,945	1,945	250	250	5,672	3,724	3,724	800	160	4,855
374	297	38	222	130	217	4,487	1,089	3,370	1,006	739	336	23,791	1,006	1,762	6,568	1,705	1,705	1,705	1,705	1,705	51	51	841
375	602	271	3,816	217	75	3,691	3,513	61	9,083	61	61	9,083	1,824	1,824	2,740	3,750	1,000	22,899	1,871	14,636	100	100	16,288
376	664	34	942	63	25	1,825	4,162	201	1,629	283	97	10,416	293	1,835	1,939	1,406	284	5,464	1,871	14,636	100	100	16,288
377	111	34	23	25	103	2,075	5,058	201	483	283	97	10,416	293	1,835	1,939	1,406	284	5,464	1,871	14,636	100	100	16,288
378	652	318	1,358	25	103	2,075	5,058	201	483	283	97	10,416	293	1,835	1,939	1,406	284	5,464	1,871	14,636	100	100	16,288
379	794	178	1,377	103	201	1,501	6,993	2,164	1,483	6	2,247	11,930	2,258	1,927	10,083	3,006	17,268	2,258	2,258	181	45	2,374	
380	266	47	221	5	6	201	1,501	6	500	8	26	2,247	2,247	2,405	2,405	4,640	2,405	2,405	2,405	181	45	2,374	
381	401	67	1,951	69	1,951	1,951	2,954	9,918	608	500	6	2,247	2,247	1,767	1,767	4,640	1,767	1,767	1,767	181	45	2,374	
382	1,174	1,004	2,185	218	4,314	6,773	6,993	9,918	608	500	6	2,247	2,247	1,767	1,767	4,640	1,767	1,767	1,767	181	45	2,374	
383	441	149	810	17	186	1,626	3,006	3,006	1,483	134	18	6,864	324	3,224	3,224	8,490	3,224	3,224	3,224	181	45	2,374	
384	757	6,661	2,876	40	1,723	4,396	830	52	10,000	482	128	27,890	3,224	3,224	41	8,490	600	12,353	660	375,115	634	136	11,430
385	205	90	14	1,892	379	6,048	1,892	379	608	19	269	2,580	718	4,280	400	4,280	2,580	4,280	4,280	181	45	2,374	
386	713	196	785	6,243	100	731	94	1,400	1,483	19	215	2,505	718	4,280	400	4,280	2,580	4,280	4,280	181	45	2,374	
387	219	30	602	100	618	6,333	731	94	1,400	19	215	2,505	718	4,280	400	4,280	2,580	4,280	4,280	181	45	2,374	
388	1,052	277	2,026	618	618	2,109	4,853	1,400	5,687	103	270	17,766	31	1,026	1,026	1,400	600	1,821	2,314	1,286	210	4,636	
389	589	221	1,870	177	1,870	1,500	4,230	9,736	1,483	66	176	21,280	262	4,268	4,268	17,633	2,300	4,268	3,157	1,286	100	2,414	
390	823	282	1,164	161	1,500	2,429	2,609	100	1,435	199	1,874	14,187	268	3,484	3,484	17,633	2,300	3,484	3,157	1,286	100	2,414	
391	245	66	45	63	1,039	2,833	2,609	100	1,435	16	1,874	14,187	268	3,484	3,484	17,633	2,300	3,484	3,157	1,286	100	2,414	
392	1,043	168	1,229	63	1,039	2,833	2,609	100	1,435	16	1,874	14,187	268	3,484	3,484	17,633	2,300	3,484	3,157	1,286	100	2,414	
393	893	119	721	104	1,214	3,601	2,609	100	1,435	38	863	22,520	314	3,149	3,149	107	1,481	3,752	3,149	1,000	2	4,159	
394	567	288	2,039	104	1,308	6,897	3,357	2,861	892	38	263	22,520	314	3,149	3,149	107	1,481	3,752	3,149	1,000	2	4,159	
395	1,601	881	2,638	100	1,140	4,114	5,267	353	446	47	364	20,447	536	8,396	8,396	1,600	21,443	2,617	2,617	1,000	2	4,159	
396	208	64	109	5	689	650	997	38	38	15	15	16,751	10,609	7,585	10,609	2,200	20,219	2,617	2,617	1,000	2	4,159	
397	269	95	261	5	689	650	997	38	38	15	15	16,751	10,609	7,585	10,609	2,200	20,219	2,617	2,617	1,000	2	4,159	
398	344	116	497	5	689	650	997	38	38	15	15	16,751	10,609	7,585	10,609	2,200	20,219	2,617	2,617	1,000	2	4,159	
399	914	247	2,542	415	5,084	2,950	6,832	58	1,800	30	155	4,736	291	1,641	1,641	2,200	2,200	4,817	1,185	354	144	1,683	
400	226	142	207	2	1,471	3,219	1,471	270	1,800	51	70	18,175	1,499	3,219	3,219	54	2,184	3,767	60	2,160	249	2,469	
401	1,255	652	3,074	370	2,474	9,217	5,637	270	3,000	109	142	21,529	2,281	6,970	6,970	226	2,281	9,505	2,071	6,000	133	6,071	
402	142	18	10	5	812	212	1,061	10	64	10	10	1,061	212	226	226	58	226	496	285	285	7	2,922	

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1901.	No. of acres assessed, 1901.	Assessed values of real and personal property, 1901.	Taxes imposed for all purposes, 1901.			Receipts, 1900.									
					Total	Per head.	Mills on %	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Stock- the Funds and other investments.	Dividends	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	
403	Sandwich E., Essex	2,487	18,732	628,895	14,196	5 71	22 6	8	13,853	514	6	5,075	1,551	487	21,439		
404	Sandwich S., Essex	1,623	23,480	588,651	10,5 0	6 47	17 6	379	11,635	110	..	1,000	2,541	388	17,083		
405	Sandwich w., Essex	2,473	23,811	691,013	11,963	4 68	16 7	97	12,710	540	..	2,100	488	822	16,537		
406	Sarawak, Grey	1,255	10,824	4,323	4,323	3 92	18 6	9 5	4,667	70	472	1,700	..	35	7,856		
407	Sarnia, Lambton	2,06	38,363	774,044	15,532	7 54	20 1	20 1	18,835	70	1	3,050	485	379	17,411		
408	Saugeen, Bruce	1,467	36,081	839,870	5,354	3 65	6 4	81	5,678	26	7	400	..	41	7,301		
409	South Ste. Marie, Algoma	933	45,626	795,917	10,750	11 52	13 5	1,662	6,809	22	..	506	..	41	9,034		
410	Scarborough, York	5776	42,642	2,855,038	17,387	4 86	8 3	465	17,342	416	313	600	..	37	19,173		
411	Schreiber, Thunder Bay	378	82,500	1,825,000	1,288	3 28	15 0	..	9,375	55	289	2,3 0	..	47	12,504		
412	Scott, Ontario	2,117	49,136	1,027,250	9,183	4 34	8 9	485	1,919	25	..	..	..	..	2,138		
413	Seabrook, Ontario	464	9,308	278,585	1,937	4 17	7 0	214	1,919	25	..	..	..	10	1,442		
414	Sebastopol, Newfrew	725	30,136	53,622	1,282	1 77	23 9	78	1,354	..	..	..	..	18	9,662		
415	Seneca, Haldimand	1,762	41,889	883,040	8,165	4 45	9 2	1,278	8,289	59	18	4,650	..	76	18,594		
416	Seymour, Northumberland	3,042	66,471	1,118,375	13,347	4 45	12 1	1,347	12,511	10	..	7,000	8,500	151	35,079		
417	Shelburne, McClintock, etc., Haldimand	2,023	69,590	1,734,830	7,243	3 58	10 8	124	8,813	159	9,877	..	1,000	819	3,406		
418	Shelburne, McClintock, etc., Haldimand	302	9,779	18,830	984	3 26	52 3	316	434	35	418	..	..	..	1,601		
419	Sherbrooke, Haldimand	398	4,668	151,220	1,155	2 90	7 6	147	1,800	18	50	..	..	23	2,361		
420	Shuniah, Thunder Bay	850	36,407	90,371	1,778	2 09	19 7	419	1,877	27	..	15	..	677	4,535		
421	Sidney, Hastings	151	94,483	135,013	2,362	15 61	17 5	1,520	2,132	..	39	167	..	701	23,249		
422	Smith, Peterborough	3,880	65,577	2,058,600	19,572	5 04	9 5	13	20,468	171	..	2,000	1,500	..	14,988		
423	Snowdon, Haliburton	2,589	57,820	1,457,935	12,171	4 70	8 3	647	12,635	151	..	618	..	354	4,006		
424	Scotbra, Lambton	698	70,653	1,022,080	2,427	3 48	35 3	..	3,634	..	..	..	..	..	32,838		
425	Somerville, Victoria	1,865	63,534	204,340	6,184	3 32	30 3	109	5,675	60	698	..	8,410	164	8,249		
426	Sophtiasburg, Prince Edward	1,728	42,951	977,044	7,648	4 43	7 8	163	7,989	69	..	500	1,000	7	8,055		
427	Sutherland, Elgin	3,839	72,498	2,415,142	23,020	6 00	9 6	8,379	23,534	198	..	4,000	..	372	36,383		
428	Springer, Nipissing	1,016	32,150	67,100	3,092	3 04	46 1	44	3,635	56	..	..	..	37	4,106		
429	Stafford, Renfrew	1,087	21,320	235,380	2,563	2 34	10 9	136	3,037	5	..	..	..	8	3,181		
430	Stamford, Welland	1,902	21,225	644,890	10,327	5 43	12 2	1,045	10,688	122	..	..	..	10	11,964		
431	Stanhope, Haliburton	474	16,121	24,784	1,133	3 40	45 7	69	1,731	..	..	..	..	206	2,003		
432	Stanley, Huron	2,138	43,318	1,066,900	10,865	5 08	6 5	487	9,377	127	1,250	..	..	113	11,373		
433	Stephen, Huron	4,141	66,787	1,805,325	15,269	3 69	8 5	1,789	13,908	392	233	2,425	..	380	18,798		
434	Stephenson, Muskoka	1,106	43,526	1,355,886	4,461	4 03	32 8	204	3,039	81	..	681	..	133	4,152		
435	Stisted, Muskoka	628	41,845	107,643	2,029	3 23	18 8	71	1,846	4	120	..	..	109	2,172		
436	Storrington, Frontenac	1,821	56,964	417,936	8,639	4 74	20 7	130	8,182	25	..	..	..	1	8,388		

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.										Assets on December 31, 1900.						Liabilities on December 31, 1900.						
	Allowances and commissions.	Other expenses of municipal government.	Roads and bridges.	Constructional build- ings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and education	Drainage work.	Sinking fund and other investments.	Debentures redeemed.	Current loans repaid.	Interests on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.
403	922	289	1,854	...	232	1,422	3,801	2,745	3,122	4,785	1,652	1,121	20,818	591	13,301	...	19,495	27,387	5,148	15,812	4,000	781	25,741
404	378	730	1,485	...	105	1,070	2,705	2,124	4,418	1,800	688	820	16,533	560	10,012	...	7,888	18,450	3,155	11,003	2,000	1,051	17,109
405	447	262	3,184	...	214	1,377	4,968	749	1,846	1,300	382	557	15,426	334	14,062	...	1,218	15,641	6,548	7,063	...	2,091	15,762
406	452	256	867	...	27	408	1,707	34	1,12	240	392	2,111	7,512	344	905	1,860	1,573	16,438	10,438	...	...	...	10,438
407	835	1,802	1,555	...	430	1,250	3,536	1,233	4,541	547	1,336	169	17,272	139	3,680	...	16,048	19,867	...	24,392	4,250	...	23,642
408	581	1,522	1,576	...	90	1,594	2,237	85	1,15	400	27	682	6,880	412	2	...	401	825	...	382	...	18	400
409	757	459	3,402	...	83	1,750	6,607	...	296	500	...	642	7,744	1,250	8,463	...	2,484	12,237	1,684	...	419	2,103	
410	1,694	697	4,914	...	26	4,245	6,607	...	296	177	...	124	18,565	608	1,333	13,125	6,253	21,319	...	5,393	...	...	5,393
411	650	1,149	1,131	...	265	4,083	4,083	...	200	2,300	97	97	11,775	729	21	4,761	1,500	5,511	...	585	...	...	585
412	149	50	1,179	...	5	1,334	1,179	...	57	...	...	57	2,018	140	...	...	1,500	1,640	...	...	...	...	96
413	142	27	1,12	...	129	1,68	3,775	...	14	...	...	14	1,357	85	332	...	1,550	2,870	...	...	...	...	320
414	493	109	1,142	...	129	2,446	4,888	...	263	5,595	161	474	18,439	155	799	...	90	1,044	...	...	950	248	1,198
415	741	241	4,476	...	149	1,744	4,888	...	300	2,307	154	270	35,050	259	2,703	...	2,000	4,738	...	8,215	...	544	9,677
416	520	160	562	...	104	3,405	1,133	...	907	15,285	1,019	32	1,958	1,108	245	...	1,000	2,353	...	355	...	67	1,422
417	161	64	564	...	5	31	1,133	...	5	...	...	1	1,615	36	453	...	600	2,243	...	...	...	...	...
418	155	70	114	...	61	333	886	...	...	1,500	375	120	2,361	202	8,058	1,926	4,216	14,402	...	7,500	15	33	48
419	237	71	117	...	4	209	1,543	...	206	2,307	164	635	4,333	292	10,675	...	1,712	13,512	...	7,12	387	631	8,518
420	359	406	862	...	770	9,070	5,805	...	200	2,307	103	270	9,353	5,630	1,887	...	1,164	13,512	...	9,585	...	...	10,247
421	263	214	2,314	...	276	5,783	4,783	...	300	2,307	103	50	22,124	292	10,675	...	1,712	13,512	...	9,585	...	...	10,247
422	547	113	2,211	...	276	5,783	4,783	...	300	2,307	103	50	22,124	292	10,675	...	1,712	13,512	...	9,585	...	...	10,247
423	248	323	1,66	...	387	1,536	1,251	...	150	...	...	457	4,006	2,678	...	...	1,164	3,842	...	7,266	636	74	5,015
424	371	329	3,074	...	587	1,688	2,265	...	15	8,979	2,045	396	31,802	1,035	21,258	...	2,663	54,127	...	7,180	...	...	46,078
425	477	157	605	...	176	442	3,256	...	1,455	500	22	17	7,823	212	79	3,416	3,335	13,983	...	7,950	1,013	...	13,990
426	479	203	517	...	158	2,159	3,708	...	1,455	500	22	17	7,823	212	79	3,416	3,335	13,983	...	7,950	1,013	...	13,990
427	976	703	6,288	...	40	7,270	7,675	...	1,674	3,000	341	242	28,371	8,012	2,636	...	3,335	13,983	...	8,449	1,013	...	15,687
428	288	176	1,082	...	30	967	967	...	403	...	226	35	3,217	889	2,681	...	1,377	4,917	...	4,65	...	...	15,687
429	168	47	140	...	66	1,006	1,402	...	...	54	...	43	2,854	327	566	...	750	1,932	...	30	210	95	325
430	536	260	1,090	...	66	2,028	4,528	...	...	...	18	549	9,077	2,877	2,105	...	10,067	15,019	...	2,240	6,030	807	9,910
431	212	60	142	...	5	78	645	...	47	...	20	340	1,552	451	606	...	347	1,404	...	230	253	35	855
432	530	218	2,518	...	206	3,869	1,250	...	1,250	2,425	472	88	11,035	337	127	1,000	4,140	6,922	...	2,188	6,642	...	8,851
433	815	243	2,955	...	21	2,188	6,611	...	66	2,425	472	459	17,249	1,544	1,268	...	1,210	6,922	...	2,188	6,642	...	8,851
434	249	149	947	...	17	...	439	...	439	...	165	96	3,608	544	1,691	...	1,679	5,699	...	2,090	1,251	429	4,835
435	371	35	485	...	89	741	741	...	90	...	43	39	1,924	248	282	...	360	1,900	...	630	...	...	630
436	413	172	487	...	48	3,721	3,197	...	71	...	...	71	8,109	229	1,409	...	1,000	2,638	...	753	...	...	753

## TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Township Municipalities and Counties in which located.	Population, 1901.		No. of acres assessed, 1901.		Assessed value of real and personal property and income taxable, 1901.		Taxes imposed for all purposes, 1901.				Receipts, 1900.						
		Total.	Per head.	Mills on %.	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from sinking funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.					
437	Strong, Parry Sound	719		38,810		138,525		1,930	14.5	21	2,590	10				47	2,668	
438	Sullivan, Grey	3,314		73,023		1,171,450		11,612	3.50	9.9	10,668	24				198	12,610	
439	Sunddale, Simcoe	1,933		84,944		814,356		8,373	4.33	3.0	8,082	174				104	12,878	
440	Sydenham, Grey	3,322		73,209		1,187,650		14,294	4.80	12.0	13,021	51				95	13,514	
441	Tay, Simcoe	4,545		644,755		11,608		15,608	15.0	18.0	9,965	135				306	18,409	
442	Tecumseh, Simcoe	3,009		45,942		1,664,910		18,810	6.26	11.3	17,876	121	2,694			347	26,391	
443	Tehkummah, Manitowin	474		19,639		51,600		1,030	2.15	20.2	1,185						1,185	
444	Thessalon, Algoma	650		18,427		35,838		1,529	3.25	27.4	1,264						1,629	
445	Thorold, Ontario	1,285		37,897		608,705		6,019	4.68	10.0	5,404	30	275			129	7,344	
446	Thorold, Welland	1,895		22,671		632,663		7,238	3.82	11.4	71						7,257	
447	Thorlow, Hastings	3,894		53,388		1,918,650		17,635	4.53	9.2	27	18,083	102			630	18,842	
448	Tilbury E., Kent	3,065		53,076		1,545,275		31,634	9.40	20.5	331	28,988				1,357	70,973	
449	Tilbury N., Essex	2,353		26,743		648,270		12,696	6.18	19.6	2,331	11,272				432	39,885	
450	Tilbury W., Essex	2,027		29,374		630,000		16,840	8.31	26.4		15,221				46	16,307	
451	Tiny, Simcoe	3,896		77,916		965,828		12,439	3.19	12.9	1,021	14,326				386	36,961	
452	Toronton, Carleton	334		25,649		142,550		3,374	3.61	23.6	2,238						16,257	
453	Toronto, Peel	4,967		64,949		2,724,400		22,071	4.44	8.1	2,538	18,104	292	4,748		35	29,792	
454	Toronto, Peel	956		18,982		692,460		5,536	5.79	8.0	211	5,446	27	6		112	7,471	
455	Tossonord, Simcoe	1,557		44,599		730,998		6,462	4.14	7.8	1,185	5,992	129			50	7,556	
456	Townsend, Norfolk	3,899		64,951		1,374,700		17,254	4.43	8.3		16,537				44	18,371	
457	Trafalgar, Halton	3,378		65,908		2,462,944		15,602	4.62	6.3	290	15,153	90	3,650		88	22,894	
458	Tuckersmith, Huron	2,431		40,661		1,022,910		13,460	6.59	6.9	2,744	10,938	6	300		1,868	16,946	
459	Tudor and Cashel, Hastings	839		69,273		66,368		2,542	2.96	38.3	784	2,651	59			240	3,734	
460	Turberry, Huron	2,105		35,648		1,224,480		6,748	3.20	5.5	1,871	7,425	38			175	10,081	
461	Tyendinaga, Hastings	3,379		77,895		1,418,035		15,181	4.49	10.7	1,039	15,299	140			602	17,700	
462	Uabrone Huron	2,316		42,675		1,813,050		12,412	5.37	6.9	2,338	11,106	42			75	14,606	
463	Uxbridge, Ontario	2,695		51,700		983,500		10,332	3.83	10.4	267	10,950	132			91	13,814	
464	Van Horne, Rainy River	246		9,565		48,180		1,201	4.88	24.9	249	644	50				943	
465	Vaughan, York	4,215		67,004		2,915,670		23,096	5.48	7.9	10,243	21,142	2,000			536	36,395	
466	Verulam, Victoria	1,800		55,312		520,990		8,894	4.94	17.1	4,657	7,717				19	12,438	
467	Vespra, Simcoe	2,990		62,060		994,874		10,643	3.56	10.7	572	10,846	12			397	13,511	
468	Wainfleet, Welland	2,704		51,948		915,675		14,442	4.42	13.0	279	10,817	15			148	13,279	
469	Wallace, Perth	2,780		49,934		1,948,910		12,381	4.45	6.4	378	13,825	55	3,888		350	19,408	
470	Walpole, Haldimand	4,117		66,628		1,948,730		19,922	4.84	10.2		19,678	106			6	4,853	



TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.										Assets on December 31, 1900.						Liabilities on December 31, 1900.						
	Allowances, salaries and commissions.	Other expenses of municipal government.	Roads and bridges.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account of schools and education.	Drainage work.	Sinking fund and other investments.	Depreciated.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments.	Miscellaneous.	Total assets.	County levy and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.
437	273	36	154	1,497	150	13	79	2,262	466	1,230	17	3,688	37	2,602	1,230	11	1,707	678	678	500	250	100	678
438	534	226	1,029	5,807	250	67	420	10,534	2,076	2,076	17	18,542	37	13,300	2,076	2	4,996	181	181	500	250	100	2,931
439	342	342	2,629	3,479	1,731	194	75	11,367	1,571	1,570	19	16,911	36	13,614	1,571	6,032	800	4,996	2,001	3,500	250	100	5,601
440	891	20	1,014	4,858	181	356	50	13,614	181	356	192	50	13,614	181	356	600	600	600	2,001	3,500	347	300	893
441	825	256	1,623	8,511	110	110	22	12,863	546	9,161	22	12,863	546	9,161	546	175	9,882	3,688	1,678	2,440	300	300	4,418
442	670	346	5,770	6,468	724	409	256	24,378	2,611	21	794	256	24,378	2,611	21	3,882	1,085	110	9,031	2,440	300	300	9,031
443	244	61	200	506	10	10	36	1,230	399	1,057	38	1,230	399	1,057	399	175	1,330	1,085	110	600	24	134	1,330
444	213	69	40	528	78	658	181	3,390	973	1,000	510	403	7,240	17	3,688	2,216	54,919	3,028	8,000	600	325	8,000	8,000
445	740	99	1,328	8,700	5	870	3,390	11,719	7,719	6,944	19	11,719	7,719	6,944	3,600	8,899	8,700	3,028	8,000	600	325	8,000	8,000
446	544	189	814	3,390	1,211	1,211	181	6,850	18,877	9,532	19,203	5,797	55	67,409	3,760	6,529	2,600	8,899	8,000	600	325	8,000	8,000
447	814	346	1,451	6,944	213	213	181	3,041	2,911	2,134	1,421	1,669	13,110	897	9,192	3,631	33,124	5,828	14,742	600	109	4915	14,742
448	1,322	376	4,361	18,877	274	274	181	6,850	18,877	9,532	19,203	5,797	55	67,409	3,760	6,529	2,600	8,899	8,000	600	325	8,000	8,000
449	972	198	888	2,911	181	181	181	3,041	2,911	2,134	1,421	1,669	13,110	897	9,192	10,446	10,635	5,828	14,742	600	109	4915	14,742
450	765	523	2,033	4,858	433	433	433	3,403	9,710	8,021	8,091	2,879	850	36,961	10,470	9,192	10,248	10,635	3,136	37,772	10,608	1,630	32,265
451	828	255	1,878	4,871	128	128	128	2,942	4,871	3,783	2,671	312	14,803	1,434	4,608	8,155	24,178	10,635	3,136	37,772	10,608	1,630	32,265
452	361	316	316	1,055	752	752	752	1,055	1,055	878	1,000	878	1,055	2,464	2,383	3,155	14,178	10,635	3,136	37,772	10,608	1,630	32,265
453	973	990	4,170	8,471	99	4,599	8,471	11,066	4,601	973	3,000	268	727	29,111	4,100	28,068	4,165	37,074	1,475	3,017	3,015	247	1,722
454	512	142	1,611	1,890	5	1,333	1,890	2,264	4,331	235	1,515	68	7,440	31	2	3,507	1,355	4,895	4,895	250	250	255	6,072
455	460	76	725	3,136	119	1,108	3,136	7,225	7	235	1,515	68	7,440	31	2	3,507	1,355	4,895	4,895	250	250	255	6,072
456	969	241	1,586	5,091	5	6,877	7,091	11,066	4,601	973	3,000	268	727	29,111	4,100	28,068	4,165	37,074	1,475	3,017	3,015	247	1,722
457	984	275	4,138	2,888	288	2,888	2,888	7,421	3,650	2,250	1,37	22,430	464	4,146	45,173	6,032	6,032	6,032	770	954	2,382	49	5,508
458	1,014	256	4,123	4,860	783	264	257	14,094	2,250	2,250	1,37	22,430	464	4,146	45,173	6,032	6,032	6,032	770	954	2,382	49	5,508
459	367	44	581	2,131	15	11	1,950	3,399	560	1,050	17	51	8,265	1,816	625	1,83	3,177	2,023	2,023	5,199	25	25	2,048
460	710	140	1,051	3,399	363	8,163	6,301	11,066	4,601	973	3,000	268	727	29,111	4,100	28,068	4,165	37,074	1,475	3,017	3,015	247	1,722
461	1,089	146	878	3,136	363	8,163	6,301	11,066	4,601	973	3,000	268	727	29,111	4,100	28,068	4,165	37,074	1,475	3,017	3,015	247	1,722
462	578	24	2,869	4,831	298	998	4,831	2,266	4,331	200	1,200	1,200	1,200	1,200	2,029	1,661	3,093	2,266	2,266	200	1,330	2,266	2,266
463	540	161	1,551	3,136	363	8,163	6,301	11,066	4,601	973	3,000	268	727	29,111	4,100	28,068	4,165	37,074	1,475	3,017	3,015	247	1,722
464	143	23	23	275	70	12,829	8,912	2,000	2,000	200	1,200	1,200	1,200	1,200	2,029	1,661	3,093	2,266	2,266	200	1,330	2,266	2,266
465	1,469	37	5,131	11,066	111	1,068	4,127	2,000	2,000	200	1,200	1,200	1,200	1,200	2,029	1,661	3,093	2,266	2,266	200	1,330	2,266	2,266
466	574	270	1,699	3,136	111	1,068	4,127	2,000	2,000	200	1,200	1,200	1,200	1,200	2,029	1,661	3,093	2,266	2,266	200	1,330	2,266	2,266
467	859	149	1,382	4,561	66	2,6	4,561	479	353	476	1,640	146	414	12,753	758	1,299	2,061	1,902	2,750	425	110	685	2,863
468	826	290	1,063	4,918	16	3,040	4,918	762	1,783	1,783	310	153	13,86	93	3,156	25,000	8,163	36,916	140	5,124	60	5,714	3,506
469	765	120	2,099	5,149	55	5,149	6,2	4,699	739	739	908	37	19,129	279	4,780	4,699	736	10,500	3,410	20,000	469	60	2,869
470	875	214	3,358	8,454	918	5,149	8,454	11,066	4,601	973	3,000	268	727	29,111	4,100	28,068	4,165	37,074	1,475	3,017	3,015	247	1,722

No.	Township Municipalities and Counties in which located.	Population, 1901.	No. of acres assessed 1901.	Assessed value of real and personal property, 1901.	Taxes imposed for all purposes, 1901.			Receipts, 1900.								
					Total.	Per head.	Mills on %.	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.
471	Walsingham N., Norfolk.....	2,095	40,000	550,535	\$ 8,612	4 11	15.6	333	8,979	49	49	500	500	411	24	9,885
472	Walsingham S., Norfolk.....	1,900	54,000	689,085	10,517	5 54	15.3	199	16,503	32	32	933	933	411	551	12,042
473	Warwick, Lambton.....	3,080	69,714	2,011,950	15,946	5 18	7.9	28	16,503	49	49	2,900	2,900	411	135	20,026
474	Wadeau, Waterloo.....	7,063	82,850	3,617,570	29,557	4 18	8.2	8	29,570	356	356	2,465	2,465	411	94	40,916
475	Watt, Manakota.....	946	35,115	1,355,220	2,246	2 37	16.6	464	2,143	41	41	66	66	411	30	2,744
476	Wawanosh E., Huron.....	1,858	41,734	1,441,050	7,215	3 88	5.0	1,964	6,798	30	30	400	400	411	116	9,321
477	Wawanosh W., Huron.....	2,080	41,718	1,313,375	8,232	3 99	6.3	47	8,790	2	2	600	600	1,270	25	10,734
478	Wellesley, Waterloo.....	4,740	66,039	2,109,705	22,434	4 73	10.6	4	19,394	423	61	1,975	1,975	411	8	22,364
479	Westmeath, Renfrew.....	3,420	69,952	294,027	10,059	2 94	34.2	9	9,154	116	116	126	126	411	5	9,284
480	Westminster, Middlesex.....	4,462	63,177	3,005,200	22,065	4 95	7.3	10,406	21,831	145	145	2,500	2,500	411	435	32,943
481	Whitby E., Ontario.....	2,495	31,175	1,630,760	10,393	4 17	6.4	246	10,133	152	152	160	160	411	86	13,277
482	Whitby, Ontario.....	1,950	30,737	1,492,310	12,686	6 45	8.4	287	11,649	183	183	7	7	411	23	15,838
483	Whitchurch, York.....	3,454	60,106	1,611,085	11,872	3 43	7.4	163	11,962	41	41	1,000	1,000	411	48	13,873
484	Whitford, Nipissing.....	655	45,129	74,045	2,096	3 20	28.3	1,138	1,138	41	41	7	7	411	1	1,186
485	Wilberforce and Algona N., Renfrew.....	2,338	68,272	133,625	3,952	1 59	29.6	1,277	3,103	94	94	1,002	1,002	411	46	4,580
486	Williams E., Middlesex.....	1,375	38,576	1,232,160	8,780	6 38	7.1	3,769	10,568	55	55	16	16	411	99	15,529
487	Williams W., Middlesex.....	1,458	35,177	891,180	8,596	5 50	9.6	985	8,989	8	8	3,200	3,200	411	95	13,219
488	Williamsburg, Dundas.....	3,690	59,692	1,464,962	14,527	3 93	9.9	311	16,832	44	44	2,366	2,366	411	1,501	20,554
489	Willoughby, Welland.....	926	18,779	417,720	4,376	4 73	10.5	266	3,976	86	86	1,000	1,000	411	4	4,331
490	Winnet, Waterloo.....	4,938	60,712	2,580,350	20,467	4 14	7.9	2,116	19,808	522	522	700	700	411	57	23,563
491	Windsor, Dundas.....	3,326	56,555	1,368,115	20,716	6 23	15.3	23	22,745	1	1	3,250	3,250	411	366	26,385
492	Windham, Norfolk.....	3,649	66,719	1,569,250	12,877	3 53	8.2	679	13,209	69	69	500	500	411	86	14,545
493	Wolfe Island, Frontenac.....	1,417	30,927	596,895	8,885	6 27	14.9	241	9,280	59	59	700	700	411	1	9,580
494	Wolford, Grenville.....	1,639	46,619	926,584	6,703	4 09	7.2	521	6,256	31	31	1,000	1,000	411	1	7,500
495	Wollaston, Hastings.....	738	49,377	66,289	2,285	3 15	34.5	42	2,105	21	21	792	792	411	339	2,488
496	Woodhouse, Norfolk.....	2,000	34,600	1,115,834	4,892	4 90	9.0	1,151	9,449	33	33	792	792	411	20	11,446
497	Woolwich, Waterloo.....	4,197	53,440	2,563,079	19,181	4 57	7.5	2,351	19,419	283	39	465	465	411	596	23,145
498	Yarmouth, Elgin.....	4,753	69,941	2,973,440	30,147	6 37	11.3	1,384	27,266	141	141	11,000	11,000	411	107	40,009
499	Yonge and Escoff Front., Leeds.....	2,372	55,443	712,610	12,530	5 28	17.6	.....	12,223	129	129	263	263	411	9	16,954
500	Yonge and Escoff Rear, Leeds.....	1,135	27,516	398,530	6,214	5 47	15.6	882	6,469	101	101	249	249	411	464	8,155
501	York, York.....	8,965	58,000	5,755,760	81,004	9 04	14.1	444	108,457	808	808	917	917	411	1,309	114,634
502	Zone, Kent.....	1,191	25,211	585,250	6,324	5 31	10.8	620	5,733	14	14	66	66	411	1,843	9,887
503	Zorra E., Oxford.....	3,901	57,539	2,734,670	25,434	6 52	9.3	2,107	22,768	465	465	4,022	4,022	411	788	33,778
504	Zorra W., Oxford.....	2,388	55,057	2,571,260	15,844	6 63	6.2	4,004	16,810	31	31	560	560	411	828	30,722

TOWNSHIP MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.										Assets on December 31, 1900					Liabilities on December 31, 1900.								
	Allowances and commissions.	Other expenses of municipal govern.	Roads and bridges.	Construction of buildings, waterworks, etc.	Charities.	County levy.	Payment on accounts of schools and education.	Drainage work.	Sinking fund and other investments	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements	Balance on hand.	Taxes in arrears.	Sinking fund and other investments and deposits	Miscellaneous.	Total assets	County levy and school rates due and unpaid.	Debentures outstanding	Temporary loans.	Miscellaneous.	Total liabilities.
471	467	226	2,429	..	21	1,597	4,210	..	46	..	..	..	101	9,829	56	5,837	..	1,311	7,937	3,488	200	..	..	8,688
472	509	419	1,175	..	7	1,823	3,956	..	2,173	483	1,018	..	167	11,766	336	1,006	..	1,750	8,092	765	18,566	410	175	19,956
473	631	216	3,442	..	306	2,619	6,201	..	1,425	2,900	2,607	..	311	19,469	557	1,026	..	658	2,236	357	4,979	826	..	6,102
474	393	1,113	5,083	..	64	4,911	15,056	..	5,900	2,919	2,863	..	726	40,916	..	36,066	..	10,212	46,281	18,389	405	..	..	18,854
475	293	102	253	187	46	1,331	..	..	..	200	57	..	111	2,530	214	945	405	3,700	537	800	..	138	..	1,535
476	518	129	1,254	..	59	1,457	3,341	..	..	400	7	..	7	7,319	1,952	154	..	2,106	1,468	..	..	..	..	1,469
477	650	224	1,430	..	10	807	5,022	..	109	600	23	..	160	9,098	1,636	1,225	..	833	3,694	1,723	1,447	..	..	3,288
478	1,012	403	3,444	..	..	3,531	11,697	..	..	110	222	..	524	22,553	71	363	13,245	..	13,630	414	1,926	..	..	6,110
479	1,013	392	925	94	100	1,781	3,096	..	..	136	146	..	450	8,560	724	1,755	..	3,206	3,380	2,221	..	..	2,221	
480	1,095	455	6,324	..	52	6,047	7,423	..	310	2,500	109	..	414	22,231	10,708	1,755	..	1,396	13,853	5,916	1,390	..	..	7,326
481	784	205	2,476	..	221	1,698	4,642	..	..	2,500	50	..	282	12,908	369	36	3,200	1,446	5,051	..	..	80	..	80
482	835	605	2,863	..	229	1,661	4,226	..	1,383	3,500	314	..	176	15,795	43	43	64	500	650	33	3,719	189	77	4,068
483	831	164	1,615	..	40	3,548	5,219	..	104	1,000	48	..	428	13,317	556	1,095	14,147	975	16,773	..	640	..	..	3,043
484	506	46	905	..	..	..	446	..	..	13	..	..	86	1,186	..	3,247	..	350	3,697	891	..	7	..	1,075
485	348	40	502	..	13	891	1,594	..	..	1,002	22	..	185	4,033	547	1,976	..	182	2,705	1,341	..	..	..	1,675
486	522	170	2,000	..	75	3,127	2,787	..	104	..	..	..	249	10,258	5,271	2,777	..	19	5,567	3,059	..	..	..	2,621
487	501	100	2,647	250	99	2,328	3,145	..	6	2,950	99	..	357	12,486	733	4,789	..	425	3,947	2,324	3,100	197	..	3,621
488	560	337	4,207	..	353	2,577	6,872	..	518	2,769	228	..	398	20,854	69	3,768	..	3,768	3,857	..	2,855	..	..	3,621
489	257	283	3,441	..	6	1,564	1,803	..	86	300	11	..	33	4,288	43	769	..	1,000	1,812	682	..	..	..	682
490	293	553	3,094	..	26	8,637	10,320	..	..	1,000	286	..	526	10,832	2,731	..	286	5,728	8,459	4,348	..	..	..	4,348
491	965	321	1,027	..	217	2,167	7,982	..	2,410	1,274	1,548	..	115	25,197	1,188	167	..	1,875	3,200	1,881	18,500	3,004	365	23,930
492	825	251	1,174	775	116	3,852	6,005	365	..	542	9	..	172	14,136	409	2,969	..	2,518	5,806	..	..	..	..	..
493	378	110	360	..	104	3,275	4,947	..	..	1,400	13	..	115	9,289	29	4,066	..	2,331	6,678	3,466	..	..	..	8,572
494	420	77	436	..	..	1,422	1,276	..	..	..	..	..	28	2,338	101	1,530	..	600	1,726	1,048	700	..	..	700
495	262	185	451	..	5	1,321	2,276	..	..	1,566	13	..	234	10,039	1,946	180	..	1,000	2,680	1,048	..	31	..	1,079
496	615	139	1,352	..	131	2,720	3,945	..	..	1,566	..	..	234	10,039	1,946	180	..	1,000	2,680	1,048	..	..	..	..
497	1,037	362	3,202	..	5	3,276	8,945	..	..	2,045	..	..	316	20,331	3,014	7	8,971	981	12,973	18,025	..	..	..	18,025
498	1,447	1,954	12,369	..	106	7,789	17,789	..	..	214	11,070	307	435	35,621	4,478	1,343	6,074	2,510	9,461	7,702	2,865	2,378	..	12,940
499	600	428	1,938	30	43	1,521	5,417	..	394	1,482	785	..	62	16,811	1,289	112	9,356	2,565	13,312	..	15,303	8,936	146	13,447
500	294	59	640	..	..	732	3,481	..	663	285	..	..	27	6,806	..	..	..	1,022	6,273	2,499	..	..	..	7,956
501	720	2,744	20,277	..	236	9,918	23,842	..	3,394	12,513	17,328	..	10,621	114,629	6	47,177	31,377	100,817	173,376	21,690	38,070	6,927	14,704	141,391
502	502	611	282	799	..	163	784	606	1,012	2,566	408	..	114	8,321	1,466	3,685	..	1,022	6,273	2,499	4,704	750	..	7,956
503	902	170	9,413	..	10	4,259	6,703	5,741	2,191	3,510	578	..	313	33,778	..	380	..	5,479	5,829	..	14,337	522	2,132	16,991
504	645	363	2,601	..	59	4,324	4,623	1,874	1,518	1,442	400	..	323	21,272	9,450	438	14,541	450	24,879	..	7,511	7,438	..	14,949



VILLAGE MUNICIPALITIES, 1900-1901.—Continued.

Disbursements, 1900.—Continued.

Assets on December 31, 1900.

Liability on December 31, 1900.

No.	Disbursements, 1900.—Continued.										Assets on December 31, 1900.					Liability on December 31, 1900.						
	Streets, bridges and parks.	Construction of buildings, waterworks, etc.	Charities.	County levy.	Payment on account of schools and education.	Sinking fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements	Balance on hand.	Taxes in arrears.	Sinking fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County due and unpaid rates levied and school.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.
1	409	1,372	24	240	1,517	611	430	4,100	229	12,568	13	453	3,858	9,000	17,400	30,724	1,440	20,455	1,799	90	23,784	
2	299	186	27	186	2,726	257	2	2,726	16	2,726	31	53	112	38,000	17,465	1,701	140	34,332	3,583	250	38,305	
3	561	203	23	230	1,503	772	772	18,772	1,992	28,495	1,040	95	1,390	1,390	4,815	4,315	140	1,173	1,057	.....	2,250	
4	390	208	170	217	1,461	641	641	3,568	208	8,681	306	95	.....	1,070	4,882	1,376	.....	.....	.....	.....	.....	
5	261	24	38	113	468	.....	.....	.....	13	1,184	306	.....	.....	.....	1,070	1,376	.....	.....	.....	.....	.....	
6	1,116	375	9	606	2,120	31	5,000	2,800	144	14,195	403	687	.....	.....	1,070	1,376	.....	.....	.....	.....	.....	
7	1,378	539	149	890	2,211	444	1,000	2,311	874	10,963	846	458	1,263	9,539	7,175	6,301	1,050	14,254	.....	142	15,446	
8	845	55	2	245	1,771	3	603	200	3	4,039	383	353	.....	.....	818	2,347	.....	19,716	.....	1,051	20,767	
9	245	28	103	348	1,872	618	337	320	506	5,160	28	50	4,745	.....	6,820	12,094	.....	12,167	257	20	12,624	
10	102	.....	69	245	460	.....	82	.....	3	1,253	643	202	2,000	.....	1,716	4,541	.....	.....	.....	.....	.....	
11	496	.....	18	181	725	.....	.....	.....	18	1,686	122	.....	.....	.....	600	722	.....	.....	.....	.....	.....	
12	662	.....	29	374	1,175	.....	407	2,310	856	6,814	367	174	.....	15,000	2,765	18,306	375	12,573	1,000	28	13,976	
13	845	.....	10	234	787	119	475	600	271	4,041	796	247	2,935	.....	8,440	12,418	816	4,350	1,170	303	6,436	
14	840	.....	25	300	786	525	525	.....	1,007	6,415	494	13	.....	36,000	7,215	43,722	323	19,078	2,321	.....	22,025	
15	459	.....	118	69	774	.....	92	1,720	50	1,720	50	194	.....	.....	861	1,105	211	.....	.....	13	224	
16	9,798	1,464	8	156	1,315	386	197	3,612	1,080	19,704	585	177	3,942	735	15,487	20,926	871	12,452	11,994	.....	.....	25,317
17	614	.....	47	261	1,900	298	.....	.....	10	4,097	3,009	207	1,854	.....	5,747	11,417	2,161	3,000	.....	.....	.....	5,161
18	956	13	11	136	787	.....	290	1,440	150	4,263	22	15	.....	.....	1,375	11,412	542	.....	.....	500	1,042	
19	644	.....	25	462	2,300	.....	564	1,051	215	6,443	2,633	1,343	.....	.....	8,700	12,076	2,490	3,559	.....	325	6,374	
20	1,785	.....	4	826	2,648	2	376	1,500	124	8,831	1,581	942	2	.....	4,596	7,084	1,880	2,116	.....	5,021	9,017	
21	1,417	.....	75	353	3,000	.....	2,315	.....	56	8,516	.....	.....	.....	.....	8,900	9,040	1,880	2,116	.....	133	133	
22	6,618	504	32	252	1,671	4,237	507	6,500	2,370	24,311	1,925	586	10,010	140	15,440	26,036	249	49,332	3,000	539	53,120	
23	782	40	45	361	1,089	250	246	1,500	467	6,143	1,625	177	630	.....	1,831	4,943	2,000	8,202	.....	249	10,351	
24	1,247	.....	310	318	2,300	.....	2,666	2,700	136	7,809	480	261	2,000	1,351	7,967	12,059	361	6,000	.....	600	6,000	
25	528	101	9	812	3,300	.....	1,500	4,000	340	5,808	674	755	.....	38,500	6,300	7,729	.....	6,000	.....	1,700	6,000	
26	1,653	5,215	103	348	5,074	2,866	2,866	4,000	2,033	28,761	4,291	1,284	.....	.....	8,499	47,574	.....	42,727	.....	780	44,127	
27	646	.....	30	326	1,450	.....	1,800	1,520	99	5,017	472	1,130	.....	.....	7,725	4,002	.....	2,845	.....	50	3,491	
28	479	.....	36	258	1,556	176	176	1,800	196	5,155	472	1,130	.....	.....	3,100	4,002	.....	2,845	.....	50	3,153	
29	605	.....	30	100	716	.....	536	536	163	2,493	131	1,100	350	.....	500	2,081	.....	2,000	1,492	.....	4,055	
30	738	.....	5	225	1,350	.....	736	182	130	4,542	183	393	.....	.....	4,525	5,101	.....	2,300	200	.....	2,500	

No.

VILLAGE MUNICIPALITIES, 1900-1901.—Continued.

No.	Village Municipalities and Counties in which located.	Population 1901.			Assessed values of real and personal property, 1901.										Taxes imposed for all purposes, 1901.										Receipts, 1900.										Disbursements, 1900.				
		Total	Per head.	Mills on \$	Total	Personal property and taxable, 1901.	Total	Real estate	Industrial	Commercial	Professional	Other	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.													
31	Chesley, Bruce .....	1,720	8,667	5 04	23 3	2,517	8,649	285	746	282	19,13,023	2,300	311	479	9,489	250	853	425	57	24,775	361	746	406	381															
32	Chesterville, Dundas .....	884	157,260	2,473	8 20	1,865	2,809	260	396	5	1,040	300	32	3,375	114	147	72	42	5,479	114	114	98	198																
33	Chippewa, Welland .....	459	122,365	1,752	3 82	1,413	1,601	396	396	14	1,040	396	171	4,381	113	147	82	7	2,640	136	32	113	198																
34	Clifton, Wellington .....	538	123,000	1,632	2 85	1,318	1,304	386	386	752	23	2,337	33	3,987	224	376	218	49	3,456	247	292	122	122																
35	Cobden, Renfrew .....	638	84,825	1,387	2 17	1,164	1,304	386	386	40	2,176	471	305	6,605	188	243	181	15	2,640	247	292	122	122																
36	Colborne, Northumberland .....	1,023	295,830	5,053	4 94	1,171	2,437	5,113	70	2,300	2,300	311	479	9,489	250	853	425	57	9,970	250	853	425	57																
37	Creemore, Simcoe .....	615	132,175	2,573	3 99	1,195	2,337	2,611	194	300	300	32	3,375	114	147	72	42	5,479	114	114	98	198																	
38	Delhi, Norfolk .....	790	170,200	3,095	3 52	1,318	2,826	3,966	158	400	400	158	4,381	113	147	82	7	2,640	136	32	113	198																	
39	Drayton, Wellington .....	789	165,595	3,707	4 88	224	3,287	471	305	2,176	2,176	305	6,605	188	243	181	15	2,640	247	292	122	122																	
40	Dundalk, Grey .....	786	147,520	3,208	4 08	217	3,383	256	1,817	40	2,176	471	305	6,605	188	243	181	15	2,640	247	292	122	122																
41	Dutton, Elgin .....	863	224,620	4,238	4 98	187	3,838	240	1,817	3,383	256	1,817	305	6,605	188	243	181	15	2,640	247	292	122	122																
42	East Toronto, York .....	1,524	539,910	15,220	10 03	283	15,045	102	1,340	134	312	2,237	86	6,313	1,629	298	38	12	19,585	1,053	1,711	817	115																
43	Eganville, Renfrew .....	1,056	287,940	4,022	3 81	1,140	4,803	487	487	1,125	2,237	86	6,313	1,629	298	38	12	19,585	1,053	1,711	817	115																	
44	Elmira, Waterloo .....	1,084	320,420	4,215	6 25	233	4,107	588	588	1,125	2,237	86	6,313	1,629	298	38	12	19,585	1,053	1,711	817	115																	
45	Elora, Wellington .....	1,187	310,545	7,417	6 25	233	4,107	588	588	1,125	2,237	86	6,313	1,629	298	38	12	19,585	1,053	1,711	817	115																	
46	Embro, Oxford .....	580	198,273	2,846	4 82	144	1,397	2,559	246	246	100	100	89	4,291	180	197	90	49	9,489	250	853	425	57																
47	Ern, Wellington .....	490	111,660	1,409	2 88	12	1,370	166	166	100	100	89	4,291	180	197	90	49	9,489	250	853	425	57																	
48	Exeter, Huron .....	1,731	511,040	9,003	5 03	17	3,996	10,479	545	16	41	3,000	220	18,300	615	2,213	262	18	24,775	361	746	406	381																
49	Fenelon Falls, Victoria .....	1,204	295,151	4,427	3 68	15	4,157	404	404	3,480	41	3,000	220	18,300	615	2,213	262	18	24,775	361	746	406	381																
50	Fergus, Wellington .....	1,437	420,460	9,053	6 30	21	8,407	750	750	432	58	775	496	11,178	453	890	230	339	11,178	453	890	230	339																
51	Fort Erie, Welland .....	820	250,955	4,096	5 00	16	4,588	342	342	1,000	1,000	28	5,958	306	262	69	12	9,227	306	262	69	12																	
52	Garden, Island, Frontenac .....	297	54,200	1,762	6 86	32	1,761	338	338	3,848	3,848	71	13,540	209	886	170	159	13,540	209	886	170	159																	
53	Georgetown, Halton .....	1,338	373,210	7,694	5 75	20	7,165	398	2,106	3,848	4,000	1,850	102	15,768	277	913	263	5	15,768	277	913	263	5																
54	Glencoe, Middlesex .....	1,037	311,760	6,312	6 09	20	6,521	684	684	4,000	4,000	1,850	102	15,768	277	913	263	5	15,768	277	913	263	5																
55	Grand Valley, Dufrin .....	760	143,150	3,162	4 16	21	2,479	2,921	359	560	3,400	277	5,360	515	574	143	10	7,165	515	574	143	10																	
56	Grimsby, Lincoln .....	908	210,300	3,862	5 61	24	4,896	113	113	3,400	10	3,400	277	5,360	515	574	143	10	7,165	515	574	143	10																
57	Hagersville, Halldam .....	1,303	171,915	5,054	3 62	23	3,923	57	57	800	800	220	5,000	235	449	182	20	5,000	235	449	182	20																	
58	Hanover, Grey .....	1,897	172,470	3,162	3 94	18	3,216	326	326	800	800	220	5,000	235	449	182	20	5,000	235	449	182	20																	
59	Hastings, Northumberland .....	803	172,470	3,162	3 94	18	3,216	326	326	800	800	220	5,000	235	449	182	20	5,000	235	449	182	20																	
60	Havelock, Peterborough .....	975	147,655	3,225	3 31	21	2,947	375	375	1,000	1,000	3,500	162	9,227	212	212	109	9,227	212	212	109	109																	

VILLAGE MUNICIPALITIES, 1900-1901.—Continued.

Disbursements, 1900.—Continued.

Assets on December 31, 1900.

Liabilities on December 31, 1900.

No.	Disbursements, 1900.—Continued.					Assets on December 31, 1900.						Liabilities on December 31, 1900.												
	Streets, bridges and parks.	Construction of buildings, water works, etc.	Charities.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.		
31	9,086	5,079	88	438	2,400	518	22,422	2,353	21	20,861	23,235	887	24,541	17,131	11,523	887	24,541	17,131	11,523	887	24,541	17,131	11,523	
32	1,429	11	56	158	1,125	57	5,186	293	70	959	1,322	426	964	538	500	1,322	426	964	538	500	1,322	426	964	
33	232	11	56	191	980	36	1,787	853	200	500	3,325	800	1,300	800	500	3,325	800	1,300	500	500	3,325	800	1,300	
34	456		14	209	1,000	43	2,091	1,365	757	1,000	3,122	500	1,300	800	500	3,122	500	1,300	500	500	3,122	500	1,300	
35																								
36	1,297		44	244	8,981	79	9,630	340	4	4,340	4,684	1	4,340	4,340	4,340	4,684	1	4,340	4,340	4,340	4,684	1	4,340	
37	730		26	461	306	499	3,032	343	1,331	150	1,824	1	150	150	150	1,824	1	150	150	150	1,824	1	150	
38	920		5	313	1,622	4	3,830	551	397	5,434	6,402	568	6,402	1,010	376	6,402	568	1,010	376	6,402	568	1,010		
39	939	93	11	345	1,722	137	1,800	339	831	137	6,500	831	137	6,500	6,500	6,500	831	137	6,500	6,500	831	137		
40	871	477	64	207	433	1,621	327	262	6,387	373	101	818	373	6,387	6,387	6,387	373	6,387	6,387	6,387	373	6,387		
41	964		20	225	1,225	430	1,125	333	131	5,215	101	818	373	6,387	6,387	6,387	373	6,387	6,387	6,387	373	6,387		
42	1,355	4,505		1,991	2,304	3,308	19,286	249	9,749	16,388	2,848	249	9,749	16,388	2,848	2,848	2,848	2,848	2,848	2,848	2,848	2,848		
43	834		50	1,374	672	38	3,465	280	60	4,079	280	60	4,079	280	280	4,079	60	280	280	280	4,079	60	280	
44	546	17	5	348	1,128	600	420	353	8,223	666	1,117	690	353	8,223	8,223	8,223	666	1,117	690	353	8,223	666	1,117	
45	1,062	400	20	731	2,716	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	1,117	
46	700		17	800	1,001	149	1,459	43	66	2,832	1,459	43	66	2,832	2,832	2,832	43	66	2,832	2,832	43	66		
47	246	359	3	184	687	2	2,054	66	103	2,054	66	103	2,054	66	66	2,054	66	103	66	66	2,054	66	103	
48	1,194	1,803	127	379	2,945	516	769	3,000	943	14,267	4,033	68	1,987	3,000	3,000	11,490	19,978	3,147	17,546	3,147	17,546	3,147	17,546	
49	651		32	376	1,610	3,000	3,000	318	198	426	7,701	1,241	2,487	90	2,588	6,406	8,502	1,703	384	230	7,974	1,703	384	
50	1,309	27	3	861	3,620	156	1,033	700	532	644	10,756	382	1,638	1,314	17,989	21,333	8,502	6,711	384	827	7,974	6,711	384	
51	1,961		12	246	1,450	425	246	5,350	28	1,234	28	1,234	28	1,234	9,827	11,083	8,502	7,112	2,286	120	9,518	7,112	2,286	
52	5			325	980	175	1,622	239	175	1,622	239	175	1,622	239	239	53,397	49,600	1,808	1,808	1,808	51,408	1,808	1,808	
53	1,191		84	348	3,442	2,651	428	13,540	428	13,540	428	13,540	428	13,540	12,120	8,504	8,504	818	12,337	8,504	13,155	8,504	13,155	
54	3,001		64	48	1,869	658	246	15,423	345	509	7,650	509	7,650	40,000	7,650	8,504	8,504	818	12,337	8,504	13,155	8,504	13,155	
55	388		5	183	2,911	388	5,038	706	68	5,038	706	68	5,038	123	123	8,504	8,504	818	12,337	8,504	13,155	8,504	13,155	
56	449		15	434	2,120	532	4,500	433	394	9,864	196	92	688	68	5,100	5,388	634	8,722	734	2,761	5,690	2,761	5,690	
57	939		19	556	1,434	281	1,261	288	208	4,228	532	1,090	492	69	1,691	1,691	1,691	234	832	94	4,878	1,691	4,878	
58	717			356	1,626	15	800	15	165	4,655	435	181	165	165	7,800	8,722	8,722	2,200	2,200	100	2,200	8,722	2,200	
59	293		113	203	1,187	164	3,876	689	233	3,876	689	233	3,876	689	7,800	8,722	8,722	2,200	2,200	100	2,200	8,722	2,200	
60	1,168	3,718	50	132	1,223	106	1,600	238	306	8,994	233	372	306	372	4,675	5,280	5,280	3,394	5,038	2,247	6,164	3,394	2,247	

VILLAGE MUNICIPALITIES, 1900-1901.—Continued.

No.	Village Municipalities and Counties in which located.	Population 1901.		Assessed value of real and personal property and income taxable, 1901.	Taxes imposed for all purposes, 1901.			Receipts, 1900.										Disbursements, 1900.			
		♂	♀		Total.	Per head.	Millions.	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Returns from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.
61	Hensall, Huron.....	823	216,570	2,292	2 78	10 6	1	2,236	163	2,305	94	94	5	2,305	94	36	97	15			
62	Hintonburg, Carleton.....	2,600	429,179	12,756	4 91	23 7	10, 968	9,352	826	2,814	2,814	2,814	513	54,964	796	2,723	472	440			
63	Ildland, Dundas.....	452	69,865	462	2 13	13 9	95	970	3	1,570	99	99	3	1,570	99	52	52	1			
64	Holland Landing, York.....	1,130	321,400	5,863	5 19	18 2	2,143	4,849	424	2,500	2,500	2,500	2,255	14,646	127	201	2,658	158			
65	Kemptville, Grenville.....	1,590	364,630	7,427	4 95	20 4	2,296	6,273	435	827	827	827	128	10,573	272	230	835	153			
66	Lakefield, Peterborough.....	1,159	330,995	5,601	4 83	16 9	80	4,908	463	1,000	1,000	1,000	48	5,205	346	290	173	145			
67	Lanark, Lanark.....	901	182,735	4,426	3 09	21 2	225	2,438	239	350	350	350	10	2,329	258	95	100	56	13		
68	Lancaster, Gloucester.....	531	77,620	1,643	3 09	21 2	225	2,438	239	350	350	350	10	2,329	258	95	100	56	13		
69	L'Orignal, Prescott.....	1,083	121,775	2,372	4 34	19 8	1,232	3,318	282	114	114	114	1	4,947	216	220	35	8			
70	Lucan, Middlesex.....	920	179,510	3,558	4 20	22 7	2,231	7,743	537	1,561	1,561	1,561	110	12,375	306	1,738	271	53			
71	Lucan, Middlesex.....	986	272,174	6,172	6 20	22 7	2,231	7,743	537	1,561	1,561	1,561	110	12,375	306	1,738	271	53			
72	Madoc, Hastings.....	1,190	317,649	6,353	5 34	20 0	477	3,535	345	7,821	7,821	7,821	90	8,256	342	893	95	97			
73	Markdale, Grey.....	1,025	188,340	3,318	3 24	17 6	477	3,535	345	7,821	7,821	7,821	90	8,256	342	893	95	97			
74	Markham, York.....	1,163	278,919	6,237	5 36	22 4	1,074	6,832	207	913	913	913	25	9,056	146	2,606	147	24			
75	Marmora, Hastings.....	706	85,315	2,554	3 62	23 9	311	4,495	10	1,817	1,817	1,817	1	1,817	115	55	55	6			
76	Maxville, Glengarry.....	700	67,065	1,392	1 99	20 8	311	4,495	10	1,817	1,817	1,817	1	1,817	115	55	55	6			
77	Merrickville, Grenville.....	953	294,250	4,540	4 76	15 4	33	4,868	301	3,800	3,800	3,800	196	21,677	1,090	3,026	815	59			
78	Merriton, Lincoln.....	1,630	662,835	15,267	9 03	22 8	16,803	471	2,824	412	412	412	140	5,406	310	622	382	21			
79	Milbrook, Durham.....	300	185,355	2,865	3 18	14 3	986	3,086	434	820	820	820	53	3,916	145	310	137	27			
80	Milverton, Perth.....	703	145,025	2,542	3 62	17 5	592	2,654	317	3,172	3,172	3,172	68	14,055	285	2,065	413	55			
81	Morrisburg, Dundas.....	1,626	522,735	12,093	7 92	23 1	635	10,447	533	1,872	1,872	1,872	56	2,750	69	29	14				
82	Morrisburg, Dundas.....	381	90,655	1,733	4 55	19 1	640	1,733	114	207	207	207	56	2,750	69	29	14				
83	Newboro', Leeds.....	595	112,445	3,388	5 69	30 1	511	3,051	25	161	161	161	156	1,436	146	83	80	10			
84	Newburg, Lennox & Add'n.....	450	61,410	1,194	2 65	19 4	344	1,194	161	161	161	161	29	6,596	265	170	112	73			
85	Newbury, Middlesex.....	605	191,460	3,828	6 33	20 0	1,985	3,492	436	500	500	500	29	6,596	265	170	112	73			
86	New Hamburg, Waterloo.....	1,201	358,724	7,964	6 11	17 2	5,011	166	525	3	3	3	4	10,453	486	1,413	219	68			
87	Niagara Falls S, Welland.....	1,413	335,730	7,964	5 64	23 7	7,755	166	525	3	3	3	4	10,453	486	1,413	219	68			
88	Norwich, Oxford.....	1,397	318,280	8,132	5 82	25 5	1,273	7,314	453	15	15	15	152	18,772	301	1,774	293	369			
89	Norwood, Peterborough.....	920	228,495	4,959	5 43	21 9	371	4,987	339	181	181	181	196	6,749	184	545	88	81			
90	Oil Springs, Lambton.....	974	244,045	5,114	5 25	21 0	503	5,394	260	48	48	48	318	13,991	418	235	9				



VILLAGE MUNICIPALITIES, 1900-1901.—Continued.

Disbursements, 1900.—Continued.

Assets on December, 31, 1900.

Liabilities on December, 31, 1900.

Table with columns for Disbursements (Streets, bridges and parks, Construction of buildings, water works, etc., Charities, County levy, Payment on account of schools and education, Sinking fund and other investments and deposits, Debentures redeemed, Current loans repaid, Interest on loans, advances and debentures, Total disbursements), Assets (Balance on hand, Taxes in arrears, Sinking fund and other investments and deposits, Waterworks, gas and electric light plants, Miscellaneous), and Liabilities (County levy and school rates, Debentures outstanding, Temporary loans, Miscellaneous, Total liabilities). Rows are numbered 61 to 90.



VILLAGE MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.—Continued.										Assets on December 31, 1900.							Liabilities on December 31, 1900.					
	Streets, bridges and parks.	Construction of buildings, water works, &c.	Charities.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	
91	485			169	957		777	25	86	3,012	187	2,206	500		21,360	900	1,087	1,462	350			350	850
92	1,091		100	266	1,200	195		163	36	3,397	1,388	2,206	500			3,689	7,753	1,462	4,180		169	5,817	1,091
93	1,632		7	541	2,122	545	1,500	113	268	3,715	560	678				20,650	2,833	1,462	1,174			1,300	1,632
94	111			328	2,275				18	3,255	906	1,325				1,705	3,935	1,300	1,174			1,300	1,632
95	375		10		290		525		259	7,011	331	512			368	2,121	2,271	1,300	17,960		428	699	375
96	955	310	52	429	2,000	458	400	713	123	7,011	569	36			1,743	23,708	1,743	17,960				17,960	955
97	685		404	390	1,825	6,500	2,200	550	36	14,297	1,390	860	6,500		1,309	10,036	1,692	12,107		190		13,984	685
98	880		13	513	2,433	702	500	318	58	12,185	493	871			4,600	6,864	457	6,149				6,864	880
99	1,400	412	9	511	2,951	4,152	799	515	297	12,124	1,043	871	1,800		11,295	16,323	1,72	17,116		48		17,386	1,400
100	773	141	60	474	3,851	1,473	524	1,625	153	11,040	387	2,816			13,682	16,885	2,816	33,448		4,651		38,145	773
101	686		3	250	725	140	2,219	87	537	5,201	149	368			59	576	264	302				123	686
102	904		11	170	772		1,200	39	73	3,958	252	809			1,600	2,661	189	302				307	904
103	220			575	507				14	2,291	158	1,056			3,169	3,109	1,110	1,110				363	220
104	143	80	23	638	638	276	500	193	10	2,131	158	1,056	1,062		2,482	4,718	1,425	3,313				4,742	143
106	403		53	250	985	54	300	135	225	3,201	278	66	63		2,482	4,801	1,425	2,846				2,846	403
106	475		3	200	2,422		450		197	4,185	1,053	1,335			1,000	3,388	907	3,313		382		1,813	475
107	3,670	5,797	28	326	3,775	551	4,125	644	386	20,716	419	828			15,448	33,945	663	24,599		3,752		21,842	3,670
108	4,204	15	26	326	2,031	520	900	884	221	10,197	2,056	2,159	10,000		8,000	22,215	2,159	21,842				21,842	4,204
109	1,068			172	454		200	5	100	2,278	263	198			1,881	2,342	2,342	21,842				999	1,068
110	440		207	483	3,746	209	1,060	53	182	6,694	84	1,185	421		3,203	4,803	850	3,750				4,570	440
111	440	33	7	3,212	3,746	816	1,060	1,054	384	6,524	644	215			3,173	29,032	593	24,300				24,988	440
112	244		15	142	588		100	2	130	1,759	80	1,240			1,695	3,236	801	24,300				805	244
113	53			25	30		130	13	290	393	28	13			37	78	78	6,000		30		100	53
114	110		97	588	588	166	400	355	280	2,670	143	1,708	5,664		4,104	7,824	490	6,000		2,514		8,057	110
115	401		59	269	625		400		25	1,521	358	33			6,708	4,495	7,824	6,000				9,465	401
116	461	83	5	294	1,364	185	300	456	217	3,525	315	33	6,708		3,866	10,866	9,465	9,465				9,465	461
117	2,567	301	5	355	1,632	1,860	300	514	189	8,809	1,552	127	3,737		7,373	21,682	10,500	10,500		2,292		13,297	2,567
118	3,137		26	254	1,500	722	3,000	252	244	10,655	408	110			8,800	10,318	1,855	4,084				6,501	3,137
119	310		41	128	794		800	44	66	2,448	63	28			82	173	1,254	27,742				328	310
120	2,357		5	229	968	4,575	892	644	53	27,479	4	2,735	4,638		9,722	34,068	1,254	27,742		218		30,166	2,357

VILLAGE MUNICIPALITIES, 1900-1901.—Continued.

No.	Village Municipalities and Counties in which located.	Population, 1901.	Taxes imposed for all purposes, 1901.			Assessed values of real and personal property and income taxable, 1901.	Receipts, 1900.											Disbursements, 1900.			
			Total.	Per head.	Mills on %.		Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Funds from Sinking investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Commissions, salaries and allowances.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.	Administration of justice, including police service.	
																					§
121	Tiverton, Bruce	446	1,518.3	40.20.5	51	1,898	143	1,500	1,000	753	86	8,678	34	393	12						
122	Tottenham, Simcoe	562	2,824.5	02.20.0	220	2,705	222	1,500	753	3	3,903	121	129	482	1						
123	Tweed, Hastings	1,217	4,121.3	39.17.1	798	4,187	350	1,500	753	96	5,481	175	459	127	16						
124	Vinona, Elgin	333	1,634.4	91.21.3	560	2,059	60	1,500	360	59	2,679	138	58	7							
125	Wardsville, Middlesex	380	1,245.3	77.20.5	196	1,143	140	1,500	360	59	1,898	117	93	8							
126	Waterdown, Wentworth	567	1,785.3	15.13.6	515	1,441	74	1,500	1,000	9	2,111	171	68	15							
127	Waterford, Norfolk	1,043	6,564.6	29.25.2	7	6,681	197	1,500	1,000	9	7,891	354	146	199	27						
128	Watford, Lambton	1,378	6,833.4	36.26.9	212	6,511	628	750	10,751	2,688	258	21,801	601	498	171	14					
129	Wellington, Prince Edward	580	2,385.4	03.11.1	284	2,417	187	750	1,250	439	1,138	173	18	127	9						
130	Weston, York	1,075	6,387.6	31.22.2	7,815	6,477	387	901	4,390	165	16,187	534	1,561	173	9						
131	Winchester, Dundas	1,130	6,362.5	63.26.6	888	5,610	329	888	2,725	170	444	9,990	122	444	183	29					
132	Woodbridge, York	626	1,879.3	01.17.3	354	1,499	162	170	300	170	2,655	170	60	77	6						
133	Woodville, Victoria	513	1,239.2	42.14.8	45	1,720	128	1,500	200	40	2,093	142	4	40	4						
134	Wroxeter, Huron	428	1,184.2	70.10.2	164	1,073	128	5,058	300	800	16	6,875	109	220	32	1					
135	Wyoming, Lambton	749	2,953.3	92.22.1	.....	2,904	321	1,000	1,100	133	4,458	263	160	123	.....						
Town Municipalities and Counties in which located.																					
1	Alliston, Simcoe	1,374	8,450.6	15.26.0	914	7,560	484	271	2,300	436	8,869	2,300	87	12,052	569	660	181	144			
2	Almonte, Lanark	3,638	18,434.6	07.22.8	438	17,907	1,022	.....	.....	.....	8,869	.....	116	30,552	193	1,741.1	204	565			
3	Amherstburg, Essex	2,119	14,628.6	30.31.9	256	14,066	581	3,245	105,074	.....	21,804	.....	528	123,790	1,730	1,941	740	333			
4	Arnprior, Kent	3,897	20,087.5	24.26.6	3,529	17,091	1,854	688	139	21,804	.....	38	44,475	889	1,679	613	539	11			
5	Aurora, York	1,576	8,483.4	38.19.4	420	8,461	241	688	34	4,350	.....	50	14,210	364	1,711	272	14	.....			
6	Aylmer, Elgin	2,186	19,716.9	02.27.9	1,888	17,620	724	34	21	20,751	.....	10	39,360	708	3,789	825	269	.....			
7	Barrie, Simcoe	6,107	40,028.6	60.25.1	.....	39,906	3,252	16,572	14,738	420	10,748	.....	373	85,069	1,340	17,263	2,424	1,243			
8	Berlin, Waterloo	9,914	67,460.6	80.20.2	.....	60,632	3,894	6,293	5,000	398	22,608	18,280	9,053	125,656	3,560	12,897	3,311	700			
9	Blenheim, Kent	1,633	9,212.5	62.21.8	287	12,500	925	585	.....	103	10,450	2,654	883	27,983	805	1,515	821	16			
10	Bowmanville, Kent	900	5,478.6	09.21.9	1,198	3,100	325	585	.....	.....	4,677	2,000	1,014	14,289	1,028	1,367	257	50			
11	Bowmanville, Durham	2,728	21,722.7	66.20.1	51	21,778	1,589	205	.....	.....	40,800	.....	550	64,923	992	2,737	759	1,300			
12	Bracebridge, Muskoka	2,310	10,142.4	39.20.1	492	8,369	741	5,654	9,116	334	11,500	.....	359	19,915	1,915	2,049.1	327	486			

VILLAGE MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.—Continued.										Assets on December 31, 1900.										Liabilities on December 31, 1900.				
	Streets, bridges and parks.	Construction of buildings, waterworks, etc.	Charities.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Investing Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.			
121	391			161	650		1,500	160	4	3,083	589	320				2,908	1,000	1,000				1,500			
122	78	356	9	195	1,100		3,003	210	102	3,718	436					3,718	3,226	3,226	43			3,304			
123	33		30	434	1,307		4,080	633	105	4,860	1,351	2,632	5,000			4,950	1,883	1,883				15,016			
124	409			143	731	91	1,844	132		4,885	855	514	455			1,400	1,800	1,800	210			3,666			
125	150	26		289	736		1,196	239	278	1,889	222	97				1,223	1,000	1,000				671			
126	656		46	177	663		1,127		104	1,889	222	97				1,000	1,000	1,000				9,891			
127	1,233	100	7	674	1,912		949	10,751	688	7,158	356	232				1,000	2,171	2,171				13,679			
128	1,164		73	294	2,606	750	21,431	710	11	21,431	710	165	400			7,759	1,709	1,709				2,550			
129	227		130	369	675		260	1,850	163	4,582	146					750	1,346	1,346				13,679			
130	727	7,640	139	5	2,404		1,661	1,077	22	16,101	86	388				4,728	14,802	1,278	430	950		21,008			
131	2,993		32	1,511	1,511		3,225	565	50	9,492	48					4,030	5,616	215	200	481		9,589			
132	441		20	197	740		154	300	31	2,165	150	672	1,858			3,086	7,432	6,284	854			7,147			
133	434		70	176	636		400	200	9	1,917	180	101				800	1,081	176				9,589			
134	184	119		10	1,127		4,000	375	7	6,814	10	600				5,169	5,888	571				574			
135	330	47	147	176	1,414		169	1,306	65	4,297	161	299				1,575	2,035	365				365			
1	589	400	52	477	1,633	1,336	706		2,331	9,373	2,674	1,132	8,545	19,341		11,298	43,060	1,878				54,057			
2	3,227		605	1,650	6,250		3,000	8,848	2,352	30,529	30	525				59,970	60,483	555	21	807		44,883			
3	9,772		451	625	3,350		2,019	96,826	4,965	423,719		7,339				45,737	96,775	3,126	848	86		98,656			
4	1,803	17,477	390	1,477	7,396	594	1,368	2,700	2,071	39,596	4,869	5,237	34,108	17,000		98,965	90,169	4,015	19,104	300		71,509			
5	759		40	777	3,050		1,298	4,350	1,360	11,045	165	1,907	260	17,800		10,000	29,072	1,000	1,560	78		21,551			
6	4,570	2,461	196	903	4,407		4,922	13,200	7,048	1,042	33,369	1,016				18,680	6,665	30,384	7,751			58,535			
7	6,176	17,362	968	3,689	11,257	35	7,635	6,270	9,257	86,009		6,643	17,742	17,000		50,725	208,946	5,470	213	247		232,231			
8	27,442	9,763	1,743	3,600	18,111		10,558	17,104	13,294	3,280	125,676	2,715				194,835	380,670	295,832	2,406			318,438			
9	744	32	15	601	2,584		2,357	13,754	2,022	25,733	2,250	2,422				20,751	25,424	604	8,842	65		25,440			
10	608	97	512	1,671	6,711		431	4,172	298	14,257	1,722	902				8,065	17,196	8,842	2,590	436		9,467			
11	19,781	574	678	976	6,829	194	1,532	22,906	3,833	64,257	586	1,191	1,727	60,000		41,697	44,341	72,001	23,700			95,781			
12	3,934	7,040	266		2,200	716	8,680	326	3,390	32,767	3,748	1,191	1,727	60,000		15,380	72,040	2,800	11,650			19,614			

TOWN MUNICIPALITIES, 1900-1901.—Continued.

No	Town Municipalities and Counties in which located.	Population, 1901.	Assessed values of real and personal property and income taxable, 1901.			Taxes imposed for all purposes, 1901.			Receipts, 1900.										Disbursements, 1900.				
			%	Total	Per head.	Mills on %	Balance from 1899.	Municipal and school taxes.	Licenses, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures.	Miscellaneous.	Total receipts.	Allowances to commissioners.	Lighting of streets, water supply and fire protection.	Other expenses of municipality.	Admin. of justice.			
																					\$	\$	\$
13	Brampton, Peel	2,813	908,884	21,751	7 73	22.4	2,486	18,807	714	3,531	90	3,807	10,391	287	84,867	1,156	1,748	879	843	Administration of justice.			
14	Brockville, Leeds	8,864	3,451,775	84,401	9 53	24.5	274	81,291	7,826	24,485	6,993	220,198	100,000	1,712	448,131	3,649	27,931	4,504	8,095	Admin. of justice.			
15	Carleton Place, Lanark	4,072	899,570	20,708	5 09	23.0	8,914	21,433	1,781	1,410	94	14,500	2,800	245	49,771	1,147	2,698	1,000	475	Admin. of justice.			
16	Clinton, Huron	2,434	689,902	14,522	5 97	22.4	12,204	13,754	1,410	.....	198	4,433	5,359	346	37,780	904	1,481	816	235	Admin. of justice.			
17	Cobourg, Northumberland	4,349	1,512,942	33,466	7 80	25.1	253	32,873	3,132	3,660	164	23,050	63,900	321	45,402	2,680	3,399	1,970	1,429	Admin. of justice.			
18	Collingwood, Simcoe	5,378	1,578,403	39,987	6 80	22.3	2,174	33,457	3,660	9,651	.....	.....	.....	2,891	139,147	1,974	10,183	3,158	900	Admin. of justice.			
19	Copper Cliff, Nipissing	6,243	1,752,245	44,370	7 11	25.3	.....	37,629	3,890	4,828	1,385	126,304	10,391	187	184,114	1,690	6,883	2,297	2,631	Admin. of justice.			
20	Cornwall, Stormont	3,746	719,465	20,864	5 57	28.0	.....	21,631	1,019	1,439	20	2,900	.....	113	24,222	745	3,587	624	479	Admin. of justice.			
21	Deseronto, Hastings	1,508	393,934	11,119	7 37	28.2	2,249	12,263	889	.....	.....	2,500	.....	169	15,821	447	1,084	273	466	Admin. of justice.			
22	Presden, Kent	3,212	941,945	23,125	7 20	24.6	.....	20,405	887	1,255	1,039	2,500	.....	489	31,589	1,500	2,343	1,048	940	Admin. of justice.			
23	Dundas, Wentworth	2,142	688,560	13,026	5 63	18.9	.....	14,478	514	1,273	.....	5,984	21,000	126	43,375	596	3,008	1,059	350	Admin. of justice.			
24	Dunnville, Halldimand	1,404	341,016	7,393	5 27	21.7	4,885	6,768	559	1,129	186	8,329	10,000	64	26,920	418	645	601	34	Admin. of justice.			
25	Durham, Grey	1,110	384,822	10,390	7 37	27.0	12	10,964	417	1,076	.....	11,500	.....	108	24,677	44	2,149	564	96	Admin. of justice.			
26	Essex, Essex	1,574	331,182	8,881	5 64	26.8	1,233	8,908	610	350	.....	11,707	6,761	359	29,988	330	931	438	247	Admin. of justice.			
27	Forest, Lambton	1,074	1,333,451	41,097	10 63	30.7	2,236	36,304	2,826	14,280	1,722	90,701	38,722	2,841	191,881	1,913	16,683	4,115	1,607	Admin. of justice.			
28	Fort William, Thunder Bay	7,985	2,889,295	55,872	7 00	19.3	.....	54,397	6,919	8,477	1,000	1,039	30,635	59	95,032	1,874	11,283	2,981	844	Admin. of justice.			
29	Galt, Waterloo	3,718	1,105,283	22,504	6 05	20.4	1,792	22,277	2,064	.....	498	16,500	.....	59	43,190	761	2,281	655	1,406	Admin. of justice.			
30	Gananoque, Leeds	4,060	1,197,105	27,982	6 89	23.4	7,463	28,448	899	7,900	1,285	112,500	10,000	384	168,876	1,197	12,155	1,644	445	Admin. of justice.			
31	Gore, Huron	510	126,285	3,171	6 22	25.1	295	3,666	41	.....	.....	.....	.....	701	4,002	216	76	101	19	Admin. of justice.			
32	Gore, Brant	2,375	359,335	12,631	5 44	36.0	533	14,895	406	.....	211	5,673	10,000	.....	32,419	490	877	564	400	Admin. of justice.			
33	Gravenhurst, Muskoka	1,675	454,280	11,631	6 59	24.3	2,691	9,624	843	.....	.....	20,685	.....	459	34,302	800	1,294	400	178	Admin. of justice.			
34	Harriston, Wellington	3,802	291,771	8,891	2 31	35.3	918	8,216	973	.....	43	2,880	.....	741	13,728	276	82	211	429	Admin. of justice.			
35	Hastings, Prescott	2,358	628,465	10,641	4 44	16.9	272	8,800	233	.....	.....	6,000	10,000	313	33,661	445	1,202	966	250	Admin. of justice.			
36	Hespeler, Waterloo	2,021	368,870	9,560	4 93	27.0	169	8,800	490	6,667	.....	.....	.....	17	22,143	833	3,108	749	45	Admin. of justice.			
37	Huntsville, Muskoka	4,459	1,455,485	36,133	7 62	26.7	903	36,303	2,661	3,141	2,430	16,790	14,725	26	76,013	1,663	5,993	1,367	1,147	Admin. of justice.			
38	Ingersoll, Oxford	2,172	606,838	16,193	7 46	26.7	.....	19,176	675	4,354	6,731	2,700	.....	563	36,202	556	5,021	367	379	Admin. of justice.			
39	Kincardine, Bruce	4,579	1,349,453	35,659	7 89	28.0	1,318	34,347	4,742	.....	.....	.....	.....	1,203	22,277	1,713	956	634	10	Admin. of justice.			
40	Kingsville, Essex	2,820	370,636	10,694	5 86	28.9	.....	7,765	629	14,742	.....	279	27,530	18,350	1,317	70,237	801	2,468	793	165	Admin. of justice.		
41	Leamington, Essex	6,259	375,105	19,583	8 19	20.9	633	17,390	629	14,742	1,943	20,809	75,000	1,010	176,584	3,762	10,004	1,995	1,937	Admin. of justice.			
42	Lindsay, Victoria	1,968,000	52,360	7 64	26.9	.....	.....	55,756	3,657	5,375	12,350	.....	.....	.....	.....	.....	.....	.....	.....	.....	Admin. of justice.		
43	Listowel, Perth	2,897	790,595	18,912	7 28	23.9	1,524	17,697	956	.....	162	6,677	10,000	601	37,687	680	2,494	927	365	Admin. of justice.			

TOWN MUNICIPALITIES, 1900-1901.—Continued.

Liabilities on December 31, 1900.

Assets on December 31, 1900.

Disbursements, 1900.—Continued.

No.	Liabilities on December 31, 1900.											Assets on December 31, 1900.											Disbursements, 1900.—Continued.										
	Roads and bridges, streets and parks.	Construction of buildings, waterworks, &c.	Charities.	County levy.	Payments on account of schools and education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.											
13	3,017	188	3-6	986	5,620	466	8,031	3,000	7,718	671	34,169	708	2,539	466	120,000	14,779	138,492	4,600	145,709	3,104	.....	153,413											
14	28,146	110,869	1,625	18,808	18,471	2,981	194,635	94,796	3,405	447,915	5,854	216,823	45,919	125,380	280,505	196,114	634,674	644,159	695,208	50,025	1,019	695,208											
15	4,049	1,391	297	1,703	8,600	2,800	14,700	2,964	1,538	43,877	5,674	781	34,448	.....	24,500	68,304	64,907	64,300	3,516	470	73,683												
16	6,142	300	93	610	4,800	1,994	4,433	2,244	5,693	29,186	3,574	781	34,448	.....	154,009	68,304	59,839	60,389	.....	.....	60,389												
17	6,772	285	711	1,418	3,302	.....	3,980	.....	9,712	974	42,582	1,920	11,590	2,216	112,000	139,004	258,108	1,364	208,456	13,500	2,565	225,875											
18	1,753	3,749	828	2,825	10,919	540	10,567	23,050	14,598	52,575	137,619	1,828	2,916	4,360	112,000	139,004	167,108	1,753	292,459	.....	10,417	304,669											
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	214,681	13,111	260,187	31,572	.....	304,870											
20	7,593	13,043	1,112	1,693	11,236	2,170	10,694	107,410	11,668	3,994	184,114	.....	39,106	19,485	105,936	50,154	214,681	13,111	260,187	.....	.....	304,870											
21	1,911	1,522	182	1,137	6,973	.....	1,880	109	3,141	1,884	24,124	98	154	.....	42,792	8,939	61,913	65,875	.....	.....	65,875												
22	1,192	.....	418	557	1,854	.....	2,476	2,912	3,957	385	13,021	2,860	2,357	.....	36,200	41,337	17,300	17,300	2,200	.....	19,003												
23	4,692	621	742	1,361	6,092	1,866	1,787	8,619	3,980	1,353	31,042	547	29,923	20,683	45,744	79,416	167,313	80,992	2,200	.....	83,102												
24	2,892	5,798	466	720	2,650	10,017	2,600	5,487	1,498	4,807	43,373	4,247	275	10,000	13,500	9,006	26,873	35,473	5,984	1,360	1,360												
25	4,190	.....	111	356	2,105	6,000	2,063	10,760	2,700	1,888	22,673	.....	3,798	.....	5,606	6,600	21,122	35,319	3,473	120	38,912												
26	654	.....	55	465	3,800	350	2,063	10,760	2,700	825	24,556	121	3,798	.....	32,931	15,385	17,729	42,456	4,700	.....	49,658												
27	7,715	.....	103	372	8,000	.....	11,309	11,867	786	532	27,980	2,008	336	.....	15,385	15,385	17,729	19,810	500	.....	19,810												
28	7,503	35,300	542	13,380	13,517	.....	69,736	15,131	8,933	188,440	3,441	30,028	49,168	76,270	127,160	286,067	1,182	221,975	131,991	807	855,955												
29	17,324	5,314	1,617	3,536	18,151	8,966	.....	2,584	11,033	6,502	95,032	1,368	2,406	50,010	157,500	73,507	283,493	278,354	1,039	3,800	282,698												
30	4,653	.....	391	1,291	6,750	2,458	.....	17,500	3,212	1,144	41,822	1,368	1,300	19,148	30,000	30,605	82,321	66,536	3,500	.....	70,844												
31	18,153	7,841	283	.....	8,294	18,312	1,276	83,500	11,135	1,097	168,132	744	4,996	86,875	114,581	73,888	281,086	178,237	76,000	.....	265,222												
32	358	200	.....	.....	637	.....	856	127	96	2,718	.....	1,284	3,363	.....	2,330	3,813	885	1,850	113	.....	2,872												
33	1,846	3,100	177	4,442	93	.....	11,573	1,821	1,018	29,232	3,187	1,768	93	.....	17,836	22,884	22,884	32,718	4,545	39,867	39,867												
34	1,122	.....	23	1,002	3,924	.....	612	10,400	1,293	924	31,972	2,330	3,445	.....	12,800	18,575	18,575	80,214	13,977	250	45,269												
35	2,427	.....	.....	645	4,085	.....	3,679	363	416	19,731	997	3,111	.....	.....	479	4,687	7,320	212	1,000	212	9,679												
36	3,159	4,980	103	626	3,159	.....	11,700	545	170	27,836	5,825	670	.....	11,654	12,621	80,677	17,468	3,000	7,198	4,000	27,636												
37	3,479	2,811	24	2,447	.....	.....	1,016	5,000	1,930	250	21,780	363	1,364	.....	38,664	1,444	41,835	30,947	4,000	.....	39,307												
38	9,949	.....	597	2,196	9,887	5,619	579	22,700	9,479	3,357	76,013	8,821	4,411	16,249	55,375	89,353	146,416	165,193	16,790	.....	181,983												
39	823	.....	175	963	4,688	8,221	1,219	2,700	3,674	1,695	33,182	3,020	5,411	16,249	115,455	34,800	70,947	70,947	2,555	.....	77,490												
40	4,376	2,807	73	225	2,172	.....	4,427	500	418	20,344	1,843	4,998	.....	45,000	10,376	68,717	41,790	1,774	6,300	1,178	52,414												
41	1,084	6,982	286	.....	5,861	.....	4,465	40,718	5,438	589	50,046	1,911	8,598	.....	60,000	32,210	93,969	96,734	6,300	1,086	108,827												
42	26,478	79,345	738	6,222	14,308	14,393	4,082	1,700	11,316	2,746	175,635	898	12,947	47,481	77,688	80,085	219,049	282,197	45,499	.....	332,381												
43	4,150	759	475	485	4,478	11,839	873	1,671	4,688	642	34,882	2,805	2,299	17,397	9,000	13,927	45,428	110,200	6,677	.....	116,877												

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TOWN MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.—Continued.										Assets on December 31, 1900.										Liabilities on December 31, 1900.				
	Streets bridges and parks.	Construction of buildings, waterworks, etc.	Charters.	County levy.	Payment on account of schools and education.	Sinking Fund and other investments and deposits.	Debtures redeemed.	Current loans repaid.	Interest on loans, advances and debtures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school rates due and unpaid.	Debtures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.			
44	171	.....	14	.....	800	.....	186	.....	146	150	1,926	488	589	.....	2,503	3,680	1,910	2,215	.....	.....	.....	2,372			
45	535	.....	2	.....	4,466	120	658	2,000	1,603	77	11,256	291	8,883	2,123	11,032	22,329	1,910	28,341	1,064	.....	.....	31,345			
46	420	284	124	829	4,290	.....	3,298	46,000	4,914	55,276	120,310	.....	1,018	20,000	26,560	47,518	1,910	82,691	518	.....	.....	83,289			
47	2,191	225	134	783	8,989	.....	1,855	17,400	2,732	479	37,352	1,247	1,022	.....	16,000	31,966	40,307	5,040	.....	.....	.....	45,507			
48	534	.....	20	401	1,705	10,369	1,676	3,200	2,110	382	22,943	3,914	1,459	13,833	23,800	8,420	50,966	40,307	5,040	.....	.....	49,793			
49	9,212	130	344	398	3,988	929	993	52,940	2,141	548	78,073	602	460	4,239	24,000	13,801	39,732	38,693	9,940	.....	.....	5,313			
50	10,628	487	65	1,137	4,741	3,181	1,680	97,710	4,844	215	69,034	1,343	209	11,943	30,000	33,000	76,485	870	.....	.....	.....	113,064			
51	2,967	85	827	2,450	6,110	.....	13,967	1,500	3,786	427	38,756	4,974	13,364	.....	22,315	60,653	9,175	60,462	.....	.....	.....	976			
52	1,373	1,900	166	839	3,841	75	2,204	5,200	2,797	318	19,871	68	1,436	.....	51,500	20,104	73,983	2,339	55,320	.....	.....	80,610			
53	1,458	.....	55	.....	2,451	.....	2,204	5,200	2,797	318	19,871	68	1,436	.....	51,500	20,104	73,983	2,339	55,320	.....	.....	57,569			
54	34,183	8,038	1,107	.....	11,803	.....	9,825	34,952	16,665	4,363	146,513	24,417	13,632	.....	197,776	250,847	476,622	286,161	57,968	25,000	.....	304,129			
55	2,290	3,498	386	.....	3,833	2,512	150	9,450	4,030	4,434	36,053	629	13,750	17,572	45,691	20,648	97,461	77,305	8,599	3,446	.....	89,260			
56	2,185	22	124	.....	5,341	.....	2,469	1,500	5,080	478	22,879	.....	15,358	48,241	2,160	66,388	3,373	55,496	8,800	.....	.....	30,721			
57	1,628	357	133	973	3,700	2,306	4,000	2,414	2,414	589	18,675	.....	4,038	13,292	29,317	48,441	4,637	29,500	8,837	.....	.....	128,738			
58	4,722	943	156	.....	5,734	2,366	2,867	16,000	5,572	779	47,889	.....	9,636	25,000	102,900	77,377	227,304	10,781	218,342	4,113	.....	229,673			
59	4,340	27,262	547	1,926	17,263	26,000	8,457	10,221	10,221	1,745	112,287	12,291	1,973	50,000	19,451	71,425	18,941	88,387	2,504	.....	.....	91,522			
60	5,766	300	850	1,070	9,184	50,000	3,157	8,860	1,781	5,871	85,810	19,843	38,698	106,745	117,085	131,760	14,131	18,941	519,150	61,996	702	690,789			
61	23,484	2,451	1,112	3,115	32,682	16,782	3,228	11,830	26,339	1,012	140,512	.....	4,203	26,501	7,638	38,342	.....	86,910	4,922	.....	.....	49,619			
62	962	.....	99	1,770	4,009	234	1,701	2,300	3,600	149	16,230	45	141	5,780	59,021	54,000	118,957	.....	49,619	.....	.....	49,619			
63	1,952	824	371	1,284	12,423	750	7,284	14,039	8,105	1,083	52,771	371	1,307	5,130	12,379	19,178	.....	503	14,200	.....	.....	14,703			
64	1,871	921	292	412	2,925	603	400	2,300	801	373	11,532	145	3,142	.....	37,957	48,964	407	34,567	3,900	.....	.....	38,991			
65	1,210	.....	292	.....	4,435	.....	881	18,200	2,836	818	3,743	.....	27,657	6,960	61,140	48,226	188,983	17,783	129,325	7,718	.....	159,593			
66	5,628	2,137	3	2,392	9,454	2,402	5,112	1,182	2,836	1,035	45,865	.....	1,728	3,158	38,000	45,474	64,933	1,611	54,164	6,968	.....	68,157			
67	1,000	102	189	584	3,507	2,519	1,988	1,000	3,157	221	20,049	6,063	1,238	.....	26,927	34,228	4,400	19,800	.....	.....	.....	24,892			
68	5,100	.....	468	775	7,567	.....	3,800	.....	1,249	245	25,725	.....	1,238	.....	316,733	425,571	.....	286,045	85,839	.....	.....	377,745			
69	22,744	4,867	2,185	1,265	27,705	21,506	8,948	28,820	12,358	2,839	162,800	1,125	31,745	186,898	51,332	271,031	10,702	211,214	25,608	2,217	.....	249,744			
70	4,529	1,404	986	2,429	11,163	.....	1,659	23,041	10,451	1,908	89,863	2,473	17,367	53,947	12,117	71,307	3,125	48,079	1,478	.....	.....	53,801			
71	5,698	13,775	936	2,429	7,875	.....	1,659	23,041	10,451	1,908	89,863	2,473	17,367	53,947	12,117	71,307	3,749	25,127	84,076	1,810	.....	293,903			
72	3,677	3,133	536	.....	3,168	4,370	12,900	12,636	4,129	1,619	92,195	2,473	17,367	31,431	12,117	40,747	3,749	25,127	84,076	1,810	.....	293,903			
73	3,048	3,714	451	1,351	8,700	902	1,503	10,476	1,613	1,298	95,162	1,798	3,268	19,212	60,104	196,809	287,341	228	834	11,800	1,212	241,846			
74	2,456	56,801	372	.....	6,015	.....	2,574	14,074	6,632	10,066	131,698	8,464	12,566	114,353	53,663	191,652	3,228	152,410	1,640	.....	.....	157,278			

TOWN MUNICIPALITIES, 1900-1901.—Continued

No.	Town Municipalities and Counties in which located.	Population, 1901.	Assessed values of real and personal property and income taxable, 1901.			Taxes imposed for all purposes, 1901.			Receipts, 1900.											Disbursements, 1900.			
			Population, 1901.	Assessed values of real and personal property and income taxable, 1901.	Total.	Per head.	Mills on %	Total.	Per head.	Mills on %	Balance from 1899.	Municipal and school taxes.	License, fees, rents, fines, etc.	Water, gas and electric light rates.	Refunds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses.	Borrowed on debentures	Miscellaneous.	Total receipts.	Advances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Other expenses of municipal government.
75	Preston, Waterloo	2,219	684,216	11,387	5.06	16.0	1,043	11,167	564.1	2,451	272	9,720	8,500	695	34,412	621	1,771	1,091	198	621	1,771	1,091	198
76	Rat Portage, Rainy River.	4,797	1,679,973	51,306	10.70	30.7	57	45,941	9,649	7,025	4,249	174,629	11,000	2,011	27,891	2,768	10,759	3,659	2,419	2,768	10,759	3,659	2,419
77	Renfrew, Renfrew	3,298	1,045,980	21,949	6.72	21.0	352	19,769	1,212	4,824	105	23,978	11,000	148	67,874	650	3,294	1,654	640	650	3,294	1,654	640
78	Ridge-town, Kent.	2,494	674,120	15,793	6.33	23.4	352	10,801	1,428	1,751	33	41,753	730	442	57,289	463	2,372	704	470	463	2,372	704	470
79	St. Marys, Perth	3,410	1,204,345	30,321	8.83	25.2	352	28,400	1,808	557	15,517	51	12,500	15,000	1,813	75,157	698	3,301	1,863	813	698	3,301	1,863
80	Sandwich, Essex	1,435	440,046	7,970	5.55	18.9	352	7,362	641	1,417	2	5,600	2,500	17,522	428	2,470	1,435	107	428	2,470	1,435	107	
81	Sarnia, Lambton	8,012	2,257,987	60,094	7.50	26.5	352	54,087	2,450	15,929	452	64,452	62,464	1,333	298,882	3,112	14,332	2,221	3,016	3,112	14,332	2,221	3,016
82	Sault Ste. Marie, Algoma.	6,323	2,923,275	47,147	7.46	16.1	352	35,073	1,212	720	6,600	13,132	93,000	2,043	148,711	1,208	12,005	603	1,032	1,208	12,005	603	1,032
83	Simcoe, Huron.	2,280	944,130	15,492	6.80	24.0	352	14,575	1,176	720	6,600	1,010	18,583	969	46,006	1,137	3,180	942	325	1,137	3,180	942	325
84	Simcoe, Norfolk	3,007	944,130	22,807	7.60	24.2	352	22,821	1,053	3,433	969	33,129	969	963	57,958	979	4,003	616	581	979	4,003	616	581
85	Smith's Falls, Lanark	5,419	1,226,635	29,439	5.43	24.0	352	25,369	1,941	3,433	969	319,170	186,898	6,187	46,795	836	4,818	974	568	836	4,818	974	568
86	Stayner, Simcoe	1,204	213,450	5,246	4.36	24.6	352	4,662	415	402	35	16,145	5,845	602	43,789	945	2,929	872	418	945	2,929	872	418
87	Strathroy, Middlesex.	2,908	585,062	19,702	6.79	21.0	352	20,040	1,101	1,101	35	16,145	5,845	602	43,789	945	2,929	872	418	945	2,929	872	418
88	Sturgeon Falls, Nipissing.	1,298	285,757	11,075	8.53	39.0	352	8,859	790	6,371	12	10,636	354	12	10,636	240	300	354	61	240	300	354	61
89	Sudbury, Nipissing	1,906	341,403	7,831	7.15	40.5	615	11,316	2,137	6,371	12	10,636	354	12	10,636	240	300	354	61	240	300	354	61
90	Thessalon, Algoma	966	188,045	4,831	6.40	30.8	255	4,313	312	1,079	56	8,872	13,500	1,225	11,065	1,040	8,102	1,981	15	1,040	8,102	1,981	15
91	Thornbury, Grey	753	293,055	4,198	5.58	18.1	1,519	4,419	100	1,079	56	8,872	13,500	1,225	11,065	1,040	8,102	1,981	15	1,040	8,102	1,981	15
92	Thorold, Welland	2,211	623,052	14,644	6.62	23.5	1,588	16,074	1,650	1,835	56	15,800	3,000	351	27,166	697	2,016	697	505	697	2,016	697	505
93	Tilsonburg, Oxford	2,117	741,950	16,947	8.05	22.8	1,588	16,704	1,650	1,835	56	15,800	3,000	351	27,166	697	2,016	697	505	697	2,016	697	505
94	Toronto Junction, York	6,038	2,118,910	51,315	8.60	23.4	3,200	59,410	1,984	14,141	807	110,722	110,722	6,373	110,722	2,075	15,349	5,517	4,244	2,075	15,349	5,517	4,244
95	Trenton, Hastings	4,176	1,031,300	24,486	5.86	22.2	1,318	25,388	1,804	2,659	626	105,030	117	117	136,452	1,190	2,054	2,680	1,389	1,190	2,054	2,680	1,389
96	Uxbridge, Ontario.	1,578	501,300	12,676	8.03	25.3	45	12,134	902	1,835	162	15,200	3,000	49	28,492	488	1,175	1,62	443	488	1,175	1,62	443
97	Vankleek Hill, Prescott	1,259	429,550	6,425	4.98	15.0	688	4,928	556	797	12	1,080	308	12	1,080	308	44	141	18	308	44	141	18
98	Walkerton, Bruce	3,049	767,913	16,423	5.39	21.2	370	22,622	1,296	1,977	7,978	44,174	11,840	2,103	105,520	720	2,606	1,837	325	720	2,606	1,837	325
99	Walkerville, Essex	2,532	1,015,046	25,724	16.18	21.2	1,161	27,469	580	580	53	42,437	3,150	81	42,437	1,879	3,117	1,005	2,000	1,879	3,117	1,005	2,000
100	Wallaceburg, Kent	2,830	527,480	15,036	5.63	30.2	11,920	11,920	564	580	53	42,437	3,150	81	42,437	1,879	3,117	1,005	2,000	1,879	3,117	1,005	2,000
101	Waterloo, Waterloo	3,574	1,448,115	28,105	7.86	19.4	1,663	23,097	1,085	3,538	119	97	16,736	16,243	962	61,877	1,747	5,394	1,687	962	61,877	1,747	5,394
102	Welland, Welland	1,944	441,475	17,841	8.18	27.2	1,663	15,959	618	3,404	11,000	413	1,628	76,003	1,381	2,777	1,687	175	1,381	2,777	1,687	175	
103	Willy, Ontario	2,289	496,510	17,602	7.86	20.8	36	26,121	1,051	884	3,395	305	18,941	101	40,070	431	2,455	578	317	431	2,455	578	317
104	Warton, Bruce	2,286	439,733	10,836	4.79	24.9	1,452	13,765	1,113	409	1,369	86	9,300	14,803	545	42,842	649	1,420	508	649	1,420	508	
105	Wingham, Huron	2,192	605,897	13,904	6.34	22.9	1,452	13,765	1,113	409	1,369	86	9,300	14,803	545	42,842	649	1,420	508	649	1,420	508	

TOWN MUNICIPALITIES, 1900-1901.—Continued.

No.	Disbursements, 1900.—Continued.										Assets on December 31, 1900.										Liabilities on December 31, 1900.				
	Streets, bridges and parks.	Construction of buildings, waterworks, &c.	Charities.	County levy.	Payment on account of schools and education.	Sinking fund and other investments and deposits.	Debentures redeemed.	Current loans repaid.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Balance on hand.	Taxes in arrears.	Sinking fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous.	Total assets.	County levy and school funds due and unpaid.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.			
75	3,628	1,620		822	3,662		2,646	10,010	1,839	4,816	32,618	1,794	39	4,000		14,015	19,848	1,300	37,546	2,710	1,000	42,676			
76	40,467	16,917	729		17,706	519	7,868	91,824	11,038	2,911	231,994	5,897	17,282	519	89,137	104,500	217,339	8,759	168,390	110,466	1,144	288,095			
77	14,430	6,033	941	1,127	8,533	1,524	3,283	16,534	5,925	5,201	63,974	17,713	3,850	93,336	15,359	131,238	4,723	117,460	23,976	857	147,022				
78	1,157	1,200	227	1,728	5,800	761	2,855	35,500	3,688	36,678	57,989	7,746	7,746	840	11,900	20,486	803	64,359	6,253		71,475				
79	4,016	18,666	384		6,640	3,351	5,722	14,471	5,645	2,251	67,741	7,386	1,353	8,851	48,970	36,510	98,160	92,661		111	92,672				
80	1,151	837	883	448	1,800	355	355	5,166	1,786	227	16,253	1,229	7,033	8,851	19,000	12,689	39,951	26,817	5,806	1,234	35,609				
81	24,797	31,473	2,637	2,270	15,770	3,682	17,804	60,424	4,273	5,018	200,869	8,013	1,272	33,931	125,000	122,282	290,498	288,622	29,345	6,075	324,042				
82	6,207	2,206	448		6,843	910	93,275	20,672	3,132	148,711	1,091	10,855	278,011	30,732	319,598			390,572	6,753	17,243	414,608				
83	6,886	20	31	577	5,100	9,000	13,383	2,859	1,435	44,915	1,091	1,824	36,300	13,000	19,800	71,615		43,000	8,900	230	62,130				
84	2,611	15	247	1,891	5,960	4,560	5,294	4,930	1,472	33,129	2,124	2,124	2,535		95,639	27,763		69,885	8,592	202	78,679				
85	11,492	94,615	180	2,128	8,450		7,470	337,217	12,901	3,989	485,648	61,147	2,278		97,500	61,360	250,532	231,880		3,334	238,214				
86	356		23	522	1,840		445	3,005	1,038	206	3,033		1,278		25,000	2,561	28,229	23,127	860		25,377				
87	4,200		127	1,172	9,335		3,088	21,017	2,513	773	43,789		1,278		25,000	2,561	28,229	23,127	860		25,377				
88	1,760	3,696	80		790		268	1,800	429	750	10,625	11	3,445		14,000	1,400	18,156	37,963	1,146	100	40,360				
89	1,381	1,297	308		3,009	100	207	14,334	956	428	33,456	1,069	8,812		14,000	1,400	18,156	59,229	4,201	13,240	25,243				
90	632	3,317	52		1,521		208	1,612	1,772	279	9,904	1,152	333		20,000	5,000	26,793	59,229		2,912	62,141				
91	1,972		8	285	1,627	180	279	1,500	298	129	7,423	734	330		20,000	5,000	26,793	14,870	3,744		18,614				
92	1,861		284	946	4,856		1,419	5,000	2,087	1,616	56,319	847	4,241		17,000	18,500	40,188	5,048		731	6,595				
93	6,513		186	1,141	5,814	7,491	2,201	7,000	5,083	481	39,006	1,820	1,853		17,000	18,500	40,188	11,104		626	15,466				
94	7,581	3,121	685		14,258	3,484	2,000	5,000	10,338	8,968	82,679	28,043	22,615	3,408	374,000	527,385	759,001	1,065,650		6,200	1,081,250				
95	5,446		906		6,271	1,459	4,738	104,030	8,471	1,028	35,400	1,052	3,886	9,826	15,000	17,807	177,596	146,744	13,420	13,393	175,347				
96	1,363	431	481		2,272	1,459	1,459	15,000	2,476	279	28,320	163	8,386	9,826	10,000	15,447	38,381	33,900	3,297	175	43,372				
97	698		5	539	3,600		105	700	116	1,152	6,007	1,825	2,502		35,000	37,500	100,355	2,794	1,680	5,760	111,947				
98	7,862	2,452	272	1,058	6,043	299	10,598	128,440	5,250	1,473	164,195	3,625	6,114	20,542		37,500	100,355	105,160	9,902	2,130	117,192				
99	6,229		316		3,583		13,334	2,888	1,483	36,298	7,139	4,017	5,000		28,444	35,630		29,892		1,465	31,357				
100	5,707	75	165	681	4,680		2,235	12,957	3,003	3,285	45,963	5,762	10,017		16,400	37,179	684	68,863	15,941	4,236	85,568				
101	6,908	12,968	632	1,609	6,340	488	3,423	14,464	4,864	1,569	61,877		1,700	1,297	50,000	75,941	128,968	118,204	4,241	2,814	131,854				
102	21,005	6,164	37	822	18,555	13,407	1,644	3,225	4,037	478	72,199		13,701	57,063	25,773	104,725	3,100	102,798	60,360	2,241	108,069				
103	2,388	50	316	796	7,318		883	44,065	3,225	207	63,856	3,694	4,251		4,000	22,280	38,568	40,360	7,450	679	68,489				
104	2,234	3,424	20	374	3,761	5,015	1,249	19,369	3,207	1,061	43,886	5,185	1,037	12,415	29,000	8,775	56,412	71,801	3,000	10,000	85,256				
105	4,998		241	399	3,550	2,726	1,408	9,340	5,301	8,855	39,777	3,665	329	11,582	18,700	18,616	59,292	50,521		1,781	92,302				

STATISTICS OF CITY MUNICIPALITIES OF ONTARIO.

POPULATION, AREA, ASSESSMENT AND TAXATION, 1901.

RECEIPTS, DISBURSEMENTS, ASSETS AND LIABILITIES, 1900.

No.	City Municipalities and Counties in which located.	Population in 1901.	Assessed values of real and personal property and income taxable for 1901.			Taxes imposed for all purposes, 1901.			Receipts, 1900.							Disbursements, 1900			
			§	§	§	Total.	Per head.	Mills on %	Municipal and school taxes.	Licenses, fees, rents, fines; water and electric light rates, etc.	Funds from Sinking Funds and other investments.	Interest and dividends.	Borrowed for current expenses and on debentures.	Miscellaneous, including balance from 1899.	Total receipts.	Lighting of streets, water supply and fire protection.	Salaries of officers, other expenses of civic government.	Administration of justice, including police service.	
																			§
1	Belleveille.....	Hastings ..	10,104	3,902,573	87,809	8 69 22.5	89,825	27,959	10,235	267,815	9,298	404,832	28,869	8,184	5,016				
2	Brantford .....	Brant .....	16,589	7,240,705	146,111	8 81 20.2	134,261	41,102	37,427	112,621	14,381	339,642	45,811	11,379	7,725				
3	Chatham .....	Kent .....	8,658	3,596,777	99,426	11 48 27 6	104,246	15,894	94	88,791	7,305	216,330	17,316	7,249	6,510				
4	Guelph .....	Wellington	11,271	3,778,060	89,242	7 92 23.6	98,154	20,171	10,938	12,416	21,792	163,471	20,118	6,195	8,934				
5	Hamilton.....	Wentworth	53,781	27,100,825	538,314	10 09 19.9	536,072	234,641	27,123	609,233	66,346	1,473,415	117,563	54,431	62,232				
6	Kingston ....	Frontenac .	18,260	7,516,043	149,839	8 21 19.9	141,802	41,974	4,491	77,576	47,395	313,238	26,821	18,044	14,481				
7	London .....	Middlesex .	39,183	17,291,918	437,552	11 17 25.3	423,111	118,465	53,510	789,414	5,290	1,889,760	86,519	36,862	43,480				
8	Ottawa .....	Carleton ..	60,989	25,063,340	576,265	9 35 22.7	589,080	215,514	145,953	395,816	10,580	1,357,573	133,666	44,896	51,090				
9	St. Catharines.	Lincoln.....	10,485	4,580,180	100,294	9 57 21.9	100,702	31,335	31,439	80,658	3,267	247,401	30,285	12,654	5,227				
10	St. Thomas....	Elgin.....	11,903	4,063,535	128,991	10 84 28.2	132,435	24,073	4,874	489,208	16,175	666,765	26,182	12,951	4,661				
11	Stratford .....	Perth .....	10,451	4,003,535	99,578	9 53 24.9	96,752	4,390	28,572	92,783	4,372	226,869	13,729	8,726	4,478				
12	Toronto .....	York .....	205,887	130,339,865	2,903,113	14 10 22.3	2,945,505	758,679	937,871	1,192,862	491,044	6,825,961	495,641	177,710	335,298				
13	Windsor .....	Essex .....	12,642	5,305,863	142,303	11 26 26.8	148,081	38,915	35,694	112,201	1,516	336,307	31,412	8,797	8,189				
14	Woodstock ....	Oxford .....	9,257	2,761,650	65,399	7 06 23 7	60,384	23,377	37,651	64,369	19,219	204,940	21,040	4,506	2,406				

## STATISTICS OF CITY MUNICIPALITIES OF ONTARIO.—Continued.

## POPULATION, AREA, ASSESSMENT AND TAXATION, 1901.

## RECEIPTS, DISBURSEMENTS, ASSETS AND LIABILITIES, 1900.

No.	Disbursements, 1900.—Continued.						Assets on December 31, 1900.						Liabilities on December 31, 1900.			
	Streets, bridges, parks, buildings, water-works and electric light plant.	Payment on account of schools and education.	Sinking Fund and other investments.	Repayment of debentures, temporary loans and deposits.	Miscellaneous, including Board of Health expenses, charities, etc.	Total disbursements	Taxes in arrears.	Sinking Fund and other investments and deposits.	Waterworks, gas and electric light plant.	Miscellaneous, including balance on hand.	Total assets.	Debentures outstanding.	Temporary loans.	Miscellaneous.	Total liabilities.	
1	14,022	16,232	48,915	268,941	14,373	404,562	85,703	107,532	180,725	183,425	557,445	503,115	261,149	.....	704,264	
2	112,449	33,475	38,906	72,154	15,072	338,571	3,134	336,208	317,509	522,288	1,179,184	1,059,760	65,979	26,107	1,151,846	
3	49,296	20,399	1,600	99,900	9,692	211,962	32,666	2,703	*203,917	356,949	566,235	581,611	115,427	3,201	703,239	
4	24,554	26,423	21,108	42,638	8,307	158,277	12,925	564,545	147,711	197,413	722,594	606,726	22,000	4,582	633,308	
5	473,029	155,470	147,923	356,401	101,462	1,468,511	338,468	487,739	1,952,452	2,061,701	4,813,360	3,954,394	186,958	18,291	4,154,643	
6	38,259	35,160	42,219	115,524	10,169	300,667	54,082	97,540	334,406	311,614	807,642	973,670	48,395	23,783	1,016,448	
7	198,713	109,141	201,436	661,602	40,070	1,378,323	49,367	1,587,663	849,819	616,546	3,053,395	3,008,150	154,722	67,555	3,230,727	
8	352,859	129,187	252,148	250,452	189,456	1,353,854	553,300	1,636,015	2,000,000	1,342,187	5,531,602	4,932,829	542,940	211,774	5,687,543	
9	45,692	24,325	13,056	105,742	11,759	246,140	35,227	68,895	360,104	277,432	741,658	864,523	61,858	7,282	933,663	
10	36,407	25,723	16,183	521,468	9,235	652,810	27,031	105,240	†152,000	379,551	663,822	607,504	32,000	12,697	651,301	
11	34,347	22,750	30,556	59,301	12,168	226,055	30,133	86,320	.....	100,640	217,003	473,421	35,031	4,726	514,178	
12	1,287,408	786,512	522,834	2,250,225	214,449	6,170,047	884,919	5,432,991	4,349,385	12,228,554	22,895,849	21,231,245	1,101,162	1,288,602	23,621,009	
13	32,379	29,715	82,190	182,734	10,864	336,280	54,155	223,723	†275,000	202,043	754,921	755,818	49,579	4,751	810,148	
14	25,959	16,351	11,218	106,058	6,871	194,609	11,454	158,469	168,314	101,023	439,260	465,723	16,178	3,778	485,679	

\* Including \$17,000 for light plant.

† Including \$2,000 for light plant.

‡ Including \$25,000 for light plant.

## FINANCIAL STATEMENT.—

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

No.	Counties	Receipts, 1900.											
		Balance from 1899.	Rates from local municipalities.	Licenses.	Fees, rents, tolls, fines, etc.	Surpluses from Registrar.	Interest and dividends.	From Legislature for Schools.	From Legislature for Administration of Justice.	Refund of moneys loaned or invested.	Money borrowed for current expenses.	Money borrowed on debentures.	Non-resident taxes collected.
1	Brant	11,779	14,482	135	265	42	288	1,965	3,850				177
2	Bruce	6,845	34,937	1,040	171	2,049	73	5,225	3,242	6,000	10,000		2,750
3	Carleton		24,295	273	404	388	1,079	3,608	6,258		43,539	15,000	1,000
4	Dufferin	69	16,845	528	171	4	474	2,408	977	7,561	1,500		412
5	Elgin	8,882	31,101	476		333	191	3,874	3,245		40,000		289
6	Essex	2,656	30,100	180	191	1,445	151	3,893	5,262		31,500	16,000	5,014
7	Frontenac	137	31,869	215	2,811	15	80	2,715	2,674		17,783		1,086
8	Grey	1,426	47,108	683	124	516	863	6,615	2,547				1,429
9	Haldimand	1,426	19,117	90		65	2	1,958	2,058				126
10	Haliburton	496	6,077	52	145			2,738	150		5,000		503
11	Halton	5,744	9,010	223	24		63	1,737	1,530		3,200		168
12	Hastings	74	47,486	250	469	591	2,868	4,692	4,170	23,024	39,258		1,939
13	Huron	596	35,868	1,385	42	2,718	816	6,052	3,011	3,275	16,760		262
14	Kent	189	32,087	410	2,437	1,276	52	4,038	7,167	16,000	24,121		1,534
15	Lambton	2,117	32,643	258	2	1,375	202	4,519	3,458		10,000		4,660
16	Lanark		18,673	230	51			2,987	2,553		17,236		250
17	Leeds and Grenville	191	26,330	388	43		810	4,353	4,116			15,000	402
18	Lennox and Addington	9,457	27,535	332	110		197	2,763	1,851				38
19	Lincoln	1,839	21,155	348	38	188	389	1,841	3,043		5,000		2,085
20	Middlesex	26,620	58,992	240	85	222	1,344	5,671	10,397	67		20,000	1,164
21	Norfolk	118	26,121	134	134		14	2,894	1,778				989
22	Northumberland & Durham	2,509	43,729	708	94	17	218	5,539	2,685		10,000		889
23	Ontario	15,041	18,722	298	16	244		3,905	2,347		39,000		512
24	Oxford	30,462	48,385	562	94	672	687	3,943	2,268				151
25	Peel		17,797	240	36		8	2,181	3,441		13,000		203
26	Perth	19,476	36,857	482	160	41	523	3,697	3,502		10,000		178
27	Peterborough	6,868	15,765	355	124		230	3,055	1,237	100	13,043		821
28	Prescott and Russell	782	13,404	260	169		160	2,406	993		2,940		4,083
29	Prince Edward	446	16,636	135	92		15	1,872	1,774		1,189		27
30	Renfrew	5,837	19,113	310	39	52	268	5,420	1,804				688
31	Simcoe	10,717	52,987	575	333	1,837		7,657	4,667		15,000		3,008
32	Stormont, Dundas and Glengarry	386	23,843	1,466	247		138	6,094	2,039		4,000	1,491	1,314
33	Victoria	665	20,368	544	1,812	31		3,303	1,410		14,000		1,433
34	Waterloo	66	29,208	377	55	560		2,726	2,952		27,698	5,000	23
35	Welland	4,240	20,361	231	39	557		2,325	3,420		5,733		764
36	Wellington	20,625	53,163	334	50		187	4,412	3,538		20,000		895
37	Wentworth	23,208	21,181	149	776	803	851	3,088	5,728	12,372			243
38	York		55,937	310	452	90		4,895	21,543		31,930		1,148

COUNTY MUNICIPALITIES, 1900.

of the county municipalities of Ontario for the year ending December 31, 1900.

Receipts.—Continued.			Disbursements, 1900.									
Towns or cities separated from county, for various services.	Miscellaneous.	Total receipts.	Attendance at meetings of council and committees.	Allowances, salaries and commissions.	Printing, advertising, postage and stationery.	Insurance, heating, lighting and care of buildings.	Law costs (including salaries).	Other expenses	Roads and bridges.	Grants to local municipalities for roads and bridges.	Buildings and other works.	No.
%	%	%	%	%	%	%	%	%	%	%	%	No.
3,401	76	41,460	629	1,479	686	2,027	200	394	32	977	6,090	1
1,689	74,021	944	3,590	683	1,068	147	169	2,523	4,300	.....	.....	2
12,500	5,084	113,428	1,191	2,308	130	81	751	755	8,423	.....	161	3
216	31,165	876	1,218	353	617	103	1,547	115	.....	.....	.....	4
3,950	1,262	92,603	999	2,480	446	1,584	141	512	20,174	108	13,937	5
4,460	3,959	100,381	693	2,620	646	701	100	168	674	.....	25,497	6
14	63,859	841	1,725	593	75	39	666	2,258	75	.....	.....	7
539	60,424	1,159	2,180	519	1,356	187	135	2,250	118	.....	654	8
8	24,870	662	1,126	354	394	.....	94	438	175	.....	.....	9
64	15,225	236	625	332	71	.....	31	194	.....	.....	.....	10
.....	21,699	265	1,029	323	344	.....	832	647	.....	.....	.....	11
4,360	238	129,419	1,255	3,310	504	324	.....	.....	16,246	6,118	.....	62
449	71,231	999	2,950	713	722	.....	9	82	5,754	.....	507	13
4,921	6,208	100,440	1,799	2,485	444	2,237	243	96	10,554	510	7,640	14
.....	741	50,975	748	2,840	569	2,075	38	708	3,328	150	353	15
.....	424	42,404	714	1,575	683	724	5	41	342	.....	.....	16
3,775	966	56,424	1,065	2,440	928	1,764	.....	575	108	.....	375	17
.....	249	42,542	748	1,166	427	1,383	939	138	1,742	75	.....	18
3,131	3,527	42,584	1,035	2,507	324	1,934	160	1,226	3,541	.....	4,459	19
8,385	1,258	134,445	1,483	4,296	602	356	.....	.....	2,388	102	259	20
.....	399	32,581	786	1,329	677	534	3	164	2,554	.....	1,036	21
.....	230	66,618	2,102	2,135	646	721	99	2,043	924	775	1,503	22
.....	567	80,652	880	1,630	931	1,173	.....	305	1,109	.....	60	23
.....	*2,351	89,575	1,782	3,021	615	397	25	99	5,275	.....	6,282	24
.....	283	37,192	423	1,429	416	396	.....	15	1,297	.....	68	25
1,155	2,249	78,320	644	1,710	165	1,651	.....	242	2,392	3,730	.....	26
2,503	1,707	45,808	1,085	1,200	974	1,568	16	22	2,827	1,792	.....	27
.....	996	26,193	880	1,057	189	249	254	198	5,269	200	87	28
.....	.....	22,186	374	800	429	607	.....	653	2,067	150	169	29
.....	199	33,730	594	1,612	489	817	260	74	1,113	.....	.....	30
.....	+17,074	113,755	2,646	3,660	736	471	569	507	3,542	1,276	.....	31
.....	±3,512	44,530	728	1,725	606	1,168	.....	1,002	97	.....	766	32
.....	967	322	44,855	1,173	1,137	1,826	38	293	3,499	550	604	33
1,608	56	68,721	1,136	1,484	1,064	1,772	27	132	502	.....	5,000	34
3,343	719	39,880	598	1,353	229	835	14	72	93	146	859	35
6,037	306	106,853	1,010	2,453	569	65	93	433	16,307	2,502	1,467	36
26,414	670	75,106	2,235	2,346	502	2,520	660	2,482	6,415	.....	.....	37
.....	4,675	147,394	2,739	3,680	1,680	1,353	1,553	2,462	2,258	.....	915	38

\* Including \$1,004 from adjoining counties.  
 + Including \$15,547 from bondsmen and estate of ex-Treasurer, Sandford.  
 ± Including \$3,500 for adjustment of "Bills Payable" account.  
 For new House of Refuge.

## FINANCIAL STATEMENT.—

## Disbursements, 1900.—Continued.

No.	Counties.	Disbursements, 1900.—Continued.											
		Support of the poor and other charities.	Administration of Justice, gaol maintenance, etc.	Grants to schools and other payments on education.	Sinking Fund and other investments and deposits.	Debentures redeemed.	Interest paid on debentures.	Refund of money borrowed for current expenses.	Interest or discount on loans and advances.	Non-resident taxes paid local municipalities.	Miscellaneous.	Total disbursements.	
		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	
1	Brant	1,146	8,322	3,781		2,759	697			177	690	30,086	
2	Bruce	4,366	10,457	12,926	12,000	698	774	10,000	94	2,750	2,844	70,333	
3	Caledon	2,450	21,396	5,566	2,548			2,250	55,297	1,478	1,000	2,718	108,903
4	Dufferin	69	5,265	5,074	8,309	1,000	780	3,500	84	1,059	1,266	30,733	
5	Elgin	5,311	8,965	11,212		2,864	1,893	16,000	274	420	267	87,485	
6	Essex	454	13,013	9,907		968	946	30,500	642	4,898	2,124	94,557	
7	Frontenac	1,025	12,115	5,453		20,500	12,810	3,050	144	1,842	352	63,561	
8	Grey	410	13,314	14,258	18,838		1,100				2,036	1,910	60,424
9	Haldimand	307	7,687	8,191				1,600	402	126	1,052	22,604	
10	Haliburton		1,258	3,341		1,000	82	6,500	85	503		14,258	
11	Halton		5,313	5,570				3,200	38	438	836	18,838	
12	Hastings	379	16,311	10,862	*10,657	20,701	3,304	35,017	1,501	1,930	894	129,335	
13	Huron	4,798	9,921	13,954	6,360		2,945	7,000	77	355	1,542	58,685	
14	Kent	4,147	19,834	10,247	16,000	5,903	2,506	12,589	1,219	1,175	799	100,428	
15	Lambton	3,893	9,666	14,197		628	549	11,000	82	4,806	2,083	57,727	
16	Lanark	786	8,283	7,755				18,097	399	250	2,750	42,403	
17	Leeds and Grenville												
18	Lennox and Addington	5,051	7,755	14,461	2,102		2,675	14,900	714	397	920	56,233	
19	Lincoln	570	5,597	11,818		5,800	5,004		7	322	125	35,861	
20	Middlesex	2,998	7,316	6,709		2,535	585	3,000	285	1,498	1,996	42,058	
21	Norfolk	11,476	56,818	14,759	22,400	20,000	24,316			1,229	1,236	131,720	
22	Norfolk	3,710	7,233	8,623						295	403	28,326	
22	Northumberland & Durham	160	16,192	14,671	2,157		700	16,000	203	406	907	62,284	
23	Ontario	487	7,958	10,246		1,302	718	36,000	336	729	1,098	64,962	
24	Oxford	5,589	9,579	8,858		6,586	4,819			283	166	53,376	
25	Peel	2,169	7,506	6,353		1,600	199	13,104	371	203	1,384	36,933	
26	Perth	4,961	10,937	8,808	8,692	1,652	9,139	13,500	91	191	1,028	69,533	
27	Peterborough	245	9,532	5,067	1,043	1,413	1,328	10,500	578	985	1,327	41,512	
28	Prescott and Russell		6,243	7,357						634	2,118	900	25,635
29	Prince Edward	310	4,636	4,810	15	5,000	150		214	27	1,775	22,186	
30	Renfrew	225	5,995	9,359	1,267	2,192	1,648			681	737	27,063	
31	Simcoe	6,999	12,841	17,933		1,746	1,898	50,000	569	3,023	2,012	110,118	
32	Stormont, Dundas and Glengarry	913	7,323	16,646		4,794	1,467	4,000	285	1,314	416	43,250	
33	Victoria	468	7,931	7,018				14,000	644	1,313	2,085	44,460	
34	Waterloo	8,531	7,607	9,025		1,259	949	28,899	505	23	703	68,618	
35	Wells	3,484	11,831	8,252				5,733	125	603	802	35,029	
36	Wellington	8,201	12,215	10,386				28,000	287	714	5,026	89,728	
37	Wentworth	1,000	12,298	6,289		11,999	1,130			243	2,768	52,887	
38	York	6,774	57,365	12,633		6,289	2,189	40,792	1,070	1,216	2,426	147,394	

\* Including \$3,416, special levy in general account.



COUNTY MUNICIPALITIES, 1900.—*Concluded.*

Assets on December 31, 1900.							Liabilities on December 31, 1900.								
Cash in treasury.	Rates due from local municipalities.	Sinking fund and other investments in stocks, mortgages, debentures, etc., special deposits, etc.	Land, buildings, furniture, etc.	Miscellaneous.	Total assets.		School grant unpaid.	Railway debentures out standing (principal).	All other debentures out-standing (principal).	Loans for current expenses and interest due on same.	Local municipalities for non-resident taxes collected.	Miscellaneous.	Total liabilities.	No.	
¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	¢	
11,374			106,000		117,374				10,190				10,190	1	
3,688	6,636	12,000	80,000	1,906	104,230				18,630			7,873	26,503	2	
4,525	21,787	18,309	185,000		229,621				60,000				60,000	3	
430	4,871	10,252	40,000	597	56,150	1,200			12,000	500	181	1,116	14,996	4	
5,116	30,792		171,000	*17,182	224,090	271			46,996	33,000		2,700	82,967	5	
5,830	21,434		95,500	6,212	128,976				38,670	24,000	116	2,273	65,059	6	
296	27,300	2,000	117,000	11,945	158,541		128,500			17,783	223	13	146,506	7	
	2,866	+43,783	87,638	668	134,955	60			26,000		222	254	26,295	8	
2,242	1,231		30,000	54	33,527							550	254	9	
967	1,411			38	2,416	21							671	10	
2,864	2,832		50,000	203	55,899									11	
81	37,594	48,892	60,000		146,570	500	10,000		27,392	44,258	10	4,237	86,397	12	
12,546	22,319	23,647	77,000		135,612				73,000	16,856	539		90,395	13	
13	15,666		+155,000	6,438	177,217				44,653	24,121	413		69,187	14	
2,252	13,061		54,500		69,813				13,090	4,000	1,304	85	18,479	15	
			54,000		54,000						236		236	16	
191	15,295	19,636	138,000	926	174,048	25			60,000	891	177	400	61,493	17	
6,681	11,894		55,000		73,575				80,500		19		80,519	18	
526	12,875		103,500	1,961	118,862	514			4,161	4,000	1,048	105	9,818	19	
2,725	58,506	\$76,468	86,000	10,334	234,033				486,260		99	8,118	494,477	20	
4,245	2,764		59,000		66,009									21	
4,334	10,706	6,157	51,000	541	72,738				20,000		888		20,888	22	
15,690	4,946		50,000	149	70,785				13,059	15,101	331	34	28,525	23	
36,199			190,000	808	227,007	70			113,888		190		2,579	116,727	24
259			76,386	1,500	78,145				3,387				1,400	4,787	25
8,787	16,043	17,123	125,000	1,044	167,997		120,000		81,818		70	2,941	204,820	26	
4,296	13,516	8,408	93,355	1,964	121,539	839			38,952	20,191	492	6,544	66,018	27	
558	13,276		20,500	4,006	38,340					19,553	1,965	261	21,779	28	
	1,564	15	32,500		34,079	15				1,189			1,204	29	
6,667	14,249	8,020	50,000	762	79,698	232			31,212		769	702	32,915	30	
3,637	18,087	*10,300	156,000	14,069	202,093	300			46,575			5,814	52,689	31	
1,280	14,659		61,000	700	77,639				30,331	3,500		855	34,686	32	
395	17,539		68,663	1,186	87,783	205			19,000	585			19,790	33	
103			89,000	769	89,872	5			27,467	698			28,170	34	
4,851	958		129,536	85	135,430						44		44	35	
17,125	31,658		80,000	3,595	132,378	3,400				20,000	493	12,492	36,385	36	
22,219			90,000	6,078	118,297				19,001			2,099	21,100	37	
	21,400		100,000	46,998	168,398				32,269	31,930	1,117	3,898	69,214	38	

\* Including \$11,748 due from St. Thomas on account of new court house.

++ Including \$32,533 deposited to credit of general account.

+++ Including \$61,700 for iron bridges.

∞ Including \$15,000 loan to Victoria Hospital and \$7,800 Hospital Trust Funds.

∞ Omitting \$8,300 written off, being \$8,000 from Northern Railway stock and \$300 from agricultural building stock

| Including \$20,000 for iron bridges.

∞ Including \$10,000 for roads.

## FINANCIAL STATEMENT.—TOWNSHIP MUNICIPALITIES.

Summary statement showing the totals for all townships in Ontario of the several items of Receipts, Disbursement, Assets and Liabilities for the ten years ending December 31st. 1891-1900.

Schedule.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
<b>RECEIPTS.</b>										
Balance from the previous year .....	\$ 502,223	\$ 539,813	\$ 541,624	\$ 414,150	\$ 559,452	\$ 478,431	\$ 476,233	\$ 589,298	\$ 501,217	\$ 474,360
<i>Ordinary municipal revenue:</i>										
Municipal and school taxes .....	4,812,372	4,675,154	4,462,288	4,598,830	4,286,861	4,478,627	4,575,620	4,463,048	4,706,576	4,140,478
Licenses (liquor and other) .....	41,726	41,878	43,019	46,723	47,738	49,339	49,339	64,577	70,664	73,337
Fees, rents, fines, etc. ....	14,265	13,811	12,716	12,423	11,873	12,363	62,084	64,577	70,664	73,337
Refund of loans, investments and deposits .....	207,790	164,632	505,476	199,050	273,483	232,825	291,747	226,983	234,690	517,726
Interest and dividends .....	55,170	55,332	75,461	72,385	65,774	68,217	68,217	226,983	234,690	517,726
<i>Loans:</i>										
Money borrowed for current expenses .....	542,259	514,505	456,217	450,533	548,195	525,677	591,014	457,466	419,385	580,354
Money borrowed on debentures for—										
Schools .....	57,886	69,572	69,597	56,673	49,982	61,850	54,324	57,397	94,707	47,160
Drainage .....	298,523	289,106	261,022	293,924	163,023	260,269	285,460	292,148	300,919	332,504
Other purposes .....	.....	.....	48,438	20,800	49,445	98,457	.....	.....	.....	.....
Premiums on debentures sold .....	.....	.....	7,690	11,625	4,068	11,798	.....	.....	.....	.....
Grants from county for roads, etc. ....	102,094	128,384	15,893	24,879	39,467	36,395	204,930	127,958	129,494	191,711
Miscellaneous .....	.....	.....	123,393	78,621	84,486	94,222	.....	.....	.....	.....
<b>Totals .....</b>	<b>6,594,318</b>	<b>6,492,087</b>	<b>6,622,836</b>	<b>6,308,516</b>	<b>6,186,167</b>	<b>6,406,670</b>	<b>6,539,412</b>	<b>6,188,870</b>	<b>6,460,682</b>	<b>6,656,630</b>
<b>DISBURSEMENTS.</b>										
<i>Expenses of municipal government:</i>										
Allowances, salaries and commissions .....	309,162	300,387	£94,313	292,205	287,272	285,335	285,560	286,188	287,882	281,802
Law costs, including salaries .....	49,098	43,372	43,630	51,865	34,690	60,491	138,693	128,700	137,748	119,487
Other expenses of municipal government .....	39,468	103,328	96,166	93,321	89,827	84,972	.....	.....	.....	.....
<i>Construction works:</i>										
Roads and bridges .....	894,104	881,068	772,947	708,09	702,212	631,241	796,776	806,781	743,651	755,323
Buildings and other works .....	15,844	19,896	16,391	21,891	16,429	8,883	7,393	11,836	17,301	23,515
Drainage works .....	284,553	327,578	311,311	373,869	258,919	297,692	297,286	275,941	237,215	275,551
Support of the poor and other charities .....	54,417	55,943	59,871	68,768	68,543	66,655	65,621	62,332	60,849	68,421
County treasurer for levy .....	953,191	976,863	910,694	968,976	984,009	1,091,953	1,086,752	1,098,967	1,204,116	1,145,037

Payments on schools and education.....	1,984,747	1,960,373	1,926,978	1,935,503	1,813,537	1,796,237	1,831,211	1,820,007	1,904,746	1,782,308
Sinking fund investin gnts and deposits.....	79,947	69,128	114,112	89,021	118,214	123,143	285,331	149,768	165,841	194,072
Other investmen t's and special deposits.....	80,341	72,457	121,058	169,427	161,621	162,983				
<i>Loans repaid:</i>										
Debtentures redeemed (principal).....										
School.....	67,215	63,834	60,969	66,140	65,230	67,409				
Drainage.....			194,044	182,884	219,201	219,588				
All other.....	311,005	327,558	390,029	72,186	100,093	85,851	438,996	355,363	365,012	611,382
Interest on loans, advances, debtentures.....	143,441	143,803	177,617	168,021	177,504	183,553	180,027	177,693	187,720	200,504
Moneys borrowed for current expenses.....	558,236	498,661	430,788	518,618	537,482	572,968	524,212	407,663	460,646	508,355
Board of Health.....	24,378	25,391	17,479	17,449	15,288	22,293	12,409	132,498	142,857	159,651
Miscellaneous.....	110,614	115,389	145,866	96,563	121,433	147,991				
Totals.....	6,019,761	5,989,864	6,083,023	5,766,892	5,742,017	5,817,218	6,050,981	5,712,637	5,921,384	6,155,413
<b>ASSETS.</b>										
Cash in treasury.....	574,557	502,223	539,813	541,624	444,150	559,452	478,431	476,233	539,298	501,217
Taxes in arrears.....	1,288,700	1,383,475	1,438,023	1,412,171	1,577,267	1,610,480	1,596,099	1,572,817	1,373,503	1,511,872
Sinking Fund investments and deposits.....	234,632	233,215	213,757	498,619	452,819	425,969	1,442,622	1,371,296	1,396,451	1,373,830
Other investments and special deposits.....	979,676	1,028,667	1,078,088	1,067,449	1,062,580	1,069,319				
Lands, buildings and other property.....	429,001	469,171	414,704	403,904	379,729	356,365	354,010	359,473	335,527	352,611
Miscellaneous.....	918,067	892,919	619,615	616,822	564,968	436,379	456,907	561,903	530,727	462,641
Totals.....	4,422,233	4,449,710	4,304,010	4,639,869	4,481,463	4,456,404	4,328,369	4,341,722	4,175,506	4,202,201
<b>LIABILITIES.</b>										
County levy.....	380,823	413,738	428,262	438,311	474,425	574,634	563,909	537,085	470,342	506,361
Local school rates.....	278,484	281,551	299,667	292,071	333,291	299,082	280,176	273,812	229,731	240,810
Debtentures outstanding (principal) for—										
Aid to railways.....	509,475	584,608	621,053	984,196	1,015,659	1,657,852	1,058,761	1,106,290	1,120,100	1,178,027
Schools.....	468,944	467,438	467,438	454,119	463,886	478,831	481,665	496,311	505,250	479,757
Drainage.....										
Other purposes.....	1,485,747	1,563,796	1,322,734	1,253,302	1,142,862	1,206,259	1,401,841	1,487,222	1,464,080	1,460,875
Due Sinking Fund.....	304,074	318,370	281,270	257,215	214,777	249,755				
Loans for current expenses and interest.....	199,947	179,821	208,691	167,768	158,481	174,752	127,669	308,167	259,168	300,020
Miscellaneous.....										
Totals.....	3,717,495	3,810,064	3,888,209	4,093,313	4,827,704	4,380,228	4,296,147	4,331,236	4,198,517	4,312,194

The total receipts do not include Legislative grant for schools, this not being considered a municipal transaction. This also refers to towns, villages and cities.  
Table beginning on page 2, gives condensed statistics of each township.

## FINANCIAL STATEMENT—VILLAGE MUNICIPALITIES.

Summary showing the totals for all villages in Ontario of the several items of receipts, disbursements, assets and liabilities for the eight years ending December 31st, 1893-1900.

Schedule.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.
<b>RECEIPTS.</b>								
Balance from previous year.....	\$ 97,738	\$ 88,900	\$ 82,474	\$ 88,589	\$ 78,973	\$ 67,269	\$ 72,950	\$ 74,284
<i>Ordinary municipal revenue:</i>								
Municipal and school taxes.....	562,027	552,142	578,449	576,392	541,849	546,809	526,672	499,040
License (liquor and other).....	27,571	29,296	31,771	33,687	34,872	34,872	42,746	45,274
Fees, rents, fines, etc.....	10,234	9,675	9,778	8,301	8,941	8,738	12,989	10,426
Water rates, etc.....	25,689	19,492	25,672	17,765	14,897	15,344	17,266	13,495
Refund of loans and special deposits.....	26,679	41,216	31,969	37,047	22,255	25,905	17,266	13,495
Interest and dividends.....	4,045	5,290	5,309	5,932	5,650	6,223	17,266	13,495
Loans for current expenses.....	204,886	174,967	180,411	180,273	165,279	176,428	135,745	119,191
Money borrowed on debentures for—								
Schools.....	.....	17,875	28,350	22,100	7,443	29,100	20,300	20,300
Other purposes.....	95,506	121,002	131,450	92,690	84,706	67,797	79,577	35,325
Premiums on debentures sold.....	.....	4,719	1,876	6,519	1,876	5,049	.....	.....
County grants.....	.....	1,956	2,391	2,391	4,148	2,887	32,731	14,053
Miscellaneous.....	17,556	18,321	14,533	21,453	18,509	15,340	.....	.....
Totals.....	1,091,901	1,078,176	1,126,451	1,093,139	988,793	1,000,811	943,726	831,368
<b>DISBURSEMENTS.</b>								
<i>Expenses of municipal government:</i>								
Allowances, salaries, commissions.....	35,562	34,383	34,367	35,661	36,604	37,738	37,139	39,386
Lighting of streets, water supply and fire protection.....	60,190	47,806	51,680	51,304	47,852	46,161	41,590	32,251
Law costs (including salaries).....	9,220	5,481	5,132	7,794	6,119	5,983	28,392	29,794
Other expenses of government.....	22,420	22,340	22,776	22,986	22,134	23,054	.....	.....
<i>Construction works:</i>								
Streets, bridges and parks.....	145,915	128,569	107,222	98,659	98,290	99,662	83,572	94,408
Buildings and other works.....	10,768	9,016	30,044	45,048	11,891	20,570	65,191	27,263
Water and electric light works.....	55,754	91,587	61,097	29,223	30,785	39,024	5,858	5,064
Support of the poor and other charities.....	6,249	5,456	6,836	5,365	5,842	6,552	7,064	4,255
Administration of justice, police service.....	8,261	8,860	11,440	9,761	8,477	7,562	.....	.....

County treasurer for levy.....	38,553	40,466	43,621	36,116	42,424	44,628	39,511
Payments for schools and education.....	214,780	223,104	250,080	223,983	212,466	232,204	214,417
Sinking fund investments and deposits.....	24,324	22,210	20,717	21,461	14,600	35,679	14,660
Other investments and special deposits.....	14,146	17,618	11,870	7,197	12,276	52,120	60,624
Debtentures redeemed.....	18,686	25,947	25,229	31,542	18,851	62,352	63,902
Interest on loans and debtentures.....	48,799	46,327	53,196	35,135	35,135	134,536	107,713
Money borrowed for current expenses.....	61,713	58,264	65,401	68,207	68,612	36,132	25,280
Board of Health.....	188,710	157,058	192,784	137,119	176,133	876,457	768,438
Miscellaneous.....	3,240	3,018	2,931	2,740	2,962	876,457	768,438
Totals.....	25,118	32,328	38,959	31,366	21,217	1,199,221	1,116,437
	992,417	980,438	1,010,665	899,605	921,433	1,199,221	1,116,437
ASSETS.							
Cash in treasury.....	99,484	17,738	82,474	89,188	79,378	67,969	72,950
Taxes in arrears.....	116,982	125,033	162,293	161,795	117,273	139,335	134,463
Sinking fund investments and deposits.....	87,328	147,720	97,651	92,526	86,181	132,914	136,838
Other investments and special deposits.....	49,247	49,401	45,882	47,278	48,742	802,525	723,877
Water works and electric light plant.....	6542,864	512,294	465,000	381,913	368,262	514,177	48,309
Other buildings and property.....	563,398	542,684	514,177	493,148	495,053	61,606	48,309
Miscellaneous.....	109,646	76,329	62,116	38,798	61,606	1,199,221	1,116,437
Totals.....	1,572,949	1,488,862	1,400,193	1,304,646	1,286,495	1,199,221	1,116,437
LIABILITIES.							
County levy.....	18,406	15,836	19,533	20,845	16,692	15,041	19,880
Local rates.....	52,303	58,683	62,659	65,478	55,432	50,089	47,694
Debtentures (principal) outstanding for—							
Aid to railways.....	36,768	450,234	72,617	92,132	115,017	119,280	122,315
Schools.....	285,727	2284,413	312,743	320,872	344,971	334,004	328,444
Other purposes.....	885,424	4,825,251	774,925	750,092	716,815	679,658	631,717
Due sinking funds.....	616,938	16,495	19,014	17,900	13,569	68,755	66,157
Loan for current expenses and interest.....	90,778	\$75,092	70,019	83,127	60,004	46,851	43,644
Miscellaneous.....	43,782	58,167	59,103	54,540	55,008	1,318,678	1,259,851
Totals.....	1,410,326	1,384,171	1,390,613	1,404,986	1,376,508	1,318,678	1,259,851

*a* The electric and other light plants in villages in 1900 aggregated \$62,806, as follows: Acton, \$9,000; Alexandria, \$7,000; Beeton, \$6,000; Campbellford, \$18,500; Dundalk, \$6,500; East Toronto, \$3,456; Markham, \$4,100; Port Colborne (gas), \$250; Tilbury, \$1,000; Weston, \$7,000.

*b* Including Acton, \$599; Ayr, \$257; Beaverton, \$1,170; Blyth, \$476; Casselman, \$164; East Toronto, \$676; Lucknow, \$4,076; Norwich, \$2,558; Sundridge, \$664; Tilbury, \$218.

\* Omitting \$1,498 transferred to Statement for towns, which in 1898 were villages.

+ Omitting \$6,100, transferred to Statement for towns.

‡ Omitting \$131,145 from aggregate of debtenture liabilities transferred to Statement for towns, which in 1898 were villages.

§ Omitting \$12,488 transferred to Statement for towns, which in 1898 were villages, viz.: Dunnville, Hespeler, Huntsville, Kingsville and Preston.

## FINANCIAL STATEMENT-TOWN MUNICIPALITIES.

Summary showing the totals for all towns in Ontario of the several items of receipts, disbursements, assets and liabilities, for the eight years ending December 31st, 1893-1900.

	1900.	1899.	1898.	1897.	1896.	1895.	1894	1893.
<b>RECEIPTS.</b>								
Schedule.	\$	\$	\$	\$	\$	\$	\$	\$
Balance from previous year . . . . .	297,876	*207,975	199,704	257,955	244,963	165,782	149,398	158,867
Municipal and school taxes . . . . .	2,208,031	2,160,904	2,098,141	2,037,988	1,964,716	1,971,028	1,932,387	1,840,603
Licenses (liquor and other) . . . . .	94,073	104,097	104,097	107,639	108,545	111,622	176,600	188,645
Fees, rents, fines, etc . . . . .	65,994	63,589	58,451	58,965	58,202	57,880	119,172	99,670
Water rates, electric light rates, etc. . . . .	34,258	289,547	229,691	193,797	164,725	152,224	242,012	268,126
Refunds of loans and special deposits . . . . .	196,865	173,861	219,676	299,175	155,291	190,884	37,591	1,562,564
Interest and dividends . . . . .	60,936	58,175	41,171	47,849	40,911	37,591	1,789,250	131,000
Loans for current expenses . . . . .	2,619,547	2,022,573	1,795,762	1,739,618	1,682,895	1,407,460	69,700	1,049,259
Money borrowed on debentures for { Schools <sup>a</sup> . . . . .	57,446	58,658	8,000	34,653	60,406	62,236	679,314	69,181
{ Other purposes . . . . .	1,232,855	1,346,890	937,057	798,131	747,861	771,320	73,522	
Premium on debentures sold . . . . .	11,444	47,598	26,226	31,748	39,933	31,784		
County grants . . . . .	966	2,099	2,425	2,022	6,307	7,289		
Miscellaneous . . . . .	80,970	65,789	68,512	68,516	37,683	53,872		
Totals . . . . .	7,231,301	6,603,300	5,782,916	5,677,826	5,311,936	5,020,372	5,231,355	5,362,915
<b>DISBURSEMENTS.</b>								
Expenses of municipal government :								
Allowances, salaries, commissions . . . . .	125,105	125,711	120,053	122,203	120,538	121,207	119,742	127,903
Lighting of streets, water supply and fire protection . . . . .	468,837	424,988	356,813	328,954	316,256	315,437	298,594	278,379
Law costs (including salaries) . . . . .	38,321	33,926	38,470	25,119	22,142	40,561	108,788	122,655
Other expenses ( of government . . . . .	96,121	98,151	86,945	87,663	79,622	81,338		
Construction works :								
Streets, bridges and parks . . . . .	677,634	552,482	379,064	325,302	351,658	304,857	333,226	376,989
Buildings and other works . . . . .	31,576	45,540	60,348	73,335	65,524	45,262	292,537	366,317
Waterworks and electric light plant . . . . .	659,007	544,162	416,681	321,379	384,868	316,920	30,664	32,747
Support of the poor and other charities . . . . .	42,348	34,825	35,636	35,371	31,234	33,908	66,251	62,418
Administration of justice, police service . . . . .	82,483	78,243	81,321	79,428	75,784	67,279	89,660	89,210
County treasurer for levy . . . . .	91,554	88,208	90,010	90,909	97,181	91,719	636,246	689,271
Payments for schools and education . . . . .	702,112	702,885	643,876	643,347	667,449	638,938	145,338	272,987
Sinking fund investments and deposits . . . . .	135,448	173,890	140,806	259,056	160,452	145,338		
Other investments and special deposits . . . . .	192,703	129,388	116,251	131,315	91,986	82,346	246,378	292,987

Debentures redeemed (School)	47,518	46,219	58,527	71,378	41,082	358,691	458,632
Interest on loans and debentures (All other)	367,426	543,968	516,822	229,187	314,543	1,491,398	151,258
Money borrowed for current expenses	516,531	474,282	486,879	1,681,743	1,481,901	1,810,483	1,745,922
Board of Health	2,279,029	1,967,075	1,756,682	1,034,743	1,481,901	1,810,483	1,745,922
Miscellaneous	29,300	16,932	12,739	13,965	12,863	197,299	143,789
Totals	6,910,776	6,305,424	5,557,690	5,478,122	4,775,814	6,065,573	5,213,517
ASSETS.							
Cash in treasury	320,525	207,876	225,226	199,704	257,955	165,782	149,398
Taxes in arrears	683,365	734,213	833,921	882,748	864,006	856,825	792,949
Sinking fund investments and deposits	705,265	*707,923	801,859	606,694	793,174	693,491	1,265,985
Waterworks and special deposits	759,368	680,501	619,971	586,228	618,862	625,479	1,265,985
Other buildings and electric light plant	a 4,403,418	3,877,347	3,564,764	3,159,171	2,890,183	2,644,987	4,943,759
Miscellaneous	1,884,386	1,805,089	3,087,487	2,983,178	2,950,863	5,092,767	426,879
Totals	11,829,810	10,733,646	10,268,698	9,855,235	9,524,407	7,954,666	7,576,970
LIABILITIES.							
County levy	37,959	37,391	32,219	38,571	34,242	36,742	44,261
Local school rates	196,068	172,296	197,723	187,251	193,869	176,931	165,324
Debentures outstanding for (Aid to railways)	598,270	497,997	507,484	693,594	697,165	722,628	851,856
Schools	845,272	831,404	857,865	895,224	1,031,407	1,023,020	974,874
Other purposes	10,316,991	* 9,485,768	8,979,831	8,361,737	7,967,529	6,863,401	6,392,549
Due Sinking Funds	b 96,028	83,619	85,159	94,551	87,791	735,877	765,267
Loans for current expenses and interest	1,100,261	*769,625	709,046	661,542	575,526	572,187	174,088
Miscellaneous	199,474	174,551	144,203	257,480	213,585	170,903	174,088
Totals	13,920,326	12,052,651	11,513,017	10,735,902	10,119,105	9,731,505	9,371,229

\* The financial returns for 1899 from Dunnville, Hespeler, Huntsville, Kingsville and previously were included in tabulation for villages—and Woodstock now tabulated as a city was formerly included with towns. These changes account for the following differences between balances reported at close of 1898 and the balances reported above, namely: a decrease of \$17,251 in balance from previous year,—a decrease of \$151,086 in Sinking Funds (assets), a decrease of \$243,098 in all debentures (Liabilities)—and an increase of \$3,621 in Temporary Loans (Liabilities).

a The electric and other light plants in towns in 1900, aggregated \$716,197, as follows: Amherstburg, \$8,500; Barrie, \$39,672; Bracebridge, \$14,010; Bothwell, \$6,600; Brockville, \$10,000; Collingwood, \$50,173; Fort William, \$16,270; Goderich, \$26,500; Hespeler, \$11,554; Huntsville, \$8,274; Kincairdine, \$13,528; Kingsville, (natural gas) \$30,000; Leamington (natural gas) \$20,000; Mitchell, \$9,000; Newmarket, \$11,500; Niagara, \$17,560; Niagara Falls, \$75,626; North Toronto, \$565; Orillia, \$32,000; Picton, \$23,547; Port Arthur, \$17,182; Prescott, \$16,618; St. Marys, \$5,262; Sudbury, \$20,713; Toronto Junction, \$24,000; Trenton, \$15,000; (North Toronto in addition to the foregoing, has an electric light plant estimated at \$10,000, in connection with its waterworks plant)

b Including Port William, \$26,620; Kincairdine, \$2,555; Listowel, \$1,677; Oakville, \$3,029; Owen Sound, \$9,296; Peterborough, \$31,491; Port Arthur, \$22,076; Seaford, \$3,100; Uxbridge, \$1,237; Walkerton, \$887.

FINANCIAL STATEMENT—CITY MUNICIPALITIES.

Summary statement showing the totals for the thirteen Cities of the Province of Ontario of the several items of Receipts, Disbursements, Assets and Liabilities for the ten years ending December 31st, 1891-1900.

Schedule.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>RECEIPTS.</b>										
Balance from previous year.....	526,712	833,413	569,891	715,390	543,686	378,541	395,266	579,254	559,040	368,901
<i>Ordinary municipal revenue:</i>										
Municipal and school taxes.....	5,600,710	5,280,927	5,078,809	4,906,002	5,068,215	5,164,106	5,164,106	5,172,759	4,717,113	4,737,229
Liquor licenses.....	93,147	95,795	91,275	95,449	92,222	93,893	99,185	102,336	99,669	100,593
Other licenses.....	50,414	50,860	47,214	41,754	39,186	41,637	42,369	42,869	45,697	50,055
Fees, rents, tolls, fines, etc.....	472,885	434,335	409,888	391,691	410,453	376,122	375,111	374,736	363,044	292,900
Water rates, electric light, gas rates, etc.....	980,039	1,032,419	1,040,332	1,028,673	1,008,129	983,534	986,249	885,333	802,671	886,139
Interest on bank deposits, sinking fund and other investments and dividends.....	381,481	369,007	354,162	309,612	285,863	248,532	244,439	192,110	211,515	168,686
<i>Subsidies and refunds:</i>										
Government (except loans and schools).....	16,228	19,162	17,053	18,638	20,388	20,641	16,185	24,419	22,332	18,498
Monies loaned or invested (including sinking funds and special deposits).....	984,291	2,260,598	1,599,386	1,662,182	916,784	444,724	512,083	292,122	26,481	294,746
<b>Loans:</b>										
Money borrowed for current expenses.....	2,968,425	2,376,181	2,215,732	1,849,188	1,377,426	1,901,123	2,214,476	2,874,272	2,654,513	3,961,752
Money borrowed on debentures—										
For school purposes.....	450,500	* 10,000	233,046	50,000	135,500	213,500	67,000	15,000	380,522	138,745
For all other purposes.....	1,366,738	2,230,022	2,769,823	2,462,888	2,892,152	2,692,179	4,413,422	2,771,880	2,788,956	3,604,225
Miscellaneous.....	1174,930	4228,601	335,039	299,766	336,975	235,511	187,974	395,797	721,667	1,683,081
<b>Totals.....</b>	<b>13,666,504</b>	<b>15,280,820</b>	<b>14,780,710</b>	<b>13,891,233</b>	<b>13,146,999</b>	<b>12,794,043</b>	<b>14,659,207</b>	<b>13,722,767</b>	<b>13,423,011</b>	<b>16,305,550</b>
<b>DISBURSEMENTS.</b>										
<i>Expenses of municipal government:</i>										
Allowance, salaries and commissions.....	225,453	234,906	188,219	192,948	199,288	171,900	153,395	159,147	154,754	154,844
Printing, advertising, postage, stationery.....	37,267	33,818	37,406	35,998	31,816	36,151	32,343	37,982	31,457	37,685
Insurance, heating, lighting buildings.....	57,789	59,795	46,892	46,074	30,175	83,265	50,723	53,542	47,827	72,148
Law costs (including salaries).....	54,872	48,562	54,270	65,066	62,464	69,380	66,846	55,780	55,780	33,312
Lighting of streets.....	255,806	239,666	251,379	245,456	254,797	282,986	278,626	275,618	263,313	270,337
Water supply and fire protection.....	839,166	736,012	828,461	720,294	716,095	727,622	750,271	686,179	686,455	633,455
Election of members of council.....	11,651	9,865	11,743	10,057	13,298	10,121	17,483	10,750	10,696	8,188
Other expenses of municipal government.....	125,152	98,912	89,402	68,128	111,686	71,708	64,691	81,377	59,840	61,889
<i>Construction works:</i>										
Streets, bridges and parks.....	1,884,182	1,618,975	1,261,798	1,398,771	830,892	1,254,890	1,201,237	1,672,647	1,846,859	1,782,703
Waterworks, sewers and electric light.....	644,059	561,181	334,439	373,916	354,112	491,655	404,513	277,326	316,074	798,903
Buildings and other property.....	197,132	376,477	467,118	555,481	527,074	243,383	439,197	639,460	281,267	182,681



Board of Health (including salaries),	68,145	65,648	59,116	78,510	70,334	77,810	114,831
Support of the poor and other charities	175,327	157,318	147,994	150,597	137,472	143,322	143,238
Administration of justice, police service, etc.	508,064	508,610	517,628	516,568	510,034	516,583	535,462
Payment on schools and education	1,068,928	1,141,815	1,134,140	1,014,689	1,068,058	979,176	1,062,372
<b>Investments and deposits:</b>							
sinking fund investments and deposits	2,079,598	1,513,124	1,233,643	913,362	989,008	829,751	597,111
Other investments and special deposits	122,431	282,450	224,517	136,064	126,401	40,467	28,972
<b>Loans and Interest:</b>							
Debentures redeemed (Principal	2,176,917	2,069,335	1,290,919	3,196,916	2,354,186	456,150	661,236
Interest	1,632,664	1,625,955	1,590,748	1,593,715	1,566,810	1,521,264	1,395,958
Interest or discount on loans, etc.	89,369	87,125	91,228	101,462	86,847	116,550	252,590
Moneys borrowed for current expenses	1,226,083	1,356,963	2,332,320	2,691,141	2,065,301	4,004,716	4,007,248
Discount on debentures sold	3,623	39,219	36,010	107,758	41,888	148,393	107,291
Library	57,666	57,017	51,631	51,631	291,837	361,897	1,905,456
Miscellaneous	345,756	482,546	303,385	303,385	350,952	361,897	1,905,456
Totals	13,301,842	12,482,208	12,250,357	14,290,666	13,327,501	12,813,757	15,746,510
<b>ASSETS.</b>							
Cash in treasury (exclusive of sinking funds)	589,891	714,791	643,686	378,541	395,265	579,254	569,040
Taxes in arrears	2,205,210	1,992,178	1,975,969	1,818,788	1,732,209	1,559,491	1,395,387
Sinking Fund investments and deposits	7,381,842	6,831,025	6,277,778	6,963,222	6,435,681	5,619,138	4,785,238
Other investments (incl. special deposits)	1,785,394	1,833,607	1,496,890	1,496,890	1,496,890	1,496,890	1,496,890
Land, buildings, etc.	12,447,827	12,570,784	12,379,758	11,917,357	11,372,880	10,274,362	9,558,307
Waterworks	10,481,486	10,421,768	10,398,892	10,107,946	9,439,334	9,126,391	8,921,883
Other property (cemetery, fire halls, etc.)	1,461,085	1,388,534	1,475,963	1,314,667	1,194,684	1,149,760	1,140,162
Miscellaneous	3,673,267	4,016,053	3,738,741	4,017,423	4,941,034	5,455,789	5,063,179
Totals	42,973,910	42,389,072	41,518,765	40,026,962	39,569,740	38,142,297	36,516,934
<b>LIABILITIES.</b>							
Local school rates unpaid	30,543	12,125	24,129	9,368	16,562	25,988	61,343
<i>Debentures outstanding (principal):</i>							
Aid to railways	2,356,537	2,391,202	2,431,057	2,443,600	2,492,981	2,165,327	2,282,075
Schools	2,519,438	2,596,676	2,657,843	2,410,542	2,392,624	2,303,921	2,081,874
Local improvements	8,495,233	9,499,774	9,748,620	9,663,424	10,308,596	10,006,307	9,605,601
Municipal works	17,065,483	17,262,637	16,281,386	15,521,769	14,600,678	14,142,763	13,199,235
All other objects	2,693,978	4,007,923	3,212,098	1,709,406	1,110,364	1,069,123	1,069,411
Loans for current expenses and interest	1,641,886	1,394,357	1,602,586	1,607,280	1,919,232	1,596,634	1,898,753
Miscellaneous	44,388,506	43,240,689	42,345,309	41,172,431	40,517,388	39,144,200	36,905,531
Totals	83,043,961	83,043,961	83,043,961	83,043,961	83,043,961	83,043,961	83,043,961

\* Ottawa, \$10,000.  
 † Including premiums on debentures sold, as follows: Stratford, \$158; Woodstock, \$121.  
 ‡ Including \$2,815 for premiums on debentures sold, as follows: Chatham, \$1,715; Kingston, \$84; St. Thomas, \$1,016.  
 • Including \$12,000 for electric light plant, as follows: Chatham, \$17,000; and Windsor, \$25,000; and for street lamps, St. Thomas, \$2,000.

FINANCIAL STATEMENT - COUNTY MUNICIPALITIES.

Summary statement showing for all County Municipalities of Ontario the aggregate totals of the several items of Receipts, Disbursements, Assets and Liabilities for the ten years ending December 31st, 1891-1900

Receipts.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
<b>Schedule.</b>										
<b>RECEIPTS.</b>										
Balance from previous year.....	220,596	179,638	227,866	222,653	221,381	224,203	262,914	347,192	303,802	298,066
<i>Ordinary municipal revenue:</i>										
Rates from local municipalities.....	1,099,357	1,110,356	1,047,924	1,097,689	1,111,043	1,243,989	1,258,060	1,231,639	1,372,862	1,303,572
Licenses.....	15,206	14,371	14,227	12,378	12,357	12,573	13,037	14,013	12,843	12,433
Fees, rents, tolls, fines, etc.....	12,305	11,656	11,673	12,454	29,439	25,557	24,966	29,539	33,394	35,100
Surplus fees from registrar.....	16,131	11,716	10,957	13,292	16,951	13,626	13,351	16,365	19,636	20,270
Interest on deposits and dividends on investments.....	13,241	12,469	17,475	16,101	34,058	30,501	33,063	31,215	33,638	49,433
<b>Loans:</b>										
Money borrowed for current expenses.....	472,430	437,272	557,227	672,967	742,454	581,717	752,801	697,950	627,984	640,987
Money borrowed on debentures.....	77,491	92,638	119,853	117,516	200,419	65,300	301,600	158,323	27,900	248,470
Non-resident taxes collected.....	42,540	55,624	73,120	71,176	71,476	89,044	89,459	95,026	103,997	107,513
Towns or cities separated from county for various services.....	89,910	81,535	79,175	97,267	107,562	95,797	102,615	96,147	98,139	94,891
<i>Subsidies and Refunds:</i>										
Refund of moneys loaned or invested.....	68,399	55,406	95,195	35,580	422,348	226,492	381,353	216,612	207,475	459,897
Received from Government:										
For schools.....	142,954	149,361	147,418	149,696	142,717	144,095	142,180	139,714	140,461	143,050
For administration of justices.....	138,685	133,845	146,726	171,541	148,916	161,820	141,888	122,261	120,658	144,545
For other purposes, except loans.....	372	18,520	128	8,144	12,167	194	4,464	209	4,141	29,339
Miscellaneous.....	62,914	49,841	59,791	97,506	85,166	28,292	48,469	111,718	37,888	40,484
<b>Totals.....</b>	<b>2,472,631</b>	<b>2,414,758</b>	<b>2,608,665</b>	<b>2,805,889</b>	<b>3,353,654</b>	<b>2,953,150</b>	<b>3,570,260</b>	<b>3,307,323</b>	<b>3,144,768</b>	<b>3,628,219</b>
<b>DISBURSEMENTS.</b>										
<i>Expenses of municipal government:</i>										
Attendance at meetings of council and committees.....	39,616	44,548	38,931	43,443	72,772	62,740	67,512	67,100	63,959	67,920
Allowances, salaries and commissions.....	78,454	77,054	71,617	74,608	75,689	77,113	77,472	82,234	84,771	89,555
Printing, advertising, postage and stationery.....	22,713	22,583	24,876	26,548	25,650	22,654	22,113	22,491	21,553	22,726
Insurance, heating, lighting and care of buildings.....	37,960	37,274	33,028	32,448	38,335	31,395	37,389	43,257	37,939	36,972
Law costs (including salaries).....	6,673	6,644	7,807	6,453	19,068	11,489	28,334	17,209	11,181	11,464
Other expenses.....	19,267	19,714	19,825	22,744	11,816	15,360	16,393	17,187	18,394	20,654

<b>Construction works:</b>										
Roads and bridges .....	139,281	144,762	136,491	125,969	107,021	109,030	195,095	217,302	194,941	235,411
Grants to local municipalities for roads and bridges .....	23,829	20,620	18,252	26,244	39,621	39,621	63,808	73,808	194,941	
Buildings and other works .....	78,813	78,667	140,330	24,211	76,963	68,912	29,968	70,487	75,614	80,556
Support of the poor and other charities .....	108,862	102,511	87,495	88,782	80,486	66,856	70,598	60,425	61,182	61,794
Administration of justice, gaol maintenance, etc .....	433,768	434,721	447,054	468,832	461,634	485,032	456,714	420,373	436,197	423,350
Grants to schools and other payments for education .....	362,375	363,919	361,215	360,176	410,249	490,081	475,245	477,940	407,803	452,795
Sinking fund investments and deposits .....	69,373	46,941	39,452	52,625	126,417	182,622	229,430	260,527	123,814	174,607
Other investments and special deposits .....	43,015	31,000	25,000	37,321	32,798	10,000				
<b>Loans and interest:</b>										
<b>Debentures redeemed:</b>										
Principal .....	131,188	103,706	141,914	163,391	546,900	137,209	382,894	350,548	243,595	645,834
Interest .....	89,600	72,022	91,914	88,379	116,423	119,928	133,768	143,712	151,672	179,572
Interest or discounts on loans, advances, etc .....	13,422	16,390	16,911	18,676	21,051	21,266	22,321	18,459	18,033	16,366
Refund of money borrowed for current expenses .....	491,778	613,637	704,425	735,743	638,216	638,216	832,107	626,097	619,997	644,578
Non-resident taxes paid local municipalities .....	42,272	70,386	66,843	83,313	75,288	112,915	95,830	95,830	112,247	98,056
Miscellaneous .....	52,377	57,211	46,432	129,695	55,897	39,320	111,368	52,837	54,608	68,207
Totals .....	2,279,536	2,194,162	2,429,027	2,578,023	3,130,991	2,731,769	3,346,057	3,044,469	2,737,576	3,324,417
<b>ASSETS.</b>										
Cash in treasury .....	192,995	220,596	179,638	227,866	222,653	221,381	224,203	262,914	347,192	303,802
Rates due from local municipalities .....	489,635	533,858	531,222	550,055	587,538	663,043	668,960	654,171	550,787	601,513
Sinking fund investments and deposits .....	257,895	234,921	212,386	220,010	181,015	449,946		672,739	628,824	712,465
Other investments and special deposits .....	47,115	34,400	34,400	57,519	42,198	36,400				
Land, buildings, furniture, etc .....	3,267,078	3,228,327	3,229,542	3,143,600	3,179,066	3,140,808	3,106,264	3,008,195	3,046,160	2,973,377
Miscellaneous .....	142,918	128,168	151,806	166,851	153,455	187,401	191,831	326,994	345,897	315,535
Totals .....	4,397,636	4,380,280	4,338,994	4,355,901	4,366,435	4,698,979	4,711,474	4,925,013	4,918,860	4,914,692
<b>LIABILITIES.</b>										
School grants unpaid .....	7,657	11,585	11,524	10,903	12,642	36,585	35,954	40,249	48,669	34,058
<b>Debentures outstanding (principal for):</b>										
Aid to railways .....	258,500	305,000	322,000	419,712	408,233	548,848	740,474	783,747	927,925	1,023,718
Schools .....	1,459,491	1,466,688	1,459,056	1,383,395	1,439,713	1,633,392	1,616,735	1,551,947	1,599,180	1,718,231
All other objects .....	*300,807	*320,585	327,025	387,249	425,883	404,252	459,674	538,982	467,123	459,477
Loans for current expenses and interest due on same .....	11,236	11,027	25,889	19,112	21,640	30,070	18,518	19,717	20,510	28,840
Local municipalities for non-resident taxes collected .....	66,342	89,429	68,664	88,700	60,142	54,150	69,199	73,278	91,750	83,393
Miscellaneous .....										
Totals .....	2,104,092	2,204,314	2,214,158	2,309,071	2,368,089	2,709,320	2,843,517	3,011,818	3,169,867	3,353,879

\* Including \$25,493 due Sinking Funds, as follows: Hastings, \$8,446; Huron, \$8,856; Peterborough, \$8,191.  
 † Including \$18,244 due Sinking Funds, as follows: Hastings, \$5,000; Huron, \$4,096; Northumberland and Durham, \$2,000; Peterborough, \$7,148.

FINANCIAL STATEMENT CITY MUNICIPALITIES - 1899.

Showing an abstract statement of Receipts, Disbursements, Assets and Liabilities of the cities of Ontario for the year ending December 31, 1899

Schedule.	Receipts.													
	Belleville.	Brantford.	Chatham.	Guelph.	Hamilton.	Kingston.	London.	Ottawa.	St. Catharines.	St. Thomas.	Stratford.	Toronto.	Windsor.	Woodstock.
Balance from 1898	\$ 7,623	5,426	5,167	6,040	4,248	16,679	46,076	.....	2,335	14,132	47	706,043	848	18,719
Municipal and school taxes	78,375	182,116	95,704	96,483	538,483	151,036	404,118	588,191	102,892	111,194	98,407	2,723,792	147,697	62,569
Liquor licenses	2,769	2,647	3,977	2,666	10,444	7,299	2,890	17,085	3,884	3,065	2,464	31,530	4,285	2,199
Other licenses	1,043	1,793	647	572	4,092	1,206	2,651	2,460	924	5,6	482	32,676	635	771
Fees, rents, tolls, fines, etc	2,903	4,271	2,533	2,818	17,091	4,491	21,033	26,465	4,850	784	985	319,071	2,998	3,262
Water rates, electric light, etc.	4,879	29,845	10,123	14,211	38,091	30,616	86,847	182,389	26,864	17,804	.....	461,797	*32,800	17,153
Interest and dividends	2,390	10,207	1,827	10,473	8,433	4,125	19,176	95,355	3,815	3,123	4,033	190,047	9,130	6,813
From Government (except for loans and schools)	.....	.....	.....	200	9,247	388	350	.....	67	.....	.....	8,720	200	.....
Refund of moneys loaned	3,500	4,826	.....	.....	15,955	710	104,458	151,414	26,304	1,000	45,808	1,863,321	41,898	1,294
<b>Loans:</b>														
Borrowed for current expenses	282,353	34,721	90,669	.....	145,067	50,000	331,170	720,702	42,700	199,642	82,000	289,789	81,747	25,621
Borrowed on debentures	.....	53,271	49,091	8,953	63,009	33,490	73,622	301,023	15,254	38,773	14,801	1,583,144	.....	5,551
Cemetery	.....	1,722	792	.....	5,567	.....	.....	.....	934	.....	1,223	.....	.....	.....
Miscellaneous	8,248	2,916	4,035	89	19,397	9,036	23,861	35,241	1,496	2,624	1,906	107,822	1,310	379
<b>Totals</b>	394,085	283,761	264,365	142,445	1,039,651	309,096	1,116,432	2,070,331	230,809	392,657	252,156	8,317,762	322,919	144,361
<b>DISBURSEMENTS.</b>														
<i>Expenses of municipal government:</i>														
Election of members of Council	165	645	166	189	561	313	819	773	218	159	178	5,026	447	206
Salaries and commissions	3,851	6,316	4,032	3,215	28,141	9,817	17,706	29,025	4,511	6,012	4,402	109,813	5,113	2,932
Printing, advertising, postage, stationery	2,209	1,261	578	584	2,308	1,370	3,976	5,591	822	953	972	11,485	1,008	547
Insurance, heating, lighting and care of buildings	567	1,542	387	2,010	3,652	2,472	4,011	1,419	1,235	930	456	28,429	585	999
Law costs (including salaries)	700	369	2,466	300	4,320	1,163	2,065	5,833	805	.....	854	28,224	554	1,009
Lighting of streets	6,639	8,138	3,996	5,850	33,524	8,001	25,289	27,575	7,705	6,734	5,038	50,400	6,461	3,816
Water supply and fire protection	16,508	39,191	12,836	11,373	38,277	19,787	51,899	84,836	21,252	17,366	8,187	378,418	24,996	15,087
Other expenses of municipal government	3,127	3,052	1,107	91	16,853	2,348	18,291	3,883	2,254	4,674	161	40,391	1,429	1,551
<i>Construction works:</i>														
Streets, bridges and parks	13,854	16,693	27,677	11,097	109,406	22,693	88,229	179,682	18,003	53,302	8,927	1,041,652	14,731	7,059
Waterworks, sewers and electric light plant	181,848	13,666	2,737	2,012	48,484	12,780	71,301	127,743	4,731	3,360	20,340	57,903	6,438	7,830
Buildings and other property	.....	433,643	.....	160	50,000	.....	41,688	.....	.....	19,484	16,580	201,938	.....	+7,989
Board of Health (including salaries)	79	600	926	1,019	4,734	731	2,519	11,480	796	482	638	41,274	2,101	386
Support of charities	1,927	5,926	2,251	3,460	43,826	3,038	19,625	1,835	1,877	3,787	3,989	88,368	2,855	525

Administration of justice, police, sur- vice .....	7,300	6,667	7,442	67,139	14,776	47,688	50,002	5,633	4,285	4,155	319,564	7,761	2,752
Schools and education .....	30,554	19,918	24,069	125,271	36,911	107,373	147,516	23,358	32,378	32,378	498,975	29,048	15,943
Sinking fund investments and deposits .....	26,764	52,560	19,088	52,560	6,019	143,713	301,023	2,574	4,947	25,514	1,706,361	32,698	\$ 16,621
Other investments and deposits .....	31,040	.....	.....	3,273	111	33,344	.....	2,974	.....	2,405	1,107,863	2,336	289
<i>Loans and interest:</i>													
Debtors .....	2,887	18,289	760	52,364	24,989	192	12,587	531	28,948	8,000	982,621	55,609	6,779
redeemed, (Interest .....	40,424	25,575	26,792	117,278	41,273	165,853	208,508	37,698	29,078	21,200	854,885	42,459	20,189
Interest or discount on loans, etc .....	1,221	5,518	588	4,952	2,807	3,395	22,729	1,884	1,795	2,945	56,455	3,125	65
Discount on debentures sold .....	.....	.....	.....	.....	.....	611	.....	.....	.....	.....	8,672	.....	.....
Refund of moneys borrowed for cur- rent expenses .....	65,000	120,737	4,000	124,315	53,665	307,245	806,131	61,309	149,500	86,000	1,126,388	76,566	10,000
Cemetery .....	1,291	1,273	.....	6,182	.....	7,852	.....	1,366	.....	2,075	.....	.....	.....
Library .....	2,400	1,708	.....	9,340	.....	.....	.....	1,710	800	.....	27,992	2,618	.....
Miscellaneous .....	25,624	2,618	2,362	53,079	2,465	10,828	35,516	5,582	2,950	7,309	26,522	3,512	4,487
Totals .....	388,925	278,623	260,861	1,035,085	267,169	1,115,508	2,069,764	228,917	377,922	251,898	7,903,314	322,832	126,031
<i>Assets</i>													
Cash in treasury (exclusive of sinking fund) .....	6,069	5,138	3,504	4,656	41,937	921	577	1,892	14,735	258	414,438	87	18,330
Taxes in arrears .....	81,625	3,810	29,116	12,808	363,462	45,636	532,638	31,685	25,053	27,100	821,668	50,562	10,542
Sinking fund investments and deposits (deposits) .....	36,562	161,658	.....	150,437	237,726	33,421	325,004	1,406,974	22,054	89,135	5,651,462	216,567	180,170
Land, buildings, library, etc .....	28,163	159,937	1,103	193,490	622,011	115,679	37,929	173,215	.....	14,963	2,335	11,632	.....
Waterworks .....	180,725	263,768	175,000	115,870	877,725	239,849	516,646	508,976	115,266	93,312	9,798,185	58,150	58,760
Other property (cemetery, fire hall, etc.) .....	52,214	28,163	488,700	12,000	781,413	30,504	131,710	140,000	45,730	21,000	299,773	43,500	9,309
Miscellaneous .....	.....	162,941	58,310	150,034	7,809	70,069	650,225	132,894	231,826	4,978	2,116,740	154,530	7,474
Totals .....	510,384	1,053,110	504,042	704,129	766,666	2,799,989	5,287,311	884,703	620,781	209,287	23,453,691	775,721	443,294
<i>LIABILITIES.</i>													
Local school rates unpaid .....	.....	.....	512	.....	.....	2,336	3,630	572	.....	.....	.....	.....	5,075
Debtors outstanding (principal):	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aid to railways .....	50,000	.....	193,000	250,000	105,397	325,000	145,000	119,627	7,460	60,000	1,143,718	.....	.....
Schools .....	8,700	72,656	15,700	242,389	66,800	86,300	287,000	59,165	59,165	20,500	1,616,369	99,771	60,525
Municipal improvement .....	17,664	172,609	133,646	84,910	38,833	133,729	301,871	611,599	181,558	40,438	7,387,345	297,840	52,176
Municipal works .....	255,000	176,374	67,900	950,000	273,890	830,629	1,474,584	30,000	128,373	.....	3,876,274	193,247	141,789
All other objects .....	421,000	426,433	238,560	2,103,214	404,300	1,310,681	2,101,889	209,037	318,500	318,500	4,816,285	259,711	218,625
Loans for current expenses .....	282,853	165,618	78,419	145,067	30,000	11,170	462,568	24,400	62,855	32,031	289,780	53,225	21,488
Miscellaneous .....	190	3,202	12,247	9,283	22,914	73,361	157,065	7,945	16,919	2,790	1,258,440	1,957	3,403
Totals .....	729,517	1,042,466	684,424	635,855	3,741,750	1,036,940	2,971,348	915,933	656,428	494,659	23,747,226	836,731	506,781

\* Including \$344 from electric light, † Including \$3,000 for gravel pit \$ In city account. ‡ Contractors' and other special deposits refunded. § Including \$20,500 bonus to rolling mill. ¶ Stock in hospital prior returns, \$1,900; water works balance, 1899, \$11; total, \$2,011. a Including water works contract deposit, \$10,023; cash balance, \$8,348; total, \$18,371. d Including \$17,000 for light plant. e Including \$748,045 for sewage disposal system. f Including \$2,000, light plant. g Including \$25,000 for light plant. h Including short dated debentures secured by taxes in arrears, \$400,000. i Including \$8,724, water works overdraft. j Including \$495,000 mortgage on city real estate and \$37,922 contractors' guarantee deposit.

NOTE. In this statement of assets the school property is not included, although the assets should properly be increased by an amount equivalent to the school debentures outstanding, which are liabilities of the municipality.

FINANCIAL STATEMENT—CITY MUNICIPALITIES—1900.

Showing an abstract statement of Receipts, Disbursements, Assets and Liabilities of the cities of Ontario for the year ending December 31, 1900.

Schedule.	Bellefille.	Brantford.	Chatham.	Guelph.	Hamilton.	Kingston.	London.	Ottawa.	St. Catharines.	St. Thomas.	Stratford.	Toronto.	Windsor.	Woodstock.
<b>RECEIPTS.</b>														
Balances from 1899 .....	6,060	5,138	3,504	14,266	4,566	41,937	4,294	577	1,892	14,735	258	414,438	87	18,330
Municipal and school taxes .....	89,525	134,951	104,246	98,154	536,072	141,802	423,111	580,680	100,702	132,435	96,752	2,945,505	148,081	60,384
Liquor licenses .....	2,388	2,825	2,956	2,180	10,183	7,244	2,365	15,407	2,107	3,147	2,487	33,844	2,758	2,196
Other licenses .....	1,016	1,702	589	562	4,696	1,182	2,608	2,497	1,005	738	638	31,319	1,004	727
Fees, rents, tolls, fines, etc .....	3,674	4,757	1,635	2,638	37,971	3,737	23,542	28,309	4,387	1,680	1,265	353,374	3,205	731
Water rates, electric light, etc .....	20,881	31,838	10,714	14,791	181,791	29,811	89,350	169,301	23,286	18,463	.....	340,142	*31,948	17,723
Interest on investments and dividends .....	4,147	10,129	94	10,448	13,634	4,380	2,377	84,924	3,014	4,776	3,757	196,576	8,225	413,100
From Government (except for loans and schools) .....	.....	.....	.....	216	7,863	402	1,474	.....	.....	.....	.....	6,157	216	.....
Refund of moneys loaned .....	9,088	27,298	.....	490	13,489	111	29,238	61,029	28,425	98	24,815	741,295	27,369	24,551
<b>Loans :</b>														
Borrowed for current expenses .....	121,864	24,082	88,791	6,000	186,958	48,945	624,722	49,992	80,658	428,500	76,000	1,101,162	92,201	38,500
Borrowed on debentures .....	145,951	88,439	.....	6,415	422,275	28,581	164,722	345,854	.....	60,708	16,733	91,700	20,000	25,809
Cemetery .....	1,161	714	.....	7,994	.....	.....	.....	.....	1,351	.....	988	.....	.....	.....
Miscellaneous .....	3,238	8,032	3,087	7,310	45,923	5,056	2,932	10,003	24	1,440	3,126	70,449	1,213	889
<b>Totals .....</b>	<b>404,832</b>	<b>339,642</b>	<b>216,330</b>	<b>163,471</b>	<b>1,473,415</b>	<b>313,238</b>	<b>1,389,760</b>	<b>1,388,573</b>	<b>247,401</b>	<b>666,765</b>	<b>226,863</b>	<b>6,325,961</b>	<b>336,307</b>	<b>204,940</b>
<b>DISBURSEMENTS.</b>														
<i>Expenses of municipal government :</i>														
Election of members of council .....	123	630	165	216	1,449	467	757	758	747	162	335	5,330	366	146
Salaries and commissions .....	3,872	6,840	3,698	3,046	29,205	10,028	17,138	23,357	4,672	6,052	4,906	105,586	4,540	2,513
Printing, advertising postage and stationery .....	715	1,159	485	544	2,502	1,180	5,502	5,852	2,472	867	906	13,685	685	743
Insurance, heating, lighting and care of buildings .....	1,536	1,159	655	2,059	5,158	2,340	4,349	4,370	1,256	2,674	1,074	30,464	794	181
Law costs (including salaries) .....	761	279	1,153	300	4,320	1,016	1,739	8,295	921	1,350	1,350	33,672	500	366
Lighting of streets .....	6,342	8,438	4,523	5,850	32,538	8,079	24,262	24,761	7,781	7,859	5,083	109,468	7,008	3,814
Water supply and fire protection .....	22,527	37,373	12,793	14,268	85,025	18,742	62,257	108,905	22,504	18,323	8,646	386,173	24,404	17,226
Other expenses of municipal government .....	1,457	1,342	1,093	30	11,797	3,013	7,377	2,264	1,986	3,196	155	88,973	1,912	557
<b>Construction works :</b>														
Streets, bridges and parks .....	11,454	19,722	46,076	9,806	238,488	20,875	113,569	155,474	42,407	30,651	10,533	1,138,850	31,609	14,008
Waterworks, sewers and electric light plant .....	2,488	62,355	2,620	764	234,541	17,384	63,423	197,268	1,137	1,763	11,776	42,083	770	5,689
Buildings and other property .....	80	\$30,374	.....	\$13,984	.....	.....	21,721	117	2,088	3,998	12,038	106,475	.....	6,262

Board of Health (including salaries) . . . . .	148	1,105	1,000	790	11,600	659	2,491	6,635	954	488	754	41,779	2,507	367
Support of charities . . . . .	2,041	5,628	2,223	3,933	49,661	3,425	27,214	11,139	2,160	4,747	2,441	30,568	3,093	1,030
Administration of justice, police service . . . . .	5,016	7,725	6,510	9,934	44,481	14,481	43,980	51,090	5,227	4,661	4,478	335,242	8,189	2,406
Schools and education . . . . .	16,232	33,475	30,349	26,423	155,477	35,150	169,141	123,187	24,925	25,723	22,750	786,512	29,715	16,351
Sinking fund investments and deposits. . . . .	12,674	30,831	30,831	21,108	54,716	6,385	80,016	252,148	11,376	3,259	30,418	412,682	31,156	10,241
Other investments and deposits . . . . .	36,241	8,075	1,600	98,207	**35,834	121,420	1,000	1,680	12,924	138	110,172	1,034	977	
<i>Loans and interest:</i>														
Debtentures redeemed . . . . .	90,000	5,277	18,192	9,750	52,317	38,937	11,053	††3,093	18,193	30,098	1,800	1,064,451	44,751	33,101
Interest or discount on loans, etc . . . . .	22,088	42,229	25,441	32,323	130,205	43,052	134,735	216,790	40,126	29,010	21,424	883,905	38,797	25,808
Discount on debentures sold . . . . .	13,960	927	5,234	565	8,812	3,535	4,614	30,569	1,923	3,218	3,077	42,080	3,296	339
Refund of moneys borrowed for cur- rent expenses . . . . .	142,863	23,721	51,033	145,067	30,000	511,170	1,000	43,200	459,142	73,000	289,789	95,890	46,810	
Cemetery . . . . .	900	2,200	1,101	9,610	9,738	6,025	8,217	1,636	2,528	1,189	800	28,365	2,096	
Library . . . . .	11,983	6,411	4,286	15,102	171,945	171,945	2,023	††120,722	4,484	2,950	6,984	63,643	3,168	885,454
Totals . . . . .	404,552	338,571	211,962	158,277	1,468,511	300,007	1,378,323	1,365,854	246,140	652,810	226,055	6,170,047	336,280	194,609
<i>ASSETS.</i>														
Cash in treasury (exclusive of sink fund) . . . . .	280	1,071	4,368	5,194	4,904	12,631	11,437	3,719	1,261	13,955	814	155,914	27	10,331
Taxes in arrears . . . . .	85,703	3,134	32,656	12,295	338,463	54,082	49,367	578,360	37,227	27,031	30,133	884,919	54,155	11,454
Sinking fund investments and deposits. . . . .	49,276	188,231	188,231	171,945	281,334	39,806	394,768	1,598,993	27,606	92,316	85,452	5,432,504	222,689	146,149
Other investments (including special deposits) . . . . .	58,316	†147,372	2,703	193,000	206,405	57,734	1,142,895	37,922	*\$11,289	12,924	868	1,034	12,320	
Land, buildings, library, etc . . . . .	124,995	324,792	149,864	118,982	870,748	233,849	641,546	503,200	115,230	100,044	72,372	9,897,637	58,650	63,410
Waterworks . . . . .	180,725	317,509	186,917	147,711	1,952,452	344,406	649,819	2,000,000	360,104	150,000	4,349,385	250,000	50,000	168,314
All other property (cemetery, fire halls, etc.) . . . . .	58,150	168,262	151,217	66,737	354,015	28,630	48,813	688,268	115,211	252,052	3,454	1,873,230	124,866	13,962
Totals . . . . .	557,445	1,179,134	566,235	722,594	4,843,360	807,642	3,053,395	5,531,502	741,658	663,822	217,093	22,895,849	754,921	439,280
<i>LIABILITIES.</i>														
Local school rates unpaid . . . . .			321	202	156	29,131	156	36,131						3,738
Debtentures outstanding (principal):														
Aid to railroads . . . . .	50,000	72,205	193,000	17,700	266,105	64,860	325,000	145,000	101,134	3,821	60,000	1,148,718		
Schools . . . . .	8,500	18,615	181,062	128,494	89,326	62,092	139,610	390,742	685,547	25,656	213,830	67,421	6,351,594	98,281
Municipal work . . . . .	476,000	451,433	288,893	247,000	2,426,197	420,800	885,629	1,474,584	30,000	134,651	326,500	8,243,285	214,769	237,437
All other objects . . . . .	201,149	465,979	115,427	22,000	186,958	48,995	154,722	654,240	61,858	32,000	35,031	1,101,162	49,579	16,178
Loans for current expenses . . . . .		726,107	2,880	4,380	13,291	23,783	67,639	†185,643	7,282	12,607	4,726	†1,288,602	4,751	45
Miscellaneous . . . . .	704,264	1,151,846	703,239	633,308	4,454,643	1,045,448	3,230,727	5,687,543	983,663	651,901	511,178	23,621,009	810,148	485,679
Totals . . . . .														

\* Including \$123 for electric light, † Including \$18,744 flood pre traction, \$6,000 addition to Hospital, \$1,760 addition to House of Refuge, †† Including \$11,136 retained in city account from sinking fund. ‡ Including \$18,126 in city account. §§ Including \$99,000 fire relief. ¶ Including \$4,291 paid to county. ¶¶ Including \$75 waterworks balance. ¶¶¶ Including \$2,000 for adjustment of error in previous return. ¶¶¶¶ Including \$26,700 debt arrangement debentures, \$9,000 smaller site, \$13 waterworks account balance. ¶¶¶¶¶ Including \$2,000 written off: stock, \$12,871; railway bonds, \$88,131; railway bond interest, \$57,812; total, \$168,817. ¶¶¶¶¶¶ Including \$708,886 for sewerage system. ¶¶¶¶¶¶¶ Including \$13,044 unexpended flood light plant. ¶¶¶¶¶¶¶¶ Including \$25,000 for the plant. ¶¶¶¶¶¶¶¶¶ Including \$30,440 as previously omitted. ¶¶¶¶¶¶¶¶¶ Including \$89,453 Industrial money and \$11,000 hospital building fund. ¶¶¶¶¶¶¶¶¶¶ Being \$146,000 on mortgages, \$37,922 contractors' deposits, \$2,721 special deposits. ¶¶¶¶¶¶¶¶¶¶¶ Including \$89,453 Industrial Exhibition loans, \$85,000 being mortgages, \$14,453 Imperial Bank stock.

## ASSESSMENT AND TAXATION.

Summary statement for the Province of Ontario and of the Population and Area, as shown by the assessment rolls, and of the assessed values and amount of Taxes imposed, as shown by the collection rolls, together with the average rate of taxes per head of population assessed as resident, and rate in mills on the dollar of total assessed value for the sixteen years, 1886 to 1901, classified as rural (townships) urban (towns and incorporated villages) and cities.

Municipalities.	Population.	Number of acres assessed	Assessed values.				Taxes imposed for all purposes.		
			Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on \$
			\$	\$	\$	\$	\$	\$ c.	
1901.									
Townships..	1,092,181	23,636,178	456,406,064	2,161,826	241,036	458,811,926	4,862,630	4 45	10.6
Towns .....	330,412	151,053	91,000,970	7,417,856	1,502,551	99,921,377	2,330,691	7 05	23.3
Villages.....	126,836	97,424	27,649,258	1,962,130	238,545	29,849,933	589,798	4 65	19.8
Cities .....	479,460	43,552	221,342,063	18,252,096	7,520,212	247,114,371	5,558,236	11 59	22.5
Total ..	2,028,889	23,928,207	796,398,355	29,793,908	9,505,344	835,697,607	13,341,355	6 58	16.0
1900.									
Townships ..	1,095,222	23,568,104	451,535,483	2,422,994	228,576	454,187,053	4,696,255	4 29	10.3
Towns .....	326,041	153,146	88,341,578	6,971,133	1,503,962	96,816,673	2,180,238	6 69	22.5
Villages.....	124,637	97,363	27,004,039	1,854,725	223,519	29,082,283	564,750	4 53	19.4
Cities .....	467,960	42,027	218,659,680	16,707,100	6,982,881	242,349,661	5,551,578	11 86	22.9
Total ..	2,013,860	23,860,640	785,540,780	27,955,952	8,938,938	822,435,670	12,992,821	6 45	15.8
1899.									
Townships ..	1,109,806	23,445,092	447,964,611	2,779,272	209,065	450,952,948	4,621,803	4 16	10.2
Towns .....	318,145	153,477	86,935,702	6,580,960	1,492,136	95,008,798	2,106,178	6 62	22.2
Villages.....	133,921	98,976	28,765,060	1,951,765	256,622	30,973,357	585,356	4 37	18.9
Cities .....	448,876	42,315	214,442,167	18,075,255	7,307,948	239,823,370	5,221,947	11 63	21.8
Total ..	2,010,748	23,741,860	778,107,540	29,387,162	9,265,771	816,760,473	12,537,284	6 23	15.3
1898.									
Townships ..	1,110,894	23,392,584	445,877,275	2,696,084	236,701	448,810,060	4,461,474	4 02	9.9
Towns .....	314,820	156,142	85,576,404	6,421,936	1,531,032	93,529,372	2,095,791	6 66	22.4
Villages.....	134,747	98,346	28,694,694	1,902,735	270,596	30,768,025	570,512	4 24	18.6
Cities .....	440,889	42,034	211,334,978	16,547,241	8,195,157	236,077,376	5,094,789	11 56	21.6
Total ..	2,001,350	23,689,106	771,383,351	27,567,996	10,233,486	809,184,833	12,222,966	6 11	15.1
1897.									
Townships ..	1,113,530	23,360,428	441,878,264	2,609,661	234,553	444,722,478	4,407,005	3 96	9.9
Towns .....	312,947	156,338	83,529,399	6,343,065	1,565,482	91,438,546	2,069,444	6 61	22.6
Villages.....	133,560	99,240	28,314,870	1,903,926	278,911	30,497,707	569,884	4 27	18.7
Cities .....	430,940	40,744	212,621,741	17,125,503	7,219,102	236,966,646	5,160,592	11 98	21.8
Total ..	1,990,977	23,656,750	766,344,874	27,982,155	9,298,348	803,625,377	12,206,925	6 13	15.2
1896.									
Townships ..	1,112,900	23,172,408	444,056,842	2,792,037	268,444	447,117,383	4,292,741	3 86	9.6
Towns .....	306,001	154,520	83,194,842	6,486,593	1,617,776	91,269,208	2,005,132	6 55	22.0
Villages.....	132,451	99,507	27,855,878	1,881,680	268,281	30,005,839	557,003	4 21	18.6
Cities .....	420,934	40,548	221,941,541	16,963,651	7,620,011	246,525,203	5,267,909	12 51	21.4
Total ..	1,972,286	23,466,983	777,049,103	28,094,018	9,774,512	814,917,633	12,122,785	6 15	14.9
1895.									
Townships ..	1,109,631	23,114,356	445,375,439	2,762,179	279,641	448,417,259	4,473,269	4 03	10.0
Towns .....	300,655	152,685	84,965,120	6,999,896	1,681,819	93,646,835	2,021,455	6 72	21.5
Villages.....	130,889	94,566	27,572,493	1,848,480	290,037	29,711,010	544,111	4 16	15.5
Cities .....	416,215	40,548	225,079,539	16,852,113	7,759,410	249,691,062	5,277,594	12 68	21.1
Total ..	1,957,390	23,402,155	782,992,591	28,462,658	10,010,907	821,466,166	12,316,429	6 29	15.0



## ASSESSMENT AND TAXATION.—Continued.

Municipalities.	Population.	Number of acres assessed.	Assessed values.				Taxes imposed for all purposes.		
			Real property.	Personal property.	Taxable income.	Total.	Total.	Per head.	Mills on \$
1894.			\$	\$	\$	%	\$	\$ c.	
Townships..	1,103,828	23,039,610	448,216,984	2,899,503	359,616	451,476,103	4,579,044	4 15	10.1
Towns .....	297,194	153,164	84,363,681	7,115,335	1,586,389	93,065,465	1,955,980	6 58	21.0
Villages .....	126,387	94,407	26,799,930	1,931,015	276,983	29,007,928	526,813	4 17	18.4
Cities .....	408,810	40,560	227,578,882	17,323,301	7,727,691	252,629,874	5,258,475	12 86	20.8
Total ....	1,936,219	23,327,741	786,959,477	29,269,214	9,950,679	826,179,370	12,320,312	6 36	14.9
1893.									
Rural .....	1,096,984	22,959,280	448,311,559	2,957,944	359,600	451,629,103	4,629,028	4 22	10.3
Urban .....	415,410	246,780	111,724,238	8,923,403	2,029,029	122,676,670	2,449,452	5 90	20.0
Cities .....	397,665	40,258	226,179,831	17,581,320	7,463,128	251,224,279	5,444,180	13 69	21.7
Total ....	1,910,059	23,246,318	786,215,628	29,462,667	9,851,757	825,530,052	12,522,660	6 56	15.2
1892.									
Rural .....	1,102,467	22,885,464	448,566,182	3,089,202	410,274	452,065,658	4,599,442	4 17	10.2
Urban .....	413,396	228,829	110,989,898	8,452,309	2,469,164	121,911,371	2,375,995	5 75	19.5
Cities .....	393,664	40,258	222,997,515	18,928,105	9,308,478	251,234,098	4,828,133	12 26	19.2
Total ....	1,909,527	23,154,551	782,553,595	30,469,616	12,187,916	825,211,127	11,803,570	6 18	14.3
1891.									
Rural .....	1,116,347	22,825,325	450,559,809	3,101,633	408,892	454,070,364	4,544,291	4 07	10.0
Urban .....	410,545	227,075	109,462,152	8,570,172	2,343,484	120,375,808	2,805,025	5 61	19.1
Cities .....	395,229	39,498	216,091,585	19,460,460	8,849,177	244,401,222	4,918,432	12 44	20.1
Total ....	1,922,121	23,091,898	776,113,546	31,132,295	11,601,553	818,847,394	11,767,748	6 12	14.4
1890.									
Rural .....	1,118,252	22,676,390	448,916,986	3,178,614	371,488	452,467,088	4,473,108	4 00	9.9
Urban .....	410,530	223,434	105,353,091	7,878,486	2,170,656	115,402,233	2,161,644	5 27	18.7
Cities .....	388,762	39,498	202,907,967	19,300,295	8,538,688	230,746,950	4,262,733	10 96	18.5
Total ....	1,917,544	22,939,322	757,178,044	30,357,395	11,080,832	798,616,271	10,897,485	5 68	13.7
1889.									
Rural .....	1,130,060	22,554,717	447,114,443	3,470,224	392,553	450,977,220	4,507,717	3 99	10.0
Urban .....	400,890	215,532	96,567,320	7,773,945	2,112,533	106,453,798	1,993,623	4 97	18.7
Cities .....	375,951	38,498	177,634,932	18,826,684	8,013,182	204,474,798	3,746,858	9 97	18.3
Total ....	1,906,901	22,808,747	721,316,695	30,070,853	10,518,268	761,905,816	10,248,198	5 37	13.5
1888.									
Rural .....	1,133,046	22,348,502	433,596,047	26,624,345	395,430	460,615,822	4,494,780	3 97	9.8
Urban .....	393,461	211,707	90,416,611	7,956,694	2,039,724	100,413,029	1,884,918	4 79	18.8
Cities .....	353,638	36,961	160,239,217	19,345,966	8,040,596	187,625,719	3,540,264	10 01	18.9
Total ....	1,880,145	22,597,170	684,251,875	53,926,945	10,475,750	748,654,570	9,919,962	5 28	13.3
1887.									
Rural .....	1,140,138	22,145,295	428,372,441	27,381,683	416,039	456,170,163	4,431,720	3 89	9.7
Urban .....	377,389	212,322	83,497,910	7,616,982	2,222,704	93,337,596	1,759,248	4 66	18.8
Cities .....	330,930	36,163	140,795,414	18,226,775	8,781,990	167,804,179	3,109,145	9 40	18.5
Total ....	1,848,457	22,393,780	652,665,765	53,225,440	11,420,733	717,311,938	9,300,113	5 03	13.0
1886.									
Rural .....	1,148,856	21,990,134	424,356,317	27,280,098	452,230	452,007,645	4,388,401	3 82	9.7
Urban .....	360,005	204,446	78,521,775	7,384,126	2,172,192	88,078,093	1,670,848	4 64	19.0
Cities .....	319,634	35,373	129,231,595	16,925,710	8,047,616	154,204,921	2,950,136	9 23	19.1
Total ....	1,828,495	22,229,953	632,109,687	51,598,934	10,672,038	694,380,659	9,009,385	4 93	13.0

\* This large decrease in personal property was due to a change in the Assessment Act, which exempted farm live stock, etc.

## POPULATION, ASSESSMENT AND TAXATION.

Statement of municipalities of Ontario (townships, towns, villages and cities) grouped into County limits, showing for 1901 the population, the area, the assessed values and amount of taxes imposed for all purposes, inclusive of schools, as shown by the assessment and collection rolls, together with the average rate per head of the resident population and mills on the dollar; also comparative totals by counties for 1900 and 1891.

Municipalities.	Popu- lation.	No. of acres assessed.	Assessed values.				Taxes imposed for all purposes.		
			Real property.	Personal property	Taxable income.	Total.	Total.	Per head.	Mills on the \$
			\$	\$	\$	\$	\$	\$ c.	
<b>ALOOMA:</b>									
Townships.....	10,744	419,470	2,435,406	36,063	12,646	2,484,115	45,208	4 21	18.2
Towns .....	7,229	2,607	2,907,455	147,325	56,540	3,111,320	52,948	7 32	17.0
Totals:									
1901.....	17,973	422,077	5,342,861	183,388	69,186	5,595,435	98,156	5 46	17.5
1900.....	13,678	394,429	3,494,566	102,350	39,070	3,635,986	70,795	5 18	19.5
1891.....	7,035	256,731	1,917,948	55,911	6,520	1,980,379	42,762	6 08	21.6
<b>BRANT:</b>									
Townships.....	13,680	215,686	9,371,982	47,316	12,280	9,431,578	67,753	4 95	7.2
Town .....	3,214	685	898,226	84,589	17,600	1,000,415	22,718	7 07	22.7
City (Brantford) ..	16,589	2,541	6,612,548	503,050	125,107	7,240,705	116,111	8 81	20.2
Totals:									
1901.....	33,483	218,912	16,882,756	634,955	154,987	17,672,698	236,582	7 07	13.4
1900.....	33,558	219,070	16,846,172	689,852	141,285	17,677,309	225,021	6 71	12.7
1891.....	34,222	218,775	15,682,523	1,090,361	233,945	17,006,829	189,161	5 53	11.1
<b>BRUCE:</b>									
Townships.....	38,347	916,678	17,647,395	135,835	8,450	17,791,680	147,421	3 84	8.3
Towns .....	7,506	4,000	1,574,664	194,200	35,650	1,804,514	43,552	5 80	24.1
Villages .....	8,701	6,674	1,800,572	224,475	13,150	2,038,197	40,176	4 62	19.7
Totals:									
1901.....	54,554	927,352	21,022,631	554,510	57,250	21,634,391	231,149	4 24	10.7
1900.....	55,263	911,887	20,820,368	488,140	53,075	21,361,583	231,114	4 18	10.8
1891.....	57,950	826,294	21,228,073	433,225	71,975	21,733,273	220,072	3 80	10.1
<b>CARLETON:</b>									
Townships.....	28,914	564,413	9,189,133	25,025	.....	9,214,158	115,201	3 98	12.5
Villages .....	4,362	2,214	780,519	15,000	.....	795,519	19,245	4 41	24.2
City (Ottawa) ....	60,989	3,365	22,923,540	1,636,950	508,850	25,069,340	570,265	9 35	22.7
Totals:									
1901.....	94,265	569,992	32,893,192	1,676,975	508,850	35,079,017	704,711	7 48	20.1
1900.....	90,260	574,093	32,611,933	1,308,425	484,750	34,405,108	696,980	7 72	20.3
1891.....	73,282	566,854	24,928,715	1,446,825	147,900	26,522,440	484,615	6 61	18.3
<b>DUFFERIN:</b>									
Townships.....	16,030	355,541	7,693,675	24,600	200	7,718,475	70,854	4 42	9.2
Town .....	4,100	1,511	764,845	1,100	8,400	774,345	20,179	4 92	26.1
Villages .....	1,923	856	469,470	20,950	9,050	499,470	10,381	5 40	20.8
Totals:									
1901.....	22,053	357,908	8,927,990	46,650	17,650	8,992,290	101,414	4 60	11.3
1900.....	21,214	358,479	7,656,526	56,550	16,700	7,729,776	100,416	4 73	13.0
1891.....	20,159	358,060	7,156,943	80,650	17,750	7,255,343	90,326	4 48	12.4
<b>DUNDAS:</b>									
Townships.....	13,780	236,756	5,430,217	53,250	7,900	5,491,367	69,855	5 07	12.7
Villages .....	4,670	2,767	1,118,480	95,400	26,850	1,240,730	26,791	5 74	21.6
Totals:									
1901.....	18,450	239,523	6,548,697	148,650	34,750	6,732,097	96,646	5 24	14.3
1900.....	18,760	238,854	6,557,606	153,025	29,550	6,740,181	94,990	5 06	14.0
1891.....	18,753	239,305	6,833,270	153,400	41,625	7,031,295	73,247	3 91	10.4
<b>DURHAM:</b>									
Townships.....	17,869	371,936	9,575,041	16,650	4,300	9,595,991	72,941	4 08	7.6
Towns .....	6,819	3,980	2,275,330	202,160	60,210	2,537,700	53,638	7 87	21.1
Villages .....	1,505	2,386	362,915	12,300	2,200	377,415	6,693	4 45	17.7
Totals:									
1901.....	26,193	378,302	12,213,286	231,110	66,710	12,511,106	133,272	5 09	10.7
1900.....	27,047	376,694	12,600,013	243,175	68,705	12,911,893	127,956	4 73	9.1
1891.....	30,872	374,590	13,095,560	288,780	114,620	13,498,960	135,367	4 38	10.0

## POPULATION, ASSESSMENT AND TAXATION.—Continued.

Municipalities.	Popu- lation.	No. of acres assessed.	Assessed values.				Taxes imposed for all purposes.		
			Real property.	Personal property	Taxable income.	Total.	Total.	Per head.	Mills on the \$
			\$	\$	\$	\$	\$	\$ c.	
<b>ELGIN :</b>									
Townships .....	24,440	435,837	12,520,821	54,545	5,770	12,581,136	156,114	6 39	12.4
Town .....	2,185	538	618,810	73,600	13,235	705,645	19,716	9 02	27.9
Villages .....	2,226	2,420	483,575	53,925	3,050	540,550	9,791	4 40	18.1
City (St. Thomas) ..	11,903	1,700	4,148,812	264,750	153,575	4,567,137	128,991	10 84	28.2
Totals:									
1901 .....	40,755	440,495	17,772,018	446,820	175,630	18,394,468	314,612	7 72	17.1
1900 .....	41,056	440,445	17,720,035	447,990	203,701	18,371,726	293,585	7 15	16.0
1891 .....	39,868	440,784	17,034,080	393,925	215,215	17,643,220	231,548	5 81	13.1
<b>ESSEX :</b>									
Townships .....	32,829	430,938	11,779,533	47,175	5,200	11,831,908	202,571	6 17	17.1
Towns .....	10,770	4,691	3,319,022	1,023,433	69,290	4,411,745	88,989	8 26	20.2
Village .....	553	327	58,317	2,600		60,917	1,272	2 26	20.9
City (Windsor) .....	12,642	2,020	5,072,163	181,400	52,300	5,305,863	142,303	11 26	26.8
Totals:									
1901 .....	56,804	437,976	20,229,035	1,254,608	126,790	21,610,433	435,135	7 66	20.1
1900 .....	56,080	438,157	20,060,524	1,223,595	129,290	21,413,409	431,795	7 70	20.2
1891 .....	51,157	433,600	18,140,862	1,212,603	70,294	19,423,759	357,096	6 98	18.4
<b>FRONTENAC :</b>									
Townships .....	20,453	690,408	4,657,053	10,520	6,000	4,673,573	91,121	4 46	19.5
Villages .....	845	216	137,850	27,900	10,000	175,750	4,245	5 03	24.2
City (Kingston) .....	18,260	2,300	6,593,043	670,950	252,050	7,516,043	149,839	8 21	19.9
Totals:									
1901 .....	39,558	692,924	11,387,946	709,370	268,050	12,365,366	245,209	6 20	19.8
1900 .....	39,630	693,482	11,443,491	707,445	273,775	12,426,711	240,959	6 08	19.4
1891 .....	40,475	676,665	11,408,645	1,094,245	470,190	12,973,080	220,285	5 44	17.0
<b>GLENGARRY :</b>									
Townships .....	17,076	289,434	3,838,173	5,650	200	3,844,023	53,233	3 12	13.8
Villages .....	2,960	1,050	451,840	10,650		462,490	10,176	3 44	22.0
Totals:									
1901 .....	20,036	290,484	4,290,013	16,300	200	4,306,513	63,409	3 16	14.7
1900 .....	19,495	286,848	4,193,650	14,435	200	4,208,285	59,656	3 06	14.2
1891 .....	20,113	289,394	4,219,906	56,975	2,780	4,279,661	48,227	2 40	11.3
<b>GRENVILLE :</b>									
Townships .....	12,564	271,381	4,479,359	5,550	2,600	4,487,509	46,161	3 67	10.3
Town .....	2,926	1,182	875,605	31,300	10,200	917,105	21,406	7 32	23.3
Villages .....	3,737	1,445	943,515	73,650	18,950	1,036,115	16,649	4 46	16.1
Totals:									
1901 .....	19,227	274,008	6,298,479	110,500	31,750	6,440,729	84,216	4 38	13.1
1900 .....	19,187	273,951	6,193,919	111,100	35,800	6,340,819	81,806	4 26	12.9
1891 .....	19,441	274,335	5,334,372	105,205	40,150	5,479,727	67,518	3 47	12.3
<b>GREY :</b>									
Townships .....	48,791	1,064,479	16,806,779	73,425	2,300	16,382,504	177,825	3 64	10.9
Towns .....	13,307	9,560	3,719,084	265,875	52,782	4,037,741	96,549	7 26	23.9
Villages .....	3,208	1,830	470,925	34,400	2,450	507,775	11,580	3 61	22.8
Totals:									
1901 .....	65,306	1,075,869	20,496,788	373,700	57,532	20,928,020	285,954	4 38	13.7
1900 .....	65,333	1,072,010	20,243,164	315,991	46,495	20,605,650	277,103	4 24	13.4
1891 .....	66,278	1,069,014	20,267,490	330,510	82,000	20,680,000	256,121	3 86	12.4
<b>HALDIMAND :</b>									
Townships .....	14,978	280,009	6,928,890	26,400	2,050	6,957,340	64,217	4 29	9.2
Town .....	2,142	941	620,790	64,500	3,300	688,590	13,026	6 08	18.9
Villages .....	2,869	1,918	518,384	38,550	5,500	562,434	11,445	3 99	20.3
Totals:									
1901 .....	19,989	282,898	8,068,064	129,450	10,850	8,208,364	88,688	4 44	10.8
1900 .....	20,545	283,520	7,989,886	129,350	11,150	8,130,386	89,495	4 35	11.1
1891 .....	20,683	282,869	8,177,045	182,745	20,200	8,379,990	88,284	4 27	10.5

## POPULATION, ASSESSMENT AND TAXATION.—Continued.

Municipalities.	Population.	No. of acres assessed.	Assessed values.				Taxes imposed for all purposes.		
			Real property.	Personal property	Taxable Income.	Total.	Total.	Per head.	Mills on the \$
<b>HALIBURTON :</b>			\$	\$	\$	\$	\$	\$ c.	
(Townships)									
1901....	5,963	563,213	496,444	9,625	800	506,869	19,980	3 35	39.4
1900....	5,858	569,283	501,055	9,375	600	511,030	21,832	3 73	42.7
1891....	5,767	563,158	479,332	11,466	200	490,998	20,747	3 60	42.3
<b>HALTON :</b>									
Townships.....	11,882	225,567	7,455,315	45,370	14,275	7,514,960	50,764	4 27	6 8
Towns.....	3,023	1,700	814,012	40,800	8,500	869,312	18,379	6 07	21.1
Villages.....	4,129	1,789	956,193	71,400	5,900	1,033,495	18,827	4 56	18.2
Totals :									
1901....	19,040	229,056	9,225,522	163,570	28,675	9,417,767	87,970	4 62	9.3
1900....	19,113	228,859	9,225,425	142,525	27,390	9,395,340	86,202	4 51	9.2
1891..	20,208	227,458	9,354,265	154,890	47,075	9,556,230	88,019	4 36	9.2
<b>HASTINGS :</b>									
Townships.....	33,382	1,036,125	9,081,010	8,450	3,500	9,092,960	127,759	3 83	14.1
Towns.....	7,922	2,333	1,746,556	54,420	21,700	1,822,676	45,350	5 72	24.9
Villages.....	3,914	2,018	747,765	67,165	7,650	822,580	16,647	4 25	20.2
City (Belleville) :	10,104	1,700	3,547,123	270,100	85,350	3,902,573	87,809	8 69	22.5
Totals :									
1901....	55,322	1,042,176	15,122,454	400,135	118,200	15,640,789	277,565	5 02	17.7
1900....	55,737	1,036,074	15,169,487	383,975	102,750	15,656,212	283,900	5 09	18.1
1891..	54,906	986,362	15,854,055	268,205	112,350	16,234,610	272,267	4 96	16.8
<b>HURON :</b>									
Townships.....	43,011	798,524	26,786,896	108,625	4,500	26,900,021	181,599	4 22	6 8
Towns.....	10,966	3,050	2,803,199	224,240	46,500	3,073,939	71,900	6 56	23.4
Villages.....	5,633	4,659	1,311,694	132,855	8,550	1,453,099	26,329	4 67	18.1
Totals :									
1901....	59,610	806,233	30,901,789	465,720	59,550	31,427,059	279,828	4 69	8 9
1900....	60,112	806,148	30,617,224	431,090	59,250	31,107,564	267,302	4 45	8 6
1891....	61,272	802,412	30,383,338	456,085	137,880	30,977,303	260,966	4 26	8 4
<b>KENT :</b>									
Townships.....	33,015	564,684	17,693,243	41,085	1,450	17,735,778	246,513	7 47	13.9
Towns.....	9,371	4,442	2,038,274	189,560	10,300	2,238,134	57,538	6 14	25.7
Villages.....	1,939	961	389,010	33,000	6,400	428,410	13,578	7 00	31.7
City (Chatham)...	8,658	1,650	3,402,927	132,900	60,950	3,596,777	99,426	11 48	27.6
Totals :									
1901....	52,983	571,737	23,523,454	396,545	79,100	23,999,099	417,055	7 87	17 4
1900....	53,512	574,315	23,431,752	383,590	88,900	23,904,242	403,474	7 54	16 9
1891....	52,236	574,299	23,297,095	365,300	135,333	23,797,728	380,726	7 29	16 0
<b>LAMBTON.</b>									
Townships.....	32,762	658,708	14,364,087	35,200	2,150	14,401,437	204,321	6 24	14 2
Towns.....	13,601	5,100	3,415,957	240,150	123,727	3,779,834	105,338	7 74	27 9
Villages.....	5,767	4,813	1,107,282	74,020	4,650	1,185,962	25,929	4 50	21 9
Totals :									
1901....	52,130	668,621	18,887,326	349,370	130,527	19,367,223	335,588	6 44	17 3
1900....	52,453	670,159	18,770,064	361,585	125,580	19,257,029	328,175	6 26	17 0
1891....	53,181	671,024	19,214,056	389,746	138,197	19,741,999	322,812	6 07	16 4
<b>LANARK :</b>									
Townships.....	19,076	672,423	5,323,678	30,890	200	5,354,768	67,739	3 55	12 7
Towns.....	16,166	3,150	3,791,080	315,600	61,450	4,168,130	91,809	5 68	22 0
Village.....	901	2,692	165,425	16,060	1,250	182,735	4,126	4 58	22 6
Totals :									
1901....	36,143	678,265	9,280,183	362,550	62,900	9,705,633	163,674	4 53	16 9
1900....	36,539	680,983	9,233,696	414,895	65,250	9,713,841	156,892	4 29	16 2
1891....	35,274	676,049	8,218,283	436,695	75,150	8,730,128	128,806	3 65	14 8
<b>LEEDS :</b>									
Townships.....	20,773	470,572	7,031,137	46,970	12,050	7,090,157	97,968	4 72	13 8
Towns.....	12,582	2,429	4,248,193	263,825	45,050	4,557,068	106,905	8 49	23 5
Villages.....	1,335	1,388	261,340	5,500	3,160	269,990	5,194	3 89	19 2
Totals :									
1901....	34,690	474,389	11,540,670	316,295	60,250	11,917,215	210,067	6 06	17 6
1900....	35,013	470,404	11,500,369	284,430	68,360	11,853,159	196,741	5 62	16 6
1891....	35,793	480,104	10,492,037	451,125	132,508	11,075,670	177,209	4 95	16 0

## POPULATION, ASSESSMENT AND TAXATION.—Continued.

Municipalities.	Popu- lation.	No. of acres assessed.	Assessed values.				Taxes imposed for all purposes.			
			Real property.	Personal property	Taxable Income.	Total.	Total.	Per head.	Mills on the \$	
			\$	\$	\$	\$	\$	\$ c.		
<b>LENNOX &amp; ADDINGTON :</b>										
Townships .....	18,383	439,511	6,856,921	48,640	9,700	6,915,261	75,998	4 13	11.0	
Town .....	2,848	372	918,879	34,700	30,900	984,479	26,040	9 14	26.5	
Villages .....	943	5,384	224,674	5,050	4,300	234,024	5,114	5 42	21.9	
Totals :										
1901 .....	22,174	445,267	8,000,474	88,390	44,900	8,133,764	107,152	4 83	13.2	
1900 .....	22,592	443,995	7,617,802	113,620	47,450	7,778,872	107,120	4 74	13.8	
1891 .....	22,866	427,226	7,634,530	71,695	44,260	7,750,485	109,636	4 79	14.1	
<b>LINCOLN :</b>										
Townships .....	13,572	191,599	6,989,569	126,833	6,540	7,122,942	68,383	5 04	9.6	
Town .....	1,250	607	501,435	13,450	400	515,285	11,422	9 14	22.2	
Village .....	4,517	1,599	1,308,854	47,465	6,610	1,362,929	29,976	6 64	22.0	
City (St. Catharins) .....	10,485	3,000	3,784,440	736,240	59,500	4,580,180	100,294	9 57	21.9	
Totals :										
1901 .....	29,824	196,805	12,584,298	923,988	73,050	13,581,336	210,075	7 04	15.5	
1900 .....	29,576	196,668	12,497,447	866,032	54,836	13,418,315	201,780	6 82	15.0	
1891 .....	28,826	196,291	11,660,214	782,513	138,162	12,580,889	172,859	6 00	13.7	
<b>MANITOULIN :</b>										
Townships .....	5,078	224,566	730,357	24,135	.....	754,492	14,223	2 80	18.9	
Towns .....	1,045	1,415	190,685	38,350	2,250	231,285	5,480	5 24	23.7	
Totals :										
1901 .....	6,123	225,981	921,042	62,485	2,250	985,777	19,703	3 22	20.0	
1900 .....	6,310	214,425	883,110	49,942	3,000	936,052	17,728	2 81	18.9	
1891 .....	5,678	215,715	745,136	46,554	900	792,590	16,987	2 99	21.4	
<b>MIDDLESEX :</b>										
Townships .....	43,641	757,901	23,686,717	20,125	3,500	23,710,342	236,808	5 43	10.0	
Towns .....	4,249	2,750	1,183,567	78,605	22,075	1,284,247	28,031	6 60	21.8	
Villages .....	3,345	2,283	699,678	38,550	3,450	741,678	14,971	4 48	20.2	
City (London) .....	39,183	4,078	15,023,038	1,719,650	549,230	17,291,918	437,552	11 17	25.3	
Totals :										
1901 .....	90,418	767,012	40,593,000	1,856,930	578,255	43,028,185	717,362	7 93	16.7	
1900 .....	90,917	766,759	40,505,183	1,878,990	570,505	42,954,678	707,985	7 79	16.5	
1891 .....	87,782	767,557	38,238,961	1,654,525	998,395	40,891,881	586,324	6 68	14.3	
<b>MUSKOGA :</b>										
Townships .....	11,593	544,814	1,692,976	27,915	.....	1,720,891	35,284	3 04	20.5	
Towns .....	6,706	1,550	1,107,893	116,900	9,200	1,233,993	33,033	4 93	26.8	
Village .....	316	3,792	54,981	2,545	.....	57,526	583	1 84	10.1	
Totals :										
1901 .....	18,615	550,156	2,855,850	147,360	9,200	3,012,410	68,900	3 70	22.9	
1900 .....	18,334	539,321	2,637,795	142,450	9,750	2,765,925	61,573	3 36	22.3	
1891 .....	14,590	515,483	1,935,799	94,240	6,400	2,036,439	45,459	3 12	22.3	
<b>NIPISSING :</b>										
Townships .....	9,911	305,263	875,190	38,570	.....	913,760	26,859	2 71	29.4	
Towns .....	7,187	5,000	1,233,622	120,000	900	1,354,522	46,984	6 54	34.7	
Totals :										
1901 .....	17,098	310,263	2,108,812	158,570	900	2,268,282	73,843	4 32	32.6	
1900 .....	14,990	295,643	1,999,884	134,570	400	2,134,854	56,627	3 78	26.5	
1891 .....	8,943	196,516	955,642	147,883	20,830	1,124,355	24,061	2 69	21.4	
<b>NORFOLK :</b>										
Townships .....	21,218	399,020	8,400,067	33,650	3,300	8,437,017	88,438	4 17	10.5	
Town .....	3,007	794	851,630	54,600	37,900	944,130	22,867	7 60	24.2	
Villages .....	3,703	1,842	775,830	43,800	4,930	824,560	17,810	4 81	21.6	
Totals :										
1901 .....	27,928	401,656	10,027,527	132,050	46,130	10,205,707	129,115	4 62	12.7	
1900 .....	27,868	404,491	10,010,112	151,885	43,817	10,205,814	128,390	4 61	12.6	
1891 .....	28,862	394,204	9,992,581	264,032	54,321	10,310,934	114,260	3 96	11.1	

## POPULATION, ASSESSMENT AND TAXATION.—Continued.

Municipalities.	Popu- lation.	No. of acres assessed.	Assessed values.				Taxes imposed for all purposes		
			Real property.	Personal property	Taxable income.	Total.	Total.	Per head.	Mills on the \$
			\$	\$	\$	\$	\$	\$ c.	
<b>NORTHUMBERLAND.</b>									
Townships .....	23,022	434,925	9,997,838	47,400	6,500	10,051,738	89,373	3 88	8.9
Town .....	4,349	2,416	1,407,442	77,150	28,350	1,512,942	33,466	7 70	22.1
Villages .....	5,682	5,002	1,566,967	90,260	13,020	1,670,247	28,188	4 96	16.9
Totals :									
1901 .....	33,053	442,343	12,972,247	214,810	47,870	13,234,927	151,027	4 57	11.4
1900 .....	33,205	443,112	12,950,089	207,675	47,229	13,204,984	147,915	4 45	11.2
1891 .....	36,045	441,097	13,483,789	365,400	103,850	13,923,039	150,626	4 18	10.8
<b>ONTARIO.</b>									
Townships .....	27,416	500,630	14,489,226	66,890	8,950	14,565,066	117,653	4 29	8.1
Towns .....	8,120	6,700	2,372,320	124,975	55,035	2,562,330	56,447	6 95	22.1
Villages .....	3,328	1,564	755,393	52,600	8,050	816,043	16,672	5 01	20.4
Totals :									
1901 .....	38,864	508,894	17,616,939	244,465	72,035	17,933,439	190,772	4 91	10.7
1900 .....	39,463	508,750	17,390,910	253,115	71,295	17,715,320	185,608	4 70	10.5
1891 .....	42,971	509,797	18,724,237	419,420	83,490	19,227,147	195,392	4 55	10.2
<b>OXFORD.</b>									
Townships .....	27,865	472,008	19,084,122	100,926	10,850	19,195,898	160,714	5 77	8.4
Towns .....	6,676	4,100	2,068,885	108,000	20,550	2,197,435	52,600	7 88	23.9
Villages .....	1,987	1,844	478,928	30,425	7,200	516,553	10,978	5 52	21.3
City (Woodstock) .....	9,257	1,525	2,650,650	165,950	44,950	2,761,550	65,399	7 06	23.7
Totals :									
1901 .....	45,785	479,477	24,182,585	405,301	83,550	24,671,436	289,697	6 33	11.7
1900 .....	45,588	479,195	24,145,686	383,975	88,500	24,618,161	270,886	5 94	11.0
1891 .....	46,910	478,753	23,882,034	310,966	120,270	24,313,270	245,899	5 24	10.7
<b>PARRY SOUND.</b>									
Townships .....	11,790	571,184	1,927,127	35,188	300	1,962,615	33,439	2 84	17.0
Town .....	2,628	805	409,180	32,200	900	442,280	13,740	5 23	31.1
Villages .....	1,234	1,070	194,411	29,495	.....	223,906	5,776	4 68	25.8
Totals :									
1901 .....	15,652	573,059	2,530,718	96,883	1,200	2,628,801	52,955	3 38	20.1
1900 .....	15,285	582,657	2,490,862	87,520	1,050	2,579,432	51,529	3 37	20.0
1891 .....	12,739	510,974	1,998,248	76,662	8,050	2,082,960	34,350	2 70	16.5
<b>PEEL.</b>									
Townships .....	16,371	288,377	9,199,570	22,850	1,600	9,224,020	74,692	4 56	8.1
Town .....	2,813	1,222	888,584	44,750	19,500	952,834	21,731	7 73	22.8
Villages .....	1,163	957	291,275	22,650	1,600	315,525	4,833	4 14	15.3
Totals :									
1901 .....	20,352	290,556	10,379,429	90,250	22,700	10,492,379	101,256	4 98	9.7
1900 .....	20,372	290,218	10,413,660	88,950	22,750	10,525,360	93,668	4 60	8.9
1891 .....	22,180	290,133	10,602,880	143,670	47,795	10,794,345	96,036	4 33	8.9
<b>PERTH.</b>									
Townships .....	28,141	519,819	19,585,664	20,300	2,700	19,608,664	170,982	6 08	8.7
Towns .....	7,961	5,684	2,416,988	210,339	39,657	2,696,981	62,673	7 87	23.5
Village .....	703	490	137,925	7,100	.....	145,025	2,542	3 62	17.5
City (Stratford) .....	10,451	2,835	3,758,355	164,400	80,780	4,003,535	99,578	9 53	24.9
Totals :									
1901 .....	47,256	528,828	25,898,932	402,139	123,137	26,424,208	335,775	7 11	12.7
1900 .....	48,139	527,608	25,884,370	404,560	115,780	26,404,710	321,967	6 69	12.2
1891 .....	48,417	524,329	24,782,664	333,955	174,435	25,291,054	281,161	5 81	11.1
<b>PETERBOROUGH.</b>									
Townships .....	18,848	571,356	7,184,534	5,553	1,000	7,191,084	71,421	3 79	9.9
Town .....	10,985	1,282	4,147,885	297,309	89,650	4,534,835	83,753	7 62	18.5
Villages .....	4,801	2,664	1,082,769	62,225	5,600	1,150,594	21,043	4 38	18.3
Totals :									
1901 .....	34,634	575,302	12,415,188	365,075	96,250	12,876,513	176,217	5 09	13.7
1900 .....	34,515	574,368	12,285,917	309,815	120,500	12,715,332	166,781	4 83	13.1
1891 .....	32,364	539,901	12,032,919	311,700	226,655	12,571,274	148,049	4 57	11.8

\* On page 94 the assessed value in Brampton should read \$952,834 instead of \$968,834. Mills on \$ should read 22.8 instead of 22.4. The error was reported by the clerk after that portion had been printed.

## POPULATION, ASSESSMENT AND TAXATION.—Continued.

Municipalities.	Popu- lation.	No. of acres assessed.	Assessed values.				Taxes imposed for all purposes.			
			Real property.	Personal property	Taxable income.	Total.	Total.	Per head.	Mills on the \$	
			\$	\$	\$	\$	\$	\$ c.		
<b>PRESCOTT:</b>										
Townships . . . .	19,164	291,764	2,291,047	16,776	.....	2,307,823	55,048	2 87	23.9	
Towns . . . . .	5,091	2,020	608,071	64,150	9,100	681,321	15,316	3 01	22.5	
Village . . . . .	1,083	3,913	120,775	100	900	121,775	2,372	2 19	19.5	
Totals :										
1901 . . . . .	25,338	297,697	3,019,893	81,026	10,000	3,110,919	72,736	2 87	23.4	
1900 . . . . .	24,867	297,142	2,977,301	74,296	10,910	3,062,507	68,852	2 77	22.5	
1891 . . . . .	20,654	294,521	2,786,517	36,440	6,200	2,829,157	49,974	2 42	17.7	
<b>PRINCE EDWARD:</b>										
Townships . . . .	12,484	232,115	5,239,260	11,500	4,425	5,255,185	42,477	3 40	8.1	
Towns . . . . .	3,640	552	1,232,902	76,900	13,300	1,323,102	21,934	6 03	16.6	
Village . . . . .	580	1,552	205,657	.....	5,000	210,657	2,335	4 03	11.1	
Totals :										
1901 . . . . .	16,704	234,219	6,677,819	88,400	22,725	6,788,944	66,746	4 00	9.8	
1900 . . . . .	16,308	234,649	6,664,333	87,375	21,050	6,772,758	72,935	4 31	10.8	
1891 . . . . .	17,241	232,376	6,685,639	165,400	37,700	6,888,739	75,117	4 36	10.9	
<b>RAINY RIVER:</b>										
Townships . . . . .	2,587	89,052	746,546	42,550	450	789,546	14,575	5 63	18.5	
Town . . . . .	4,797	3,840	1,580,498	136,325	5,850	1,672,673	51,806	10 70	30.7	
Totals :										
1901 . . . . .	7,384	92,892	2,277,044	178,875	6,300	2,462,219	65,881	8 92	26.8	
1900 . . . . .	7,915	103,348	2,245,116	241,303	2,150	2,488,569	66,166	8 36	26.6	
1891 . . . . .	3,068	17,073	1,057,018	69,625	5,300	1,131,943	17,962	5 85	15.9	
<b>RENFREW:</b>										
Townships . . . . .	34,895	982,562	4,897,563	22,081	.....	4,919,644	76,939	2 20	15.6	
Towns . . . . .	12,236	3,511	2,706,097	246,275	35,900	2,988,272	71,426	5 84	23.9	
Villages . . . . .	1,694	851	304,280	68,485	.....	372,765	5,409	3 19	14.5	
Totals :										
1901 . . . . .	48,825	986,924	7,907,940	336,841	35,900	8,280,681	153,774	3 15	18.6	
1900 . . . . .	47,548	980,462	7,715,587	318,675	39,600	8,073,862	142,666	3 00	17.7	
1891 . . . . .	41,731	919,386	4,405,004	275,513	38,900	4,719,417	109,216	2 62	23.1	
<b>RUSSELL:</b>										
Townships . . . .	15,098	252,053	1,911,574	10,550	.....	1,922,124	50,234	3 33	26.1	
Villages . . . . .	2,117	1,700	111,055	3,975	.....	115,030	6,289	2 97	54.7	
Totals :										
1901 . . . . .	17,215	253,753	2,022,629	14,525	.....	2,037,154	56,523	3 28	27.7	
1900 . . . . .	16,677	252,556	1,982,031	15,513	.....	1,997,544	52,964	3 18	26.5	
1891 . . . . .	15,466	254,399	1,902,725	11,375	.....	1,914,100	38,220	2 47	20.0	
<b>SIMCOE:</b>										
Townships . . . . .	50,393	965,512	16,147,262	58,425	9,050	16,214,737	189,154	3 75	11.7	
Towns . . . . .	25,144	12,014	5,850,309	422,270	99,200	6,371,779	162,631	6 47	25.5	
Villages . . . . .	2,930	3,066	827,659	53,015	.....	680,674	13,526	4 62	19.9	
Totals :										
1901 . . . . .	78,467	980,592	22,625,230	533,710	108,250	23,267,190	365,311	4 66	15.7	
1900 . . . . .	77,927	978,338	21,133,144	390,055	109,525	21,632,724	331,440	4 25	15.3	
1891 . . . . .	73,926	976,505	18,321,330	405,915	147,100	18,874,345	313,896	4 25	16.6	
<b>STORMONT:</b>										
Townships . . . . .	17,516	248,887	3,640,130	27,990	7,200	3,675,320	64,678	3 69	17.6	
Town . . . . .	6,243	740	1,651,895	78,550	21,800	1,752,245	44,270	7 11	25.3	
Totals :										
1901 . . . . .	23,759	249,627	5,292,025	106,540	29,000	5,427,565	109,048	4 59	20.1	
1900 . . . . .	23,790	249,558	5,241,698	149,075	32,200	5,422,973	101,827	4 28	18.8	
1891 . . . . .	23,585	254,262	4,788,671	85,700	36,280	4,910,651	74,474	3 16	15.2	
<b>THUNDER BAY:</b>										
Townships . . . . .	1,160	250,550	518,238	500	.....	518,738	9,837	8 48	19.0	
Towns . . . . .	7,241	19,500	2,333,012	147,365	32,250	2,512,627	74,302	10 26	29.6	
Totals :										
1901 . . . . .	8,401	270,050	2,851,250	147,865	32,250	3,031,365	84,139	10 02	27.8	
1900 . . . . .	7,875	276,713	2,675,684	127,575	35,400	2,838,659	79,923	10 15	28.2	
1891 . . . . .	4,488	256,397	2,708,903	147,850	32,300	2,889,053	51,538	11 48	17.8	

POPULATION, ASSESSMENT AND TAXATION.—*Concluded.*

Municipalities.	Population.	No of acres assessed.	Assessed values.				Taxes imposed for all purposes.		
			Real property.	Personal property	Taxable income.	Total.	Total.	Per head.	Mills on the \$
			\$	\$	\$	\$	\$	\$ c.	
<b>VICTORIA:</b>									
Townships.....	19,308	599,289	7,641,340	16,850	1,000	7,659,190	91,117	4 72	11 9
Town.....	6,929	1,550	1,767,500	167,950	32,550	1,968,000	52,960	7 64	26 9
Villages.....	3,587	2,026	621,620	44,575	1 000	667,195	12,057	3 36	18.1
Totals:									
1901....	29,824	602,865	10,030,460	229,375	34,550	10,294,385	156,131	5 24	15.2
1900....	30,661	601,365	10,016,346	216,740	36,050	10,269,136	151,266	4 93	14.7
1891....	30,153	574,952	9,796,581	202,339	61,800	10,060,711	146,482	4 86	14.6
<b>WATERLOO:</b>									
Townships.....	22,932	306,816	12,677,024	61,475	10,760	12,749,259	101,574	4 43	8.0
Towns.....	26,120	8,506	8,058,640	783,100	151,250	8,992,990	173,465	6 64	19.3
Villages.....	3,131	1,962	857,431	87,255	8,800	953,486	14,745	4 71	15.5
Totals:									
1901....	52,183	317,284	21,593,095	931,830	170,810	22,695,735	289,784	5 55	12.8
1900....	52,428	317,365	21,431,980	905,725	182,059	22,519,764	272,180	5 19	12.1
1891....	48,349	317,392	22,018,776	767,395	200,626	22,986,797	210,856	4 36	9.2
<b>WELLAND:</b>									
Townships.....	16,339	227,714	6,666,638	167,005	4,400	6,778,043	73,572	4 50	10.9
Towns.....	8,653	2,567	3,107,577	144,750	19,400	3,271,727	83,540	9 65	25.5
Villages.....	5,260	1,921	1,434,565	93,680	17,200	1,545,445	25,191	4 79	16.3
Totals:									
1901....	30,252	232,202	11,148,780	405,435	41,000	11,595,215	182,303	6 03	15.7
1900....	29,313	231,654	11,060,403	352,900	49,450	11,492,833	168,483	5 75	14.7
1891....	27,901	231,380	10,246,617	398,730	71,990	10,717,337	133,562	4 79	12.5
<b>WELLINGTON:</b>									
Townships.....	30,991	627,790	18,231,396	87,825	15,290	18,334,511	137,739	4 44	7.5
Towns.....	5,636	3,196	1,393,960	116,875	15,450	1,526,285	36,731	6 52	24.1
Villages.....	5,744	4,152	1,274,510	103,640	7,500	1,385,650	28,280	4 92	20.4
City (Guelph)....	11,271	3,210	3,471,010	243,800	63,250	3,778,060	89,242	7 92	23.6
Totals:									
1901....	53,642	638,348	24,370,876	552,140	101,490	25,024,506	291,992	5 44	11.7
1900....	54,307	637,901	24,307,607	606,970	100,290	25,014,867	301,812	5 56	12.1
1891....	56,017	637,580	21,538,475	695,395	170,360	22,404,230	279,069	4 98	12.5
<b>WENTWORTH:</b>									
Townships.....	21,960	272,303	12,237,593	72,458	14,200	12,324,251	87,931	4 00	7.1
Town.....	3,212	550	826,145	81,900	30,900	941,945	23,125	7 20	24.6
Village.....	567	323	125,000	6,650	.....	131,650	1,785	3 15	13.6
City (Hamilton)...	53,781	3,990	23,868,262	2,568,313	724,250	27,100,825	538,314	10 01	19.9
Totals:									
1901....	79,520	277,166	37,057,000	2,672,321	769,350	40,498,671	651,155	8 19	16.1
1900....	79,011	276,915	37,015,755	2,554,376	797,920	40,368,051	647,103	8 19	16.0
1891....	75,141	276,824	32,423,309	3,391,130	980,635	36,800,074	540,046	7 19	14.7
<b>YORK:</b>									
Townships.....	40,146	536,016	22,835,308	58,650	13,500	22,907,458	226,570	5 64	9.9
Towns.....	11,810	5,911	3,604,267	174,450	33,900	4,012,617	91,372	7 74	22.8
Villages.....	7,229	5,014	1,859,948	58,790	14,635	1,933,373	40,245	5 57	20.8
City (Toronto)....	205,887	9,638	116,586,152	9,053,643	4,760,070	130,399,865	2,903,113	14 10	22.3
Totals:									
1901....	265,072	556,579	145,085,675	9,345,533	4,822,105	159,253,313	3,261,100	12 30	20.5
1900....	258,036	557,319	142,838,577	8,488,957	4,222,870	155,550,404	3,256,913	12 62	20.9
1891....	226,303	553,749	168,041,451	9,997,410	5,467,692	183,506,556	3,350,056	14 80	18.3



## POPULATION.

Showing by Townships, Villages, Towns and Cities, grouped by Counties and Districts, the Population of Ontario, as taken by the Municipal Assessors, for the three Census years, 1901, 1891 and 1881, as compared with the figures of the Dominion Censuses, similarly arranged.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>ALGOMA :</b>							
Balfour .....Tp.	* 922	629	755	253			1890
Blind River .....	†	490					1901
Cbaplean .....	750	726					1901
Drury, Denison and Graham	807	626					1894
Hallam .....	665	320					1893
Hilton .....	407	380	389	274			1885
Jocelyn .....	452	395		370			1888
Johnson, Tarbutt and Tar-							
butt additional .....	†	906	795	471			1889
Laird .....	496	355		251			1891
Macdonald, Meredith and							
Aberdeen additional .....		700					1892
Nairn and Lorne .....		186					1896
Plummer additional .....		619	750	487			1891
Princes .....		204					1897
Rayside .....	*	760		314			1890
St. Joseph .....	1,137	1,099	736	757	1,237	220	1878
Salter, May and Harrow .....	1,507	736					1893
Sault Ste. Marie .....	1,417	933	438	392	1,119	1,706	1872
Thessalon .....	606	650	1,160	1,166			1888
Unorganized .....	12,403		9,383		8,272		
Rural .....	26,209	10,744	14,406	4,735	10,628	1,920	
Sault Ste. Marie .....Town	7,169	6,323	2,567	2,300			1887
Thessalon .....	1,205	906					1892
Urban .....	8,374	7,229	2,567	2,300			
Total .....	34,583	17,973	16,973	7,035	10,628	1,920	
<b>BRANT :</b>							
Brantford.....Tp.	5,757	5,235	6,954	6,354	6,555	5,537	1850
Burford .....	4,512	4,104	4,939	4,540	5,466	4,854	1845
Dumfries S .....	2,922	2,572	3,137	2,832	3,490	3,448	
Oakland .....	745	700	858	774	939	875	1850
Onondaga .....	1,186	1,069	1,482	1,264	1,739	1,431	1850
**Tuscarora .....	3,170		3,228		2,891		
Rural .....	18,292	13,680	20,598	15,764	21,080	16,145	
Paris . . . . .Town	3,229	3,214	3,094	3,007	3,173	3,062	1850
Brantford.....City	16,619	16,589	12,753	15,451	9,616	10,555	
Urban .....	19,848	19,803	15,847	18,458	12,789	13,617	
Total .....	38,140	33,483	36,445	34,222	33,869	29,762	
<b>BRUCE :</b>							
Albemarle .....Tp.	†† 1,962	1,451	†† 1,819	1,214	†† 1,505	794	1870
Amabel .....	†† 3,587	3,331	†† 3,890	2,652	†† 3,046	1,862	1861
Arran .....	2,562	2,339	2,913	2,710	3,512	3,237	1853
Brant .....	4,349	3,794	4,929	3,859	5,423	4,687	1854

\* Including Chelmsford and some unorganized territory. † Not given in census. ‡ Includes only Tarbutt.  
 § According to census this only includes Macdonald and Coffin. || Including Hyman and some unorganized territory.  
 ¶ Including some unorganized territory. \*\* An Indian reserve, not municipally organized. †† Including Cape Croker Indian Reserve. ‡‡ Including Saugeen Indian Reserve.

NOTE.—The municipal population is from assessment rolls taken in same year. The Dominion census is arranged in this table according to municipal boundaries.

## POPULATION—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>BRUCE—Continued.</b>							
Bruce .....	3,109	2,970	3,793	3,208	4,236	3,650	1856
Carrick .....	5,023	4,667	5,503	4,986	5,909	4,940	1856
Culross .....	2,955	2,793	3,345	3,101	3,807	3,287	1856
Eastnor .....	1,830	1,655	1,484	1,317	1,364	1,197	1878
Elderslie .....	2,458	2,139	3,047	2,877	3,273	3,022	1856
Greenock .....	3,085	2,740	3,389	2,938	3,751	2,965	.....
Huron .....	3,539	2,979	4,125	3,612	5,175	4,259	1854
Kincardine .....	2,855	2,621	3,618	3,306	4,566	3,753	.....
Kinloss .....	2,355	2,232	2,903	2,647	3,628	3,265	1855
Lindsay and St. Edmunds ..	1,374	1,169	837	737	*	*	1888
Saugen .....	1,581	1,467	1,813	1,661	2,090	1,841	1854
Rural .....	42,624	38,347	47,408	40,825	51,225	42,581	.....
Chesley .....	1,734	1,720	1,437	1,515	893	789	1880
Lucknow .....	1,111	996	1,285	1,193	1,162	1,164	1875
Paisley .....	1,086	1,103	1,328	1,119	1,154	943	1875
Port Elgin .....	1,813	1,274	1,659	1,803	1,400	1,394	1874
Southampton .....	1,636	1,620	1,437	1,404	1,141	1,116	1858
Tara .....	625	664	695	704	561	688	1881
Teeswater .....	930	878	1,128	1,098	861	918	1875
Tiverton .....	470	446	550	508	545	632	1877
Kincardine .....	2,077	2,172	2,631	2,836	2,876	2,593	.....
Walkerton .....	2,971	3,049	3,061	3,030	2,604	2,612	.....
Warton .....	2,443	2,285	1,984	1,915	796	977	1880
Urban .....	16,396	16,207	17,195	17,125	13,993	13,826	.....
Total .....	59,020	54,554	64,603	57,950	65,218	56,407	.....
<b>CARLETON :</b>							
Fitzroy .....	2,767	2,391	2,940	2,443	3,378	2,798	.....
Gloucester .....	7,778	6,584	6,823	6,293	6,254	5,000	1847
Goulbourn .....	2,765	2,447	2,784	2,458	3,381	3,235	1850
Gower N. ....	2,234	2,003	2,383	2,111	2,481	2,388	.....
Huntley .....	2,236	2,233	2,321	2,208	2,534	2,393	.....
March .....	1,184	849	1,264	1,059	1,318	1,122	1822
Marlborough .....	1,584	1,524	1,703	1,532	2,090	1,852	.....
Nepean .....	5,840	5,282	6,201	5,736	8,044	7,058	.....
Osgoode .....	4,818	4,667	4,858	4,235	4,753	3,995	1850
Torbolton .....	1,002	934	1,023	939	1,024	1,111	.....
Rural .....	32,209	28,914	32,300	29,014	35,257	30,969	.....
Hintonburgh .....	2,798	2,600	†	†	†	†	1894
Ottawa East .....	1,500	1,300	741	684	†	†	1890
Richmond .....	469	462	447	355	439	381	1850
Ottawa .....	59,928	60,989	44,142	43,229	28,407	26,425	1855
Urban .....	64,695	65,351	45,330	44,268	28,846	26,806	.....
Total .....	96,904	94,265	77,630	73,282	64,103	57,765	.....
<b>DUFFERIN :</b>							
Amaranth .....	2,798	2,643	2,799	2,645	2,914	2,504	.....
Garafraza E. ....	1,895	1,777	2,169	1,865	2,635	2,159	1869
Luther E .....	1,698	1,631	2,178	2,016	1,557	1,357	1881
Melancthon .....	3,831	3,747	3,822	3,173	3,099	2,514	1855
Mono .....	3,111	3,480	3,518	3,181	4,097	3,510	.....
Mulmur .....	3,253	2,752	3,661	3,192	4,211	3,836	1851
Rural .....	16,586	16,030	18,147	16,072	18,513	15,880	.....

\* Attached to Eastnor.

† Included in Nepean Township.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>DUFFERIN—Continued.</b>							
Grand Valley . . . . . Vil.	751	760	*	*	*	*	1898
Shelburne . . . . .	1,188	1,163	1,202	1,160	733	657	1879
Orangeville . . . . .	2,511	4,100	2,962	2,927	2,847	2,523	.. .
Urban . . . . .	4,450	6,023	4,164	4,087	3,580	3,180	.....
Total . . . . .	21,036	22,053	22,311	20,159	22,093	19,060	.....
<b>DUNDAS:</b>							
Matilda . . . . . Tp.	4,016	3,833	4,138	4,102	4,692	3,785	.....
Mountain . . . . .	3,427	2,931	3,422	2,980	3,719	3,098	1840
Williamsburg . . . . .	3,906	3,690	4,308	3,836	4,671	4,186	1849
Winchester . . . . .	3,585	3,326	3,621	3,340	4,796	4,032	.....
Rural . . . . .	14,934	13,780	15,489	14,258	17,878	15,101	.....
Chesterville . . . . . Vill.	932	884	775	699	†	†	1890
Ircquois . . . . .	1,097	1,130	1,047	1,122	1,001	902	1857
Morrisburg . . . . .	1,693	1,526	1,859	1,696	1,719	1,704	1861
Winchester . . . . .	1,101	1,130	962	978	†	†	1888
Urban . . . . .	4,823	4,670	4,643	4,495	2,720	2,606	.....
Total . . . . .	19,757	18,450	20,132	18,753	20,598	17,707	.....
<b>DURHAM:</b>							
Cartwright . . . . . Tp.	1,768	1,702	2,026	1,979	2,357	2,255	1842
Cavan . . . . .	2,729	2,418	3,106	2,928	3,479	3,218	.....
Clarke . . . . .	3,788	3,610	4,427	4,294	5,169	5,096	.....
Darlington . . . . .	4,174	3,956	4,757	4,522	5,465	5,044	1837
Hope . . . . .	3,273	3,250	3,887	3,847	4,522	3,946	1850
Manvers . . . . .	3,357	2,933	4,047	3,551	3,976	3,319	.....
Rural . . . . .	19,089	17,869	22,250	21,121	24,968	22,873	.....
Millbrook . . . . . Vill.	917	900	971	896	1,148	1,062	1880
Newcastle . . . . .	645	605	737	735	1,060	1,038	1856
Bowmanville . . . . . Town	2,731	2,728	3,377	3,338	3,504	3,462	1858
Port Hope . . . . .	4,188	4,091	5,042	4,782	5,585	5,382	1834
Urban . . . . .	8,461	8,324	10,177	9,751	11,297	10,944	.....
Total . . . . .	27,570	26,193	32,427	30,872	36,265	33,817	.....
<b>ELGIN:</b>							
Aldborough . . . . . Tp.	5,341	4,426	5,299	4,695	4,718	4,280	1852
Bayham . . . . .	3,771	3,540	3,856	3,167	4,649	3,830	1852
Dorchester S. . . . .	1,637	1,265	1,624	1,522	1,844	1,716	1852
Dunwich . . . . .	3,658	3,045	3,663	3,017	4,290	3,649	.....
Malahide . . . . .	3,795	3,592	3,851	3,718	4,415	3,861	1858
Southwold . . . . .	4,338	3,839	4,766	4,273	5,206	4,442	1850
Yarmouth . . . . .	5,089	4,733	5,471	4,806	5,575	5,393	1850
Rural . . . . .	27,629	24,440	28,530	25,198	30,697	27,171	.....
Dutton . . . . . Vill	863	863	838	693	†	†	1891
Port Stanley . . . . .	552	542	616	654	674	650	1875
Springfield . . . . .	501	488	463	425	555	474	1878
Vienna . . . . .	352	333	398	358	528	495	1854
Aylmer . . . . . Town	2,204	2,186	2,166	2,179	1,540	1,407	.....
St. Thomas . . . . . City	11,485	11,903	10,366	10,361	8,367	8,853	.....
Urban . . . . .	15,957	16,315	14,847	14,670	11,664	11,879	.....
Total . . . . .	43,586	40,755	43,377	39,868	42,361	39,050	.....

\* Included in Luther East Tp.

† Included in Winchester Tp.

‡ Included in Dunwich Tp.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>ESSEX:</b>							
Anderdon . . . . . Tp.	2,071	1,688	2,205	1,934	2,406	2,003	....
Colchester N. . . . .	2,145	1,894	1,720	1,499	2,090	1,514	....
Colchester S. . . . .	2,763	2,803	2,827	2,415	2,727	2,461	1880
Gosfield, N. . . . .	1,999	1,984	* 4,071	1,733	* 3,494	* 3,345	....
Gosfield, S. . . . .	2,417	2,134		1,951			1888
Maldstone . . . . .	3,117	3,012	3,127	2,588	3,260	2,993	....
Malden . . . . .	1,489	1,369	1,573	1,527	1,727	1,531	1838
Mersea . . . . .	4,172	4,159	3,788	3,567	3,552	3,143	....
Pelee Island . . . . .	669	643	605	590	361	330	1879
Rochester . . . . .	2,625	2,480	2,806	2,222	2,483	2,018	....
Sandwich E. . . . .	2,794	2,487	4,378	3,884	4,386	3,843	1860
Sandwich, S. . . . .	1,710	1,623	†	†	†	†	1853
Sandwich W. . . . .	2,738	2,473	2,643	2,394	2,860	2,366	1864
Tilbury N. . . . .	2,192	2,053	5,100	4,360	4,410	3,530	1892
Tilbury, W. . . . .	2,209	2,027	††	††	††	††	....
Rural . . . . .	35,110	32,829	34,843	30,664	33,756	29,077	....
Belle River . . . . . Vill.	607	563	657	627	556	605	1877
Amherstburg . . . . . Town	2,222	2,119	2,279	2,260	2,672	2,543	....
Essex . . . . .	1,391	1,410	1,709	1,789	¶	¶	1884
Kingsville . . . . .	1,537	1,824	1,835	1,289	863	822	1878
Leamington . . . . .	2,451	2,390	1,910	1,948	1,411	1,152	1877
Sandwich . . . . .	1,450	1,435	1,352	1,170	1,143	1,038	1851
Walkerville . . . . .	1,695	1,592	933	882	¶	¶	1890
Tilbury . . . . . City	12,153	12,642	10,322	10,528	6,561	6,283	1864
Urban . . . . .	23,406	23,975	20,497	20,493	13,206	12,443	....
Total . . . . .	58,516	56,804	55,340	51,157	46,962	41,520	....
<b>FRONTENAC:</b>							
Barrie . . . . . Tp.	682	558	670	596	486	419	....
Bedford . . . . .	1,730	1,466	1,837	1,406	2,019	1,568	1842
Clarendon and Miller . . . . .	941	825	929	843	685	642	....
Hinchinbrooke . . . . .	1,645	1,265	1,466	1,196	1,322	1,155	1857
Howe Island . . . . .	361	329	422	400	479	396	1872
Kennebec . . . . .	1,404	1,264	1,428	1,243	1,149	935	....
Kingston . . . . .	3,176	2,325	3,349	2,500	3,739	2,716	....
Loughborough . . . . .	2,144	1,755	2,218	1,762	2,394	1,855	....
Olden . . . . .	1,126	1,029	1,002	946	829	728	....
Oso . . . . .	1,358	1,060	1,176	1,115	959	779	1866
Palmerston and Canoto . . . . .	1,133	1,076	1,064	821	1,005	739	....
Pittsburg . . . . .	2,544	2,159	3,000	2,491	3,352	2,760	....
Portland . . . . .	2,602	2,104	2,512	2,096	2,452	2,300	1855
Storriogton . . . . .	2,062	1,821	2,285	1,965	2,811	2,217	1850
Wolfe Island . . . . .	1,796	1,417	2,003	1,657	2,383	1,917	....
Rural . . . . .	24,504	20,453	25,360	21,037	26,064	21,126	....
Garden Island . . . . . Vill.	242	257	412	389	495	502	1866
Portsmouth . . . . .	1,827	588	1,974	847	1,734	999	1859
Kingston . . . . . City	17,961	18,260	19,263	18,202	14,091	14,260	1846
Urban . . . . .	20,030	19,105	21,649	19,438	16,320	15,761	....
Total . . . . .	44,534	39,558	47,009	40,475	42,384	36,887	....
<b>GLENGARRY:</b>							
Charlottenburg . . . . . Tp.	5,280	4,896	5,657	5,073	6,354	5,473	1860
Kenyon . . . . .	4,700	4,050	5,376	4,675	5,491	4,278	....
Lancaster . . . . .	4,051	3,654	4,084	3,744	4,851	4,164	....
Lochiel . . . . .	4,857	4,476	5,016	4,517	5,525	4,480	1818
Rural . . . . .	18,888	17,076	20,133	18,009	22,221	18,395	....

\* United to Gosfield N. † United to Sandwich Ess. ‡ United to Tilbury N.

¶ Taken out of Colchester N Tp. || Taken out of Sandwich E. Tp.

## POPULATION—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>GLENGARRY.—Continued.</b>							
Alexandria Vill.	1,911	1,729	1,614	1,465	*	*	1884
Lancaster	583	531	700	659	†	†	1889
Maxville	749	700	+		++	++	1892
Urban	3,243	2,960	2,314	2,104			
Total	22,131	20,036	22,447	20,113	22,221	18,395	
<b>GRENVILLE:</b>							
Angusta Tp.	4,166	3,798	4,534	4,111	5,096	4,418	1850
Edwardsburg	4,268	3,630	4,517	3,744	4,799	4,143	
Gower S.	868	802	960	816	1,022	842	
Oxford on Rideau	2,920	2,695	3,307	3,100	3,785	3,118	
Wolford	1,855	1,639	2,115	1,770	2,401	1,900	
Rural	14,677	12,664	15,433	13,541	17,103	14,421	
Cardinal Vill.	1,378	1,284	959	964	632	546	1880
Kemptville	1,523	1,500	1,226	1,058	1,188	987	1857
Merrickville	1,024	953	1,072	954	819	719	1860
Prescott Town	3,019	2,926	2,919	2,924	2,999	2,930	1860
Urban	6,944	6,663	6,176	5,900	5,638	5,182	
Total	21,021	19,227	21,609	19,441	22,741	19,603	
<b>GREY:</b>							
Artemesia Tp.	3,923	3,553	4,092	3,640	4,576	3,817	1850
Bentinck	3,551	2,997	5,323	4,811	5,472	4,721	
Collingwood	3,902	3,728	3,932	3,463	4,915	4,366	
Derby	2,146	1,772	2,200	1,941	2,363	1,955	1846
Egremont	3,607	3,139	3,904	3,221	4,455	3,754	1850
Euphrasia	3,441	3,149	3,567	3,228	3,688	3,031	
Glenelg	2,754	2,721	3,318	3,037	4,001	3,725	1850
Holland	3,504	3,102	3,602	3,133	3,688	3,120	1851
Keppel	4,160	3,467	3,774	3,433	3,449	3,102	1864
Normanby	4,630	4,399	5,006	5,387	6,140	5,815	1849
Osprey	3,075	3,119	3,314	3,181	3,512	3,494	1852
Proton	3,378	2,931	3,297	3,020	3,402	2,906	1857
St. Vincent	3,108	2,823	3,494	3,360	4,119	3,349	1850
Sarawak	1,362	1,255	1,201	1,024	972	846	1868
Sullivan	3,697	3,314	4,164	3,617	4,143	3,527	1850
Sydenham	3,406	3,322	3,903	3,750	4,293	3,860	1850
Rural	53,644	48,791	58,091	53,246	63,188	55,388	
Dundalk Vill.	762	786	696	636	†	†	1887
Hanover	1,392	1,397			§	§	1900
Markdale	892	1,025	756	665	§	§	1888
Durham Town	1,422	1,404	1,273	1,192	1,059	1,033	1872
Meaford	1,916	1,895	1,999	1,852	1,866	1,790	1875
Owen Sound	8,776	9,255	7,497	7,867	4,426	4,309	1856
Thorobury	786	753	902	820	*	*	1887
Urban	15,946	16,515	13,123	13,032	7,351	7,132	
Total	69,590	65,306	71,214	66,278	70,539	62,520	
<b>HALDIMAND:</b>							
Canborough Tp.	966	842	1,118	998	1,220	1,104	
Cayuga, N.	1,657	1,476	1,893	1,728	2,109	1,838	1850
Cayuga, S.	833	701	925	825	959	900	

\* Included in Lochiel Tp.

† Included in Lancaster Tp.

‡ Included in Kenyon Tp.

|| Included in Bentinck.  
Collingwood Tp.

§ Included in Proton.

§ Included in Glenelg Tp.

\*\* Included in

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>HALDIMAND—Continued.</b>							
Dunn .....	354	816	984	930	1,040	936	.....
Moulton .....	1,931	1,825	1,894	1,685	1,799	1,546	1840
Oneida .....	2,023	1,365	2,400	1,715	2,863	2,021	.....
Rainham .....	1,802	1,676	2,010	1,851	2,217	1,927	1860
Seneca .....	1,885	1,762	2,231	2,081	2,545	2,469	1850
Sherbrooke .....	396	398	456	419	494	465	.....
Walpole .....	4,189	4,117	4,922	3,974	5,854	5,051	1850
Rural .....	16,536	14,978	18,813	16,206	21,100	18,257	.....
Caledonia..... Vill.	801	803	968	841	1,242	1,102	1853
Cayuga .....	771	1,158	822	880	830	758	1860
Hagersville .....	1,020	903	1,061	910	*	*	1887
Dunnville..... Town	2,105	2,142	1,776	1,846	1,808	1,591	1860
Urban .....	4,697	5,011	4,627	4,477	3,880	3,451	.....
Total .....	21,233	19,989	23,440	20,683	24,980	21,708	.....
<b>HALIBURTON:</b>							
Anson and Hindon..... Tp.	300	267	275	272	371	322	.....
Cardiff .....	698	679	612	582	497	515	1878
Dysart, etc. ....	1,116	964	1,082	985	1,087	914	.....
Glamorgan .....	527	470	505	503	902	864	1881
Luttreworth.....	464	402	549	509	586	491	.....
Minden .....	1,170	1,170	1,182	1,155	1,110	1,075	.....
Monmouth .....	629	538	548	509	†	†	.....
Sherborne, etc. ....	299	802	583	564	551	495	1866
Snowdon .....	856	698	1,014	708	807	540	1860
Stanhope .....	500	473	†	†	†	†	1866
Rural .....	6,559	5,963	6,350	5,767	5,911	5,216	.....
<b>HALTON:</b>							
Esqueving..... Tp.	3,787	3,547	4,435	3,748	4,998	4,585	1850
Nassagaweya .....	2,357	2,269	2,809	2,642	2,800	2,748	1851
Nelson .....	2,776	2,688	3,269	2,857	3,340	3,035	.....
Trafalgar .....	3,594	3,378	4,153	3,747	4,382	4,384	1850
Rural .....	12,614	11,882	14,666	12,994	15,520	14,756	.....
Acton .....	1,484	1,471	1,209	1,228	848	805	1874
Burlington .....	1,119	1,320	1,325	1,345	1,068	1,046	1874
Georgetown .....	1,313	1,338	1,509	1,542	1,471	1,562	1864
Milton .....	1,372	1,321	1,450	1,284	1,302	1,192	1855
Oakville .....	1,643	1,708	1,823	1,815	1,710	1,709	.....
Urban .....	6,931	7,158	7,316	7,214	6,399	6,314	.....
Total .....	19,545	19,040	21,982	20,205	21,919	21,070	.....
<b>HASTINGS:</b>							
Bangor, Wicklow and McClure..... Tp.	1,062	952	1,026	822	855	612	.....
Carlow .....	655	594	569	482	935	869	1870
Dungannon .....	867	751	754	651	970	920	1891
Elzevir and Grimsthorpe.....	1,501	1,292	1,506	1,176	1,514	1,132	1867
Faraday .....	1,339	1,250	705	721	¶	¶	1891
Hungerford .....	3,798	3,466	4,109	4,620	4,559	4,005	.....
Huntingdon .....	2,612	2,368	2,562	2,086	2,555	2,377	.....
Limerick .....	597	630	508	464	1,550	1,501	1886
Madoc .....	2,790	2,231	2,967	2,459	3,182	2,700	1876
Marmora and Lake.....	2,099	1,577	2,176	1,822	2,084	1,711	.....
Mayo .....	597	510	518	593	.....	.....	1891

\* Included in Walpole. † Joined with Glamorgan. ‡ Joined with Sherborne, etc.

¶ United to Dungannon.      United with Carlow.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>HASTINGS.—Continued.</b>							
Monteagle and Herschel....	1,891	1,961	1,552	1,503	1,072	982	1875
Rawdon .....	3,434	3,160	3,629	3,114	3,692	2,910	.....
Sidney .....	4,438	3,880	4,685	4,128	4,842	3,698	1850
Thurlow .....	4,210	3,894	4,817	4,822	4,922	4,302	1850
Tudor and Cashel .....	832	859	843	779	*	*	1860
Tyendinaga .....	4,743	3,379	5,135	4,028	6,162	4,759	1850
Wollaston .....	834	738	771	686	*	*	1881
Rural .....	38,299	33,382	38,832	34,956	38,894	32,568	.....
Madoc .....	1,157	1,190	1,134	1,031	1,065	1,063	1878
Marmora .....	961	706	†	†	1901	†	1901
Stirling .....	845	801	850	801	874	814	1858
Tweed .....	1,168	1,217	651	732	†	†	1891
Deseronto .....	3,627	3,746	3,338	3,001	1,670	1,331	1872
Treuton .....	4,217	4,176	4,363	4,165	3,042	2,726	1853
Belleville .....	9,117	10,104	9,916	10,220	9,516	10,038	.....
Urban .....	20,992	21,940	20,252	19,950	16,167	15,972	.....
Total .....	59,291	55,322	59,084	54,906	55,061	48,540	.....
<b>HURON:</b>							
Ashfield .....	3,497	3,284	4,010	3,539	4,766	3,719	1852
Colborne .....	1,866	1,756	2,215	1,956	2,663	2,114	.....
Goderich .....	2,528	2,399	2,907	2,661	3,444	2,785	.....
Grey .....	3,657	3,343	4,022	3,744	4,577	4,026	1856
Hay .....	3,627	3,600	4,244	3,639	4,421	3,486	.....
Howick .....	4,140	3,838	4,439	4,314	5,616	5,256	1856
Hullett .....	2,898	2,700	3,281	2,982	3,875	3,373	1862
McKillop .....	2,685	2,615	3,086	2,820	4,046	3,699	.....
Morris .....	2,606	2,407	3,263	2,894	3,815	3,444	1856
Stanley .....	2,152	2,138	2,470	2,328	2,940	2,400	1835
Stephen .....	4,172	4,141	4,271	3,606	4,504	3,775	1852
Tuckersmith .....	2,463	2,431	2,867	2,761	3,550	3,248	1835
Turnberry .....	2,141	2,105	2,452	2,270	3,010	2,355	1857
Usborne .....	2,367	2,316	2,528	2,392	3,074	2,763	.....
Wawanosh, E. ....	1,960	1,858	2,078	1,905	2,674	2,304	1852
Wawanosh, W. ....	2,218	2,080	2,337	2,048	2,795	2,284	.....
Rural .....	44,877	43,011	50,460	45,859	59,770	51,031	.....
Bayfield .....	558	563	595	578	679	694	1876
Blyth .....	871	862	927	925	914	1,161	1877
Brussels .....	1,114	1,166	1,204	1,193	1,280	1,335	1873
Exeter .....	1,792	1,791	1,809	1,615	1,725	1,586	1873
Hensall .....	820	823	*	*	*	*	1897
Wroxeter .....	446	428	504	486	590	568	1875
Clinton .....	2,547	2,434	2,635	2,421	2,606	2,598	1858
Goderich .....	4,158	4,060	3,839	3,595	4,564	4,195	.....
Seaforth .....	2,245	2,280	2,641	2,544	2,480	2,414	.....
Wingham .....	2,392	2,192	2,167	2,056	1,918	1,953	1874
Urban .....	16,943	16,599	16,321	15,413	16,756	16,504	.....
Total .....	61,820	59,610	66,781	61,272	76,526	67,535	.....
<b>KENT:</b>							
Camden .....	2,811	2,550	2,991	2,681	3,239	2,616	.....
Chatham .....	6,049	4,749	6,207	5,145	5,907	4,871	.....
Dover .....	4,464	4,210	4,415	3,814	4,447	3,429	1848
Harwich .....	5,494	4,534	6,017	5,370	6,410	4,999	1852

\* United to Limerick. † Included in Marmora Tp. ‡ Included in Hungerford. § Included in Hay and Tuckersmith Tps. ¶ Not including the Indian reserve of Walpole Island, 828. (See Sombra, p. 136.)

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>KENT.—Continued.</b>							
Howard .....	3,243	3,453	3,626	3,640	3,962	4,232	.....
Orford .....	3,347	2,613	3,479	2,744	3,766	2,890	1828
Raleigh .....	4,844	4,697	4,955	4,443	5,298	4,570	1850
Romney .....	2,103	1,752	1,534	1,441	1,082	961	1850
Tilbury E. ....	3,456	3,366	3,033	2,522	2,872	2,521	1860
Zone .....	1,326	1,191	1,401	1,246	1,495	1,355	.....
Rural .....	37,137	33,015	37,658	33,046	38,478	32,434	.....
Thamesville .....	864	889	798	773	740	68	1874
Tilbury .....	1,012	1,050	925	816	*	*	1887
Blenheim .....	1,653	1,639	1,708	1,675	1,212	1,016	1875
Bothwell .....	907	900	897	900	965	851	1867
Dresden .....	1,613	1,508	2,058	1,915	1,979	1,829	.....
Ridgetown .....	2,405	2,494	2,254	2,161	1,538	1,429	1877
Wallaceburg .....	2,763	2,830	2,726	2,186	1,525	1,140	1875
Chatham .....	9,068	8,658	9,652	8,764	7,873	7,656	1853
Urban .....	20,285	19,968	20,418	19,190	15,832	14,597	.....
Total .....	57,422	52,983	58,076	52,236	54,310	47,031	.....
<b>LAMTON:</b>							
Bosanquet .....	2,662	2,530	2,866	2,516	3,360	2,863	.....
Brooke .....	3,678	3,383	3,874	3,188	3,492	3,006	1842
Dawn .....	3,659	3,363	3,480	3,012	2,026	1,850	.....
Enniskillen .....	4,745	4,659	5,006	4,616	3,588	2,576	.....
Euphemia .....	2,321	2,142	2,523	2,208	2,791	2,497	.....
Moore .....	4,795	4,401	5,079	5,683	5,146	4,919	1830
Plympton .....	3,621	3,306	3,929	3,368	4,495	4,165	.....
Sarnia .....	2,632	2,061	2,957	2,009	3,583	2,202	1849
Sombra .....	† 5,231	3,837	† 5,035	3,928	4,601	2,988	1852
Warwick .....	3,329	3,080	3,644	3,290	4,052	3,649	.....
Rural .....	36,873	32,762	38,373	33,818	37,134	30,714	.....
Alvinston .....	898	800	1,006	979	830	750	1881
Arkona .....	468	450	463	471	569	595	1877
Oil Springs .....	1,018	974	1,138	1,129	552	514	1865
Point Edward .....	780	814	1,881	1,792	1,293	1,389	1879
Thedford .....	633	602	616	619	685	711	1878
Watford .....	1,279	1,378	1,299	1,185	1,132	1,406	1874
Wyoming .....	829	749	871	777	886	764	1874
Forest .....	1,653	1,574	2,057	1,550	1,614	1,402	1873
Petrolea .....	4,136	4,015	4,357	4,363	3,465	3,081	.....
Sarnia .....	8,176	8,012	6,692	6,498	3,874	4,270	1856
Urban .....	19,769	19,368	20,380	19,363	14,900	14,881	.....
Total .....	56,642	52,130	58,753	53,181	52,034	45,596	.....
<b>LANARK:</b>							
Bathurst .....	2,508	2,378	2,757	2,341	2,960	2,677	1850
Beckwith .....	1,646	1,615	1,766	1,680	1,928	1,791	1850
Burgess N. ....	952	824	1,117	1,007	1,287	1,034	.....
Dalhousie and Sherbrooke N. ....	1,829	1,725	2,142	2,023	2,528	2,458	1851
Darling .....	771	714	739	684	767	694	1854
Drummond .....	2,078	1,916	2,202	2,025	2,378	2,188	1860
Elmsley N. ....	1,087	1,009	1,233	1,076	1,319	1,130	.....
Lanark .....	1,751	1,672	1,904	1,747	2,029	1,747	.....
Lavant .....	569	523	679	605	†	†	1884
Montague .....	2,068	1,833	2,232	2,143	2,683	2,158	1860

\* Included in Tilbury E. and W. Tps. in 1881. † Including Indian reserve of Walpole Island, but not included in municipal. ‡ Included with Dalhousie and Sherbrooke N. Tps.



## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census	Municipal assessment.	Dominion census	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>LANARK.—Continued.</b>							
Pakenham .....	1,872	1,921	2,007	1,864	2,284	1,792	.....
Ramsay .....	2,383	2,096	2,601	2,185	2,899	2,377	.....
Sherbrooke S. ....	924	850	984	865	948	782	.....
Rural .....	20,428	19,076	22,363	20,245	24,010	20,828	.....
Lanark .....	979	901	859	828	752	666	1862
Almonte .....	3,023	3,038	3,068	2,925	2,684	2,631	1871
Carleton Place .....	4,059	4,072	4,435	4,316	1,975	1,800	.....
Perth .....	3,588	3,637	3,136	3,205	2,467	2,755	1851
Smith's Falls .....	5,165	5,419	3,864	3,756	2,087	1,980	.....
Urban .....	16,804	17,067	15,362	15,029	9,965	9,832	.....
Total .....	37,232	36,148	37,725	35,274	33,975	30,660	.....
<b>LEEDS:</b>							
Bastard and Burgess S...Tp.	3,006	2,296	3,319	3,183	3,500	2,665	.....
Crosby N .....	2,030	1,775	2,097	1,718	1,999	1,680	1850
Crosby S. ....	1,811	1,588	1,849	1,743	1,968	1,865	.....
Elizabethtown.....	4,872	3,859	4,726	3,694	4,905	4,214	.....
Elmsley, S. ....	889	828	977	812	1,121	960	1850
Kitley .....	2,089	1,946	2,336	2,242	2,593	2,261	1850
Leeds and Lansdowne, Front	3,085	2,717	3,387	2,838	3,587	3,028	.....
Leeds and Lansdowne, Rear.	2,386	2,257	2,492	2,178	2,653	2,401	.....
Yonge and Escott, Front ...	2,680	2,372	2,877	2,513	3,107	2,527	.....
Yonge and Escott, Rear ...	1,276	1,135	1,413	1,261	2,103	1,985	.....
Rural .....	24,124	20,773	25,453	22,182	27,536	23,586	.....
Athens .....	953	954	904	786	*	*	1890
Newboro .....	432	381	462	432	418	387	1876
Brockville .....	8,940	8,864	8,791	8,864	7,609	7,473	1832
Gananoque .....	3,526	3,718	3,669	3,529	2,871	2,736	1863
Urban .....	13,851	13,917	13,826	13,611	10,898	10,596	.....
Total .....	37,975	34,690	39,279	35,793	38,434	34,182	.....
<b>LENNOX AND ADDINGTON:</b>							
Adolphustown .....	544	486	720	500	737	649	.....
Amherst Island .....	821	825	938	903	1,089	1,117	.....
Camden E. ....	4,611	5,321	4,745	5,369	5,134	4,142	.....
Denbigh, Abinger and Ashby	1,056	1,011	870	850	621	536	1866
Ernestown .....	3,317	2,998	3,597	2,874	3,961	3,354	1850
Fredericksburg N .....	1,523	1,393	1,659	1,404	1,720	1,583	1859
Fredericksburg S .....	1,103	817	1,125	968	1,340	1,193	1858
Kaladar, Anglesea and Ef- ingham .....	1,364	1,248	1,232	1,075	990	895	.....
Richmond .....	2,563	2,261	2,898	2,528	3,241	2,477	1849
Sheffield .....	2,280	2,023	2,355	2,082	2,591	2,243	1850
Rural .....	19,182	18,383	20,139	18,553	21,424	18,191	.....
Bath .....	407	348	530	505	546	589	.....
Newburgh .....	614	595	648	587	834	760	1858
Napanee .....	3,143	2,848	3,433	3,221	3,680	3,313	.....
Urban .....	4,164	3,791	4,611	4,313	5,060	4,662	.....
Total .....	23,346	22,174	24,750	22,866	26,484	22,853	.....

\* Included in Yonge and Escott Rear Tp.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>LINCOLN :</b>							
Caistor .....	1,784	1,705	2,002	1,795	2,164	1,916	1850
Clinton .....	2,056	1,882	2,137	1,955	2,399	2,091	.....
Gainsborough .....	2,463	2,249	2,683	2,413	3,001	2,615	.....
Grantham .....	1,941	1,812	1,928	1,816	2,218	2,083	.....
Grimsby N. ....	1,312	1,174	1,095	1,019	2,416	2,327	.....
Grimsby S. ....	1,379	1,379	1,610	1,470	*	*	1882
Louth .....	1,848	1,694	1,774	1,548	1,995	1,664	1793
Niagara .....	1,897	1,697	1,845	1,820	2,004	1,832	1850
Rural .....	14,680	13,572	15,074	13,836	16,197	14,528	.....
Beamsville .....	832	797	911	881	685	692	1879
Grimsby .....	1,001	973	883	846	692	645	1876
Merritton .....	1,710	1,690	1,813	1,730	1,798	1,704	1874
Port Dalhousie .....	1,125	1,057	879	836	1,129	1,000	1863
Niagara .....	1,258	1,250	1,349	1,320	1,441	1,445	1845
St. Catharines .....	9,946	10,485	9,170	9,377	9,631	10,026	.....
Urban .....	15,872	16,252	15,005	14,990	15,376	15,512	.....
Total .....	30,552	29,824	30,079	28,826	31,573	30,040	.....
<b>MANITOULIN :</b>							
Assiginack .....	2,592	1,131	818	944	881	907	1876
Billings .....	751	342	635	265	.....	.....	1885
Burpee .....	285	274	186	213	.....	.....	1887
Carnarvon .....	757	698	500	577	550	381	1879
Cockburn Island .....	301	181	240	173	.....	.....	1885
Gordon .....	761	580	455	900	.....	.....	1882
Howland .....	1,217	1,138	1,139	800	1,502	932	1874
Sandfield .....	283	255	230	269	432	462	1880
Tehkummah .....	521	479	405	337	.....	.....	1882
Unorganized .....	2,440	.....	4,667	.....	5,045	.....	.....
Rural .....	9,908	5,078	9,325	4,478	8,460	2,682	.....
Gore Bay .....	723	510	472	500	.....	.....	1890
Little Current .....	728	535	997	700	.....	.....	1890
Urban .....	1,451	1,045	1,469	1,200	.....	.....	.....
Total .....	11,359	6,123	10,794	6,678	8,460	2,682	.....
<b>MIDDLESEX :</b>							
Adelaide .....	2,233	1,972	2,616	2,360	3,108	2,980	.....
Biddulph .....	2,263	2,357	2,600	2,600	2,940	2,700	1842
Caradoc .....	4,612	3,898	4,762	4,012	5,230	3,880	.....
Delaware .....	2,178	1,439	2,549	1,599	2,674	1,687	.....
Dorchester N. ....	3,622	3,471	3,752	3,705	4,056	3,887	.....
Ekfrid .....	2,757	2,493	2,876	2,623	3,023	2,806	1820
Lobo .....	2,695	2,643	2,989	2,860	3,092	2,894	1856
Loudon .....	8,878	8,397	8,934	8,673	9,599	9,503	.....
McGillivray .....	3,151	2,862	3,503	3,025	4,178	3,685	.....
Metcalfe .....	1,562	1,516	1,699	1,653	2,192	2,195	.....
Mosa .....	2,206	2,476	2,450	2,759	2,673	2,790	1850
Nissouri W. ....	2,998	2,821	3,271	2,878	3,562	3,550	1851
Westminster .....	4,730	4,462	4,462	4,646	7,892	6,834	.....
Williams E. ....	1,587	1,376	1,794	1,657	2,195	1,881	.....
Williams W. ....	1,468	1,458	1,782	1,624	2,339	1,988	1860
Rural .....	46,940	43,641	49,997	46,654	58,753	53,260	.....
Ailea Craig .....	744	708	731	699	872	838	1875
Glencoe .....	1,034	1,037	976	940	801	801	1876
Lucan .....	848	820	920	897	976	900	.....

\* Included in Grimsby N.

† Population decreased by annexing 3,261 to London city.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>MIDDLESEX.—Continued:</b>							
Newbury	454	450	452	414	546	547	1873
Wardsville	343	330	380	336	540	474	1867
Parkhill Town	1,430	1,346	1,680	1,536	1,539	1,522	.....
Strathroy	2,933	2,903	3,316	3,216	3,817	3,640	.....
London City	37,976	39,183	33,892	33,090	25,237	25,442	.....
Urban	45,762	46,777	42,347	41,128	34,328	34,164	.....
Total	92,702	90,418	92,344	87,782	93,081	87,424	.....
<b>MUSKOKA:</b>							
Brunel Tp	811	774	1,728	635	1,604	624	1877
Cardwell	466	446	1,337	416	1,114	246	1878
Chaffey	1,136	1,033	980	803	.....	.....	1883
Draper	998	950	1,082	1,003	1,794	1,237	.....
McLean and Ridout	762	715	735	670	756	700	1874
Macaulay	736	626	760	715	942	890	.....
Medora and Wood	1,116	909	921	863	1,116	675	.....
Monck	1,008	935	854	697	801	621	1869
Morrison	927	813	890	531	816	646	1865
Muskoka	838	799	797	706	1,135	828	1869
Oakley	348	336	385	264	*	.....	1882
Ryde	552	576	612	570	*	623	1878
Stephenson	1,249	1,106	†	885	†	863	.....
Stisted	626	629	‡	567	.....	.....	1882
Watt	975	946	‡	857	++	755	1871
Unorganized	1,323	.....	1,496	.....	2,105	.....	.....
Rural	13,871	11,593	13,225	10,382	12,183	8,708	.....
Port Carling Vill	323	316	.....	.....	.....	.....	1896
Bracebridge Town	2,479	2,310	1,419	1,216	1,193	1,127	1875
Gravenhurst	2,146	2,375	1,848	1,556	1,015	938	1878
Huntsville	2,152	2,021	1,159	1,436	§	.....	1886
Urban	7,100	7,022	4,426	4,208	2,208	2,065	.....
Total	20,971	18,615	17,651	14,590	14,391	10,773	.....
<b>NIPISSING:</b>							
Bonfield Tp	1,707	1,338	2,249	1,229	.....	.....	1887
Caldwell	868	853	.....	.....	.....	.....	1894
Calvin	509	455	549	411	.....	.....	1889
Cameron	487	166	242	112	.....	.....	1887
Dymond	698	372	.....	.....	.....	.....	1901
Ferris	962	795	**	329	.....	.....	1885
McKim	3,012	2,519	2,354	1,800	.....	.....	1890
Mattawan	328	259	694	248	.....	.....	1887
Papineau	670	593	††	366	.....	.....	1887
Ratter and Dunnett	774	890	.....	.....	.....	.....	1897
Springer	1,305	1,016	1,480	830	.....	.....	1884
Widdifield	919	655	273	268	.....	.....	1885
Unorganized	6,564	.....	1,947	.....	2,090	.....	.....
Rural	18,803	9,911	9,788	5,593	2,090	.....	.....
Mattawa Town	1,400	1,594	1,438	1,450	.....	.....	1884
North Bay	2,530	2,500	1,937	1,900	.....	.....	1891

United to Draper. † United with Brunel. ‡ United with Cardwell.

\* Included with Draper. § In unorganized territory in 1881.

Including Harley, Hudson, Keras and part of Harris. \*\* Included with Bonfield. †† Included with Mattawan.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>NIPISSENG.—Continued:</b>							
Sturgeon Falls.....	1,418	1,298					1896
Sudbury.....	2,027	1,796					1893
Urban.....	7,375	7,187	3,375	3,350			
Total.....	26,178	17,098	13,163	8,943	2,090		
<b>NORFOLK :</b>							
Charlottetown.....Tp.	3,464	3,238	3,937	3,494	4,416	3,903	.....
Houghton.....	2,035	1,957	2,014	1,860	2,071	1,927	1851
Middleton.....	2,591	2,485	3,457	3,254	3,514	3,309	1850
Townsend.....	4,017	3,899	4,291	3,881	4,963	4,530	1849
Walsingham, N.....	2,359	2,095	4,785	2,295	5,819	4,956	.....
Walsingham, S.....	2,012	1,900		1,776			.....
Windham.....	3,884	3,649	4,252	4,023	4,913	4,296	.....
Woodhouse.....	2,379	2,000	2,508	2,262	2,922	2,600	.....
Rural.....	22,741	21,218	25,244	22,845	28,618	25,521	.....
Delhi.....Vill.	823	790	†	†	†	†	1894
Port Dover.....	1,177	1,145	1,213	1,146	1,146	1,065	1879
Port Rowan.....	657	725	649	600			1890
Waterford.....	1,122	1,043	1,212	1,168	1,118	1,110	1878
Simcoe.....Town.	2,627	3,007	2,674	3,103	2,645	2,498	.....
Urban.....	6,406	6,710	5,748	6,017	4,909	4,673	.....
Total.....	29,147	27,928	30,992	28,862	33,527	30,194	.....
<b>NORTHUMBERLAND :</b>							
Alnwick.....Tp.	1,247	991	1,321	1,079	1,471	1,220	1845
Brighton.....	2,774	2,434	3,017	2,879	3,470	2,849	1851
Cramahé.....	2,556	2,418	2,995	2,737	3,481	3,181	1850
Haldimand.....	3,946	3,862	4,484	4,116	5,401	5,185	.....
Hamilton.....	3,623	3,758	4,313	4,542	5,155	4,649	1826
Munaghan, S.....	929	856	1,093	1,078	1,148	1,072	.....
Murray.....	2,993	2,755	3,303	3,023	3,560	3,070	.....
Percy.....	3,216	2,907	3,388	3,048	3,768	3,529	1850
Seymour.....	3,261	3,042	3,509	3,109	3,783	3,293	.....
Rural.....	24,545	23,022	27,423	25,611	31,237	28,048	.....
Brighton.....Vill.	1,378	1,352	1,479	1,479	1,547	1,515	1858
Campbellford.....	2,485	2,504	2,424	2,435	1,418	1,355	1876
Colborne.....	1,017	1,023	1,068	1,033	1,079	974	1859
Hastings.....	815	803	812	793	885	802	1874
Cobourg.....Town	4,239	4,349	4,829	4,694	4,967	5,164	1837
Urban.....	9,934	10,031	10,612	10,434	9,886	9,810	.....
Total.....	34,479	33,053	38,035	36,045	41,123	37,858	.....
<b>ONTARIO :</b>							
Brock.....Tp.	3,727	3,592	4,071	3,629	4,378	4,156	.....
Mara.....	2,921	2,931	3,152	2,980	3,237	2,940	1868
Pickering.....	5,225	5,211	5,998	5,781	6,883	6,035	1811
Rama.....	1,618	1,237	1,752	1,317	1,370	913	1869
Reach.....	3,589	3,439	4,190	4,122	4,949	4,385	1852
Scott.....	2,270	2,117	2,342	2,234	2,563	2,414	.....
Scugog.....	554	464	662	578	768	625	1856
Thorah.....	1,438	1,285	1,623	1,368	2,542	2,420	1849
Uxbridge.....	2,846	2,695	3,461	3,119	4,081	3,748	1849
Whitby, E.....	2,631	2,495	3,080	2,928	3,417	3,267	.....
Whitby.....	2,050	1,950	2,551	2,307	2,946	2,852	.....
Rural.....	28,869	27,416	32,882	30,363	37,134	33,755	.....

\* Included with Walsingham, N.

† Taken out of Middleton and Windham Tps.

‡ Included in Walsingham.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>ONTARIO.—Con.</b>							
Beaverton . . . . . Vill.	855	746	850	850	*	*	1885
Cannington . . . . .	1,058	1,172	1,050	1,101	922	903	1879
Port Perry . . . . .	1,465	1,410	1,698	1,756	1,500	1,687	1873
Oshawa . . . . . Town	4,394	4,303	4,066	4,082	3,992	4,196	.....
Uxbridge . . . . .	1,657	1,578	2,023	2,126	1,824	1,674	1873
Whitby . . . . .	2,110	2,239	2,786	2,693	3,140	2,946	1854
Urban . . . . .	11,539	11,448	12,473	12,608	11,678	11,406	.....
Total . . . . .	40,408	38,864	45,355	42,971	48,812	45,161	.....
<b>OXFORD:</b>							
Blandford . . . . . Tp.	1,694	1,596	1,911	1,620	2,089	1,855	1836
Blenheim . . . . .	4,679	4,186	5,606	4,704	5,937	5,086	1850
Dereham . . . . .	3,979	3,585	4,025	3,580	4,486	3,976	1832
Nissouri, E . . . . .	2,753	2,374	3,031	2,637	3,325	2,612	1850
Norwich, N . . . . .	2,345	2,189	2,389	2,147	2,632	2,129	.....
Norwich, S . . . . .	2,664	2,387	2,943	2,408	3,360	2,615	1856
Oxford, E . . . . .	2,057	1,930	2,155	1,929	2,313	2,081	1848
Oxford, N . . . . .	1,402	1,267	1,498	1,418	1,645	1,461	.....
Oxford, W . . . . .	2,230	2,062	2,193	1,868	2,694	2,265	1856
Zorra, E . . . . .	4,298	3,901	4,262	3,697	4,591	3,774	1850
Zorra, W . . . . .	2,792	2,388	2,988	2,638	3,430	2,742	1840
Rural . . . . .	30,893	27,865	33,001	28,746	36,502	30,594	.....
Embros . . . . . Vill.	595	590	627	565	616	510	1858
Norwich . . . . .	1,269	1,397	1,255	1,200	1,411	1,316	1876
Ingersoll . . . . . Town	4,573	4,559	4,191	5,200	4,318	4,949	1852
Tillsonburg . . . . .	2,241	2,117	2,163	2,207	1,939	1,827	1872
Woodstock . . . . . City	8,833	9,257	8,612	8,992	5,373	5,399	1851
Urban . . . . .	17,511	17,920	16,843	18,164	13,657	14,001	.....
Total . . . . .	48,404	45,785	49,849	46,910	50,159	44,595	.....
<b>PARRY SOUND:</b>							
Armour . . . . . Tp.	315	855	1,722	941	1,203	435	1881
Carling . . . . .	377	296	.....	.....	.....	.....	1897
Chapman . . . . .	694	750	1,301	852	.....	.....	1882
Christie . . . . .	553	459	.....	.....	.....	.....	1894
Foley . . . . .	618	503	502	355	2,025	563	1875
Hagerman . . . . .	471	470	1,189	481	1,056	.....	1890
Himsworth, N . . . . .	2,516	562	1,832	207	.....	.....	1886
Himsworth, S . . . . .	†	1,518	†	1,095	.....	.....	1890
Humphrey . . . . .	685	609	498	474	607	438	1874
Joly . . . . .	268	280	836	256	.....	.....	1890
McDougall . . . . .	503	474	355	311	.....	930	1875
McKellar . . . . .	697	607	§	533	.....	577	1874
McMurrich . . . . .	716	613	724	633	.....	.....	1891
Macbar . . . . .	902	805	1,177	721	.....	.....	1889
Nipissing . . . . .	675	303	†	600	.....	.....	1888
Perry . . . . .	1,779	1,224	1,704	1,052	.....	.....	1888
Ryerson . . . . .	761	743	¶	641	¶	532	1880
Strong . . . . .	768	719		638	.....	.....	1884
Unorganized . . . . .	6,948	.....	4,232	.....	7,922	.....	.....
Rural . . . . .	20,846	11,790	16,072	9,840	12,813	3,475	.....
Burk's Falls . . . . . Vill.	849	764	449	413	.....	.....	1890
Sundridge . . . . .	357	470	664	750	.....	.....	1890
Parry Sound . . . . . Town.	2,884	2,628	1,982	1,736	.....	.....	1887

\* Included in Thorah Tp. in 1881.

† Included with Himsworth, N. ¶ Included with Armour. ‡ Included with Foley. § Included with Hagerman || Included with Joly.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>PARRY SOUND.—Con.</b>							
Urban .....	4,090	3,862	3,095	2,899	.....	.....	.....
Total .....	24,936	15,652	19,167	12,739	17,813	3,475	.....
<b>PEEL:</b>							
Albion.....Tp.	2,741	2,715	3,142	2,782	3,872	3,189	.....
Caledon .....	4,345	3,880	5,520	4,175	5,310	3,568	.....
Chinguacousy .....	4,177	3,853	4,744	4,487	5,476	5,005	.....
Toronto .....	5,208	4,967	5,528	5,129	5,873	5,343	1850
Toronto Gore.....	1,032	956	1,247	1,103	1,362	1,245	1850
Rural .....	17,503	16,371	20,181	17,676	21,894	18,350	.....
Bolton.....Vill.	702	635	743	653	606	560	1872
Streetsville .....	522	533	695	557	756	655	1858
Brampton.....Town.	2,748	2,813	3,252	3,294	2,920	2,966	1852
Urban .....	3,972	3,981	4,690	4,504	4,281	4,181	.....
Total .....	21,475	20,352	24,871	22,180	26,175	22,531	.....
<b>PERTH:</b>							
Blanshard.....Tp.	2,575	2,518	2,927	2,828	3,244	2,967	.....
Downie .....	2,895	2,704	3,281	2,927	3,489	2,928	1842
Easthope, N.....	2,295	2,012	2,551	2,494	2,722	2,390	1843
Easthope, S.....	2,097	1,875	2,149	1,672	2,244	1,829	.....
Ellice .....	3,367	2,761	3,384	2,913	3,275	2,804	1842
Elma .....	4,159	3,598	4,231	3,973	4,421	3,752	1857
Fullarton .....	2,295	2,150	2,511	2,351	2,708	2,469	.....
Hibbert .....	2,400	2,005	2,636	2,252	3,394	3,130	.....
Logan .....	3,024	2,772	3,693	2,726	3,355	2,813	1857
Mornington .....	3,246	2,966	3,509	3,224	3,998	3,586	.....
Wallace .....	2,839	2,780	3,237	2,891	3,655	2,979	1858
Rural .....	31,192	28,141	33,509	30,251	36,505	31,647	.....
Milverton.....Vill.	698	703	603	533	562	669	1881
Listowel.....Town.	2,693	2,597	2,587	2,520	2,688	2,462	1867
Mitchell .....	1,945	1,954	2,101	2,202	2,284	2,377	.....
St. Marys .....	3,384	3,410	3,416	3,494	3,415	3,432	1864
Stratford.....City.	9,959	10,451	9,500	9,417	8,239	8,954	.....
Urban .....	18,679	19,115	18,207	18,166	17,188	17,894	.....
Total .....	49,871	47,256	51,716	48,417	53,693	49,541	.....
<b>PETERBOROUGH:</b>							
Asphodel.....Tp.	1,877	1,767	1,866	1,722	1,918	1,687	.....
Beimont and Methuen.....	2,382	1,953	2,807	2,304	1,965	1,643	1834
Burleigh and Austruther.....	687	692	1,520	1,290	1,381	1,307	1866
Chandos .....	806	778	.....	.....	.....	.....	1894
Douro .....	1,871	2,020	2,131	1,980	1,972	1,562	1840
Dummer .....	2,039	1,857	2,143	2,005	2,149	2,012	.....
Ennismore.....	936	807	932	877	1,137	1,033	.....
Galway and Cavendish.....	853	1,130	804	676	787	716	1860
Harvey .....	1,199	1,095	1,155	1,000	1,114	934	1860
Monaghan, N.....	957	911	1,021	851	912	740	.....
Otonabee .....	3,456	3,249	3,652	3,521	4,013	3,739	1850
Smith .....	2,944	2,589	3,045	2,640	3,301	2,732	1850
Rural .....	20,007	18,848	21,076	18,866	20,549	18,405	.....
Ashburnham.....Vill.	1,647	1,747	1,674	1,583	1,266	1,299	1859
Havelock .....	984	975	†	†	†	†	1893
Lakefield .....	1,244	1,159	1,120	1,092	992	987	1875

\* United with Burleigh and Austruther. † Included in Belmont.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>PETERBOROUGH.—Con.</b>							
Norwood .....	945	920	1,010	982	853	767	1878
Peterborough .....	11,239	10,985	9,717	9,841	6,812	6,752	1850
Urban .....	16,059	15,786	13,521	13,498	9,923	9,805	.....
Total .....	36,066	34,634	34,597	32,364	30,472	28,210	.....
<b>PRESCOTT:</b>							
Alfred .....	3,327	3,025	3,053	2,822	3,208	2,454	.....
Caledonia .....	2,201	1,771	1,943	1,570	1,751	1,440	.....
Hawkesbury, E. ....	4,621	4,813	4,896	4,515	5,082	3,898	1800
Hawkesbury, W. ....	1,350	1,162	2,740	2,473	2,360	1,888	.....
Longueuil .....	1,060	912	1,172	978	1,162	984	.....
Plantagenet, N. ....	4,082	4,116	4,245	3,569	3,997	3,446	.....
Plantagenet, S. ....	3,544	3,365	3,080	2,331	2,524	2,192	.....
Rural .....	20,185	19,164	21,129	18,318	20,084	16,302	.....
L'Orignal .....	1,026	1,083	1,002	779	853	764	1876
Hawkesbury .....	4,150	3,802	2,042	1,557	1,920	1,457	1857
Vankleek Hill .....	1,674	1,289	*	*	*	*	1897
Urban .....	6,850	6,174	3,044	2,336	2,773	2,221	.....
Total .....	27,035	25,338	24,173	20,654	22,857	18,523	.....
<b>PRINCE EDWARD:</b>							
Ameliasburg .....	2,585	2,903	3,079	2,896	3,451	3,084	.....
Athol .....	1,187	1,110	1,284	1,080	1,573	1,384	1849
Hallowell .....	3,445	2,846	3,380	3,042	3,704	3,217	.....
Hillier .....	1,647	1,501	1,890	1,626	2,192	1,842	1850
Marysburg N. ....	1,213	1,219	1,430	1,350	1,700	1,548	1850
Marysburg S. ....	1,342	1,177	1,643	1,591	2,205	1,886	1870
Sophiasburg .....	2,095	1,728	2,341	2,071	2,646	2,200	.....
Rural .....	13,514	12,484	15,047	13,656	17,471	15,161	.....
Wellington .....	652	580	555	525	598	537	1862
Pictou .....	3,698	3,640	3,287	3,060	2,975	2,833	183
Urban .....	4,350	4,220	3,842	3,585	3,573	3,370	.....
Total .....	17,864	16,704	18,889	17,241	21,044	18,531	.....
<b>RAINY RIVER:</b>							
† Alberton .....	183	193	.....	234	.....	.....	1891
‡ Chapple .....	.....	344	.....	.....	.....	.....	1899
§ Emo .....	1,321	485	.....	.....	.....	.....	1899
¶ Keewatin .....	1,166	933	1,416	629	.....	.....	1888
McIrvine .....	1,163	386	.....	.....	.....	.....	1893
Van Horne .....	741	246	.....	.....	.....	.....	1899
Unorganized .....	7,723	.....	3,638	.....	.....	.....	.....
Rural .....	12,237	2,587	5,054	863	.....	.....	.....
Rat Portage .....	5,202	4,797	1,806	2,205	.....	.....	1885
Total .....	17,489	7,384	6,860	3,068	.....	.....	.....
<b>RENFREW:</b>							
Admaston .....	2,463	2,243	2,548	2,126	2,383	2,126	.....
Algona S. ....	1,080	939	1,025	692	759	662	1867
Alice and Fraser .....	2,139	1,978	1,920	1,742	1,912	1,607	1848
Bogot and Blithfield .....	1,620	1,397	1,594	1,241	1,126	952	.....

\* Included in Hawkesbury Township.

† Alberton comprises Crozier and Roddick. ‡ Not specified in census. † Chapple comprises Barwick, Shenstone, Dobie and Rosberry. § Comprises Carpenter, Lash and Aylesworth.

|| McIrvine includes Fort Frances.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>RENFREW.—Continued:</b>							
Bromley .....	2,069	2,025	1,933	1,773	1,797	1,623	.....
Brougham .....	601	568	548	549	574	490	.....
Brudenell and Lyndoch .....	1,411	1,417	1,398	1,338	1,270	1,185	1861
Grattan .....	2,078	1,992	1,724	1,578	1,893	1,523	1858
Griffith and Matawatchan .....	697	720	721	681	614	569	.....
Hagarty, Jones, etc. ....	3,456	2,828	2,200	2,111	1,417	1,210	.....
Head, Clara and Maria .....	488	364	521	373	953	391	.....
Horton .....	1,557	1,316	1,608	1,419	1,510	1,262	.....
McNab .....	3,835	3,445	3,514	3,254	3,092	2,984	.....
Pembroke .....	903	622	801	622	683	630	.....
Petewawa and McKay .....	1,067	993	991	928	689	547	.....
Radcliffe and Raglan .....	1,364	1,185	1,059	925	785	619	1878
Rolph, Buchanan & Wylie ..	1,140	1,029	1,034	736	699	577	.....
Ross .....	2,269	2,254	2,402	2,457	2,131	2,050	.....
Sebastopol .....	731	725	710	674	626	572	.....
Stafford .....	1,174	1,097	1,173	1,000	1,055	973	.....
Westmeath .....	3,586	3,420	3,612	3,005	3,220	2,614	.....
Wilberforce and Algona N. .	2,700	2,338	2,877	2,164	2,406	2,002	.....
Rural .....	38,413	34,895	35,913	31,388	31,594	27,198	.....
Cobden .....	734	638	*	*	*	*	1901
Eganville .....	1,107	1,056	710	750	†	†	1891
Arnprior .....	4,152	3,837	3,341	3,116	2,147	1,948	.....
Pembroke .....	5,166	5,131	4,401	4,277	2,820	2,804	1858
Renfrew .....	3,153	3,268	2,611	2,200	1,605	1,483	.....
Urban .....	14,302	13,930	11,063	10,343	6,572	6,235	.....
Total .....	52,715	48,825	46,976	41,731	38,166	33,433	.....
<b>RUSSELL:</b>							
Cambridge .....	3,459	3,147	2,767	2,424	1,676	1,471	.....
Clarence .....	6,085	5,203	4,779	4,187	4,411	4,059	.....
Cumberland .....	4,198	3,790	4,014	3,367	3,535	2,509	1845
Russell .....	3,835	2,958	3,918	2,902	3,458	2,833	.....
Rural .....	17,577	15,098	15,478	12,880	13,080	10,872	.....
Casselman .....	707	479	1,346	1,179	‡	†	1889
Rockland .....	1,998	1,638	1,465	1,407	§	§	1887
Urban .....	2,705	2,117	2,811	2,586	.....	.....	.....
Total .....	20,282	17,215	18,289	15,465	13,080	10,872	.....
<b>SIMCOE</b>							
Adjala .....	2,161	2,087	2,459	1,899	2,885	2,210	.....
Esa .....	3,438	4,150	3,592	3,950	4,666	3,826	.....
Flos .....	3,897	3,353	3,782	3,038	3,141	2,383	.....
Gwillimbury W .....	2,342	2,196	2,525	2,323	2,994	2,871	1850
Innisfil .....	3,858	3,526	5,110	4,191	5,499	4,624	1843
Matchedash .....	499	439	375	363	3,097	2,354	1888
Medonte .....	4,451	3,917	4,514	3,453	3,632	2,755	1850
Nottawasaga .....	5,342	5,252	6,060	4,949	6,971	5,339	.....
Orillia .....	4,564	3,663	3,687	3,158	¶	¶	1866
Oro .....	4,001	3,880	4,357	3,819	4,566	4,119	.....
Sunnisdale .....	2,367	1,933	2,772	2,293	2,802	2,628	1860
Tay .....	5,442	4,545	4,714	3,775	2,993	1,904	1869
Tecumseth .....	3,440	3,009	3,863	3,194	5,325	4,390	.....
Tiny .....	4,386	3,896	4,784	3,818	3,736	2,832	1851

\* Included in Ross Tp. † Included in Grattan and Wilberforce Tps. in 1881.

‡ Included in Cambridge Tp. § Included in Clarence Tp. in 1881. ¶ United with Matchedash.



## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>SIMCOE.—Continued:</b>							
Toscorontio.....	1,726	1,557	1,870	1,456	1,921	1,223	.....
Vespra.....	2,830	2,990	3,022	2,813	2,879	2,548	1854
Rural .....	54,744	50,393	57,486	48,522	57,107	46,006	.....
Beeton..... Vill	634	726	771	767	*	*	1886
Bradford .....	984	997	996	92*	1,176	1,025	1858
Creemore .....	654	645	721	648	†	†	1890
Tottenham .....	611	562	586	531	*	*	1885
Alliston..... Town	1,256	1,374	1,371	1,951	1,099	985	1875
Barrie .....	5,949	6,067	5,550	5,274	4,854	4,611	1853
Collingwood.....	5,755	5,878	4,939	5,008	4,445	41,34	1858
Midland .....	3,174	3,040	2,088	2,198	1,095	953	1878
Orillia .....	4,907	4,863	4,752	4,854	2,910	2,900	.....
Penetanguishene .....	2,422	2,718	2,110	2,125	1,089	980	1877
Stayner .....	1,225	1,204	1,357	1,123	1,028	1,008	1874
Urban .....	27,571	28,074	25,241	25,404	17,696	16,596	.....
Total .....	82,315	78,467	82,727	73,926	74,803	62,602	.....
<b>STORMONT:</b>							
Cornwall..... Tp	6,911	5,594	6,790	5,629	5,436	3,580	.....
Finch .....	3,765	2,942	3,509	3,024	3,493	3,035	.....
Osnabruck .....	4,828	4,706	5,316	4,769	5,796	4,856	.....
Roxborough.....	4,834	4,274	4,736	4,153	4,005	3,727	.....
Rural .....	20,338	17,516	20,351	17,575	18,730	15,198	.....
Cornwall..... (Urban)	6,704	6,243	6,805	6,010	4,468	4,190	1847
Total .....	27,042	23,759	27,156	23,585	23,198	19,388	.....
<b>THUNDER BAY:</b>							
‡Neebing..... Tp	403	218	2,176	838	.....	.....	1885
Oliver .....	504	413	427	385	.....	163	1881
Shuniah .....	22	151	.....	107	.....	.....	1884
Schreiber.....	510	378	.....	.....	.....	.....	1901
Unorganized .....	1,659	.....	1,928	.....	4,926	.....	.....
Rural .....	3,098	1,160	4,531	1,330	4,926	163	.....
Fort William..... Town	3,997	4,093	.....	.....	.....	.....	1892
Port Arthur .....	3,214	3,148	2,698	3,158	.....	.....	1884
Urban .....	7,211	7,241	2,698	3,158	.....	.....	.....
Total .....	10,309	8,401	7,229	4,488	4,926	163	.....
<b>VICTORIA:</b>							
Bexley..... Tp	907	871	902	723	903	844	.....
Carden .....	805	690	815	720	916	995	1862
Dalton .....	541	509	509	528	530	.....	1887
Eldon .....	2,994	2,723	3,145	2,814	3,778	3,008	.....
Emily .....	2,304	1,938	2,603	2,211	2,876	2,382	.....
Fenelon .....	2,470	2,221	2,809	2,550	3,094	2,811	1850
Laxton, Digby & Longford..	815	720	874	759	957	796	1854
Mariposa.....	4,190	3,795	4,849	4,044	5,531	5,216	.....
Ops .....	2,610	2,176	2,926	2,544	3,358	2,804	1841
Somerville .....	2,105	1,865	1,940	1,787	1,509	1,359	.....
Verulam .....	2,130	1,800	2,291	1,943	2,474	2,195	.....
Rural .....	21,871	19,308	23,663	20,623	25,926	22,410	.....

\* Included in Tecumseth Tp. in 1881.

† Included in Nottawasaga in 1881.

‡ Neebing is composed of Neebing, Paipoonge, Blake, Crooks and Pardee.

§ United with

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<i>VICTORIA—Continued:</i>							
Bobcaygeon . . . . . Vill	914	891	1,018	984	750	710	1877
Fenelon Falls . . . . .	1,132	1,204	1,219	1,044	1,155	1,017	1875
Omeme . . . . .	574	610	687	690	744	689	1874
Sturgeon Point . . . . .	*	369	*	*	*	*	1899
Woodville . . . . .	458	513	323	655	†	†	1884
Lindsay . . . . . Town	7,003	6,929	6,081	6,157	5,080	5,365	1857
Urban . . . . .	10,081	10,516	9,328	9,530	7,729	7,781	.....
Total . . . . .	31,952	29,824	32,991	30,153	33,655	30,191	.....
<i>WATERLOO:</i>							
Dumfries N . . . . . Tp	2,164	1,994	2,516	2,468	3,848	3,583	1848
Waterloo . . . . .	7,107	7,063	7,344	6,905	7,594	6,997	1850
Wellesley . . . . .	5,051	4,740	5,609	5,188	5,752	4,778	.....
Wilmot . . . . .	4,944	4,938	5,487	5,226	5,858	4,888	.....
Woolwich . . . . .	4,318	4,197	4,838	4,462	5,524	5,193	1850
Rural . . . . .	23,584	22,932	25,794	24,249	28,076	25,439	.....
Ayr . . . . . Vill	827	846	1,040	980	oz++	oz++	1884
Elmira . . . . .	1,060	1,084	1,069	988			1887
New Hamburg . . . . .	1,208	1,201	1,335	1,250	1,240	1,151	1858
Berlin . . . . . Town	9,747	9,914	7,425	7,443	4,054	4,079	1854
Galt . . . . .	7,866	7,985	7,535	7,374	5,187	4,983	1857
Hespeler . . . . .	2,457	2,398	1,482	1,374	698	642	1858
Preston . . . . .	2,308	2,249	1,843	1,838	1,419	1,305	1852
Waterloo . . . . .	3,537	3,574	2,941	2,853	2,065	2,012	.....
Urban . . . . .	29,010	29,251	24,670	24,100	14,664	14,172	.....
Total . . . . .	52,594	52,183	50,464	48,349	42,740	39,611	.....
<i>WELLAND:</i>							
Bertie . . . . . Tp	3,189	2,891	4,222	3,836	3,986	3,460	1807
Crowland . . . . .	1,010	819	1,107	994	1,318	1,185	1850
Humberstone . . . . .	3,232	2,866	2,842	2,599	4,182	3,298	.....
Pelham . . . . .	2,490	2,336	2,654	2,342	2,623	2,406	.....
Stamford . . . . .	2,140	1,902	2,099	2,025	3,162	2,836	1793
Thorold . . . . .	2,025	1,895	2,316	2,009	2,456	2,502	1799
Wainfleet . . . . .	3,008	2,704	2,945	2,327	2,996	2,331	1850
Willoughby . . . . .	991	926	1,099	1,041	1,273	1,024	1796
Rural . . . . .	18,085	16,339	19,184	17,173	21,996	19,042	.....
Bridgeburg . . . . . Vill	1,356	1,311	1,519	1,464	1,664	1,631	1895
Chippawa . . . . .	460	459	523	519	664	631	1849
Fort Erie . . . . .	890	820	934	913	722	600	1857
Niagara Falls South . . . . .	1,458	1,413	1,179	1,107			1882
Port Colborne . . . . .	1,253	1,257	1,154	1,025	1,716	1,520	.....
Niagara Falls . . . . . Town	4,244	4,498	3,349	2,905	2,347	2,200	1856
Thorold . . . . .	1,979	2,211	2,273	2,401	2,456	2,471	.....
Welland . . . . .	1,863	1,944	2,035	1,858	1,870	1,876	.....
Urban . . . . .	13,503	13,913	11,447	10,728	9,775	9,298	.....
Total . . . . .	31,588	30,252	30,631	27,901	31,771	28,340	.....
<i>WELLINGTON:</i>							
Arthur . . . . . Tp	2,961	2,830	3,224	3,220	3,916	3,554	1860
Eramosa . . . . .	2,705	2,566	3,116	2,867	3,611	3,391	1829
Erin . . . . .	3,587	3,368	4,048	3,560	4,644	3,962	.....
Garafraxa W. . . . .	2,561	2,305	3,043	2,631	3,620	3,216	1869

\* Formerly in with Fenelon and Verulam Tps. † Included in Eldon Tp. ‡ Included in Dumfries N. Tp. in 1881 § Included in Woolwich Tp. in 1881. ¶ Included in Bertie Tp. ¶ Included in Stamford Tp.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<b>WELLINGTON.—Continued:</b>							
Guelph.....	2,423	2,286	2,464	2,277	2,798	2,823	.....
Luther W.....	2,227	2,068	2,044	1,892	1,790	1,561	.....
Maryborough.....	3,188	2,999	3,546	3,069	4,551	3,669	1851
Minto.....	3,128	2,994	3,687	3,271	4,448	3,919	1856
Nichol.....	1,685	1,691	2,056	1,973	2,474	2,157	.....
Peel.....	3,865	3,842	4,253	4,200	5,024	4,882	.....
Pilkington.....	1,491	1,358	1,663	1,561	1,958	1,792	.....
Paslinch.....	3,045	2,739	3,614	3,331	3,985	3,258	.....
Rural.....	32,866	30,991	36,708	33,862	42,809	37,674	.....
Arthur..... Vill.	1,285	1,278	1,296	1,246	1,257	1,265	1872
Clifford.....	608	593	634	561	722	664	1874
Drayton.....	791	759	793	758	587	789	1875
Elora.....	1,187	1,187	1,304	1,228	1,387	1,390	1858
Erin.....	511	490	594	542	477	406	1881
Fergus.....	1,396	1,437	1,598	1,532	1,733	1,732	1858
Harriston..... Town	1,637	1,675	1,687	1,645	1,772	1,712	.....
Mount Forest.....	2,019	2,184	2,214	2,304	2,170	2,194	.....
Palmerston.....	1,850	1,777	2,006	1,654	1,828	1,743	1875
Guelph..... City	11,496	11,271	10,537	10,695	9,890	10,057	.....
Urban.....	22,780	22,651	22,663	22,165	21,823	21,952	.....
Total.....	55,646	53,642	59,371	56,017	64,632	59,626	.....
<b>WENTWORTH:</b>							
Ancaster..... To.	3,863	3,612	4,098	3,895	4,726	4,465	1850
Barton.....	3,620	3,539	3,269	4,676	3,525	3,270	.....
Beverly.....	3,909	3,837	4,636	4,550	5,230	5,100	1850
Binbrook.....	1,403	1,229	1,674	1,569	1,814	1,643	.....
Flamboro, E.....	2,522	2,428	2,961	2,448	2,746	2,432	.....
Flamboro, W.....	2,822	2,715	3,079	2,878	3,461	3,364	1850
Glanford.....	1,585	1,490	1,744	1,643	1,977	1,847	.....
Saltfleet.....	3,209	3,110	2,765	2,634	2,951	2,587	1850
Rural.....	23,023	21,960	23,926	24,293	26,430	24,708	.....
Waterdown..... Vill.	622	567	669	669	852	754	1879
Dundas..... Town	3,173	3,212	3,546	3,885	3,709	3,668	1847
Hamilton..... City	52,634	53,781	48,973	46,794	35,961	36,946	1847
Urban.....	56,429	57,560	53,188	50,848	40,522	41,368	.....
Total.....	79,452	79,520	77,114	75,141	66,952	66,076	.....
<b>YORK:</b>							
Etobicoke..... Tp.	4,413	3,481	4,557	3,579	2,976	2,728	1850
Georgina.....	1,808	1,629	1,990	1,707	2,482	2,232	.....
Gwillimbury, E.....	3,576	3,166	3,844	3,553	4,143	3,892	1836
Gwillimbury, N.....	1,827	1,244	1,990	1,695	2,151	1,953	.....
King.....	5,565	5,128	6,067	5,375	6,664	5,655	1809
Markham.....	5,378	5,278	5,681	4,956	6,375	5,600	.....
Scarborough.....	3,845	3,576	4,028	3,864	4,208	4,082	1850
Vaughan.....	4,586	4,215	5,292	4,490	6,828	5,230	.....
Whitchurch.....	3,619	3,464	4,019	3,702	4,529	4,117	1850
York.....	11,192	8,965	*8,357	6,453	12,748	10,939	1793
Rural.....	45,803	40,146	45,825	39,374	53,104	46,428	.....
East Toronto..... Vill.	1,564	1,524	1,975	910	†	†	1888
Holland Landing.....	446	452	443	430	580	553	1861
Markham.....	967	1,163	1,100	1,019	954	949	1873
Richmond Hill.....	629	594	743	750	867	797	1873

\* Census gives 23,257, but this includes the corporations of East Toronto, North Toronto and Toronto Junction, estimated at 8,105 and 6,795 within the limits of City of Toronto. † Included in York Tp. in 1881.

## POPULATION.—Continued.

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
<i>YORK.—Continued :</i>							
Stouffville.....	1,223	1,202	1,148	1,128	866	805	1877
Sutton.....	646	593	686	631	+	+	1891
Weston.....	1,083	1,075	1,194	1,109	* *	* *	1882
Woodbridge.....	604	626	762	782	++	++	1882
Aurora.....Town	1,590	1,576	1,743	1,922	1,540	1,480	1863
Newmarket.....	2,125	2,366	2,143	1,948	2,006	1,704	.....
North Toronto.....	1,852	1,830	1,612	1,191	*	*	1890
Toronto Junction.....	6,091	6,038	4,518	4,158	*	*	1888
Toronto.....City	208,040	205,887	181,209	170,951	93,196	83,874	1834
Urban.....	226,860	224,926	199,276	186,929	100,009	90,163	.....
Total.....	272,663	265,072	245,101	226,303	153,113	136,591	.....

## SUMMARY OF TOTAL POPULATION WITHIN COUNTY LIMITS.

Algoma.....	34,583	17,973	16,973	7,035	10,628	1,920	.....
Brant.....	38,140	33,483	36,445	34,222	33,869	29,762	.....
Bruce.....	59,020	54,554	64,603	57,950	65,218	56,407	.....
Carleton.....	96,904	94,265	77,630	73,282	64,103	57,765	.....
Dufferin.....	21,036	22,053	23,311	20,159	22,093	19,060	.....
Dundas.....	19,757	18,450	20,132	18,753	20,598	17,707	.....
Durham.....	27,570	26,193	32,427	30,872	36,265	33,817	.....
Elgin.....	43,586	40,755	43,377	39,868	42,361	39,050	.....
Essex.....	58,516	56,804	55,340	51,157	46,962	41,520	.....
Frontenac.....	44,534	39,558	47,009	40,475	42,384	36,887	.....
Glengarry.....	22,131	20,036	22,447	20,113	22,221	18,335	.....
Grenville.....	21,021	19,227	21,609	19,441	22,741	19,603	.....
Grey.....	69,590	65,306	71,214	66,278	70,539	62,520	.....
Haldimand.....	21,233	19,989	23,440	20,683	24,980	21,708	.....
Haliburton.....	6,559	5,963	6,350	5,767	5,911	5,216	.....
Halton.....	19,545	19,040	21,982	20,208	21,919	21,070	.....
Hastings.....	53,291	55,322	59,084	54,906	55,061	48,540	.....
Huron.....	61,820	59,610	66,781	61,272	76,526	67,535	.....
Kent.....	57,422	52,983	58,076	52,236	54,310	47,031	.....
Lambton.....	56,642	52,130	53,753	53,181	52,034	45,595	.....
Lanark.....	37,232	36,143	37,725	35,274	33,975	30,660	.....

\* Included in York Tp. in 1881. † Included in Georgina Tp. ‡ Included in Vaughan Tp.

POPULATION.—*Concluded.*

	1901.		1891.		1881.		Date of municipal organization.
	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	Dominion census.	Municipal assessment.	
THE PROVINCE.— <i>Continued:</i>							
Leeds .....	37,975	34,690	39,279	35,793	38,434	34,182	.....
Lennox and Addington .....	23,346	22,174	24,750	22,866	26,484	22,853	.....
Lincoln .....	30,552	29,824	30,079	28,826	31,573	30,040	.....
Manitoulin .....	11,359	6,123	10,794	5,678	8,460	2,682	.....
Middlesex .....	92,702	90,418	92,344	87,782	93,081	87,424	.....
Muskoka .....	20,971	18,615	17,651	14,590	14,391	10,773	.....
Nipissing .....	26,178	17,098	13,163	8,943	2,090	.....	.....
Norfolk .....	29,147	27,928	30,992	28,862	33,527	30,194	.....
Northumberland .....	34,479	33,053	38,035	36,045	41,123	37,858	.....
Ontario .....	40,408	38,864	45,355	42,971	48,812	45,161	.....
Oxford .....	48,404	45,785	49,849	46,910	50,159	44,595	.....
Parry Sound .....	24,936	15,652	19,167	12,739	12,813	3,475	.....
Peel .....	21,475	20,352	24,871	22,180	26,175	22,531	.....
Perth .....	49,871	47,256	51,716	48,417	53,693	49,541	.....
Peterborough .....	36,066	34,634	34,597	32,364	30,472	28,210	.....
Prescott .....	27,035	25,338	24,173	20,654	22,857	18,523	.....
Prince Edward .....	17,864	16,704	18,889	17,241	21,044	18,531	.....
Rainy River .....	17,489	7,384	6,860	3,068	.....	.....	.....
Renfrew .....	52,715	48,825	46,976	41,731	38,166	33,433	.....
Russell .....	20,282	17,215	18,289	15,466	13,080	10,872	.....
Simcoe .....	82,315	78,467	82,727	73,926	74,803	62,602	.....
Stormont .....	27,042	23,759	27,156	23,585	23,198	19,388	.....
Thunder Bay .....	10,309	8,401	7,229	4,483	4,926	163	.....
Victoria .....	31,952	29,824	32,991	30,163	33,655	30,191	.....
Waterloo .....	52,594	52,183	50,464	48,349	42,740	39,611	.....
Welland .....	31,588	30,252	30,631	27,901	31,771	28,340	.....
Wellington .....	55,646	53,642	59,371	56,017	64,632	59,626	.....
Wentworth .....	79,452	79,520	77,114	75,141	66,952	66,076	.....
York .....	272,663	265,072	245,101	226,303	153,113	136,591	.....
Rural .....	1,246,610	1,092,181	1,282,981	1,116,347	1,346,623	1,134,192	.....
Urban .....	936,337	936,708	831,340	805,774	580,299	561,042	.....
Total .....	2,182,947	2,028,889	2,114,321	1,922,121	1,926,922	1,695,234	.....

## MUNICIPAL EXEMPTIONS.

Statement showing by municipalities the "exemptions from general rates by by-law but subject to school rate" for the year 1901.  
 Note.—These are entirely exclusive of statutory exemptions, but a few are given as still in force in which the by-laws exempted from all taxes. The returns show many cases of "fixed" assessments, but the information in all cases does not show the extent of the exemption. Besides the list given below, many towns exempt "farm lands" from certain taxes, such as street lighting, sidewalks, etc.

TOWNSHIPS.	Exempt except for schools.	Description.	Exempt except for schools.	Exempt for all purposes.	Description.
Alborton, Rainy River . . . . .	\$ 600				
Alpborough, Elgin . . . . .	2,000	Roller mill (for 10 years).		\$ 8,400	Metropolitan R. R. Co. (10 yrs)
Assignack, Manitoulin . . . . .	1,800			6,000	Mill Co.
Barton, Wentworth . . . . .	2,000				
Billings, Manitoulin . . . . .	1,750	Mill property.			
Boothfield, Nipissing . . . . .	1,000			11,000	
Brunei, Muskoka . . . . .	900			2,850	
Burpee, Manitoulin . . . . .	4,600	Mill (10 years).		2,000	
Carleton Place, Parry Sound . . . . .	1,000	Grist mill.		10,500	
Carleton Place, Parry Sound . . . . .	1,000	Brick Co.		2,650	
Clinton, Lincoln . . . . .	3,300			2,850	
Cookburn Island, Manitoulin . . . . .	500			30,855	Exempted \$100 per year. Electric light plant. Taxes exempt amount to \$488
Eastnor, Bruce . . . . .	7,500	Two grist mills.		4,000	Starch Co.
Faraday, Hastings . . . . .	1,353	Roller grist mill.		60,000	
Gloucester, Carleton . . . . .	1,000	Grist mill.		13,450	
Grimby S., Lincoln . . . . .	4,009	T. H. & B. R. R. & Cheese Co.		1,800	
Hilton, Algoma . . . . .	1,250			3,500	
Hinsworth N., Parry Sound . . . . .	1,300	This exempt'n expired in 1901		2,700	
Huron, Bruce . . . . .	40,000	Flax mill.		15,800	Felt Co. & agricultural works
Keppel, Grey . . . . .	53,500			6,000	Also \$2,500 from village rate.
King, York . . . . .	3,000	Metropolitan R. R. Co.		2,000	An \$11,400 property fixed at \$2,000 for school taxes.
Lochiel, Glengarry . . . . .	400	Alexandria Power House.		5,500	
Mayo, Hastings . . . . .	650			3,500	
Normanby, Grey . . . . .	15,000	Shingle mill, exempt from [township rate only.]		15,000	Milling Co.
Orellia, Simcoe . . . . .	696			49,200	The Dickson Co. and Cement Flour mill. [Co. (10 yrs.)]
Pettawawa, Renfrew . . . . .	5,185			4,000	Furniture Co.
Ratter and Dunnatt, Nipissing . . . . .	2,500			6,000	Also farm lands.
Rayside, Algoma . . . . .	4,340			8,500	
Sandwich W., Essex . . . . .	10,750	Mill.		2,000	
Sarawak, Grey . . . . .	1,500	M. C. R. R. (20 years).			
Sheffield, Lennox . . . . .	1,800	Cement Co. & canning factory			
Springer, Nipissing . . . . .	4,000			5,311	Electric car line (non-resident)
Wainfleet, Welland . . . . .	2,600			7,800	Broom, vinegar & evaporator
Walpole, Haldimand . . . . .				900	Foundry (10 years).
				45,496	







SECOND REPORT

OF

THE BUREAU OF LABOR

OF THE

PROVINCE OF ONTARIO

FOR

THE YEAR ENDING DECEMBER 31st

1901

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PRINTED BY ORDER OF  
THE LEGISLATIVE ASSEMBLY

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*TORONTO:*  
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SECOND REPORT  
OF  
THE BUREAU OF LABOR  
1901.

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TO THE HONORABLE F. R. LATCHFORD,  
*Commissioner of Public Works, Ontario.*

SIR,—I have the honor to submit herewith the Second Report of the Bureau of Labor.

I have the honor to be, Sir,

Your obedient servant,

R. GLOOKLING,  
*Secretary.*



## INTRODUCTION.

The interest necessary to the full success of the Ontario Bureau of Labor has not yet fully awakened. We feel justified, however, in asserting that the work in this direction that has been accomplished during the year just closed (the second of the Bureau's existence) has been of a character that leads to that desired success referred to.

In my first report I took occasion to say that "there is a misconception in the public mind as to the purpose of the Bureau, the object of its creation, its methods of work, and the useful purpose which it can be made to serve. This can only be removed by arduous and careful work, with which there can be no doubt it will receive full recognition, and in time be accorded its proper place in public appreciation."

That the misconception exists has been more than demonstrated by the visits of the Secretary of the Bureau to the industrial centres of the Province during the year. In preparing the plans of operation for collecting and publishing statistics and information for our second annual report, the Bureau has used much the same methods as last year; some few changes were made in the system of question blanks.

The experience of last year in gathering the desired information by means of the mails was found to be inadequate for the purpose, and this is the experience of other bureaus, which have at their inception used this method, until, one by one, they have had, in course of time, to adopt the special agent method of collection.

In August of the present year the attention of the Hon. the Commissioner of Public Works was drawn to the unsatisfactory results in returns to the Bureau of schedules sent out for information, and permission was sought by the Secretary to visit the industrial centres, with a view of stimulating interest in assistance to the Bureau in the collection of data, and this course was approved by the Hon. the Commissioner. In nearly all cases but little argument sufficed to remove misapprehension as to the purposes of the Bureau prevalent among many of the newly organized bodies.

In many instances neglect of those deputed by the organizations to forward the returns was the cause of their non-receipt by the Bureau. The result of these visits was that about one-half of the organizations have made returns that promised much less before the visits were made. The fact was demonstrated in our Province, as it has been in other places, that personal application is the sure way of getting full information, and of ensuring correct understanding.

The collection of industrial statistics from the manufacturers of the Province was but fair. With time, full confidence will be established in the impartiality of the Labor Bureau.

### FREE EMPLOYMENT OFFICES.

The question of free employment offices has been given some attention. The Bureau has received considerable correspondence on this subject. It is one that is receiving much consideration in most civilized countries, many of which have adopted this adjunct to Government.

### RECENT LEGAL DECISIONS AFFECTING LABOR.

The recent legal decisions affecting labor rendered in the Province of Ontario, which have been compiled from the Labor Gazette, will be much appreciated, I am sure, by the workers of the Province.

### STRIKES AND LOCK-OUTS.

Returns of strikes and lockouts show a desirable diminution for the period from September 1st, 1900, to August 31st, 1901, compared with a like previous period. The total number of strikes reported being 19, and one lock-out, involving 64 establishments, and covering an aggregate of 438 days, or an average of 23 days to each. The greater number required but a few days for settlement. The tendency to settle disputes between employers and employees by conciliation or arbitration is rapidly on the increase, not only in Ontario, but in other parts of the world, as the various reports from different countries indicate.

THE VALUE AND INFLUENCE OF LABOR STATISTICS.<sup>1</sup>

By Carroll D. Wright.

There are now in the United States, besides the Federal Department of Labor thirty-one State bureaus or departments devoted to the collection of statistics of labor by means of original investigations. Besides these, the Federal Census Office, the Bureaus of Statistics of the Federal Treasury and Agricultural Departments, the Bureau of Foreign Commerce of the Department of State, the departments and boards of agriculture of the various States, and various other offices may be considered as publishing labor statistics in some degree. But I speak here of the value and influence of those offices first mentioned—those devoted specifically and technically to the investigation of social and industrial conditions and to the publication of distinctive labor statistics. These offices had their foundation in the establishment of the Massachusetts bureau in 1869. Gradually other States created bureaus of statistics of labor, and in 1884 the United States government added its own office to those already in existence. All the offices, together, have published over 400 octavo volumes, covering a great variety of topics and the results of investigations relative to almost every condition and environment of the workingman.

The character and quality of the work of the different offices varies in some degree, due to a considerable extent to the short tenure of the heads of the different bureaus. Where the Governor of a State has allowed himself to ignore politics and insist upon scientific work, the bureaus have achieved the greatest success; but as a rule a governor feels that the office of the chief of the bureau of statistics of labor of his State must be filled by somebody from his party, without reference to the skill, the experience, or the integrity of the incumbent under the previous administration. Yet I am glad to say, as the result of pretty careful study of the reports of all the officials who have done duty in this country during the past thirty-two years, that no matter for what reason they were appointed, no matter how inexperienced in the work of investigation and of compilation and presentation of statistical matter, no matter from what party they came, and whether in sympathy with capital or with labor, and even if holding fairly radical socialistic views—the men have, almost without exception, at once comprehended the sacredness of the duty assigned them, and have served the public faithfully and honestly, being content to collect and publish facts without regard to their individual bias or their individual political sentiments. As soon as a man realizes that he is giving to the world a fact, he feels the necessity of accuracy, and that to distort the information collected would be to commit a crime worse than any ordinary lying, because it would mislead legislators and others and fix a falsehood in the history of the State. Many men, too, have come into the work of the statistical bureaus feeling that they could use them as the means of propagandism in some way, and in a few cases this has been attempted, but almost always with failure, because bureaus are looked to to furnish information relative to actual conditions surrounding industry.

That what I have said is true is illustrated by other countries following the example of the American States. Great Britain, France, Belgium, Austria, New Zealand, New South Wales, Canada, and the Province of Ontario, Canada, have established bureaus following in their duties very closely those assigned by law to the American bureaus and departments. In Germany, Italy, and Sweden labor statistics of the same character are published by general statistical bureaus. A distinguished member of the House of Commons of England told me a few years ago that, whenever he wished to lay any facts relative to workingmen before his colleagues, he carried into the House some American report on the statistics of labor. In the Chamber of Deputies of France, in the German Reichstag, and in the legislative bodies of other countries the American labor reports have been freely used in economic discussions. Had not the work of the American offices been highly regarded, these things would not have occurred. It is true, of course, that the sentiment of the times is largely conducive to the successful operation of bu-



reus of statistics of labor. The general attention paid to social and industrial conditions and all conditions affecting the environment of men has fitted the soil for statistical seed. The altruistic spirit of this age calls for accurate information, that it may know how best to expend its efforts and not dissipate its energy. The question is constantly being asked: "What do social classes owe to each other?" and that any one class may not be deceived in the nature or magnitude of its debt, it must turn to statistics to ascertain the true situation.

The question is often asked, and by very intelligent people, Of what good is a bureau of statistics of labor? Does the workingman secure any direct benefits from its existence? This question cannot be answered very specifically, any more than could one asking for the direct benefits of the public school. It would be a difficult process to show how a dollar more is made to enter the pockets of the working people through the existence of the public schools, or any other educational institution, and yet all men will admit that the sum of benefits is largely increased by the existence of schools. Personally, I have always contended that the bureau of statistics of labor, wherever it exists, is simply a part of the educational machinery established by the community through which it is enabled to know more of itself. "Know thyself" is an injunction which should be applied to communities as well as to individuals, and it is only through rigid, impartial, and fearless investigations that any community can know itself in many directions. Notwithstanding this general view of the educational influence of the offices I am considering, very many instances of their specific influence can be cited. These instances I must, for purposes of convenience, draw largely from those which have come under my own observation or within my knowledge, for to enter upon a research of all the influences which have come in direct ways from the services of all the offices in existence in this country would take me too far afield.

One of the first results that I remember, as being traceable to a published report, related to the tenement-house-system of the city of Boston. In the second, third and fourth reports of the Massachusetts Bureau of Statistics of Labor there were many facts showing the condition of the tenement-houses in the city named. The public was fully apprised of the misery that existed in them, resulting from bad conditions, ill construction, and all that tended to make tenement-house life an evil. Public attention was aroused through these publications, better laws were framed and passed, and a public sentiment created which crystallized in a reform movement having for its purpose the improvement of tenement-houses in Boston. Some of the worst places were improved, and the impetus then given is still active, as is shown by the existence of societies in that city and their influence in securing from the legislature an appropriation to enable the bureau in that State to make a very exhaustive investigation covering every tenement of whatever grade in the city of Boston.

The bureaus everywhere, whenever conditions warranted it, have investigated the subject of child labor and shown to the public all the facts connected with such employment, the evils it entailed upon the community, and the methods which could be resorted to for its reduction, and everywhere, too, the results have been beneficial. If the bureaus had never accomplished anything else than the marked reductions in the number of young children—those under ten years of age—who are employed in factories and workshops, they would have amply repaid the public for its expenditure in their equipment and support.

The publication of information relative to the inspection of factories and workshops in England and other countries, together with statistics showing the necessity for such inspection in this country, has led in several States to the establishment of boards of factory inspectors. These boards have committed to them the execution of all laws providing in any way for the benefit of those who have to work in any kind of productive establishments. These inspectors enforce the laws concerning the hours of labor, the employment of women and children, the guarding of machinery so that the operatives may be more free from accidents, and in all ways undertake the enforcement of all laws of the character specified. Through these efforts (and they were largely induced by the reports of labor statistics) child labor has decreased, accidents have been

reduced in number and severity, the hours of labor have been shortened and recognized, and so all along that line of facts the influence of the reports of the bureaus has been enormous; the value of their statistics cannot be expressed by figures.

The first ten-hour law in this country was passed by the Massachusetts legislature in 1874. The statistics published by the bureau of that State helped the passage of the law in a marked degree, and saved its repeal in later years. The manufacturers, finding that they were brought under the ten-hour law so far as minors and women were concerned, felt that the manufacturers in surrounding States ought to be brought under like laws or the law of Massachusetts should be repealed, for they claimed, as was claimed in England years ago, that in working under a ten-hour law the manufacturers of Massachusetts were placed at a decided disadvantage relative to the manufacturers in the surrounding States. The legislature therefore directed the Bureau of Statistics of Labor to investigate the subject of the hours of labor in that State and in the other New England States. The result of the investigation showed that under a ten-hour system, the Massachusetts manufacturers paid more wages than those in the other States, where eleven and twelve hours were the rule; that they produced more goods on any basis that could be named, whether per individual or per machine; in short, that in every respect the Massachusetts operatives were under better conditions than those of the Surrounding States. There has been no attempt since that report was published to repeal the ten-hour law of Massachusetts. On the other hand, other States have followed suit, until now that system prevails generally in the United States.

The bureaus have been very influential in securing a modification of the old common-law rule relating to the liability of employers for accidents occurring to their employees. Under this rule a workman cannot recover damages for injuries received through the carelessness or negligence of a co-employee, although a stranger might recover damages for an injury following the same carelessness or negligence: as, for instance, under the old common-law rule, a brakeman on a train running perhaps 500 miles could secure no damages from a railroad corporation in consequence of injuries received through the carelessness or negligence of a switchman along any part of the line, although the brakeman knew nothing of the switchman, had no knowledge of his skill or capacity when he engaged with the company, and in no sense of the word, so far as reason is concerned, could be considered the co-employee of the switchman; yet, although that common-law rule grew up before great industrial enterprises were established, judges had adhered to it, and had ruled that in such a case as that just mentioned the switchman and the brakeman were co-employees, and therefore the employer could not be held liable. The agitation for a legislative change in this common-law rule in England resulted in the enactment of a law in 1880 changing or modifying the rule, and, in this country, the matter being taken up by the bureaus of statistics of labor, several legislatures have been convinced of the justice of a change, and have therefore made it; the dire results which were predicted as sure to follow the change of the rule have not followed. In this direction the bureaus have done a great service, not only to the employees of railroads and corporations engaged in productive industry, but in securing the public against the employment of incompetent men.

Another very emphatic influence which the bureaus have exercised is in the abolishment or modification of what is known as the "truck-store" system, or, as it is more popularly known in some parts of the country, the "pluck-me" method of store trading. This system consists in the establishment of a store by the proprietors of a works for the supply of its employees. Formerly, in many instances, the prices charged at these stores were much higher than those charged at other places, and so the employee of a concern having a truck store was almost compelled, and in many instances actually compelled, to purchase the necessaries of life for his family at an exorbitant price, whereby the employer made a second profit on the labor of the employee. In very many instances the workmen of such an establishment never saw any money from one year's end to another. The pay for the goods purchased in the store was secured by the payrolls, and the debts and credits left no margin on pay-day. Early in the existence of bureaus of statistics of labor this system was attacked through the statistical

method, and the result has been that in very many States laws have been passed making it a criminal offence, in some cases, to carry on such a system, and in other cases making it the duty of the proper officers to see to it that they are regulated. The evils of the truck-store system have not yet been entirely eradicated in this country, but the change has been great, and the value to the wage receiver of the greatest importance.

In this connection I might mention the influence which the bureaus have had in securing more frequent payments for the workingman. Formerly the payments were monthly. Under this system the credit system grew also because without ready money the wage receiver must secure credit of his grocer, and the grocer, under such circumstances, looks out that the charges are sufficient to cover the delay in receiving his money or the losses which may come through his endeavors later on to collect the amount of his bill of the employer through the trustee or the garnishee system. Weekly payments have been shown by various bureaus to be beneficial in eradicating some of the evils of the credit system.

In some of the Western States there have grown up during the past few years some of the most rascally practices on the credulity of the workingman that have ever been known. They are robberies of the meanest sort, for they not only rob a man of his money, but in many instances of his manhood. The practice I refer to is that of a certain class of employment offices, located usually in the rear of some beer saloon, which advertise that a large number of men are wanted for labor in a certain city, but almost always at a distance. In a western city one of these offices advertised for one thousand men to proceed immediately to Washington, D.C., where employment would be furnished at \$1 per day. Hundreds of men responded to this advertisement. They were obliged to pay down \$3 or \$4, as the case might be, or as the rascality of the manager might demand, and then the men were put off by various excuses for several days, until they began to clamor for their contract. When they became too demonstrative, the manager would pay back a part of the sum advanced, for the sake of integrity. Meantime, however, these hundreds of men, loafing about his beer-saloon, had expended more or less money for beer, in addition to the fee paid for the supposed employment. In one city an advertisement appeared for a large number of men to be shipped to Iowa, while in Iowa an advertisement appeared for a large number of men to be shipped to the very place of the first call. The bureaus in some of the States where such practices have been carried on collected the information relative to these offices, and exposed the swindle perpetrated upon the wage receiver. Much good was derived from these reports, and, in addition to the laws in existence, others of a more stringent nature followed.

These instances of the direct influence and value of bureaus of statistics of labor are sufficient, it seems to me, to prove beyond any question their right to exist, their right to the sympathy and support of the public, and their right to ample equipment and means for carrying on their beneficent work. But they have another office to perform, which is one of the leading offices of statistics in every direction, and that is the correction of false impressions and the removal of apprehension, and two or three instances of this kind may perhaps be of service.

The statement is usually made by writers on the labor question from the capitalistic point of view that the prosperity of the savings-banks of the country represents absolutely the prosperity of the working man—that the total amount of savings in such banks clearly indicates the prosperity of labor. I am not disposed to question this statement, so far as it applies as a principle, but I question the degree of accuracy contained in it, for the investigations have clearly shown that only about one-half of the deposits in the savings-banks belong to men and women engaged in manual labor or in the toil necessary to the production of goods. Such a fact, properly brought out, simply sets peoples' thoughts in the right direction, although it does not disprove the sentiment underlying the erroneous statements regarding the conditions involved.

In 1878 a great deal was said about the unemployed in this country. It was reported, and the report was very industriously circulated, that there were from 200,000

to 300,000 people out of employment in Massachusetts, 40,000 in the city of Boston alone, and 3,000,000 in the United States. These figures were quoted in newspapers works on political economy, speeches in Congress, political resolutions, etc., until they came to be believed everywhere, and yet no attempt was made, officially or otherwise, to ascertain the real facts. The Bureau of Statistics of Labor of Massachusetts undertook to make an investigation of the subject, and this it did at two separate canvasses, one in June, 1878, and the other in November of the same year. The result showed that in that Commonwealth, on June 1, there were 28,508 skilled and unskilled laborers, male and female, out of employment, seeking and in want of work, and that in November there were not more than 23,000 of the same class. On this basis, there could not have been over 460,000 unemployed able-bodied men and women in the United States, ordinarily having work, out of employment at the time mentioned. The report further showed that in the State mentioned there were in 1875 only 316,459 persons engaged in manufactures and mechanical industries, in occupations upon which they depended for support, whether actually employed or not, and the whole number actually employed in the manufacturing and mechanical pursuits of the State was 308,963. If, therefore, there had been 200,000 or 300,000 persons out of employment in the State in June, 1878, as the alarmists were in the habit of stating, there could have been hardly any left in the factories and workshops of the community. The figures published by the report were used all over the country, and completely reversed the popular belief relative to the vast number of the alleged unemployed in the country.

But I think one of the most striking instances of the removal of false impressions from the public mind relates to mortgage indebtedness on real estate. In a speech made in Congress, in May, 1888, the statement was quoted from an agricultural paper that the estimated mortgage indebtedness of all real estate in Ohio at that time was \$701,000,000; in Indiana, \$398,000,000; in Illinois, \$620,000,000; in Wisconsin, \$250,000,000; in Michigan, \$350,000,000; in Iowa, \$351,000,000; and statements were made for other States. The Ohio and Michigan Bureaus of Statistics of Labor undertook to investigate this subject through the offices of the registers of deeds, the boards of assessors, etc., and in these two States the mortgage indebtedness, as established and estimated by the Commissioners of Labor, was for Ohio, \$330,999,205, and for Michigan, \$129,229,553, instead of the amounts popularly claimed. Under the Federal census of 1890 an investigation was made relative to mortgage indebtedness, and the facts established with remarkable accuracy for the other States just named. By the investigation of the census it was shown that in Indiana the mortgage indebtedness is \$110,730,643; in Illinois, \$384,299,150; in Wisconsin, \$121,838,168; and in Iowa, \$199,774,171. It is a little remarkable that the sums accepted in a popular way for the mortgage indebtedness of the States named were in some instances exactly the valuation of all the property of the State. The extravagant figures quoted were used all over this country and in Europe, wherever capitalists were seeking investment in this country. The figures did immense harm; the wrong cannot be calculated; but as time goes on the statistics emanating from bureaus of statistics of labor and from the Census Office are removing the apprehension which grew out of the original statements.

Another feature relative to mortgages relates to the causes for which mortgages are placed upon farms in the western country. It has been claimed in recent years that the great mortgage indebtedness of Western States is due largely to disaster or adversity. The Commissioner of Labor of Nebraska undertook to satisfy himself by positive investigation, as to the truth or falsity of such claims, and he took as the territory for his investigation the county of Sarpy, covering the period from December 31, 1879, to January 1, 1890. Sarpy is one of the oldest counties in Nebraska, and it therefore offered the best opportunities for investigation in that State. The result, as to the causes for the creation of the mortgage indebtedness of the county, is shown in the following statement, taken from Commissioner Jenkins's report for 1889-90:

Purchase money .....	58.00 per cent
Permanent improvements .....	3.00 per cent
Purchase of stock .....	4.00 per cent
To meet personal obligations .....	.50 per cent
To invest in real estate .....	7.00 per cent
To invest in mercantile business .....	20.00 per cent
Sickness .....	.25 per cent
Unknown causes .....	7.25 per cent

Allowing that all the mortgages from sickness and from unknown causes were the result of misfortune or of adversity of some kind, the foregoing table shows that 92½ per cent. were for legitimate causes, and such causes as indicated prosperity rather than adversity.

The investigation under the eleventh United States census comprehends the object of indebtedness for 102 selected counties in several States, the results being obtained by personal inquiry through the experts of the office. The investigation is a clear and emphatic corroboration of the results arrived at by Commissioner Jenkins of Nebraska. It shows that to legitimate objects, indicating clearly prosperity and advancement, 94.37 per cent. of all the mortgage indebtedness of 102 counties considered must be attributed.

The convict labor question is one that has attracted a great deal of attention during the last quarter of a century, but it was not until various State bureaus and the United States Department of Labor collected exhaustive statistics relative to productive employments in penitentiaries and other penal institutions and showed the effect of different systems of employing convicts that the discussion took intelligent shape. There has been much reform along the lines of convict labor. Many States have made experiments which have been abandoned, while others have established new systems which are progressing favorably; in the whole work the contributions of labor statistics have been of the greatest possible value.

The advancement of technical science, too, has been greatly accelerated by the exhaustive publications of different departments and bureaus of statistics of labor relative to industrial education. It is only recently that the different States of the Union have felt it incumbent upon them, through their legislatures, to study all the phases of industrial training, consisting of manual training, trade school instruction, and the higher technological or university work which is done in our institutes of technology. The United States Bureau of Education has aided the discussion and consideration of such matters, and its work has been grandly supplemented by the State bureaus and the United States Department of Labor. It is now possible to discuss the question of industrial education in all its phases not only intelligently, but on the basis of practical experience in this and other countries.

These few instances show the enormous value of statistics in removing apprehension and in correcting erroneous views. The money value of such information is not easy to calculate.

In September, 1883, the heads of the few bureaus of statistics of labor then existing met at Columbus, Ohio, and organized the National Convention of Chiefs and Commissioners of Bureaus of Statistics of Labor. Since then these officials have met annually for the purpose of discussing statistical methods and the best way of collecting information and of tabulating, analyzing, and presenting it. It was one of the early dreams of the founders of this convention that some uniform contemporaneous work could be undertaken by all the bureaus in co-operation, but this dream was fraught with many difficulties. States did not organize their bureaus at the same time. Many of the subjects which had been covered by those organized at early dates formed the subjects of investigation of those which had been established at later dates,

and hence there was a conflict; for the earlier bureaus did not wish to cover again what was new and important to the more recently established ones. Another difficulty arose in the fact that the industries and conditions of one State were not common to all States having bureaus of statistics of labor. Notwithstanding the fact that the original idea has not been and cannot be carried out, the convention has been of the greatest possible value to the different States. At each annual meeting each Commissioner of Labor reports the investigations he has in hand, the methods he has adopted for obtaining the information desired, and all the difficulties and complications attending his work. These matters are then discussed and the experience of older Commissioners brought out for the benefit of those who have more recently come into the work of gathering statistics of labor. Thus great advantage is given to even the older Commissioners to gain fresh inspiration from the troubles and difficulties of those who are new to the work. The convention also helps to call public attention not only to the value but to the methods of the work being conducted.

Notwithstanding all that I have said relative to the value and influence of the statistics of labor, I am perfectly well aware that they could be made of far greater value; but that greater value can only be secured through the direct action of the legislative bodies behind the bureaus. They are very poorly equipped. They need more men and more money. They need experience, which can only come through the influence of the executives of the States. With a longer tenure of office and an increase in the equipment and means of the bureaus, their future usefulness can be made to far excel that of the past and of the present. The lines of work which they can undertake are numerous and inexhaustible. Knowledge of production is absolutely essential for the adjustment of many of the difficult questions we are facing today, and any contribution, through statistical investigation or otherwise, that will enable both the capitalist and his employee to more clearly understand the real conditions of production should be welcomed by all elements of the community. The bureaus must be kept in the future, as in the past, from partisanship. The statistician is not a statistician when he is an advocate, no matter how skillful he may be in the manipulation of figures. He must be impartial, he must make his investigations without any reference to theories to be proved or disproved, and give to the world the actual results of his inquiries. This country lacks trained statisticians. We have no means for training them, except in the practical work of the statistical offices of the State and federal governments. These offices, therefore, become a school for the future, and the statisticians of this country that are to be of great service to the governments must acquire their knowledge through the statistical offices; but no work can be accomplished successfully without money and without men. We must look, therefore, to the legislative branches of our various governments for the increase of the usefulness and for recognized influence of our bureaus of statistics of labor.

## LIST OF BUREAUS OF LABOR STATISTICS.

That the utility and general value of accurate statistics in those branches of a nation's wealth, comprising subjects of mechanical and manual labor, is recognized by most civilized countries, is evidenced by the following list of existing labor bureaus, compiled from official records.

Ontario.—The Bureau of Labor was created by an Act passed by the Ontario Legislature, April 25th, 1900, under the direction of the Hon. F. R. Latchford, Commissioner of Public Works. R. Glockling, secretary of the Bureau of Labor.

Canada.—The department of Labor was established in July, 1900, and practically supersedes the Bureau of Labor of the Department of Agriculture established in 1890, with Mr. George Johnson as chief clerk. The department is under the direction of the Minister of Labor, the Hon. William Mulock. The Act establishing the department provides for the monthly issuing of a Labor Gazette, the editor of which is W. L. MacKenzie King, B.A., Deputy Minister of Labor. The first number of *The Gazette* was issued in September, 1900.

Great Britain.—The Labor Bureau of the Board of Trade was established March 2nd, 1886. In 1893 the service was greatly enlarged and given its present name, "Board of Trade Labor Department." H. Llewelyn Smith, chief secretary. It publishes monthly *The Labor Gazette*; also annual reports.

New Zealand Department of Labor.—The Right Hon. R. J. Seddon, Minister of Labor. E. Tregear, secretary, Wellington, N. Z.

New South Wales.—Department of Labor and Industry. T. B. Clegg, chief clerk, Sydney, N. S. W.

Queensland Department of Immigration.—Government Labor Bureau and Relief. Chief clerk, J. O'Neil Brenan, Brisbane, Queensland.

South Australia Labor Bureau. Chief clerk, A. C. H. Richardson, Adelaide, South Australia.

United States Department of Labor.—Established as a Bureau of Labor, January 31st, 1885; made a Department of Labor, June 13th, 1888. Bi-monthly bulletins. Annual reports. Commissioner of Labor, Carroll D. Wright, Washington, D.C.

Masachusetts Bureau of Statistics of Labor.—Established June 23rd, 1869. Quarterly bulletins. Annual reports. Chief of the Bureau of Statistics of Labor, Horace G. Wadlin, Boston, Mass.

Pennsylvania Bureau of Industrial Statistics.—Established April 12th, 1872. Annual reports. Chief of Bureau of Industrial Statistics, James M. Clark, Harrisburg, Pa.

Connecticut Bureau of Labor Statistics.—Established July 12th, 1873. Abolished July 23rd, 1875. Re-established April 23rd, 1885. Annual reports. Commissioner of Labor, Harry E. Back, Hartford, Conn.

Kentucky Bureau of Agriculture, Labor and Statistics.—First established March 20th, 1876, as a Bureau of Agriculture, Horticulture and Statistics; the duties of the Bureau were enlarged and present name adopted April 2nd, 1892. Biennial reports. Commissioner of Agriculture, Labor and Statistics, Lucas Moore, Frankfort, Ky.

Missouri Bureau of Labor Statistics and Inspection.—Established March 19th, 1879; enlarged March 23rd, 1883. Annual reports. Commissioner of Labor, Wm. Anderson, Jefferson City, Mo.

Ohio Bureau of Labor Statistics.—Established May 5th, 1877. Annual reports. Commissioner of Labor, M. D. Ratchford, Columbus, Ohio.

New Jersey Bureau of Statistics of Labor and Industries.—Established March 27th, 1878. Annual reports. Chief of the Bureau of Statistics of Labor and Industries, William Stainsby, Trenton, N.J.

Illinois Bureau of Labor Statistics.—Established May 29th, 1879. Biennial reports. Secretary of the Bureau of Labor Statistics, David Ross, Springfield, Ill.

Indiana Bureau of Statistics.—Established March 29th, 1879. Biennial reports. Chief of the Bureau of Statistics, B. F. Johnson, Indianapolis, Ind.

- New York Bureau of Labor Statistics.—Established May 4th, 1883. Annual reports. Commissioner of Labor, John McMackin, Albany, N. Y.
- California Bureau of Labor Statistics.—Established March 3rd, 1883. Biennial reports. Commissioner of Labor, F. V. Myers, San Francisco, Cal.
- Michigan Bureau of Labor and Industrial Statistics.—Established June 6th, 1883. Annual reports. Commissioner of Labor, Scott Griswold, Lansing, Mich.
- Wisconsin Bureau of Labor Statistics.—Established April 3rd, 1883. Biennial reports. Commissioner of Labor, Halford, Erickson, Madison, Wis.
- Iowa Bureau of Labor Statistics.—Established April 3rd, 1884. Biennial reports. Commissioner of Labor, C. F. Wennerstrum, Des Moines, Iowa.
- Maryland Bureau of Industrial Statistics.—Established March 27th, 1884. Annual reports. Chief of the Bureau of Industrial Statistics, Thomas A. Smith, Baltimore, Md.
- Kansas Bureau of Labor Statistics.—Established March 5th, 1885. Annual reports. Commissioner of Labor, W. L. A. Johnson, Topeka, Kan.
- Rhode Island Bureau of Labor Statistics.—Established March 29th, 1887. Annual reports. Commissioner of Labor, Henry E. Tiepke, Providence, R. I.
- Nebraska Bureau of Labor and Industrial Statistics.—Established March 31st, 1887. Biennial reports. The Governor, ex-officio Commissioner. Deputy Commissioner of Labor and Industrial Statistics, C. E. Watson, Lincoln, Neb.
- North Carolina Bureau of Labor Statistics.—Established February 28th, 1887. Annual reports. Commissioner of Labor, Henry B. Varner, Raleigh, N. C.
- Maine Bureau of Labor Statistics.—Established March 7th, 1887. Annual reports. Commissioner of Labor, Samuel W. Matthews, Augusta, Maine.
- Minnesota Bureau of Labor.—Established as a Bureau of Labor Statistics, March 8th, 1887; enlarged and changed to a Bureau of Labor, April, 1893. Biennial reports. Commissioner of Labor, John O'Donnell, St. Paul, Minn.
- Colorado Bureau of Labor Statistics.—Established March 24th, 1887. Biennial reports. Commissioner of Labor, James T. Smith, Denver, Col.
- West Virginia Bureau of Labor.—Established February 22nd, 1889. Annual reports. Commissioner of Labor, I. V. Barton, Wheeling, W. Va.
- North Dakota Department of Agriculture and Labor.—Established October 1st, 1890. Biennial reports. Commissioner of Labor, H. U. Thomas, Bismarck, N. D.
- Tennessee Bureau of Labor Statistics and Mines.—Established March 23rd, 1891. Annual reports. Commissioner of Labor, R. A. Shifflett, Nashville, Tenn.
- Montana Bureau of Agriculture, Labor and Industry.—Established February 17th, 1893. Annual reports. Commissioner of Labor, J. A. Ferguson, Helena, Mont.
- New Hampshire Bureau of Labor.—Established March 30th, 1893. Biennial reports. Commissioner of Labor, Lysander H. Carroll, Concord, N. H.
- Washington Bureau of Labor.—Established June 11th, 1897. Annual reports. Commissioner of Labor, Wm. Blackman, Olympia, Wash.
- Idaho.—Commissioner of Labor, J. A. Cizek, Boise City, Idaho.
- Argentine Republic.—Francois Latzina, Directeur General de la Statistique de la Republique Argentina (Ministere de l'Interieur), Buenos Ayres.
- Austria-Hungary.—Commission Central of Statistics (Minister of Public Instruction). Dr. Karl Theodor von Inama Sternegg, President, Vienna. Department of Municipal Statistics, Dr. Sedlatzek, Chief, Vienna.
- Bavaria.—Royal Bureau of Statistics (Department of the Interior). Karl Rasp, Director, Munich.
- Belgium.—Royal Bureau of General Statistics (Minister of the Department of the Interior and Public Instruction). Edmund Nicoall, Chief, Brussels.
- Brazil.—Dr. R. Pompeia, Directeur de Bureau de Statistique des Etats Unis du Bresil (Ministere de l'Interieur), Rio Janeiro.
- Bulgaria.—Bureau of Statistics of Bulgaria (Minister of Public Instruction). P. Ivantchoff, Director, Sophia.
- Chili.—Don Francisco S. Asta Buruaga, Chef du Bureau Central de Statistique du Chili, Santiago.



Denmark.—Royal Bureau of Statistics (Minister of Finance). Marius de Gad, Director, Copenhagen.

France.—Office du Travail (Ministere du Commerce et de l'Industrie). C. Moron, Directeur, Paris.

Victor Furquan, Chef du Bureau de la Statistique General de France (Ministere du Commerce et de l'Industrie—Office du Travail) Paris.

Germany.—Imperial Office of Statistics (Department of Interior), Dr. F. W. Hans von Scheel, Director, Berlin.

Herzegovina.—Bureau of Statistics of Bosnia and Herzegovina. Dr. Ferdinand, Schmid, Director, Sarajevo.

Italy—Luigi Bodio, Directeur General de la Statistique du Royaume (Ministere de l'Agriculture, de l'Industrie et du Commerce), Rome.

Japan.—S. Ishibashi, Chef du Bureau General de Statistique (Cabinet Imperial), Tokio.

Mexico.—Antonio Penafiel, Directeur General de la Statistique de la Republique (Mexicaine du Fomento), Mexico.

Paraguay.—I. Jasquet, Directeur General de la Statistique du Paraguay, Assumption.

Portugal.—Ernesto Maderia Pinto, Director General of Statistics of Commerce (Minister of Public Works, or Commerce and Industries), Lisbon.

Prussia.—Royal Bureau of Statistics (Minister of the Department of the Interior). Karl Julius Eml Blenck, Director, Berlin.

Office of Statistics of the City of Berlin. Dr. Richard Bockh, Director, Berlin.

Roumania.—C. E. Curpenski, Directeur de la Statistique General du Rouaume (Ministere de l'Agriculture, de l'Industrie, du Commerce et des Domaines), Bucharest.

Russia.—Nicholas Troinitsky, Directeur du Comite Central de Statistique (Ministere de l'Interieur), St. Petersburg.

B. Grigoriev, Chef du Bureau de la Statistique Municipale, Moscow.

Saxony.—Bureau of Statistics of the Minister of State. Dr. Victor Bohmert, Director, Dresden.

Spain.—Ing. Francisco de Paula de Arrillaga, Director General of the Geographic Institute and Bureau of Statics of Spain, Madrid.

Styria.—Bureau of Statistics of Styria. Dr. Ernest Meschler, Director, Gratz.

Sweden and Norway.—Dr. Elis Sidenbladh, Directeur en Chef du Bureau Central de Statistique du Royaume (Ministere de l'Interieur), Stockholm.

Anders Nicoali Kiaer, Director du Bureau Central de Statistique du Royaume (Ministere de l'Interieur), Christiana.

Switzerland.—Dr. Louis, Guillaume, Directeur du Bureau Federal de Statistique (Ministere de l'Interieur), Berne.

Uruguay.—Honore Roustan, Directeur du Bureau de la Statistique General, Montevideo.

#### CIRCULAR TO TOWN CLERKS.

The following circular was issued in March, 1901, to the Town Clerks of the smaller cities, towns and villages of the Province. In reply to the 243 circulars sent out 130 answers were received. A record is herewith given of these answers, which includes a list of the new industries established in the various towns, the openings that may exist for other enterprises, and the remarks and suggestions that have been sent to the Bureau for publication regarding industrial development, etc.

#### DEPARTMENT OF PUBLIC WORKS, ONTARIO.—THE BUREAU OF LABOR.

Toronto, March 11th. 1901.

Dear Sir,—The Bureau of Labor of the Province of Ontario is at present engaged in an investigation of the industries of the Province. In order to make the returns as complete as possible, we seek your co-operation, and respectfully ask you to make as

correct replies as possible to the following questions, and return same to this office in enclosed envelope at your earliest convenience.

Thanking you in advance for this courtesy. Yours respectfully,  
Secretary, The Labor Bureau, Ontario.

1. What new industries, if any, have started in your town within two years? (Give name of firm or firms) .....
2. Nature of business? .....
3. Nearest postoffice address? .....
4. Has any industry changed hands? .....
5. Do you consider there is any opening in your town for new industries? .....
6. If so, of what character? .....

#### REMARKS FROM TOWN CLERKS.

**Brighton**—Almost of any kind of factory, except canning industry, of which there are two here now.

**Dunnville**—New industries: F. R. Lalor Canning Factory, Dominion Hammock Company, Dunnville Knitting Mill, Dunnville Planing Mill Company, Lalor Vinegar Works. Opening for good iron foundry and machine shop.

**Alexandria**—Two new industries, Soft Drinks and Export Lumber. Good opening here for grist mill; had a good one here until four years ago, but owing to litigation, re insurance, etc., has not been rebuilt. There is no grist mill nearer than seventeen miles. A site, with good water-power, could be procured reasonably here, and town would give exemption from taxes for ten years; a free site without water-power is also available.

**Barrie** reports a brewery, and, also, Barrie Waterworks Company, name of firm Anderton & Company. Opening for any industry in the wood working department. The Barrie Tanning Company have erected buildings and plant capable of employing 200 hands, former capacity 25 to 30; a carpet weaving and cleaning company have just engaged premises, and are about to open up business, employing five or six hands to start with. Barrie has good railroad accommodation; lines to Toronto, Hamilton, Meaford, Midland, Penetanguishene, Orillia and North Bay.

**Forest**—Sutherland, Innes & Company (stave mill); William Pepper & Company (foundry and machine shop). Opening for furniture manufacturing, agricultural implements, pork packing, cold storage, carriage making.

**Cornwall**—It is hard to specify, but we are willing and anxious to treat with manufacturers of furniture, carriages, boots and shoes; in fact almost anything employing labor and paying good wages, as we possess excellent facilities for shipping, both by rail and water, besides many other advantages.

**Aylmer**—Laidlaw, Watson Shoe Company; Aylmer Mfg. Company (turned goods). There are openings for several kinds of industries, except as above.

**Dresden**—Good opening for canning factory, tobacco factory, flax mill, or other industry not coming too much into competition with the large centres. There is railroad accommodation here, and an unsurpassed farming country around. The municipality is prepared to aid any desirable industry located here.

**Bracebridge**—John Leishman & Son (lumber, lath and shingles). Opening for spool or furniture factory. There is good water-power here, and after the 15th September the corporation will have electric power to furnish on most favorable terms.

**Burk's Falls**—A grist mill would do well here; also a woollen mill.

**Elora**—No new industry here, but J. C. Mundell & Company have enlarged their furniture factory premises considerably, going into the manufacture of chairs very extensively. Opening for almost any industry; foundry, machine shop, boots and shoes, carpets, woollens, etc., etc. There is the water-power (Grand River), and several vacant premises.

**Drayton**—Good opening for machine shop. There is now a project before the people to aid in establishing an industry for the manufacture of felt and felt shoes.

Alvinston—Good opening for sugar-beet factory; flax mill and vitrified brick. There are two railroads, the Grand Trunk and the Michigan Central, and the village is well supplied with water by the Sydenham River, and is located in one of the best farming districts in western Ontario.

Bayfield—John Whiddon, fruit evaporator. Good opening for flour mill, as there is no flour mill within twelve miles; there is also a good harbor for shipping facilities.

Alliston—Good opening for the manufacture of woollen wares and agricultural implements.

Gananoque—Gananoque Harness Factory. Good opening for comfortable summer hotel, to accommodate 200 or 300 guests at reasonable rates; cabinet factory. We have all the native woods, cheap and abundant, required. A good building, with water-power, is available, and is well adapted for cabinet or carriage factory. A carriage factory, well managed and with sufficient capital, would succeed without doubt. Good facilities for pork-packing factory, as regards supplies, water, yard room and shipping. Sharp business with capital would find this an excellent place to locate.

Bowmanville—Good opening for furniture factory, foundry and machine shop, the latter being badly needed. We are open to encourage the establishment of industries by bonuses and other privileges.

Brockville—Canada Oak Belting Company. Good opening for first-class machine shop and boiler works; pork packing; electric street railway, condensed milk for export to South Africa. We have one of the best central shipping points in Canada, both by rail and water, during open navigation.

Carleton Place—Good opening for carriage works; pulp mills and furniture factory.

Bobcaygeon—Opening for burning lime, tannery, any wood factory, a 300-room summer hotel.

Ailsa Craig—This is not a competing point, and until legislation equalizes rates between long and short haul railway freights the establishment of any important industry here would be unwise.

Belleville—Abbot, Mitchell Iron & Steel Works; R. J. Graham, evaporation of vegetables and cold storage; C. B. Smith, pork-packing; H. M. Forward, cigar factory; King Shirt Company, Limited. Good opening for the manufacture of agricultural implements, also carriages, cotton goods, ship yards, smelting works, being only 25 miles from the Madoc iron deposits.

Collingwood—Collingwood Steel Ship Company; Charlton Brothers, sawmill. Opening for any manufacture of wood or iron.

Colborne—Opening for any kind of industry; old industrial factory shut down owing to the irresistible competition of the large central concerns, or the old appliances being outlawed.

Durham—Durham Furniture Company, Limited. Good opening for Portland Cement Works.

Essex—A chopping mill to chop coarse grains for the farmers for feeding stock and hogs is much needed. There is also a fine opening for a first-class beet-sugar factory, as the soil and climate are both peculiarly adapted to the growth of a high-class sugar beet of great richness; also for a tobacco factory. The soil here is rich and produces heavy crops of first-class tobacco, and it would be grown here extensively if there was a market convenient.

Bridgeburg—Being purely a railroad town, there are no industries here, but there is a good opening for almost any kind of good shipping by rail, and also by the Niagara River.

Fort William—Gilbert, Hartley & Company, broom factory; S. Stevens & Company, grist mill and shingle factory; E. Woecker, soda water factory; Gowanlock & Company, brickmakers. There are splendid opportunities for new industries at this point, with a town as fast coming into prominence as we are, and a population growing steadily; natural advantages unsurpassed; good fire protection; municipal ownership of electric light and waterworks; splendid sewerage. Wholesale houses should find this to be a

profitable place to do business, being at the head of lake navigation, and must in time be the distributing point for all Manitoba and the Northwest; mining business, gold, silver and iron in abundance; pulpwood and fishing. We have now under consideration an offer from the American Steel & Wire Company for the erection of ore docks, a smelter, and the head office of their operations in the Dominion of Canada.

Renfrew—Opening for any industry that requires water or electric power, as we have good supply.

Tweed—Pratt, Patching & Company, electric light; Walker & Lockwood, hub factory. Good opening for woollen and canning factories.

Uxbridge—Opening for any good manufacturing concern; a good creamery would be a good thing here. We have good water-power and could supply woollen factory.

Trenton—The Gilmour Company, Limited, box manufacturers, lumber, etc. Opening for any industry in the manufacture of wood, or for anything in the manufacturing line requiring water-power. Trenton would be an ideal location for iron and steel works. It has splendid shipping facilities by rail and water, is in a limestone district, and is the gateway for the mines of North Hastings and the Central Ontario Railway.

Waterloo—Opening for any kind of factory, especially boot and shoe.

Tottenham—F. Strangway, piggery; M. & G. Hamilton, piggery. Good opening for furniture factory.

Stouffville—James Packenham, pork packing; Forsyth Acetylene Generator Company. Good opening for boot and shoe factory, creamery and beet-sugar factory.

Cannington—Cannington Creamery Company, Knitting Factory, Victoria Piano Factory. Good opening for canning factory, boot and shoe factory, furniture factory; also for companies to enlarge carriage factory, tannery and woollen mills, which are at present not working to their full capacity for want of capital.

Beaverton—Alex. Dobson, mnfr., peat. Good opening for cement works; some of the best clay in Ontario is found in large quantities in this locality, suitable for bricks, tiles, pottery and cement.

Bradford—Good opening for pork-packing, manufacture of mattresses, and peat. Any industry employing labor would find this town a good location.

Seaforth—Robert Bell, jun., foundry and machine shop. There is a woollen mill closed down here for want of capital, and a flax mill has been idle for some time owing to the dull market for flax.

Woodbridge—Good openings for foundry and woollen mill, buildings all complete, with good water-power or steam. These buildings, which were formerly used for the manufacture of agricultural implements, could be rented for a mere trifle.

Ayr—W. J. Reid, sawmill. There is a prospect of an electric plant being started here, with the promise of the distribution of power, in which case white goods could be manufactured. There are vacant buildings which could be utilized for this purpose.

Oakville—Opening for manufacturing industry of any description.

Vankleek Hill—Opening for canning and other industries where a running stream of water is required. Vankleek Hill is surrounded by an excellent agricultural country.

Smith's Falls—The Perrin Plow Company, manufacturers of a newly-invented riding plow. Openings for industries of any kind, principally woollen or cotton manufactures. There is water-power and a good stand vacant.

Clinton—Andrews Brothers, cement works; J. E. Crealy, Dairy Company. Good opening for furniture factory or pork-packing establishment.

Hespeler—Opening for any new industry that will employ males.

Port Perry—Robert Lucas & Company, Saddlery; Canning Factory. Good opening for a beet-sugar factory.

Picton—Opening for apple barrel factory, roller grist mill, beet sugar industry, another canning factory, grand opening for pork-packing establishment. "Capital and enterprise is what we are deficient in."

Lancaster—R. J. McDougall & Son, grinding grain for feed. Not very much opening here for new industries.

Thorold—The Rehder Manufacturing Company, the Imperial Art Wood Company, There is also a company building a pulp mill to have in operation in the spring. Good opening for manufacturing industry requiring water-power.

Lindsay—Rider & Kitchener, Veneer Factory; R. M. Beal, tannery; the Kennedy Downs Milling Company, barrel factory; Squire & Sons, seed pea industry. Opening for furniture factory, carriage factory, piano factory, and any factory for the manufacture of wood, or in fact any kind of industry.

Stratford—The Whyte Pork Packing Company; Rustin Brothers, furniture manufacturers. Opening for all kinds of industries.

Perth—The Perth Woollen Mills Company, Dettrick Bolt Factory. Good opening for new industries; a rubber factory was talked of, and would doubtless prove a profitable investment.

Paris—Opening for agriculture and machine works, waggon works, machine shops, meat curing and packing, and almost any industry.

Elmira—The Elmira Felt Company, Limited. Good opening for the manufacture of furniture and shoes.

Morrisburg—Opening for almost any industry. We expect to have an electric power plant in operation this summer (1901), and will likely have some power to be utilized.

Perscott—Imperial Starch Company, starch and glucose mnfrs. Opening for factory of any kind; splendid shipping facilities, being connected with both Grand Trunk and C. P. R., and also St. Lawrence River.

Strathroy—Cameron, Dunn Mfg. Copmany. Opening for new industries, character not specified.

Goderich—Opening for any manufacturing industry.

Niagara Falls—Ontario Silver Company, Hinds' Box Factory. Opening for any kind of industry.

Madoc—Sandford & Brooks, carriage mnfrs.

Welland—George Robertson, fruit evaporator. Any kind of industry would be well situated in this town, for the reason that the facilities for transportation are not excelled by any town in Ontario, as there are five different lines of railway and the Welland Canal (the last named running through the centre of the town), all convenient for the transportation of manufactures or material.

Port Colborne—K. & C. B. Shickluna Bicycle Works. Good opening here for blast furnace and steel works, or dry dock; would be glad to correspond with any person re above.

Port Dalhousie—The Maple Leaf Rubber Company, mnfrs., rubber shoes. There is every facility here for new industries, good shipping by either rail or water, besides electric power for rental on easy terms.

Whitby—Clothing Mngf. Company. A splendid opening here for almost any industry. The town is situated on a good harbor, with railway communication east, west and north. Land is cheap and rents are very low, which should make this town a favorable location for industries seeking a site.

Walkerville—Gardner Brothers, handle factory; Seagrave Ladder Company, Match Factory, Fly Paper Factory, Canadian Bridge Company, Limited, Ideal Manufacturing Company. Good opening here for a beet-sugar industry. "We have twenty-one industries in our little town, and one helps another; we have every facility for new industries."

Huntsville—Willam Craddock, broomhandle mnfr. Good opening for the manufacture of woodenware of various descriptions and spool factory; also for charcoal; there is lots of hardwood in the vicinity, blrch, maple and beech.

Ridgetown—Good opening for canning factory and pork-packing factory.

Waterford—Good opening for foundry and repair shop; a good section of country for beet-sugar industry.

Newburgh—Drury Brothers' flour mill rebuilt. There is good water-power here undeveloped; would be good site for wheel factory or woollen factory. We have a splendid foundry and machine shop here, well equipped with new machinery, for manufacturing agricultural implements, but the owner lacks capital, but would otherwise do a big business.

Simcoe—Lea & Company, pickle factory; Charles Severeen, mattress factory; Frank Pierce, job printing.

Leamington—Canadian Ladder Company, the Consumers' Tobacco Company, Epiral Tobacco Manufacturing Company, The Whiffle Tree Company, whiffle tree mnfrs. Good opening for pork-packing establishment and for canning factory.

Oshawa—Smith & Company, canning factory. There is an ideal factory vacant here, which was used last as a furniture factory. Good opening for the manufacture of boots and shoes, clothing and iron industries, pork packing, agricultural implements.

Kingsville—The Ontario Glass Company, Limited; The Erie Tobacco Company, Limited; The Imperial Canning Company; Ernest Bailey, tobacco sorting and curing; C. Johnson, box factory. Good opening for any industry for which cheap fuel is important; opening for sash and door factory. We have natural gas for fuel, an important incentive to industrial enterprise, if it is preserved to us and not squandered for the benefit of Americans by unlimited exportation.

Millbrook—George Locks, waggon shop. We have no industries here, but any kind would be welcome, as there is no work for men in winter.

Meaford—Cleland Brothers & Company, mnfrs of wheelbarrows, etc.; Meaford Elevator Company, handling of grains, etc. Good opening for industries here. Efforts are being made to get a blast furnace similar to the one at Midland. There are good lake shipping facilities here, as well as connection by railroad; water-power is also available, and there is plenty of timber in the neighborhood. We have good opening for sawmills, canning factories, cheese factories, barrel factories and the manufacture of stoves.

Markham—Underhill & Sissman, boot and shoe mnfrs. Ferrol Medicine Company, Tonic Pill Company. Good opening for tannery and creamery; good district for sugar beets.

Sarnia—Edmund Hall, sawmill and lumber; E. M. Marshall, mnfr. of display tables; Henderson & Morgan, "Eureka" Engine and Machine Shop; Cleveland Sawmill & Lumber Company. Opening here for sawmills, grain elevators, transportation companies, and any kind of manufacturing industry, particularly where a market is sought in the northwest.

Port Stanley—Good opening for canning factory, hand factory, smelting works, in fact, industries of any character; good water privileges and other inducements.

Merritton—Andrew Clark, Merritton Brass Foundry. Good opening for any industry requiring water power. There is a large vacant factory here with the best water-power on the Welland Canal.

Paisley—Paisley Pork Packing Company. Good opening for furniture factory.

Hanover—Plenty of water-power here and the taxes are light.

North Bay—Good opening for the manufacture of all kinds of lumber.

Preston—Mineral Springs Furniture Company, Limited; Preston Furniture Company, Limited. Plenty of openings for new industries, especially for the manufacture of furniture and boots and shoes. Taxation free, except school tax: loan likely would depend on Council.

Listowel—Samuel Forbes Chair Factory; Listowel Furniture Company, Limited; Ness Brothers Bent Chair Factory, Limited. Good opening for new industries here.

Port Dover—Morgan & Liddy, fruit evaporator. Shipping facilities first-class by rail and water for manufacturing industries.

Norwood—J. L. Squire & Son, pork packing and cold storage. Good opening for chair factory, foundry, smelting works, carriage and waggon factory, tannery.

Shelbourne—Good opening here for any industry using hardwood, and any system of making bricks or tile clay. There are also undeveloped quarries of excellent build-

ing stone. Good section of farm lands adjacent to this town. These lands are improving fast in value, and any industry dealing directly with farmers should find this location good. The great drawback is the want of railway competition. The C. P. R. has a monopoly of transportation and rates are high.

Glencoe—Davis & Company, creamery. Openings here for apple evaporator, flax mill, canning factory. We are surrounded by an excellent farming country.

Kincardine—H. Coleman, pork factory. Openings here for factories of any kind sawmills, etc.

Delhi—Excellent opening for the manufacture of farm implements particularly.

Tilbury—Adam H. Roszel, furniture factory. First-class opening for a number of industries including planing mill, sash and door factory, canning factory, pork packing factory, etc.

Almonte—Everett & Doyle, butter factory to be operated during part of the winter. "This is a manufacturing town, the principal industries being in woollens, cloth and knit goods. The cotton industry should find a good location here. In fact there are some good water-powers with buildings on them at present vacant, which might be utilized for almost any industry. These powers can be bought very reasonably.

Walkerton—The Walkerton Binder Twine Company, Sieling Furniture Company. Good opening for foundry and oatmeal mill. Good water-power can be obtained from the Saugeen River. A biscuit factory could be easily promoted here. The town will give a loan and exemption from taxes for a period of years.

Port Elgin—Miller Brothers, sash and door factory; Bowman & Zinkan, tannery. Good opening for evaporating factory, canning factory, barrel making, pork packing.

Palmerston—Palmerston Pork Packing Company. This is a splendid railway centre, with good openings for the manufacture of furniture, stoves, binder twine.

Sault Ste. Marie—Canadian Electro Chemical Works; Sulphide Pulp Mill, Nickel Reduction Works. Good opening for furniture factory and flour mill.

Chesley—Chesley Rake & Novelty Factory. Opening for tannery and knitting factory.

Grimsby—John Grout & Company, basket factory; J. W. Van Dyke, evaporated apples; S. Balfour, canned fruit and vegetables; James A. Hewitt, planing mill. Good opening for basket factory and canned goods. Lack of water supply has prevented the development of several lines of business.

Orangeville—McDonald, Ceasar & Company, caskets and coffins. Good openings here, and the town is willing to offer Liberal terms to industries to locate here, and is now in correspondence with reference to the establishment of a biscuit factory, pork-packing company, Portland cement works, etc.

Merrickville—National Wire Fence Company; Mills & Brimstin, sash and door factory. There are good buildings and water-power not in use here, suitable for manufacturing.

Streetsville—"We have splendid water-power, capable of giving 200 horse-power per day. The village is willing to assist any manufacturing industry by way of bonuses."

Lanark—Good opening for wood working manufactures, but there is no railroad nearer than 11 miles.

Port Arthur—Reports no new industries, but good openings for pulp mills.

Wingham—Iron and Brass Foundry. Good opening for stove foundry, shoe factory, biscuit factory. Good shipping facilities by Grand Trunk and C. P. R.

Hagersville—Good opening for canning factory.

Hastings—Reports good opening for cotton or woollen mills, and also paper mills.

Wlarton—H. C. Withrow & Company, lumber mnfrs; Canadian Spool & Bobbin Company; Simon Brothers & Hill, mnfrs. of tables and mattresses; Dominion Portland Cement Company; Wlarton Oil & Gas Company, Limited. Good opening for any industry developing the natural resources of the Province. The facilities for shipping by water are first class, and there is also the Grand Trunk Railway.

Kemptville—There is no better district for any agricultural industry.

Pembroke—Pembroke Development Company, mnfrs. of scales and Webster grinders. Openings for sawmill, pork-packing factory, pulp mill, any industry manufacturing woodenware. Good facilities for export, being on the main line of the C. P. R., and a branch connecting with the C. A. Railway.

Windsor—Turning Goods Company, Limited; Paper Box Factory; Gas Meter Manufacturing Company, Limited; Two small cigar factories. Good opening for pork-packing establishment. Corn is the staple crop with the farmers of this county, the bulk of which is used in fattening hogs, which are killed and shipped east, instead of being converted into bacon, etc., here, where three trunk lines of railway and ample water transportation afford unequalled facilities for reaching desirable markets.

Bolton—John S. Proctor, mnfr. acetylene gas.

Bothwell—Reports good opening for canning factory, or almost any industry, as land is cheap and the people are in need of employment.

Stirling—Good opening for fruit canning factory.

Lakefield—Lakefield Portland Cement Works. Opening for furniture and woollen mills.

Fergus—Reports good opening for any manufacturing industry; good shipping facilities and healthy situation. The Municipal Council will grant no money bonus, but may exempt from taxation.

New Hamburg—Opening for the manufacture of any kind of small and light ware. Paper boxes could be made to engage younger folks, and supply felt factory, etc.

Stayner—"This is a good fruit locality and an evaporator ought to do well."

Owen Sound—Imperial Cement Company, The National Table Company, The Park-hill Basket Company; W. Kennedy & Sons, founders, have enlarged their business and premises by adding thereto a plant for the manufacture of steel. Good opening for industries of every character. The town is connected with both Grand Trunk and C. P. R., and has unlimited harbor accommodation. No town in Ontario offers better shipping facilities than Owen Sound.

Blyth—Drummond Brothers, flax mill. Good opening for any industry that would employ help.

Aurora—Boot and Shoe Factory. Opening for all kinds of industries.

Sturgeon Falls—Edward Lloyd Company, Limited, pulp mnfrs. Good opening for flour mill, foundry, sash and door factory. We have first-class wheat producing country in four surrounding townships, and a flour mill is greatly needed.

Point Edward—Good openings here for new industries, but the Grand Trunk Railway owns all the property and the terms are not satisfactory. Good opening for saw-mill or smelting works, or in fact any industry requiring easy transportation by rail or water. In boring for oil two years ago we struck gas, and it has burned ever since from each well lighted. We also pumped thirty pounds of oil, but the Grand Trunk would only grant property right from year to year, and our little testing company gave up.

Brussels—Good locality for beet-root sugar. The land is good and on limestone sub-soil, and there is plenty of limestone for factory purposes.

Maxville—Two sawmills and a general store have been started here within the last two years. There is also a good opening for a newspaper and a bank.

#### CIRCULAR TO CENTRAL LABOR ORGANIZATIONS.

The appended letter was sent to:—

- The Trades and Labor Councils of Ontario.
- Trades and Labor Congress of Canada.
- Federated Council of Building Trades, Toronto.
- Allied Printing Trades Council, Toronto.
- District Assembly, No. 180, Knights of Labor, Toronto.
- Amalgamated Wood-Workers' Council, Toronto.
- Federated Council of Metal Trades, Toronto.



## DEPARTMENT OF PUBLIC WORKS, ONTARIO—THE BUREAU OF LABOR.

Dear Sirs,—For the information of the membership of labor organizations particularly, the Ontario Labor Bureau purposes publishing in its next report as complete as possible a directory of labor organizations, local and central. With this object in view, I would respectfully request that you furnish answers to the following questions:—

1. Name of organization? .....
2. Location? .....
3. Date organized? .....
4. Number of organizations represented? .....
5. Name of President for current term? .....
6. Address? .....
7. Name of Corresponding Secretary for current term? .....
8. Address? .....
9. Nights of meeting? .....
10. Do the above named officers object to the publication of their names and addresses in the Bureau report? .....

In addition to the above information, the Bureau would be pleased to have for publication any remarks or suggestions of a general or specific character, which, in the opinion of your body, may seem wise and proper, bearing upon the industrial question, or looking to such legislation or otherwise, as will, in its judgment, be of permanent benefit to the people. Yours respectfully,

Secretary, The Labor Bureau, Ontario.

## CIRCULAR TO LABOR ORGANIZATIONS.

The following circular and accompanying schedule were forwarded to the labor organizations in the Province of Ontario:—

## DEPARTMENT OF PUBLIC WORKS, ONTARIO—THE BUREAU OF LABOR.

Dear Sir,—The Bureau of Labor of the Province of Ontario is now engaged in its second year's work, in collecting such data as will give intelligent knowledge of the conditions of wage-workers, as to wages, hours of labor, and such other information as the Bureau may be able to gather, which will be of special interest to the people of our Province. The response of labor organizations last year to our inquiries for information was not as complete as we would wish, due, doubtless, to some misapprehension as to the purposes of the Labor Bureau, and due, also, perhaps, to some suspicion as to the uses that would be made of the information so furnished. We trust, however, that the report published by the Bureau will remove much of such misapprehension or suspicion. Copies of the report have been forwarded to the secretaries of each labor organization whose address could be procured. Should your organization have been missed, and you will kindly drop me a line so informing me, I will be pleased to have a copy forwarded at once.

The Bureau requests that you bring this matter before your body at its first meeting after receipt of this, with a view to their authorizing the filling in of the questions in accompanying schedule.

The Bureau begs to give the assurance that the strictest confidence will be at all times observed between it and its informants. The information and data collected for the investigations of the Bureau will be so classified and grouped as to preclude recognition of individuality, and no names will be published without permission. Should blank spaces not admit of full answers, kindly use additional blank paper.

The Bureau invites, and will cordially receive, any remarks of a general character. Trusting your organization will be pleased to give the Labor Bureau its cooperation, by authorizing the information sought for in the schedule being given, and

returned to this office in enclosed envelope, and thus aid in obtaining the ends sought for in the establishment of the Bureau, viz., assisting the workers to a proper understanding of their conditions within the Province. I am, respectfully yours,

R. GLOCKLING,  
Secretary the Labor Bureau, Ontario.

If you are not now secretary of your organization, will you kindly hand this to your successor as soon as convenient.

The Bureau respectfully asks that the name and address of the corresponding secretary of your organization be forwarded, whenever a change of officers takes place.

#### LABOR ORGANIZATIONS' SCHEDULE.

#### DEPARTMENT OF PUBLIC WORKS, ONTARIO.—THE BUREAU OF LABOR.

The following questions refer to the year ending December 31st, 1900 :—

1. Location? .....
2. Trade or calling? .....
3. Title of organization? .....
4. Date organized? .....
5. Total membership, Male..... Female.....
6. Average earnings per week, Male..... Female.....
7. No. of working hours first five days? .....
8. No. of working hours Saturday? .....
9. Average number of days idle, per member, during year? .....
10. General cause of idleness? .....
11. Total number employed at your business in your locality,  
Male..... Female .....
12. What difference in wages or hours of labor (if any) of those engaged  
at your business in your locality, between members and non-members  
of your organization, Male..... Female.....
13. What cash benefits, if any, are paid in case of (a) lack of employment  
.....(b) sickness..... (c) death  
..... (d) superannuation.....
14. Do you carry on any special work for members, such as reading-room,  
evening classes, etc? .....
15. Name of President for current term .....  
Address .....
16. Name of corresponding secretary for current term .....  
Address .....
17. Nights of meeting? .....
18. Do the above named officers object to the publication of their names  
and addresses in the Bureau report? .....

#### REMARKS.

Any remarks or suggestions bearing on the subjects under investigation, or anything that in your opinion will improve the condition of your craft, or any other suggestions that in the opinion of your organization may seem wise and proper, looking to such legislation, or otherwise, as will, in its judgment, be of permanent benefit, are cordially invited, and will be most cheerfully received, and made the best use of by the Bureau.

In response to the 438 schedules sent out to the labor organizations of the Province but 216 replies were received; the number and location of the various organizations reporting are as follows:—

Allandale .....	1	North Bay .....	4
Belleville .....	2	Ottawa .....	20
Berlin .....	13	Owen Sound .....	1
Brantford .....	8	Palmerston .....	1
Brockville .....	3	Peterboro' .....	2
Chapleau .....	1	Preston .....	2
Collingwood .....	2	St. Catharines .....	9
Dundas .....	2	St. David's .....	2
Fort William .....	2	St. Thomas .....	7
Galt .....	1	Sarnia .....	3
Guelph .....	11	Schreiber .....	3
Hamilton .....	30	Stratford .....	6
Kingston .....	15	Smith's Falls .....	3
Lindsay .....	2	Toronto .....	47
London .....	9	Windsor .....	4
Midland .....	1	Woodstock .....	1

The nature of the organizations reporting is as follows:—

Trades Unions .....	199
Trades and Labor Councils .....	9
Local Assemblies—	
Knights of Labor .....	2
Federations of Trades .....	6

By Trades and Callings the labor organizations, which have made returns, are as follows:—

Allied Metal Mechanics .....	1
Architectural and Structural Iron Workers .....	1
<b>Iron Workers</b> .....	1
<b>Brass Workers</b> .....	1
Bakers and Confectioners .....	3
Blacksmiths .....	1
Bricklayers and Masons .....	13
Bread Salesmen .....	1
Bookbinders .....	2
Builders' Laborers .....	1
Builders' Laborers (A. F. of L.) .....	2
Boot and Shoe Workers .....	3
Boiler Makers & Iron Ship Builders .....	1
Broommakers .....	4
Bartenders .....	2
Barbers .....	4
Brotherhood of Locomotive Engineers .....	9
Brotherhood of Locomotive Firemen .....	9
Brotherhood of Railroad Trainmen .....	8
Carpenters and Joiners (Amalgamated Society) .....	2
<b>Carpenters &amp; Joiners (United Brotherhood of)</b> .....	6
<b>Cigar Makers</b> .....	6
Carriage and Waggon Makers .....	1
Carpet Weavers .....	1
<b>Electrical Workers</b> .....	1
Engineers (Amalgamated Society of) .....	3
Fire Dept (Federal Union Trades & Labor Congress of Canada) .....	1
<b>Federal Labor Unions (A. F. of L.)</b> .....	5

Garment Workers .....	1
Horseshoers .....	1
Hardwood Finishers .....	1
Iron Molders .....	8
Iron Workers' Helpers (A. F. of L.) .....	1
Longshoremen (International) .....	1
Leather Workers on Horse Goods .....	1
Letter Carriers (K. of L.) .....	1
Machinists .....	9
Metal Polishers, etc .....	3
Mailers .....	1
Order of Railway Conductors .....	7
Plasterers .....	2
Plasterers' Laborers .....	1
<b>Printing</b> Pressmen .....	2
Pattern Makers .....	2
Piano Workers .....	1
Painters and Decorators .....	6
Plumbers, Steam and Gas Fitters .....	5
Quarrymen (A. F. of L.) .....	1
Retail Clerks .....	2
Sheet Metal Workers .....	6
Street Railway Employees .....	2
Stone Cutters .....	2
Stone Masons .....	1
Typographical .....	8
Tailors .....	5
Tobacco Workers .....	1
Teamsters .....	2
Theatrical Stage Employees .....	1
Tanners and Curriers .....	1
Upholsterers .....	1
Varnishers and Polishers .....	1
Wood-workers .....	10
Wood-carvers .....	1
Trades and Labor Councils .....	9
Federation of Trades .....	6
Knights of Labor (Local Assemblies).....	2

## RETURNS OF ORGANIZATIONS IN DETAIL.

### CENTRAL ORGANIZATIONS.

#### BERLIN.

Name of Organization.—Twin City Trades and Labor Council (Berlin); date organized, March, 1901; number of organizations represented, 19; President, Alex. A. Rose, Berlin; Corresponding Secretary, J. H. Kressler, Box 224, Berlin; nights of meeting, first and third Mondays of every month.

#### BRANTFORD.

Name of Organization.—Brantford Trades and Labor Council; date organized, February 9th, 1897; number of organizations represented, 18; President, Thomas Bremner, West Mill street; Corresponding Secretary, Frank Mather, 75 Greenwich street; nights of meeting, first and third Wednesdays.

## GUELPH.

Name of Organization.—Guelph Trades and Labor Council; date organized, March 1898; number of organizations represented, 8; President, Joseph Dandeno, Guelph; Corresponding Secretary, William Drever, Guelph; nights of meeting, second and fourth Fridays of every month.

## HAMILTON.

Name of Organization.—Hamilton Trades and Labor Council; date organized, December 3rd, 1888; number of organizations represented, 30; President, Samuel Landers, Grant avenue, Hamilton; Corresponding Secretary, Henry Obermeyer, 96 Catherine street south, Hamilton; nights of meeting, first and third Fridays.

## KINGSTON.

Name of Organization.—Kingston Trades and Labor Council; date organized, December 2nd, 1899; number of organizations represented, 22; President, W. A. Tweed, 79 Arch street, Kingston; Corresponding Secretary, James O'Reilly, William street, Kingston; nights of meeting, first and third Thursdays.

## ST. CATHARINES.

Name of Organization.—St. Catharines Trades and Labor Council; date organized January 25th, 1897; number of organizations represented, 10; President, George F. Nicholson, Box 714, St. Catharines; Corresponding Secretary, James Carty, Box 193, St. Catharines; nights of meeting, first and third Wednesday in each month.

## OTTAWA.

Name of Organization.—Allied Trades and Labor Association; date organized, 1898; number of organizations represented, 20; President, V. H. Annable, 374 Gloucester street, Ottawa; Corresponding Secretary, P. M. Draper, 93 Slater street, Ottawa; nights of meeting, second and fourth Friday of every month.

## STRATFORD.

Name of Organization.—Stratford Trades and Labor Council; date of organization, July 21st, 1900; number of organizations represented, 9; President, William Stovel, Stratford, Ont.; Corresponding Secretary, Walter Crossland, Box 5, Stratford, Ont.; nights of meeting, second and fourth Friday of each month.

## TORONTO.

Name of Organization.—Toronto Trades and Labor Council; date organized, 1881, number of organizations represented, 47; President, Samuel Moore, 52 Teraulay street, Toronto; Corresponding Secretary, D. W. Kennedy, 59 Edward street, Toronto; nights of meeting, second and fourth Thursdays of every month.

Name of Organization.—Amalgamated Wood Workers' Council; date organized, December, 1900; number of organizations represented, 5; President, S. Moore, 52 Teraulay street, Toronto; Corresponding Secretary, A. J. Bateman, 138 Lisgar street, Toronto; nights of meeting, second and fourth Monday of each month.

Name of Organization.—Federated Council of Building Trades; date organized, 1886; number of organizations represented, 10; President, F. J. Wilson, 91 Palmerston avenue, Toronto; Corresponding Secretary, Patrick Cox, 52 Regent street, Toronto; nights of meeting, second and fourth Monday of every month.

Name of Organization.—Allied Printing Trades Council; date organized, June 1895; number of organizations represented, 8; President, M. J. Carmody, 198 Baldwin

street, Toronto; Corresponding Secretary, William Irwin, 38 Niagara street, Toronto; nights of meeting, first and third Tuesday of every month.

Name of Organization.—Federated Council of Metal Trades; date organized, February 11th, 1901; number of organizations represented, 10; President, John Francis, 19 Caer Howell street, Toronto; Corresponding Secretary, Horace J. Maughan, 284 Euclid avenue, Toronto; nights of meeting, second and fourth Monday of every month.

#### LOCAL UNIONS.

##### ALLANDALE.

Name of Union.—Div. No. 486, Brotherhood of Locomotive Engineers; date organized, February, 1892; total membership, 30; number employed at this calling in this locality, 64; death benefits, \$750, \$1,500, \$3,000, \$4,500, according to premium; President, Daniel Cameron, Allandale, Ont.; Secretary, George S. Lawrence, Box 24, Allandale, Ont.; nights of meeting, first Sunday and third Tuesday.

##### BELLEVILLE.

Name of Union.—Amalgamated Sheet Metal Workers' Union; date organized, February, 1901; total membership, male, 19; average earnings per week, \$7.50; number of working hours first five days, 10; number of working hours Saturday, 9; total number employed at this calling in this locality, 25 journeymen. There is no difference here between union and non-union workers as regards wages; we have not yet made a demand for higher wages as a union. No special work is carried on for members, although our constitution provides for classes of instruction in each union, but we have not started that yet. President, Moses Doyle, Grove street, Belleville; Corresponding Secretary, John McCarthy, Murney street, Belleville; nights of meeting, first and third Friday of each month.

Name of Union.—Lodge No. 66, Brotherhood of Locomotive Firemen; date organized, 1884; total membership, 67; total number employed at this calling in this locality, 80; there is no difference here between union and non-union men as regards wages; benefits, sickness \$3.00 per week, death according to amount of premium; President Charles Orrill, Station P. O., Belleville; nights of meeting, second and fourth Tuesdays in each month.

##### BERLIN.

Name of Union.—Bricklayers', Masons & Plasterers' Union, No. 12, Ontario; date organized, March, 1900; total membership, 46; average earnings per week, \$13.50; number of working hours, first five days nine, Saturday nine; total number employed at this calling in this locality, 46; President, August May, Berlin P. O.; Secretary, Jacob E. Cook, 11 Church street, Berlin, Ont.; nights of meeting, every Thursday.

Name of Union.—Amalgamated Woodworkers' International Union, No. 129 (Hardwood Finishers); date organized, March 8th, 1900; total membership, male, 72; average earnings per week, \$8; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 30; general cause of idleness, slackness of work; total number employed at hard wood finishing in this locality, 120; there is no difference in the wages or hours of labor between union and non-union men: dues are paid in case of lack of employment, and \$75 in case of death. President, George Fehrenbach, Berlin; Corresponding Secretary, Michael Kahle, Berlin; nights of meeting, second and fourth Wednesdays of every month.

Name of Union.—Brotherhood of Painters, Decorators and Paperhangers; date organized, April 16th, 1901; total membership, 14; average earnings per week, \$9.00; number of working hours first five days, 10; number of working hours Saturday, 9; cash

benefits in case of death, \$100 after one year's membership, \$150 for two years' membership; President, Julius Rietz, Cameron street, Berlin; Corresponding Secretary, Geo. H. Stahle, Berlin, Box 392; nights of meeting, second and fourth Tuesday of every month.

Name of Union.—Broommakers' Local Union, No. 7 (Berlin and Waterloo); date organized, April 2nd, 1900; total membership, 9; average earnings per week, \$8.50; number of working hours first five days, 10; number of working hours Saturday, 8, except June, July and August, when the number of working hours is 5; general cause of idleness, the crop of broom corn is sometimes a failure, and this makes the price very high; total number employed, 10. Since organization two advances in wages have been received, in all about 25 per cent., and the hours of labor have also been shortened to some extent; President, E. Kuhn, Berlin, Ont.; Corresponding Secretary, A. J. Volge, Box 507, Berlin, Ont.; nights of meeting, second and fourth Monday.

Name of Organization.—Amalgamated Woodworkers' International Union No. 112 of America; date organized, March 14th, 1900; total membership, 220; average earnings per week, \$7.50; number of working hours first five days, 10; number of working hours Saturday, 9; number employed at woodworking in this locality, 220; benefits, dues are paid in case of lack of employment and sickness; President, Franklin Schatz, Berlin; Corresponding Secretary, C. Kuehner, Berlin; nights of meeting, second and fourth Wednesday in the month.

Name of Organization.—Berlin Wood Carvers' International Association of North America; date organized, October 24th, 1899; total membership, 42; average earnings per week, \$10; number of working hours first five days, 10; number of working hours Saturday, 5; benefits, \$50 in case of death is the only benefit paid; President, David Heit, Berlin, Ont.; Corresponding Secretary, Edward J. O'Brien, Berlin, Ont.; nights of meeting, first and third Tuesdays.

Name of Organization.—Tanners' and Curriers' Union, No. 8.231, A. F. of L.; date organized, March 23rd, 1900; membership, 60; average earnings per week, \$7.50; number of working hours first five days, 10; number of working hours Saturday, 10; total number employed at this calling in this locality, 210; President Frank Ackernecht; Corresponding Secretary, Herman Shallhorn, Berlin; nights of meeting, second and fourth Wednesday of each month.

Name of Organization.—Retail Clerks' International Union, No. 28; date organized, May 5th, 1901; membership, 46; average earnings per week, \$8; number of working hours first five days, 10; number of working hours Saturday, 15; total number of retail clerks in locality, male, 75; female, 25; cash benefits, death, \$50.00; do you carry on any special work for members, such as evening classes, etc.? We have not as yet started, but will in a few months; President, Adam Sippel, care A. Weseloh & Company, Berlin; Corresponding Secretary, Albert K. Levan, 34 Queen street, south, Berlin; nights of meeting, first and last Friday in every month.

Name of Organization.—General Teamsters' International Union, No. 194; date organized, April 16th, 1901; membership, 22; average earnings per week, \$21.00; number of working hours first five days, 10; number of working hours Saturday, 10; average number of days idle per member during year, four months; general cause of idleness, winter weather; total number of teamsters in locality, 34; difference in wages between union and non-union members, 50c per day; President, Julius Luft, Berlin; Corresponding Secretary, P. K. Weber, Berlin; nights of meeting, second Thursday of every month.

Name of Organization.—Cigar Makers' International Union, No. 422; date organized, July 8, 1899; membership, 51; average earnings per week, \$9.00; number of work-

ing hours first five days, 8; number of working hours Saturday, 7; average number of days idle per member during year, 25; general cause of idleness, damp weather; total number of cigar makers in locality, male, 50; female, 5; difference in wages and hours of labor between union and non-union members, \$9.00 per week; non-union, \$7.00 per week; union men work 8 hours per day, non-union, 10; cash benefits, lack of employment, \$3.00 per week; sickness, \$5.00 per week; death, from \$50 to \$550; President, F. G. Carroll, Berlin, Ont.; Corresponding Secretary, Henry Englert, Box 224, Berlin, nights of meeting, Executive Board, every Monday evening; regular meeting, second Tuesday of every month.

Name of Organization.—International Typographical Union, No. 336; date organized, April 2nd, 1900; membership, 16; female, 1; average earnings per week, male, \$7.50; female, \$7.00; number of working hours first five days, 9; number of working hours Saturday, 6 1-2; total number employed in this calling in locality, male, 25; female, 5; difference in wages between union and non-union members, male, \$2.00 per week; female, \$3.00 per week; President, Charles Delion, Berlin; Corresponding Secretary, Anthony Beith, Box 70, Berlin; nights of meeting, first and last Friday of every month.

#### BRANTFORD.

Name of Organization.—Cigar makers' International Union, No. 59; date organized, March 15th, 1886; membership, 21; average earnings per week, \$8.00; number of working hours first five days, 8; number of working hours Saturday, 5; average number of days idle per member during year, 68; general cause of idleness, dullness in trade, material affected by weather or lack of help to prepare material; total number employed in this business in this locality, 35, as follows, male, union, 21; non-union, 6; female, non-union, 8; there is a difference in wages between union and non-union workers of from \$2.00 to \$4.00 per week, and the non-union workers are employed for 12 hours per day; cash benefits, lack of employment, \$3.00 per week; sickness, \$5.00 per week for 13 weeks; death, \$500 to \$550, also a loaning system to the amount of \$20; President, A. Crandass, Mohawk street, Brantford, Ont.; Corresponding Secretary, Frank Mather, 75 Greenwich street, Brantford, Ont.; nights of meeting, third Tuesday in every month.

Name of Organization.—Sheet Metal Workers' International Association, Local Union, No. 98; date organized, April 3rd, 1900; membership, 15; average earnings per week, \$10.50; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 54; cause of idleness, lack of work in the winter; there is no difference here in the wages or hours of labor, as all the sheet metal workers belong to the union; President, P. A. Cheevers, 25 Gilkinson street, Brantford; Corresponding Secretary (pro tem.), P. A. Cheevers, 25 Gilkinson street, Brantford; nights of meeting, fourth Tuesday of every month.

Name of Organization.—Operative Plasterers' International Union; date organized, April 9th, 1900; membership, 9; average earnings per week, \$10.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle, the winter months, on account of the cold weather, and this is the slack time in building trades. The difference between union and non-union men as regards wages and hours of labor is that non-union men work 10 hours per day, and for 5 per cent. less wages; President, Joseph Wood, Eagle Place, Brantford, Ont.; Corresponding Secretary, John A. Whelan, 151 Rawdon street, Brantford; nights of meeting, second Tuesday in every month.

Name of Organization.—United Association of Journeymen Plumbers, Steam and Gas Fitters, etc.; date organized, October 28th, 1899; membership, 10; average earnings per week, \$13.75; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 72; general cause of idleness, the winter season and depression in the building trades; President, J. Anguish, 30 North Bruce street, Brantford; Corresponding Secretary, F. Helm, 186 Sheridan street, Brantford, Ont.; nights of meeting, second and fourth Wednesday in every month.



**Name of Organization.**—Lodge No. 382, International Association of Machinists; total membership, 45; number of working hours first five days, 10; number of working hours Saturday, 9 in winter, 5 in summer; total number of machinists and helpers in this locality, 740; difference in wages between union and non-union men about \$1.50 per week, hours are the same; benefits, death, \$50; President, William Dickson, 40 King street, Brantford; Corresponding Secretary, G. F. Towers, 221 Darling street, Brantford; nights of meeting, second and fourth Wednesday of every month.

**Name of Organization.**—Bricklayers' and Masons' International Union; date organized, March 10, 1898; membership, 46; average earnings per week, \$9.00; number of working hours first five days, 9; Saturday, 5; average number of days idle per member, 110, as there is no work in cold weather; non-union bricklayers work 10 hours per day, wages not known; President, W. J. Kerr, 97 Wellington street, Brantford; Corresponding Secretary, Edward Fisher, 83 Victoria street, Brantford; nights of meeting, every Thursday.

**Name of Organization.**—Federal Labor Union, No. 7,370, A. F. of L.; date organized, 1898; membership, 75; average earnings per week, \$8.50; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, 4 weeks; general cause of idleness, bad weather; total number of laborers in locality, 100; cash benefits, sickness, \$4.00 per week; the union maintains a reading room for the benefit of members; President, W. F. Llye, Brantford; Corresponding Secretary, Frank Donovan, 31 Colborne street, Brantford; nights of meeting, second and fourth Friday of every month.

#### BROCKVILLE.

**Name of Organization.**—Lodge No. 208, Brotherhood of Railroad Trainmen; date organized 1886; membership, 48; average earnings per week, \$14.00; number of working hours first five days and Saturday, 10 hours or 100 miles; total number employed at this business in this locality, about 75; cash benefits, sickness, \$3.00 per week; at death or disability the Brotherhood of Railroad Trainmen pays to members \$1,200; Grand Trunk Railway pays according to insurance from \$250 to \$2,000. We think the superannuation benefit would be a great benefit; Master, J. H. Kelly, Brockville, Ont.; Corresponding Secretary, Charles Keer, Brockville; nights of meeting, first Monday and third Sunday in every month.

**Name of Organization.**—Federal Labor Union (Laborers'); date organized, August 31st, 1900; membership, 20; average earnings per week, \$7.50 to \$9.00; number of working hours first five days, 10; number of working hours Saturday, 9 and 10; average number of days idle per member during year, 125; cause of idleness, lack of work in the winter; President, W. H. Boon, Brockville; Corresponding Secretary, E. A. Clement, Box 81, Brockville; nights of meeting, first and third Wednesday in every month.

**Name of Organization.**—International Typographical Union, No. 393; date organized, September 7, 1900; membership, 14; average earnings per week, \$10; number of working hours first five days, 9; number of working hours Saturday, 9; total number employed at this calling in locality, 14; President, L. E. Murphy, Brockville; Corresponding Secretary, S. W. Bell, Box 100, Brockville; nights of meeting, first Monday of every month.

#### CHAPLEAU.

**Name of Organization.**—Brotherhood of Locomotive Engineers, Div. 319; date organized, May, 1887; membership, 21; average earnings per week, \$35.00; total number of locomotive engineers in locality, 25: do you carry on any special work for members, such as evening classes, etc.? Yes, instruction is given at lodge meetings in matters pertaining to our calling; President, Ernest M. Cryer, Chapleau; Corresponding Secretary, J. D. McAdam, Chapleau; nights of meeting, first and third Monday of every month.

## COLLINGWOOD.

Name of Organization.—United Brotherhood of Carpenters and Joiners; date organized, July, 1900; membership, 20; average earnings per week, \$10.50; number of working hours first five days, 10; number of working hours Saturday, 10; average number of days idle per member during year, 25; general cause of idleness, bad weather and lack of work; number of carpenters and joiners in this vicinity, about 130; difference in wages between union and non-union men is 10c per day; cash benefits, death, \$400; it is intended, however, to establish other benefits as soon as the union grows stronger; President, W. J. Reid, Collingwood; Corresponding Secretary, J. V. Buffy, Collingwood, Ont.; nights of meeting, second and fourth Thursday in every month.

Name of Organization.—Federal Labor Union (Laborers); date organized, May 1st, 1901; membership, 20; average earnings per week, \$7.50; number of working hours first five days, 10; number of working hours Saturday, 10; average number of days idle per member during year, 70 to 80; general cause of idleness, mills closing, steam boats tying up for the winter, and a general shortage all round; total number employed in this locality, 350 to 450; President, N. F. Highley, Collingwood; Corresponding Secretary, Albert Houghton, Collingwood; nights of meeting, second and fourth Wednesday in every month.

## DUNDAS.

Name of Organization.—Lodge No. 69, International Association of Machinists; date organized, March 16th, 1900; membership, 40; average earnings per week, \$10.50; number of working hours first five days, 10 1-2; number of working hours Saturday, 5; total number employed at this calling in locality, 99, not including apprentices; no union man receives less than 16c per hour, but some of the non-union men get only 13c per hour, the hours of labor are the same; cash benefits, sickness, \$3.00 per week; death, \$50.00; President, J. W. Dickson, Box 98, Dundas; Corresponding Secretary, William MacGregor, jun., Box 203, Dundas; nights of meeting, first and third Saturday in every month.

Name of Organization.—Amalgamated Woodworkers' International Union, No. 128. date organized, June 9th, 1900; average earnings per week, \$8.25; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 20; general cause of idleness, Saturday half holidays in the summer, stock-taking, repairing and public holidays; total number of woodworkers in locality, 35; there is no difference in the wages or hours of labor between union and non-union men; cash benefits, sickness, \$3.00 per week; death, \$75.00; total disability, \$250.00; President, William Ball, Dundas; Corresponding Secretary, Samuel Paterson, Dundas; nights of meeting, every alternate Friday.

## FORT WILLIAM.

Name of Organization.—Div. No. 243, Brotherhood of Locomotive Engineers; date organized, about 1884; membership, 16; number of engineers in locality, 26; cash benefits paid by Brotherhood, death, \$750 to \$4,000; President, William Blennerhassett, Fort William; Corresponding Secretary, John Whitehurst, Box 157, Fort William; nights of meeting, every Tuesday.

Name of Organization.—Lodge No. 309, International Association of Machinists; date organized, November 25th, 1900; membership, 12; average earnings per week, \$14; number of working hours first five days, 10; number of working hours Saturday, 5 from May 1st to October 1st; 9 the remainder of the year; average number of days idle per member during year, 7; although last winter we were idle 10 days during the Christmas season on account of the dullness of business, and we were also on short time from December to April, that is, 7 1-2 hours per day; total number of machinists and fitters in locality, 13 journeymen, 5 apprentices; there is some difference here in the wages

and hours of labor, although it is not due to men not being members of the union, the hours of labor of the employees of the Canadian Northern Railway are at present 60 per week, and of the Canadian Pacific Railway, 55 per week, the latter railway pays 27c per hour to machinists, the Canadian Northern, 26c, while elsewhere the rate is 25c per hour; there is a library at the C. P. R. at Fort William, where the latest journals and the daily papers are open to members; President, James Booker, McDonald street, Fort William, Ont.; Corresponding Secretary, H. C. Carvell, Cumberland street, Port Arthur, Ont.; nights of meeting, first and third Friday of every month.

## GALT.

Name of Organization.—Lodge No. 120, International Association of Machinists; date organized, November 25th, 1899; average earnings per week, \$8.50; number of working hours first five days, 10; number of working hours Saturday, 5; total number of machinists in locality, 200; membership of union, 50; cash benefits, sickness, \$2.00 per week; death, \$50; President, Thomas Barnard, Galt; Corresponding Secretary, S. McLean, Galt, Ont.; nights of meeting, every second Monday.

## GUELPH.

Name of Organization.—International Typographical Union, No. 391; date organized, July, 1900; membership, 26; average earnings per week, minimum, \$9.00; number of working hours first five days, 9; number of working hours Saturday, 8; total number of typesetters in locality, 28; difference in hours of labor between organized and unorganized workers, about 6 per week; cash benefits, death, \$65; President, A. A. Auderson, Guelph; Corresponding Secretary, O. R. Wallace, care The Mercury, Guelph; nights of meeting, first Thursday of every month.

Name of Organization.—Brussel Carpet Weavers' Union; date organized, August 10th, 1900; membership, 10; average earnings per week, \$10; number of working days first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 80; cause of idleness, lack of orders, caused, it is said, by the preferential tariff being favorable to English manufacturers; total number of carpet weavers in locality, male, 20; female, 5; there is no difference in wages or hours of labor between union and non-union workers; no cash benefits are paid, as the union is not yet strong enough financially, but it is the intention to establish some in the near future; President, John Branford, care the City Hotel, Guelph; Corresponding Secretary, Ernest Lea, care the Western Hotel, Guelph; nights of meeting, every other Friday.

Name of Organization.—Journeymen Tailors' International Union, No. 297; date organized, April, 1900; membership, male, 27; female, 42; total number of tailors in locality, about 100; all the merchant tailors of this city employ union labor, so that conditions are equal, outside of these there are just a few repairers, etc.; cash benefits, death or funeral benefit is graded according to the length of membership from \$40 to \$100; President, James Thomas, Guelph; Corresponding Secretary, Thomas H. Gordon, Box 294, Guelph; nights of meeting, first and third Monday of every month.

Name of Organization.—Iron Moulders' International Union, No. 212; date organized, <sup>1891</sup>—; membership, 66; number of working hours first five days, 10; number of working hours Saturday, 9; cash benefits, lack of employment dues are paid; sickness, \$5.00 per week; death, from \$150 to \$200; President, Arthur McCulloch, Guelph; Corresponding Secretary, C. W. Dawson, Box 208, Guelph; nights of meeting, second and fourth Tuesday of every month.

Name of Organization.—Amalgamated Wood Workers' International Union, No. 111; date organized, March 14, 1900; membership, 127; average earnings per week, \$7.50; number of working hours first five days, 10; number of working hours Saturday, some 9, but the greater number 10; average number of days idle per member during year, 40; general cause of idleness, slackness of business, stock taking, etc.; total number of wood workers in locality, 300; cash benefits, death, \$75.00; President, W. H. Readwin, Guelph;

Corresponding Secretary, J. Dandeno, Guelph; nights of meeting, first and third Tuesday of every month.

Name of Organization.—Bakers' and Confectioners' International Union; date organized, April 27, 1901; President, Clarence Liddell, Guelph; Corresponding Secretary, Andrew McGrath, Box 81, Guelph; nights of meeting, every second Saturday.

Name of Organization.—Bricklayers' and Masons' International Union; date organized, May, 1900; membership, 180; average earnings per week, \$16.50; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 100; general cause of idleness, no work in this line during the winter; total number of bricklayers, etc., in locality, 30; difference in wages between union and non-union members, 50c to 75c per day, and non members work 10 hours per day; President, Joseph Shaw, Guelph; Corresponding Secretary, Henry Thatcher, Guelph; nights of meeting, second and fourth Thursday of every month.

Name of Organization.—Carriage and Wagon Makers' International Union, No. 78; date organized, July, 1901; membership, 20; average earnings per week, \$9.00; female, \$4.00; number of working hours first five days, 10; number of working hours Saturday, 9; total number employed at this calling in locality, male, about 300; female, 13; President, J. H. Parker, 109 Neeve street, Guelph; Corresponding Secretary, Alfred L. Eisel, Guelph; nights of meeting, second and fourth Monday of every month.

Name of Organization.—Wine Clerks' Union; date organized, October 20, 1901; membership, 16; average earnings per week, \$8.00; President, James W. Williams, Commercial Hotel, Guelph; Corresponding Secretary, David Black, Western Hotel, Guelph; nights of meeting, first Sunday of every month.

Name of Organization.—Journeymen Barbers' International Union; date organized, June 4, 1901; membership, 12; average earnings per week, \$9.00; number of working hours first five days, 10; number of working hours Saturday, 14; total number of journeymen barbers in locality, 22; cash benefits, sickness, \$5.00 per week; death, \$60.00; President, August Mogk, Wellington Hotel, Guelph; Corresponding Secretary, W. H. Fairlay, Macdonell street, Guelph; nights of meeting, second Tuesday of every month.

#### HAMILTON.

Name of Organization.—United Brotherhood of Leather Workers on Horse Goods, L. U., No. 73; date organized, May, 1900; membership, 19; average earnings per week, \$6.50; number of working hours first five days, 10; number of working hours Saturday, 10; total number of leather workers in locality, between 40 and 50; there is no difference in wages or hours of labor between organized and unorganized workers; cash benefits, sickness, \$5.00 per week; death, funeral expenses; President, William Berry, Hamilton; Corresponding Secretary, Norman Creen, 109 Main street east, Hamilton; nights of meeting, second and fourth Tuesday of every month.

Name of Organization.—Amalgamated Society of Carpenters and Joiners; date organized, June 4th, 1860; membership, 28; average earnings per week, \$12.37 1-2; number of working hours first five days, 10; number of working hours Saturday, 5; difference between union and non-union workers is that union members get time and a half for all overtime, while non-unionists do not; cash benefits, lack of employment, \$2.50 per week; sickness, \$3 per week; death, \$60; superannuation, \$22.75 every three months; President, Robert Somerville, 485 Cannon street, east; Corresponding Secretary, William Disher, 80 Catherine street, north; nights of meeting, every alternate Friday.

Name of Organization.—International Brotherhood of Painters, Decorators and Paper Hangers, No. 205; date organized, June 26th, 1900; membership, 53; average earnings per week, \$9.00; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, 20; cause of idleness, cold weather and the slackness in the building trades in the winter; total number of painters, etc., in locality, 93; of which 53 are union men; difference in wages and hours of labor between union and non-union men is that unionists work 50 hours per week, and receive 20c and 22c per hour, while non-unionists work 60 hours per

week and receive only an average wage of 17 1-2c per hour; cash benefits, death, \$100 and \$150 on one and two years' membership, also \$50 on death of wife after one year's membership; permanent disability benefit of \$100 for one year's membership, and \$150 for two years' membership, subject to medical advice; President, James Smith, Queen street north, Hamilton; Corresponding Secretary, W. A. Turk, 519 James street north, Hamilton; nights of meeting, first and third Monday in the month; local union, No. 205, claims the distinction of being the only local, so far as is known, which is in possession of and uses a union label of their own design in Canada in the painting trade.

**Name of Organization.**—Cigarmakers' International Union, No. 55; date organized, September 12th, 1865; membership, male, 204; female, 5; average earnings per week, \$10.00; number of working hours first five days, 8; number of working hours Saturday, 4; average number of days idle per member during year, 14; general cause of idleness, stock-taking; total number of cigar makers in locality, 209, and all are members of the union; cash benefits, lack of employment, \$3.00 per week; sickness, \$5.00 per week, death, \$550; President, A. LaFrance, 56 Chatham street, Hamilton; Corresponding Secretary, Thomas O'Dowd, P.O. Box 35; nights of meeting, the second Wednesday of the month.

**Name of Organization.**—Boot and Shoe Dayworkers' International Union, No. 232; date organized, November 10th, 1900; membership, 42; average earnings per week, \$9.00; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 6; cause of idleness, stock-taking; cash benefits, sickness, \$3.00 per week; death, \$50.00; President, E. W. A. O'Dell, 189 Cannon street, Hamilton; Corresponding Secretary, Arthur B. Snider, 83 Jackson street west, Hamilton; nights of meeting, first Thursday of every month.

**Name of Organization.**—Boot and Shoe Workers' International Union, No. 234 (Shoe Fitters); date organized, Nov. 24th, 1900; membership, male, 1; female, 86; average earnings per week, male, \$18.00; female, \$3.00 per week; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 40; general cause of idleness, stock-taking and depression during sample time; total number employed at this business in locality, 103 (this is the number in the stitching room only); there are no non-union shoe workers in Hamilton, as there is only one shoe manufacturing factory in the city; cash benefits, sickness, \$3.00 per week; death, \$50.00, if a member of the organization for seven months in good standing, and \$100 after two years' membership, if in good standing; President, Miss Annie McDonald, 232 Duke street, Hamilton; Corresponding Secretary, Miss Annie Gibson, 149 Hess street north, Hamilton; nights of meeting, the fourth Thursday of every month.

**Name of Organization.**—International Association of Machinists, Lodge No. 414; date organized, March 1st, 1900; membership, 75; average earnings per week, \$11.00; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 40, when the shops were shut down for lack of work; total number of machinists in locality, 250; difference in wages between union and non-union men is 10c to 20c per day in favor of the association; dues are paid in case of lack of employment or sickness, and at death \$50; President, William Kerus; Corresponding Secretary, R. T. Land, 173 Oak avenue, Hamilton; nights of meeting, alternate Fridays.

**Name of Organization.**—Bartenders' International Union, No. 197; date organized, October 29th, 1899; membership, 51; average earnings per week, \$9.00; number of working hours first five days, 8; number of working hours Saturday, 10; total number of bartenders in locality, 80; difference in wages between union and non-union workers, from \$5 to \$10 per week; President, M. Meston, New American Hotel, King street west, Hamilton; Corresponding Secretary, A. Spellessay, 103 King street east, Hamilton; nights of meeting, first and third Sunday of every month.

**Name of Organization.**—Garment Workers' International Union, No. 124; date organized, April, 1898; membership, 23; average earnings per week, \$11.00; number of working hours first five days, 10; number of working hours Saturday, 5, with full day's

pay; total number of garment workers in locality, male, about 116; female, about 42; President, Christian Kruss, 64 Catherine street, south, Hamilton; Corresponding Secretary, Cyrus P. Olliver, 145 Grant avenue, Hamilton; nights of meeting, fourth Wednesday of every month.

**Name of Organization.**—Div. No. 107, Amalgamated Association of Street Railway Employees of America; date organized, April 9th, 1899; average earnings per week, \$9.00; number of working hours first five days, 10; number of working hours Saturday, 10; total number of street railway employees in locality, 130; difference in wages and hours of labor between union and non-union employees, from 2 to 4 hours, and from 12 1-2c to 13c per day; cash benefits, death, \$75.00, there is no superannuation fund, but a voluntary subscription of a sum voted out of the funds is given to a member in distress; President, John W. Ogilvie, 17 Oak avenue, Hamilton; Corresponding Secretary, Albert Webber, 6 Sanford avenue, Hamilton; nights of meeting, first and third Saturdays.

**Name of Organization.**—Bricklayers' and Masons' International Union, No. 1, of Ontario; date organized, 1881; membership, 120; average earnings per week, \$8.25; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, 167; cause of idleness, rain and bad weather, and sometimes dullness of trade; total number of bricklayers and masons in locality, 120; cash benefits, death, \$100; there is no special work carried on for the members, but the hall in which meetings are held is open every day during the winter, and members may there have access to the daily papers and the trade journals; President, John Seaman, 28 West avenue north, Hamilton; Corresponding Secretary, William J. Whitelock, 39 West avenue, north, Hamilton; nights of meeting, every Thursday night.

**Name of Organization.**—Local Union, No. 167, United Association of Plumbers, Steam and Gas Fitters; date organized, July, 1899; membership, 40; average earnings per week, \$12.00; number of working hours first five days, 10 for 6 months and 8 for the other 6 months; number of working hours Saturday, 5 from May 1st to October 31st; total number of plumbers, etc., in locality, 41; difference in wages between union and non-union men, 25c per day; cash benefits, sickness, \$3.00 per week, death, amount not stated; President, Frank Drake, 106 Gibson avenue, Hamilton; Corresponding Secretary, A. W. Harris, 28 Smith avenue, Hamilton; nights of meeting, first and third Wednesday.

**Name of Organization.**—Hamilton Teamsters' Association; date organized, June 1st, 1899; membership, male, 93; female, 3; average earnings per week, \$12.00; female, \$12.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle, not stated, but there is more work in summer than in winter on account of the character of the work; total number of teamsters in locality, over 300; President, J. H. Larkin, 612 Barton street east, Hamilton; Corresponding Secretary, J. H. R. Taylor, 41 King street, Hamilton; nights of meeting, second and fourth Thursday.

**Name of Organization.**—Journeyman Horsehoers' International Union, No. 72 membership, 18; average earnings per week, \$9.60; number of working hours first five days, 10; number of working hours Saturday, 9; total number employed at this calling in locality, 57; difference in wages between organized and unorganized workers, \$3.00 per week; President, B. H. Lewis, 28 Market street, Hamilton; Corresponding Secretary, C. E. Groves, 40 York street, Hamilton; nights of meeting, second and fourth Wednesdays.

**Name of Organization.**—Journeyman Bakers' and Confectioners' International Union, No. 79; date organized, June 2nd, 1900; membership, 35; average earnings per week, \$11.00; number of working hours first five days, 10; number of working hours Saturday, 10 to 12; average number of days idle per member during year, 5; cause of idleness, dullness of trade in winter; total number of bakers, etc., in locality, 35; cash benefits, \$5.00 per week; death, \$50 to \$100; President, William McLure, Hamilton; Corresponding Secretary, Ernest Kelly, 310 Robert street, Hamilton; nights of meeting, every Saturday.

**Name of Organization.**—Tobacco Workers' International Union; date organized, August 24th, 1899; membership, male, 112; female, 51; average earnings per week,

male, \$9.00; female, \$4.00; number of working hours first five days, 10 in summer, 9 1-2 in winter; number of working hours Saturday, 5 in summer, 7 1-2 in winter; average number of days idle per member during year, from 40 to 60; general cause of idleness, stock-taking for two weeks, warm, wet weather and too many hands for the amount of sales: total number of tobacco workers in locality, male, 120; female, 57; cash benefits, strike, \$3.00 per week; sickness, \$3.00 per week; death, \$50.00; President, W. Wheaton, 190 Hess street north, Hamilton; Corresponding Secretary, D. McLean, 7 Richmond street, Hamilton; nights of meeting, second and fourth Monday in every month.

Name of Organization.—United Brotherhood of Carpenters and Joiners; date organized, January, 1882; membership, 50; average earnings per week, \$12.37; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, about 90; cause of idleness, the severity of the winter stops the building trade for the winter months; total number of carpenters in locality, about 200; difference in wages and hours of labor between organized and unorganized workers, from 50c to 75c per day; cash benefits, death, \$200.00; disability, \$400.00; President, E. Hancock, 389 McNab street north, Hamilton; Corresponding Secretary, William Brass, 176 Market street, Hamilton; nights of meeting, first and third Thursday of every month.

Name of Organization.—Journeyman Tailors' International Union, No. 149; date organized, 1892; membership, male, 60; female, 15; average earnings per week, male, \$10.25, female, \$5.00; number of working hours first five days, 10; number of working hours Saturday, 12; average number of days idle per member during year, 45; cause of idleness, slackness of trade between the seasons; total number of journeymen tailors in locality, male, 80; female, 45; difference in wages and hours of labor between union and non-union workers, non-union workers, male and female, get about 15 per cent. less; cash benefits, death, \$100.00; the international organization has under its consideration the possibility of making provision in the near future for "out of work," "sick" and "superannuation" benefits, on the same principle as the International Cigar-makers' Union; do you carry on any special work for members? yes; discussions on social and economic questions are held; President, John Lord, 80 Gore street, Hamilton; Corresponding Secretary, Hugh Robinson, 42 James street north, Hamilton; nights of meeting, last Monday in every month.

Name of Organization.—Iron Moulders' International Union, No. 26; date organized, 1862; membership, 310; average earnings per week, \$13.50; number of working hours first five days, 10; number of working hours Saturday, 10; average number of days idle per member during year, 75; cause of idleness, the unjust laws which make it legal for the capitalists to rob the producer of his purchasing power; total number of iron moulders in locality, 310; all the moulders in the locality are members of the organization; cash benefits, sickness, \$5.00 for 13 weeks; death, \$250.00; President, Thomas H. Church, corner Pearl and Peter streets, Hamilton; Corresponding Secretary, William Hugo, 287 Mary street, Hamilton; nights of meeting, every Wednesday evening.

Name of Organization.—Amalgamated Association of Sheet Metal Workers, No. 61; date organized, August, 1899; membership, 40; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 5; total number of sheet metal workers in locality, 75; difference in wages between organized and unorganized workers, 2 1-2c per hour; do you carry on any special work for members? yes; trade instruction; President, John Henderson, Barton street east, Hamilton; Corresponding Secretary, W. H. Dennis, 270 East avenue north, Hamilton; nights of meeting, second and fourth Friday of every month.

Name of Organization.—Wood Workers' International Union, No. 37; date organized, June 5th, 1900; membership, 26; average earnings per week, \$9.13 1-2; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, about 27; cause of idleness, slack season and holidays; cash benefits, death, \$75.00; President, H. H. Harper, 298 Jackson street west, Hamilton; Corresponding Secretary, Charles Middleton, 81 Gore street, Hamilton; nights of meeting, first and third Tuesday of every month.

Name of Organization.—Metal Polishers', Buffers' and Platers' International Union, No. 26; membership, 13; average earnings per week, \$10.00; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 100, on account of the works being closed down for that period; total number of polishers, etc., in locality, 60; cash benefits, death, \$100; President, Henry Murdock, 218 Barton street east, Hamilton; Corresponding Secretary, J. Shower, 372 Cannon street east, Hamilton; nights of meeting, first and third Wednesday of every month.

Name of Organization.—Brotherhood of Locomotive Firemen, Lodge 151; date organized, December 17, 1893; membership, average earnings per week, \$12.50; number of working hours first five days, 12 to 15; number of working hours Saturday, 12 to 15; total number of firemen in locality, 80; cash benefits, death, \$400, \$500, \$1,000, \$1,500; if a member is disabled so as to be unable for work he receives his insurance; nights of meeting, first and third Sunday of every month.

Name of Organization.—Federal Labor Union, No. 10 (City Fire Department); date organized, January, 1900; membership, 38; average earnings per week, \$12.00; total number of firemen in locality, 38; cash benefits, death, \$50; President, R. Wilson, 224 Canada street, Hamilton; Corresponding Secretary, Robert Aitchison, 52 George street, Hamilton; nights of meeting, first Monday of every month.

Name of Organization.—Journeymen Barbers' International Union; date organized, October 20, 1900; membership, 55; average earnings per week, \$9.00; number of working hours first five days, 10; number of working hours Saturday, 14; total number of barbers in locality, 60; cash benefits, sickness, \$5.00 per week; death, \$60.00; President, Harry Halford, 59 South John street, Hamilton; Corresponding Secretary, James L. Stichel, 131 West Stuart street, Hamilton; nights of meeting, first and third Monday of every month.

Name of Organization.—International Typographical Union, No. 129; date organized, February, 1869; membership, 80; number of working hours first five days, 9 hours, 48 minutes; number of working hours Saturday, 5; total number employed at our calling in locality, 80; cash benefits, death, \$65; President, George H. Richmond, Grippen & Kidner's job office, King William street, Hamilton; Corresponding Secretary, John J. Burns, 280 John street north, Hamilton; nights of meeting, second Saturday of every month.

Name of Organization.—Broom Makers' International Union, No. 9; date organized, May 15, 1900; membership, 14; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 7; general cause of idleness, stock-taking; total number of broom makers in locality, 20; difference in wages between union and non-union members, about 10 per cent.; President, E. Norton, 60 Wentworth street north, Hamilton; Corresponding Secretary, F. Vallie, 30 Wood street west, Hamilton; nights of meeting, second Monday of every month.

#### KINGSTON.

Name of Organization.—Federal Labor Union, No. 7,448 (Builders' Laborers); date organized, May 12th, 1899; membership, 80; average earnings per week, \$9.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 118; general cause of idleness, no work in the cold weather; total number employed at this calling in this locality, 80; President, John Burns, 65 Queen street, Kingston; Corresponding Secretary, John Donovan, 97 Bagot street, Kingston; nights of meeting, first and third Wednesday of every month.

Name of Organization.—United Association of Journeymen Plumbers, Steam and Gas Fitters, No. 221; date organized, August, 1900; membership, 25; average earnings per week, \$12.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 30; cause of idleness, dulness of trade in the winter; total number of plumbers, etc., in locality, 25, and all are members of the union; cash benefits, none as yet, but we are working out a plan to



pay benefits in case of lack of employment, sickness, death and superannuation; President, James J. Bruce, Kingston Station, Kingston; Corresponding Secretary, John Conley, 143 Pine street, Kingston; nights of meeting, first and third Tuesdays of every month.

Name of Organization.—Iron Molders' International Union, No. 252; date organized, February 26th, 1899; membership, 20; average earnings per week, \$12.10; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 50; average number of days idle per member during year, 50; total number of iron molders in locality, 20, all being members of the International organization; cash benefits, lack of employment, members are not obliged to pay any dues to the union while out of employment; sickness, \$5.00 per week; death, \$100 to \$200; President, Chas. Rutherford, Brock street, Kingston; Corresponding Secretary, William Varney, 27 King street, Kingston; nights of meeting, first and third Monday of every month.

Name of Organization.—Branch No. 10, Masons', Bricklayers and Plasterers' International Union; date organized, April 5th, 1900; membership, 57; average earnings per week, \$12.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 130; general cause of idleness, frost and unfavorable weather, and work coming late in the spring; total number of masons, etc., in locality, 60; difference in wages and hours of labor between organized and unorganized workers, union men work 9 hours per day, non-union men 10, union men receive 33 1-3c per hour, non-union men 25c per hour; there is a reading room for the benefit of members; President, William Clugston, 394 Brock street, Kingston; Corresponding Secretary, Joseph Wilson, Rideau and Bay streets, Kingston; nights of meeting, second and fourth Tuesday of the month.

Name of Organization.—Journeymen Tailors' International Union, No. 263; date organized, April 29th, 1901; membership, male 18, female 27; average earnings per week, male \$8 to 10, female \$4 to \$6; number of working hours first five days, 10; number of working hours Saturday, 10; total number of journeymen tailors in locality, male 29, female 75; cash benefits, death, \$25 after six months' membership, and the payment of six months' dues, with a gradual increase after stated periods of time; President, Wm. James, 203 University avenue, Kingston; Corresponding Secretary, William Bucknell, 402 Montreal street, Kingston; nights of meeting, every Monday night, trying to get in new members.

Name of Organization.—United Brotherhood of Painters, Decorators and Paper-hangers, No. 114; date organized, May 24th, 1900; membership, 34; average earnings per week, \$8.00; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 90; general cause of idleness, dull times; total number of painters, etc., in locality, 50; cash benefits, death, \$150.00; President, W. J. Savage, 18 Vine street, Kingston; Corresponding Secretary, Frank Gorgett, 12 Redan street, Kingston; nights of meeting, first and third Mondays.

Name of Organization.—Laborers' Protective Union, No. 8,663; date organized, September 15th, 1900; membership, 67; average earnings per week, \$6.00 to \$8.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 90; general cause of idleness, scarcity of work during the winter months; total number of laborers, etc., in locality, from 690 to 700; difference in wages and hours of labor between organized and unorganized workers, union men work 9 hours and receive \$1.25 and \$1.50 per day, while non-union men work 10 hours for \$1.00 per day; cash benefits, lack of employment, whatever the union can afford to pay; sickness, no stated benefit; death, members are buried at the expense of the union; there is no superannuation fund, but the union will do what it can for members as far as the funds allow; President, J. O. Saunders, 159 Nelson street, Kingston; Corresponding Secretary, Walter S. Shufflebotham, 466 Montreal street, Kingston; nights of meeting, first and third Saturdays of every month.

Name of Organization.—Amalgamated Sheet Metal Workers' International Association, No. 117; date organized, August 24th, 1900; membership, 19; average earnings

per week, \$11.50; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 30; general cause of idleness, slackness of trade; total number of sheet metal workers in locality, 23; all are union men except the foremen; President, William Patterson, cor. King and Centre streets, Kingston; Corresponding Secretary, Charles Harris, 370 Bagot street, Kingston; nights of meeting, second and fourth Friday of every month.

Name of Organization.—Amalgamated Association of Street Railway Employees; date organized, May 31st, 1900; membership, 29; average earnings per week, \$6.50; number of working hours first five days, 15; number of working hours Saturday, 15; total number of street railway employees in locality, 29; difference in wages and hours of labor between organized and unorganized workers, 25c per day; President, Peter Ryan, Ellis street, Kingston; Corresponding Secretary, W. A. McCann, 27 John street, Kingston; nights of meeting, first and third Sundays.

Name of Organization.—Amalgamated Society of Engineers, Branch No. 560; date organized, 1850; membership, 11; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member per year, 36; general cause of idleness, suspension of works; total number employed as engineers, machinists, fitters, etc., in locality, ; difference in wages and hours of labor between organized and unorganized workers about 10 per cent, difference in wages in favor of organized workers; cash benefits, lack of employment, \$2.50 per week; sickness, \$2.50 per week; death, \$60; superannuation, from \$1.75 to \$2.50 per week, according to the length of time in the society; President, Richard Bunt, cor. of North and Bagot streets, Kingston; Corresponding Secretary, John Lovick, 152 University avenue, Kingston; nights of meeting, every Wednesday.

Name of Organization.—Limestone City Typographical Union, No. 204; date organized, 1886; membership, 25; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 9; total number employed at this calling in locality, 25; difference in wages and hours of labor between union and non-union men, none, as there are no non-union printers in Kingston; cash benefits, death \$65; President, Edward Ball, 364 Barrie street, Kingston; Corresponding Secretary, Samuel Carson, 220 University avenue, Kingston; nights of meeting, last Thursday of every month.

Name of Organization.—Ironworkers' and Helpers' International Union, No. 8,412; date organized, May 10, 1900; membership, about 185; average earnings per week, \$8.25; number of working hours first five days, 10; number of working hours Saturday, 5 in the summer and 9 in winter complete's a day's pay; total number of ironworkers and helpers in locality, about 200; difference in wages between union and non-union men, 10c per day; cash benefits, sickness, exemption from dues, death, a reasonable allowance: "our monthly dues are so small that as yet we cannot definitely grant benefits, but we are making every effort to benefit and study the welfare of our organization, according to our funds"; do you carry on any special work for members, such as reading room, etc? Yes, and the various rooms are comfortably furnished to meet the demands of our workmen; President, John Flanigan, corner William and Barrie streets, Kingston; Corresponding Secretary, Albert J. Meredith, 52 Division street, Kingston; nights of meeting, second and fourth Wednesday of every month.

Name of Organization.—United Brotherhood of Carpenters and Joiners; date organized, June 26, 1899; membership, 68; average earnings per week, \$12.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 60; general cause of idleness, cold and bad weather; total number of carpenters, etc., in locality, 100; difference in wages between union and non-union members, union men receive \$2.00 per day, non-union men \$1.25 per day; cash benefits, sickness \$3.00 per week, death \$200; President, Nat. Smith, Collingwood street, Kingston; Corresponding Secretary, H. Sallsbury, Barriefield, Ont.; nights of meeting, second and fourth Monday of every month.

## LINDSAY.

Name of Organization.—Brotherhood of Railroad Trainmen, Lodge No. 308; date organized, May, 1889; membership, 65; total number of trainmen in locality, 80 to 90; cash benefits, sickness \$3.00 per week, death from \$250 to \$300. "Do you carry on any special work for members?" "The Grand Trunk has a reading room, of which trainmen have the use." Master, William Hammill, Lindsay; Corresponding Secretary, H. M. Lockwood, Lindsay; nights of meeting, second and fourth Sunday.

Name of Organization.—Brotherhood of Locomotive Firemen, Lodge No. 136; membership, 30; average earnings per week, \$11.00; number of working hours first five days, sometimes 16 hours a day for seven days, when very busy; total number of firemen in locality, 34; cash benefits, death, class insurance, Master, W. Chambers, Lindsay; Corresponding Secretary, W. Dolby, Lindsay; nights of meeting, alternate Sundays.

## LONDON.

Name of Organization.—Brotherhood of Painters, Decorators and Paperhangers, No. 97; date organized, July 23rd, 1895; average earnings per week, \$10.80; number of working hours first five days, 9; number of working hours Saturday, 8; total number of painters, etc., in locality, about 75; difference in wages between union and non-union men, 2c to 5c per hour; cash benefits, death \$50 to \$150; President, W. F. Graham, 528 South street, London, Corresponding Secretary, J. W. McCandless, 121 Albert street, London; nights of meeting, second and fourth Thursdays of every month.

Name of Organization.—Amalgamated Society of Carpenters and Joiners; date organized, June, 1860; membership, 30; average earnings per week, \$10.50; number of working hours first five days, 9; number of working hours Saturday, 7½; average number of days idle per member during year, not known; general cause of idleness, dulness of trade, and not much building going on in the severe cold weather; total number of carpenters in locality, about 250 to 300; cash benefits, lack of employment \$2.50 per week, sickness \$3.00 per week, death \$60, superannuation \$2.00 per week after being a member for 25 years, and over 50 years of age, and unable to earn half of average wages; President, J. H. Ward, Albion street west, London; Corresponding Secretary, John Lanton, 379 Waterloo street, London; nights of meeting, alternate Wednesdays.

Name of Organization.—Cigar Makers' International Union, No. 278; date organized, January 1st, 1899; membership, male 147, female 10; average earnings per week, male \$7.00, female \$5.00; number of working hours first five days 8; number of working hours Saturday, 6; average number of days idle per member during year, 14; general cause of idleness, stock-taking by the firms; total number of cigar makers in locality, male 347, female 210; difference in wages and hours of labor between union and non-union workers, male \$1.00 per week, female \$1.50 per week, union workers have an eight-hour day, while the non-union workers have a ten-hour day; cash benefits, lack of employment \$3.00 per week up to \$54 per year, sickness \$5.00 per week for 13 weeks; death \$50, after one year's membership, \$200 after five years' membership, \$350 after ten years' membership, \$550 after fifteen years' membership; President, James Walsh, 155 Albert street, London; Corresponding Secretary, Chas. J. Meaden, 186 Kent street, London; nights of meeting, first and third Thursdays of every month.

Name of Organization.—Bricklayers' and Masons' International Union; date organized, 1863; total membership, 58; average earnings per week, \$11.00; number of working hours first five days, 8; number of working hours Saturday, 7; average number of days idle per member per year, 120; general cause of idleness, bad weather and lack of work; total number of bricklayers, etc., in locality, 60; difference in wages and hours of labor between organized and unorganized workers, 25c per day; cash benefits, death \$50; President, J. Clark, 400 Clarence street, London; Corresponding Secretary, H. Rymill, 491 Oxford street, London; nights of meeting, every alternate Tuesday.

Name of Organization—International Brotherhood of Electrical Workers; date organized, April 8, 1900; President, William Cook, 38 Miles street, London; Corresponding Secretary, D. R. Marshall, 758 Richmond street, London; nights of meeting, first and third Friday of every month.

Name of Organization.—Broom Makers' International Union, No. 74; date organized, September 30, 1900; membership, 25; total number of broom makers in locality, 27; President, William Rae, 11 Oxford street, London; Corresponding Secretary, Charles Eggett, 721 Princess avenue, London; nights of meeting, first and third Tuesday of every month.

Name of Organization.—Brotherhood of Locomotive Firemen, Lodge No. 117; date organized, 1872; membership, 48; average earnings per week, \$11.45; average number of days idle per member during year, 6; general cause of idleness, slackness in traffic, either passenger or freight; total number employed as firemen in locality, about 60 on the Grand Trunk Railway; cash benefits, death \$15, disability \$15. "Do you carry on any special work for members?" "There is an educational club with rooms supported jointly by engineers and firemen;" nights of meeting, first Tuesday evening and third Sunday afternoon of every month.

Name of Organization.—Order of Railway Conductors, Div. 16; date organized, —; membership, 41; average earnings per week, \$20; cash benefits, death \$1,000 to \$3,000, according to class; nights of meeting, first and third Sunday of every month.

#### MIDLAND.

Name of Organization.—Longshoremen's International Union, No. 199; date organized, August 2nd, 1900; membership, 130; average earnings per week, \$10.00 to \$12.00; number of working hours first five days and Saturday, "we work to best advantage to give the boats quick despatch"; average number of days idle per member during year, —; general cause of idleness, close of navigation, when the members go to the lumber camps, or cut wood; difference in wages and hours of labor between union and non-union workers, no non-union workers on the boats; common labor at saw-mills, \$1.25 per day of 10½ hours; corporation or other works, \$1.50 per day of 10 hours; cash benefits, in case of accident a subscription is taken up for the benefit of the injured member; "Do you carry on any special work for members, such as evening classes, etc.?" "No, in the summer a large number are working at nights, and in winter they are away in the lumber camps; no meetings of the union are held after November; President, William Clegg, Midland; Corresponding Secretary, D. A. Hall, Midland; nights of meeting, second and fourth Monday of the month.

#### NORTH BAY.

Name of Organization.—Brotherhood of Railroad Trainmen, Lodge No. 249; date organized, 1887; membership, 80; average earnings per week, \$15; number of working hours first five days, 8; number of working hours Saturday, —; average number of days idle per member during year, 100; general cause of idleness, waiting turn out; total number of trainmen in locality, 100; Master, John Russell, North Bay; Corresponding Secretary, D. Dewan, North Bay; nights of meeting, second and fourth Thursday.

Name of Organization.—International Association of Machinists, Lodge No. 413; date organized, July, 1900; membership, 13; average earnings per week, \$12.60; number of working hours first five days, 10; number of working hours Saturday, 10; total number of machinists in locality, 8; cash benefits, death, \$50.00; President, Fred. Ronaldson, North Bay; Corresponding Secretary, Thomas Hinds, North Bay; nights of meeting, first and third Monday.

Name of Organization.—Order of Railway Conductors, No. 242; date organized, March 13th, 1889; membership, 19; average earnings per week, \$22.00; number of working hours first five days, subject to duty at all times, Sundays included; cash benefits, death \$1,000 to \$5,000; Chief Conductor, S. N. Berry, North Bay; Corresponding Secretary, H. A. Washburn, North Bay; nights of meeting, first and third Monday of every month.

Name of Organization.—Brotherhood of Locomotive Engineers, Div. 308; date organized, —; membership, 33; average earnings per week, \$20; total number of engineers in locality, 50; cash benefits, death \$750, \$1,500, \$3,000 and \$4,000; Chief Engineer, Oscar Barnhart, North Bay; Corresponding Secretary, James Devine, North Bay; nights of meeting, first and third Monday of every month.

#### OTTAWA.

Name of Organization.—United Brotherhood of Carpenters and Joiners, No. 674; Date organized, October 3rd, 1900; membership, 50; average earnings per week, \$15; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 30 to 40; general cause of idleness, little doing in trade in the winter months; total number of carpenters, etc., in locality, 400 to 500; difference in wages and hours of labor between union and non-union workers, none as yet, the organization being so recent; cash benefits, death \$100 to \$200, total disability benefit of from \$100 to \$200, according to the length of membership, also a wife's funeral benefit of from \$25 to \$50; no special work as yet is carried on for members, but it is the intention of the union to do something in this line during 1901; President, William G. Adamson, 156 Friel street, Ottawa; Corresponding Secretary, I. E. Cross, 486 Gladstone avenue, Ottawa; nights of meeting, first and third Monday of every month.

Name of Organization.—Letter Carriers' Assembly, K.O.L.—Date organized, March 4th, 1901; membership, 24; average earnings per week, paid monthly, from \$30 to \$50; number of working hours first five days, irregular; number of working hours Saturday, irregular; total number of letter carriers in locality, 41; President, M. F. Fagan, Hintonburg, Ont.; Corresponding Secretary, M. A. Demers, 47 St. Andrew street, Ottawa; nights of meeting, first Tuesday of every month.

Name of Organization.—United Association of Plumbers, Steam and Gas Fitters, No. 71; date organized, 1888; membership, 59; average earnings per week, \$13.50; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 60; total number of plumbers, etc., in locality, 59; cash benefits, lack of employment, \$10, if needed; sickness, \$10; death, \$59; President, M. O'Connell, 204 Somerset street east, Ottawa; Corresponding Secretary, Joseph Hurtbouse, 289 St. Andrew street, Ottawa; nights of meeting, second and fourth Monday of every month.

Name of Organization.—Builders' Laborers' International Protective Association.—date organized, 1889; membership, 50; average earnings per week, \$9.50; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, 120; general cause of idleness, lack of work in the winter; difference in wages and hours of labor between union and non-union workers, 21c per day and four hours per week, in favor of union men; cash benefits, death \$50; President, J. Burroughs, 442 St. Patrick street, Ottawa; Corresponding Secretary, Thomas Rosborough, 426 Maria street, Ottawa; nights of meeting, second and fourth Thursdays of every month.

Name of Organization.—International Brotherhood of Bookbinders, No. 65—Date organized, September, 1900; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 5; total number of bookbinders in locality, male 60 to 65, female 150; President, F. W. Stewart, care J. Hope & Sons, Sparks street, Ottawa; Corresponding Secretary, A. F. Cottee, 257 Bolton street, Ottawa; nights of meeting, first Friday of every month.

Name of Organization.—Commercial Union (Clerks); date organized, 1891; membership, 100; average earnings per week, \$9.00; number of working hours first five days, 9; number of working hours Saturday, 13; total number of clerks in locality, male 250, female about 150; President, Napoleon Mercier, 263 Water street, Ottawa; Corresponding Secretary, Adolphe Leclerc, 277 Clarence street, Ottawa; nights of meeting, second and fourth Monday of every month.

Name of Organization.—International Printing Pressmen's Union, No. 5; date organized, January 20th, 1879; membership, 23; average earnings per week, vary very much, the union scale being \$13.00, but in the Government Printing Bureau printers receive \$14.50 per week, while some of the members of the union receive \$14.00, \$15.00 and \$16.00 per week; number of working hours first five days, 10; number of working hours Saturday, 4; President, W. P. Webb, 197 Slater street, Ottawa; Corresponding Secretary, Alfred K. Larden, 327 Bell street, Ottawa; nights of meeting, second Monday of each month.

Name of Organization.—International Typographical Union, No. 102; date organized, 1867; membership, male 299, female 2; average earnings per week, male \$13.00, female \$12.50; number of working hours first four days, 8½, Friday 9; number of working hours Saturday, 5; average number of days idle per member during year, 20; total number employed at this business in our locality, male 299, female 2; cash benefits, sickness \$4.00 per week; death, \$200; President, A. E. Sanderson, 206 Gloucester street, Ottawa; Corresponding Secretary, J. A. Murphy, 412 McLeod street, Ottawa; nights of meeting, first Saturday of every month.

Name of Organization.—Brotherhood of Locomotive Engineers; date organized, April 1st, 1895; membership, 59; average earnings per week, \$21.50; cash benefits: "Insurance in connection with our organization pays policies of \$4,500, \$3,000, \$1,500 and \$750 in case of death, loss of one or both eyes, and in case of loss of one or both hands or feet; nights of meeting, second and fourth Sunday of every month at 2 p.m.

Name of Organization.—Iron Molders' International Union, No. 280; date organized, October 8th, 1891; membership, 35; average earnings per week, \$13.20; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 26; general cause of idleness, slackness of trade; total number of iron molders in locality, 45; cash benefits, sickness \$5.00 per week, death \$100; President, John Thompson, 91 Cambridge street, Ottawa; Corresponding Secretary, Geo. Kirkpatrick, 73 Flora street, Ottawa; nights of meeting, second and fourth Wednesday of every month.

Name of Organization.—Journeymen Tailors' International Union, No. 143; date organized, 1893; membership, male 44, female 5; number of working hours first five days, 10 to 12; number of working hours Saturday, 10; total number of tailors in locality, male 100, female about 400; difference in wages between organized and unorganized workers, about 50 per cent.; cash benefits, \$40 to \$100; President, A. Larson, 82 Earncliffe avenue, Ottawa; Corresponding Secretary, E. Empey, 265 Clarence street, Ottawa; nights of meeting, first and third Mondays of every month.

Name of Organization.—Brotherhood of Railroad Trainmen; date organized, September 9th, 1887; membership, 84; cash benefits, death, three classes of insurance, \$400, \$800 and \$1,200; President, H. M. Sproule, 244 Concession street, Ottawa; Corresponding Secretary, William A. Perry, 580 McLaren street, Ottawa; nights of meeting, first and third Sunday.

Name of Organization.—Bakers' and Confectioners' International Union, No. 101; date organized, October 4th, 1900; membership, 94; average earnings per week, \$12.00; number of working hours first five days, "we are trying to do the work in 60 hours per week, or ten hours per day; total number of bakers, etc., in locality, about 150; difference in wages and hours of labor between organized and unorganized bakers, from \$3.00 to \$4.50 per week, and from two to three hours per day, since the union has been established: there is no special work carried on as yet for members, as nearly all work at night; President, C. Mair, 315 Nepean street, Ottawa; Corresponding Secretary, H. E. Sutton, Cummings Bridge, Ottawa; nights of meeting, first and third Saturday.

Name of Organization.—Journeymen Stone Cutters' International Association; date organized, March 10th, 1893; membership, 75; average earnings per week, \$18.00; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, 180; general cause of idleness, lack of work; total number of stone cutters in locality, 100; difference in wages and hours of labor between union and non-union workers, union men receive \$1.00 more per day

than the unorganized workers, and the latter work 60 hours per week, while union members work 50; cash benefits, death \$100; Corresponding Secretary, Arthur Kirk, 30 Second avenue, Ottawa; nights of meeting, second and fourth Wednesday of every month.

Name of Organization.—Bricklayers' and Masons' International, No. 7, of Ontario.—date organized, 1889; membership, 102; average earnings per week, \$10.00; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, between four and five months; general cause of idleness, winter, wet weather, etc.; total number of bricklayers, etc., in locality, from 120 to 130; difference in hours of labor between union and non-union workers, non-union men work 10 hours per day and 9 on Saturday; cash benefits are only paid when there is an authorized strike in progress, married men \$7.00 per week, unmarried men \$5.00 per week; President, H. McCullough, Queen street, Ottawa; Corresponding Secretary, K. E. McGuine, 310 Gloucester street, Ottawa; nights of meeting, every Thursday night.

Name of Organization.—Amalgamated Sheet Metal Workers' International Union, No. 11; date organized, May 13th, 1898; membership, 50; average earnings per week, \$10.50; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 30; general cause of idleness, dullness of trade and cold weather; total number of sheet metal workers in locality, 60; difference in wages and hours of labor between union and non-union men, one hour per day and about 15 per cent. in wages, in favor of union men; trade instruction is carried on by the union for the benefit of the members; President, A. J. Kelly, 216 Nepean street, Ottawa; Corresponding Secretary, F. A. Wood, 118 Emmett street, Ottawa; night of meeting, first and third Thursday of every month.

Name of Organization.—Brotherhood of Railroad Trainmen, Lodge 185; date organized, April 7, 1895; membership, 110; average earnings per week, \$12.00; cash benefits, death \$400, \$800, \$1,200; Master, T. W. Kennedy, Ottawa; Corresponding Secretary, W. Kevil, Ottawa; nights of meeting, alternate Sunday afternoons.

Name of Organization.—Amalgamated Wood Workers' International Union, No. 116; date organized, 1900; average earnings per week, \$10.50; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 60; general cause of idleness, winter season; total number of wood workers in locality, 350; cash benefits, death \$75, total disbaility \$250; President, M. Kelly, 372 Maria street, Ottawa; Corresponding Secretary, W. J. Gregory, 106 McKay street, Ottawa; nights of meeting, first and third Tuesday of every month.

Name of Union.—Lodge No. 280, International Association of Machinists; date organized, December, 1899; total membership, 60; average earnings per week, \$12.00; number of working hours, first five days 10, Saturday 9; total number employed at this calling in this locality, 90; benefits, death \$60; there is no difference in wages between union and non-union men in this calling in the locality. President, C. J. Pink, 97 Preston street, Ottawa; Secretary, Alex. Anderson, 231 Gloucester street, Ottawa; nights of meeting, first and third Tuesdays in each month.

#### OWEN SOUND.

Name of Organization.—Bricklayers' and Masons' International Union; date organized, May 10th, 1899; membership, 35; average earnings per week, \$16.20; number of working hours first five days, 9; number of working hours Saturday, 9; total number of bricklayers, etc., in locality, 40; difference in wages and hours of labor between union and non-union workers, union workers get 30c per hour for a nine-hour day, while non-union workers get only 25c for a ten-hour day; President, James Holland, Owen Sound; Corresponding Secretary, William French, Box 821, Owen Sound; nights of meeting, every Thursday night.

## PALMERSTON.

Name of Organization.—Brotherhood of Locomotive Engineers, Div. No. 518; date organized, November 26, 1893; membership, 15; total number of engineers in locality, 25; cash benefits, from \$750 to \$4,500; nights of meeting, second and fourth Sundays at 1.30 p.m.

## PETERBOROUGH.

Name of Organization.—Iron Molders' International Union, No. 191; date organized, 1874; membership, 50; average earnings per week, \$12.00 to \$15.00 per week; number of working hours first five days, 10; number of working hours Saturday, 5 for four months and 9 for eight months: total number of iron molders in locality, 50; no man is allowed to work here as a molder if not a member of the union; cash benefits, sickness \$5.00 per week; death, \$100 to \$150; President, P. C. Heslep, Peterborough. Corresponding Secretary, W. E. Green, Box 730, Peterborough; nights of meeting, first and third Fridays of every month.

Name of Organization.—Pattern Makers' Union; date organized, October 17th, 1900, average earnings per week, \$13.50; number of working hours first five days, 10 hours, 10 minutes; number of working hours Saturday, 5 hours 10 minutes: total number of pattern makers in locality, 21; cash benefits \$5.00 per week, death \$50; President, Thomas G. Anderson, P. O. Box 255, Peterborough; Corresponding Secretary, J. Y. Gerard, P. O. Box 255, Peterborough; nights of meeting, second Wednesday of every month.

## PRESTON.

Name of Organization.—Amalgamated Wood Workers' International Union; date organized, 1900; membership, 48; average earnings per week, \$7.50; number of working hours first five days, 10; number of working hours Saturday, 9 in winter, 5 in summer; average number of days idle per member during year, 20; total number of wood workers in locality, 200; cash benefits, death \$75, total disability \$250; President, Thomas Smith, Preston; Corresponding Secretary, George Wieberg, Preston; nights of meeting, second and fourth Wednesday of every month.

Name of Organization.—Iron Molders' International Union, No. 314; date organized, May, 1900; membership, 45; average earnings per week, \$14.00 to \$18.00; number of working hours first five days, 10; number of working hours Saturday, 10; average number of days idle per member during year, 50 to 60; general cause of idleness, stock-taking and repairing; total number of molders in locality about 60, with apprentices; cash benefits, sickness \$5.00 per week, death \$100; President, Albert Whitmen, Preston; Corresponding Secretary; Joseph Jansen, Preston; nights of meeting, first and third Wednesday of every month.

## ST. CATHARINES.

Name of Organization.—Allied Metal Mechanics' Union; date organized, March 21st, 1901; membership, 22; average earnings per week, \$9.60; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 175; total number employed in our business in our locality, 60.

Name of Organization.—Cigar Makers' International Union, No. 140; date organized, August 14, 1881; membership, male 24, female 2; average earnings per week, male \$10, female \$10; number of working hours first five days, 8; number of working hours Saturday, 6; average number of days idle per member during year, 21; general cause of idleness, stock-taking; total number of cigar makers in locality, 25; difference in wages between union and non-union workers, \$4.00 per week; cash benefits, lack of employment \$3.00 per week, sickness \$5.00 per week, death \$50 to \$500; President, H. Flumerfelt, Box 153 St Catharines; Corresponding Secretary, Joseph Locke, Box 153, St. Catharines; nights of meeting, first and third Mondays of every month.



Name of Organization.—International Association of Machinists, No. 268; date organized, April 6, 1900; membership, 15; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 5 and 8½; total number of machinists in locality, 22; cash benefits, death \$1,500; President, A. E. Grass, Niagara street, St. Catharines; Corresponding Secretary, J. B. Beoll, 19 Centre street, St. Catharines; nights of meeting, first and third Tuesday of every month.

Name of Organization.—United Brotherhood of Carpenters and Joiners; date organized, February, 1883; membership, 33; average earnings per week, \$8.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, about 100; general cause of idleness, bad weather and lack of work; total number of carpenters in locality, about 125; difference in wages and hours of labor between union and non-union workers, non-unionists work 10 hours per day, but for the same rate of wages; cash benefits, death, \$200; President, George Nicholson, Box 174, St. Catharines; Corresponding Secretary, James Carty, Box 193, St. Catharines; nights of meeting every Friday.

Name of Organization.—Journeymen Barbers' International Union; date organized, October 1, 1886; membership, 19; average earnings per week, \$9.00; number of working hours first five days, 12; number of working hours Saturday, 18; total number of journeymen barbers in locality, 19; cash benefits, sickness \$3 per week, death \$25; President, William Band, St. Catharines; Corresponding Secretary, Adam Haynes, St. Catharines; nights of meeting, first and second Monday of every month.

Name of Organization.—United Brotherhood of Plumbers, Steam and Gas Fitters; date organized, April 13th, 1901; membership, 15; average earnings per week, \$12.00; number of working hours first five days, 9; number of working hours Saturday, 9; total number of plumbers, etc., in locality, 20; President, David Lawrence, Box 447, St. Catharines; Corresponding Secretary, Patrick O'Gorman, 9 Catharine street, St. Catharines; nights of meeting, every Thursday.

Name of Organization.—Bricklayers' and Masons' International Union, No. 4, of Ontario; date organized, June 6, 1882; membership, 30; average earnings per week, \$10.50; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 125; general cause of idleness, bad weather and no work. "Do you carry on any special work for members, such as reading room, etc?"; "Yes, we have a reading room open during the winter months;" President, E. Bennett, St. Catharines; Corresponding Secretary, C. G. Patey, Box 53, St. Catharines; nights of meeting, first and third Tuesday of every month.

Name of Organization.—Laborers' Protective Union, No. 9,030, A. F. of L.; date organized, April 24, 1901; membership, 48; average earnings per week, \$8.25; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 100; general cause of idleness, slack times and bad weather; total number of laborers in locality, 200 to 300; difference in wages and hours of labor between union and non-union workers, union men work nine hours per day, non-union 10, union scale of wages \$1.35 to \$1.50 per day, non-union \$1.25 per day; cash benefits, none as yet, but it is intended to establish benefits later on; President, Andrew Dobbin, Beech street, St. Catharines; Corresponding Secretary, Frank Clark, North street, St. Catharines; nights of meeting, first and second Thursday of every month.

#### ST DAVID'S.

Name of Organization.—Quarreyment's and Laborers' Union; date organized, July, 1901; membership, 50; average earnings per week, \$10.00; number of working hours first five days, 10; number of working hours Saturday, 10; average number of days idle per member during year, 50; general cause of idleness, cold weather and rain; total number of laborers, etc., in locality, 100; President, Frederick Griffiths, St. David's Corresponding Secretary, Wm. Wickens, Box 78, St. David's; nights of meeting, every second week, commencing on July 14th.

## ST. THOMAS

Name of Organization.—Brotherhood of Railroad Trainmen; date organized, 1883; total membership, —; average earnings per week, \$13.00; number of working hours first five days, about 10; number of working hours Saturday, same; average number of days idle per member during year, 30; general cause of idleness, crews being laid off on account of slackness of business; total number employed in our business in this locality, about 300; cash benefits, sickness \$5.00 per week, death from \$400 to \$1,200, in case of total disability members receive full amount of policy; President, Y.G. Courtenay, Box 838, St. Thomas; Corresponding Secretary, A. E. Hookway, Box 519, St. Thomas; nights of meeting, first and third Sundays and second and fourth Mondays.

Name of Organization.—Brotherhood of Locomotive Firemen, No. 5; date organized, May 10, 1882; membership, 165; average earnings per week, \$12.00; total number employed at your calling in your locality, about 300; cash benefits, insurance, which may be \$500, \$1,000 or \$1,500; President, W. H. O'Brien, 33 Barnes street, St. Thomas; Corresponding Secretary, Andrew Stewart, 39 Barnes street, St. Thomas; nights of meeting, every Tuesday, at 2 p.m.

Name of Organization.—Div. No. 132, Brotherhood of Locomotive Engineers; date organized, 1876; membership, 130; average earnings per week, \$25.00; number of working hours first five days, 8 to 12; number of working hours Saturday, same; total number employed in your calling in locality, 250; Michigan Central 150. Wabash and Grand Trunk 100; cash benefits, death \$750 to \$4,000, in cases of total disability the member receives the amount of insurance he carried; President, James Cain, Box 884, St. Thomas; Corresponding Secretary, Eli Coules, Box 1,313, St. Thomas; nights of meeting, every Monday afternoon at 2.30.

Name of Organization.—Journeyman Barbers' International Union; date organized, May 19th, 1900; membership, 19; average earnings per week, \$9.00; number of working hours first five days, 10; number of working hours Saturday, 14; total number of journeymen barbers in locality, 25; difference in wages and hours of labor between union and non-union members, union shops close at 8 o'clock, non-union whenever they please; all the shops employing help are union shops, the others being those that are run by the proprietor alone; cash benefits, sickness \$5.00 per week, death \$60.00; President, Joseph T. Whitney, 11 Fifth avenue, St. Thomas; Corresponding Secretary, James W. Lodge, 352 Talbot street, St. Thomas; nights of meeting, first and third Monday.

Name of Organization.—Bricklayers' and Stone Masons' International Union, No. 8, of Ontario; date organized, February, 1900; membership, 27; average earnings per week, \$12.00; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 130; general cause of idleness, severe and rainy weather; total number of bricklayers, etc., in locality, 27; difference in wages and hours of labor between union and non-union workers, 8c per hour; President, James Belbin, St. Thomas; Corresponding Secretary, Charles Scass, jun., Box 593, St. Thomas; nights of meeting, second and fourth Wednesday of each month.

Name of Organization.—International Brotherhood of Painters, Decorators and Paperhangers; date organized, April, 1900; membership, 40; average earnings per week, \$11.00; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, two to three months; general cause of idleness, lack of work; total number of painters, etc., in locality, about 50; cash benefits, death, maximum, \$150; nights of meeting, second and fourth Tuesdays of every month.

Name of Organization.—Div. No. 13, Order of Railway Conductors; date organized, 1883; membership, 90; average earnings per week, \$20.00; total number employed at our calling in this locality, 130; cash benefits, there is an insurance graded on \$1,000, \$2,000 and \$3,000, governed by age and other restrictions; President, Peter Stuart, Conductor, C. P. R.; Corresponding Secretary John Mackenzie, Bailiff, Box 557, St. Thomas; nights of meeting, second and fourth Sundays.

## SARNIA.

Name of Organization.—Brotherhood of Locomotive Firemen, No. 221; date organized, 1884; membership, 64; average earnings per week, \$12.00; total number of firemen in locality, about 80; cash benefits, sickness \$3.00 per week, death \$500, \$1,000 and \$1,500, according to class of insurance; nights of meeting, first and third Tuesdays of every month.

Name of Organization.—Div. 189, Order of Railway Conductors; date organized, April 27th, 1886; membership, 25; average earnings per week, \$23.00; total number of conductors in locality, 42; cash benefits, death or disability, insurance of \$1,000 to \$5,000, if a member of the benefit department; President, R. Fletcher, Sarnia; Corresponding Secretary, H. Bell, Tunnel P. O., Sarnia; nights of meeting, first and third Tuesday of every month at 2 p.m.

Name of Organization.—Brotherhood of Locomotive Engineers; date organized, 1883; membership, 41; average earnings per week, \$20.00; number of working hours first five days, all kinds of hours; number of working hours Saturday, ditto; average number of days idle per member during year, from 20 to 30; general cause of idleness, engines going to the shops for repairs; total number of engineers in locality, 50; cash benefits, death \$750 to \$4,500; President, John McNaughton, Tunnel P.O., Sarnia; Corresponding Secretary, Edward Everett, Sarnia; nights of meeting, second and fourth Tuesdays of every month.

## SCHREIBER.

Name of Organization.—Brotherhood of Locomotive Engineers; average earnings per week, \$30.00; total number of engineers in locality, 25; cash benefits, \$1,200 to \$3,000; Corresponding Secretary, J. Messon, Schreiber; nights of meeting, first and third Friday in very month.

Name of Organization.—Brotherhood of Railway Trainmen; date organized, February, 1892; membership, 35; average earnings per week, \$20.00; number of working hours first five days, 10; number of working hours Saturday, 10; total number of railway trainmen in locality, 50; cash benefits, death, \$1,200; superannuation, don't live long enough; Master, A. J. Elliott, Schreiber; Corresponding Secretary, W. F. Currie, Schreiber; nights of meeting, second and fourth Sunday.

Name of Organization.—Brotherhood of Locomotive Engineers, Div. No. 562; date organized. —; total number of engineers in locality, 19; cash benefits, \$750 is the lowest and members can carry any amount of insurance; do you carry on any special work for members? Yes, a little instruction is given at the meetings on care of engines; President, C. E. W. Hedge, Schreiber; Corresponding Secretary, J. Presson, Box 78, Schreiber; nights of meeting, first and third Saturday of every month.

## STRATFORD.

Name of Organization.—International Typographical Union, No. 139; date organized, November, 1900; membership, 18; average earnings per week, \$8.00; number of working hours first five days, 9; number of working hours Saturday, 9; total number of printers in locality, 23; difference in hours of labor between union and non-union workers, 6 per week; cash benefits, death, \$60.00; President, Alex Abram, Stratford; Corresponding Secretary, Michael Morrissey, Stratford; nights of meeting, first and third Saturdays in the month.

Name of Organization.—Amalgamated Wood Workers' International Union, No. 107; date organized, March 1st, 1900; membership, 70; average earnings per week, \$8.00; number of working hours first five days, 10; number of working hours Saturday, 10; average number of days idle per member during year, 30; general cause of idleness, public holidays and slack times; total number of wood workers in locality, 200; cash benefits, death, \$75.00; total disability, \$250; President, E. L. Boothby, Box 415, Stratford;

Corresponding Secretary, Albert Thom, Stratford; nights of meeting, alternate Tuesdays.

Name of Organization.—Amalgamated Society of Engineers; date organized, 1851; membership, 29; average earnings per week, \$10.00; number of working hours first five days, 10; number of working hours Saturday, 4; total number of machinists, blacksmiths and pattern makers in locality, 500 or 600; difference in wages or hours of labor between union and non-union workers, there is none because of being a union member, but there is a little advantage in wages among the union workers, because as a rule they are better workmen, only good men being eligible for membership; cash benefits, lack of employment, \$3.00 per week; sickness, \$2.50 per week; death, \$60.00; superannuation, \$2.00 per week; if a member's wife dies first he is allowed \$25.00 of his funeral benefit, which is deducted at the time of his own death; President, J. W. Skinner, G.T.R. Works, Stratford; Corresponding Secretary, C. McLellan, Box 4, Stratford; nights of meeting, alternate Saturdays.

Name of Organization.—Brotherhood of Railroad Trainmen, Lodge No. 8; date organized, April 27, 1887; membership, 40; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 10; total number of trainmen in locality, 60; cash benefits, sickness, \$3.00 per week; death, \$400, \$800 and \$1,200, according to rate of insurance; nights of meeting, first and third Sunday of every month.

Name of Union—Lodge No. 38, Brotherhood of Locomotive Firemen; date organized, January, 1880; total membership, 65; average earnings per week, \$11.00; average number of days idle during the year, 25; total number employed in this locality, 80; no difference here between union and non-union men as regards wages; benefits, sickness \$3.00 per week, death \$500 to \$1,500 according to premium, total disability, full amount of insurance; President, John F. Spencer, Box 318, Stratford; Secretary, George Brener, Box 318, Stratford; nights of meeting, second and fourth Sunday in each month.

#### SMITH'S FALLS.

Name of Organization.—Iron Moulders' International Union, No. 201; date organized, membership, 100; average earnings per week, \$11.00; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, three months, owing to lack of work; total number of moulders in locality, 140, including apprentices; cash benefits, lack of employment, 25c per week out of work stamps; sickness, \$5.00 per week; death, \$100.00; President, Alex. Ridewood, Smith's Falls; Corresponding Secretary, John R. Nichol, Box 210, Smith's Falls; nights of meeting, first and third Tuesday.

Name of Organization.—Order of Railway Conductors, Div. No. 199; date organized, September 23, 1896; membership, 38; average earnings per week, \$22.00; total number of conductors in locality, 55; cash benefits, death, \$1,000, \$2,000, \$3,000 and \$4,000; nights of meeting, first and third Sunday of every month.

#### TORONTO.

Name of Organization.—Pattern Makers' League of Toronto; date organized, June 1892; membership, 40; average earnings per week, \$15.13; number of working hours first five days, 10; number of working hours Saturday, 5; total number of pattern makers in locality, 46; difference in wages between union and non-union workers, 25c per day; cash benefits, sickness, \$4.00 per week; death, \$50.00; superannuation, \$12.00 per month for a member of 25 years' standing, and \$16.00 for one of 30 years' standing; total insurance, \$50.00; strike benefit, \$7.00 per week; President, Charles W. Sherwood, 281 Dovercourt road, Toronto; Corresponding Secretary, Horace J. Maughan, 284 Euclid avenue, Toronto; nights of meeting, first and third Tuesday of every month.

Name of Organization.—Div. No. 344, Order of Railway Conductors; date organized, March 13, 1893; membership, 22; average earnings per week, paid 2 1-2c per mile, running as required; no regular time for work, night, day or Sunday; general av-

erage of time about 2,500 miles per month; cash benefits, death or disability, from \$1,000 to \$3,000 at option of members, assessment system; President, Richard Benson, Coleman P. O.; Corresponding Secretary, Edwin Seller, 126 Peter street, Toronto; nights of meeting, second and fourth Monday of every month.

Name of Organization.—International Association of Machinists, Lodge No. 371; membership, 50; average earnings per week, \$11.00; number of working hours first five days, 10; number of working hours Saturday, 5; total number of machinists in locality, about 60; difference in wages between union and non-union men, 25c per day; cash benefits, death, \$50.00; President, W. W. Webster, Toronto Junction P. O.; Corresponding Secretary, John Minshall, 78 Robert street, Toronto; nights of meeting, first and third Monday of every month.

Name of Organization.—Amalgamated Wood Workers' International Union, No. 121; date organized, May 1st, 1900; membership, 60; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 5; total number of wood workers in locality, 209; cash benefits, death, \$75.00; President, F. J. Breen, Toronto Junction P. O.; Corresponding Secretary, John Linton, Box 199, Toronto Junction; nights of meeting, first and third Wednesday of every month.

Name of Organization.—Brotherhood of Locomotive Firemen, No. 262; date organized, March 29, 1885; membership, 90; cash benefits, death, insurance policy for \$500.00, \$1,000 and \$1,500; President, George Mark, 51 Cameron street, Toronto; Corresponding Secretary, William D. Donaldson, 509 Adelaide street, Toronto; nights of meeting, every alternate Sunday.

Name of Organization.—Broom Makers' International Union, No. 53; date organized, January, 1900; membership, 29; average earnings per week, \$7.00; number of working hours first five days, 10; number of working hours Saturday, 5 in summer; average number of days idle per member during year, 60 to 90; total number of broom makers in locality, 35 or 40; President, George Swanton, Dovercourt P.O.; Corresponding Secretary, James M. Lang, 113 Church street, Toronto; nights of meeting, first and third Thursday of every month.

Name of Organization.—Amalgamated Wood Workers' International Union, No. 111; Date organized, April 28, 1900; membership, 45; average earnings per week, \$11.00; number of working hours first five days, planing mills, 9; novelty shops, 10; number of working hours Saturday, 5; cash benefits, death, \$75.00; total disability, \$250.00; President, A. J. Bateman, 138 Lisgar street, Toronto; Corresponding Secretary, Thomas Harris, 56 Dundas street, Toronto; nights of meeting, first and third Wednesday of every month.

Name of Organization.—Operative Plasterers' International Association, No. 48; date organized, —; membership, 75 to 80; average earnings per week, \$14.46, or 34c per hour; number of working hours first five days, 8; number of working hours Saturday, 4; average number of days idle per member during year, from 1 to 3 months; general cause of idleness, winter weather, also depression in the building trade; total number of plasterers in locality, 75; cash benefits, death, \$100; in case of sickness, a voluntary collection is taken up for the sick member, generally started by the union; President, John Wine, 376 Wilton avenue, Toronto; Corresponding Secretary, William J. Hamilton, 42 Foxley street, Toronto; nights of meeting, first and third Wednesday of every month.

Name of Organization.—Plasterers' Laborers' Association; date organized, 1881; re-organized, 1896; membership, 60; average earnings per week, \$9.00; number of working hours first five days, 8; number of working hours Saturday, 4; total number of plasterers' laborers in locality, about 80; President, Patrick Smith, 86 Power street, Toronto; Corresponding Secretary, Patrick Cox, 32 Regent street, Toronto; nights of meeting, every alternate Tuesday.

Name of Organization.—International Brotherhood of Blacksmiths; date organized, November 23rd, 1900; membership, 25; average earnings per week, \$11.75; number of working hours first five days, 10; number of working hours Saturday, 5; total number of blacksmiths in locality, about 120; President, John Francis, 19 Caer Howell

street, Toronto; Corresponding Secretary, J. J. Bliss, 141 Portland street, Toronto, nights of meeting, first and third Fridays of every month.

Name of Organization.—Div. No. 17, Order of Railway Conductors; date organized, 1881; membership, 75; cash benefits, we have an insurance for death or disability, but no casual benefits for members out of employment; Chief Conductor, Alfred Johns, 21 Mercer street, Toronto; Corresponding Secretary, Charles Mitchell, 23 Rosa avenue, Toronto; nights of meeting, first and third Sunday of every month.

Name of Organization.—Upholsterers' International Union, No. 30; date organized, 1894; membership, 30; average earnings per week, \$12.00; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, four weeks; general cause of idleness, slack season in July and January; total number of upholsterers in locality, 48; difference in wages and hours of labor between union and non-union men, 2 1-2c per hour; cash benefits, in case of sickness the union does any work that can be procured for or by them, such as renovating old furniture, mattresses, etc.; President, Alexander Baird, 58 Sullivan street, Toronto; Corresponding Secretary, Kenneth J. Mundy, 115 Claremont street, Toronto; nights of meeting, second and fourth Monday of every month.

Name of Organization.—Stone Masons' International Union; date organized, 1881; membership, 65; average earnings per week, \$10.00; number of working hours first five days, 8; number of working hours Saturday, 4; average number of days idle per member during year, 50 to 70; general cause of idleness, wet weather and snow and frost in the winter; total number of stone masons in locality, 65; President, Charles Ingram, 58 Pumbert street, Toronto; Corresponding Secretary, John R. Cross, 34 Folis avenue, Toronto; nights of meeting, every Thursday.

Name of Organization.—Bricklayers' International Union, No. 2 of Ontario; date organized, —; membership, 300; average earnings per week, \$14.00; number of working hours first five days, 8; number of working hours Saturday, 4; cash benefits, death, \$150.00; President, William Steen, 367 Carlton street, Toronto; Corresponding Secretary, Thomas Izzard, 23 Virtue street, Toronto; nights of meeting, every Tuesday.

Name of Organization.—United Brotherhood of Carpenters and Joiners; date organized, 1882; membership, 113; average earnings per week, \$9.00; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, 90; general cause of idleness, no work; total number of carpenters, etc., in locality, 1,200; difference in wages between union and non-union men, 10 per cent.; cash benefits, death, \$200; President, W. J. Hird, 42 Reid street, Toronto; Corresponding Secretary, John Tweed, 250 Palmerston avenue, Toronto; nights of meeting, second and fourth Wednesday of every month.

Name of Organization.—Bread Salesmen's Union; date organized, May, 1899; membership, 55; average earnings per week, \$9.00; number of working hours first five days, 8; number of working hours Saturday, 11; President, W. Edis, 196 Teraulay street, Toronto; Corresponding Secretary, B. C. Webber, 587 Parliament street, Toronto; nights of meeting, second and fourth Tuesday of every month.

Name of Organization.—Boiler Makers' and Iron Ship Builders' International Union; date organized, May 6th, 1893; membership, 55; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 5 during the summer months; average number of days idle per member during year, 25; total number of boiler makers, etc., in locality, 60; difference in wages between organized and unorganized workers, from 2c to 11c per hour; President, Harry M. Pollard, 130 Northcote avenue, Toronto; Corresponding Secretary, John H. Marshall, 86 Gladstone avenue, Toronto; nights of meeting, second and fourth Friday of every month.

Name of Organization.—Amalgamated Sheet Metal Workers' International Union, No. 30; date organized, November 23rd, 1896; membership, 103; average earnings per week, \$12.50; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, about 15; general

cause of idleness, slack season; total number of sheet metal workers in locality, about 200; difference in wages and hours of labor between union and non-union workers, members receive from 4c to 5c per hour more than non-members and work about 1 hour per day less; do you carry on any special work for members, such as evening classes, etc.? Yes, we have a school for draughting and pattern cutting; President, Daniel McRae, 166 Argyle street, Toronto; Corresponding Secretary, William Bryant, 58 Euclid avenue, Toronto; nights of meeting, first and third Friday of every month.

Name of Organization.—Cigar Makers' International Union, No. 27; date organized, May, 1869; membership, 157; female, 4; average earnings per week, male, \$9.90; female, \$9.00 (this represents average for actual working time, 49 weeks); number of working hours first five days, 8; number of working hours Saturday, 4; average number of days idle per member during year, 21; general cause of idleness, waiting for prepared tobacco and wet weather; total number of cigar makers in locality, male, 157; female, 4; cash benefits, lack of employment, \$3.00 per week; sickness, \$5.00 per week; death, from \$50.00 to \$550, from two to fifteen years' membership; President, P. Farley, Duchess street, Toronto; Corresponding Secretary, R. Haberstock, 196 Elizabeth street, Toronto; nights of meeting, regular meeting third Monday of the month, the Executive board meets every other Monday evening.

Name of Organization.—Brotherhood of Painters, Decorators and Paperhangers; date organized, March, 1887; membership, 218; average earnings per week, \$8.50; number of working hours first five days, 9; number of working hours Saturday, 5; average number of days idle per member during year, 70; general cause of idleness, dullness of trade; total number of painters, etc., in locality, 500; difference in wages between union and non-union members, about 2 1-2c per hour; cash benefits, death, from \$50 to \$150; President, Robert Collins, 3 John street, Toronto; Corresponding Secretary, Frank McCoy, 82 Ulster street, Toronto; nights of meeting, second and fourth Tuesdays of every month.

Name of Organization.—International Brotherhood of Bookbinders, Local Union, No. 28; date organized, 1893; membership, 166; average earnings per week, \$12.50; number of working hours first five days, 9 1-2; number of working hours Saturday, 4 1-2; average number of days idle per member during year, 2 weeks; general cause of idleness, lack of work; total number of bookbinders in locality, 200; cash benefits, lack of employment, remittance of dues; President, John L. Marshall, 163 Farley avenue, Toronto; Corresponding Secretary, Charles Goldsmith, 111 Harrison street, Toronto; nights of meeting, second and fourth Monday, Executive first and third Monday.

Name of Organization, Metal Polishers', Buffers', Platers, Brass Moulders' and Brass Workers' International Union, No. 53.—Date organized, June, 1900; membership, 55; average earnings per week, \$9.00; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 6; cause of idleness, slackness of trade; total number of metal polishers, etc., in locality, 100; cash benefits, lack of employment, none unless for strikers, death, \$100; President, Frederick Burton, 36 Lippincott street, Toronto; Corresponding Secretary, Alexander Croker, 267 Euclid avenue, Toronto; nights of meeting, second and fourth Tuesday of every month.

Name of Organization.—Printing Pressmen's International Union; date organized, 1882; membership, 79; average earnings per week, \$14.00; number of working hours first five days, 9 hours and 50 minutes; number of working hours Saturday, 4 hours and 50 minutes; total number of pressmen in locality, 79; President, George Crighton, 111 Carlaw avenue, Toronto; Corresponding Secretary, William Davey, 51 Bellevue place, Toronto; nights of meeting, first Monday of every month.

Name of Organization.—Toronto Mailers' International Union, No. 5; date organized, November 11, 1893; membership, 27; average earnings per week, \$14.00; number of working hours first five days, day men work 48 hours per week or 8 hours per day for 6 days; night and day work combined, 44 hours per week; total number of mailers in locality, 27; cash benefits, death, \$60.00; President, John J. O'Reilly, 166 McCaul

street, Toronto; Corresponding Secretary, Thomas Morton, 5 St. Matthias' place, Toronto; nights of meeting, first Monday of every month.

Name of Organization.—Amalgamated Wood Workers' International Union, No. 34; date organized, 1895; membership, 130; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 5; cash benefits, there are none from the treasury, but we see that no brother lacks comforts if **slck**; do you carry on any special work for members? We are about to start a reading room; President, William Ward, 202 Brunswick avenue, Toronto; Corresponding Secretary, James Dempster, 55 Carr street, Toronto; nights of meeting, first and third Tuesday of every month.

Name of Organization.—Metal Polishers', Buffers' and Platers' International Union, No. 21; date organized, July, 1893; membership, 66; average earnings per week, \$10.00; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 56; general cause of idleness, slack season; difference in wages between union and non-union workers, 25 per cent.; cash benefits, death, \$175.00; do you carry on any special work for members? Yes, we have a reading room and club room; President, C. E. Beltz, 86 Woolsley street, Toronto; Corresponding Secretary, E. C. Salmon, 116 Markham street, Toronto; nights of meeting, second and fourth Wednesday of every month.

Name of Organization.—Theatrical Stage Employees' Union: date organized, October 4, 1894; membership, 45; average earnings per week, about 25 cents per hour (average \$17.00 per week); number of working hours first five days, 11; number of working hours Saturday, about 13; total number of days idle per member during year, about three months, when the theatres are closed for the summer; total number employed at our calling in locality, 45; cash benefits, \$25.00; President, William Powis, 98 Hayter street, Toronto; Corresponding Secretary, W. E. Meredith, 472 Dovercourt road, Toronto; nights of meeting, second Sunday of every month.

Name of Organization.—Varnishers' and Polishers' International Union, No. 65; date organized, February 1st, 1893; membership, 102; average earnings per week, \$12.00; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 31; general cause of idleness, slackness of trade; total number employed at our calling in locality, 125; cash benefits, death, \$75.00; disability, \$25.00; President, William Welsh, West Toronto Junction P. O.; Corresponding Secretary, Joseph Harding, 112 Birch avenue, Toronto; nights of meeting, second and fourth Tuesdays of every month.

Name of Organization.—Architectural and Structural Iron Workers' International Union, No. 23; date organized, May 14th, 1900; membership, 75; number of working hours first five days, 9; number of working hours Saturday, 5; total number employed at our calling in locality, about 75; difference in wages between union and non-union members, union men receive a minimum wage of 22 1-2c per hour and 25c for first-class men; non-union members receive from 14 cents per hour and upwards; cash benefits, death, \$75.00; President, William Kemp, 54 Farley avenue, Toronto; Corresponding Secretary, George Oulton, 16 Belshaw avenue, Toronto; nights of meeting, first and third Tuesdays in every month.

Name of Organization.—International Typographical Union, No. 91; date organized, 1844; membership, 658; female, 5; number of working hours first five days, 9 hours and 50 minutes; number of working hours Saturday, 4 hours and 50 minutes; cash benefits, death, \$40. sickness, \$3.00 per week for 13 weeks; President, William Powell, P.O. Box 543; Corresponding Secretary, Joseph Clinton, Box 543, Toronto; nights of meeting, first Saturday of every month.

Name of Organization.—International Association of Machinists, Lodge 235; date organized, February, 1891; membership, 397; average earnings per week, \$12.37; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 27; general cause of idleness, ten weeks' strike; total number of machinists in locality, 500; difference in wages between union and non-union members, non-members average about 25c per day less; cash



benefits, death, \$50.00 to \$200.00; President, Henry Boucher, West Toronto Junction P. O.; Corresponding Secretary, Arthur C. Quinn, 20 Waterloo avenue, Toronto; nights of meeting, first and third Tuesday of every month.

Name of Organization.—Excelsior Assembly, No. 2,305, Knights of Labor; President, John Francis, 19 Caer Howell street, Toronto; Corresponding Secretary, William Gil-mour, 7 Walton street, Toronto.

Name of Organization, Brotherhood of Locomotive Firemen, No. 67—Date organized, March 14th, 1887; membership, 120; cash benefits, sickness, \$3.00 per week; death, three classes of insurance, \$500, \$1,000 and \$1,500, members can belong to any of the three classes; nights of meeting, first and third Sunday of every month.

Name of Organization.—Journeymen Stone Cutters' International Association; date organized, 1840; membership, 58; average earnings per week, \$13.92; average number of days idle per member during year, about 120; general cause of idleness, no building during the winter months; total number of stone cutters in locality, 58; differences in wages between union and non-union members, 10c to 15c per hour; cash benefits, sickness, subscription list; death, \$100 if in good standing; President, James Craig, Box 573, Toronto; Corresponding Secretary, Frank Dawson, Box 573, Toronto; nights of meeting, second and fourth Friday of every month.

Name of Organization.—Amalgamated Society of Engineers; date organized, 1850; membership, —; average earnings per week, \$13.50; number of working hours first five days, 10; number of working hours Saturday, 5; average number of days idle per member during year, 10; general cause of idleness, dullness of trade; cash benefits, lack of employment, \$2.50 per week; sickness, \$2.50 per week; death, \$60.00; superannuation, \$1.75 to \$2.50 per week as per length of membership; contingent benefit, \$1.25; accident benefit, \$500.00, and benevolent grants to members in straightened circumstances; President, James Moore, 132 Euclid avenue, Toronto; Corresponding Secretary, John M. Clements, 39 Bellevue avenue, Toronto; nights of meeting, alternate Mondays.

Name of Organization.—Brotherhood of Railroad Trainmen, Lodge No. 322; date organized, — membership, 70; average earnings per week, \$12.50; cash benefits, death, \$400 to \$1,200; President, W. J. Cook, Rolyat street, Toronto; Corresponding Secretary, H. T. Meredith, 125 Givens street, Toronto; nights of meeting, first and third Sunday of every month.

Name of Organization.—Maple Leaf Assembly, No. 1,960, Knights of Labor (Rail-road Teamsters); date organized, April 15, 1899; membership, 170; average earnings per week, \$8.80; number of working hours first five days, 10 to 12; number of working hours Saturday, 8 to 10; total number of railroad teamsters in locality, 220; President, J. G. Macdonald, 75 Mitchell avenue, Toronto; Corresponding Secretary, William Jones, 177 Bolton avenue, Toronto; nights of meeting, first and third Saturday of every month.

Name of Organization.—Journeymen Tailors' International Union, No. 132; date organized, 1883; membership, 130; female, 35; average earnings per week, male, \$9.00; female, \$5.00; total number of custom tailors in locality, male, 400; female, 500; difference in wages between union and non-union members, male, 50 per cent.; female, 15 per cent.; cash benefits, death, \$100.00; President, J. H. Addison, 114 May street, Toronto; Corresponding Secretary, George Sangster, 43 Scott street, Toronto; nights of meeting, second Monday of every month.

#### WINDSOR.

Name of Organization.—Bricklayers' and Masons' International Union, No. 6, of Ontario; date organized, April 21, 1895; membership, 29; average earnings per week, it would be difficult to give an average weekly earnings of our members, our wages are \$6 1-9c per hour, or \$3.25 per day, but I do not think that any of our members average in work more than 200 days per year, and some not as much as that; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 120; general cause of idleness, inclemency

of the weather and scarcity of work; total number of bricklayers, etc., in locality, 29; cash benefits, death, \$50.00; President, Edward Ainsworth, Windsor; Corresponding Secretary, Matthew Rapson, Box 615, Windsor; nights of meeting, every Tuesday.

Name of Organization.—Plumbers' and Tinnners' International Union, No. 8,019, A. F. of L.; membership, 21; average earnings per week, \$14.25; number of working hours first five days, 9; number of working hours Saturday, 9; average number of days idle per member during year, 60; general cause of idleness, cold weather, which stops building and digging; total number employed at our calling in our locality, 12 tinnners, 11 plumbers; President, David Smith, 101 Windatt street, Windsor; Corresponding Secretary, William T. Parker, 24 McKay avenue, Windsor; nights of meeting, first and third Wednesday of every month.

Name of Organization.—Brotherhood of Locomotive Engineers, No. 390; date organized, June 12, 1893; membership, 18; average earnings per week, \$19.00; total number of engineers in locality, about 35; cash benefits, death, none, unless insured in organization, which is a separate feature; Chief Engineer, Caleb Knight, Windsor; Corresponding Secretary, David Lanspeary, Box 353, Windsor; nights of meeting, every alternate Tuesday.

Name of Organization.—Brotherhood of Locomotive Firemen, Lodge No. 421; date organized, June 6, 1890; membership, 30; average earnings per week, \$17.25; total number of firemen in locality, 40; cash benefits, death, \$500, \$1,000 and \$1,500; do you carry on any special work for members? Yes, a little instruction is given on meeting nights on the use of air brakes, etc.; nights of meeting, every second Tuesday.

#### WOODSTOCK.

Name of Organization.—Iron Moulders' International Union, No. 249; date organized, February, 1899; membership, 18; average earnings per week, \$13.00; number of working hours first five days, 10; number of working hours Saturday, 9; average number of days idle per member during year, 2 and one-half months; general cause of idleness, shops closed; total number of iron moulders in locality, 25; cash benefits, sickness, \$5.00 per week; death, \$100.00; President, Joseph Robinson, Woodstock; Corresponding Secretary, William McLaughlin, Box 30, Woodstock; nights of meeting, first and third Tuesday of every month.

## Report of Central Labor Organizations.

Name of Organization.	Date organized.	No. of organizations represented.	President.	Address.	Secretary.	Addresses.	Night of meeting.
Pekin— Trades and Labor Council.....	1901	19	Alex. A. Rose.....	Berlin.....	J. H. Kressler.....	Box 224.....	1st and 3rd Monday.
Brantford— Trades and Labor Council.....	1897	18	Thos. Bremner.....	West Mill St.....	Frank Mather.....	75 Greenwich St.....	1st and 3rd Wednesday.
Guelph— Trades and Labor Council.....	1896	8	Jos. Dandeno.....	Guelph.....	Wm. Drever.....	Guelph.....	2nd and 4th Friday
Hamilton— Trades and Labor Council.....	1888	30	Samuel Landers.....	Grant Ave.....	Henry Obermeyer.....	96 Catherine St.....	1st and 3rd Friday.
Kingson— Trades and Labor Council.....	1849	22	W. A. Tweed.....	79 Arch St.....	James O'Reilly.....	William St.....	1st and 3rd Thursday.
Ottawa— Allied Trades and Labor Association	1898	20	V. H. Annable.....	374 Gloucester St.....	P. M. Draper.....	43 Slater St.....	2nd and 4th Friday.
Stratford— Trades and Labor Council.....	1900	9	Wm. Stovel.....	Stratford.....	Walber Crossland.....	Box 5.....	2nd and 4th Friday.
St. Catharines— Trades and Labor Council.....	1897	10	Geo. F. Nicholson.....	Box 714.....	James Carty.....	Box 193.....	1st and 3rd Wednesday.
Toronto— Trades and Labor Council.....	1881	47	Samuel Moore.....	52 Teraulay St.....	D. W. Kennedy.....	59 Edward St.....	2nd and 4th Thursday.
Amagambed Workers' Council	1900	5	S. Moore.....	52 Toranlay St.....	A. J. Bateman.....	138 Lisgar St.....	2nd and 4th Monday.
Federated Council of Building Trades.....	1886	10	F. J. Wilson.....	91 Palmerston Ave.....	Patrick Cox.....	52 Regent St.....	2nd and 4th Monday.
Allied Printing Trades Council.....	1885	8	W. J. Carmody.....	198 Baldwin St.....	Wm. Irwin.....	38 Niagara St.....	1st and 3rd Tuesday.
Federated Council of Metal Trades	1901	10	John Francis.....	19 Caer-Howell St.....	Horace J. Maughan.....	284 Euclid Ave.....	2nd and 4th Monday.

## Report of Labor Organizations.

Trade or calling.	Date organized.	Members.	Name of President.	President's Address.	Name of Secretary.	Secretary's Address.	Nights of Meeting.
Allandale— Bro. Locomotive Engineers	1892	30	Daniel Cameron	Allandale, Ont.	Geo. S. Lawrence	Box 24	1st and 3rd Tuesday.
Belleville— Sheet Metal Workers	1901	19	Moses Doyle	Grove st.	Mr. McCarthy	Murray st.	1st and 3rd Friday.
Bro. Locomotive Firemen	1884	67	Chas. Orrill	Station P.O.	Harry Wilson	Station P.O.	2nd and 4th Tuesday.
Woodworkers No. 129	1900	72	Geo. Fedrenbach	P. O. Berlin	Michael Kahle	P. O. Berlin	2nd and 4th Wednesday.
Painters and Decorators	1901	14	Julius Lietz	Cameron st	Geo. H. Stabile	Box 392	2nd and 4th Tuesday.
Br-onmakers No. 7	1900	9	E. Kuhn	Berlin P.O.	A. G. Volge	Box 507	2nd and 4th Monday.
Woodworkers No. 112.	1899	220	Fraukhn Schatz	Berlin	C. Krubner	Berlin	2nd and 4th Wednesday.
Woodcarvers	1899	42	David Heit	Berlin	E. J. O'Brien	Berlin	1st and 3rd Tuesday.
Bricklayers, Masons and Plasterers	1900	48	V. May	Berlin	Jacob E. Cook	11 Church st	Every Thursday.
Retail Clerks	1901	46	Adam Seigel	Care A. Weslot & Co.	Albert K. Jevan.	34 Queen st S	1st and Last Friday.
General Teamsters	1901	22	Julius Loftr	Berlin	B. K. Weber	Berlin	2nd Thursday.
Cigar makers	1899	51	F. G. Carroll	Berlin	Henry Englert.	Box 254	2nd Tuesday.
Typographical Union	1900	17	Chas. Dutton	Berlin	Anthony Beith	Box 70.	1st and last Friday.
Tanners and Curriers	1900	60	Frank Ackersrecht.	Berlin	Herman Shallhan	Berlin	2nd and 4th Wednesday.
Broantford— Cigar makers	1886	21	A. Chandars.	Mohawk st	Frank Mather.	75 Grenwick st.	3rd Tuesday.
Sheet Metal Workers	1900	15	P. A. Chievers	25 Gilkenson st			4th Tuesday.
Plasterers.	1900	9	Jos Wood	Bagle Place	John A. Whelan.	151 Ramon st.	2nd Tuesday.
Plumbers, Steam and Gas Fitters.	1899	10	J. Anguish	40 North Bruce st	F. Helni	186-Sheriden st.	2nd and 4th Wednesday.
Machinist-	1898	45	Wm. Dickson.	40 King st	G. F. Towers	221 Darling st.	2nd and 4th Wednesday.
Bricklayers and Masons	1898	46	W. J. Kerr	97 Wellington st.	Ed. Fisher	83 Victoria st	Every Thursday
Federal Labor Union	1898	76	W. F. Lyle	P. O. Braantford	Frank Donovan	31 Colborne st	2nd and 4th Friday.
Brookville— Bro. of Railroad Trainmen	1886	48	J. H. Kelly	Brookville	Chas. Kerr	Brookville	1st and 3rd Sunday.
Federal Labor Union	1900	20	W. H. Egan	Brookville	E. A. Clement.	Box 81	1st and 3rd Wednesday.
Typographical Union	1900	14	L. E. Murphy	Brookville	S. W. Ball	Box 100	1st Monday.
Chapleau— Bro. Locomotive Enginee s	1887	21	Eroest M. Cryer	Chapleau.	J. D. McAdam	Chapleau	1st and 3rd Monday.
Collingwood— Bro. Carpenters and Joiners	1900	20	W. J. Reid	Collingwood.	J. V. Buffy	Collingwood	2nd and 4th Thursday.
Federal Labor Union	1901	20	N. F. Highley	Collingwood	Albert Houghton	Collingwood.	2nd and 4th Wednesday
Dundas— Machinists	1900	40	J. W. Dickson	Box 98	Wm. McGregor, jr	Box 203	1st and 3rd Saturday.
Woodworkers	1900		Wm. Ball	Dundas	Samuel Patterson	Dundas	Alternate Fridays.
Fort William— Bro. Locomotive Engineers	1884	16	Wm. Bjennerhasset	Fort William	John Whitthurst	Box 157	Every Tuesday.
Machinists	1900	12	James Booker	McDonald st.	H. C. Carvell	Cumberl'd st	1st and 3rd Friday.
Galt— Machinists	1899	50	Thos. Barnhard	Galt	S. McLean	Galt	2nd Monday.



## Report of Labor Organizations.—Continued.

Trade or calling.	Date or granted.	Membershp.	Name of president.	President's address.	Name of secretary.	Secretary's address.	Night's of meeting.
Kingston.—Continued.							
Typographical Union	1886	25	Ed. Ball	364 Barrie st.	Samuel Carson	220 University ave.	Last Thursday.
Ironworkers and Helpers	1900	185	John Flannigan	Cor. William & Barrie st.	Albert J. Meredith	52 Division st.	2nd and 4th Wednesday
Bro. of Carpenters and Joiners	1899	68	Nat. Smith	Collingwood st.	H. Saltbury	Barriefield, Ont.	2nd and 4th Monday
Lindsay—							
Bro. Railroad Trainmen	1889	65	Wm. Hammill	Lindsay	H. M. Lockwood	Lindsay	2nd and 4th Sunday.
Bro. Locomotive Firemen		30	W. Chambers	Lindsay	W. Dolly	Lindsay	Alternate Sundays.
London—							
Painters and Decorators	1895	60	W. F. Graham	528 South street	J. W. McCandless	121 Albert st.	2nd and 4th Thursday.
Electrical Workers	1900	60	James O. Rushton	332 York st.	Thomas Sprout	83 George st.	1st and 3rd Friday.
Amal. Soc. Carpenters and Joiners	1860	30	J. W. Ward	Albion at W.	John Lanton	379 Waterloo st.	Alternate Wednesdays.
Cigar-makers	1899	157	James Walsh	155 Albert st.	Charles J. Madow	186 Kent st.	1st and 3rd Thursday.
Bricklayers and Masons	1863	58	J. Clark	400 Clarence st.	H. Kymill	491 Oxford st.	Alternate Tuesdays.
Broom-makers	1900	25	Wm. Rae	11 Oxford	Charles Eggett	721 Princess ave	1st and 3rd Tuesday.
Bro. Locomotive Firemen	1872	48					1st Tues and 3rd Sunday
Order of Railway Conductors	1872	41					1st and 3rd Sunday.
Midland—							
Loughshoremen International Union	1900	130	Wm. Clegg	Midland	D. A. Hall	Midland	2nd and 4th Monday.
North Bay—							
Bro. Railroad Trainmen	1887	80	John Russell	North Bay	D. Deau	North Bay	2nd and 4th Thursday.
Machinists	1900	13	F. Donaldson	North Bay	Thomas Hinds	North Bay	1st and 3rd Monday.
Order of Railroad Conductors	1889	19	S. N. Berry	North Bay	H. A. Washburn	North Bay	1st and 3rd Monday.
Bro. Locomotive Engineers		33	Oscar Barnhart	North Bay	James Devine	North Bay	1st and 3rd Monday.
Ottawa—							
Bro. Carpenters and Joiners	1900	50	Wm. G. Adanson	156 Friel st.	L. E. Cross	486 Gladstone ave	1st and 3rd Monday.
Letter Carriers	1901	24	M. F. Fagan	Hincombury, Ont.	M. A. Demers	47 St. Andrew st.	1st Tuesday.
Plumbers, Steam and Gas Fitters.	1888	59	M. O'Connell	204 Somerset st.	Joseph Huitboise	289 St. Andrew st.	2nd and 4th Monday.
Builders' Laborers	1889	50	J. Burroughs	442 St. Patrick st.	Thomas E.borough	426 Maria st.	2nd and 4th Thursday.
Bookbinders	1900	100	F. W. Stewart	cars J. Hope & Sons	A. F. Cotto	257 Bolton st.	3rd Friday.
Commercial Union (Clerks)	1891	100	Napoleon Mercier	263 Water st.	Adolphe Le Clerc	277 Clarence st.	2nd and 4th Monday.
Printing Pressmen	1879	23	W. P. Webb	197 Slater st.	Alf. K. Lardon	327 Bell st.	2nd Monday.
Typographical Union	1867	301	A. E. Sanderson	65 Gloucester st.	J. A. Murphy	412 McLeod st.	1st Saturday.
Bro. Locomotive Engineers	1895	59					2nd and 4th Sunday.
Iron Molders	1891	35	John Thompson	91 Cambridge st.	Geo. Kirkpatrick	73 Flora st.	2nd and 4th Wednesday.
Journeyman Tailors	1893	49	A. Larson	82 Earncliffe ave	E. Empey	265 Clarence st.	1st and 3rd Monday.
Bakers and Confectioners	1900	94	C. Mair	315 Nepean st.	H. E. Sutton	Cunningham Bridge.	1st and 3rd Saturday.
Stonecutters	1889	75					2nd and 4th Wednesday.
Bricklayers and Masons	1893	102	H. McCullough	Queen st.	A. Kirkpatrick	30 Second ave	Every Thursday.
Sheet Metal Workers	1888	50	A. J. Kelly	216 Nepean st	K. E. McGuire	310 Gloucester st	1st and 3rd Thursday.
Bro. Railroad Trainmen	1885	116	T. W. Kennedy	Ottawa	F. A. Wood	118 Einmett st.	Alternate Sundays.
Woodworkers	1900	M	Kelly	372 Maria st.	W. Kevil	106 McKay st.	1st and 3rd Tuesday.
Machinists	1899	60	C. J. Pink	97 Preston st.	W. J. Gregory	231 Gloucester st.	1st and 3rd Tuesday.

Owen Sound— Bricklayers and Masons	1899	James Holland	Owen Sound	Wm. French	Box 821	Every Thursday.
Palmerston— Bro. Locomotive Engineers	1893	15				2nd and 4th Sunday.
Peterborough— Iron Molders	1874	P. C. Heslep	Peterborough	W. E. Green	Peterborough.	1st and 3rd Friday.
Pattermakers	1900	Thomas G. Anderson	P. O. Box 255	J. Y. Gerard	P. O. Box 255	2nd Wednesday.
Preston— Woodworkers	1900	Thomas Smith	Preston	Geo. Weiberg	Preston	2nd and 4th Wednesday
Iron Molders	1900	Albert Whitman	Preston	Joseph Jansen	Preston	1st and 3rd Wednesday.
St. Catharines— Allied Metal Mechanics	1901	22				
Cigar-makers	1881	N. Flumerfelt	Box 153	Jos. Locke	Box 153	1st and 3rd Monday.
Machinists	1900	A. E. Grass	Niagara st.	J. E. Beoll	19 Centre st.	1st and 3rd Tuesday.
Bro. Carpenters and Joiners	1883	Geo. Nicholson	Box 714	James Garty	Box 193	Every Friday.
Journeyman Barbers	1886	Wm. Bond	St. Catharines	Adam Haynes	St. Catharines	1st and 2nd Monday.
Plumbers, Steam and Gas Fitters	1901	David Lawrence	Box 447	Patrick O'Gorman	9 Catharine st.	Every Thursday.
Bricklayers and Masons	1882	E. Bennett	St. Catharines	C. G. Patey	Box 63	1st and 3rd Tuesday.
Laborers' Protective Union	1901	Andrew Dobbin	Beech st.	Frank Clark	— North st.	1st and 2nd Thursday.
St. David's— Quarrymen and Laborers' Union	1901	Federick Griffiths	St. David's	Wm. Wickens	Box 78	Every second week.
St. Thomas— Bro. Railroad Trainmen	1883	T. G. Courtenay	Box 838	A. F. Hookway	Box 519	1st and 3rd Sunday and 2nd and 4th Monday.
Bro. Locomotive Firemen	1882	W. H. O'Brien	33 Barnes st.	Andrew Stewart	39 Barnes st.	Every Tuesday.
Bro. Locomotive Engineers	1876	James Cab	Box 884	Ed Coules	Box 1313	Every Monday.
Journeyman Barbers	1900	Jos. T. Whitney	11 Fifth ave.	James W. Lodge	352 Talbot st.	1st and 3rd Monday.
Bricklayers and Masons	1900	James Edton	St Thomas	Chas. Strass, Jr.	Box 593	2nd and 4th Wednesday
Painters and Decorators	1900	27				2nd and 4th Tuesday.
Order of Railway Conductors	1883	Peter Stuart	Conductor C. P. R.	John Mackenzie	Ballif, Box 557	2nd and 4th Sunday.
Sarnia— Bro. Locomotive Firemen	1884	64				
Order Railway Conductors	1886	R. Fletcher	Sarnia	H. Bell	Tunnel P.O.	1st and 3rd Tuesday.
Bro. Locomotive Engineers	1883	John McNaughton	Tunnel P.O.	Ed. Everett	Sarnia	2nd and 4th Tuesday.
Schreiber— Bro. Railroad Trainmen	1892	A. J. Elliott	Schreiber	W. F. Currie	Schreiber	2nd and 4th Sunday.
Bro. Locomotive Engineers		C. E. W. Hedge	Schreiber	J. Presson	Box 78	1st and 3rd Saturday.
Stratford— Typographical Union	1900	18				
Woodworkers	1900	Alex. Abram	Stratford	— Morrissey	Stratford	1st and 3rd Saturday.
Annal. Soc. Engineers	1887	E. L. Boothby	Box 415	Albert Thom	Stratford	Alternate Tuesdays.
Bro Railroad Trainmen	1887	J. W. Skinner	G. T. R. Works	C. McLellan	Box 4	Alternate Saturdays.
Bro. Locomotive Firemen	1887	40				1st and 3rd Sunday.
Smith's Falls— Iron Molders	1889	Geo F. Spencer	Box 318	Geo Brewer	Box 318	2nd and 4th Sunday.
Order of Railway Conductors	1896	Alex. Ridewood	Smith's Falls	John E. Nichol	Box 210	1st and 3rd Tuesday.
Toronto— Patter Makers	1892	40				1st and 3rd Sunday.
Order of Railway Conductors, No. 334	1893	Chas. W. Sherwood	281 Dovercourt rd.	Horace J. Maughan	284 Enclid ave.	2nd and 4th Monday.
Machinists, No. 371		Richard Benson	Coleman P.O.	Edwio Sellar	126 Peter st.	1st and 3rd Monday.
		W. W. Webster	Toronto Junction P.O.	John Minshall	78 Robert st.	1st and 3rd Monday.

Report of Labor Organizations. — *Continued.*

Trade or calling.	Date organized.	Membership.	Name of president.	President's address.	Name of secretary.	Secretary's address.	Nights of meetings.
Toronto.— <i>Continued.</i>							
Woodworkers, No. 121	1900	60	F. J. Breen	Toronto Junction P. O.	John Linton	Box 199, Toronto Jct.	1st and 3rd Wednesday.
Broom Makers	1901	29	Geo. Swanton	Dovercourt P. O.	James M. Lang	113 Church st.	1st and 3rd Thursday.
Woodworkers, No. 118	1900	45	A. J. Bateman	138 Laigar st.	Thos. Harris	56 Dundas st.	1st and 3rd Wednesday.
Plasterers	1881	80	John Milne	376 Wilson ave.	Wm. J. Hamilton	42 Foxley st.	1st and 3rd Wednesday.
Plasterers Laborers	1881	60	Patrick Smith	86 Power st.	Patrick Cox	32 Regent st.	Alternate Tuesdays.
Blacksmiths	1900	25	John Francis	19 Caer-Howell st.	J. J. Bliss	141 Portland st.	1st and 3rd Friday.
Div. No. 17, Order of Railway Con.	1881	75	Alfred Johns	21 Mercer st.	Chas. Mitchell	25 Rose ave.	1st and 3rd Sunday.
Upholsterers	1884	30	Alex. Baird	58 Sullivan st.	John R. Cross	115 Claremont st.	2nd and 4th Monday.
Stonemasons	1884	65	Chas. Ingram	307 Humbert st.	Thos. Issard	34 Pollis ave.	Every Thursday.
Bricklayers	1882	113	Wm. Stoen	42 Reid st.	John T. Welsch	23 Virtue st.	Every Tuesday.
Bro. Carpenters and Joiners	1899	55	W. Edis	196 Tecumseh st.	B. C. Welber	250 Palmerston ave.	2nd and 4th Wednesday.
Bread Salesmen	1893	103	Harry M. Pollard	130 Northcote ave.	John H. Marshall	557 Parliament st.	2nd and 4th Tuesday.
Boiler Makers & Iron Shipbuilders.	1896	103	Daniel McKee	166 Argyle st.	Wm. Bryant	86 Gladstone ave.	2nd and 4th Friday.
Sheet Metal Workers	1889	161	P. Farley	Duchess st.	R. Haberstock	58 Puclit ave.	1st and 3rd Friday.
Cigar makers	1887	218	Robert Collins	3 John st.	Frank McCoy	196 Elizabeth st.	3rd Monday
Painters and Decorators	1887	166	John L. Marshall	163 Forley ave.	Chas. Goldsmith	111 Harrison st.	2nd and 4th Tuesday.
Bookbinders	1891	166	John L. Marshall	163 Forley ave.	Chas. Goldsmith	111 Harrison st.	2nd and 4th Monday.
Metal Polishers, Buffers, Pla- ners and Brass Molders, No. 530	1900	55	Fred Burton	36 Lippincott st.	Alex. Croker	267 Enclid ave.	2nd and 4th Tuesday.
Printing Pressmen	1882	79	Geo. Orlington	111 Carlaw ave.	Wm. Davy	51 Polleye place	1st Monday.
Mailers	1893	27	John J. O'Reilly	166 McCaul st.	Thos. Morton	5 St. Matthias's place	1st Monday.
Woodworkers, No. 34	1895	130	Wm. Ward	202 Brunswick ave.	James Dempster	55 Carr st.	2nd and 3rd Tuesday.
Metal Polishers, No. 21	1893	66	C. E. Bellz	86 Wonslaye st.	E. C. Salmon	116 Markham st.	2nd and 4th Wednesday.
Theatrical Stage Employers	1894	45	Wm. Pavis	98 Hayter st.	W. F. Meredith	472 Dovercourt rd.	2nd Sunday.
Varnishers and Polishers	1893	102	Wm. Welsh	Toronto Junction P. O.	Jos. Harding	112 Birch ave.	2nd and 4th Tuesday.
Architectural and Structural Iron Workers	1900	75	Wm. Kemp	54 Farley ave.	Geo. Oulton	16 Belslaw ave.	1st and 3rd Tuesday.
Typographical Union	1844	658	A. M. Powell	P. O. Box 543	Jos. Clinton	P. O. Box 543	1st Saturday.
Machinists, No. 235	1891	397	Henry Boncher	W. Toronto Junct. P. O.	Arthur C. O'Leary	20 Waterloo ave.	1st and 3rd Tuesday.
Excelsior Assn., No. 2305, K. of L.	1882	120	John Francis	19 Caer-Howell st.	Wm. Gilmore	7 Walton st.	Last Friday.
Bro. Locomotive Firemen, No. 67	1887	58	James Craig	Box 573	Frank Dawson	Box 573	2nd and 3rd Sunday.
Stonemasons	1840	70	James Moore	132 Euclid ave.	John M. Clements	39 Bellevue ave.	2nd and 4th Friday.
Amal. Soc. Engineers	1850	70	W. J. Cook	Royal st.	H. T. Meredith	125 Givens st.	Alternate Mondays.
Bro. Railroad Trainmen, No. 322	1883	165	J. H. Addison	114 May st.	Geo. Saugster	43 Scott st.	1st and 3rd Sunday.
Joinerymen Tailors	1883	165	J. H. Addison	114 May st.	Geo. Saugster	43 Scott st.	2nd Monday.
Windsor—							
Bricklayers and Masons	1895	29	Edward Ainsworth	Windsor	Matthew Rapson	Box 615	Every Tuesday.
Fed. Labor Union, No. 8019	1888	21	David Smith	101 Windat st	Wm. T. Parker	24 McKay ave	1st and 3rd Wednesday.
Bro. Locomotive Engineers	1888	18	Caleb Knight	Windsor	David Lanspenry	Box 353	Alternate Tuesdays.
Bro. Locomotive Firemen	1890	30					2nd Tuesday.
Woodstock—							
Iron Molders	1899	18	Jos. Robinson	Woodstock	Wm. McLaughlin	Box 30	1st and 3rd Tuesday.



## REMARKS FROM LABOR ORGANIZATIONS.

3, Garment Worker—We believe that the adoption of the union label on all clothing would tend to benefit, not only the trade, but the public generally, as it would prevent the making of clothing in undesirable and pestilential places, and would, if anything, keep up or enhance the income of the wage-earner, thus creating a better distribution for the greater number.

6, Laborer—Union masons and bricklayers are working nine hours per day in this locality; the contractors employ union and non-union men at the same rate of wages and for the same number of hours.

7, Bricklayer—That work be done by day labor; that no Government contract be let, but building inspectors appointed to see that the work is done properly; \$500 is about the average we earn per year.

10, Machine Wood Worker—We think that every mill should put in dust fans on all machines, as it would greatly benefit the health of the employees.

12, Locomotive Engineer—If the hours of duty, especially during the winter months, could be regulated, so that we would not be on duty over 12 hours, it would be of permanent benefit to us.

15, Machinist—A law enforcing the eight-hour day; Government ownership of all public works.

21, Longshoreman—No legislation is required for the longshoremen, we are too well organized here, but in the other trades a more stringent alien labor law is required; since organization we have a better observance of Sunday, as the union men refused to work at the elevators on that day.

22, Street Railway Employee—Do away with Sunday cars, whereby our men could enjoy a Sunday as other working men do and allow us to live up to the laws of the Bible, which says:—"Six days shalt thou labor and do thy work—remember the Sabbath day to keep it holy."

26, Plasterers' Laborer—We have this year got an increase in the rate of our wages from 24c to 25c per hour (an increase of one cent per hour), and an agreement with the employers for two years from June 1st, 1901, to June 1st, 1903, this we have not had for a number of years until this year. There are no remarks concerning our branch of the trade that we could bring to you at present.

29, Stonecutter—The way in which our craft could be most improved would be by the introduction of a shorter work day, as for our work, nine hours per day is too much, and the eight-hour system would improve it a great deal; also by putting a stop to sub-contracts and piecework.

33, Plumber—We would repeat our suggestion of last year, wherein we stated that Provincial by-laws governing plumbing should be enacted, and that each municipality should be forced to appoint a practical plumber as inspector, so that the by-laws would be properly enforced. We maintain that no one but a practical plumber is competent to inspect our work. We are severely handicapped owing to the loose methods of installing, plumbing, etc. We have made repeated appeals to our City Council to have this condition remedied, but without avail. By complying with the above suggestions not only would our craft be benefited, but the health of the community would be safeguarded.

34, Blacksmith—We would like to see a law passed making it compulsory for all employers to place smoke stacks or chimneys over all fires, and to provide proper ventilation, so as to carry off all gases, smoke and heat, as far as possible.

40, Upholsterer—Abolition of piece work; compulsory half holiday per week; owing to so much dust, our business is very unhealthy; Government recognition of the union label.

44, Carpet Weaver—It is the opinion of this organization that the tariff on Brussels carpets made and shipped from England should be the same as from any other country, so that the two firms manufacturing them in Canada would be able to compete with the English manufacturers, as they claim they cannot do so under the present conditions.

46, Baker—We would like a law put in force making it compulsory for us to do our work in the day time, like other trades.

50, Machinist—We are not aware of anything special to bring before you, but shall always be happy to give all the information in our power.

51, Railway Conductor—I find it rather difficult to make my answers fit in with the questions on enclosed form, so I send you a short history of the year's work. There are 42 conductors running freight in our district; we had a very busy year; we are paid by the mile, 2 1-2c per mile on our run; passenger conductors in this district get \$103 per month, but work every day in the year; freight crews get about \$75.00 per month, and work six days a week. Quite a number of the conductors are members of the brakemen's order. They join it first, and some of them do not care to leave it. There are about ten in this district who are not members of any railway organization. We made from 3,800 to 4,200 miles a month last year, which would make the average about \$93,00 per month for the year. We have no regular hours of work. The call boy calls us any hour of the day or night, Sundays the same, but we are allowed eight hours' rest after sixteen hours on duty.

53, Woodworker—There are no fire escapes on factories here, the machines are not protected in any way, and the sanitary conditions are very bad.

55, Bricklayer—I am glad to be able to report that trade is better now than it has been for the past eight years.

56, Printer—I may say in connection with our union that we have only lately got recognition in this city, and our scale of wages, etc., are not by any means what our organization wishes for; but we think that by getting recognition we have put in the thin edge of the wedge, and expect a better condition of things to accrue therefrom.

57, Bricklayer—To prevent strikes we are of the opinion that the Mayor should be an arbitrator in case of dispute, to decide what he thinks is just, and the bosses and employees to submit to his decision; but the Mayor would have to be a man who would not be biased.

62, Sheet Metal Worker—We have given you the number of journeymen, but there are quite a number working here who are not, as there is a tinware and lantern factory here which employs a number of press hands and boys who are not tinsmiths.

63, Carpenter—The adoption of a universal eight-hour working day, legalized by act of Parliament, would be the best thing for the improvement of our craft, in our opinion.

It has been suggested that during the winter evenings talks on the trade, methods, materials, tools and other matters connected with our craft be carried on. If by any means the Government would supply or lend the lodges the latest works on the subjects named above, for, say, three months it is thought that the condition of the men would improve by natural evolution, and the country would be benefited thereby. A sort of travelling library might be established, at very little cost to the country, the union being held responsible for the books, models, drawings and the matter lent them, and also paying express charges. If this system were adopted and supplemented with visits occasionally of persons who were able to explain any difficult problem in such works, the benefit would be doubled. These persons might lecture the union on improved methods, and in connection with the trade. This would be in line with the movement now active regarding technical schools, and technical teaching. The lecturer need not confine himself to one trade, but to all matters connected with the building and kindred trades.

A movement is on foot here to make a day's work 9 hours, instead of 10, and to this end a petition is being circulated and is already largely signed, to induce the Town Council to make nine hours a day's work for all corporation employees who are working by the day. Several firms here have given their employees the Saturday half holiday; this is a start.

66, Locomotive Fireman—We would appreciate legislation forbidding traffic on Sunday, other than passenger and perishable freight.

69, Iron Molder—Yes, eight hours per day.

73, Machinist—As I have already stated, the Canadian Pacific Railway here give their employees a bonus hour; when they are working full time 59 hours is a week's work, and they are paid for 60 hours. Some of us here are employed by the Canadian Northern Railway, and have to work the full 60 hours for 60 hours' pay. It is a matter you might consider, and if possible have the C. N. R. grant its employees the same privileges as the C.P.R. We are led to believe that this is an Ontario law; we are also strongly in favor of, and in fact, urge an apprentice system of four years, and also a sum sufficient to support an apprentice when first starting at the business, so as to give an intelligent poor boy the same chance as one better off; and, further, we strongly urge the fortnightly pay system, as it is now in the west. Here we are nearly a month behind all the time, being paid for May's work, for instance, on the 23rd and 24th, and sometimes as late as the 27th of the next month. Hoping you will give these remarks your careful consideration, etc.

74, Tanner—Our union is strongly opposed among tanners, but the result has to be in our favor.

76, Boilermaker and Shipbuilder—The apprentice system is very bad in Ontario; in our line they take men at any age from 16 to 35 in non-union shops, and send them out to do the work that requires a practical boilermaker; the small towns, where living is so much cheaper, are our worst enemies: we think Government ownership the best remedy.

81, Tailor—More vigilance on the part of the factory inspectors in enforcing the proper sanitary conditions, and regarding the employment of child labor.

84, Locomotive Engineer—Government inspection of locomotive boilers; making it a criminal offence to employ minors as telegraph operators, and also engineers without two years' experience as locomotive firemen, or conductors without two years' experience as brakemen; making it compulsory for all stations and yards to be provided with distant semaphore signals, and all engines to be equipped with air brakes.

87, Custom Tailor—In answer to request for remarks, would say that as our label is the life and backbone of our organization, we most certainly would welcome such legislation as would protect us from piratical infringement and illegal use of the same. The Government has given us registration, it now remains to be seen if the law will afford us protection.

91, Cigar Maker—We would recommend that the import duty on cigars be increased to \$4.00 per pound, as this would enable the Canadian manufacturer to compete in the ten-cent class of cigars. The Inland Revenue stamp duty of \$6.00 per 1,000 cigars should be reduced. It was increased from \$3.00 to \$6.00 at the time of the Northwest rebellion, and the Government promised to reduce it when the cost of the rebellion was made up.

95, Bookbinder—Compulsory arbitration as per New Zealand act; union label on Government publications; municipal and Government ownership of all the means of production and distribution; the short work day, we heartily approve of not more than 8 hours per day; enforcement of the Alien Labor Law, which has been a dead letter; the establishment of a Government bindery for the Province of Ontario.

97, Bricklayer—We think it would be for the best interest of labor if the Government passed a law making eight hours per day compulsory on all Government works.

99. Metal Polisher—We consider that if our trade was thoroughly organized it would better our condition.

101, Woodworker—More stringent factory inspection and the inauguration of a Government eight-hour day, which, we believe, is the only available way of securing it.

105, Machinist—Shorter working hours.

108, Clerk—We have been trying to get a Saturday half holiday during the months of July and August, but have not been successful so far. We must first amend the early closing by-law through the City Council, and send it to the Legislature for ratification; we are still at it.

116, Printer—A compulsory arbitration law, if properly enacted, would benefit all classes of working men.

117, Woodworker—The Factories Act should be more strictly enforced, and we think it would be well if the said act were amended so as to permit certain officers of unions to enter factories and report to the Factory Inspector.

126, Locomotive Firemen—With regard to grievances and injustice, it would require an officer specially deputed to look after that part of our business.

131, Locomotive Fireman—Firemen employed on this branch of the Grand Trunk Railway do not seem to be alive to their interests by becoming members of the organization which has secured for them the wages they are earning to-day.

134, Journeyman Plumber—We would suggest that there be a general work day of eight hours, as it would give steadier employment for a greater number of men; also, that there be a practical plumber appointed as inspector for each city.

136½, Painter—The Brotherhood of Painters, Decorators and Paperhangers of America was organized March 15th, 1887, in Baltimore, Md., and incorporated December 7th, 1894, revised at Milwaukee December 4, 1899, and affiliated with the American Federation of Labor and the National Building Trades Council; Local Union, No. 205, organized June 26th, 1900, affiliated with the Hamilton Trades and Labor Council August 6th, 1900; No. 205 is the only local so far as known to possess and use a label of their own design in Canada in the painting trade.

128, Brakeman—We would suggest the curtailment to a certain extent of Sunday work; the enforcement of a law making the use of automatic couplers and air brakes compulsory on all cars, both freight and passenger; increased compensation for injuries or death, where a company is responsible, and a law compelling all railroads to carry two brakemen and conductors on all trains, and at least one brakeman and conductor, where engines are running light, that is, without any cars except a way car.

141, Railway Conductor—The only grievance is that the Intercolonial Railway run by the Government, is the only railway now using the old pin and link coupling. This is now more dangerous to the men than before the adoption of the automatic coupler, resulting in loss of fingers and sometimes the whole hand. We would think that, instead of being last, a Government railroad would be the first to adopt safety appliances.

151, Journeyman Plumber—We think a law compelling all cities and towns that have a system of sewers to have a practical plumber for an inspector would be a great benefit both to the health of the public, and also to the trade; also that the hours of labor should be shortened on Saturday to 5, that is a half holiday on Saturday.

157, Patternmaker and Engineer—Our membership are desirous of having a nine-hour day, as a standard of labor, and are of the opinion that such could be established by legislation.

161, Engineer and Patternmaker—We wish some revision of the law on duty, as cast iron patterns for stove plates and agricultural work are imported from the United States, and duty is collected for cast-iron at 3½c per pound; duty should be collected at the rate of at least 35 or 40 cents per pound; some \$10,000 or \$15,000 worth of these patterns are annually imported from the United States and duty paid for them as above;

in our opinion, the revision should be as follows: collect the duty as at present ad valorem on the value of the article proved by a sworn invoice.

166, Retail Clerk—In regard to above remarks, I might say that before we had agitated early closing all union and non-union men and women here had to work as long as 12 hours the first five days and 16 or 17 hours on Saturday; we now work 10 hours the first five days and 15 Saturday; so you see that through our efforts we have materially aided the non-union men as well as ourselves.

168, Carpenter—During the early part of the present year our union made rapid progress, and when the strike occurred we had a membership of 340. The membership has decreased slightly since owing to removals from the city. We are organizing our evening classes for the winter, and will be pleased to receive information in reference to Mechanics' Institute regulations or pertaining to technical schools.

171, Locomotive Engineer—In reference to average wages it would be rather difficult, owing to the system of running first in first out, also the great fluctuation in traffic, but I might say that since the introduction of the heavy engines, although the pay per day is about 7 per cent. more, the average monthly pay is much smaller than with the larger engines.

172, Cigarmaker—Owing to the unhealthy nature of the trade, special factory regulations should be provided, touching the proper system of ventilation, and the allaying of the dust created by the handling of the raw material.

177, Journeymen Barber—Stricter enforcement of the Sunday labor law; a Provincial board of examiners in the trade, to prevent such impositions on the public as barber colleges, departmental barber shops, and apprentices who have not served three years at the trade.

178, Journeyman Barber—We work from 8 o'clock to 8 o'clock, with an hour off to each meal; on Saturday we work from 8 until midnight.

185, Iron Worker—One benefit to labor organization would be a periodical tour in the midst of labor organization by prominent magnates, who, through their general experience, are our only council and guidance; labor legislation is a cardinal principle and will no doubt ere long be recognized as such, through the attention your department is showing to the interest of labor organizations in general, and its system of instruction merits more regard than has formerly been given the Bureau for its good work.

188, Locomotive Fireman—There is one dark cloud hanging over every fire boy on this system of railway, and that is our Providence Society, though wrongfully named such. If it were possible to remove this cloud from the employees' horizon, such a man would have the blessings of afflicted workers; we also regret having alien officials on this road, for want of a workable law to prevent the same.

190, Locomotive Engineer—Would suggest that a board of conciliation and arbitration be appointed by the Government, having the power to investigate and settle matters in dispute between railway companies and employees regarding wages, hours of labor, and also the more glaring cases of unjust treatment of employees.

192, Locomotive Fireman—Less Sunday labor and shorter working hours during the week.

194, Custom Tailor—There is no limit to the hours of labor in the busy season; employees work from 12 to 15 hours a day. The large majority of the employers do not furnish workshops, and the employees have to provide such work rooms, which cost them from \$25 to \$30 per year; a large number work at their homes; a lasting benefit to our craft would be the securing of free work rooms, and the abolition of the home system.

195, Locomotive Engineer—Is there anything you can do to do away with Sunday labor, and provide means of compulsory arbitration to take the place of strikes; if so you would be conferring a lasting benefit on railroad men.

197, Locomotive Engineer—Government inspection of locomotive boilers.

211, Railway Conductor—We have for years been trying to do away with Sunday labor.

Table showing average wages per week and hours of labor, with comparison between those organized and unorganized, in localities as reported.

Trade or Calling.	Average wages per week.		Hours of labor first five days.		Hours on Saturday.		Total hours per week.		Average number of weeks idle.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	
	8 c.	5 c.							
Allandale:									
Bro. Locomotive Engineers .....									
Belleville:									
Sheet Metal Workers .....	7 50		10		9		59		
Bro. Locomotive Firemen .....									
Berlin:									
Woodworkers, No. 112 .....	8 00		10		9		59		5
Painters and Decorators .....	9 00		10		9				
Broom-makers .....	8 50		10		9 & 5		55 & 59		
Woodworkers, No. 129 .....	7 50		10		9		59		
Wood Carvers .....	10 00		10		5		55		
Tanners and Curriers .....	7 50		10		10		60		
Bricklayers and Masons and Plasters .....	10 00		9		9		54		16
Retail Clerks .....	8 00		10		15		65		
General Teamsters .....	21 00	18 00	10		10		60		16
Cigarmakers .....	9 00	7 00	8	10	7	10	47	60	4
Typographical Union .....	7 50	5 50	9		6½		51½		
Brantford:									
Cigarmakers .....	8 00	5 00	8	12	5		46	53	11
Sheet Metal Workers .....	10 50		10		9		53		11
Plasterers .....	10 00	9 50	9	10	9	10	54	60	12
Plumbers, Steam and Gasfitters .....	13 75		10		5		55		12
Machinists .....			10		9 & 5		59 & 55		
Bricklayers and Masons .....	9 00		9	10	5	10	50	60	18
A. F. of L. 7370 (Laborers) .....	8 50		9		5		50	50	4
Brockville:									
Bro. Railroad Trainmen .....	14 00		10		10		60		
Fed. Labor Union (Laborers) .....	8 50		10		9 & 10		59 & 60		20
Typographical Union .....	10 00		9		9		54		
Chapleau:									
Bro. Locomotive Engineers .....	35 00								
Collingwood:									
Bro. Carpenters and Joiners .....	10 50	9 75	10		10		60		4
Fed. Labor Union (Laborers) .....	7 50		10		10		60		12
Dundas:									
Machinists .....	10 50	8 75	10½		5		57½		
Wood-workers .....	8 25		10		9		59		3
Fort William:									
Bro. Locomotive Engineers .....									
Machinists .....	14 00		10		5 & 9		55 & 59		5
Galt:									
Machinists .....	8 50		10		5		55		
Guelph:									
Typographical Union .....	9 00	6 00	9		8		53		
Brussel Carpet Weavers .....	10 00		10		5		55		
Journymen Tailors .....									
Iron Molders .....			10		9		59		
Wood-workers .....	7 50		10		9		59		7
Bakers and Confectioners .....									
Bricklayers and Masons .....	16 50	12 50	9	10	9	10	54	60	16
Carriage and Wagon-makers .....	9 00		10		9		59		
Wine Clerks .....	8 00								
Journymen Barbers .....	9 00		10		14		64		
Hamilton:									
Leather Workers on horse goods .....	6 50		10		10		60		
Amal. Soc. Carpenters and Joiners .....	12 40		10		5		55		
Painters and Decorators .....	9 00	7 50	9	10	5	10	50	60	3
Cigarmakers .....	10 00		8		4		44		2
Boot and shoe (day workers) .....	9 00		10		5		55		1
Boot and Shoe (Fitters) .....	3 00		10		5		55		7
Machinists .....	11 00	10 00	10		5		55		7

Table shewing the average wages per week and hours of labor, etc.—Continued.

Trade or calling.	Average wages per week.		Hours of labor first five days.		Hours on Saturday.		Total hours per week.		Average number of weeks idle.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	
Hamilton.-- <i>Con.</i>	\$	c	%	c.					
Bartenders	9 00	6 00		8		10		50	
Garment-workers	11 00			10		5		55	
Street Railway Employees	9 00	8 00		10	13	10	13	60	78
Bricklayers and Masons	8 25			9		5		54	27
Plumbers, Steam and Gasfitters	12 00	10 50	10 & 8		5 & 8			55 & 48	
Teamsters	12 00			9		9		54	
Journeyman Horseshoers	9 60	6 60		10		9		59	
Bakers and Confectioners	11 00			10	10 to 12			60 & 62	1
Tobacco-workers	9 00		10 & 9½		5 & 7½			55	8
Bro. of Carpenters and Joiners	12 40	9 00		10		5		55	15
Journeyman Tailors	10 25	9 00		10		12		62	7
Iron Molders	13 50			10		10		60	12
Sheet Metal Workers	12 00	10 50		10		5		55	5
Wood-workers	9 15			10		5		55	
Metal Polishers' Buffers and Platers	10 00			10		9		59	16
Bro. Locomotive Firemen	12 50		12 to 15		12 to 15			72 to 90	
Fed. Labor Union (Fire Dept)	12 00								
Journeyman Barbers	9 00			10		14		64	
Typographical Union				10		4		54	
Broom-makers	12 00	10 75		10		9		59	1
Kingston :									
Fed. Labor Union (Laborers)	9 00			9		9		54	19
Plumbers, Gas and Steam Fitters	12 00			9		9		54	5
Iron Molders	12 10			10		5		55	8
Bricklayers, Masons and Plasterers	12 00	9 00		9	10	9	10	54	60
Journeyman Tailors	9 00			10		10		60	
Painters and Decorators	8 00			10		9		59	15
Laborers Protective Union	7 00	5 75		9	10	9	10	54	60
Sheet Metal Workers	11 50			9		9		54	5
Street Railway Employees	6 50	5 00		15		15		90	
Amal. Soc. Engineers	12 00	10 75		10		5		55	6
Typographical Union	12 00			10		9		59	
Ironworkers and Helpers	8 25	7 50		10		5 & 9		55 & 59	
Bro. Carpenters and Joiners	12 00	7 50		9		9		54	10
Lindsay :									
Bro. Railroad Trainmen				16				96	
Bro. Locomotive Firemen	11 00			16		16		96	
London :									
Painters and Decorators	10 80	9 00		9		8		53	
Amal. Soc. Carpenters and Joiners	10 50			9		7½		52½	
Cigarmakers	7 00	6 00		8	10	6	10	46	60
Bricklayers and Masons	11 00	9 50		8		7		47	20
Electrical Workers									
Broom-makers									
Bro. Locomotive Firemen No. 117	11 45								1
Order Railway Conductors No. 16	20 00								
Midland :									
Longshoremen's Int. Union	11 50	7 50							
North Bay :									
Bro. Railroad Trainmen	15 00			8		8		48	16
Machinists	12 60			10		10		60	
Order Railway Conductors	22 00								
Bro. Locomotive Engineers	20 00								
Oaws :									
Bro. Carpenters and Joiners	15 00			9		9		54	6
Letter Carriers	7 50								
	to								
	12 50								
Plumbers, Steam and Gas Fitters	13 50			9		9		54	10
Welders' Laborers	9 50	8 25		9		5	9	50	54
Bookbinders	12 00			10		5		55	
Commercial Union (Clerks)	9 00			9		13		58	





Table shewing the average wages per week and hours of labor, etc.—*Concluded.*

Trade or Calling.	Average wages per week.		Hours of labor first five days.		Hours on Saturday.		Total hours per week.		Average number of weeks idle.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	
Toronto:	\$ c.	% c.							
Pattern Makers	15 00	13 50	10		5		55		
Order Railway Conductors No. 344	15 75								
Machinists	11 00	9 50	10		5		55		
Woodworkers No. 121	12 00		10		5		55		
Bro. Locomotive Firemen No. 262									
Broommakers	7 00		10		5		55		12
Woodworkers No. 111	11 00		10		5		55		
Plasterers	14 46		8		4		44		10
Plasterers' Laborers	9 00		8		4		44		
Blacksmiths	11 75		10		5		55		
Order of Railway Conductors No. 17									
Upholsterers	12 00		9		5		50		4
Stonemasons	10 00		8		4		44		10
Bricklayers and Masons	14 00		8		4		44		15
Bro. Carpenters and Joiners	9 00	8 00	9		5		50		
Bread Salesmen	9 00		8		11		51		4
Boiler Makers and Iron Ship Builders	12 00	9 00	10		5		55		4
Sheet Metal Workers	12 50	10 00	9	10	5		50	55	3
Cigarmakers	9 00		8		4		44		3
Painters and Decorators	8 50	7 25	9		5		50		12
Bookbinders	12 50		9 <sup>1</sup> / <sub>2</sub>		4 <sup>1</sup> / <sub>2</sub>		52		2
Metal Polishers, etc., No. 53	9 00		10		5		55		1
Printing Pressmen	14 00		10		4		54		
Mailers	14 00		8		8		48		
Woodworkers No. 34	12 00		10		5		55		
Metal Polishers No. 21	10 00	8 50	10		5		55		
Theatrical Stage									
Employees	17 00		11		13		68		12
Varnishers and Polishers	12 00		10		5		55		5
Architectural and Structural Ironworkers	12 00	8 00	9		5		50		
Typographical Union			10		4		54		6
Machinists No. 235	12 37	10 50	10		5		55		
Excelsior Assembly K. of L									
Bro. Locomotive Firemen									
Stone Cutters	18 92	16 00							20
Amal. Society Engineers	13 50		10		5		55		2
Bro. Railroad Trainmen No. 322	12 50								
Railroad Teamsters	8 80		11		9		64		
Journeyman Tailors	9 00	6 00							
Windsor:									
Bricklayers and Masons	14 00		9		9		54		20
Fed. Labor Union No. 8019									
Tinners and Plumbers	14 25		9		9		54		10
Bro. Locomotive Engineers	19 00								
Bro. Locomotive Firemen	17 25								
Woodstock:									
Iron Molders	13 00		10		9		59		10

## CIRCULAR TO LABOR ORGANIZATIONS.

The following circular was issued to the labor organizations and manufacturers in Ontario:—

## DEPARTMENT OF PUBLIC WORKS, ONTARIO—THE BUREAU OF LABOR.

Toronto, September, 1901.

In the report of the Ontario Bureau of Labor for 1900, a record was given of strikes and lock-outs, as far as could be ascertained, for a period including the year 1899, and to August 31st, 1900. With a view of making the history continuous, the Bureau is now engaged in an investigation of the strikes and lock-outs that have taken place in the Province from September 1st, 1900, to August 31st, 1901. With this object in view, you are asked to co-operate by filling in answers to questions on accompanying schedule, and returning same to this office as soon as possible. The assurance is given you that such information will be received in the strictest confidence and presented in the report of the Bureau in such a manner as to preclude individuality. It is desired that you return enclosed form not later than November 15th.

The Bureau will be pleased to receive from you any suggestions or remarks relating to strikes or lock-outs, or any data having reference thereto, which will give an intelligent understanding of the causes leading to these troubles, or suggest possible preventatives. By using enclosed envelope no postage is required. Thanking you in advance for this favor. Yours respectfully,

Secretary, The Labor Bureau, Ontario.

If you are not now secretary of your organization, please hand this to your successor as soon as possible.

## LABOR ORGANIZATIONS' SCHEDULE.

## DEPARTMENT OF PUBLIC WORKS, ONTARIO—THE BUREAU OF LABOR.

Strikes and Lock-outs—Occurring between September 1st, 1900, and August 31st, 1901.

1. Location? .....
2. Trade or calling? .....
3. Name of Organization? .....
4. Name of President for current term? .....
- Address?.....
5. Name of Corresponding Secretary for current term.. . . .
- Address.. ..
6. Date of commencement of strike or lock-out? .....
7. Date of termination? .....
8. Cause .....
9. No. of employees involved, Male..... Female.....
10. No. of establishments affected? .....
11. Nature of settlement effected? .....
12. Total amount paid in relief to strikers? .....
13. Amount paid out for other purposes? .....
14. Total cost? .....
15. Total loss in wages to strikers? .....

If strike, erase the word lock-out; if lock-out erase the word strike. If spaces allowed for answers are insufficient, please use additional paper.

Strikes and Lockouts.—Returns from Organizations.

Location and nature of industry.	Time of beginning and ending of strike.		No. of establishments and persons affected.		Result.	Strike allowance paid out.	Loss to strikers.	Total cost of strike to organization.
	From.	To.	Establishments.	Persons.				
<b>Strikes.</b>								
Dundas— Machinists . . . . .	Oct. 10, 1900 . . . . .	Jan. 13, 1901 . . . . .	1	60	Settled by mediation of Deputy Minister of Labor . . . . .	1,850 00	4,000 00	2,100 00
Guelph— Brussels Carpet Weavers . . . . .	April 1, 1901 . . . . .	April 1, 1901 . . . . .	16	65	Successful . . . . .	80 00	80 00	
Hamilton— Custom Tailors . . . . .	Mar. 1, 1901 . . . . .	Mar. 7, 1901 . . . . .	4	38	Successful . . . . .	600 00	600 00	
Kingston— Painters and Decorators . . . . .	June 15, 1901 . . . . .	Oct. 5, 1901 . . . . .	1	17	Successful . . . . .	236 70	236 70	
London— Cigarmakers . . . . .	Dec., 1901 . . . . .	Feb., 1901 . . . . .	1	42	Partly successful . . . . .			
Oshawa— Coremakers . . . . .	June 3, 1901 . . . . .	June 6, 1901 . . . . .	13	36	Successful . . . . .	10 00	270 00	22 00
Ottawa— Plasterers . . . . .	June 1, 1901 . . . . .	June 17, 1901 . . . . .	11	54	Compromise . . . . .	45 00	1,100 00	55 00
Toronto— Sheet Metal Workers . . . . .	July 14, 1901 . . . . .	Aug. 9, 1901 . . . . .	1	22	Successful . . . . .	375 00	1,040 00	400 00
Brass Moulders . . . . .	June 21, 1901 . . . . .	Aug. 6 . . . . .	7	23	Compromise . . . . .	200 00	140 00	214 00
Broom-makers . . . . .	Mar. 5, 1901 . . . . .		1	16	Still pending . . . . .			
<b>Lockout.</b>								
Oshawa— Coremakers . . . . .	No date given.	Return received Oct. 24 ; all then locked out.						

The returns from labor organizations reported 11 strikes and one lock-out. Returns from manufacturers reported 10 strikes.

The returns in both cases covered the period from September 1st, 1900, to August 31st, 1901. Two of the strikes reported over-lapped in the two classes of returns. Thus, there was a total of 19 strikes and one lock-out reported for this period, as against 35 strikes and two lock-outs for a similar previous period. The location of their occurrence includes Dundas, Hamilton, Guelph, Kingston, London, Oshawa, Ottawa, Thorold and Toronto.

The results of the 19 strikes, and the one lock-out, were:—

Successful .....	7	Unsuccessful .....	2
Settled by compromise .....	7	Still pending .....	1
Settled by arbitration .....	1	No particulars .....	1

The strikes by trades, and the year of their occurrence are:—

Broommakers .....	1901	Machinists .....	1900 (1), 1901 (3)
Brass moulders .....	1901	Locomotive works .....	1901
Brussels carpet Weavers (not given)		Painters and decorators .....	1901
Custom tailors .....	1901	Quarrymen .....	1901
Coremakers .....	1901	Sheet metal workers .....	1901
Corporation Laborers .....	1900-1901	Street railway employees .....	1901
Furriers .....	1901		

#### PARTICULARS OF STRIKES AND LOCK-OUTS—Returns from Labor Organizations.

##### DUNDAS.

Organization affected, International Association of Machinists, Lodge No. 69—Date of commencement of strike, October 10th, 1900; date of termination, January 13th, 1901; cause of strike, the refusal of the employers to recognize a committee of their own men as competent to arrange a basis of wages, and the regulation of the number of apprentices, or a minimum rate of same; number of employees involved, 60; number of establishments affected, 1; nature of settlement, the firm, although not signing any agreement, through the intervention of the Deputy Minister of Labor, agreed to all the men asked for; total amount paid in relief to strikers, \$2,100, about \$250 of this went for rent, etc., total cost of strike, \$2,100; loss of wages to strikers, about \$4,000; in this case it was both a strike and a lock-out, as the firm refused to listen and told the men to strike if they could, and they ordered them to take out their boxes.

##### HAMILTON.

Organization affected, Journeymen Tailors' International Union, No. 149—Date of commencement of strike, April 1st, 1901; date of termination, April 1st, noon; cause of strike, a dispute in the classification of material in first and second class list, also a demand for 10 per cent. increase in wages; number of employees involved, male 50, female 15; number of establishments affected, 16; nature of settlement, the 10 per cent. increase asked for was given, and the classification of materials settled in employees' favor; loss in wages, about \$80, or half-day's wages for 65 union members.

##### KINGSTON.

Organization affected, Brotherhood of Painters, Decorators and Paperhangers, No. 114—Date of commencement of strike, March 1st, 1901; date of termination, March 7th; cause of strike, demand for an advance of 15c per day, and to work 9 hours instead of 10; number of employees involved, 38; number of establishments affected, 4; nature of settlement, demands of the men granted; loss in wages, about \$500.00.

##### LONDON.

Organization affected, Cigar Makers' International Union, No. 278—Date of commencement of strike, January 15th, 1900; date of termination, October 5th, 1901; cause

of strike, reduction of wages in a union shop which they tried to make non-union, but failed, so they came to time, and the shop is union now; number of employees involved, male 13, female 4; nature of settlement, the payment of union wages, one dollar in advance of non-union; total amount paid in relief to strikers, \$236.70; most of employees involved got other jobs within a short time, except three of the men, some were out two weeks and some three; they were paid \$5.00 per week while on strike by the union. The union pays its members \$5.00 per week for 16 weeks, and then \$3.00 per week until the strike is over, or until employed.

## OSHAWA

Organization affected, Coremakers' International Union—Date of commencement of strike, December; date of termination, January; cause of strike, we went out on strike because we had to go out in the moulding shop, which heated us up, and after which we had to sit in a draught, which was most injurious to our health; number of employees involved, 42; nature of settlement, we were to shift in the manner described only in very exceptional cases; total loss in wages, about \$1,200; we are sorry to say that the company have broken all their agreements with us. we settled the strike and now we are locked out.

## OTTAWA.

Organization affected, Operative Plasterers' International Association, No. 124—Date of commencement of strike, June 3rd, 1901; date of termination, June 6th, 1901; cause of strike, we demanded an increase of wages and shorter hours, namely, half holiday on Saturday; number of employees involved, male 36; number of establishments affected, 13; nature of settlement, demand of the men was granted; total amount paid in relief to strikers, \$12.00; total cost, \$22.00; loss in wages, \$270.00.

Organization affected, Amalgamated Sheet Metal Workers' International Union, No. 11—Date of commencement of strike, June 1st, 1901; date of termination of strike, June 17th, 1901; cause of strike, employers ignored the demands of the union in asking for 15 per cent. increase, that none but union labor be employed, that pay be given for overtime at the rate of time and one-half, and a minimum rate of 20c per hour for all who served over four years; number of employees involved, 54; numbr of establishments affected, 11; nature of settlement, 10 per cent. increase of wages, recognition of the union, time and one-half overtime, double time after 12 p.m., and four-year apprenticeship clause; had to drop demand for union labor and minimum wage; total amount paid in relief to strikers, \$45.00; amount paid for other purposes, \$10.00; total cost, \$55.00; loss in wages, about \$1,100.

## TORONTO.

Organization affected, International Association of Machinists, Lodge 235—Date of commencement of strike, July 19th, 1901; date of termination, August 9th, 1901; cause of strike, refusal to use unfair castings, as the brass molders were on strike; number of employees involved, 22; number of establishments affected, 1; nature of settlement, satisfactory to union brass molders; total amount paid in relief to strikers, \$375; amount paid for other purposes, \$25; total cost, \$400; loss in wages, \$1,060.

Organization affected, Brass Molders' International Union, No. 33—Date of commencement of strike, June 21st, 1901; date of termination, August 6th; cause of strike, refusal of employers to sign an agreement granting the men a working week of 55 hours, and overtime at rate of time and a half, and the limitation of apprentices to one to a shop; wages to be 25c per hour; number of employees involved, 23; number of establishments affected, 7; hours, and overtime at rate of time and a half, and the limitation of apprentices to one to a shop; wages to be 25c. per hour; number of employees involved, 23; number of establishments affected, 7; nature of settlement, a minimum scale of 22½c. per hour, 55 hours per week; all the nature of settlement, a minimum scale of 22½c per hour, 55 hours per week; all the men whose places had not been filled went back to work; total amount paid in relief to strikers, \$200; paid for other purposes, \$14.00; total cost, \$214; loss in wages, \$140;

during the strike quite a few left town and procured employment elsewhere, and, also, there were some who went into business for themselves.

Organization affected, Broommakers' International Union, No. 55—Date of commencement of strike, March 5th, 1901; date of termination, still on (October 14); cause of strike, discharge of a union man; number of employees involved, 16; total amount paid in relief to strikers, \$54.00; paid out for other purposes, \$25.00; total cost, \$79.00; loss in wages, \$784 for six weeks.

#### PARTICULARS OF STRIKES AND LOCK-OUTS.—Returns from Manufacturers.

##### HAMILTON.

Merchant Tailor—Date of strike, April, 1901; date of termination, the strike lasted one day; employees were members of a labor organization; cause of strike, a difference on the classification of goods, which governed the prices of making; number of employees involved, 8; nature of settlement, an advance of from 10 per cent. to 25 per cent. in wages; there was no loss to firm except in the advanced wages.

##### KINGSTON.

Corporation of the City of Kingston—Date of strike, November 30, 1900, and January 11, 1901; date of termination, December 4th, 1900, and February 4th, 1901; employees were members of a labor organization; cause of trouble, the union men refused to work with the non-union men; number of employees involved, 22; nature of settlement, the city claimed that all taxpayers were entitled to work, whether union or non-union, and the men resumed work on this understanding.

Electric Railway Company—Date of lock-out, June 8th, 1901; date of termination June 22, 1901; employees were members of a labor organization; cause of trouble, demand for increased pay, recognition of the union, and the employment of only union labor; number of employees involved, 22; nature of settlement, slight increase in pay, and the company to have the right to employ any kind of labor; how many lost situation as a result of trouble, 2; loss to firm, \$350.

Locomotive Company—Date of strike, May 16; date of termination, May 21st; employees were members of a labor organization; cause of trouble, a request for increased wages had been made and was under consideration, in the meantime an employee was discharged with reason; the men demanded his reinstatement, and the immediate granting of all their previous requests for increased pay, and struck to enforce same; nature of settlement, the discharged man was not re-instated, the increases were given in some cases and refused in others; how many lost situation as a result of trouble, 1; loss to firm, about \$5,000.

##### OTTAWA.

Machine Shop—Date of strike, May 20th, 1901; date of termination, about September 5th; cause of trouble, men demanded increase of 12½ per cent. in wages, and a nine-hour day with ten hours' pay; number of employees involved, 11; nature of settlement, men came back at the old rates, but were given 5 per cent. increase voluntarily by the employers; loss to firm, \$500.

##### THOROLD.

Contracting Company—Date of strike, July 30th, 1901; date of termination, August 15th, 1901; employees claimed to be members of a labor organization; cause of trouble,

the men demanded shorter hours and higher wages, they were receiving as high wages as the work commanded anywhere in the Province; number of employees involved, 30; nature of settlement, the strike disintegrated, the men returned at the old rates, one hour less being granted on Saturdays; one arrest was made during trouble; how many lost situation, 8 or 10, 5 of the ringleaders were not re-employed; loss to firm, cannot estimate accurately, not less than \$500; the strikers were quarrymen, drillers, engineers and derrick men, they thought we were rushed for stone and took advantage of the situation.

## TORONTO.

Furriers—Date of strike, about January 15th, 1901; date of termination, about January 24th; a few of the men were members of a labor organization, cause of trouble, one male operator (machine) was put in with girls, and could do double the amount of work of one girl, consequently they did not want him there; number of employees involved, male 10, female about 30; nature of settlement, we explained our position, viz., that as he drew over double the amount of wages they were paid, he must do more work; about three girls and two men lost their situations as a result of the trouble; loss to firm, principally in filling orders.

Manufacturers of Woodenware, Etc.—Date of commencement of strike, March 5th, 1901, the broom-makers went out on strike; date of termination, not yet settled, and not likely to be; employees were members of a labor organization; cause of trouble, we had in our employ one man who had learnt his trade in the Central Prison, we refused to discharge him and the others went out on strike; number of employees involved, 30; no settlement has been effected; the men were all replaced two weeks after the strike; all lost situation as a result of the trouble.

Machinist—Date of strike, April 1st, 1901; date of termination, April 2nd, 1901; employees were members of a labor organization; cause of trouble, change of foreman; number of employees involved, 17; nature of settlement, old foreman was reinstated; loss to firm, about \$50.00.

## MANUFACTURERS' SCHEDULE.

No. 2, 1901.

Office No.....

## DEPARTMENT OF PUBLIC WORKS, ONTARIO— THE BUREAU OF LABOR.

1. Name of Firm? .....
2. Location .....
3. Have you had any strike or lock-out among your employees during the period from September 1st, 1900, to August 31st, 1901? .....
4. Date of strike or lock-out?.....
5. Date of termination? .....
6. Were employees members of a labor organization? .....
7. Cause of trouble? .....
8. No. of employees involved, Male? ..... Female?.....
9. What was the nature of the settlement effected? .....
10. Were any arrests made during trouble? .....
11. How many lost situation as a result of trouble? .....
12. What was loss to firm as a result of trouble? .....

Where blank spaces left for answers are insufficient, please use additional paper. If strike, erase the word lock-out; if lock-out, erase the word strike.

## Strikes and Lockouts.—Returns by Employers.

Location and nature of industry. Strikes.	Time of beginning and ending of strike.		No. of establishments and persons affected.		Results.	Loss to employers.
	From.	To.	Estab-lish-ments.	Per-sons		
Hamilton— Custom Tailors.....	Lasted one day.....		1	8	Compromise.....	\$ c.
Kingston— Corporation work .....	Nov. 30, 1900	Dec. 4, 1900	1	22	Strikers unsuccessful.....	
“ “ .....	Jan. 11, 1901	Feb. 4, 1901	1	22	“ “ .....	
Street Railway Co.....	June 8, 1901	June 22, 1901	1	22	Compromise.....	350 00
Locomotive works .....	May 16, 1901	May 21, 1901	1	....	Compromise.....	5,000 00
Ottawa— Machinery .....	May 20, 1901	Sept. 5, 1901	1	11	Compromise.....	
Thorold— Quarrymen .....	July 30, 1901	Aug. 15, 1901	1	30	Small compromise .....	500 00
Toronto— Furriers .....	Jan. 15, 1901	Jan. 24, 1901	1	40	Strikers unsuccessful ..	
Broom-making .....	Mar. 5, 1901	.....	1	30	Still pending .....	
Machinist .....	April 1, 1901	April 2, 1901	1	17	Strikers successful .....	50 00

## CIRCULAR TO MANUFACTURERS.

## DEPARTMENT OF PUBLIC WORKS, ONTARIO.—THE BUREAU OF LABOR.

Toronto, April 12th. 1901.

The Act creating The Bureau of Labor, passed by the Ontario Legislature in April 1900, gives power to The Bureau, among its other provisions, to collect and publish information that will give an intelligent understanding of the relations between labor and capital, together with such a knowledge of the industries of the Province as The Bureau may be able to gather. It is the purpose of The Bureau to make an investigation of the industries of the Province during the year 1900, and for the accomplishment of this object The Bureau seeks your co-operation, giving you the assurance that information thus obtained will be used only in tabulated form, and in no way that would disclose the identity of the persons supplying such information to The Bureau, except in the most general way.

The Bureau, confident that the provincial merchants will render the assistance asked for, respectfully requests that the enclosed schedule be filled in at your earliest convenience, and returned to this office in enclosed envelope, which does not require postage if not sealed.

Thanking you in advance for this courtesy,

Yours respectfully,

R. GLOCKLING,  
Secretary The Labor Bureau, Ontario.



Manufacturers' Schedule No. 1.—1901.

Office No.....

## DEPARTMENT OF PUBLIC WORKS, ONTARIO.—THE BUREAU OF LABOR.

The following questions refer to the year ending December 31st, 1900.

- 1.—Name of Firm? .....
- 2.—Post-office address? .....
- 3.—Character of business? .....
- 4.—Capital employed, including plant? .....
- 5.—Number of days in operation during year? .....
- 6.—Gross value of product manufactured during year? .....
- 7.—Has the production increased or decreased during year? .....
- 8.—If either, what per cent? .....
- 9.—Value of materials used in production during year, including fuel, gas, etc?.....
- 10.—Total taxes paid during year? .....
- 11.—Total insurance paid during year? .....
- 12.—Amount invested, if any, in permanent repairs or plant enlargement during year? .....
- 13.—Total number of employees during year (wage-earners only), male .....
- female .....
- 14.—Total wages paid during year to wage-earners only, male .....
- female .....
- 15.—Highest weekly wages paid, male .....
- female .....
- 16.—Lowest weekly wages paid, male .....
- female .....
- 17.—Total number of salaried clerks and officials, male .....
- female .....
- 18.—Total salaries paid to clerks, officials, etc., during year .....
- 19.—Have wages been increased or decreased during the year? .....
- 20.—If either, what per cent.? .....
- 21.—Which class of employees has increase or decrease affected, if both, what per cent. in either case? .....

## INDUSTRIAL STATISTICS.

With a view to a collection of data of the industries of the Province, a circular was forwarded to 2,500 representative firms throughout the Province. Only 570 replies were received, and of these many were of such an incomplete character that 305 only were available, any bearing the slightest imprint of inaccuracy being carefully excluded. The value of this data will be enhanced by time, as year after year comparison will show progress or otherwise; this being the intention of this character of investigation. Many manufacturers demurred at giving the information, particularly that of the gross value of the product. With time and increased facilities the Bureau will doubtless overcome this reticence to contribute to public data on the part of the different elements of the people of our Province.

The object of the present investigation was primarily to show the relative per centage of the labor cost to the gross value of products in Ontario. Future investigation will go further afield and with the co-operation of employers and employees alike will construct such information as will be invaluable to all.

As will be seen by reference to table, there were 305 establishments from which available statements were received, giving amount of wages paid, the number employed, the days in operation and the value of the product. The 305 manufacturers had in their employ an average of 14.240 persons during the year 1900. The number of days these establishments were in operation was 87,308; the amount disbursed by them in wages during that period was \$4,966,622.00; the average annual earnings per person were therefore \$325.29, and the average daily wage rate was \$1.23.

The gross value of the product, which may be considered as the manufactured product or the output of these 305 establishments was \$23,031,579.00. Upon comparing this sum with the amount paid in wages it is seen that labor received 21.69 per cent. of the commercial value of the manufactured product. The proportion of the output or gross product value distributed among the several accounts of cost of material, interest, taxes, rent, insurance, miscellaneous expenses and profit, was 78.31 per cent. It will be discovered in studying the tables and making comparisons that there are many establishments which, while being classified under similar captions, show a considerable discrepancy when the ratio of wages paid to the value of the product is considered. This will be understood when it is explained that in many cases much of the material used in the process of manufacture by one establishment may be, and oftentimes is, the unfinished product of another. Hence a smaller labor cost in one instance and a greater proportion of expense for labor in the other. Of course, therefore, there will be a reversal of conditions as to the cost of material, etc., in such instances.

Number of circulars issued .....	2,518
Number of replies received .....	83
Number of replies available .....	305
Number of establishments represented .....	305
Number of employees .....	14,240
Number of days in operation .....	87,308
Amount paid in wages .....	4,996,622 00
Average annual earnings per person .....	325 29
Average daily wage rate .....	1 23
Gross value of product .....	\$23,031,579 00
Per cent. of value paid in wages.....	21.69
Per cent. balance of cost .....	78.31

TABLE SHEWING WAGE RATE AND LABOR COST.

## INDUSTRY.—AGRICULTURAL IMPLEMENTS.

Schedule No.	Average No. of persons employed.	No of days in operation.	Amount paid in wages	Gross value of product.	Employees' average annual earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			\$	\$	\$ c	\$ c.		
368	55	300	17,100	48,000	310 90	1 03	35.62	64.38
265	24	360	10,200	20,000	425 00	1 41	51.	49.
227	76	290	28,200	75,000	371 05	1 27	37 6	62.4
175	76	300	38,350	110,000	504 60	1 68	34.86	65.14
101	16	308	5,390	9,700	336 87	1 09	55.56	44.44
93	51	208	12,180	24,500	248 62	1 19	51.75	48.25
56	16	300	5,000	25,000	312 50	1 04	20.	80.
32	11	313	2,200	7,050	200 00	62	31 20	68 80
25	11	310	4,000	12,000	363 63	1 17	33.33	66.67
404	410	290	155,000	800,000	378 04	1 30	19 37	80.63
406	222	305	91,500	400,000	412 16	1 35	22.87	77.13
	968	3,234	369,120	1,531,250				

## INDUSTRY.—BREWERS AND MALTSTERS.

250	44	313	18,500	120,000	420 45	1 34	15.41	84.59
211	35	313	14,500	100,000	414 28	1 36	14.5	85.5
200	22	300	7 60	30,000	345 45	1 15	25.33	74.67
173	12	305	7,450	40,400	620 83	2 03	18.44	81.56
472	16	313	5,990	39,600	374 37	1 19	15.12	84.88
	129	1,544	53,040	330,000				

## INDUSTRY.—CANNING FACTORIES.

271	102	104	7,125	35,000	69 85	67	20.28	79.72
43	137	260	10,250	115,000	74 81	28	8.91	91.09
476	61	125	3,300	9,000	54 09	43	36.66	63.34
413	24	65	1,025	2,600	42 70	65	39.42	60.58
360	53	180	11,500	35,000	216 98	1 20	32.85	67.15
	377	734	33,200	296,600				

## INDUSTRY.—CARRIAGE AND VEHICLE MANUFACTURERS.

98	54	300	23,000	90,000	425 92	1 41	25.55	74.45
327	106	270	58,000	200,000	547 16	2 02	29.	71.
399	12	305	5,000	14,000	416 66	1 36	35.71	64.29
387	2	305	300	1,800	150 00	49	16.66	83.34
388	12	300	4,800	16,000	400 00	1 33	30.	70.
416	143	305	54,175	316,800	378 62	1 24	17 09	82.91
436	6	305	2,600	55,000	433 33	1 42	4.72	95.28
103	5	305	800	8,000	160 00	52	10.	90.
182	5	300	1,000	2,000	200 00	66	50.	50.
244	104	300	41,000	240,000	394 23	1 31	17.08	82.92
278	2	305	900	2,000	450 00	1 47	45.	55.
302	58	300	21,500	75,000	370 68	1 23	28.66	71.34
320	58	300	18,000	75,000	310 34	1 03	24.	76.
370	2	300	800	4,000	400 00	1 33	20.	80.
358	73	300	35,600	125,000	487 67	1 62	28.48	71.52
367	9	305	4,500	11,000	500 00	1 63	40.90	59.10
	651	4,805	271,975	1,235,600				

TABLE SHEWING WAGE RATE AND LABOR COST.—Continued.

## INDUSTRY.—DAIRY PRODUCTS.

Schedule No.	Average No. of persons employed.	No. of days in operation.	Amount paid in wages.	Gross value of product.	Employees' annual average earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			\$	\$	\$ c.	\$ c.		
332	8	195	600	39,000	75 00	38	10.53	89.47
342	.....	305	2,600	18,000	.....	.....	14.44	85.56
328	.....	280	80,000	200,000	.....	40	40.	60.
279	17	200	3,100	30,000	182 35	91	10.33	89.67
270	5	365	1,740	7,950	348 00	96	21.25	78.75
267	10	180	1,775	8,175	177 50	98	21.71	78.29
243	.....	155	250	10,020	.....	.....	2.49	98.51
181	4	155	1,070	8,708	267 50	1 72	12.28	87.72
127	6	310	7,100	38,765	1,183 33	3 81	18.31	81.69
5	14	305	7,800	35,000	557 14	1 82	22.28	77.72
438	.....	200	1,860	8,500	.....	.....	21.88	78.12
417	11	305	3,820	37,125	347 27	1 13	10.28	89.72
411	4	200	440	11,250	110 00	2 20	3.91	96.09
398	8	200	1,650	4,000	206 25	1 03	41.25	58.75
	87	3,355	113,805	456,493				

## INDUSTRY.—FLOUR MILLS.

35	5	300	1,500	75,000	300 00	1 00	2	.98
361	3	300	760	25,000	253 33	84	3.04	96.96
326	8	300	3,500	67,000	437 50	1 45	5.22	94.78
318	4	250	1,650	45,000	412 50	1 65	3.66	96.34
317	8	235	4,000	81,000	500 00	2 12	4.93	95.07
303	68	305	31,175	921,800	531 98	1 74	3.38	96.62
301	17	300	6,600	132,680	383 23	1 29	4.97	95.03
297	11	305	6,140	89,500	558 18	1 83	6.86	93.14
295	5	300	2,200	40,000	440 00	1 46	5.5	94.5
288	4	305	1,600	30,000	400 00	1 31	5.33	94.67
261	86	300	36,000	500,000	418 60	1 39	7.2	92.8
253	8	305	4,700	50,000	587 50	1 92	9.4	90.6
249	8	300	3,100	30,000	387 50	1 29	10.33	89.67
235	8	300	3,100	30,000	388 50	1 29	10.33	89.67
226	6	300	2,750	50,000	458 33	1 52	5.5	94.5
206	18	305	7,900	130,000	438 88	1 43	6.07	93.93
202	4	305	1,390	25,000	347 50	1 13	5.56	94.44
165	15	300	5,270	100,000	351 33	1 17	5.27	94.73
156	10	300	5,600	83,500	560 00	1 86	6.73	93.27
134	1	300	240	10,000	240 00	80	2.4	97.6
125	4	300	1,000	12,000	250 00	83	8.33	91.67
118	6	365	3,500	10,000	583 33	1 67	35.	65.
89	17	312	10,250	85,000	602 94	1 93	12.05	87.95
81	6	306	2,550	25,000	425 00	1 41	10.2	89.8
41	6	305	2,400	25,000	400 00	1 31	9.6	90.4
374	25	305	9,500	75,000	380 00	1 24	12.66	87.34
47	5	360	2,180	25,000	436 00	1 45	8.72	91.28
463	6	300	2,775	45,000	462 50	1 54	6.16	93.84
447	3	300	600	20,000	200 00	66	3.	97.
435	31	250	17,350	600,000	559 67	2 23	2.89	97.11
433	7	365	3,200	35,000	457 14	1 25	9.14	90.86
405	2	300	650	15,000	325 00	1 08	4.33	95.67
	413	9,677	185,130	3,487,480				

TABLE SHEWING WAGE RATE AND LABOR COST.—Continued.

## INDUSTRY—FURNITURE.

Schedule No.	Average No. of persons employed.	No. of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			\$	\$	\$ c.	\$ c.		
414	4	280	1,020	3,000	255 00	91	34.	66.6
33	30	305	7,000	17,000	233 33	76	41.17	58.83
80	40	310	13,000	35,000	325 00	1 04	37.14	62.86
147	47	286	12,600	30,410	268 08	93	41.04	58.96
192	84	100	9,500	18,000	113 09	1 13	52.77	47.23
222	43	305	24,200	40,000	562 79	1 84	60.5	39.95
223	250	300	87,500	250,000	350 00	1 16	35.	65.
245	59	305	23,000	70,000	389 83	1 27	32.85	67 15
357	55	300	17,750	50,000	322 72	1 07	35.5	64 95
310	50	302	17,750	64,400	355 00	1 17	27.56	72.44
	662	2,793	213,320	577,810				

## INDUSTRY—GAS, ELECTRIC LIGHT, ETC.

87	67	365	34,800	98,265	519 40	1 42	35 36	64.64
29	5	365	3,495	18,365	693 00	1 62	19.03	80.97
201	8	365	2,450	4,150	306 25	83	59.03	40 97
193	16	365	6,600	20,000	412 50	1 13	33.	67.
96	5	365	1,270	3,600	254 00	69	35.27	64.73
92		365	12,600	26,000			48 46	51 54
475	4	365	900	2,500	225 00	61	36.	64.
431	4	360	1,450	3,500	362 50	1 00	41.42	58 58
296	4	365	2,000	8,800	500 00	1 36	22.72	77.28
362	3	365	1,300	2,800	433 33	1 14	46.42	53 58
209	24	365	16,050	88,200	668 75	1 83	18.19	81.81
263	2	365	400	2,480	200 00	54	16.12	83.88
276	4	365	986	3,600	246 50	67	27.39	72 61
351	293	365	197,531	734,935	674 18	1 84	26.87	73.13
247	4	365	2,300	17,685	575 00	1 57	13 05	86.95
366	348	305	169,000	1,862,745	485 63	1 59	9.07	90.93
	791	5,775	453,136	2,806,625				

## INDUSTRY—LUMBER.

291	55	300	21,750	50,000	395 45	1 31	43.5	56 95
286	310	200	132,000	250,000	425 80	2 12	52 8	47.92
282	35	120	7,500	60,000	214 24	1 78	12.5	87.95
280	4	225	1,000	10,000	250 00	1 11	10.	90.
126	13	300	5,000	50,000	384 61	1 28	10.	90.
82	82	132	8,400	15,000	102 43	77	56.	44.
79	69	200	12,500	50,000	171 15	85	25.	75.
67	185	305	67,300	125,000	363 78	1 19	53.84	46.16
460	15	250	5,400	20,000	360 00	1 44	27.	73.
454	32	200	11,500	50,000	359 37	1 79	23.	77.
427	21	255	5,600	12,000	266 66	1 04	46 66	53.34
424	5	200	1,400	4,000	280 00	1 40	35.	65
419	77	180	22,760	97,000	295 67	1 64	23.46	76.54
418	7	260	1,700	12,000	142 85	54	14.16	85.84
	910	3,127	304,810	805,000				

TABLE SHEWING WAGE RATE AND LABOR COST.—Continued.

## INDUSTRY—MACHINERY AND IRON FOUNDRIES.

Schedule No.	Average No. of persons employed.	No. of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
356	36	190	9,600	14,000	309 67	1 62	68.57	31.73
343	15	300	8,100	23,000	540 00	1 80	35.21	64.79
326	23	304	9,600	12,700	417 39	1 37	75.59	24.41
321	167	285	72,500	200,000	434 13	1 52	36.25	63.75
299	5	300	2,800	7,200	560 00	1 86	38.88	61.12
285	31	300	8,450	30,000	272 58	91	28.16	71.84
264	124	295	54,330	135,500	438 14	1 48	40.09	59.91
257	7	304	4,450	57,100	635 71	2 09	7.79	92.21
248	35	300	17,300	40,000	494 28	1 64	43.25	56.75
241	11	306	3,475	67,000	315 90	1 09	5.18	94.82
215	99	280	46,150	110,000	466 16	1 66	41.90	58.10
214	25	300	8,500	50,000	340 00	1 13	17.	83.
204	9	300	5,000	20,000	555 55	1 85	25.	75.
177	25	305	13,285	50,000	531 40	1 74	26.57	73.43
171	10	300	4,325	8,000	432 50	1 44	54.06	45.94
159	8	305	3,400	10,900	425 00	1 39	34.	66.
158	46	330	23,050	60,000	501 08	1 67	38.41	61.59
145	5	300	2,300	70,000	460 00	1 50	3.28	96.72
111	144	270	43,950	350,000	305 20	1 13	12.27	87.73
107	157	305	62,000	250,000	394 90	1 29	24.8	75.92
95	3	300	2,000	50,000	666 66	2 22	4.	96.
60	19	300	8,900	12,000	468 42	1 56	74.16	25.84
54	40	305	13,950	32,000	348 75	1 14	43.59	56.41
44	4	305	1,250	2,500	312 50	1 02	50.	50.
13	222	300	62,600	500,000	281 98	93	12.52	87.48
9	8	290	5,625	24,000	703 12	2 42	23.43	76.57
378	40	300	22,000	60,000	550 00	1 83	36.66	63.34
473	7	300	1,500	10,000	214 28	71	15.	85.
376	400	305	48,000	55,000	120 00	39	87.27	12.73
457	2	312	750	1,800	375 00	1 20	41.66	58.34
456	189	300	57,000	175,000	301 58	1 00	32.57	67.43
445	57	305	22,000	80,000	385 96	1 26	27.5	72.95
	1,876	9,576	597,140	2,566,806				

## MANUFACTURES—BRICK, CEMENT, ETC.

389	5	155	1,400	5,000	280 00	1 16	28.	72.
392	9	120	1,100	3,000	122 22	1 01	36.66	63.34
430	171	305	44,055	192,100	257 63	84	22.93	77.07
434	28	300	9,270	25,250	331 07	1 10	36.71	63.29
441	14	90	2,000	5,000	142 92	1 58	40.	60.
4	25	300	11,050	30,000	442 00	1 47	36.33	63.67
162	43	120	10,000	15,000	232 55	1 93	66.66	33.34
217	11	162	1,503	4,150	136 63	84	3.62	96.38
256	11	156	2,700	5,986	245 45	1 57	45.10	54.90
260	7	100	555	3,000	79 28	79	18.5	81.95
	324	1,808	83,633	288,486				

TABLE SHEWING WAGE RATE AND LABOR COST.—Continued.

## INDUSTRY—PLANING MILLS.

Schedule No.	Average No. of persons employed.	No. of days in operation.	Amount paid in wages.	Gross value of product.	Employees' annual average earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			\$	\$	\$ c.	\$ c.		
266	6	220	2,275	6,000	379 16	1 72	37.91	62.09
229	10	305	3,360	20,000	336 00	1 10	16.8	83.92
157	71	300	17,400	100,000	245 07	81	17.4	82.96
150	11	300	3,500	13,000	318 18	1 06	26.92	73.08
141	25	200	5,000	20,000	200 00	1 00	25.	75.
132	9	200	1 800	6,800	200 00	1 00	26.47	73.53
121	7	288	2,560	12,000	365 71	1 27	21.33	78.67
100	16	300	6,500	30,000	406 25	1 35	21.66	78.34
77	5	305	1,350	6,000	270 00	88	22.5	77.95
72	9	305	3,100	15,000	344 44	1 12	20.66	79.34
71	10	300	6,000	12,000	600 00	2 00	50.	50.
59	5	305	2,000	10,000	400 00	1 31	20.	80.
58	14	280	4,200	11,000	300 00	1 07	38.18	61.82
51	26	305	9,350	55,000	359 61	1 17	17.	83.
28	40	300	4,320	50,000	358 00	1 19	28.64	71.36
15	35	305	16,500	50,000	471 42	1 54	33	67.
401	58	300	23,500	79,000	405 17	1 35	29.77	70.23
	357	4,816	122,715	495,800				

## INDUSTRY—PRINTING AND PUBLISHING.

11	35	306	16,700	33,000	477 14	1 55	50.6	49.94
10	79	305	18,200	54,400	330 38	75	33.08	67.92
176	16	313	5,000	10,000	312 50	99	50.	50.
314	49	310	19,000	52,000	452 05	1 45	36.53	63.47
354	4	305	1,040	2,500	260 00	85	41.6	58.94
433	7	313	1,344	4,000	192 00	61	33.6	66.94
432	7	305	1,500	7,500	214 28	70	20.	80.
377	11	300	3,600	8,500	327 27	1 09	42.35	57.65
1	4	300	1,250	3,000	312 50	1 04	41.66	58.34
22	19	300	8,550	15,000	450 00	1 50	57.	43.
57	53	310	18,840	28,000	355 47	1 14	67.42	32.58
75	250	305	75,000	250,000	300 00	98	30.	70.
115	10	300	3,800	9,000	380 00	1 26	42.22	57.78
142	14	305	5,000	8,000	357 14	1 18	62.5	37.95
144	6	312	1,850	3,400	308 33	98	54.41	45.59
172	33	308	15,550	34,000	471 21	1 80	45.73	54.27
195	3	313	884	1,200	294 66	90	73.66	26.34
268	5	310	400	1,600	80 00	25	25.	75.
272	20	304	8,000	12,000	400 00	1 31	66.66	33.34
287	15	310	5,100	16,000	340 00	1 09	31.87	68.13
348	4	313	700	3,000	175 00	55	23.33	76.67
	644	6,447	211,308	556,100				

## INDUSTRY—PIANOS AND ORGANS.

36	173	305	55,250	150,000	319 36	1 04	35.83	63.17
66	46	300	19,800	75,000	430 43	1 43	26.4	73.96
312	80	300	27,250	67,000	340 62	1 13	40.67	59.33
23	45	305	5,300	50,000	117 77	38	10.6	89.94
481	179	305	98,760	175,000	551 73	1 80	56.43	43.57
	523	1,515	206,060	517,000				

TABLE SHEWING WAGE RATE AND LABOR COST.—Continued.

## INDUSTRY.—SASH, DOOR AND BLINDS.

Schedule No.	Average No. of persons employed.	No. of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			\$	\$	\$ c.	\$ c.		
263	27	305	2,000	30,000	444 44	1 12	40.	60.
359	6	240	2,200	7,500	366 66	1 52	29.33	70.67
337	4	300	3,000	6,000	750 00	2 50	50.	50.
129	5	250	2,000	3,500	400 00	1 60	57.14	42.86
120	9	300	3,000	12,000	333 33	1 11	25.	75.
114	8	305	1,200	5,000	150 00	49	24.	76.
474	12	285	3,800	10,725	316 66	1 11	35.43	64.57
450	6	280	1,500	3,500	250 00	8 89	42.85	57.15
	77	2,265	28,700	68,225				

## INDUSTRY.—WOOD SPECIALTIES.

880	29	250	4,250	15,000	146 55	58	28.33	71.67
446	11	225	3,895	30,000	354 09	1 57	12.98	87.02
452	15	200	3,000	10,000	200 00	1 00	30.70	69.3
14	11	300	4,500	20,000	409 09	1 36	22.5	77.95
113	54	305	16,800	40,000	311 11	1 02	42.58	57.42
197	27	305	9,525	25,000	352 40	1 15	38.1	61.93
203	23	305	6,100	50,000	295 65	96	13.6	86.94
224	33	280	8,750	30,000	265 15	94	29.16	70.84
307	8	260	1,500	5,000	187 50	72	30.70	69.30
329	25	200	6,000	12,000	240 00	1 20	50.5	49.95
485	116	305	44,560	65,160	384 13	1 25	56.43	43.57
	352	2,935	109,780	302,160				

## INDUSTRY.—WOOLLENS AND COTTONS.

210	75	300	29,700	113,250	336 00	1 32	26.22	73.78
349	52	300	12,000	50,000	290 76	76	24.	76.
319	16	300	3,450	25,900	215 62	71	13.32	86.68
308	5	250	1,250	4,250	250 00	1 00	29.41	70.59
293	16	300	4,600	21,500	287 50	95	21.39	78.61
269	11	275	2,550	15,000	231 81	84	17.	83.
233	10	140	725	3,700	72 50	51	19.65	80.35
196	78	290	16,750	62,000	214 73	74	27.01	72.99
160	40	305	12,525	62,000	313 12	1 02	20.20	79.80
137	50	190	8,000	10,000	160 00	84	80.	20.
124	4	150	550	1,000	137 50	91	55.	45.
117	5	200	725	4,000	145 00	72	18.12	81.88
62	51	300	13,200	80,000	258 82	86	16.5	83.95
30	35	305	10,500	20,000	300 00	98	52.5	47.95
440	7	260	1,900	3,000	271 42	1 04	63.33	36.67
390	42	300	11,000	40,000	261 90	87	27.5	72.95
45	86	300	23,800	90,000	276 74	92	26.44	73.56
63	288	291	80,715	356,385	280 26	93	22.64	77.36
76	36	300	5,800	20,000	161 11	53	29.	71.
178	25	300	6,150	25,000	246 00	82	24.6	75.94
198	6	230	1,400	4,350	233 33	1 01	32.18	67.82
479	1,497	303	445,000	1,986,000	297 26	94	22.40	77.60
	2,435	5,889	692,290	1,997,335				



TABLE SHEWING WAGE RATE AND LABOR COST.—*Concluded.*

## MISCELLANEOUS INDUSTRIES.

Schedule No.	Average No. of persons employed.	No. of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			\$	\$	S c.	S c.		
483	106	300	43,560	157,900	410 94	1 36	27.58	72.42
169	37	300	19,900	42 000	537 83	1 79	47 38	56.62
179	55	312	28,875	150,000	525 00	1 68	19 25	80.75
119	135	300	39,050	465,000	279 25	96	8.39	91.61
91	15	305	5,600	100,000	373 33	1 22	5 6	94.94
53	4	305	3,100	15,000	776 00	2 54	20.66	79.34
52	59	305	18,000	300,000	305 08	1 60	6.	94.
41	25	308	12,000	90,000	480 00	1 55	13.33	86.67
37	18	300	8,500	25,000	472 22	1 57	34.	66.
466	13	305	6,000	10,000	461 53	1 51	60.	40.
415	9	59	345	6,000	38 33	65	5.75	94.25
24	100	300	27,000	75,000	270 00	90	36.	64.
116	5	313	1,700	3,200	340 00	1 08	53.12	46.88
131	31	300	8,500	15,000	274 19	91	56.66	43.34
16	3	305	1,400	10,000	466 36	1 53	14.	86.
470	36	300	9,300	31,400	258 33	86	29 61	70.39
464	3	305	520	3,000	173 33	56	17 33	82.67
395	5	305	1,500	4,000	300 00	98	37.5	62.95
461	8	268	2,450	9,000	360 25	1 14	27.22	72.78
136	94	280	45,450	117,000	483 51	1 72	38.84	61.16
48	16	300	4,325	20,000	270 31	90	21.62	78.38
429	4	310	900	3,600	225 00	72	25.	75.
448	10	313	3,000	20,000	300 00	95	15.	85.
478	38	300	14,825	60,000	390 13	1 30	24.70	75.30
437	302	310	113,800	590,000	376 82	1 21	19.28	80.72
421	76	275	20,000	75,000	263 15	95	26.66	73.34
420	5	300	2,000	6,000	400 00	1 33	33.33	66.67
284	223	300	98,000	455,000	439 46	1 46	21 53	78.47
273	15	300	5,100	35,000	340 00	1 13	14.57	85.43
251	39	250	8,095	19,000	207 56	83	42.60	57.40
250	2	60	200	2,000	100 00	1 66	10	90.
212	26	305	10,450	35,375	401 92	1 31	29.54	70.46
151	4	300	1,000	4,000	250 00	43	25.	75.
444	45	300	20,600	40,000	457 77	1 52	51.5	48.95
246	15	305	6,000	20,000	400 00	1 31	30.	70.
90	36	305	5,365	80,000	149 02	48	6 7	93.93
104	75	310	96,000	250,000	480 00	1 54	14 4	85.96
252	30	300	16,500	65,000	550 00	1 83	25.38	74.62
298	11	306	3,010	24,625	273 63	89	12.22	87.78
106	26	305	6,600	100,000	253 84	83	6.6	93.94
17	70	305	27,500	118,000	392 85	1 28	9 32	90.68
394	57	298	16,000	60,000	280 70	94	26.66	73.34
383	17	305	8,500	20,000	500 00	1 63	42 5	57.95
402	35	305	24,000	52,000	685 71	2 24	46.15	53.85
38	11	200	2,940	8,500	267 27	1 33	34.58	65.42
409	22	305	7,400	18,000	336 36	1 10	41.11	58.89
442	13	311	2,720	8,475	209 23	67	32.09	67.91
467	165	280	53,500	175,000	324 24	1 15	30.57	69.43
465	44	300	15,170	71,000	344 77	1 14	21.36	78.64
403	308	260	78,500	300,000	254 87	98	26 16	73.84
316	16	300	3,200	9,750	200 00	66	32.82	67.18
439	81	155	27,000	180,000	333 33	2 15	15.	85.
455	42	305	14,350	50,000	327 36	1 08	28.7	71.93
143	6	335	3,630	15,600	605 00	1 80	24.2	75.98
482	6	300	3,000	7,500	500 00	1 66	40.	60.
489	10	300	2,430	4,500	243 00	81	54.	46.
	2,662	16,013	947,460	4,631,815				

LABOR ORGANIZATIONS IN THE PROVINCE OF ONTARIO SUBORDINATE TO INTERNATIONAL ORGANIZATIONS.

- American Federation of Labor. Headquarters, Washington, D.C.
- American Federation of Musicians. Headquarters, St. Louis, Mo.
- Allied Metal Mechanics. Headquarters, Toledo, Ohio.
- Amalgamated Society of Carpenters and Joiners. Headquarters, England. American headquarters, New York City.
- Amalgamated Society of Engineers. Headquarters, London, Eng. American headquarters, New York City.
- Amalgamated Wood Workers' International Union of America. Headquarters, Chicago, Illinois.
- Amalgamated Association of Street Car Employees of America. Headquarters, Detroit, Michigan.
- Amalgamated Sheet Metal Workers' International Union of America. Headquarters, Kansas City, Mo.
- Amalgamated Meat Cutters and Butcher Workmen of North America. Headquarters, Syracuse, N. Y.
- Bricklayers' and Masons' International Union of America. Headquarters, North Adams, Massachusetts.
- Brotherhood of Painters, Decorators and Paper Hangers of America. Headquarters, Lafayette, Ind.
- Broom Makers' International Union. Headquarters, Galesburg, Ill.
- Brotherhood of Railway Trainmen. Headquarters, Cleveland, Ohio.
- Brotherhood of Locomotive Firemen. Headquarters, Peoria, Ill.
- Brotherhood of Locomotive Engineers. Headquarters, Cleveland, Ohio.
- Brotherhood of Railroad Trackmen. Headquarters, St. Louis, Mo.
- Brotherhood of Boiler Makers and Iron Ship Builders. Headquarters, Kansas City, Kansas.
- Brotherhood of Electrical Workers of America. Headquarters, Rochester, N.Y.
- Boot and Shoe Workers' Union. Headquarters, Boston, Mass.
- Cigar Makers' International Union of America. Headquarters, Chicago, Ill.
- Core Makers' International Union. Headquarters, Boston, Mass.
- Carriage and Waggon Makers' International Union. Headquarters, Cleveland, O.
- Glass Bottle Blowers' Association of the United States and Canada. Headquarters, Philadelphia, Pa.
- Hotel and Restaurant Employees' International Alliance, and Bartenders' International League of America. Headquarters, Cincinnati, Ohio.
- International Protective Laborers' Union. Headquarters, Lowell, Mass.
- International Wood Carvers' Association of North America. Headquarters, Covington, Ky.
- International Brotherhood of Bookbinders. Headquarters, Chicago, Ill.
- International Brotherhood of Blacksmiths. Headquarters, Moline, Ill.
- International Union of Horseshoers of the United States and Canada. Headquarters, Denver, Colorado.
- International Typographical Union. Headquarters, Indianapolis, Ind.
- International Printing Pressmen and Assistants' Union of North America. Headquarters, Brooklyn, N. Y.
- International Association of Machinists. Headquarters, Washington, D. C.
- International Association of Watch Case Engravers. Headquarters, Brooklyn, N.Y.
- International Bridge and Structural Iron Workers. Headquarters, Pittsburg, Pa.
- International Protective Retail Clerks. Headquarters, Denver, Col.
- International Union Team Drivers. Headquarters, Detroit, Mich.
- International Union of Jewellery Workers. Headquarters, New York City.

- International Union of Wood, Wire and Metal Lathers. Headquarters, Columbus, O.  
 International Association of Longshoremen. Headquarters, Detroit, Mich.  
 International Plate Printers of North America. Headquarters, Dorchester, Mass.  
 Ironmolders' Union of North America. Headquarters, Cincinnati, Ohio.  
 Journeymen Tailors' Union of America. Headquarters, Bloomington, Ill.  
 Journeymen Barbers' International Union of America. Headquarters, Cleveland, Ohio.
- Journeymen Bakers' and Confectioners' International Union of America. Headquarters, Cleveland, Ohio.
- Metal Polishers', Buffers', Platers' and Brass Workers' Union of North America. Headquarters, New York City.
- Order of Railroad Telegraphers. Headquarters, St. Louis, Mo.  
 Order of Railway Conductors. Headquarters, Cedar Rapids, Iowa.  
 Operative Plasterers' International Association. Headquarters, Cincinnati, Ohio.  
 Pattern Makers' League of North America. Headquarters, New York City.  
 The Knights of Labor. Headquarters, Washington, D. C.  
 Tobacco Workers' International Union. Headquarters, Louisville, Ky.  
 Upholsters' International Union of North America. Headquarters, Chicago, Ill.  
 United Association, Plumbers, Gas Fitters, Steam Fitters and Steam Fitters' Helpers. Headquarters, Chicago, Ill.  
 United Brotherhood of Leather Workers on Horse Goods. Headquarters, Kansas City, Mo.  
 United Brotherhood of Carpenters and Joiners of America. Headquarters, Philadelphia, Pa.  
 United Garment Workers of America. Headquarters, New York City.  
 United Hatters of North America. Headquarters, Brooklyn, N.Y.

#### 1901.—THE SHORTER WORK DAY.

#### SECURED BY LABOR ORGANIZATIONS IN THE UNITED STATES AND CANADA.

*From Ninth Biennial Report of Bureau of Labor Statistics, Iowa :*

The material of which this chapter is composed is designed to fill a long-left want, and has been made necessary by the many enquiries coming to the bureau from students in all walks of life.

A chronological review of the national and international trades unions, with general offices in the Union States, reveal ninety-four of such organizations, eighty-nine of which reported the date they were established; their growth by decades is as follows:

Year	1850	1860	1870	1880	1890	1900
National and international unions	1	5	4	6	22	51

The total membership in those organizations is now 1,550,247. Seventy-six organizations reported the maximum hours for a day's work previous to organization as being sixteen hours for ten crafts, fourteen hours for five crafts, twelve hours for twelve crafts, eleven hours for three crafts, ten hours for forty-seven crafts, or an average of eleven hours and one-half for a maximum day's work.

Since organization has been effected, eight crafts work twelve hours, three crafts work eleven hours, one craft works nine hours and one-half; thirty-five crafts work ten hours, seventeen crafts work nine hours, and twelve crafts work eight hours, thereby showing the average length of the maximum number of hours for a day's work has been reduced to nine hours and three-quarters.

In addition to the foregoing, twenty-eight of the thirty-five crafts listed as working ten hours per day, now have the eight and nine hour workday in operation in the strongest organized localities.

The total number working on the basis of eight hours for a maximum day, as reported, is 531,085, exclusive of such employes in the service of the government, who are not represented through organization.

Relative to that portion of the table following in this chapter which refers to strikes, this enquiry was confined to those strikes which had been reported to and conducted by the general offices, and do not include such strikes as have been conducted entirely by local effort, and many of which are never made a matter of record.

The total number of strikes here recorded for 1899 and 1900, and which were conducted by the constitutional officials of the organizations, amounted to 1,427, with 1,071 successful, 179 compromised, and 177 lost. These disputes cost the treasuries of the organizations, who reported this item, a total of \$1,293,181. This expense only represents strike benefits distributed to strikers and persons involved, together with the expenses of committees and arbitrators who conducted and settled the disputes. The total number of persons involved in these strikes during 1899 and 1900 were 274,260, and the total number benefited were 285,932.

An exhaustive inquiry was also made as to the position these organizations took on the question or arbitration as a method of preventing strikes.

Compulsory arbitration is unanimously opposed.

Arbitration by outside parties who are not directly interested in the controversy, and who may be specially selected by the disputants, is generally regarded with favor, but only as a last resort.

Many organizations have adopted an elaborate conciliatory system, whereby the employers and employed directly interested shall settle their own differences, with provisos made to permit assistance being given by both the national representatives of the employers and of the trades organizations. This system is very successful as a rule, and meets with increasing favor.

Some other organizations, the most notable being the bituminous coal miners, prefer the conference system, whereby representative employers and employees meet annually or at such times as may be previously arranged. At these conferences every point of detail is brought up for consideration, and a conclusion reached by a unanimous vote of the whole conference on all matters, before adjournment. This method is highly regarded both by miners and operators, and from the record made during the last three years, the system bids fair to become permanent.

Another system to avoid strikes which is growing in popular favor is the stamping or labelling the products of labor as "union made." Thirty-one organizations now have labels. The following table shows craft organization, date of establishing label, and the number issued:

Craft.	Date.	Label was established.	Numbers issued.
Bakers	1887	For 1900 only	82,483,000
Boot and shoe workers	1896	A stamp only; many millions used	
Brewery workmen	1894	For 1900 only	13,000,000
Cigar-makers (Blue Label)	1880	For 1899 and 1900 only	41,024,500
Carriage workers	1894		12,000
Croppers	1896	No record	
Engravers (watch)	1900	Eight months only	200,000
Hatters	1885		58,000,000
Leather workers	1897	No record	
Metal polishers	1897	For 1900 only	500,000
Printers, pressmen, etc.	1891	Many million impressions	
Tailors	1892	For 1900 only	1,500,000
Tobacco workers	1895	Total to date	431,260,033
Trunk and bag workers	1899		20,000
Wood workers	1897	Stamped on product	No record of quantity.

The remainder are of recent date and have not been reported.

Table showing shorter work day secured by Labor Organizations in the United States and Canada.

Name of organization.	Date of organization.	Present member-ship.	Number of strikes during 1899 and 1900.			Total cost of strikes during 1899-1900.	Number of persons		Maximum working hours per day.			
			Won.	Compromised.	Lost.		Total.	Involved in strikes.	Benefited by strikes.	Previous to organization.	Since organization.	Date when hours were reduced.
Allied Metal Mechanics, Int. Ass'n. of	1897	2,200							10	9-10	1899	None
Bakers and Confect oners, Int. Jour. of	1886	9,000	4		1	1,913	365	365	16	10-11	1899	None
Barbers, Int. Union of Journeymen	1896	6,900	1			175	35	35	12-16	10-12	1899	None
Blacksmiths, Int. Brotherhood of	1890	10,000	2		3		300	600	10	8-9-10	1899	1,500
Boilermakers and Iron Ship Builders, Bro. of	1831	5,400	6	5	70	18,027	4,127	4,948	10	8-9-10	1899	500
Bookbinders, Int. Brotherhood of	1892	7,000	3	2	5	2,769	592	555	10	9	1899	None
Boot and Shoe worker's Union	1895	13,500	7	5	13	750	750	750	10	10	1899	None
Brewery Workers, Int. Union of United	1886	22,500	21	1	22	1,500			14-18	8-9-10	1887	11,000
Brickmakers' National Alliance	1894	3,000	6	2	10	5,500	1,075	550	10	8	1895	3,000
Bricklayers and Masons' Int. Union	1865	45,000	2		11				10-12	8-9	1878	32,000
Broommakers, International	1897	1,000	9	1	1	1,000	320	280	10	8-9-10	1899	200
Carpenters and Joiners U. Bro. of	1881	70,000	10	6	214				10	8-9	1881	45,000
Carpenters and Joiners, Amalgamated Soc	1860	3,000	10	1	4	30,000	320	320	10	8-9	1881	2,500
Carriers and Wagonmakers, International	1891	2,000	3	2	15	2,800	150	125	10	8-9	1899	250
Carvers Ass'n. of North America, Wood	1898	2,000	10	3	2	1,020			10	9	1899	None
Chairmakers, National, of U. S. of A	1900	400							12-15	8	1886	35,000
Cigar-makers' Int. Union of America	1864	35,000	149	38	27	97,332	9,547	21,817	14	10	1892	None
Clerks Int. Protective Ass'n., Retail	1850	30,000				4,250	911	775	13	8-9-10	1892	500
Coopers' Int. Union of North America	1890	4,500	35	6	11							
Conductors, Order of Railway	1868	28,250										
Corsmakers' International Union	1898	4,000										
Curtain Operatives of America, Amalgamated Lace	1898	1,000	1		1	8,950	100	100	10	10	1899	None
Drivers, International Union Team	1898	5,000	19	4	3		330	250	10	10		
Electrical Workers of America, Nct. Brotherhood of	1891	8,000	8		4	10,000	3,000	2,000	10	8-9	1892	4,000
Engineers, Brotherhood of Locomotive	1863	35,000										
Eng'neers, Nat'l. Union Bro. Coal Hoisting	1895	950	1		2	None	600	300	12-14	8-12	1899	350
Engineers, Int. Union of Steam (Stationary)	1895	7,500	5	5	10				12	8-10	1897	2,000
Engineers, Amal. Soc. of (M. chinists, etc)	1851	2,500				22,000	300	250	10	8-9-10	1899	400
E. Gravers, Int. Association of Watch Case	1900	500	4		5				10	10		None
Firemen, Brotherhood of Locomotive	1875	36,600							12-14	8-12	1898	1,000
Firemen, Int. Brotherhood of Stationary	1898	2,600	5	3	10	1,500	329	265	10	8-9	1890	1,500
Fitters and Helpers, National Ass'n. of Steam	1888	2,000	4	1	3	18,000	900	900	12	9-10	1897	1,000
Garment Workers of America, United	1891	22,000	1	3	1	625	2,000	1,800	15	9-10	1900	None
Garment Workers Union, International Ladies'	1900	2,000	14	2	18	6,500	1,300	1,300	10	8-8-3	1884	3,000
Glass Bottle Blowers' Association of U. S. and Can.	1847	4,000	15	3	18	335,000	1,300	1,300	10	8-8-3	1884	900
Glass Cutters' League of America, Window	1895	900							10	8	1898	900
Glass Flatners Ass'n. of N. A., Window	1895	500	1		1		77	500	10	8	1898	500





ADVANTAGES GAINED BY ORGANIZATIONS WITHOUT STRIKES DURING  
1899 AND 1900.

**Bakers**—Gained ten per cent. increased wages; secured a reduction in hours of one per day, affecting 500 people; obtained recognition of the union generally.

**Barbers**—General improvement in working conditions. Some localities have reduced hours from thirteen and over to eleven per day, the majority have reduced the hours to an average of twelve per day; have advanced the rate of wages in many places twenty per cent.

**Blacksmiths**—Gains in wages and reductions in hours have been secured in a majority of cases with the blacksmiths by conciliatory means.

**Boilermakers**—In seven cities gained one hour less per day with ten per cent. increased wages; in one city twenty per cent. increased pay; in one city secured the eight hour day without reduction in pay.

**Bookbinders**—Gained in wages an average of twenty per cent.; in some cases as high as \$6.00 per week; reduced hours from ten to nine per day generally.

**Boot and Shoe Workers**—Secured increase of two dollars and a half and three dollars per week in wages in several cities; better prices and working conditions gained by conciliatory means and the union stamp.

**Brewery Workers**—General improvement in working conditions, more considerate treatment by bosses; increased wages and reduction of working hours secured in many places by conciliation.

**Broom-Makers**—200 members secured fifteen per cent. increase of wages, and one shop the eight-hour day.

**Carpenters**—As organization develops the eight-hour day follows, which we usually gain without striking; have also secured the Saturday half-holiday and two and one-half cents per hour increased pay.

**Carriage Workers**—Fifty members secured a reduction of working hours without re-

**Carvers**—Two hundred members got twenty-five cents a day increase of wages; two hundred secured the eight-hour day without decreased pay; generally we were driven to strike before we could make ourselves understood that we were in earnest.

**Cigar Makers**—Had a great many strikes, but the majority of difficulties settled without strikes; eight-hour day prevailed; greater demand for blue label goods than ever.

**Clerks**—Continue to gain reductions in working hours and receive the blessing of Sunday observance, which was absolutely impossible without organization; better working conditions granted, which have an important bearing on our health and comfort.

**Coopers**—Increased wages and reduced hours have been secured in many places without strikes.

**Curtain Operatives**—Gained reduction of working hours; better factory conditions; fifteen per cent. increase of wages.

**Team Drivers**—better working conditions for man and beast, but we are frequently driven to strike or threaten a strike before it is obtained.

**Engineers (Coal Hoisting)**—Twenty per cent. increase of wages and a reduction of four hours per day for 500 men: the blessing of Sunday observance is afforded us too in many instances.

**Engineers (Locomotive)**—Close organization, careful preparation of grievances, determined efforts, everlasting vigilance for our rights have made strikes almost unnecessary.

**Firemen (Locomotive)**—Advantages too numerous to specify; we avoid strikes by organizing more solidly.

**Garment Workers (Ladies' Apparel)**—Eighteen shops unionized without strikes, gaining twenty-five to thirty per cent. increase of wages.

**Garment Workers (Men's Apparel)**—Eighteen shops unionized without strikes, which meant higher wages and reduced hours in every instance.

**Glass Bottle Blowers**—Few advantages gained, without strikes.



**Granite Cutters**—Advantages gained without strikes are not many, but by these means we have gained recognition of our union in every locality where we are organized, and we have also secured the adoption of official agreements.

**Hatters**—Many advantages gained without strikes, largely influenced by the patronage given our union label.

**Hotel Employes (Waiters, Etc.)**—Many advantages secured, chief of which are better conditions, sanitary and otherwise, making the employment more endurable.

**Lauers**—Every local made demands for more wages and less hours; nearly all won without any strikes of importance.

**Leather Workers**—Continual gains of increased wages and reduced hours without strikes.

**Machinists**—One hundred and twenty disputes settled without the loss of a day, which secured advantages of recognition, more pay, less hours, and other important shop regulations.

**Meat Cutters (Butcher Workmen)**—Better wages, shorter hours, pay for overtime, and better working conditions have been secured in numerous instances.

**Metal Polishers**—3,500 members secured an increase in wages of twenty-five cents per day; better working conditions were secured in every case where complaints were made.

**Mine Workers (Coal)**—A general increase of twenty per cent. in wages was secured by means of joint conferences with employers of bituminous coal miners, in Pennsylvania, Ohio, Indiana, Illinois, and Iowa. \$20,000,000 is a fair average of the total amount of increased wages secured for the bituminous miners during the past year without strikes.

**Miners (Gold, Silver and Copper)**—Legislative means are employed to secure better terms and conditions, this method is found far more efficient than striking.

**Molders**—Yearly agreements, defining minimum rates of wages, maximum hours, improved shop facilities, and conditions less irksome to the molders, is a small part of the advantages obtained without strife.

**Oil and Gas Well Workers**—Gained fifty cents a day of twelve hours, and labor day as a holiday and other minor concessions.

**Painters**—As our organization grows and the employers' patience expands, we find strikes become less necessary, although they have been frequent in the past, many concessions were obtained during the past two years.

**Pattern Makers**—Many strikes of a minor character took place in order to test the challenge "That pattern makers would not strike anyhow." Serious disputes have not been necessary; reasonable concessions have been secured easily by conferences.

**Telegraphers (Railroad)**—Made enormous gains in the wages of members; hours should be reduced; have not materially shortened them yet, but have taken extra work off telegraphers which properly belonged to other labor; many disputes successfully adjusted.

**Trackmen (Railway)**—\$200,000 a year has been secured for the trackmen on five large railroad systems in the shape of increased wages, in addition to a reduction of hours, and pay for overtime, which previously had not been granted.

**Tailors**—Tendency is upward for better shop conditions, better pay, and shorter hours; all the advantages which have been gained without strikes have not been reported to the general office. Bad news always travels faster and more directly than good news. Our records show that at least \$25,000 more wages are being paid tailors annually this year than last, for the same class and quantity of work.

**Tin Plate Workers**—Reduced the hours of labor from twelve to ten per day.

**Tobacco Workers**—As the demand for goods with our Union Label increases the necessity for our organization striking, proportionately decreases; as a consequence wages are increased and hours reduced, with the assurance that shop conditions are healthy and comfortable.

**Trunk and Bag Workers**—A few improvements in our general condition without striking have been conceded, which have been gratefully appreciated.

## FREE EMPLOYMENT OFFICES

Pursuant to the spirit of clause 3 of the Act creating the Bureau of Labor, as I interpret it, and which reads as follows: "It shall be the object of the Bureau to collect, assort and systematize and publish information and statistics relating to employment, wages and hours of labor throughout the Province, co-operation, strikes, or other labor difficulties, trades unions, labor organizations, the relations between labor and capital, and other subjects of interest to workingmen, with such information relating to the commercial, industrial, and sanitary condition of workingmen, and the permanent prosperity of the industries of the Province, as the Bureau may be able to gather." I beg to direct attention to a few facts gathered, relative to what are generally known as employment offices, with a view of pointing out what action has been taken by other legislative bodies in connection therewith. For while it is not the purpose of the Bureau of Labor to advise or suggest legislation concerning any subject, yet it would appear to be the duty of the Bureau to point out any seeming injustice to the workingmen and women that may come under its notice, and which may serve as a guide to legislation.

Situated in most cities are what are known as employment or intelligence offices, whose business consists in undertaking to find situations for those seeking them, in all branches of work, for a monetary consideration, and whose operations may be regarded as of private profit, rather than for public benefit. Doubtless many engaged in this business are men of integrity and honesty, and who conduct their business on sound principles, following closely the rules of honest business methods. On the other hand, evidence is abundant that with many engaged in the business of Employment or Intelligence Offices, the contrary of fair dealing is the fact. Speaking of these agencies, the fifteenth annual report of the Bureau of Labour Statistics for Connecticut says: "Their managers are engaged in grasping the hard-earned money of the poor by charging fees for the supposed service of securing employment for the applicants. These private agencies charge men and women from one dollar upwards for securing them employment, and in some cases they demand and receive a price for accepting an application whether they secure a place or not. This every citizen knows to be wrong, because it is evident that when men and women are willing to labor, but are unable to find work, it is burdensome enough for them to suffer the hardships which are inseparable from enforced idleness, without being taxed for the privilege of securing work or for some one's promise to secure work for them."

Much interest in this subject has long been manifested by the workers in Canada, through their various organized channels, such as the Dominion Trades and Labour Congress, also the various Trades and Labour Councils of the different cities, and also among other elements of the community has attention been drawn to the abuses of this system, so much so that as Secretary of the Bureau of Labour I have felt it incumbent upon me to gather together such facts in connection therewith as will give a fairly intelligent idea of the situation with a view of directing such attention thereto, as will ensure the due consideration of this subject. The Connecticut report, before referred to, in its excellent treatise on this subject, says:

"It is doubtless true that the destitute unemployed in large cities constituted for the time a dependent class as helpless as, and more dangerous to the body politic, than those unfortunates who are abundantly provided for by public charities. Present conditions develop a class who prey upon these needy people in their want, and thus aggravate not only the individual desperation, but the social disease which it begets. It is easily in the power of the State to anticipate and alleviate to a great extent this evil."

With the development of industrial interests has arisen the necessity for employment agencies. The practices of unscrupulous men, ever ready to take advantage of the necessities of the unemployed have directed public attention to this question. The result has been that free offices under the management of the State have been

opened in many of the United States, the Australian Colonies, and parts of Europe, together with many bureaus in most countries under religious and philanthropic auspices, the experiences of which removes from these undertakings all the uncertainty of experiment. Fortunately the recent substantial improvement in the industrial conditions of the country has somewhat reduced the necessity for such agencies so far as those seeking for labor are concerned. The growing wants of those who employ labor and appreciate its increasing scarcity, however, should not be forgotten. The benefits which would accrue from the establishment of free employment agencies would be of nearly as great value to them as to the unemployed. Very little is generally known either concerning the hardships which the private agencies impose upon multitudes of worthy and willing poor, or, on the other hand, concerning the efforts which have been made through the Governmental and other agencies in this and other countries to deliver the working people from this form of oppression. On account of the varied need of help in the widely diversified industries of this State, and because of the great army of skilled and unskilled labourers who seek employment therein, our Province furnishes a wide field for the permanent establishment of free employment offices, for the gratuitous guidance and assistance of those whose uninterrupted employment is so closely allied to and which vitally affects the public welfare. The work could be undertaken by the Labour Bureau with but small cost to the Province.

Hon. David Ross, Secretary of the Illinois Board of Labour Statistics, in the course of an address delivered at the opening of the free employment offices in the city of Chicago, said; "As showing the extent of the field for such legislative effort in our own bodies, it is shown that in the city of Boston, with less than half the population of Chicago, 119 private employment agencies received over 600,000 applications for work during one year, also that in St. Louis, six private agencies received over 100,000 applications in the same period, and that in Kansas City 88,000 applications were made in a year to 12 private agencies; moreover, that all these figures are notorious understatements, having been obtained from the private agents themselves, all whose interests lie in minimizing the real number. But, assuming the substantial completeness of the figures given for the City of Boston, which are doubtless the most trustworthy we have, and applying them to the 196 private agencies which were licensed in the city of Chicago in 1896, we are confronted with the startling probability that during periods of depression approximately 1,000,000 applications for work must be made in the course of a year to the tribute-gathering offices in this city.

#### EMPLOYMENT AGENCIES IN EUROPE.

As an evidence of the efficiency of the free service rendered at public cost by the various home and foreign Governments we find that partial returns from the various municipal offices in the city of Paris show that in the year 1897 employment was secured without cost to the applicant for 47,979 persons, and that in the first ten months of 1898 work was found for 26,270 others, and this notwithstanding the fact that free agencies are also maintained in that city by 421 different trade unions, by seventy-six convents, and by fifty-nine friendly societies.

The five so-called "Labour Bureaus" in London and five in other cities in England, together with the agencies of the Salvation Army and of the Association for Befriending Young Servants, secured situations free of charge in 1898 for 14,994 persons out of 16,382, who made applications; in addition to these, fifteen temporary registries were established for various periods, and special permanent offices have long been maintained in London for securing without charge employment for seamen, for discharged soldiers, for reserved corps soldiers, for army and navy pensioners, and for discharged prisoners.

The free employment agencies in Germany secured during the year ending July 1898, occupations for 222,595 idle persons out of 387,991 who sought occupation. These are the submerged, the helpless, the hopeless, a constant menace to society—for

whom there is no relief except in such State help as will enable them to recover their footing and again become self-helping contributors to the common weal.

England, France, Germany, Bavaria, New Zealand, Australia, and even Russia, representatives alike of the oldest and of the youngest civilizations, as well as numerous cities on this continent, have all reached the common conviction by a common experience that the needs of the unemployed are of legitimate concern to the State.

Ohio was the first State to create public employment offices, having established them in 1890. The Commissioner, in a recent report, speaking of these offices said: "The Municipal Labour Congress of Cincinnati, an organization composed of all trades and labour unions in that city, started the agitation in favour of something of this kind in all the large cities of the State. The law creating them was undoubtedly an experimental departure in legislation. The result of that Act has been a success. I am glad to say that these offices stand well in favor with employers of labor, and workmen and women consider it a great privilege to have a place of this kind in their city where they can go for information or to secure employment, without being charged a fee or being imposed upon in any way. If the kind of work they desire can be had, they get it freely. The army of idle men seeking situations has been alarmingly great in cities at times, and few of our people are cognizant of the expense to which the laboring people are often subject to in seeking employment through private intelligence offices.

Before the inauguration of the free public employment offices by the State these pay offices were springing up on every corner, and were getting fat by their methods of doing business. There are now but a few of them left, and where they still exist, they are not working in that high-handed manner as was the case a few years ago.

From the reports of the Bureau of Statistics of Connecticut for 1899 and 1900, which presents an exhaustive examination into this question, this Bureau is enabled to give data of the Ohio offices, located in Cincinnati, Cleveland, Toledo, Columbus, and Dayton up to 1899, the ten years of its existence, and from the last report of Ohio for 1900. The complete totals for Ohio is here presented from their inception in 1890 up to December 31st, 1900:

OHIO GRAND TOTALS 1890 1900 (INCLUSIVE).

Location	Males.			Females.		
	Situations wanted.	Help wanted.	Positions secured.	Situations wanted.	Help wanted.	Positions secured.
Cincinnati . . . . .	30,314	12,478	9,383	25,351	22,229	14,192
Cleveland . . . . .	33,487	10,804	7,841	32,601	31,398	23,972
Columbus . . . . .	32,175	12,707	8,814	18,686	25,988	18,218
Toledo . . . . .	29,356	15,709	12,181	23,981	33,463	23,725
Dayton . . . . .	35,514	14,639	11,085	32,300	31,209	21,503
Totals . . . . .	160,846	66,337	49,304	132,919	144,287	100,710

In 1890 5,575 men and 3,413 women had positions secured for them. In 1891 employment was secured for 6,967 men and 8,628 women; in 1892 for 5,985 men and 7,860 women; in 1893, for 4,566 men and 8,635 women; in 1894, for 2,140 men and 7,626 women; in 1895, for 2,677 men and 9,048 women; in 1896, for 2,781 men and 10,164 women; in 1897, for 3,912 men and 13,135 women; in 1898, for 4,029 men and 13,666 women; in 1899, for 6,058 men and 9,931 women; and in 1900, for 4,714 men and 8,630 women.

By referring to the table of grand totals it will be seen that out of 160,846 men who applied for employment in Ohio during the eleven years 49,304 were secured positions; also that out of 132,919 women who applied 100,710 were given employment. Out of this total application for employment of 293,765 persons there were secured situations for 150,014, in other words, over 50 per cent. of the applicants for situations were secured positions, and absolutely free. Well may the Commissioner of Labor of Ohio describe five public employment offices in the State "a success," and "as fully justi-

fyng the wisdom of the legislators who enacted the law."

The Superintendent of the Cleveland office in his report to the Commissioner for 1900 says: "The free public employment office has passed the experimental stage, and is to-day considered one of the most beneficent of the State institutions. Through it the unemployed are very largely able to obtain positions or labor to perform, while the employers of labor are able to find such help as they desire without expense to themselves or to those whom they employ. The good work accomplished by this office is, to a great extent due to the support of the labor unions of the city and of the working people in general. If the workings of the office were as well known to the employing public as it is to the laboring class the results would be double what our report shows. As it is now, those needing help are only about 70 per cent. of the applications made to the office for work."

Further on he says: "The private employment agencies are the greatest enemy of the unemployed. They are conducted by unscrupulous robbers, and the shekels they gather in during the year are enormous. When we take into account that the men and women they rob are of that class who can least afford it.

What is true of Cleveland is also true of all other cities, as borne out by the facts presented in other reports from places where such free public employment offices have been established.

#### "ASSISTANCE TO FARMERS."

With a view of ascertaining to what extent the bureaus assist the farmer in securing help in season of need, the commissioners of the various States were communicated with, soliciting information on this question.

Hon. David Ross, Secretary of the Bureau of Labor Statistics for Illinois, replies under date of October 26, 1901: "I am in receipt of your favor of the 17th instant, and, answering your enquiry as to the advantages of free employment offices to farming communities, respectfully report that since the opening of our employment agencies in Chicago, the records show that 1,671 farm hands have secured employment. This is the result of practically two years work. The agencies report that nearly every application for farm labor is supplied. This is true of our offices located in the city of Chicago, as it is in the city of Peoria. Wishing you success in this most commendable work, etc.

Hon. William Anderson, Commissioner for Missouri, writes:

"During the very busy season in harvest times, when they are sadly in need of help, the free employment office would be an aid to the farmer in securing help. We find this to be true to a very large extent in the State of Missouri. During the dull seasons the farmers' sons apply to our free employment offices frequently to go on railroads, construction works of various kinds, and remain until the farmers' busy season opens, when they go to work on the farms, and during the harvest season we have frequently sent out as many as 2,000 during a month into the harvest fields of Kansas."

Hon. Henry E. Back, Commissioner of Connecticut, writes under date of October 30, 1901: "I send herewith letters, received from each of the superintendents of the five free public employment bureaus in Connecticut. You will observe that in the three months, from July 1 to October 1, 1901, help had been furnished at the Hartford office to 189 farmers. At the Waterbury office to 26 farmers, at the Bridgeport office to 68 farmers, at the New Haven office to 22 farmers, at the Norwich office to 10 farmers, making 315 farmers supplied with laborers in the little State of Connecticut in about three months, July, August, and September. This is at the rate of over 1,200 farmers furnished with help without expense or trouble per year in this small commonwealth, and with the free offices in only four of the eight counties. It also should be observed that small Connecticut is not essentially or principally an agricultural State, it is chiefly a manufacturing State.

The following review of the free employment offices, from the Niuth Biennial Iowa Report for 1899-1900, prepared by Miss Kate B. Mills of Chicago University, show some very interesting comparisons.

Ohio: Estimated amount which would have been paid to agencies by applicants during annual period, \$20,123; deduct cost of maintenance of "free office," \$5,000. A net saving to the working people of the State, \$15,132.

The above estimate is based on the fee of \$1, and is believed to be below the real cost. In this connection it is proper to show that the State of Washington reports an average cost of each position secured by the State employment office at Seattle: 1891, 22.93 cents; 1895, 19.38 cents; 1896, 21.38 cents; 1897, 6.24 cents; 1898, 5.64 cents; 1899, 4.98 cents.

One particular divergence between Ohio and Illinois is noticed: Ohio compels the cities themselves who by the operations of the law have free employment bureaus to pay for their maintenance, whereas in Illinois their maintenance is paid for by the State, and there the service is materially helped, and its efficiency increased by the co-operation of the factory inspectors, who can be made doubly useful by obtaining and furnishing information both as to help and employment wanted, a plan that could be advantageously adopted in our State.

Free employment bureaus, as conducted in many of our sister States, are not an experiment any longer; they have proven their right to exist at the State's expense, and I believe I voice the opinion of not only the labor organizations, but the general opinion of the wage-earners of the State, in advocating the establishment of free employment offices under the supervision of the labor commissioner, either on the Ohio or Illinois plan.

This beneficent arrangement would prevent congestion of laborers in certain localities and do away with the scarcity in others. Farmers could in time of pressing work, such as harvest time, have access to this clearing-house, and idle men easily find employment.

The reasons for the establishment of free employment bureaus are so obvious that as the urban population (which is now 43 per cent. of the whole) increases their establishment will become an imperative necessity.

The free employment office is a product of Europe, France being the first nation to put the plan into operation. From Paris the movement spread all over Europe, extending into Germany, England, Russia, and Bavaria, and reaching New Zealand and Australia.

The plan was brought to America by an official of Ohio, who, after an investigation of the Paris office, recommended the establishment of a free employment office in Ohio. By act of the general assembly, passed April 28, 1890, a law was enacted by which offices were established in the five largest cities in Ohio, viz., Cincinnati, Cleveland, Columbus, Dayton and Toledo. I have appended a copy of the Ohio law (pages 16 and 17). It is unnecessary for the purpose of this paper to go into the details of the annual reports of these various offices. I desire to make an historical statement of the movement in this country rather than an argument for or against it. Some figures, however, are necessary and interesting to show the scope and growth of the work.

The report of the Ohio Bureau of Labor statistics for the year 1890 gives the work of the different offices since their establishment. The first office was opened in Toledo, June 26, 1890, the last in Columbus on September 2nd. The report for 1890 includes the work of these offices from June 26 to October 1. During this short period there were 20,136 applications for positions, 18,154 applications for help, and 8,938 situations were secured for the applicants. It is in the relation of these figures to each other that I find the most significance. The number of situations secured was 44.6 per cent. of the situations wanted, and 29.5 per cent. of the help wanted; the help wanted was 90.2 per cent. of the situations wanted. These figures show that the employers and workmen were ready to seize the opportunities held out to them by the State and to free themselves from the exorbitant and often fraudulent charges of many of the private agencies.

Another interesting statement in this fourteenth annual report is the financial one:

Estimated amount which would have been paid to agencies by applicants during this period .....	\$20,132 00
Deduct cost of maintenance of offices .....	5,000 00
And there is shown a net saving of.....	15,132 00

to the working people of the State.

Of course the first figure of \$20,132 is an estimated one, but the investigations made by different labor commissioners of the private agencies in their respective States show that a fee of \$1.00 is not a high average for applicants to pay for registering for employment. In addition to this registry fee, the private agency demands a per cent. of the first wages.

A test year of such work as the free employment offices hoped to do 1893, a year of great business depression. In that year the figures are as follows:—

Total number of situations wanted.. . . . .	26,854
Total number of help wanted.. . . . .	17,229
Total number of situations secured.....	15,201

ing established in the City of Seattle in 1894. In that year 2,823 applicants secured were 76.62 per cent. of help wanted, and positions secured were 49.16 per cent. of the situations wanted.

This would seem to indicate great activity on the part of the offices and hearty support and appreciation by the employers. In 1891 45.2 per cent. of those applying for positions secured them. The figures of 1893 show an increase over these, but there is a slight decrease in the 1893 figures when compared with the year 1892. In that year 51.36 per cent. of applicants for positions receiving them. The World's Fair is held by many to be responsible for this decrease.

The latest obtainable report of this bureau, that of 1900, gives the following figures:—

Number of situations wanted.. . . . .	20,855
Number of help wanted.. . . . .	22,437
Number of situations secured.. . . . .	13,344

Help wanted was 93 per cent. of situations wanted. Positions secured were 59 per cent. of help wanted, and positions secured were 64 per cent. of situations wanted.

Thus it is seen that the "Ohio experiment" as it has been called, has demonstrated the advantages to that State of the public administration of a free labor employment office for the use of her unemployed workmen.

The first state to follow the example of Ohio was Washington, an office being established in the City of Seattle in 1894. In that year 2,823 applicants secured positions through the office; in 1897, 8,736; in 1898, 21,948; in 1899 there was a slight decrease, the number being 20,070. In Washington the office places large numbers of hop-pickers, but their season is so short, and their number so uncertain, a fact due to variability of the crop, that this class of workmen is not included in the figures given.

In the Washington report there is also the interesting financial statement showing the cost to the state of each position secured:—

1894 .. . . . .	22.93 cents.
1895.. . . . .	19.38 cents.
1896.. . . . .	21.38 cents.
1897.....	6.24 cents.
1898.. . . . .	5.64 cents.
1899.. . . . .	4.98 cents.

The commissioner for Washington says he has made special endeavor to be of service of the skilled workmen, and he has been gratified by the marked increase in skilled help he has supplied. He does not, however, give figures classifying the workmen according to their trades.

He has also made investigations as to the satisfaction given to the employers by the help furnished through his office as compared with that furnished by the pri-

vate agencies. The employers say the help furnished by the free employment office has been more satisfactory than that furnished by the private agencies.

While the work of the Seattle office is contained in the report of the Commissioner of Labor for Washington yet the conduct of the office is under the control of the city and is maintained by it.

From 1895 to 1897 the Commissioner of Labor of California maintained a free employment office without any special appropriation from the legislature, the funds being supplied by private subscription. At the end of that time the office was discontinued, the bill providing for such work failing to pass. In the Ninth Biennial Report of the Bureau of Labor Statistics of California, 1899-1900, the commissioner, after a review of the results of the agency in 1895-1897, and a statement of the advantages and disadvantages of state control, concludes his report on the subject by recommending, not the establishment of a state office, but a close supervision of private ones and the enactment of certain laws in regard to fees, etc. He says further that not more than 10 per cent. of the wage earners of the state are patrons of the employment agencies.

In the same year that the commissioner of California was making his experiment, Montana established a free employment office. The law in Montana at first provided for the establishment of such offices by the state only. It was in 1897 modified to provide for their establishment by municipalities also, if desired. So far I have been unable to find that any have been so established. The defect of the Montana law, a defect which has prevented the successful operation of the offices, is that the free employment office is located in the office of the Commissioner of Labor in the state capital, a place not easily accessible to the unemployed; and, further, reports indicate that the demand for employment is not so great in Helena as it is in other cities in the state. These facts sufficiently account for the small returns from Montana office. Notwithstanding these unfortunate limitations the report for 1895, covering the work from April 1st to December 1st, shows that positions were secured to 46 per cent. of those applying for employment. In 1896, 62 per cent. of those applying were provided with work. I should infer from these figures that better location and better facilities would make the office of vast advantage to the workingmen of Montana.

In his report for 1896 the Commissioner of Maryland says he made the experiment without expense to the state. He does not give statistics, but states that about 12½ per cent. of the applicants were placed in positions of minor importance. He further states that he is convinced of the advisability of the establishment of a free employment office by the state.

The first work of this nature under sanction was in 1900, beginning August 21st. During the remaining months of the year there were 124 applicants, of whom forty-six were referred to employers. The Commissioner for that year urges the better equipment of the office by State appropriation.

In New York the free employment office was established by an act of the general assembly in 1896. A noticeable feature of the law of New York is the requirement that the Commissioner shall mail weekly to the supervisors of every county in the state a list of all applicants for labor or help. The Commissioners of other states lament their inability to make known to the people of their states the applications filed. The New York Commissioner, however, does not seem to think the method authorized by the state is the best one. He thinks newspaper advertising would bring better results.

An office was opened in New York City July 20th. During the five remaining months of 1896 there were 8,040 applications for labor and 948 applications for help. Four hundred and forty-four situations were secured for applicants.

Help wanted was 11 per cent. of the situations wanted, and positions secured were 5 per cent. of the situations wanted.

In 1897 the law was repealed, and another substituted for it in which was omitted the requirement in regard to the weekly report to the county supervisors.



In the 1898 report it is shown that 39.6 per cent. of the persons applying for work in that year received it, as against 20 per cent. in 1897. The figures are given in more detail for the work of the next two years in the reports. For 1899 they are as follows :—

Applicants for work .....	4,922
Applicants for help.. .....	2,982
Situations secured .....	2,292

For the year 1900 they are as follows :—

Applicants for work... .....	5,633
Applicants for help.. .....	3,505
Situations secured.. .....	2,899

These figures show a marked increase over the previous year, the per cent. of increase in situations secured being 26.

The last available New York reports show that New York is the only city in which the free employment office has been established, although under the law there could be one in Buffalo. The appropriation for the New York office is but \$5,000 a year.

In Nebraska a free employment office was opened May 1, 1897. No extra appropriation was made for two years. Owing to this lack of funds no branch office could be established in the large cities of the State, the work being confined to that which could be transacted in the office of the Commissioner at the capital at Lincoln.

The feeling of the unemployed toward the office in Nebraska is clearly seen in the numbers of applicants who registered for work during the period from May 1, 1897, to December 31, 1899, that being the period covered by the Commissioner's first report. There were 1,040 applicants. While there were but 218 of these who received positions, this is quite a saving to the state, since there was no outlay.

The Bureau of Labor in Nebraska makes biennial reports, hence the next report covers the work for the two years, 1899-1900. The figures are as follows:—

Applicants for positions .. .....	653
Applicants for help.. .....	15
Positions secured .....	181

Twenty-seven per cent. of those applying for work received it, as against 24 per cent. in the previous report.

In looking at these figures and comparing them with those of other states, the location of the office, and the fact that no appropriation is made for it must be borne in mind.

In Missouri the State Bureau of Labor opened a free employment department in St. Louis the first Monday in October, 1897. No appropriation was made for this office by the State, all expense being paid out of the regular appropriation for the Bureau of Labor.

In the annual report for 1897 there is a statement of the work for the first month.

Applicants for positions .. .....	1,748
Applicants for help.. .....	787
Positions secured .....	506

The number of male applicants far exceeded the female, the former being 1,511, the latter but 237. The female help desired was about 50 per cent. of the male help, the figures being 266 against 521.

In 1898 the St. Louis office shows :—

Applicants for employment.. .....	4,849
Applicants for help.. .....	3,181
Situations secured .....	2,318

Nearly fifty per cent. of those applying received work

In but four classes of labor was the demand greater than the supply, viz., factory workers, housework, miners, salespeople and solicitors. There were 1,271 ap-

plicants for positions as office help, while there were but 156 applicants for such help. Boys seemed to be in demand, 140 of the 125 applicants receiving positions. It was the unskilled labor, the ordinary day laborer and the teamster, who applied in large numbers, and whose labor was not in demand, but about three per cent. of the applicants of this class receiving work.

In December, 1899, an office was established in Kansas City. The work of this office, from its opening to October 1, 1900, was much larger than that of the St. Louis office. The total figures for the two offices are as follows:—

Applicants for positions, St. Louis .. . . . . .	4,222
Applicants for positions, Kansas City.. . . . . .	7,311-11,533
Applicants for Help, St. Louis.. . . . . .	2,281
Applicants for help, Kansas City.. . . . . .	5,423-7,524
Positions secured, St. Louis.. . . . . .	1,928
Positions secured, Kansas City.. . . . . .	4,278-6,186

It will be seen from these figures that there was a decrease in the work of the St. Louis office. There is nothing to show whether or not any of the applications were diverted from the St. Louis office to Kansas City.

In this year over fifty per cent. of the applicants received positions, the gain being about one per cent. over the previous year.

The Missouri law provides for the establishment of the Free Public Employment Office in all cities of 100,000 inhabitants. The commissioner, in his last report, recommends appropriations for the establishment of an office in St. Joseph.

Next to New York the state in which there would seem to be the largest demand for the Free Employment Office is Illinois, the second city in the United States being in that state. But it is not until 1889 that the legislature of Illinois passed a law establishing the free employment office. A comparison of the Ohio law of 1890 and the Illinois law of 1899 will show progress of the feeling towards the "Ohio experiment." It is no longer an experiment, and the State, instead of shifting the burden of the maintenance of the offices upon the cities in which they are located, provides for them out of state funds. Enlisting the services of the different inspectors of the state to aid in the placing of labor is an advantageous feature of this law. Illinois seems to have done all in her power to bring the demand for labor and the labor supply together. The results may be seen from the reports. These reports give the work of the offices in much greater detail than do the reports from other states, and since in no city can labor conditions be studied with greater advantage than in Chicago I will give in some detail the work of the Chicago offices.

Under the law three offices were established in Chicago in 1899, one on the West Side, one on the North, and one on the South Side. The report for 1900 gives the statistics for that year as follows:—

Applicants for employment.. . . . . .	37,285
Applications for help.. . . . . .	39,866
Positions secured .. . . . . .	35,542

87.73 per cent. of those applying received positions. Unskilled workmen form the larger class of applicants. There were but sixty-one professional men and women applying and but sixteen secured positions. One minister applied, and he was placed in some institution where he performed the duties of chaplain.

The statistics for the male department are as follows:—

Manual labor includes three classes of workmen, according to the report, and the statistics are as follows:—

Applicants for employment. . . . . . .	5,758
Applications for help.. . . . . .	7,326
Positions secured .. . . . . .	5,607

Trades, represented by eighty-two classes:—

Applications for positions .. . . . . .	2,974
Applications for help .. . . . . .	1,262
Positions secured .. . . . . .	1,042

Agriculture represents five classes :—	
Applicants for employment . . . . .	962
Applications for help.. . . .	1,008
Positions secured..... . . . .	919
Farm hands :—	
Applications for positions.. . . .	681
Applicants for help.. . . .	757
Positions secured . . . . .	675
Clerical, represented by seven classes :—	
Applicants for positions.. . . .	320
Applicants for help.. . . .	43
Positions secured . . . . .	309
Commercial, represented by twenty-two classes :—	
Applicants for employment . . . . .	1,922
Applicants for help.. . . .	808
Positions secured . . . . .	569
Domestic service, represented by twelve classes :—	
Applicants for employment.. . . .	4,192
Applicants for help.. . . .	3,335
Positions secured . . . . .	3,193
Transportation represented by seventeen classes:—	
Applications for employment . . . . .	2,232
Applications for help . . . . .	1,579
Positions secured. . . . .	1,433
Miscellaneous, represented by twenty-eight classes, such as apprentices, bartenders, boys (bell, errand. etc.), factory hands, janitors, watchmen, etc. :—	
Applicants for employment.. . . .	2,721
Applicants for help.. . . .	1,370
Positions secured . . . . .	1,277
Unclassified . . . . .	1,287
The statistics for the female department as follows:—	
Unclassified..... . . . .	999
Clerical, represented by five classes :—	
Applicants for employment.. . . .	188
Applicants for help.. . . .	62
Positions secured . . . . .	59
Commercial, represented by nine classes :—	
Applicants for employment . . . . .	282
Applicants for help.. . . .	137
Positions secured . . . . .	106
Domestic service, represented by eighteen classes :—	
Applicants for employment . . . . .	14,388
Applicants for help.. . . .	17,321
Positions secured.. . . .	13,983
Personal service, represented by three classes :—	
Applicants for employment . . . . .	25
Applicants for help.. . . .	1
Positions secured . . . . .	1
Professional, represented by five classes :—	
Applicants for employment . . . . .	144
Applicants for help.. . . .	210
Positions secured . . . . .	116
Miscellaneous, represented by five classes :—	
Applicants for employment.. . . .	389
Applications for help . . . . .	725
Positions secured . . . . .	346

In the statistics for the male department the best showing is made in manual labor, 39.95 per cent. of those applying receiving work; in the statistics for the female department the domestic service has the best showing, 93.87 per cent. of those applying receiving work.

During the existence of the bureau, from its establishment August 2, 1899, to December 8, 1900, a period of seventy-one weeks, the statistics in general are as follows:—

	Men.	Women.	Total
Applicants for employment . . . . .	34,491	22,454	56,945
Applicants for help. . . . .			61,622
Positions secured. . . . .	22,283	21,833	44,116

Seventy-seven per cent. of those applying for employment received it.

In July of the present year an office was opened in Peoria. The work of that office from July 1st to September 14th is as follows:—

Applicants for employment. . . . .	1,503
Applicants for help. . . . .	1,454
Positions secured. . . . .	993

Many commissioners are recommending to their legislatures the establishment of the free employment offices, feeling convinced after an examination of the working of the private agency that the state should come to the help of its unemployed in this way.

The feeling of the labor organizations toward the movement may be seen to some extent in a resolution which was read at the meeting of the Federation of Labor held at Louisville in December, 1900, from the Hotel and Restaurant Employees' International Alliance and Bartenders' International League of America condemning the private employment agencies and recommending that steps be taken to suppress them.

A communication from J. K. Vicha, Superintendent of the Cleveland, Ohio, Free Public Employment Office, was also read. This letter rehearses the evils of the private pay agency, and also the work done by the free offices in Ohio. He recommends that the Federation use all its influence toward the establishment of such agencies in other states.

Both these communications were referred to the committee on resolutions, which reported in favor of the free employment offices, and recommended their establishment and the suppression of the private agencies.

It is impossible, of course, to tell how many of the unemployed who seek the aid of the free employment office would go to the pay agency if the former were not in existence. Undoubtedly all would not do so, for there are many who do not have the fee demanded, and these are the very ones whom the state should help. When the conditions become such that the free employment office is no longer needed, as the commissioner of California says is the case in his state, then they may easily be discontinued, but in many states there is a large class of unemployed, and the most self-respecting way in which the state can care for them is to procure employment for them.

Statistical data of employment agencies in Ontario is not at present available. It is estimated that there are some twenty of these offices in the City of Toronto, with a proportionate number in the other cities of the Province, some of whom, it is alleged, are exploiting the necessities of those who can least afford it, namely, the unemployed. The evils surrounding the private agencies has long been a subject for consideration not only among the labor organizations, but other sections of the community. Some time ago a large and influential deputation, numbering many clergymen and others, petitioned the Toronto City Council with a view of mitigating the recognized evils existing from this source.

In a general way it is conceded that what is true of other localities, set forth in the foregoing, is also true of the cities of Ontario. A number of letters have been received by the Bureau bearing upon this subject.

## RECENT LEGAL DECISIONS IN ONTARIO AFFECTING LABOR.

## CASE UNDER THE WORKMEN'S COMPENSATION FOR INJURIES ACT.

A workman, while employed by contractors in the erection of a building, sustained injuries by falling a distance of 30 feet to the ground through the giving way of part of the scaffolding on which he was working. He claimed damages for negligence in the construction of the scaffolding. The scaffold on which he was standing consisted of a single plank, 16 feet long, one end of which rested on a trestle, and the other on a stay formed of a plank nailed to two upright posts forming part of the main building. The stay as originally fastened to the posts was perfectly secure, as the plank forming the stay was two inches thick and rested on its edge on a cleat securely fastened to the posts by spikes; the stay itself being securely fastened to the post by large spikes. The whole evidence showed that the stay while in that position was capable of sustaining a great weight. The general superintendent of the contractors' works was explicit in giving directions to the workmen, from time to time, that the stays should be put up and secured as these stays were. The day before the accident the stay in question was removed by two of the workmen, for their own convenience, while working a windlass, and raised about a foot above the cleats and nailed to the posts. This rendered the stay dangerous, because it was fastened at one end with two or three nails, and at the other end (upon which the plank forming the scaffold was placed) by only one nail. On the day of the accident the plaintiff (the carpenter) and a fellow-workman, were directed by the foreman on this work to cut off the ends of two beams at the top of the third story, and the plank referred to was thrown across from the trestle to the stay, a distance of 12 feet. The carpenter and his companion mounted this plank, which was over an open hatchway, when the stay gave way, and the carpenter fell down through the hatchway and so received the injuries for which the action was brought.

In answer to written questions put to them by the Judge, the jury found:—(1) That the defendant (the contractors' foreman) did not direct the two workmen to remove the stay; (2) that replacing the stay caused it to be defective; (3) that the defect was not discovered through the neglect of the contractors' foreman; (4) that the foreman placed the plank across the two beams to form the scaffold; (5) that the foreman, through his own negligence, was not aware that the stay was defective. The jury assessed the damages at \$500.

The trial Judge reserved judgment on these answers, and subsequently dismissed the action with costs. He held that the jury having found that the foreman did not direct the two workmen to remove the stay, there was no evidence to support the finding of the jury that the defect was not discovered through the negligence of the foreman. The foreman, he said, had no reason to suppose that any change had been made in the stay. On returning with their answers the jury were asked by the Judge what was the negligence imputed to the foreman. They replied: "The plank would be higher at one end than the other, and he could easily see facing that." As to this the court makes the following comments: "The foreman, having a right to assume that the stay had not been tampered with by the workman, and that it was in the condition of security in which it had been placed under his directions, and when it was in the same condition up to three o'clock the previous day, there was nothing in the mere difference in the height of the two ends of the plank to indicate that there had been a change. The difference caused no comment on the part of the plaintiff, who was present and saw the plank placed in position, and who mounted on it to commence work. If it could be held that there was negligence on the part of the foreman upon the facts disclosed here, it would cast a responsibility on employers never contemplated by the Act." (1900) Ontario Reports, vol. 31, page 521.

## ANOTHER CASE UNDER THE WORKMEN'S COMPENSATION FOR INJURIES ACT.

A conductor employed by an electric railway company brought an action to recover damages for injuries sustained by him by being thrown from a car while in the discharge of his duty as conductor. The accident was alleged to have been the result of negligence on the part of the motorman of the car. At the time of the accident the conductor was standing upon the lower and outer one of the two side steps of the car, having walked forward to take his fare from a passenger who had just got on the car. A waggon loaded with furniture was moving slowly ahead of the car in the same direction, and the motorman drove the car at a considerable rate of speed past the waggon as it was being turned out of the way. The conductor was struck by some of the furniture and was knocked off and severely injured. No part of the car was struck. The accident took place about eight o'clock on the evening of June 28, and it was proved that the motorman saw the waggon in plenty of time to have stopped the car if he had thought it necessary to do so. It was also proved that it was the conductor's duty to go to the passengers for their fares as they came on the car, and that he could not get to the passengers without using the side steps. The car was not crowded, and there were no passengers standing on the side steps. There was some evidence that the motorman sounded the gong as he approached the waggon, but the conductor said that he did not hear it.

In answer to questions put to them by the Judge, the jury found:—(1) That the conductor was injured by reason of the negligence of the motorman in not slackening speed; (2) that the conductor did not contribute to the accident by his own negligence; (3) that he did not enter into or continue in the company's employment with a full knowledge and understanding of the danger of such employment, and did not voluntarily incur the risk of the particular danger out of which the accident arose.

The jury awarded \$1,200 damages, and judgment was given for that sum with costs.

The company appealed to the Court of Appeal, which dismissed the appeal with costs. The court held that the motorman was "a person who has the charge or control," within the meaning of sub-section 5 of section 3 of the Act, and that his employers (the company) were liable for the injuries sustained by the conductor, a fellow-servant, while in discharge of his duty, owing to the motorman's negligence in passing too close to the waggon while it was moving out of the way of the car. (1900) Ontario Reports, vol. 27, page 151.

## A CASE OF INJURIES TO A WORKMAN WHILE ENGAGED IN DANGEROUS WORK.

A workman employed by a rolling mill company claimed damages for injuries sustained by him while working in their mill. His duty was to take away pieces of metal as they were cut by a pair of shears worked by steam power. While doing this, on one occasion, he was struck by a piece of metal, which was thrown off by the shears, and was severely injured. The machine was perfect of its kind, and it was not shown that a screen or guard could have been used, and the workman was aware that there was danger in the employment in which he was engaged. The danger when steel was being cut was greater than when iron was being cut, and it was while steel was being cut that the workman was injured. At the trial a general verdict was given by the jury in the workman's favor for \$250. The company appealed to the Court of Appeal, which dismissed the appeal with costs. The court held that there should have been some system of giving warning when steel was about to be cut, and that this means of reducing the possible danger not having been adopted, the company were liable in damages as at common law. One of the appeal Judges also held that, as the foreman of the works had been in the habit of warning the workmen when steel was to be cut, and had neglected to do so on the occasion when this accident happened, the company were also liable under the Workmen's Compensation for Injuries Act. (1900) Ontario Appeal Reports, vol. 27, page 155.

## CASES UNDER THE MECHANICS' AND WAGE-EARNERS' LIEN ACT.

In a case brought under the Mechanics' and Wage-earners' Lien Act (R. S. O., ch. 153) by a person entitled to a lien for material furnished to the contractor, the owner was made a defendant and appealed to the Divisional Court from a decision of the official referee ordering him to pay a sum of \$94.56 under the following circumstances:—The agreement of the contractor with the owner was for the carpenter work upon a building, and the contract price was \$2,200. So far as appeared no work was done upon the building, nor were any materials furnished later than August 10, 1899. At this date the contractor had done all the contract work excepting a few trifling matters estimated by the architect at \$25, and he had done \$45 worth of work in respect of extras. So that the total amount then earned by him was \$2,200. The payments made by the owner were \$1,770.70, leaving a balance unpaid of \$429.30. The contractor had been in default to his workmen in paying their wages on July 22, 1899, and the owner on that day had paid to the contractor \$50 for the express purpose of paying these wages, and it had been so applied. On July 31 the workmen notified the architect that, unless their wages were paid, they would stop working and register liens, and the architect thereupon paid them \$45.70 on the owner's behalf. Both these sums were included in the \$1,770.70 above mentioned. The only material furnished after the payment of July 31 was of trifling value, and was charged by a lien-holder on August 10, 1899. The last work done upon the building appeared to have been done on August 11, 1899. Three days afterwards, three of the workmen whose wages remained unpaid, and (as was admitted) were entitled to liens for \$94.56, brought to the solicitor for the owner liens for that amount, and informed him that, unless they were paid at once, they would register the liens. Thereupon, in order to save expense, the owner paid the amount and \$4 additional for preparing the liens. Under these circumstances the official referee held that the owner was not entitled to deduct this sum of \$94.56 from the twenty per cent. which he is required by the 11th section of the Act, R. S. O., ch. 153, to retain to answer liens, and directed him to pay into court the full amount of the twenty per cent. on \$2,200, viz., \$440, without deducting, as he had done, this sum of \$94.56. From this decision the owner appealed to the Divisional Court, and the question raised upon the appeal was whether or not the owner was entitled to deduct this sum of \$94.56 from the \$440, which he was required to retain for the lien holders. The sum paid into court by the owner, after deducting the \$94.56, was sufficient to pay all wage-earners in full, and to leave a considerable sum applicable to the liens of persons who supplied materials, but was not sufficient to pay the latter in full.

The court allowed the appeal with costs, and the owner was declared entitled to deduct the \$94.56 from the twenty per cent. fund (\$440) which the owner is required by the 11th section of the Act to retain to answer liens. The object of the 11th and following sections of the Act is to ensure to persons, intended to be protected by the Act, the formation of a fund in the hands of the owner equal to one-fifth of the contract price, or of the amount of work done, as the case might be, to which they might resort in case of the failure of the contractor to pay them. This fund is to be ascertained at the completion or abandonment of the work, and the owner is directed to retain it in his hands for thirty days from that time. In the present case the work upon the building was abandoned from August 11, 1899, when the last work was done. The twenty per cent. to be retained was therefore properly to be ascertained on August 12, 1899, and the amount was correctly fixed at \$440. In answer to the contention of some of the lien-holders that the owner had improperly paid the \$94.56 to the four wage-earners, who had threatened proceedings, because it was paid too soon, and because the whole of the twenty per cent. upon the contract price should have been retained for thirty days, it is pointed out that the only object of requiring the owner to retain the twenty per cent. for thirty days is to give persons entitled to liens a chance of enforcing them against the fund directed to be re-

tained. The position of all the lien-holders was precisely the same as if the owner had retained the \$440 for the full thirty days, because at the end of that time the wage-earners, to whom the \$94.56 was paid on August 14, would have been entitled to receive that sum, and the other lien-holders would have been entitled to the balance. No one was injured by the owner having paid the \$94.56 at the beginning, instead of at the end of the thirty days, and therefore no one could complain. But the owner by making a payment before the expiration of thirty days takes the responsibility of showing that he places the other lien-holders in no worse position by doing so; and this the owner did in the present case. Section 12 of the Act was urged against the appeal being allowed, but it does not apply to moneys which the owner is directed to retain, and so did not affect the case. That section merely gives authority to the owner, without the consent of the contractor, but upon mere notice to him, to make payments out of the contract price direct to persons who would be entitled to liens, but limiting the right to make such payments to the moneys which the owner is not directed to retain under section 11. This case in effect decides that the owner of a building is not prohibited from making payments (before the expiry of the thirty days from completion) out of the twenty per cent. reserve, required by section 11 of the Act, to persons entitled to liens, but he makes such payments at his own risk as against any one ultimately prejudiced by such payment. (1900. Ontario Reports, vol. 31, page 546.)

#### EFFECT OF A MECHANICS' LIEN ON MORTGAGE INTERESTS.

The following points have been very recently decided by a Divisional Court with respect to the effect of a mechanics' lien on mortgage interests in the property:

In order to find the interest of a mortgage in an action to enforce a mechanics' or wage-earner's lien under the Mechanics' and Wage-earners' Lien Act, such a mortgagee must be made a party to the action within the 90 days mentioned in section 24, sub-section 1, otherwise the lien absolutely ceases to exist as against such interest. The decision on this point follows the decision in the cases of the Bank of Montreal vs. Hoffner, reported in volume 10 of the Ontario Appeal Reports, page 529, and of the Cole vs. Hall, reported in volume 13 of the Ontario Practice Reports, page 100. Wide and comprehensive as is the language used in sub-section 35 and 36 of the Act, it was not intended to make so radical a change in the procedure as to enable a claimant (plaintiff), who has not constituted his action with the necessary parties, and who cannot make them parties after judgment on a reference as to encumbrances on the property, to bind them by serving them with a notice of trial under those sections.

In this same case the court also held, one of the Judges dissenting, that a mechanics' lien attaches to the increased value, if any, in priority to a mortgage, as soon as lumber, which is to be used in the construction of a building upon the land, is placed upon the land, and before the lumber is incorporated into the building. And when the lumber, paid for by the mortgagee out of advances under his mortgage, was removed by the owner to a mill to be planed, and the mill owner sold it to satisfy his charges and paid the balance to the mortgagee, the court held, that at most the act of the mortgagee amounted to a conversion of the lumber, or proceeds of its sale, to his own use. The Mechanics' Lien Act provides no machinery enabling the court to assess damages against anyone in such a case, so as to give lien-holders the benefit of the amount of such damages.

#### WHO IS AN "OWNER" UNDER THE MECHANICS' AND WAGE-EARNERS' LIEN ACT.

Upon an appeal from the judgment of a county Judge, reversing his judgment, the Court of Appeal for Ontario held that a person is not an "owner" within the meaning of the Mechanics' and Wage-earner's Lien Act, and as such liable to me-



chanics' lien proceedings for work done or materials placed upon land in which he has an interest, unless there is something in the nature of a direct dealing between the contractor and the person whose interest is sought to be charged. Mere knowledge of, or consent to, the work being done or the materials being supplied, is not enough there must be a request, either of an express nature, or implied, from circumstances, to give rise to the lien. (1900. Canada Law Journal, vol. 36, page 421.)

In this same case a Judge of the High Court of Justice held that sections 41 and 42 of the Act, limiting the "costs of the action under the Act" to twenty-five per cent. of the amount of the judgment, besides actual disbursements, do not apply to the costs of an appeal from the decision of the Judge or officer trying the action. The court appeared to think, without, however, so deciding, that the costs of such an appeal are within the scope of section 45 of the Act. This decision is reported in the same volume of the same periodical as the previous decision, at page 421.

#### AN EMPLOYER'S LIABILITY ASSURANCE CASE.

A firm of contractors brought an action against an employers' liability assurance corporation to recover part of the premium paid by them to the corporation for an employers' liability policy, which had been cancelled, and also for indemnity under the policy in respect of a workman's claim which arose while it was in force. The facts, shortly stated, were these: The defendant, corporation, had its head office in London, England, its chief office in Canada at Montreal, its chief agency for Ontario at Toronto, and a local agency at Hamilton. The local agents of the company, without authority from anyone, upon the request of the assured firm, and after some correspondence with the chief agent for the company in Ontario as to other changes, which had been refused to the knowledge of the assured firm, altered an employers' liability policy which had been sent to them (the local agents) for delivery to the assured firm. The alteration consisted in making the policy comprehend the workmen at a place other than those places named in the policy. After this alteration had been made the local agent handed the policy to the assured firm, who paid him the premium. The local agents then sent the premium to the chief agent for Ontario, and advised him at the same time of the alteration made. The power to make any changes in the policy did not rest in the local agents, nor in the chief agent for Ontario, but only in the manager and chief attorney for Canada, who was not notified of the alteration. The trial Judge held that the defendant company could not be held to have authorized the alteration, and were not bound by the contract as altered. (1900, Ontario Reports, vol. 31, page 666.)

#### A CASE UNDER THE WORKMEN'S COMPENSATION FOR INJURIES ACT.

A machine, perfect in itself, is, if applied to some purpose for which it is unfitted, defective within the meaning of section 3, sub-section 1 of the Workmen's Compensation for Injuries Act (R. S. O., ch. 160).

To state in the defence that notice of the accident has not been given, and that the defendants intend to rely on that defence, is not sufficient. Formal notice must be given in accordance with the provisions of section 14 of the Act. In deciding this particular point the court applied one of its previous decisions (Cavanagh vs. Park, 1896) reported in the Ontario Appeal Reports, vol. 23, page 715. In that case the court held that the provisions of section 14 of the Workmen's Compensation for Injuries Act, 55 Vic., ch. 3, an Ontario statute, are not complied with in merely setting up as a defence that the notice of action relied on by the person bringing the action is defective, or that person against whom the action is brought must give formal notice of such an objection not less than seven days before the hearing of the action if he intends to rely upon it. (1900, Canada Law Journal, vol. 36, page 421.)

## CASE UNDER THE WORKMEN'S COMPENSATION FOR INJURIES ACT

There were three cases in the docket of the Fall Assizes, which opened at Hamilton on October 15th, of actions for damages under the Workmen's Compensation for Injuries Act.

The first was the suit of McMenemy v. the Canada Screw Company, to recover \$1,000 compensation for the loss of a hand.

The plaintiff was Mrs. Ellen McMenemy, a widow. She claimed that on January 31st last, while she was using a grindstone in the works of the company, through the unguarded condition of the stone, a wrench slipped, forcing her right hand against the stone and causing injuries necessitating the amputation of some of the fingers and rendering her hand useless.

The defence was that Mrs. McMenemy had been employed at the works for twelve years; that the grindstone was not dangerous, and that she had been careless, looking about her when she should have been watching the machine.

The jury were out an hour and returned a verdict in favor of the defendant, Canada Screw Company.

Another suit was that of George Fallis against the Gartshore Pipe Foundry Company for \$5,000 for the loss of an eye. While the plaintiff, a teamster, was delivering goods to the defendants' yard an employee of the company was chipping rough edges from castings in another part of the yard, and a small chip flew across the yard and struck him in the eye, causing the loss of sight. Owing to the plaintiff's absence from the city the case was laid over to the winter assizes, which open in January.

The suit of Green v. the Hamilton Mountain Park Company for \$10,000 for the loss of a life, was settled, the defendant paying the plaintiff \$850 and all costs. The accident happened on June 9, 1900, the husband of the complainant was in the employ of the defendants, who operate an incline railway, running up to the table land, on the south of the city. Deceased was second engineer, and was instructing the head engineer at the top to proceed on the car half way down to do some oiling, he was to give the engineer at the top a signal when he was out of danger the man above did not wait for the arranged signal, but started the car, crushing the deceased in six inches of space between the car and the retaining wall. The injuries received resulted in death the next day. The defence claimed carelessness on the part of the head engineer, and defective construction, six inches space being too little left between the retaining wall and the car.

At the Assize Court, Guelph, on the 10th and 11th of October, a case was tried under the Workmen's Compensation for Injuries Act. The plaintiff, an employee of a local factory, on March 29, while working a circular saw, had his thumb and three fingers cut off. He claimed that a guard which is used on such saws was lacking, and that a divider was on the machine. The defence was that the man did not exercise the necessary care, and placed his hand where no good workman should at a circular saw table. The case hinged mainly on where a man should stand in doing his work at a circular saw table. The jury found that (1) the injury was caused through no fault or negligence of the defendants; (2) that it occurred through plaintiff's incompetence; (3) it could have been avoided by reasonable care; (4) the machinery was securely guarded. Plaintiff may appeal.

## CASE OF AN EMPLOYEE INJURED BY REASON OF DEFECT IN GANGWAY.

A workman was employed by a school board to carry mortar to some masons (also employed by the school board) who were building a wall on land belonging to the latter. When the wall had been put up, a foreman, who was in general charge of the work, directed the workman and one mason to do the tuck-pointing the next day. In order that the mortar might be carried to the mason at the foot of the wall these two made, of some of the planks that had been used in scaffolding, a gang-

way from the top of the wall to an adjacent building, and from there to the ground. Whilst the workman was walking along this gangway with a load of mortar an insecurely fastened plank gave way, and he was injured.

In the action for damages which he then brought against his employers it was decided:—(1) that at common law (that is, apart from there being any statute on the subject) his employers were not liable for the accident, as the injured man and the mason were fellow-workmen (neither being bound to obey the other) who had exercised their own judgment as to the best means of building the gangway, and as the material supplied by the employers (the plauks) would have proved strong enough if they had been properly fastened.

It was also decided that (2) the employers were not liable under the terms of the Workmen's Compensation for Injuries Act, because the gangway was not constructed by any one under their orders (as a superintendent foreman) whose commands the injured man was bound to obey.

(Ferguson vs. Galt Public School Board. Canadian Law Times, vol. 20, p. 397.)

#### CASE CONCERNING UNREASONABLE ARTICLES OF APPRENTICESHIP.

A boy, under twenty-one, was bound for four years to a firm of iron-turners. It was agreed that at the end of the four years the boy's surety in the articles of apprenticeship should pay the firm \$300 for teaching him the trade, and that if before the end of that time he was either dismissed for good reasons, or if he left the firm the \$300 should then be paid immediately. The boy was to work, in all, for a time equal to four years of 310 days of 10 hours each; but the firm could at any time reduce the number of hours' work to be done in a day. The firm agreed to pay him 40 cents for every full day's work during the first year, forty-five cents in the second year, fifty cents in the third year, sixty cents in the fourth year and to give him a bonus of \$25.00 if he completed the fourth year.

The boy worked for about eighteen months, and then stopped going to the shop, saying that for various reasons he found that the work was hurting his health. The firm said that he wilfully left their employment, and sued his surety for \$300.

It was decided that the articles of apprentice were unreasonable, because the firm could, if it choose, reduce the number of working hours at any time, and thus not only compel the boy to work for a greater number of days in order to serve his full time, but also reduce his weekly wages. The apprenticeship was therefore of such a nature that the boy was never legally bound by it, and the action was accordingly dismissed. (McGregor v. Sully. Ontario Reports, vol. 31, page 535.)

#### CASE OF INJURIES TO A CHILD UNDER FOURTEEN YEARS OF AGE.

The child injured in the case was only twelve years of age. He was employed to work at a circular saw. The action for damages for the injuries sustained was dismissed, but an attempt was then made, on behalf of the child, to obtain another trial. The Ontario Factory Act names the different kind of work at which a child under fourteen years of age may legally be employed in a factory, and working of a circular saw is not one of them. But the court decided that though the employer might have been wrong in allowing the child to do such work (and if he had thus contravened the Factories Act he might be fined), yet in order to get damages from the employer it was necessary to prove that the accident really did happen because the child was too young to do the work properly, or because it was too exhausting for his strength. But that was not shown in this case, and therefore, no new trial was granted. (Roberts v. Taylor, Ontario Reports, vol. 31, page 10.)

#### CASE OF ACCIDENT CAUSING DEATH OF RAILWAY CONTRACTORS' EMPLOYEE.

J. W. R. was employed by certain contractors, who were constructing a railway. About 6 o'clock one evening J. W. R., returning from his day's work, was

on a loaded gravel train, which was going from the gravel pit (where he had been working) to the place where the gravel was dumped. On the way the train went off the track at a switch. J. W. R. was amongst those killed.

In the action brought against the contractors for damages it was found that the accident had been caused by a misplaced switch, the switch-point having been sprung away from the rail because the lever was out of the notch; it was held, on these facts, that the switch was not properly guarded, and as there was no lock the contractors then in charge of that part of the road were guilty of negligence, and were liable for injuries which might thus happen to their employees. The relatives of J. W. R. were given \$2,500 damages. (*Romhough v. Balch & Peppard, and the New York & Ottawa Railway Company.* Ontario Appeal Reports, vol. 27, page 32.)

#### CASE OF UNMARRIED MAN KILLED IN AN ACCIDENT.

Another case decided at the same time as the preceding one was that of G. W. G. who was also an employee of the railway contractors, and was likewise killed by the train going off the track. But G. W. G. (unlike J. W. R. in the last case) was unmarried, and he did not even give any regular sums of money to his parents. The contractors therefore said that as the parents (who sued for damages) did not receive any certain amount from their son, their means of support were not lessened by his death, and that, therefore, they were not entitled to any damages. It was decided, however, that in such case parents need not prove that their son had been in the habit of regularly helping to maintain them, but that if they could only show that there was a reasonable expectation that they would have received such assistance from him in the future, had he lived—that fact would entitle them to recover damages for his death. In this case the \$1,500 awarded to the parents by the jury was, in view of circumstances, reduced by the court to \$1,000.

(*Green v. New York and Ottawa Railway Company, and Balch and Peppard.* Ontario Appeal Reports, vol. 27, page 32.)

#### CASE OF EMPLOYERS LIABLE FOR INJURIES CAUSED BY A DEFECTIVE MACHINE.

A firm of Cement Manufacturers had in their factory a machine known as a "screw conveyer," which took from one part of the building to another the current discharged into it from a drop spout connected with a conveyer. The conveyer was operated by machinery, and made from 70 to 80 revolutions per minute. It was formed of a large iron screw, set in a wooden box, the cover of which was removed. Some months after the machine was put up, partly in order to mix some fine cement with the ordinary cement that was passing from the spout. This fine cement was in sacks, which, when full, weighed about 65 pounds. An employee was, as directed, slowly emptying the cement from one of these sacks, when it stopped coming out. He shook the bag, and in doing so lowered it. The screw caught it, and the jerk pulled the employee round, and his hand was brought down between the side of the box and the screw. For the injury thus sustained he sued his employers, and the jury gave him \$500 damages.

The cement manufacturers appealed from this on two grounds, which will be considered separately: (1) They said that there has been no negligence on their part, and that the employee would not have been hurt if he had not been negligent himself. The court decided that though the machine was perfect for the purpose for which it was made (i.e., as a conveyer), yet that it was not meant to be a "mixer," and that, therefore, when it was used as one it was defective machinery, and therefore the employers were liable for injuries caused by it to their employees. It was also held that the employee himself had not been careless.

(2) Workmen's Compensation for Injuries Act (under which this action was brought) says that the injured employee must give written notice of the injury to the employers within twelve weeks after the accident? In this case the cement manufacturers claimed that, as his notice had not been duly given, the suit should be dis-

missed. But another part of the same Act provides that if the employers intend to rely on the want of this notice as a defence to the action, they themselves must give the employee notice that they mean to do so seven days before the trial. In this instance that had not been done. The employers had merely mentioned the want of notice in their statement of defence, which was not sufficient. The verdict for \$500 was therefore upheld.

(Wilson v. the Owen Sound Portland Cement Co., Limited, Ontario Appeal Reports, vol. 27, page 328.)

#### CASE OF EMPLOYERS NEGLECTING TO TAKE DUE PRECAUTIONS FOR SAFETY OF THEIR EMPLOYEES.

The employee of a company was directed by another employee who was in authority over him to remove the waste near a circular saw, which was in motion. While doing so he had his left arm cut off. He then sued the company for damages, alleging that his employers had been guilty of negligence in not having the saw guarded, and also in not having a proper way arranged for going in and out near it to get the waste.

The jury could not agree whether or not the employee was (as he claimed) told by the employee in authority over him to approach the circular saw in the particular way he did so. (If this had been proved to the satisfaction of the jury, the company, of course, would have been held responsible for the act of the latter—i.e., for the order he gave to the employee under him.)

But, on the second part, the jury decided that the saw was unreasonably dangerous, because it was not properly guarded, and therefore the employee was awarded \$500 damages.

An effort was afterwards made to have this verdict and judgment set aside, on the ground that the jury had not agreed on a general verdict—nor had it decided that the employee had been injured in obeying the order of his superior. But it was held by the court that the fact that the jury had found that the company was negligent in not having the saw properly guarded was sufficient, and the verdict was therefore not set aside.

Judgment delivered in a divisional court of the High Court of Justice, at Toronto, in November, 1900.—Blow v. London & Petrolea Barrel Co.

#### CASE OF ILLEGAL BY-LAW OF A TRADE UNION.

P. was a member of the Toronto Musical Protective Association, and was also an active militiaman, and, as such, was a member of the band of the 48th Highlanders.

The Musical Protective Association, by an amendment to its by-laws, forbade any of its members to play with musicians who were not members, and made anyone who should do so liable to be fined. P. played in uniform at a concert in which the band of the 48th Highlanders took part, by permission of the officers of the regiment. All the other members of the band were not members of the Musical Protective Association. P. was therefore fined \$2, and his name was afterwards struck off the membership list of the association, because he had not paid the fine. P. contended that the amendment under which he was fined was illegal, and he sued the association accordingly.

It was decided by the court that as P, being a member of the militia, attached to the band of his regiment, was obliged to play when the band was ordered to do so, no matter how many of its members did not belong to the Musical Protective Association, the amendment under which he was fined for so playing was invalid, because it was unreasonable. It was also decided that the amendment was invalid because it was in restraint of trade; and that it was contrary to the provisions of the Militia Act, which obliges regimental bandsmen to play whenever they are duly directed to do so.

P. was therefore awarded \$20 damages for having been wrongfully dismissed from membership in the Musical Protective Association; and it was also declared that the

by-law under which he was expelled was void, that his expulsion was illegal, and that he should enjoy all the benefits of membership without any further interference.

(Parker v. The Toronto Musical Protective Association, judgment delivered at Toronto by Mr. Justice McMahon, on December 18, 1900.)

#### CASE OF FATAL ACCIDENT CAUSED BY NEGLIGENCE OF RAILWAY COMPANY.

J. A. C. was learning the system used for checking freight cars. He was not paid anything by the railway company, thus being only a licensee. While on the track he was run over and killed by an engine and tender going backwards.

The father of J. A. C. sued the company on behalf of himself and wife. The jury decided that the company had been guilty of negligence in allowing J. A. C., who was only a novice at the work, to go alone without an experienced car-checker, and awarded \$3,000 damages.

The railway company appealed on the ground that the deceased was not employed by them, but was only a licensee, to whom they had given permission to learn the business of car-checking.

It was decided that the deceased was only a licensee, but that the company was nevertheless liable for negligence, and that they had been negligent. It was held, however, that as the deceased was only 22 years of age at the time of his death, and he was not earning anything, the damages given by the jury were excessive, and the amount was therefore reduced to \$1,500.

(Collier v. Michigan Central Railway Company, judgment given by the Court of Appeal on November 13, 1900.)

#### QUESTION AS TO WHO CAN BRING AN ACTION AGAINST EMPLOYER FOR INJURIES CAUSING DEATH OF HIS EMPLOYEE.

The various statutes respecting the liability of employers state by whom and for whose benefit the action may be brought. Generally it may be said that such actions can only be brought on behalf of those who received, or who had reasonable expectation of receiving support from the deceased employee. In this case the employee was unmarried, but the action for damages was taken by his administrator for the benefit of his mother. On the very day that the issue was joined (i.e., when both parties to the suit had put in their pleadings and had agreed to have the case tried), the mother died. It was then contended by the employer that the action must be dismissed—that, the mother being dead, there was no need for damages for her support, and that the right of action ceased at her death. It was decided, however, that in such a case the death of the mother might reduce the amount of damages to be awarded, but that her decease did not destroy the right of action, and that any damages that might be given would form part of her estate.

(McHugh v. Grand Trunk Railway Company; judgment given by Mr. Justice Ferguson, at Toronto, November 6, 1900.)

#### A CASE OF CHILD LABOR AS AFFECTED BY THE FACTORIES ACT.

A boy twelve years of age was employed in a factory to work at a circular saw, and had his hand injured by allowing the fingers to get into the slot beneath which the saw worked. He sued for damages, alleging negligence on the part of his employers. At the trial the case was withdrawn from the jury, and a non-suit directed to be entered. An appeal was taken to the Divisional Court to have the non-suit set aside, and a new trial granted on the following grounds:—(1) That at common law the fact of employment of a person of tender years to work a dangerous machine (such as a circular saw) may in itself constitute negligence, and it should have been left to the jury to say whether or not, under the circumstances disclosed in evidence, the employment in this case constituted negligence on the part of the employers. (2) That the employment of

the boy constituted a breach of the Ontario Factories Act (R.S.O., Chap. 256), and was therefore negligence, which should have been submitted to the jury. (3) That on the facts in evidence the question of contributory negligence—one of the defences to the action—on the part of the boy could not arise, or if it did it was a question for the jury.

The Divisional Court dismissed the appeal and affirmed the judgment of the trial judge. The appeal judgment, in reviewing the evidence, declares that it cannot be said that the machine at which the boy was put to work was dangerous, or not sufficiently protected, or that, with ordinary care, there was any risk in doing the work assigned, or that the boy was not sufficiently informed as to the manner of doing the work. It seems to have been a simple operation, easily done by any handy youth, such as the boy appeared to be. Nor could it be found on the evidence that the injury arose from the immature age of the boy, rendering the work too exacting or too exhausting for him? He appears to have undertaken the work understanding what he had to do, and being apt enough to do it with ordinary care. He had competent knowledge of the danger to be avoided, and could not have been hurt had he not allowed his fingers to get into the slot beneath which the saws worked—a place intended for the strips of board, and into which he had no call to put his hand. The injury appears to have been the result of either injury or accident, for which an adult could not sue. Then how is the situation different because of the boy's infancy, or because of his being under the lawful age of employment. There was no evidence that the age was asked by, or known to, the employers. No doubt the boy was under fourteen, and should not have been employed in the factory. The Factories Act (R.S.O., 1897, Ch. 256, sec. 2, sub-section 5, and sec. 5) says that no child shall be employed in a factory except at certain kinds of work (under which the work in question in this case does not fall) and "child" is defined as a person under fourteen. But though this subjects the employer to a penalty, it does not give rise to a civil action for damages, unless there is evidence to connect this violation of the Act with the accident. The work assigned may be too dangerous for a child, or too exhausting in its demands, so that what an older person might do would overtask the child and so contribute to the injury. But no case was made here coupling the accident with any such illegal employment. Then, again, in the absence of evidence tending to show that the child injured was not competent to understand the situation—the work to be done, the manner of doing it, and the attending risk—and to appreciate the need for due caution according to the circumstances, the court may infer capacity in the case of youth of twelve or thirteen who shows intelligence in his manners and his answers. The evidence of the boy himself in this case established all that was needed to show that he was entitled to no greater consideration than an adult suing for a personal injury.

(1899, Ontario Reports, vol. 31, page 10.)

#### CONDITIONS IN ACCIDENT INSURANCE POLICY.

M. who was a baggageman employed at a railway station, took out an accident insurance policy, in which his occupation was so described. The policy stated that if he was injured "in any occupation or exposure" which was classed by the insurance company as being more hazardous than that of a baggageman, he should only receive whatever insurance the premiums he had paid would have purchased if he had said he was engaged in the more hazardous business. Another clause of the policy provided that no insurance should be paid if death was caused by "voluntary exposure to unnecessary danger."

M. was killed whilst coupling cars, which was not part of his duty as baggageman. The insurance company claimed therefore that the accident came within the exceptions above mentioned. The evidence showed that M. had coupled cars on other occasions, and that, in this particular instance, he thought that the brakeman had requested him to make the coupling.

The court decided that the words "occupation or exposure" did not include the casual act of coupling; that there was not "voluntary exposure to unnecessary danger," and that therefore the representatives of M. were entitled to the sum for which he was insured.

(McNevin v. Canadian Railway Accident Insurance Company. "The Canadian Law Times," vol. 21, page 76.)

#### QUESTION OF A FATHER'S LIABILITY FOR THE NEGLIGENCE OF HIS SON.

H. D., a minor, about twenty years of age, was driving his father's horse and buggy, when the wheel caught the wheel of F.'s waggon, causing the latter's horse to run away. F. sued the father of H. D. for damages for injuries thus caused, claiming that as at the time of the accident H. D. was employed by his father and using his horse and buggy, the father was liable for the results of his negligence, in the same way as an employer is liable for the negligence of his employee whilst engaged in his business.

The evidence showed that H. D. was living at home, assisting his father in the work of the farm, but not being paid any wages for so doing. Occasionally he worked for others, and the money which he thus earned he was allowed to keep, and with it he bought clothes, etc., for himself. On the day of the accident he was driving to town to purchase some articles for himself with the money he had made.

The court decided that on these facts the relation of employer and employee did not exist between the father and son, and that, therefore, though the latter had been negligent, the father was not liable for the injuries caused thereby. (File v. Dugger, Ontario Appeal Reports, volume 27, page 468.)

#### AN EMPLOYEE NOT HAVING ANY SUPERINTENDENCE.

C., a dressmaker employed in a departmental store, was injured by the fall of the elevator in which she was going down at the end of the day's work. She sued her employers for damages. It was proved that all due precautions had been taken regarding the safety appliances of the elevator. But it was also shown that the accident would not have happened if the person in charge of the elevator had made a proper use of the brake. The question, therefore, was whether the employers were responsible for this negligence on the part of their employee—the person in charge of the elevator. It was decided that the latter was not a person having any superintendence entrusted to him by his employers; and that, therefore, according to the Workmen's Compensation Act, the employers could not be made liable for injuries caused to another of their employees by the negligence of the person in charge of the elevator. The action was therefore dismissed. (Carnahan v. The Robert Simpson Company. Judgment given at Toronto, December 24, 1900.)

#### TECHNICALLY OVERRULED BY JUSTICE.

A public school teacher, who was dismissed because the school trustees wished to engage someone at a lower salary, sued for the amount of his salary which he claimed was in arrears, and obtained a judgment for that sum and for three months' additional salary because of the fact that he had not been paid at the proper time. The school trustees appealed from this judgment, and alleged that the agreement made with the teacher was void, because it was not sealed with the corporate seal, and that therefore they were not liable. The court said that the law would not allow justice to be defeated by such a technicality, dismissed the appeal, and confirmed the judgment in favor of the teacher.—Re McPherson v. The Public School Trustees of the Township of Osborne. Judgment given at Toronto, January 16, 1901.



## EMPLOYER LIABLE FOR HIS EMPLOYEE'S NEGLIGENCE.

W. B., a corporation labourer at Hamilton, was working on the street when a waggon coming from behind knocked him down, and so injured him that he was prevented from working for some time. The waggon was driven by W. K.—but it belonged to H. K., by whom W. K. was employed. W. B. therefore sued H. K. for injuries caused by the negligence of his employee whilst acting in the course of his employment. Judgment was given against H. K. for the amount of wages lost by W. B., together with the sum paid doctors.—*Ballantine v. Kuntz*. Judgment given by Judge Snider in the Division Court at Hamilton, December 20, 1900.

## STREET CAR VESTIBULES FOR CONDUCTORS.

A by-law of the City of Toronto requires the Street Railway Company to provide their cars with proper and sufficient vestibules for protecting the motormen and other persons in charge of the car from exposure to cold, snow, rain and sleet, while engaged in operating the car. The cars of the Toronto Street Railway Company are provided with vestibules at one end—but have not any at the rear end for the protection of the conductor. On this account the company was (about two years ago) convicted for breach of the by-law, and fined accordingly. Recently the company appealed, and asked to have this conviction set aside, contending that the conductors were not "persons in charge" of the cars, and that anyway the by-law only meant that there should be one vestibule on each car. The Court held, however, that the only sensible meaning which could be drawn from the words of the by-law was that there should be two vestibules on each car. The conviction was therefore affirmed. There was no appeal from this judgment.—*Re Toronto Street Railway Company*. Judgment given by Divisional Court at Toronto, January 22, 1901.

## QUESTION OF WHAT IS A "WAY" WITHIN THE WORKMEN'S COMPENSATION ACT.

The Workmen's Compensation Act provides (amongst other things) that an employee shall recover damages from his employer when he is injured by reason of "any defect in the condition or arrangement of the ways . . . connected with, intended for, or used in, the business of the employer."

In this case the fireman on a tug-boat, whilst attempting to pass along the outside rail from the engine room to the furnaces, slipped and fell into the water and was drowned. His father sued the owners of the tug-boat for damages, alleging that the accident was caused by the fact that slabs of wood, intended to be used for fuel, were piled to a height of four feet upon the decks and passageways. The owners of the boat replied that there were other safe ways of going from the engine room to the furnaces and that the fireman had himself been negligent: and that anyway the passage from one place to another was not such a "way" as was meant by the Workmen's Compensation Act.

A jury gave a verdict in favor of the father of the deceased, but the Higher Court agreed with the contentions of the owner, and set aside the verdict and dismissed the action. (*Young v. Owen Sound Dredge & Construction Company*. Judgment of the Court of Appeal, November 13, 1900.)

## CASE OF A GIRL EMPLOYED IN A FACTORY.

A girl, fifteen years of age, was employed in a factory, her work being to feed and run a machine for stamping cardboard. In taking out the stamped, and putting in the unstamped cardboard, she was obliged to place her hands for an instant between the stationary and the moving parts of the machinery. She was given a good deal of practice in this work, and men did it for several days without any accident, and apparently without any difficulty. On one of the following days, however, her left hand was caught between two plates at the top of the machine, and was badly crushed. Her employers were sued for damages.

At the trial the girl could not tell how it came to be in the position in which it was when it was caught, nor could she give any explanation regarding the accident, which no one saw happen. Her father said that he never knew that she was working at the machine. Her employer admitted that he knew the kind of work she was doing, but said that he did not consider it to be a breach of the Ontario Factories Act on his part. The section referred to says that "a child or young girl shall not be allowed to work between the fixed and traversing part of any self-acting machine, while the machine is in motion." A "young girl" means a girl between fourteen and eighteen years of age.

Upon the evidence given the Court decided that even if the employer had contravened the Factories Act by engaging the girl to do such work, it was still necessary in order to make him liable to prove that he had been guilty of some negligence which had been the direct cause of the accident. As this had not been shown the action was dismissed.—*Fahey v. Jephcott*. The Canadian Law Times, vol. 21, page 143.

#### EMPLOYEE INJURED BY NEGLIGENCE OF ONE IN AN AUTHORITY OVER HIM.

M. was the driver of an engine going from Cobourg to York. On arrival at Port Hope the Conductor showed M. a despatch saying that their train would meet an east-bound freight train, called "2nd 86," at Newtonville. M. read the despatch and asked the conductor if it was all right. The latter replied that it was, and gave the signal to start. Two miles west of Port Hope the train collided with another, called "1st 86," and M. was injured. M. sued the railway company for damages under the Workmen's Compensation Act, alleging that the accident was caused by the negligence of the conductor, whose orders he was bound to obey, and that therefore the company was liable.

The court decided that the despatch had nothing to do with the matter, and that the accident was caused by the negligence of the conductor in failing to examine the train register at Port Hope. By one of the company's rules, the driver is obliged to obey the conductor's orders about starting a train "unless they endanger the safety of the train," which means that unless the driver had reason to believe that they endangered the safety of the train." In this case the driver had no reason to think so, because he was entitled to believe that the conductor, who said it was all right, had examined the register as he should have done. Judgment was therefore given in favor of M. for damages to the amount previously agreed upon between the parties.

*Miller v. Grand Trunk Railway Company*. Judgment given by Mr. Justice Street, February 11, 1901.

#### WHAT CONSTITUTES A DEFECTIVE MACHINE.

G. was employed to work a jointer machine in a piano factory. In the course of his work he joined and left a piece of wood in its usual place, when it fell, and forced his left hand upon the knives of the machine—which were unguarded. G. sued his employers, alleging negligence because the knives of the machine were unprotected, and because this defect was known to their foreman. A jury gave G. damages. When the employers appealed, this verdict was sustained, and it was held that upon the evidence it had been proved that the jointer was a defective machine, and that its defective nature had been known to the foreman. The court adopted "the governing principle that when a machine is defective with reference to danger, and such defect is within the knowledge of the employer, he is then liable."

*Godwin v. Newcombe*. Judgment given by the Court of Appeal, March 2nd, 1901.

#### WORKMEN'S COMPENSATION ACT.

H. was employed by contractors who were building a sewer. He was told by the foreman to do some work on a part of the sewer where he had never been before. When he had finished the work, he attempted to ascend by a ladder he saw, and by which he thought he could get to the surface. Several of the rungs were missing and he fell and

was injured. He sued his employers for damages, claiming that the ladder was such a "way" as is referred to by the Workmen's Compensation Act, and that therefore the employers were liable for any injuries caused to their employees by reason of its being in bad repair. The court decided that the ladder was not such a "way," and that he himself was reckless in making such an attempt to get out of the sewer. The action was therefore dismissed.

Hoak v. O'Leary. Judgment given by a Divisional Court at Toronto. February 19, 1901.

#### ACTION BY EMPLOYEE OF CONTRACTORS.

B. was employed by a firm of contractors, and while working in a ditch, at a distance of about ten feet below the surface, was injured by a cave-in. He claimed that the accident was caused by lack of proper "shoring," and that he was injured for life, and sued the contractors for \$5,000 damages. The contractors asserted that every precaution had been taken, and that the accident was occasioned by what could not have been foreseen.

During his cross-examination B. admitted that the contractors had treated him well—that they had paid \$140 for doctors' bills and hospital charges, and had insisted upon his returning to the hospital after he had left it. B. also admitted that he had gone out of the hospital when the doctor had advised him not to do so, and that he had taken a few drinks, which the doctor told him had delayed his recovery.

The jury gave a verdict in favor of the contractors, and the action was dismissed. (Brennan v. Harding & Leathorne—London Assizes, April 12th, 1901.)

#### BOY INJURED IN A FACTORY.

A boy, between fourteen and fifteen years of age, who was employed in a factory, was told to place some boards beside one of the machines. When he did so, one man who was in charge of the machine was some distance away, standing at a window. The boy, thinking that the machine was not in motion, put his hand on it to brush off some dust, and was severely injured by the knives. He sued his employers for damages, and the jury found that the boy had used reasonable care, considering his age, and that his employers were guilty of negligence, because they had not a guard on the knives, and because their employee, the man in charge of the machine, was not attending to his proper duty at the time of the accident.

The court, however, reversed this, and held that a boy of fourteen years of age was (unless proved to be otherwise) capable of understanding the danger he ran; and that his employers had not by their negligence caused the accident. The action was therefore dismissed.

Moore v. J. D. Moore Company.—Judgment given by Mr. Justice Street, April 15th, 1901.

#### ACCIDENT DUE TO DEFECTIVE APPLIANCES.

K., a conductor employed by the Toronto Suburban Street Railway Company, was holding the trolley rope tightly in his hand, when, owing to a defect in the joint of the wire above, his thumb was pulled off. He sued the company for damages, and the jury gave a verdict in his favor for \$400, on the ground that the company was responsible for accidents caused by defects in its appliances.

Knapp v. Toronto Suburban Street Railway Company, Toronto Assizes April 11th, 1901.

#### AGREEMENT BETWEEN EMPLOYER AND EMPLOYEE.

A. engaged B. as his employee, the agreement being that, unless A. sold out his business before, the employment was to last for one year, and that B. was to be paid both a weekly salary, and, at the end of the year, a certain percentage on the net profits made during that time.

Before the end of the year A. sold his business, and refused to pay B. a percentage on the profits made up to the time of the sale. B. claimed that he was entitled not only to that percentage, but also to a percentage on the profits made by A. by the sale of his business.

The court decided that B. had a right to a percentage on the profits made up to the date of sale; but that, as he never owned any part of the assets of the business he was not entitled to any part of the profits of their sale.

In re Sims and Harris.—Canadian Law Times, volume 21, page 231.

#### LOSS OF LIFE THROUGH NEGLIGENCE.

Edward Sim was employed on a steam tug in catching and packing fish in Providence Bay, Manitoulin. The boxes in which the fish were packed had handles at each end. Sim placed in one of these handles one of the iron hooks provided for such use by his employers and was dragging the box to the other end of the vessel to be stored when the handle came out, and Sim, losing his balance, fell overboard and was drowned. The widow of the deceased sued his employers for damages, alleging that the handle which had come out was a rotten one, and that it was insecurely attached to the box, and that they, therefore, had been negligent and were liable for the consequences; it was also claimed that the employers were negligent because, contrary to the provision of an Act regarding the inspection of steamboats, they had failed to have on their tug, at a convenient place, at least one life-buoy, with a proper heaving line attached to it.

The jury found that the accident would not have been fatal if a buoy had been in its proper place; and that if there had been a proper inspection the defective handle might have been discovered; and that while the employers had been negligent the deceased had not. The Judge determined that there was no right of action against the employers on the ground of their not having a life buoy in the proper place; he also held, however, that there was evidence that the employers had been negligent in not having had some inspection in order to see that the handles placed upon the boxes would resist the force which it was necessary to use in dragging them, as an employer is bound to exercise due care to see that proper materials, machinery and plant are supplied.

Judgment was given against the employers for \$1,500 damages, and this was sustained on appeal. (Sims v. Dominion Fish Company.—Judgment given at Toronto May 14th, 1901.)

#### LIABILITY OF ELECTRIC COMPANY FOR NEGLIGENCE OF MOTORMAN.

According to the Workmen's Compensation Act (Ontario) an employer is responsible to his employees for the acts of a "person who has charge or control" of any of his works, machinery, etc. A motorman of a local electric car negligently allowed the car to collide with a passing vehicle, whereby the conductor, who was properly standing on the side step of the car taking the fares, as he was bound to do, was struck and injured. It was held that the motorman was a "person who had charge or control" within the meaning of the Workmen's Compensation Act, and that, therefore, the electric company was bound to pay damages to the conductor for the injuries caused him by reason of the negligence of their motorman.

(Snell v. Toronto Railway Company. Judgment given by the Supreme Court of Canada, 1st April, 1901.)

#### INFRINGEMENT OF UNION TRADE MARK.

The Journeymen Tailors' Union of America, through one of their members, named Robinson, of Hamilton, has brought a suit against a merchant named McLeod of the same city, to restrain the latter from continuing an alleged infringement of the Union's

registered trade mark. The plaintiff was ordered to give minute particulars of the alleged infringement. He appealed from this decision, but it was confirmed by the higher court.

Robinson v. McLeod. Decision given by Mr. Justice Lount, May 31st, 1901.

#### EMPLOYEES' PROVIDENT SOCIETIES.

A point of considerable interest to members of labor organizations generally, and to employees of railway companies in particular, was decided, so far as Ontario is concerned, by a judgment recently delivered by Mr. Justice Meredith.

John Lucy was employed by the Grand Trunk Railway Company as a brakeman, and whilst working in that capacity at Oshawa he met with an accident which resulted in the loss of three fingers. Lucy claimed that the accident had been caused by negligence for which the company was responsible, and he therefore sued them for \$5,000 damages. The company denied negligence on their part, and claimed that the accident had resulted from the carelessness of Lucy himself.

The company, however, also raised another and more interesting defence. Lucy was a member of the Grand Trunk Railway Provident Society, an organization of which every employee of that company is obliged to become a member, which is partly supported by the Grand Trunk Railway Company, and which has a constitution, one of the clauses of which states that a member of the society cannot sue the company for damages for any accident which he suffers while in their employment. The company claimed that this proviso in the constitution of the Grand Trunk Railway Provident Society debarred Lucy from bringing any action against them for damages on account of the accident referred to, and that the suit should be dismissed without being given to the jury. The question of law involved was fully argued, and the presiding judge finally decided that the fact that an employee pays dues into such an organization as the Grand Trunk Railway Provident Society does not debar him from suing the Grand Trunk Railway Company; that the employee paid the dues for the insurance which the society gave him; and that despite the clause in the constitution of the society, the fact that he was a member of such organization did not take away the right of an employee to sue the company which employed him.

(Judgment by Mr. Justice Meredith delivered September, 1901.)

#### CASE UNDER THE ONTARIO FACTORIES ACT.

The Ontario Factories Act provides that "a child or young girl shall not be allowed to work between the fixed and traversing part of any self-acting machine while the machine is in motion." Another section of the Act defines a "young girl" as a girl between fourteen and eighteen years of age.

A girl, fifteen years of age, was (unknown to her father) engaged by her employer in running a machine for stamping cardboard. After she had had a fair amount of practice, and after having managed the machine for some days without any apparent fatigue, her hand got caught in the machine and was so badly injured that it was necessary to amputate it. She was unable to explain how it was that her hand came to be where it was when the accident happened, and nobody else was present at the time.

The father of the girl sued her employer for damages, claiming that by reason of the Factories Act he had no right to allow a girl of that age to work at such a machine, and that he was liable in damages for any accident which might occur while she was doing so. The trial judge, however, held that it was necessary to prove that they had been guilty of some other negligence which was directly connected with and caused the accident; and there being no such evidence, he dismissed the action.

The plaintiff appealed, and the Court of Appeal decided that the mere fact that the employer allowed a girl under eighteen years of age to operate between the fixed and traversing part of a self-acting machine was sufficient to render him liable in

damages for any accident which happened to the girl while she was so engaged Judgment was therefore given against the defendant. *Fahey vs. Jephcott*. Decision of the Court of Appeal for Ontario, Sept. 21st, 1901. See report of the first judgment in this case in the *Labor Gazette*, vol. 1, No. 7, page 385, March, 1901.

#### THE LORD'S DAY ACT.

An interesting decision was given on October 17, 1901, by the police magistrate of Belleville, in an action under the Lord's Day Act brought against the Trent Valley Paper Company, which was charged with allowing its employees to work on Sunday. The magistrate decided that the Lord's Day Act did not apply to corporations, and he therefore dismissed the complaint.

#### A CASE UNDER THE WORKMEN'S COMPENSATION ACT.

One Charles Armstrong, employed by the Canada Atlantic Railway Company, was engaged in shunting cars in the yard of that company at Ottawa, when he received injuries that resulted in his death.

His widow brought an action under the Workmen's Compensation Act against the railway company for damages, alleging that the accident was caused by certain negligence on their part. Now that Act requires that, in the case of any action being brought under it, notice of the accident upon which the action is founded shall be given to the proposed defendant within twelve weeks from the date of the accident, and the action itself shall be commenced within twelve months from the time of the death of the person injured when the accident has resulted in death.

In this instance the action was brought within the proper time; but notice of the accident had not been given to the company within the twelve weeks, and on that ground, the judge at the trial held that there was no right of action under the Act, and, therefore, dismissed the action.

The plaintiff appealed, and the Court of Appeal decided that as the evidence showed that the company was well aware that Armstrong had been killed in its yard, whilst in its employment, and whilst engaged in its work, and as the notice of the accident, if it had been given, would have given them no information which they did not possess before, that afforded a reasonable excuse for not giving the notice. It was said that the whole object of requiring notice of the accident to be given was attained by the knowledge of the company of the occurrence of the accident at the time, and of the cause of it, and that it had not been proved that they had been in any respect prejudiced by the notice not having been given.

A new trial was therefore ordered, the costs of the former one to be paid by the defendant company. *Armstrong vs. Canada Atlantic Railway Co.* Judgment of the Court of Appeal for Ontario. August 27, 1901.

#### CASE OF A BUILDING ACCIDENT.

The Hamilton Steel & Iron Co. was constructing, as part of a smelter, an iron stove, which was to be seventy feet in height, with an interior of brick. Eight platforms were put up, one above the other, for the purpose of supplying bricks. K. was engaged on one of these platforms, receiving bricks from below, and handing them on above, and while doing this work he was hit on the head by a brick. K. was attended by a physician, who, it was alleged, was acting in the interests of a company which had insured the Hamilton Steel & Iron Co. against damages by reason of such accidents; this physician obtained from K. for \$60, a release of all his claims against the Hamilton Steel and Iron Co.; but K. subsequently repudiated this release, offered to return the money, and sued the Hamilton Steel and Iron Co. for damages, claiming that the accident had been caused by its negligence in not providing proper means of hoisting the materials used in building the iron stove. The jury found that the company had

been guilty of negligence in that respect; but it was unable to decide where the brick came from which injured K. The court therefore held that as it was quite possible that another workman had maliciously caused the accident, the company could not be held liable. It was also held that although the release was not obtained by undue influence or by fraud, yet if K. had on other ground been entitled to judgment against the company, it would have been decided that the release did not bind him. The action was therefore dismissed, but without costs.

(Keenan v. Hamilton Steel and Iron Company. Action tried at Hamilton before Chief Justice Falconbridge. Judgment rendered November 14, 1901.)

#### RAILWAY EMPLOYEES AND PROVIDENT SOCIETIES.

At the Hamilton Assizes, in the case of Holden v. the Grand Trunk Railway Co. (which was an action for damages by the widow of the late Walter Holden, a Grand Trunk Railway engineer, who was killed on the defendant company's line), the point arose whether or not the fact that the widow of a deceased member of the Grand Trunk Provident Society has accepted insurance from that institution on the life of her husband debarred her from subsequently taking an action against the company for damages for the death of her husband. The court decided that the acceptance of such insurance did not have that effect; but it is understood that this case will be carried to the Court of Appeal.

In the November number of the Labor Gazette (at page 315) a report was given of a somewhat similar case, the point involved therein whether the fact that an employee of the Grand Trunk Railway Company, who was a member of the Grand Trunk Railway Provident Society (of which every employee of the Grand Trunk Railway Company is obliged to become a member), prevented him from taking an action against the company for damages for injuries caused by the alleged negligence of the company. In that case, apparently, the employee had not accepted anything from the Provident Society, but simply brought his action for damages against the Grand Trunk Railway Company, and Mr. Justice Meredith held that he had a right to do so.

(Holden v. Grand Trunk Railway Company. Judgment delivered by Mr. Justice Falconbridge.)

#### CASE OF AN ELECTRIC CAR ACCIDENT.

K., a conductor employed by the Toronto Suburban Railway Company, while engaged in his duties as conductor, was holding the trolley rope tightly in his hand as the car entered a switch. The trolley pole went in the wrong direction and jerked up K.'s right hand so that it struck the top of the car, pulling his hand off. K. sued the company for damages, alleging that the accident was caused by a defective trolley switch (regarding which K. said that he had complained before the date of the accident to the company), and by an excessive rate of speed.

At the trial the jury awarded K. \$400 damages, but the presiding Judge decided that this verdict was not sustained by the evidence, and entered judgment for the company, dismissing the action. K. appealed, and the Appellate Court held that the evidence submitted at the trial was such that the jury was justified in bringing in a verdict for damages; that this evidence showed that the trolley system did not work properly; that there was clearly a defect in the switch, and that the attention of K.'s superior officer had been called to this defect (which apparently caused the accident) before the day of the accident.

The court therefore ordered that judgment should be entered for K. for \$400 and costs.

(Knapp vs. Toronto Suburban Railway Company.)

## ACCIDENT CAUSED BY DEFECTIVE MACHINERY

C. was employed by D. who was a manufacturer of woodenware, to work at an "upright post-boring machine." While engaged in this work C.'s left hand slipped over the knob at the end of the "shifter," and was drawn into two connected cog wheels, a part of the gearing of the machine, and two fingers were crushed. C. sued D. for damages for this injury, alleging that the machinery was not properly protected, and that, in view of the provisions of the Workmen's Compensation Act, the machine was in a defective condition. The case was tried with a jury, which found, in answer to various questions, that the gearing of the machine was dangerous, unless proper care was used in doing the work; that it was practicable to guard the machine securely; that D. was aware of the danger in working the machine and that C. was not; and that D. was negligent in not having a guard for the machine. C. was accordingly awarded \$125 damages.

(Carter v. Dowswell Manufacturing Company. Judgment delivered by Mr. Justice McMahon.)

## HOUSE OF LORDS DECISIONS AFFECTING TRADE UNIONS.

One of the most interesting legal questions arising out of possible relations between trade unions and employers is whether, if a trade union, by threats of strike or otherwise, directly forces a firm or company to dismiss an employee or employees, either because they are not members of a union or otherwise, or by the same methods causes an individual or firm to be boycotted, the employee or employees, so dismissed, or the individual or firm boycotted, can recover damages from the trade union. One phase of this question occupied the attention of the English courts a few years ago, and after many judgments had been rendered a decision was finally given in the matter by the House of Lords. This was the famous case of *Allen v. Flood*, in which judgment was rendered in 1898.

## ALLEN vs. FLOOD.

Flood was a shipwright, employed "for the job" in repairing the woodwork of a ship. He was liable to be discharged at any time. Some ironworkers who were employed to do the iron work on the same ship objected to Flood being employed, upon the ground that he had previously worked at ironwork on another ship for another firm, although the ironworkers' union strongly objected to shipwrights being allowed to do ironwork. The ironworkers therefore sent for Allen, who was a delegate of their union, and explained the situation to him. Allen then went to the employers and told them that unless Flood was discharged all the ironworkers would be "called out," and that, moreover, wherever Flood was employed the ironworkers would stop work, as he had infringed their rule that no shipwright should do their kind of work. The employers, being afraid that this threat would be carried out, and their business would thus be stopped, discharged Flood, and refused to employ him again.

It appeared that if it had not been for this interference of Allen, Flood would have been given work for some time to come.

Flood then brought an action for damages against Allen, for having maliciously induced the former's employer to break his contract with him, and to agree not to enter into any new contract with him. The case went through several courts, and the opinions of many judges were obtained, before the matter was finally settled by the House of Lords.

The evidence showed that Flood had no contract with his employer; he could be dismissed at any time. However, it is also, under certain circumstances a legal wrong to induce a man not to make a contract with a particular person, and that argument was urged in this case.



But the chief point to be remembered in considering the case of *Allen v. Flood* is that the dismissal of the latter was not obtained because he was interfering with the work of union men; at the time he was working at his own trade (that of a shipwright), and his dismissal was demanded by the ironworkers because he had once, on some previous occasion, worked as one himself in defiance of the rules of the union. In other words, it was sought to punish Flood for his former actions.

#### THE POINTS AT ISSUE.

The majority of the Judges of the highest court of appeal came to the conclusion that the points at issue might be resolved into the following questions, which they answered in the manner stated below:—

(1) Did Allen, when he induced the employers to dismiss Flood, thereby cause them to do a legal wrong which had caused actual injury to Flood—for, if so, Allen (as well as the employers) would be liable in law for the damage so suffered by Flood. Now, as Flood had no contract of his service, his employers being at liberty to dismiss him whenever they chose, they had not been guilty of any legal wrong in doing so when they did. Allen, therefore, was not liable on that ground.

(2) But the second (and most difficult) point was raised by the contention that though otherwise Allen would not have been legally responsible for inducing Flood's employers to do that which they had a perfect right to do, yet in this instance he was so, because it was out of malice (i.e., through malicious motives—with the intention of punishing Flood, and not for the purpose of protecting his co-members of the union) that he had persuaded the employers to stop giving work to Flood. In other words, it was contended that what was otherwise perfectly legal, became illegal as soon as it was done for purely malicious reasons. The majority of the House of Lords decided that this concession was not good law, and this point is, probably, the first of the decision in *Allen v. Flood*.

It is to be remembered, however, that, on the other hand, if Allen had used any unlawful means to induce the employers to dismiss Flood, then he would have been liable for the damages so caused to Flood, although, of course, the employers would not have been, as they could dismiss him at any time. But the fact that Allen had been actuated by malice was not sufficient to make him responsible to Flood; he had not used any unlawful means to effect his end, and so long as he had not done that he was not legally answerable to Flood for the result.

#### LIABILITY OF TRADE UNIONS.

The following account of an important decision given by the House of Lords during July of the present year, bearing on the legal status of trade unions when registered under the Trade Union Act, appears in the August number of the *English Labour Gazette*, the journal of the English Labour Department of the Board of Trade, England.

In connection with a dispute between the Taff Vale Railway Company and its workmen, an action was brought by the company against the Amalgamated Society of Railway Servants, a trade union registered under the Trade Union Act, and against their secretary, the claim being for an injunction and for other relief, which would include damages. The injunction asked for was to restrain the society, their servants, agents and others acting by their authority, and their officers named as co-defendants from watching or besetting, or causing to be watched or beset, the Great Western Railway station at Cardiff, or the works of the Taff Vale Company, or any of them, or the approaches thereto, or the places of residence, or any place where they might happen to be, of any workman employed by or proposing to work for that company, for the purpose of persuading or otherwise preventing persons from working for that company, or for any purpose except merely to obtain or communicate information, and from procuring any person who might have or might enter into contracts with the company

to commit a breach of such contracts. The society took out a summons to strike their names out as defendants, on the ground that they are neither a corporation nor an individual, and could not be sued in a quasi-corporate or any other capacity. The Judge of the Vacation Court refused to strike the society out of the action, and granted an interim injunction until the trial of the action, restraining the society in the manner asked for by the company, the costs to be costs in the action.

The society appealed against this decision, and the Court of Appeal allowed the appeal, with costs in that court and in the court below. The court held that nothing in the Trade Union Act made a trade union liable to be sued in its registered name, so as to enable its funds to be taken in execution, and that the action was not maintainable against a trade union. Accordingly the court ordered that the society should be struck out as defendants to the action, and that the injunction against them should be dissolved.

The company appealed to the House of Lords, which held that a trade union registered under the Trade Union Acts can be sued in its registered name and reversed the judgment of the Court of Appeal, and restored that of the Vacation Judge, ordering the society to pay costs both in the House of Lords and in the court below.

Taff Vale Railway Company v. Amalgamated Society of Railway Servants, House of Lords, July 12th, 15th, 16th and 22nd, 1901.

#### HOUSE OF LORDS DECISIONS

In the September number of the Labour Gazette mention was made of a decision given by the House of Lords on August 5, dismissing an appeal from the judgment of the Irish courts awarding a wholesale butcher damages against the Butchers' Assistants' Association, which brought pressure to bear on retailers to boycott him until he dismissed a certain non-union employee, threatening to call out the union employees of the firm, and finally induced non-unionists to leave the plaintiff. In anticipation of the text of the judgment in this case, a review was given of the well-known case of Allen vs. Flood, there being an impression in some quarters that the decision in the aforementioned case presented points of variance with that rendered in Allen vs. Flood. From the statements contained in the judgments, however, it appears that the facts and circumstances of the two cases are different, and that, consequently, there is no conflict between the decisions rendered.

The following account of the case of the wholesale butcher against the Butchers' Assistants' Association appears in the September number of the English Gazette, the journal of labour of the Labour Department of the Board of Trade, England:

#### CONSPIRACY TO INDUCE CUSTOMERS AND SERVANTS TO LEAVE

In an action brought by a butcher against five assistants, of whom one was president, another treasurer, another secretary, and the remaining two ordinary members of a Journeymen's Butchers' and Assistants' Association, it was shown that the plaintiff offended the defendants by employing some men who were not members of that association, in refusing to dismiss them, and that a constant customer of the plaintiff, yielding to a threat made by the secretary of the association and the other defendants that his assistants would otherwise be called out, telegraphed to the plaintiff to cease sending him meat, and thenceforth took no meat from him. It was also proved that several of the defendants published "black lists" containing and holding up to odium not only the plaintiff's name, but also the names of persons who dealt with him; that a customer of the plaintiff, who was operated on in this mode, ceased to deal with him; and attempts were made similarly to influence certain other persons; and that certain of his servants were induced to leave his service. In two cases after giving due notice, in one case without giving notice. At the trial the jury found (1) that the defendants maliciously induced the plaintiff's customers to refuse to deal with him; (2) that the defendants maliciously conspired to induce the plaintiff's customers

and servants not to deal with him and not to continue in his employement, and that the persons so induced did leave him; and (3) that three of the defendants published a "black list" with the intention of injuring the plaintiff. The jury gave £200 damages in respect of each of the first two findings against all the defendants, and £50 in respect of the third against three of the defendants (the secretary and the two ordinary members of the association); and judgment was given accordingly.

The defendants appealed; but the appeal was dismissed, except that the damages were disallowed in respect of the third finding of the jury (in regard to the "black list.")

One of the defendants (the treasurer of the association) appealed to the House of Lords, which dismissed the appeal with costs, holding that, upon the facts proved in the case, the plaintiff had a right of action against the defendants for damages, sustained in consequence of the conduct of the defendants. *Quinn vs. Leatham*, House of Lords, May 14, 17 and 20, June 11 and 13, and August 5.

#### COMPARISON WITH ALLEN VS. FLOOD.

The following extracts from the judgment rendered in the case of *Quinn vs. Leatham* will serve to make clear the points of distinction between that case and the facts of the case of *Allen vs. Flood*.

The Lord Chancellor in his judgment said:—

The hypothesis of fact upon which "*Allen vs. Flood*" was decided by a majority in this House was that the defendants there neither uttered nor carried into effect any threat at all. They simply warned the plaintiff's employer of what the men themselves without his persuasion or influence had themselves determined to do, and it was certainly proved that no resolution of the trade union had been arrived at, and that the trade union official had no authority himself to call out the men, which in that case was argued to be the threat which coerced the employers to discharge the plaintiff. It was further an element on the decision that there was no case of conspiracy or even combination. What was alleged to be done was only the independent and single action of the defendant, actuated in what he did by the desire to express his own views in favor of his fellow members now in this case (i.e. *Quinn vs. Leatham*), it cannot be denied that if the verdict stands, there was conspiracy and threats, carried into execution so that loss of business and interference with the plaintiff's legal rights are abundantly proved."

Lord Lindley, in the course of his judgment, after examining the exact force and meaning of "*Allen vs. Flood*," said:—

"This decision, as I understand it, establishes two propositions, one a far-reaching and extremely important proposition of law, and the other a comparatively unimportant proposition of mixed law and fact, useful as a guide, but of a very different character from the first. The first and important proposition is that an act otherwise lawful, although harmful, does not become actionable by being done maliciously in the sense of proceeding from a bad motive, and with intent to annoy or harm any one. This is a legal doctrine not new or laid down for the first time in "*Allen vs. Flood*": it has been gaining ground for some time, but it was never before so fully and authoritatively expounded as in that case. In applying this proposition, however, care must be taken to bear in mind, first, that in "*Allen vs. Flood*" criminal responsibility had not to be considered. It would revolutionize criminal law to say that the criminal responsibility for conduct never depends on intention. Secondly, it must be borne in mind that even in considering a person's liability to civil proceedings the proposition in question only applies to "acts otherwise lawful," i.e., to acts involving no breach of duty, or, in other words, no wrong to any one. The second proposition is that what *Allen* did infringed no right of the plaintiff's, even although he acted maliciously and with a view to injure them. Truly, to inform a person, that others, not under the control of the informant, will annoy or injure him unless he acts in a particular way, cannot of itself be actionable whatever the motive or intention of the informant may have been."

### LIABILITY OF TRADE UNION FUNDS.

In the case of the Taff Vale Railway Co. vs. the Amalgamated Society of Railway Servants (referred to in the September number of the Labour Gazette at p. 181), the House of Lords held that a registered trade union could be sued in its registered name so as to make its funds liable to be taken in execution for any damages which might be recovered.

Another English decision may be considered in connection with the above case. In *Linaker vs. Pilcher and others*, three of the defendants were registered as the proprietors of a newspaper, the *Railway Review*, which was published to protect the interests of the Amalgamated Society of Railway Servants, of which organization the three defendants referred to were the trustees. The *Railway Review* published an article imputing drunkenness to the plaintiff *Linaker*, and in an action for libel the latter was awarded £1,000 damages. The question then arose whether the funds of the Amalgamated Society (the real owner of the publication) could be taken for the payment of the damages and costs, and the court decided that they could. (*Linaker vs. Pilcher et al.*, decision of the Court of King's Bench, February, 1901).

### CO-OPERATION IN GREAT BRITAIN.

The Report of Workmen's Co-operative Societies in the United Kingdom, Board of Trade (Labor Department), 1901, gives a detailed statistical history of co-operative societies operated by workmen in Great Britain; also the work of various other classes of co-operative societies.

H. Llewellyn Smith, in his letter of transmittal, says:—The progress made by co-operation in the United Kingdom in recent years has been continuous and remarkable. Between 1874 and 1899 the recorded membership of all classes of co-operative societies increased from 403,010 to 1,681,342. The percentage which co-operatives formed of the population of the United Kingdom rising from 1.2 to 4.1. The increase of the value of the total yearly transactions of these societies has been still more rapid than that of their membership. The aggregate business for 1874 being valued at about fifteen million sterling, while that for 1899 amounted to over 68 millions, exclusive of the banking transactions of the English Wholesale Society. The majority of co-operative societies (1,446 out of 71,858) are associations established primarily for retail distribution, and these embrace more than nine-tenths of co-operative societies, as stated above. The value, however, of the commodities produced by co-operative societies of various classes is very considerable, amounting in 1899 to nearly eleven millions sterling, of which rather more than a third is produced by the workshops attached to societies for retail distribution, a third by the "wholesale" societies by which the retail stores are largely supplied, and the remainder by independent societies established expressly for production, including under the last heading the corn milling societies, the output of which was valued in 1899 at over a million sterling. It is interesting to note the progress made by co-operative societies established primarily for production since 1882, the first year for which figures are given in the tables appended to the present report. Excluding corn mills, returns for 1882 are available for sixteen such societies, with sales amounting to £137,848, while in 1899 the number of societies was 259, with sales valued at £2,191,785. Over four-fifths of this production is accounted for by the following trades, in order of importance: dairying, baking, textile, boots and shoes, and printing. Most societies of this class allot a share of profits to their employees.

The English and Scottish "Wholesale" Societies are federations of retail societies for supplying themselves with goods for sale to their members. Full details are given in the report as to the operations and progress of these societies.

Among other features of the report to which attention is called are the accounts given of various minor operations carried on by the retail and wholesale co-operative societies, e.g., the provision of dwellings for their members, insurance, banking, etc., as

well as the work of various classes of societies, such as building societies and labor loan societies, which partake more or less of a co-operative character.

M. J. J. Dent, Labor Correspondent of the Board of Trade, in the opening pages of the report says (in part) as follows:—

#### DISTINGUISHING FEATURES OF A WORKMEN'S CO-OPERATIVE SOCIETY.

(1.) Membership open to all, subject only to veto of committee in objectionable cases; share list never closed.

(2.) Shares are issued at par value, usually £1, payable in small weekly or quarterly instalments aided by automatic accumulations of profits accruing to the holder.

(3.) Share capital is withdrawable at short notice, generally. Some of the societies, however, compel members to hold at least one transferable share, which can be realized only by sale.

(4.) In all the societies, almost without exception, each member has but one vote, irrespective of the number of shares held.

(5.) Proxy voting is almost unknown in these societies.

(6.) The interest on share capital is in most cases limited to a fixed rate of interest (usually 5 per cent. per annum). The surplus profits remaining after the payment of the fixed rate of interest on share capital are distributed in certain agreed proportions, in some cases between the customers of the society, in others between the customers and employees, in others, again, between customers, employees and shareholders; but in no case do the shareholders receive in right of their capital the whole of the profit.

(7.) Publicity of accounts is a universal feature.

(8.) The societies are, with few exceptions, formed under laws specially passed to meet the requirements of the industrial classes. The associations vary in size from the Leeds Industrial, with its membership of 48,000, its capital of £733,644, and its annual sales of £1,473,702, down to the Society of Forth, in Scotland, which has ten members, but possesses no capital, whether share or loan, the ten members sending a periodical order for goods to the Scottish Wholesale Society, to be delivered at the house of one of their number. The total capital of these societies at the end of 1899 amounted to £22,282,473, of which £18,925,270 was share capital, £2,516,691 loans and deposits, and £840,512 reserve and insurance funds.

The Act under which they are incorporated prohibits any one member from holding shares to a nominal value exceeding £200. In many cases the capital has increased beyond the society's requirements, in which cases the amount of share capital to be held by any one member is limited to £100 or less, and in some instances to £10.

In many cases members who have already paid up their shares in full voluntarily allow the interest on their shares and the dividend on their purchases to be regularly added to their share account; and in this manner, by the accumulation of dividends and compound interest, they have acquired the full limit of share capital permitted by the acts, or by the rules of the society, and when this limit has been reached, the money, as it becomes due, is credited as loan capital advanced by them to the society. It is this process of transfer of interest and dividends to share and loan capital that has led to the large accumulations of capital in the retail distributive societies, and has given them the character of an automatic savings bank, in which a member's capital is constantly increasing without any actual investment being made by him directly out of his ordinary income.

The account books of almost every old-established society would show numerous instances of members who, having invested in cash only one or two shillings, and having in the course of a number of years withdrawn many pounds sterling, still have a substantial balance standing to their credit.

As already stated, the societies as a whole possess considerably more capital than is required for their present business, and frequent conferences are held in various parts of the country to discuss the best method of utilizing the surplus. At the end of

1899 a total of £9,850,140 was invested by retail distributive societies otherwise than in their own business. Of this amount £3,816,087 was re-invested in other co-operative societies, including the Wholesale Societies, the Corn Mills and other productive societies, while £4,465,041 was invested in house property, partly let to members and partly held on mortgage as security for advances made to members, the balance being invested in various cotton spinning, railway and canal undertakings, and other concerns.

#### SALES AND SOURCES OF SUPPLY.

The total sales in 1899 of the 1,423 retail distributive societies in Great Britain amounted to £44,985,490, upon which, after allowing for all expenses, but no interest on shares, there remained a profit of £7,021,534. If to this profit we add the trade expenses, amounting to £3,276,714, we get the gross profits, and deducting these gross profits from the sales, as given above, we get £34,687,242 as the wholesale value of the goods sold in the year. The Annual Report of the Co-operative Union for 1900 shows that the purchase of 887 societies from co-operative sources (the wholesale societies, the corn mills and other co-operative manufacturing societies) in 1899 amounted to £16,022,315; assuming that the remaining societies, which made no returns, purchased from co-operative sources in the same proportion, we get the total of about \$19,500,000; and if to this we add the further sum of £3,906,385, the value of the goods produced by the retail societies themselves, we obtain a total of £23,500,000, as the value of goods produced or purchased from co-operative sources. Thus, to the extent of some 68 per cent. of their business, these societies, carrying out the intentions with which they were formed, are engaged in distributing articles obtained from co-operative sources, and to this extent they are able to exercise some degree of control over the industrial conditions under which these goods have been produced. Of the retail distributive societies, 1,369, comprising 88 per cent. of the total membership of societies of this class, were at the end of 1899 members of the wholesale federations, and obtained from these organizations the whole or part of the goods with which they supply the requirements of their customers.

There are still, however, some societies which prefer to obtain the whole of their supplies in the open market, a circumstance for which various causes are assigned, and which forms a constant subject for discussion at gatherings of working men co-operators.

#### DISTRIBUTION OF PROFITS.

Goods are sold to the general public at the same prices as to members. Every customer being given at the time of purchase a metal or other token representing the value of his purchase. These tokens are returned at the end of the quarter or half year, when they are accepted as evidence of the amount of the purchases from the society made by the persons presenting them, and form the basis of calculation in ascertaining the sum due to him as his share in the profits of the society. The average rate of dividend to members has for several years past been about two shillings and eight pence in the pound. This dividend is usually paid out in cash, except as to the dividends of a member in arrears with the instalments upon his shares, in which case the whole or part of the dividend is placed to the credit of the members' share account.

It is the practice to sell goods at ordinary market prices of the district. The surplus profits are distributed to the purchasers, many of them thus being enabled to save considerable money who otherwise would not have done so. Even had they obtained their goods at reduced prices at time of purchase.

The report says:—There is some ground for the belief that in districts where competition is not severe, or where, as in some of the mining districts, the co-operators have almost monopolized the trading of the district, the value of the dividend system

in encouraging saving has led committees of societies to keep selling prices at a level unnecessarily high, in order to increase the dividend, much of which experience has shown will be capitalized by the members. Much discussion as to the policy of high dividends has taken place during the past year or two, and in one or two instances societies have announced their intention of lowering prices. It is urged that the lowering of prices will bring into the societies the poorer classes, who, as yet, are largely outside of them, and who, as they cannot afford to wait for a prospective dividend, are led to purchase what they require at the lowest prices for which the goods may be obtained in the ordinary shops. In this connection a further proposal, also being actively discussed at the present time by co-operators, is that the larger and stronger societies shall open in the very poor localities in their districts, branch stores, at which goods shall be sold at a very small margin over cost prices, plus expenses, and that dividend shall be paid to customers at such branches at a lower rate than that allotted to customers at the other shops of the society.

During 1899 £21,471 was distributed in charity, £6,566 subscribed to the co-operative union for propagandist organization and defensive purposes, and £56,158 were devoted to educational purposes. 500 societies had at the end of 1898 established "penny banks" for the encouragement of saving, especially among the children of members, the total amount to the credit of depositors in these banks at the end of 1898 being upwards of £500,000. Interest at the rate of 4 1-6 per cent. per annum is usually credited to depositors.

#### CREDIT BY SOCIETIES

Ready money trading has always been held up as an important principle among co-operators, and the rules of many societies expressly prohibit credit. Returns published in recent years, however, prove that there has been considerable departure from this principle, the report of the Co-operative Union for 1899 stating that no less than 928 retail distributive societies in Great Britain gave credit for some period, or to some limit of amount (in some cases to the extent of a certain proportion of the share capital held by the customer). Efforts are being made by some of the leading co-operators to induce the societies to abandon altogether the practice of allowing credit. But there seems to be some difficulty in doing this, and the total amount owing by customers to retail distributive societies is stated by the co-operative union to have risen from £398,340 for 776 societies at the end of 1895, to £576,913 for 928 societies at the end of 1899. It should be stated, however, that the rules of co-operative societies usually give the society a lien upon a member's share capital for debts due by such members to the society, and that to this extent the societies are secured against loss by bad debts.

#### WHOLESALE CO-OPERATIVE SOCIETIES.

The English and Scottish Wholesale Societies are federations (mainly of retail distributive societies) formed for the purpose of enabling co-operators to make their purchases in an advantageous manner, avoiding competition among themselves in the open markets, and to overcome the difficulties caused especially in the early days of the co-operative movement, by the opposition of the private traders, who brought pressure to bear upon the wholesale merchants to prevent the supply of goods to co-operative societies. It was also seen that federations with a large trade, besides, in many cases, purchasing directly from the producer might eventually set up workshops to produce for themselves the goods required for their members. Previous attempts to form wholesale societies had been made in Liverpool in 1832 by the Owenite Co-operative Societies, and in 1850 by the Christian Socialists in London, but both had failed after a short period, mainly owing to the state of the law which gave the societies little or no control over the working of the experiments. A further attempt in the same direction was made in 1855 by the "Rochdale Pioneers' Society," which established a wholesale department for the supply at wholesale prices to the neighboring societies, and this also, from various causes, failed after a brief existence.

The societies then commenced an active agitation for such an alteration in the law as would enable them to establish, and effectively control, federations for their common benefit. The Industrial and Provident Societies Act of 1862 gave this power and resulted in the establishment of the present English Wholesale Society in 1863, and of the Scottish Wholesale Society in 1868. The two societies render considerable assistance to each other, and in certain departments have joined buyers and depots, of which they share the expenses and management.

At the present time arrangements are in progress for creating a legal partnership between the two societies for the purpose of carrying on certain businesses in common.

#### CAPITAL AND SALES.

The following table will show the progress of the two societies. The English Society commenced business in 1864; the Scottish Society in 1868 :—

Year.	Number of Federated Societies.	Capital (share, loan, reserve and Insurance.)	Sales.
English Wholesale Society.			
		£	£
1870 .....	209	44,164	677,734
1880 .....	604	565,854	3,339,681
1890 .....	941	1,474,466	7,429,073
1900 .....	1,078	3,187,945	16,043,889
Scottish Wholesale Society.			
		£	£
1870 .....	103	12,543	105,250
1880 .....	161	110,179	845,222
1890 .....	260	575,322	2,475,601
1900 .....	288	1,676,765	5,463,631

Most of the business of the wholesale societies is conducted in premises owned by them; the English Society had at the end of 1900 expended a total of £1,980,303 in land and buildings, and the Scottish Society £847,129. The English Society owns in its shipping department seven steamships, acquired at a total cost of £82,778, the whole of which has been written off by depreciation.

Both societies have established workshops for the manufacture of various articles required by the members.

The societies carry on jointly numerous purchasing depots in foreign countries, the value of the foreign produce imported direct by the English Society in 1900 amounted to £4,818,310. In the same year it purchased goods from co-operative productive societies in the United Kingdom to the value of £178,607. They also own 741 acres in Shropshire, part of which they cultivate, growing fruit and other produce for its jam factory and distributive departments, and part is let to tenant farmers. At a recent meeting of the society it was decided to convert a mansion and grounds, which form part of the estate, into a convalescent home for members of co-operative societies, holding shares in the society.

The Scottish Society also rents a farm of 280 acres, which it uses for raising live stock for its own use and for sale to its members.

For the year 1899 returns from 616 societies, employing 13,810 in their productive departments, give a total output of £3,906,385, or 36 per cent. of the total production of co-operators in the United Kingdom, the goods so produced being transferred to the distributive departments of the societies.

Rates of wages and hours of labor of employees of these societies are usually those prevailing in their district, in addition to which profit-sharing to some extent prevails. The 616 societies making returns gave a share of profits in 1899 to their productive em-



ployees amounting to £3,717, being an average of 6.7 per cent. upon the wages paid by them.

The following table will show progress in production in the past three decades:—

Year.	English Society.		Scottish Society.		Totals.	Both Societies.
	No. of productive employees.	Value of productions.	No. of productive employees.	Value of productions.	No. of productive employees.	Value of productions.
		£		£		£
1880 .....	680	118,604			680	118,604
1890 .....	1,969	341,277	1,024	119,627	2,993	460,904
1900 .....	7,462	2,718,434	4,069	1,446,596	12,131	4,165,030

#### WORKMEN'S CORN MILL SOCIETIES

This class consists of eight corn mill societies, which, like the retail and wholesale societies, are worked in the interest of the consumers. The total sales in 1900 amounted to £1,226,995. Two societies, with sales amounting to £178,167 are purely federations; one of ten, and the other of forty, retail distributive societies, of the remaining six, two with sales amounting to £25,350, consist wholly of individuals, and four, with total sales of £1,023,478, have a mixed membership consisting of 363 retail societies and 4,567 individuals. The greater part of the profit of these mills, after paying a fixed rate of interest on share capital, is returned to the customers as a dividend upon purchases in the same manner as is done by the wholesale and retail distributive societies.

#### CO-OPERATION IN IRELAND.

The co-operative movement in Ireland is almost entirely a growth of the past twelve years.

In 1888 there were only ten workmen's co-operative societies at work in Ireland, these being retail distributive societies, doing a total trade in that year of £34,273. In the autumn of 1888 a largely-attended conference of co-operators was held at the Irish Exhibition in London, under the Presidency of the Earl of Aberdeen, to consider the subject of co-operation as a means of improving the condition of "Irish Industries," papers upon that subject being read by Mr. Benjamin Jones and Mr. R. B. O'Callaghan. As the outcome of the discussion a committee was appointed "to endeavor to carry the system of co-operation into practical operation among the Irish agricultural and industrial classes." The result of the propaganda thus initiated at the end of 1899 shows the following results:—

Description of Society.	Number.	Sales in 1899. £
Production—		
Dairying Societies .....	123	615,026
Miscellaneous Societies .....	4	3,638
Distribution—		
Retail Distributive Societies .....	17	61,956
Agricultural Societies .....	74	62,652
Poultry Societies .....	6	3,261
Home Industries, etc., Societies .....	5	3,438
Irish Agricultural Wholesale Societies .....	1	36,697
Irish Co-operative Agency Society .....	1	159,209
Total production and distribution .....	231	945,877
Credit Banks .....	42	5,720
Total Societies and Business .....	273	951,597

In addition to the 273 societies reported there were 115 who had either not commenced business or failed to make returns, so that the total number of societies at the end of 1899 was 388.

#### THE PROVISION OF DWELLINGS BY WORKMEN'S CO-OPERATIVE SOCIETIES

A strong opinion has grown up in recent years among co-operators that they should use their organization and capital to secure better housing for their members. Much difference of opinion exists upon the question of collective ownership by members. Numerous conferences have during the past two years declared themselves in favor of the societies retaining the ownership and letting to their members. The number of societies investing their surplus capital in dwelling houses is rapidly increasing. Encouragement to investment by societies in houses was recently given by the action of the English Co-operative Wholesale Society, which prepared a scheme under which it was willing to advance capital to its federated societies at  $3\frac{1}{2}$  per cent. upon the security of the title deeds of house property purchased or built by the societies for selling or letting to their members.

Many Societies have, as a consequence, prepared schemes for giving to their members the advantage of the Wholesale Society's offer.

Returns collected by the Co-operative Union show that up to the end of 1899 two hundred and twenty-four co-operative societies making returns, had expended a total of £5,147,526 in the provision of dwelling houses for their members. Of this amount £917,397 has been expended by 179 societies in building 4,247 houses, of the average value of £216, all of which are owned by the societies and let to members. Eighty-nine societies have expended £827,823 upon the building of 3,709 houses, of the average value of £223, which have been sold to members, and 139 societies have advanced £3,402,306 upon 16,082 houses, which have been built or purchased by members, the average amount lent per house being £211 10s. Ten societies advance up to 95 per cent. of the value of the houses mortgaged, 59 societies up to 90 per cent., and the remainder up from 50 to 92½ per cent.

The rate of interest charged for advances by 34 per cent. of the societies is 4 per cent., by 27 per cent. of the societies, 5 per cent., the remainder at various rates, none of which reach 5 per cent.

With few exceptions the terms of repayment of advances range from two shillings to five shillings per week per one hundred pounds advanced.

#### PROPAGANDIST ORGANIZATIONS.

There are seven central organizations for purposes of propaganda and organization and the defence of co-operative interests. These are: The Co-operative Union, Long Millgate, Manchester, formed in 1869, and at the end of 1900 comprised 1,108 co-operative societies, with a total membership of 1,620,185. No society can be admitted as a member of the union unless the management is of a representative character, nor unless it accepts the following as the principles by which all its business transactions should be guided—the desire to promote the practise of truthfulness, justice and economy, in production and exchange.

(1.) By the abolition of all false dealing, either: (a) Direct—by representing any article produced or sold to be other than what is known to the producer or vendor to be, or, (b) indirect, by concealing from the purchaser any fact known to the vendor, material to be known by the purchaser to enable him to judge of the value of the article purchased.

(2.) By conciliating the conflicting interests of the capitalist, the worker and the purchaser through an equitable division among them of the fund commonly known as "profit."

(3.) By preventing the waste of labor now caused by unregulated competition.

The union is governed by an annual congress, composed of representatives from the societies connected therewith. The Executive is divided into sections and district

committees, responsible to the union to carry on its work in their respective districts. It provides speakers for propagandist work, gives free legal advice to the members and advice as to all the details of management of a co-operative society, and acts generally as the representative of the interests of co-operative societies. It has established two scholarships at the University of Oxford in the names of EDWARD VANSITTART NEALE, late General Secretary to the union, and THOMAS HUGHES. These scholarships are open to the sons of members of the co-operative societies which subscribe to testimonials to these two workers in the movement.

Considerable attention has been given during recent years to the guidance of societies, to expend their grants not only in teaching the history and principles of co-operation, but in teaching the duties of citizenship in its various aspects. In connection with the union a joint committee of trade unionists and co-operators has been formed, consisting of four co-operators, elected by the Central Board, and four Trade Unionists elected by the Parliamentary Committee of the Trade Union Congress. The purpose of this joint committee is to arbitrate upon any dispute which may arise between co-operative societies and their employees.

The other six organizations are :—

Labour Association, 15 Southampton Road, London, W. C.

Co-operative Production Federation, 39 Cambridge Street, Leicester.

International Co-operative Alliance, 15 Southampton Road, London, W.C.

Irish Agricultural Organization Society, 22 Lincoln Place, Dublin.

Women's Co-operative Guild, Kirby, Lonsdale, Westmoreland.

Scottish Co-operative Womens' Guild, 1 Orwell Terrace, Edinburgh.

All of these work more or less on the general principles which govern the Co-operative Union.

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## CO-OPERATIVE SYSTEM OF CONSTRUCTING PUBLIC WORKS IN NEW ZEALAND.

BY H. J. H. BLOW, UNDER-SECRETARY FOR PUBLIC WORKS

The great bulk of our railway and road works and much of our building-work in New Zealand is now carried out under what is known as the co-operative system, an arrangement which has only been brought into operation within the last three years or so.

The contract system had many disadvantages. It gave rise to a class of middlemen, in the shape of contractors, who often made large profits out of their undertakings, and at times behaved with less liberality to their workmen than might have been expected under the circumstances. Ever in New Zealand, where the labor problem is less acute than in older countries, strikes have occurred in connection with public-works contracts, with the result that valuable time has been lost in the prosecution of the works, much capital has been wasted by works being kept at a standstill and valuable plant lying idle, and large numbers of men being for some time unemployed; and considerable bitterness of feeling has often been engendered. The contract system also gave rise to sub-contracting, which is worse again; for not only is it subject to all the drawbacks of the parent system, but by relegating the conduct of the works to contractors of inferior standing, with little or no capital, the evil of "sweating" was admitted. Very often too the business people who supplied stores and materials were unable to obtain payment for them, and not seldom the workmen also failed to receive the full amount of their wages. The result in such cases was that, instead of the expenditure proving a great boon to the district in which the works were situated, as would have been the case if the contract had been well managed, and properly carried out, such contracts frequently brought disaster in their train. The anomaly of the principal contractor making a large profit, his sub-contractor being ruined, and his workmen left unpaid also occasionally presented itself, and thus the taxpayer who provided the money had the mortification

or seeing one man made rich (who would perhaps take his riches to Europe or America to enjoy them) and a number of others reduced to poverty, or in some instances cast upon public charity.

Contracting also sometimes led to congestion of the labor market in the very districts where works were in progress. When large undertakings were advertised for tender, workmen out of employment naturally gravitated to the districts where such works were to be constructed, in the hope of obtaining employment upon them when operations were commenced. But if the successful tenderer happened to be a contractor residing in some other part of the colony, who already possessed a good staff of workmen, or knew where to find reliable men who had worked for him before, he generally took his men with him, so that instead of the works being a relief to the local labor market they would have quite the reverse effect.

The co-operative system was designed to overcome these evils, and to enable the work to be let direct to the workmen, so that they should be able not only to earn a fair day's wage for a fair day's work, but also to secure for themselves the profits which a contractor would otherwise have made on the undertaking.

It also places the workman on a much higher plane and enables him to comprehend more fully the dignity of labor. Under the co-operative system every workman is a contractor, and has a personal interest in the economical and successful carrying out of the work. He is also his own master.

Not only does the system offer these solid and very real advantages to the workmen, but it also offers substantial advantages to the State. Under this system works are carried out for their actual value—no more and no less.

The work is valued by the engineer appointed to have charge of it before it is commenced, and his valuations are submitted to the Engineer-in-Chief of the colony for approval. When approved they constitute the contract price for the work; but they are not absolutely unchangeable, as in the case of a binding, strictly legal contract. It frequently happens under an ordinary contract that works turn out to be more easy of execution than was anticipated, and the State has to see its contractors making inordinate profits. Sometimes, on the other hand, works cost more than expected; but in most cases of this kind the contractor either becomes bankrupt, so that the state has, after all, to pay full value for the work, or, if the contractor happens to be a moneyed man, he will probably find some means of getting relieved of his contract, or of obtaining special consideration for his losses on completion of his work. Under the co-operative system, if it is found that the workmen are earning unusually high rates, their contracts can be determined, and be let at lower rates, either to the same party of men or to others, as may be necessary. Similarly, if it is shown, after a fair trial of any work, that capable workmen are not able to earn reasonable rates upon it, the prices paid can, with the approval of the Engineer-in-Chief, be increased, so long as the department is satisfied that the work is not costing more than it would have cost if let by contract at ordinary fair paying prices.

An illustration in support of the contention that contractors sometimes make unreasonable and quite unexpected profits occurred on one of the railway works recently. After very careful inquiries in the neighborhood, and also after prospecting all the likely places thoroughly, the conclusion was come to that no suitable and easily obtainable material was available for ballasting the eight miles extension of the Whangarei-Kamo Railway to Hikurangi. It was therefore determined to ballast it with broken metal, the stone for breaking being taken from an extensive limestone deposit at one end of the line. No contractor would have prospected the district more thoroughly than the Government engineers did, and so, if the work had been tendered for, all the tenderers would doubtless have allowed for ballasting with broken metal, every yard of which would have cost at least 2s. 6d. After the formation works had been in hand for more than a year, however, and just as platelaying was about to be begun, an extensive deposit of very suitable scoria-ash was discovered quite accidentally and quite unexpectedly. The deposit was situated so con-

veniently to the line that the ballast only cost about 6d. per yard, delivered on the railway; hence the saving to the Government by this fortunate discovery will not be less than £2,000. Under the co-operative contract this money will be absolutely saved to the taxpayers of the colony, whereas, under the old contract system, it would have all gone into the pockets of the lucky contractor.

Another great advantage of co-operation is that it gives the Government complete control over its expenditure. Under the old plan when large contracts were entered into the expenditure thereunder was bound to go on, even though, through sudden depression or other unlooked-for shrinking of the revenue, the Government would gladly have avoided or postponed the outlay. To propose a postponement of the works, however, would only be to invite claims for compensation from the contractor—possibly entailing a loss to the State fully as large as any loss that could accrue from going on with the works in the face of an unfavorable money market. Under the co-operative method the works can be proceeded with more leisurely, or discontinued altogether, by simply giving a week's notice to the men.

Not only has the Government complete control over the expenditure, but in the matter of the time within which works are to be completed the control is much superior to that possessed when the works are in the hands of a contractor. When once a given time is allowed to a contractor in which to complete a work any request to finish it in less time would at once provoke a demand for extra payment; but under the co-operative system the Government reserves the right to increase the numbers employed in any party to any extent considered desirable, so that if any sudden emergency arises, or an unusually rapid development in any district takes place, it is quite easy to arrange for the maximum number possible of men being employed on the works in hand, with no more loss of time than is required to get the men together.

Work also is better done under the co-operative than under the contract system. Under the former method the Government finds its own materials, which are carefully selected to insure their being of the best class; and the workmen, therefore, have no interest in stinting the use of material to try to effect savings, while the Government overseers, of course, see that there is no waste. No attempts are now made to put whiting into the paint, instead of white lead, or to introduce inferior brands of cement or iron into the works, and no walls are built dry in the centre, or filled in with bats, as it is easier for the men to construct the work of sound materials than with rubbish. All stores are purchased by the Government's own officers, and are supplied to the co-operative contractors from the Government store, so that the department knows exactly what class of materials is used. The workmanship put in is also of a superior kind. The men are the contractors themselves; they take a pride in their work, and have no taskmaster standing over them, finding fault with them for being too particular and taking too much pains. All the work done under the co-operative system will bear comparison with any similar work done by contract, and will generally show to advantage.

The system was first tried in connection with formation works on roads and railways, including small bridges and culverts, and other similar works, but it has now been extended to the erection of iron bridges (the ironwork being supplied and delivered at the sites of the bridges by the department), the supply of sleepers, the laying of the permanent way, the construction of timber bridges up to £2,000 in value, and of masonry abutments and piers for bridges, and the erection of stations and other public buildings, etc.

The first work to be carried out under the co-operative system was the formation of certain sections of the Ngakawau-Mokihinui Coal Railway. Some portions of this line had been let by contract in the ordinary way, and the contracts thrown up as unremunerative, when, as a large number of men were in need of employment in the district, it was decided to let the work to them on the co-operative principle. They were asked to arrange themselves into parties of about fifty each, and to select certain persons to act as trustees under regular deeds of trust, the trustees

to take the work from the Government at the amount of the Engineer's estimate, but all the men to have an equal interest therein, and the wages and profits to be divided equally. The plan worked well from the start; but further experience with it has shown the advisableness of modifying some of the details. For example: The parties are smaller now, and no trustees are insisted upon. It was found difficult in practice to get fifty or sixty men to work harmoniously together, owing to differences not only in the temperament of the men, but also in their abilities as workmen. The parties now for the most part do not exceed ten or twelve men, and they probably do not average much over six. Then, instead of trustees, acting under regular deeds of trust, there now are merely two "headmen," and if the party prefers it (as they sometimes do) only one "headman."

The method followed in letting and carrying out the work is somewhat as follows: When a length of railway is to be constructed on the co-operative principle the formation work is divided into sections of suitable size. Where the work is heavy one cutting and one embankment will be sufficient for a party, but in lighter works sometimes as much as half a mile, or even a mile, of formation may be entrusted to one set of men. Plans and sections of the work are prepared, and a brief and simple specification provided. The Engineer who is to have charge of the work then carefully computes the quantities of the several classes of excavation and other work requiring to be done, assesses the value of the same, and forwards his estimates to the head office, where they are submitted to the Engineer-in-Chief for an expression of opinion as to their reasonableness or otherwise. The rates are based on the current rate of wages ruling in the district for similar work, with a small percentage added to represent in some degree the profits which a contractor would have made had the work been let by tender in the ordinary way. That is, the price fixed should enable a first-class workman to earn an average wage per day of eight hours slightly in excess of what a contractor would pay him for the same work, while workmen of less strength and ability would earn proportionately less. There is, however, an understood proviso that the work shall not cost more than if let by contract at fair rates, and experience has generally given favorable results in this respect. When the prices have been approved by the Engineer-in-Chief, they constitute the basis of the contract with the men, the contract being a "schedule rate," and not a "lump sum" one. The Engineer's estimate of the quantities is not, however, binding on either the Government or the men, the work done being measured monthly, and the actual quantity executed paid for. The men go to work at these prices, finding their own picks and shovels, but all plant of an expensive character, such as trucks, rails, barrows, etc., is supplied by the Government, the price allowed for the work being, of course, largely dependent on the class of plant supplied for performing it. Then men are also furnished with tents in the first instance, but they are required to keep them in repair, or to be at the cost of supplying new ones when the old ones become worn out or unserviceable. If horses or drays are required the men make their own arrangements for procuring them, as there is never any difficulty in hiring them from settlers living in the neighborhood. The men provide their own explosives, or requisition for them on the Government store, in which case they are charged a small percentage over the actual cost to the Government, the sum being deducted at the end of the month from the sum payable under the contract. Separate contracts are let for bushfelling and clearing, fencing, construction of culverts, etc.

A very similar procedure is adopted with regard to other works. If the contract is to be for the erection of a timber bridge, the department first takes out the detail quantities of all timber and ironwork required, and obtains tenders for the supply of the same, and arranges for delivery on the ground. The value of the labor required in the erection of the structure is then carefully assessed and submitted for the approval of the Engineer-in-Chief, as in the case of earthwork contracts; the number of men required to carry out the work properly and economically is determined upon, and a contract let accordingly. The same is done with ma-

sonry work, except that the excavations of the foundations and the cutting of the inlets and outfalls is usually let to one party and the actual masonry work to another, so as to avoid having to include laborers and mechanics in the same party. When the line is ready for the laying of the permanent way the department first supplies all the rails, fastenings, points and crossings and sleepers necessary for the work, and then arranges contracts as follows:—(1) For notching and boring the sleepers. (2) For getting and filling ballast into trucks. (3) For laying the permanent way, including linking-in, spreading the ballast when tipped on the road from ballast-waggons, lifting and packing, and final lifting and straightening. The department supplies its own engine and waggons, and does the hauling for the men.

In the erection of buildings separate contracts are let for each trade employed. First, a contract to a party of laborers for levelling or otherwise preparing the site; then another contract to a party of bricklayers for all brickwork required; still another contract to a party of carpenters and joiners for the woodwork; and another to a party for the plumbing work; and another for the painting, and so on, the Government finding all materials in each case.

The work done is measured monthly, and payments made to the headmen of parties in cash, and to the full value of the work done, no percentage or "reserve" being retained, the headmen being left to pay whatever debts may have been contracted by the party, and to divide the balance equally among all the members thereof.

The department does not guarantee payment to storekeepers supplying the men with goods and provisions, but, with the view of assisting them in the collection of their accounts, the Engineers are instructed to notify storekeepers known to be supplying goods to the men of the dates on, and places at which, payments are to be made, and generally to assist the storekeepers in obtaining payment of their accounts; and, whenever any storekeeper intimates his intention of taking proceedings against a party, the Engineer will withhold payment for a few days to enable the storekeeper to obtain an order of the Court attaching the moneys due, or so much thereof as may be owing to him.

As it often happens that men are working at a distance from where their families live, the Government Paymaster is instructed to offer his services in conveying remittances to the nearest money-order office for transmission to their wives, or for deposit in the Postoffice Savings Bank; and any men not remitting to their families, but allowing them to become a charge upon public charity, are dismissed from the works.

Should any of the men desire to leave the works no impediment is placed in the way of their doing so. On the occasion of any monthly pay they can resign from their party and leave immediately, their places being filled by other men obtained by the Engineer through the Government Labor Bureau. A change can also be made in the headman or headmen of the party, either by the Engineer in charge of the works or by a majority of the workmen comprising the party. The Engineer, if he considers a change necessary in the interests of the work, is empowered to depose the headmen, and to call upon the party to elect others in their place; and the workmen, in their turn, are also entitled to depose the headmen and elect others, provided that a majority of the party agree upon such a course, and forwards notice in writing to the Engineer of such having been done. The Engineer is authorized also to discharge a man or any number of men from a party for any reason that he may consider sufficient, and is responsible to the department only for such action.

The Engineers see that the men make due and satisfactory progress with their work, and if the progress is not satisfactory they can either determine the contract altogether, and relet it to another party, or they can draft additional men into the party, as they may think best. They also see that the men do not make unduly high wages by working extra hours, the regulation hours not exceeding forty-eight per week.

All men employed on Government co-operative works are selected by the Government Labor Bureau, and in selecting them the following rules apply :—

(1) Applicants not previously employed on Government co-operative works have priority of claim over men who have recently been so employed.

(2) Men resident in the neighborhood of the works have priority over non-residents.

(3) Married men have priority over single men.

(4) In recording the applications of men who have previously been employed on Government co-operative works, the dates when they left such works are noted, and those longest off such works are considered first.

(5) All applicants for work must have been at least one week out of employment before they can apply, and all men previously employed on Government co-operative works must have been at least fourteen days off such works prior to re-registration as applicants for further work.

(6.) If there are more applicants for work than there are vacancies to fill, a ballot is taken to determine the particular men to be employed. Such ballots are conducted in the presence of the men interested, and members of local bodies in the district may also be present if they wish.

The qualifications of the men as workmen, and their personal characters, are also, of course, taken into consideration.

All parties of men when they finish their contracts are discharged, and are not again employed except under the above-mentioned rules.

It sometimes happens, of course, that men who are not up to the standard which a contractor would require are selected for employment on the works; but it is claimed as one of the advantages of the system that men of all capacities can be employed under it, since payments are made according to results, so that the men get just what they earn, whether the amount be great or small.

If men are sent to work at a distance too great for them to walk their railway or coach fares are paid by the Government on their signing an order authorizing the amount thereof to be deducted from their first month's earnings, and the amounts so paid are deducted from the earnings of the party accordingly.

In reporting each month on the progress of the work in hand, the Engineer in charge of the same sends in a statement showing the number of parties employed, the number and names of men in each party, the work on which they are employed, the amount of work done during the month, the rate paid for same, and the total amount earned by each party. From this latter amount he deducts all payments made by the party for horse-hire, explosives, tools, etc., thus showing the net amount available for distribution amongst the members as their actual earnings. The return also shows the days and hours each man worked, and from this is worked out and shown the actual wages earned per man by each party for each day worked, and also per standard day of eight hours. For some of the information contained in this return—as, for example, the number of days and hours worked by each man—the Engineer has to depend mainly upon information furnished by the head-men of the parties; but the Government overseers check the information supplied as far as possible. The department takes every care by supplying each party with time-sheets, and instructing its overseers to examine them as frequently as possible, to secure the accuracy of these returns, and there is no reason to believe that the information furnished is untrustworthy.

The number of men employed under the co-operative system from time to time varies greatly, but about 2,000 may be taken as the average number for the last year or so.



## SYNOPSIS OF THE LABOR LAWS OF ONTARIO.

## THE MINES ACT.

R. S. O. 1897, chap. 36, provides that no boy under the age of fifteen years shall be employed in or allowed to be for the purpose of employment in any mine to which this Act applies, below ground. The Act applies to all mines, quarries and pits, and oil, gas and salt wells, and other openings from which ores and minerals of any kind or class are raised or taken, and to all furnaces or works for smelting, or otherwise treating rocks, ores or clays, sands, oils, brines or other minerals for any economic object.

No boy or young male person of the age of fifteen and under the age of seventeen shall be employed or allowed to be for the purpose of employment in any mine to which this Act applies below the ground on Sunday, or for more than forty-eight hours in any one week, or more than eight hours in any one day.

Any appliance used for the purpose of entrance to, or communication to or from any part of the mine, and which is operated by steam or other mechanical power, or by animal or manual labor, must be in charge of a male of at least twenty-one years of age. Where the motive power is supplied by an animal, the driver of such must be at least sixteen years of age.

No wages shall be paid to any person employed in or about any mine, etc., at or within any public house, beer shop or place for the sale of intoxicating liquors.

Each owner is required to make returns to the Bureau of Mines each year of the number of employees, their ages, and hours of labor, the rate of wages of each class, together with weights and estimates of values of minerals, mineral dressed and undressed, etc., and may be required by the Bureau of Mines to make such returns monthly or quarterly.

Provision is also made for proper ventilation, also care of explosives used in or about mines, etc., also for the appliances of safety in the operation of the shafts, cage, etc. Accommodation is also required near the entrance of the mine for the conveniently drying and changing of clothes of those employed in or about the mine, etc.

Provision is made for the reporting of any accident in writing within twenty-four hours of the occurrence of such accident, giving full particulars thereof.

## MECHANICS AND WAGE EARNERS' LIENS.

R. S. O., 1897, cap. 153, provides protection to wage earners and contractors for loss on account of labor or material furnished in the erection of buildings or the construction of machinery.

The Act not merely recognizes the new form of liability, but provides the means of establishing and enforcing claims arising under it. The original Act has been several times amended, with a view to make it more simple and perfect in its working. The Act also provides that the liens for wages shall to a certain amount have priority over all other liens, and over any claims by the owner against the contractor, on account of failure to complete his contract.

In 1890 an Act was passed to simplify procedure for enforcing mechanic's liens. One clause provides that without issuing a writ of summons or taking any other preliminary proceedings, the plaintiff may file a statement of claim in the office of a master or official referee having jurisdiction in the County wherein the lands are situate. It is also provided that any number of lien holders may join in one action. The ruling or certificate of the master or official referee when filed in the proper office shall become a judgment of the High Court when the sum is \$400,000 or over, of the County Court, when less than \$400.00, but over \$100.00, and of the Division Court when the sum is less than \$100.00. The fees payable for entering such certificate as a judgment are as follows: In the High Court, \$1.60, in the County Court, 80c. in the Division Court, 50c.

A further amendment provides that a device by any owner or contractor which shall be adopted in order to defeat the priority of wage earners for their wages under the several acts relating to mechanics' liens, shall as respects such wage earners be null and void.

A further provision regulates that in the case of wages due to any mechanic or other person in respect of work referred to in the 4th section of the Mechanics' Lien Act, the jurisdiction of a police magistrate in a city under the act respecting master and servant shall extend wages for thirty days or for a balance equal to the wages for thirty days, though the same or the balance thereof exceed the sum of \$40.00 in the said section mentioned.

It is also provided that where no specific rate of wages has been expressly agreed to between the parties, the city police magistrate may order payment of the wages, reckoning the amount thereof according to the current rate of wages in the city in like cases, or according to what may appear to be a just and reasonable allowance, and any order of a city police magistrate for the payment of such wages as aforesaid shall be payable forthwith.

#### WOODMEN'S LIENS.

R. O. S., 1897, cap. 154.—This Act applies to the Districts of Muskoka, Parry Sound, Nipissing, Algoma, Manitoulin, Thunder Bay and Rainy River, and to the provisional County of Haliburton, its purpose being to protect the wages of all engaged in those localities in cutting, skidding, felling, hauling, scaling, banking, driving, running, rafting or booming any logs, or timber, and any work done by cooks, black-smiths, or others, usually employed in connection therewith, giving them priority of right for wages above all other claims, except such right as the Crown may have upon logs or timber for or in respect of any dues or charges, or which any timber slide company, or owner of slides and booms, may have thereon for or in respect of tolls.

This Act also provides that no payment of wages shall be made or offered to any person for any labor or services performed upon, or in connection with any logs or timber in the said districts or provisional county, by any cheque, order, I.O.U., bill of exchange, promissory note, or other undertaking other than a bank note, or bill drawn upon or payable at or within any place or locality not within the Province of Ontario. A violation of this provision incurs a penalty of not less than \$5.00 or more than \$20.00, recoverable by summary proceedings before a stipendary or police magistrate or justice of the peace, under the Ontario Summary Convictions Act.

#### LABOR ON PUBLIC WORKS.

R. S. O., 1897, cap. 155.—This Act secures payment of wages for labor performed in the construction of public works. Any foreman, workman or laborer or by any team employed on the work, giving notice not later than two months after the wages are due to the member of the Executive Council entering into the contract, for and on behalf of her Majesty, or having the supervision of the execution of the contract where the same is made, may cause such claim to be paid to the extent of any moneys or securities at the time of the filing of the said claim in the hands of the Crown for securing the performance of the contract.

The Act also provides that the said member of the Executive Council may in writing require every contractor or sub-contractor to forward a list each month showing the names, rate of wages, amounts due and unpaid for wages for labor done, such list to be attested on oath.

Failure to comply with this demand incurs a penalty of not less than \$10 or more than \$100 for every day during which default continues.

#### WAGES.

R. S. O., 1897, cap. 156.—An Act respecting wages—applies to wages or salary, whether payable by the day, week, piece, job or otherwise. When an assignment is

made for the general benefit of creditors the assignee shall pay in priority to the claims of the ordinary or general creditors of the person making said assignment, the wages or salary of all persons in the employment of such person at the time of making such assignment or within one month before the making thereof, not exceeding three months' wages or salary, and such persons shall be entitled to rank as ordinary or general creditors for the residue, if any, of their claims. This provision also applies to the liquidation in distributing the assets of a company under the provision of the joint stock companies winding-up act, also to the sheriff who has made seizure, under the creditors' relief act, also under the act respecting absconding debtors, and also applies to the administration of the estate of deceased person. This Act is not intended to apply to an assignment made under the provision of any Act of the Parliament of Canada relating to or respecting bankruptcy or insolvency.

By an amendment of 1899, it was also provided that where an estate was not sufficient to meet priority of claims for wages over ordinary or general debtors, that the priority extends to the wage-earner over all others excepting the cost of liquidation.

It is also provided that the executor, liquidator, administrator, or other person engaged in winding up the estate, may forthwith, upon such estate coming into his hands, pay all claims for wages, without being chargeable, in case it shall in the end appear that said estate was insufficient to cover such payment, provided that he has acted in good faith, and had reasonable ground to believe that the estate would be sufficient.

#### THE TRADES ARBITRATION ACT.

To Facilitate the Adjustment of Disputes Between Master and Workmen, R. S. O., 1897, chap. 159.

This act provides that any number of masters and workmen in any city, town, township or village in Ontario, may mutually agree to the formation of a board of arbitration for the purpose of settlement of any industrial disputes that may arise at any time between them in their relations as employers and employees.

The masters and workmen shall jointly sign a memorandum, whereby it is mutually agreed to establish such board; such memorandum to be filed with affidavits verifying the signatures thereto in the registry office of the registry division within which the masters and workmen reside. The board shall consist of not less than two masters and two workmen, not more than ten masters and ten workmen and a Chairman, and the number to constitute the board other than the Chairman shall be inserted in the memorandum, but no member of the board shall adjudicate in any case in which he or any relation of his are one of the parties.

The Board shall have power to appoint their own Chairman and two clerks, one for the masters and the other for the workmen's portion thereof. The Board is given all the powers conferred upon arbitration by the Arbitration Act, R. S. O., 1897, chapter 140, s. 10.

Any award made by the Board is final and conclusive between the parties thereto, without being subject to review or challenge by any court or authority whatsoever.

A committee of the Board, to be denominated the committee of reconciliation, shall be appointed by the Board, consisting of one master and one workman, who shall sit at such times as shall be appointed, and shall be renewed from time to time as occasion may require; and all cases or questions of dispute which are submitted to the Board by both parties thereto shall in the first instance be referred to the committee, who shall endeavor to reconcile the parties in difference. When such reconciliation is not effected, the matter in dispute shall be referred to the Board, to be disposed of as contested matter.

#### AN ACT RESPECTING MASTER AND SERVANT

R. S. O., 1897, cap. 157—Provides that no voluntary contract of services or indentures entered into by any parties shall be binding on them or either of them for a longer time than a term of nine years from the day of the date of such contract. Where an agreement is entered into between the master and the servant, by which a definite share of the profits or proceeds of a business is allotted to a servant, either

in lieu of or additional to his salary, wages or other remuneration, and such agreement not creating any relation in the nature of a partnership, such agreement shall be deemed lawful, provided that in such case the servant must accept the statement of the said master as to proceeds involved in the agreement and shall not have power to examine accounts of said master.

An agreement, whether verbal or written, entered into between master and servant for the performance of any duty or service whatsoever shall be binding, but a verbal agreement shall not exceed the term of one year.

The Act also provides that no tavern keeper or boarding house keeper shall keep the wearing apparel of any servant or laborer in pledge for an expense incurred to a greater amount than \$6, and shall surrender immediately any goods kept by said tavern or boarding house keeper under such circumstances upon the tender of said \$6 or less sum due. This does not apply to other property of the servant or laborer.

Any agreement verbal or written between any person and any other person not a resident of Canada, for the performance of labor or service in the Province of Ontario shall be void and of no effect as against the person only migrating or coming. This foregoing provision does not apply to teachers, professional actors, artists, lecturers or singers or to such skilled workmen not procurable in Canada.

Proceedings may be taken under this Act for the collection of wages within one month after the engagement or employment has ceased, or within one month after the last instalment of wages under the agreement of hiring has become due. Where proceedings are taken under this act before a police magistrate, and payment of wages is ordered by him to be made by the master or employer to the servant or laborer, and the same are not paid within the time limited by the order, the same proceedings may be taken by the person claiming the benefit of the order as may be taken by a party having an unsatisfied judgment or order in the Division Court for the payment of any debt, damages or costs, as respects the examination of the judgment debtor touching his estate and effects, the means he has of discharging his liability, and the disposal he has made of any property, and the police magistrate shall have the like power and authority to enforce payment of the debt as are possessed by the Division Court Judge in like cases. The police magistrate may also, if he thinks fit, name in the order for payment of wages such time not exceeding twenty-one days, as to him may seem just and reasonable for the payment of the same and costs, and in case of non-payment within such time the complaint shall be entitled to take forthwith the proceedings for enforcement provided by the Division Court Act with respect to judgment debtors.

In the case of wages due and no specific rate has expressly been agreed upon between the parties, the police magistrate has the power to fix the rate on the basis of the current rate of wages in the city in like cases or according to what may appear to be a just and reasonable allowance.

Every agreement or bargain, verbal or written, expressed or implied, entered into having for its object the waiving of the provisions of this Act is declared null and void and of no effect as against any workman, servant, laborer, mechanic or other person.

#### TRADE DISPUTES.

R. O. S., 1897, cap. 158.—An Act respecting Councils of Conciliation and Arbitration for settling industrial disputes.

The preamble to the Act recites: There is reason to believe that the establishment of councils of conciliation and arbitration for the friendly settlement of disputes between employers and employees, would conduce to the cultivation and maintenance of better relations and more active sympathies between employers and employees, and would be of benefit in the public interest by providing simple methods for the prevention of strikes and lockouts, from which industrial operations and the welfare of the country generally may suffer injury.

The Act applies to any person or body of persons incorporated or unincorporated employing not less than ten workmen in the same business in which the trade dispute has arisen, and their employees.

A claim or dispute under this Act shall include any disagreement between any employer and his employees in respect of any of the matters following :

1. The price to be paid for work done or in course of being done whether such disagreement shall have arisen with respect to wages or to the hours or time of working.

2. Damage alleged to have been done to work, or delay in finishing the same; not finishing the same according to agreement; or dispute respecting materials supplied to employees or alleged to be bad, unfit or unsuitable.

3. The price to be paid for mining any material or substance mined or obtained by mining, hewing, quarrying or other process; or the allowances, if any, to be made for bands, refuse, faults or other cause whereby the mining of the mineral substance is impeded.

4. The performance or non-performance of any stipulation or matter alleged to have been in the agreement, whether in writing or not.

5. Insufficient or unwholesome food supplied to employees where there is an agreement to victual them, or to supply them with provisions or stores of any kind.

6. Ill-ventilated or dangerous workings or places in mines, or unwholesome or insanitary rooms or other places of accommodation, in which work is being performed, or want of necessary conveniences in connection with such rooms or places.

7. The dismissal or employment under agreement of any employee or number of employees.

8. The dismissal of any employee or employees for their connection with any trade or labor organization.

#### *Duties, etc., of the Registrar*

It shall be the duty of the Registrar under this Act to deal with all applications coming within the meaning of the Act: to keep a registrar in which shall be entered all particulars of cases referred to the Council of Conciliation, and the settlement thereof. The Registrar shall have power to summon witnesses and issue notices in connection with the sittings of each Council of Conciliation.

#### *Council of Conciliation.*

Such council as above-mentioned shall consist of four conciliators, two to be nominated by each of the parties in dispute; each nomination in writing to be lodged with the Registrar.

The council shall deal with cases in which the parties of the dispute jointly agree to refer the claim or dispute to the Council of Conciliation for settlement. Upon receipt of application the Registrar shall refer same to the Council, and under the Act shall carry out the directions of the Council in the endeavor to affect a settlement of the dispute or claim.

Either party of the dispute or claim may, for the purpose of this Act, be represented by one or more persons, not exceeding three, authorized by such party as manager or managers in that behalf, and such party shall be bound by the acts of this representative or representatives; where the party number fewer than twenty the manager must be authorized in writing signed by the members of the party to act for and on their behalf. Where the party numbers twenty or more, the manager may be elected in such manner as the members of the party think proper.

The statements of those thus agreeing to refer their dispute to the Council of Conciliation should be forwarded to the Registrar before the meeting of the Council. When the parties of the dispute or claim have nominated their conciliators, the Registrar shall by notice in writing convene a meeting of the conciliators, mention-

ing time and place of meeting, the same being selected with due regard to the convenience of all concerned. The Council of Conciliation shall transmit to the Registrar a report setting forth the result of the reference. In case such report is to the effect that the Council has failed to bring about any settlement or adjustment of the dispute or claim, the Registrar shall transmit a copy of the report to each party of the dispute or claim; whereupon either party may require the Registrar to refer the dispute to the Council of Arbitration for settlement.

*Council of Arbitration,*

There shall be two councils of arbitration, one for the settlement of disputes and claims between railway companies (including street railway companies), and their employees, both in respect of railway construction or traffic on railways, and a council of arbitration for the settlement by award in respect of disputes and claims other than between railway companies and wage earners employed in respect of railway construction or traffic.

Each council shall consist of three members, one to be appointed by the Lieutenant-Governor on the recommendation of the employees, and one to be appointed by him on the recommendation of the employers. The third member to be appointed shall be President of the Council, and may be appointed by the Lieutenant-Governor on the recommendation of the two members already appointed, within twenty-one days of their appointment. Failing this, the Lieutenant-Governor shall appoint as President of the Council an impartial person, not likely to be biased in favor of or against employers or employees. The same person may be President of both Councils.

As soon as practicable after the appointments have been made, the names of the members of the Council shall be notified by the Registrar in the Ontario Gazette. The Lieutenant-Governor may cancel the appointment of any member on the recommendation of the authority by which his appointment was recommended. The term of office of a member of a council shall be two years; and at the end of every term of two years a fresh appointment of members shall be made in manner aforesaid. Every member shall be eligible for reappointment.

*Qualification of Voters in the Interest of Employers.*

For the person to be recommended by the employers every employer in the Province, having at least ten persons in his employment, shall be entitled to one vote; every organization in the Province, whether incorporated or unincorporated, representing the interests of employers, each member of which has at least ten persons in his employment, shall be entitled to one vote.

Every Board of Trade in the Province, legally constituted, shall be entitled to one vote for a representative of the employers in each Council.

*Qualification of Voters in the Interest of Employees.*

For the person to be recommended by employees in matters not belonging to railways, every trades and labor council, every district assembly of the Knights of Labor, every federated Council of building trades, every lawfully incorporated trades union, every organization of wage-earners of an industrial calling primarily constituted for, and actually and bona fide operated for the regulation of the wages and hours of labor as between employers and employed, shall be entitled to one vote; but this shall not be deemed to include co-operative associations or societies formed under the Revised Statute respecting Co-operative Associations.

For choosing the person to be recommended by employees of railway companies as a member of the Council of Arbitration in matters belonging to railways, every organization in the Province, whether incorporated or unincorporated, exclusively representing the interest of wage-earners employed in respect of railway construction or

traffic on railways shall be entitled to one vote; but this shall not be deemed to include co-operative societies or associations.

The Registrar shall give notice in The Ontario Gazette, calling on all organizations and persons entitled to vote for a member to be recommended to either Council, or claiming to be so entitled, to communicate with him on or before the 1st day of August, 1898, and every second year thereafter. Such notice is to be inserted for at least four weeks before the said day in each of the said years.

The Registrar shall forthwith, after the 1st day of August aforesaid, prepare a list of the persons and organizations appearing to be entitled to vote for a person to be recommended for appointment to each of the said Councils respectively, and may refer any doubtful claim to the Minister of Agriculture for his advice or direction.

Each list so to be prepared shall give the last known postoffice address of every person and organization entitled to vote as employers and employees respectively for the said Councils respectively, and shall be published in The Ontario Gazette, and shall be open to inspection at any time by any person without fees, in the office of the Registrar, during office hours.

Between the 1st and 30th days of September, 1898, and between the same days of every second year thereafter, the Registrar shall transmit by post to the address of each person and organization entitled to vote, a voting paper; and such voting paper may be in the following form:—

Voting paper of (naming the person or organization).

A. B. (person recommended) is hereby recommended to be appointed a member of the council of arbitration for disputes between railway companies and their employees (or in matters not relating to railway disputes) under the Ontario Trade Disputes Conciliation and Arbitration Act, on behalf of the employers or employees, as the case may be).

(Signed)

The voting paper of any person entitled to vote under this Act as an employer shall be signed by himself or by some duly authorized person; and the voting paper of any organization entitled to vote shall be signed by the president or vice-president of the organization, or, in the absence of such president or vice-president, by any office bearer of the organization other than the secretary thereof, and shall be countersigned by the secretary or the acting secretary, or, in the absence of such secretary or acting secretary, by any two members not being office bearers. The voting papers of a Board of Trade shall be under the corporate seal of the Board.

The voting paper shall be forwarded to the Registrar in a stamped envelope, addressed to the Registrar of Councils of Conciliation and Arbitration, Toronto, and endorsed, "Voting paper under the Ontario Trades Dispute Conciliation and Arbitration Act."

Every voting paper shall be forwarded by mail or otherwise to the Registrar, before the 15th day of October, in the year in which the voting is to be held, and no voting paper received after said date shall have any effect or validity.

After the 15th of October the Registrar shall count the recommendations of employers and employees for each council, and shall forward same to the Minister of Agriculture with report thereon: and the Minister of Agriculture shall publish in The Ontario Gazette the names of the persons appointed by the Lieutenant-Governor upon such recommendations to be members of each council: and also the names of, and the number of votes of the five persons who shall receive the greater number of votes for each council on behalf of employers and employees respectively.

In case either employers or employees, or both, fail to recommend any person to represent them on either or both the councils as provided for in this section, the Lieutenant-Governor in Council may appoint a person or persons to fill the vacancy or vacancies.

The Mayor of any city or town upon being notified that a strike or lockout is threatened, or has actually occurred within the municipality, shall at once notify the Registrar thereof by writing, stating the name of the employer, the nature of the

dispute, and the number of the employees involved, as far as his information will enable him to do so.

Upon being notified that a strike or lockout is threatened or has taken place, it shall be the duty of the Councils of Arbitration, under this Act, to communicate with the parties concerned as soon as practicable, and endeavor by mediation to affect an amicable settlement, and if deemed best to enquire into the causes of controversy, it shall proceed as provided in this Act in the case of a reference.

The Council of Arbitration shall sit and conduct its proceedings as an open court, and in making its decision shall be governed by the principles of equity and good conscience. The President shall for the purpose of preserving order during any sitting of the council have all the powers of a Judge of a High Court of Justice, save that he shall not have the power of committing for contempt.

Any two members shall constitute a quorum for the transaction of business, and may hold meetings at any time and at any place in the Province of Ontario.

The Council may order that an examination or investigation may be held before any one member of the Council, but such member shall make report to the Council, and his decision shall not be considered binding until approved of by the Council or a majority thereof.

The report of award of the Council shall be made within one month after its hearings of a reference, and shall be by, and under the hands of, a majority of the members of the Council.

The report of award, or a copy thereof, shall be deposited in the office of the Registrar, and shall be open to inspection during office hours without charge.

#### *Miscellaneous Provisions.*

For the purposes of this Act the Councils of Conciliation and Arbitration shall have power (a) to visit the locality where the dispute has arisen, and hear all persons interested who may come before them; (b) to summon witnesses and to administer oath, or to take the affirmations of any person attending as a witness before the Council. On refusal of any person to attend as witness, application may be made in a summary way to a Justice of the Peace for an order compelling such attendance.

No fees shall be paid to the Registrar by any party in respect of any proceedings under this Act.

Every member of such Council shall be remunerated as follows:—

Preliminary meetings.. . . . .	\$3 00
Whole-day sittings.. . . . .	4 00
Half-day sittings.... . . . .	2 00

#### WORKMEN'S COMPENSATION FOR INJURIES, R.S.O. 1897, CAP. 160.

This Act applies to all wage-earners while engaged in their daily occupation for injuries received by reason of any defect in the condition or arrangement of the ways works, machinery, plant, buildings or premises connected with, intended for or used in the business of the employer; or by reason of the negligence of any person in the service of the employer who has had any superintendence entrusted to him, or who has the charge or control of any points signal, locomotive, engine, machine or train upon a railway, tramway or street railway.

If the injuries received result in the death of the workman, his legal representative, or those entitled in case of death, shall have the same right of compensation and remedies against the employer, as if the workman had not been a workman of, nor in the service of the employer, nor engaged in his work.

#### *Work Done Under Contract.*

Where the execution of any work is being carried into effect under any contract, and personal injury is sustained by any workman, through any defect or neg-



ligence, as mentioned above, the person for whom the work is done shall be liable to pay compensation for the injury as if the workman had been employed by him, and for that purpose shall be deemed to be the employer of the workman within the meaning of this Act.

Personal injury caused to workman employed on or about any railway.

Such injury shall be deemed to have been caused by reason of a defect within the meaning of the clause numbered 1 of section 3 of this Act.

The amount recoverable under this Act shall not exceed a sum equivalent to the earnings during three years previous to the injury received, in like employment within this Province, or the sum of \$1,500. whichever is the larger sum, and such compensation shall not be subject to any deduction or abatement, save as is specially provided for in section 12 of this Act.

When compensation is awarded in the case of the death of a workman through an injury sustained by him in the course of his employment the amount recovered may be divided between the wife or husband, parent or child, of the deceased, as the case may be, in such shares as the Court or Judge may direct, or if tried by jury, as the jury may determine.

No action shall be maintainable against any employer, unless notice that the injury has been sustained is given within twelve weeks of the accident, and the action is commenced within six months of the occurrence of the accident, or in case of death, within twelve months from the time of death; in the latter case the want of such notice shall be no bar to the maintenance of such action, if the Judge be of opinion that there was reasonable cause for want of such notice.

Notice under this Act shall give the name and address of the person injured, and shall state in ordinary language the cause of the injury, the date on which it was sustained, and the amount of compensation claimed, and shall be served on the employer either at his residence or place of business. The notice may also be served by post in a registered letter, and may be deemed to have been served when the letter containing the notice would be delivered in the ordinary course of post.

If the defendant in any action intends to rely for his defence on insufficient notice, or on the ground that he was not the employer of the workman injured, he shall, not less than seven days before the hearing of the action, give notice to the plaintiff of his intention to rely on such defence.

In the trial of an action for the recovery for compensation under this Act before a Judge without a jury, one or more assessors may be appointed by the Court or Judge, for the purpose of ascertaining the amount of compensation. In any such action a party who desires assessors to be appointed, shall, ten clear days before the trial, file application stating the number of assessors he proposes to be appointed, and the names, addresses and occupations of the persons who have expressed, in writing, their willingness to act as assessors. If the applicant has obtained the consent of the other party to the persons named being appointed, he shall file such consent with his application.

This Act, by an amendment of 1899, gives the choice of settlement of claims for injuries, under the Act, by either action or arbitration, subject to appeal by either party to the High Court of Justice.

#### APPRENTICES AND MINORS, R.S.O. 1897, CAP. 161

Any parent, guardian or other person having the care of a minor, or any charitable society authorized to exercise the powers conferred by this Act, may, if the minor consent, if the minor is a male not under the age of fourteen years, or a female not under the age of twelve years, and without consent if he or she is under such age, constitute to be the guardian of the child, any trustworthy person who is willing to assume the duty of a parent toward the child, but the parent shall remain liable for the performance of any duty imposed by law, in case the guardian fails in the performance thereof.

The guardian shall thereupon possess the same authority over the child as he or she would have were the ward his or her own child, and shall be bound to perform the duties of a parent toward such child.

*Rights and Liabilities of Minors.*

No minor who is dependent upon charity for support shall be removed from any charitable institution or from the control of any private person who is charitably taking care of the minor, by the father or mother or guardian, against the will of the head of such charitable institution or of such private person, without an order from the Judge of the High Court, or from the Judge of the County Court, or the Mayor or Police Magistrate of the city or town where the minor is; and the Judge or other person so empowered may refuse to grant the order unless he is satisfied that the removal will tend to the advantage of the minor. When a minor, who has no parent or legal guardian, enters into an engagement to perform any service, he shall be liable upon the same, and shall have the benefit thereof, as if he were of legal age.

*Apprenticing Minors.*

A parent, guardian or other person having the care of a minor, or any charitable society authorized to exercise the powers conferred by this Act, may, with the consent of the minor, if a male not under the age of fourteen years, bind him as an apprentice by indenture to any respectable master mechanic, farmer, or other person carrying on a trade or calling for a term not to extend beyond the minority of the minor; or in the case of a female not under the age of twelve years, may, with her consent, bind the minor to any respectable person carrying on a trade or calling, or to domestic service with any trustworthy person, for a term not to extend beyond the age of eighteen years.

Where the father of an infant child abandons and leaves the child with the mother, the mother, with the approbation of two Justices of the Peace, may bind the child as an apprentice to any person as mentioned in the last section, until the child attains the age of twenty-one years in the case of a male, and eighteen in the case of a female; and an indenture to that effect under the hand and seal of the mother and countersigned by such justices shall be valid; but no child, having attained the age of fourteen years, shall be so apprenticed, unless he or she consents.

In a city or town, the Mayor, Judge of the County Court or Police Magistrate, and in a county, the Judge of the County Court of the county, may put and bind for a like period to any person mentioned in the several sections of this Act, with the consent of such person and of the minor (or if such minor is a male under the age of fourteen years, or a female under the age of twelve years, then without the consent of such minor), any minor who is an orphan or who has been deserted by his or her parents or guardian, or any minor who is dependent upon charity for support; and such apprentice and the master of such apprentice shall be held in the same manner as if the apprentice had been bound by his or her parents.

All wages reserved by any indenture or otherwise to be paid for the services of any minor, shall, if not payable to the parent, be either payable to the minor or to some person for the benefit of the minor.

If the master of an apprentice dies, the apprentice, if a male, shall be transferred to the person who continues the establishment of the deceased, and such person shall hold the apprentice on the same terms as the deceased, if living, would have done.

A master may transfer his apprentice, with his consent, to any person who is competent to take or receive any apprentice, and who carries on the same kind of a business.

Every master shall provide his apprentice with suitable board, lodging and clothing or such equivalent therefor as is mentioned in the indenture, and shall also properly instruct him in his trade or calling.

Every apprentice shall faithfully service his master, and obey all his lawful and reasonable commands, and shall not absent himself from his service without his consent.

Any indentured apprentice leaving his employment is liable to the penalties of the Act, if apprehended in the Province of Ontario, up to three years of his desertion.

AN ACT RESPECTING INNKEEPERS, R.S.O. 1897, C. P. 187.

Every innkeeper, boarding-house keeper and lodging-house keeper shall have a lien on the baggage or property of his guest for the value and property of his guest for the value or price of any food or accommodation furnished, and in addition to all other remedies provided by law, shall have the right, in case the same remains unpaid for three months, to sell by public auction the property of such guest, on giving one week's notice by advertisement in a newspaper of the intended sale, stating the name of the guest, the amount of his indebtedness, and giving a description of the property to be sold, and shall pay over the surplus of such sale (if any) to the person entitled thereto, on application being made by him therefor.

Where an innkeeper, etc., or livery stable keeper has by law a lien on a horse or other animal for the price of any food or accommodation supplied to such animal or care bestowed thereon, he shall have the right, in addition to the other remedies provided by law, if such price remains unpaid for the space of two weeks, to sell by public auction such horse or other animal, on giving two weeks' advertisement in a newspaper, stating (if known) the name of the person who brought such horse or other animal to the inn, etc., the amount of the indebtedness, and the name of the auctioneer, and giving the description of the horse or other animal; and after the sale the innkeeper, etc., shall pay over the surplus (if any) to the person entitled thereto on application being made by him therefor.

No innkeeper shall be liable to make good to any guest any loss or injury to goods or property to a greater amount than the sum of \$40.00, except in the following cases:—

Where such goods or property have been stolen, lost or injured through the wilful act, default or neglect of such innkeeper, or any servant in his employ; where such goods or property have been deposited expressly for safe custody with such innkeeper.

PAWNBROKERS, R.S.O. 1897, CAP. 188.

The Act defines any person who takes and receives, by way of a pawn, pledge or exchange, any goods for the repayment of money lent thereon, shall be deemed a pawnbroker within the meaning of the Act.

Any person carrying on the trade of pawnbroker shall have license issued by the treasurer of the municipality in which he is carrying on the business. Any person carrying on the business of pawnbroker without a license shall forfeit \$50.00 for every pledge he takes, recoverable with costs before police magistrate.

Each pawnbroker is required to exhibit sign with the word pawnbroker thereon, under a penalty of \$40.00.

Each pawnbroker is required to have painted or printed in a conspicuous place in his shop the rates of profits he is allowed to charge under the Statutes of Canada, which rates are as follows:—

R. S. C., cap. 128, provides that every pawnbroker may take the following rates above the principal sum advanced before he is obliged to re-deliver the goods pawned, that is to say, upon every pledge upon which there has been lent not exceeding 50c. the sum of one cent for any time not exceeding one month, and the same for every month afterwards, including the current month in which the pledge is redeemed, although such month has not yet expired; and so on progressively, and in the same proportion for every sum of fifty cents up to twenty dollars.

When the sum lent exceeds twenty dollars, the pawnbroker may take up all beyond that amount after at the rate of five cents for every four dollars by the month, and so on in proportion for any fractional sum.

Such sums respectively shall be in lieu of and taken as full satisfaction for all interest due and charges for warehouse room.

On all pledges where the sum lent exceeds \$1.00, the pawnbroker is required to make entry of such in a book kept for the purpose, giving a description of the goods received, in pledge, the sum lent thereon, the date, and the name and address of the person making the pledge, and whether he is a housekeeper or lodger.

When the amount lent is above \$2.00 a separate book must be kept for the purpose of entry, the pledges received to be numbered in consecutive order in the book. The pawnbroker shall issue to the person making the pledge a note or memorandum written or printed, containing a description of the goods pawned, and money advanced thereon, the date and name and address of the person making the pledge, and whether a housekeeper or lodger. On the back shall be printed or written the name and address of the pawnbroker.

For such ticket or memorandum he will be allowed to charge the following rates: If the sum lent is under \$1.00, the ticket shall be free.

If the sum lent is over \$1.00 and under \$2.00, the charge shall be one cent.

If the sum lent is over \$2.00 and under \$5.00, two cents may be charged.

If the sum lent is over \$4.00 and under \$20.00, three cents may be charged.

When the sum lent is over \$20.00 and upwards seven cents may be charged.

No goods pledged can be sold by the pawnbroker until one year has expired after the pledge of such goods. If the amount lent exceeds \$2.00 the sale must be by public auction, and must be exposed to the public view. And a description of the goods, the date of the pledge, etc., published on two separate days in a public newspaper, at least two days before the sale.

Should the goods be sold for more than was due thereon, and in case of demand within three years after the sale, the overplus, after deducting the costs, shall be paid to the person on whose account the goods were pawned.

No pawnbroker shall:

1. Purchase, receive or take any goods in pledge from any person who appears to be under the age of fifteen years, or to be intoxicated with liquor, nor

2. Purchase or take in pawn, pledge or exchange, the ticket or memorandum of any other pawnbroker

3. Employ any servant or any other person under sixteen years of age to take any pledge.

4. Receive any goods by way of pawn, pledge or exchange on any fast or Thanksgiving day appointed by authority, or on Sunday, or any other day before 8 o'clock in the morning, nor after 8 o'clock in the evening, except on Saturday and the evening preceding Good Friday and Christmas Day. On such days he may keep open his place of business until 10 o'clock p.m.

#### LIABILITY OF DIRECTORS OF COMPANIES FOR WAGES. R.S.O. 1897, CAP. 191.

The directors of the company shall be jointly and severally liable to the laborers, servants and apprentices thereof for all debts not exceeding one year's wages due for services performed for the company; but no director shall be liable to an action therefor, unless the company has been sued therefor within one year after the debt became due, nor yet before an execution against the company has been returned unsatisfied in whole or in part; and the amount due on such execution shall be the amount recoverable with costs against the directors.

#### LIABILITY OF DIRECTORS OF MINING COMPANIES FOR WAGES R.S.O. 1897, CAP. 197.

All mining companies in force in Ontario, shall be subject to the provisions of this Act.

The directors of a company shall be jointly and severally liable to the laborers, etc., for all debts not exceeding one year's wages due for services performed; but no director shall be liable to an action therefor unless the company has been sued therefor within one year after the debt became due, nor yet before an execution against the company has been returned unsatisfied in whole or in part; and the amount due on such execution shall be the amount recoverable with costs against the directors.

CO-OPERATIVE ASSOCIATIONS. R. S. O. 1897, CAP. 202.

Any seven or more persons who desire to associate themselves together for the purpose of carrying on any trade, labor or business, whether wholesale or retail, except the working of mines, minerals, or quarries, and except also the business of banking and insurance, and the business of a loan corporation within the meaning of the Loan Corporations Act, may make, sign and acknowledge before a Notary Public or Justice of the Peace, in duplicate, and file in the office of the Registrar of the Registry Division in which the business of the association is intended to be carried on, a certificate in writing on the form set forth in the schedule of this act, or of the same effect together with a copy of the rules agreed upon for the regulation, government and management of the association, signed by such persons respectively.

Upon the filing of the certificate and rules as aforesaid, the members of the association shall become a body corporate by the name therein described, with power to hold such lands as are required for the convenient management of the business.

No association shall be registered under a name identical with that by which any other existing association has been registered, or so nearly resembling such name as to be likely to deceive the members or the public; and the word limited shall be the last word in the name of any association registered under this act.

A member of an association incorporated under this act may have shares therein to an amount mentioned in any by-law of the association, provided the same does not exceed \$1,000,000.

The liability of the shareholders shall be limited, that is to say: No shareholder shall be in any manner liable for or charged with the payment of any debt due by the association, beyond the amount of his share, and having fully paid up the amount of his share shall not be subject to any further liability.

Every person appointed to an office touching the receipt, management, or expenditure of money, or with the receipt of goods, wares or merchandise for the purposes of the association, shall before entering upon the duties of his office, give such security as is deemed sufficient by the trustees, which security shall be renewed from time to time as the amount of the business, or other circumstances, may, in the discretion of the trustees be rendered necessary.

The business of the association shall be a cash business exclusively; no credit shall be either given or taken, and no officer, member or servant of the association shall have power to contract any debt in its name, except in respect of rent of the premises required for the business, the salary of clerks and servants, and such like contracts, necessary in the management of the affairs of the association; everything shall be bought and sold for cash only.

INSURANCE BY TRADES UNIONS. R. S. O. 1897, CAP. 203.

Where a friendly society registered under this Act has its head office elsewhere than in the Province of Ontario the Grand or other Provincial body, or the Lodges situated in the Province may file with the Insurance Register, an application for Provincial incorporation, setting forth the facts of the case, and the proposed corporate name and head office, and the purpose and rules of the society; also the names of those persons who are to be its first trustees, and stating the mode in which their successors are to be elected; also furnishing such other information as the Registrar requires.

Upon due application made the Registrar may name a day for the hearing of the application, and such public hearing of the application shall be given in The Ontario Gazette and otherwise as the Registrar directs.

If, upon the hearing, it appears to the Registrar that such incorporation ought to be granted, he shall have authority to certify in duplicate, or in as many parts as may be required, under his hand and the seal of his office, that he finds entitled to incorporation under the name and for the purposes specified in the certificate, the persons mentioned therein.

One of the original parts of the certificate shall be filed in the office of the Provincial Registrar, together with such other documents as the Insurance Registrar by his certificate requires to be filed; and from the day of such filing the persons mentioned in the Insurance Registrar's certificate and their associates and successors shall henceforth be a body corporate and politic, and shall have the powers, rights and immunities vested by law in such bodies.

Upon due application the Insurance Registrar shall have authority to admit to registry as a friendly society the body so incorporated.

Upon like proceedings taken as enacted in the first section under this Act, incorporation may be granted in either of the two following cases :

Where any trade or labor union, or trade or labor organization purposes to undertake contracts with its own members exclusively, for any of the insurance benefits enumerated in and permitted by clause 3 of section 62, or contracts to furnish tools or to pay unemployed or superannuation benefits to the said members.

Where any organization of persons resident in Ontario, consisting of not less than twenty-five members and managed and operated as a friendly society under rules conforming to this Act purposes to contract with its own members exclusively for sick benefits, not exceeding five dollars a week and a funeral benefit of not more than one hundred dollars, or either of such benefits.

The body so incorporated may upon due application, be admitted to register as a friendly society; but unless and until so registered, the corporation shall not undertake, nor agree to offer to undertake, any contract insuring the said or other insurance benefits.

Where any society, association, union, organization or lodge already incorporated under a prior Act of this Province becomes incorporated under this Act, such prior incorporation shall be deemed to have been merged in and superseded by the said latter incorporation.

In addition to friendly societies standing duly registered as such, at the passing of this Act, the following shall be admissible to registry on the Friendly Societies' Register:

Societies incorporated from time to time by virtue of sections 33, 34, 36, 37 and 38 of this Act :

Any corporation not provided for elsewhere herein which has, by virtue of an Act of the Parliament of Canada, an insurance and provident society or association, or an insurance or guarantee fund in connection with the corporation, may upon due application for registry under this Act, be registered on the Friendly Society Register.

Provided that where any bona fide trade union or labor organization provides by its constitution, by-laws or rules for the assistance, relief or support of its members, the Registrar may, by writing, under his hand and the seal of his office, declare the organization exempt from the operation of this Act; and such certificate shall remain valid until by like writing revoked; and the organization so exempted shall not be subject to any penalty imposed by this Act;

Any corporation in Ontario which at the passing of this Act has under authority of an Act of Canada created a fund for paying a gratuity on the happening of death, sickness, infirmity, casualty, accident, disability or any change of physical or mental condition, shall, upon due application for registry hereunder, be entitled to be registered on the Friendly Society Register;

Any association of the civil servants or employees of the Dominion of Canada, incorporated by virtue of an Act of the Parliament of Canada, may, upon due application, be admitted to registry.

RAILWAY COMPANIES—BY-LAWS AFFECTING EMPLOYEES. R.S.O. 1897, CAP. 207.

Every railway company shall make such by-laws, rules and regulations to be observed by the conductors, engine-drivers and other officers and servants of the company, and by all other persons and companies using the railway of such company, and such regulations with regard to the construction of the carriages and other vehicles, to be used in the trains of the railway of the company, as are requisite for the perfect carrying into effect of the provisions of this part of this Act and the orders and regulations of the Lieutenant-Governor in Council.

Any railway company may, by a by-law, impose upon any officer, servant or person who, before the contravention of such by-law has had notice thereof, and is employed by the company, a forfeiture to the company of not more than thirty days' pay of such officer or servant, for any contravention of such by-law, and may retain such forfeiture out of the salary or wages of the offender.

The notice of the by-law, or of any order or notice of the Commissioner of Public Works, may be proved by proving the delivery of a copy thereof to the officer, servant or person, or that he signed the copy thereof, or that a copy thereof was posted in some place where his work or his duties, or some of them were to be performed.

Such proof, with evidence of the contravention, shall be a defence to the company in any action for the recovery from it of the amount so retained. The Electric Railway Act, R.S.O., 1897, cap. 209, contains four sections (137-140) exactly similar in terms to the above.

STREET RAILWAYS—LIEN FOR WAGES. R.S.O. 1897, CAP. 208.

Every mechanic, laborer or other person who performs labor for wages upon the construction or maintenance of the railway or the works connected therewith, shall have upon the said railway and other property of the company a lien for such wages not exceeding the wages for thirty days, and the said lien may be enforced in the manner provided for enforcing liens for wages by the Mechanics' and Wage-earners' Lien Act.

IMMIGRATION AID SOCIETIES. R.S.O. 1897, CAP. 212.

The Minister of Agriculture shall from time to time divide the Province of Ontario into immigration districts, either by counties, ridings, municipalities, as seems to him most expedient; and in each of such districts there shall be an immigration office and an immigration agent; and such division and any future alteration thereof, shall be notified in The Ontario Gazette as the immigration district of the place where the immigration office is kept.

In each of such districts an Immigration Aid Society may be formed and constituted under this Act, for the purpose of assisting immigrants to reach Ontario from Europe and elsewhere; and of obtaining employment for them on their arrival in the Province; and of enabling persons in the Province in want of laborers, artisans or servants to obtain them by such immigration; for every such society shall consist of not less than twenty-five persons, whether resident or not in the immigration district, agreeing to form such society and to subscribe among them, as the capital of the society, not less than \$500.00, in fifty shares of \$10.00 each, one-fourth of which, at least, shall be paid on subscribing the declaration of membership into the hands of a person agreed upon as their secretary-treasurer, by the persons present at the meeting at which it is agreed to form the society.

The Act also provides for the regulation and control of such societies under the inspection of a district agent, to be appointed by the Minister of Agriculture. Such societies have power to make loans to immigrants, and provision is made for their inspection by the Minister of Agriculture.

AN ACT RESPECTING MUNICIPAL MATTERS. R.S.O. 1897, CAP. 223.

This Act provides that the hours for the nomination of candidates for the offices of aldermen in cities may, by by-law, be fixed at half-past seven o'clock in the evening, and for polling from nine in the morning until seven o'clock in the evening. This latter provision applies only to cities of 100,000 inhabitants and over. A by-law to extend the time of holding the election until seven o'clock in the evening must be passed before the fifteenth day of November of the year in which such by-law is to take effect. In all other cases the polls shall be opened at nine o'clock in the morning, and shall continue open till five in the afternoon and no longer.

*Powers of Police Commissioners as to Livery Stables, Etc.*

The Board of Commissioners of Police shall, in cities, license and regulate second-hand shops and junk stores, and the owners of livery stables and of horses, cabs, carriages, carts, trucks, sleighs, omnibuses and other vehicles regularly used for hire within the said city, and shall establish the rates of fare to be taken by the owners or drivers of such vehicles for the conveyance of goods or passengers from any point within the city to any point not more than three miles beyond the limits of such city, and may provide for enforcing such rates.

The Board of Commissioners of Police in any city may pass by-laws defining areas or districts in the city within the limits of which no livery stable, sale, or boarding stable in which horses are to be kept for hire or for express purposes shall be established or maintained.

The Board of, etc., in any city shall pass by-laws regulating the hours of labor of persons employed in livery or boarding stables, or as drivers of cabs, carriages or sleighs kept for hire within the city, and also the hours of labor of persons employed by owners of horses, carts, etc., kept for hire within the city, and for licensing drivers of cabs within the said city.

The Board, etc., shall also regulate and control children engaged as :

- (a) Express or despatch messengers:
- (b) Vendors of newspapers and small wares:
- (c) Bootblacks.

The Board in any city, and the council in any town, may regulate and prohibit the playing of bands and of musical instruments on any street, highway, park or public place in the city, but this shall not apply to any military band attached to any corps of the militia of Canada when on duty under command of its regular officer.

*Protection of Workmen and others on Buildings.*

By-laws may be passed by the councils of municipalities, townships, cities, towns and villages for inspecting and regulating the construction and erection of hoists, scaffoldings and other constructions used in erecting, repairing, altering or improving buildings, chimneys or other structures; and for making all necessary regulations for the protection and safety of workmen and other persons employed thereon; and for appointing inspectors of scaffolding.

*Egress from and Construction of Buildings.*

By-laws may be passed as above for regulating the number of doors on churches, theatres, halls or other buildings used for worship, public meetings or places of amusement, and the street gates leading thereto; and the construction and width of stairways,



in churches, etc., and in factories, warehouses, hotels and boarding houses; and also the size and number of doors and other means of egress from all hospitals, schools, colleges and other buildings of a like nature, and also the structure of stairs and railings in all such buildings, and the strength of beams, walls and joists and their supports, and for compelling the production of plans for inspection and for enforcing the observance of such regulations.

For preventing the obstruction of the halls, aisles, passage-ways, etc., in any such building or leading thereto during the occupation of the same by any public assemblage.

#### *Hoists and Elevators.*

For licensing and inspecting elevators and hoists for passengers or freight, used by the public or by employees, and for imposing and enforcing penalties for the infringement of such by-laws, and for prohibiting and preventing the use of elevators and hoists contrary to the provisions of such by-law. But the provisions in this clause contained shall be subject to the Ontario Factories Act and of any other Act making provisions applicable to elevators and hoists.

#### *By the Councils of Cities, Towns and Villages.*

For regulating the construction of cranes, hoists and elevators, and for determining the manner in which elevators in buildings shall be constructed and worked, and for providing for the inspection of all cranes, etc., but none of the provisions of such by-laws shall be inconsistent with the Ontario Factories Act so far as the same provides for the regulation or construction of cranes, etc.

#### *Cab Stands and Booths.*

By-laws may be passed by the councils of cities, etc., for authorizing and assigning stands for vehicles kept for hire on the public streets and places; and for the erection and maintenance of covered stands for booths on streets, etc., and for the protection or shelter of the drivers of such vehicles. Provided that no such booth shall be placed upon any sidewalk without the previous consent of the owner or lessee of the property fronting or adjoining such stand or booth.

By-laws may be passed by the councils of cities, etc., for building, equipping and maintaining and operating street railways in, along and over such streets of the city or town and subject to and upon such terms as the Lieutenant-Governor-in-Council may approve; and for leasing the same from time to time on such terms as may be determined on; and for levying an annual special rate to defray the yearly interest on the expenditure therefor, and to form a yearly sinking fund for the payment of the principal within a time not exceeding thirty years.

A municipal corporation which builds, constructs, owns or manages a street railway shall have and exercise the same rights and powers and be subject to the same liabilities as street railways and companies under the Street Railway Act, except where the same conflict with or are repugnant to the rights, powers, liabilities or duties of a municipal corporation as provided by law.

#### *Electric Street Railways.*

By-laws may be passed by the councils of cities for compelling every electric railway company, operating its railway within the limits of such city, to provide proper and sufficient enclosed vestibules upon its street cars to protect the motormen and persons in charge of such cars, from exposure to cold, snow, rain or sleet, during the months of November, December, January, February and March in every year, while engaged in operating the cars.

*Schools for Artisans.*

By-laws may be passed by the councils of municipalities, counties, cities and towns for establishing schools for the training and education of artisans, mechanics and workmen in such subjects as may promote a knowledge of mechanical and manufacturing arts, and for acquiring such real property as may be requisite for such schools; and the erection and maintenance of suitable buildings thereon: and for improving and repairing such school buildings, and for disposing of such property when no longer required. Councils establishing such schools may appoint boards of trustees to conduct the schools, giving them such authority as the councils may deem expedient.

For making grants in aid of such schools, or to art schools, approved by the Department of Education, as they may deem expedient.

*An Amendment to the Municipal Act of 1900.*

Provides that in cities having a population of more than 15,000 the council may, by by-law, provide that the aldermen shall be elected by a general vote of the electors, and either by general vote, or in two electoral divisions with a population exceeding 40,000, one-half the number to be elected by each division, but such by-law shall not come into force until it has been first submitted to a vote of the electors, and the persons entitled to vote on such by-law shall be the persons entitled to vote at municipal elections. Upon a petition being presented by 400 of the electors, it shall be submitted at the next municipal election following, and such by-law being carried by a majority of the electors voting thereon, shall come into effect at the next annual municipal election.

Such a by-law may be repealed by a by-law to be submitted to the electors at any annual municipal election held not later than five years after its first coming into effect. The repealing by-law to be submitted to a vote of the municipal electors after being petitioned for by at least 400 of such electors. Where such vote has been in favor of the election of mayor and aldermen by a general vote of the electors, and not by ward, a by-law bringing the Act into force may be passed by the council of the municipal ity before the first day of July next, without submitting the same to a vote of the municipal electors.

## PUBLIC MEETINGS. R.S.O. 1897, CAP. 230.

The notice to be issued by the sheriff of any county, or by the mayor of any city or town, or by two or more justices of the peace, for calling any public meeting shall be issued at least three days before the day on which such meeting is appointed to be held, and shall set forth the names of the requisitionists, or of a competent number of them. Also that the meeting is called within conformity of the provisions of this Act, and that such meeting, and all persons attending the same, will be within the protection of this Act, and that all persons are required to take notice and govern themselves accordingly.

Every person required by law, or who has in the usual way been appointed at such meeting to preside over the same, shall cause order to be kept at such meetings, and shall commence the proceedings of the meeting by causing the summons or notice calling the meeting, or the declaration whereby the same is declared to be a public meeting, under the protection of this Act, to be publicly read. The person who presides over such public meeting shall cause any person who attempts to interrupt or disturb such meeting to be removed to such a distance from the same as may effectually prevent such interruption or disturbance, and may adjudge any person who makes such an attempt guilty of such attempted disturbance, upon which conviction any justice of the peace may, by warrant under his own hand, forthwith commit such person to the common goal of the county or district, for any period not exceeding forty-eight hours from the time of commitment signed, and until the lawful costs of the constable and gaoler for the arrest, transmission and detention of such person are paid or satisfied.

Every action to be brought against any person for anything by him done under authority of this Act, must be brought within twelve months next after the cause of such action accrued.

## FACTORIES. R.S.O. 1897, CAP. 256.

An Act for the protection of persons employed in factories.

Provided that where not more than five persons are employed within any place coming within the foregoing definition of a factory, and that where children, young girls or women are employed at home, that is to say, in a private place, house or room used as a dwelling, wherein neither steam, water or other mechanical power is used in aid of the manufacturing process carried on there, and wherein the only persons employed are members of the same family dwelling there, the provisions of this Act shall not apply.

A part of a factory may for the purposes of this Act be taken to be a separate factory; and a place used as a dwelling shall not be deemed to form any part of the factory for the purposes of this Act.

Where a place situate within the precincts of a factory is used solely for some other purpose than the manufacturing process carried on in the factory, such place shall not be deemed to form any part of the factory for the purposes of this Act, but shall be deemed to be a separate factory and regulated accordingly.

No place shall be excluded from the definition of a factory by reason only that such place is in the open air.

Where any owner, occupier or tenant of any premises, building, workshop, structure, room or place, who has the right of access thereto, and control thereof, lets or hires out or contracts for work or labor to be done therein by any other person, and such other person employs therein any workman, child, young girl or woman, in or for the carrying out or performing of any such work or labor, every person thus employed shall, for the purposes of this Act, be considered and taken as being in the service of the said owner, tenant or occupier, and in computing the number of persons employed in any place in order to ascertain if such place comes within the definition of a factory according to the intent and meaning of this Act, every such person shall be taken into account.

"Child" shall mean a person under the age of fourteen years.

"Young girl" shall mean a girl of the age of fourteen years and under the age of eighteen years.

"Woman" shall mean a woman of eighteen years and upwards.

No child shall be employed in any factory, except in the business of canning or desiccating fruits and vegetables and the work incidental thereto, as provided above.

The Lieutenant-Governor-in-Council may, from time to time, by order-in-Council, notice of which shall be published in The Ontario Gazette, prohibit the employment of girls under the age of eighteen years, and of boys under the age of sixteen years in factories the work in which is deemed by the Lieutenant-Governor-in-Council to be dangerous or unwholesome.

It shall not be lawful to employ in a factory any child, young girl or woman so that the health of such child, young girl or woman is likely to be permanently injured, and whoever so employs any child, etc., shall upon summary conviction thereof incur and be liable to imprisonment in the common gaol of the county wherein the offence has been committed for a period not exceeding six months, or to a fine of not more than \$100, with costs of prosecution, and in default of immediate payment of such fine and costs, then to imprisonment as aforesaid.

It shall not be lawful for any child, young girl or woman to be employed for more than ten hours in one day, nor more than for sixty hours in one week, unless a different apportionment of the hours of labor per day has been made for the sole purpose of giving a shorter day's work on Saturday. In every factory the employer shall allow every child, etc., therein employed not less than one hour at noon of each day for meals, but such hour shall not be counted as part of the time herein limited as respects the employment of children, etc.

If the inspector so directs in writing the employer shall not allow any child, etc., to take meals in any room wherein any manufacturing process is then being carried on. And if the inspector so directs in writing the employer shall at his own expense provide

a suitable room in the factory, or in connection therewith, for the purpose of a dining and eating room for the persons employed in the factory.

Notwithstanding anything contained in this Act, women may, during the months of July, August, September and October in any year, be employed to a later hour than nine o'clock in the afternoon of any day in any factory wherein the only work or operations carried on relate to and are exclusively such as may be necessary for the canning or desiccating of fruits or vegetables, and the preparation thereof; but no woman shall be employed during the said months to a later hour than nine o'clock on the afternoon of any day for more than twenty days in the whole, and in reckoning such period of twenty days every day on which any woman has been employed to a later hour shall be taken into account.

Where any woman is employed on any day to a later hour than seven o'clock in the afternoon, she shall, on every such day, and in addition to the hour provided at noon, be allowed not less than forty-five minutes for an evening meal between the hours of five and eight o'clock.

Subject to the regulations which may be made in that behalf by the Lieutenant Governor in Council, it shall be lawful for the Inspector, where any accident, which prevents the working of any factory happens to the motive power of any machine, or where the exigencies of certain trades require that children, young girls or women working in a factory shall be employed for a longer period than is herein provided, on due proof of such accident or exigency, to give permission for such exemption, as, in his judgment, will, fairly to all parties concerned, make up for any loss of labor from such accident, or meet the requirements of any exigency of trade. In such cases no woman, etc., shall be employed before the hour of six o'clock in the morning, nor after nine in the evening, and the hours of labor shall not be more than twelve in any one day, nor more than seventy-two and a half in any week. And such exemption shall not comprise more than thirty-six days, on the whole, in any twelve months.

A child shall not be allowed to clean any part of the machinery in a factory while the same is in motion by the aid of steam, water or other mechanical power.

A young girl or woman shall not be allowed to clean any part of the machinery in a factory as is mill-gearing while the same is in motion for the purpose of propelling any part of the manufacturing machinery. A child or young girl shall not be allowed to work between the fixed and traversing part of any self-acting machine, while the same is in motion.

Every factory shall be kept in a cleanly state, and free from effluvia arising from any drain, privy or other nuisance.

A factory shall not be so overcrowded while work is being carried on therein, as to be injurious to the health of the employees.

Every factory shall be ventilated in such a manner as to render harmless, so far as is reasonably practicable, all the gases, vapors, dust and other impurities generated in the course of the manufacturing process that may be injurious to health. In every factory there shall be kept a sufficient number and description of privies, earth and water closets and urinals for the use of the employees, which shall at all times be kept clean and well ventilated; and separate sets thereof shall be provided for the male and female employees.

In every factory all dangerous parts of mill-gearing, machinery, vats, pans, caldrons, reservoirs, wheel-races, flumes, water channels, doors, openings in the floors or walls, bridges and all other like dangerous places shall, as far as practicable, be securely guarded.

No machinery other than steam engines shall be cleaned while in motion if the Inspector so directs by written notice.

The openings of every hoistway, hatchway, elevator, etc., shall be provided with and protected by trap-doors or self-closing hatches, and such trap-doors, etc., shall be kept closed at all times except when in actual use by the persons authorized by the employer to use the same.

In every factory there shall be such means of extinguishing fire, as the Inspector, acting under the regulations made in that behalf, directs in writing.

The main inside and outside doors shall open outwardly, and any door leading to or being the principal or main entrance to the factory, or to any tower, stairways, or fire-escapes therein, or belonging thereto, shall not be bolted, barred or locked at any time during the ordinary and usual working hours of the factory.

In case of a fire or accident in any factory occasioning any bodily injury to a person employed therein, whereby he is prevented from working for more than six days, notice shall be sent to the Inspector in writing by the employer forthwith, after the expiration of the said six days; in case of an explosion occurring in any factory, whether any person is injured thereby or not, the fact shall be reported to the Inspector within twenty-four hours of the occurrence. Where in any factory any person is killed or injured through any cause, written notice shall be sent to the Inspector within twenty-four hours.

In case of neglect on the part of any employer to comply with the foregoing provisions with respect to sending written notices to the Inspector, such employer shall be liable to a fine not exceeding \$30.00.

The provisions of this Act which relate to cleanliness, ventilation, etc., and to children, etc., being during any part of the times allowed for meals in any factory, and to sending notices of accidents, shall not apply where persons are employed at home, that is to say, in any private room, house, place, etc., used as a dwelling.

Nothing in this Act shall extend to any person being a mechanic, artisan or laborer, working only in repairing the machinery in, or any part of, a factory.

The Lieutenant-Governor in Council may from time to time, for the purpose of carrying out this Act, make such rules and regulations for enforcing its provisions, and for the conduct and duties of inspectors, as may be deemed necessary. And also from time to time appoint a female inspector, in addition to the other inspectors directed by law.

Every person shall, within one month after he begins to occupy a factory serve on the Inspector a written notice stating the name of the factory, the place where it is situated, the address to which he desires his letters to be addressed, the nature of the work, the amount of moving power therein, and the name of firm under which the business of the factory is to be carried on, and in default shall be liable to a fine not exceeding \$30.00.

Such annual or other report of the Inspector as the Lieutenant-Governor from time to time directs, shall be laid before the Legislative Assembly.

*Industries included under Factories Act.*

Agricultural Implement Factories.	Button Factories.
Auger Factories.	Canning Factories.
Axle and Spring Factories.	Cap Factories.
Bakehouses and Bakeshops.	Carpet Factories.
Barb Wire Factories.	Carriage Factories.
Barrel Factories.	Carriage Goods (Iron) Factories
Bell Factories.	Carriage Woodwork Factories.
Billiard Table Factories.	Cartridge Factories.
Bird Cage Factories.	Car Shops.
Bismit Factories.	Cheese Box Factories.
Blacking Factories.	Chemical Works.
Blanket Factories.	Childs' Carriage Factories.
Boiler Factories.	Cider Factories.
Bolt and Nut Factories.	Cigar Factories.
Book-binding Factories.	Cigar Box Factories.
Boot and Shoe Factories.	Clay Pipe Factories.
Box Factories.	Clock Factories.
Brass Factories.	Clothing Factories.
Breweries.	Coffin Factories.
Broom Factories.	Confectionary Factories.
Brush Factories.	Coopers' Factories.
Bustle and Hoopskirt Factories.	Cork Factories.

*Industries under Factories Act—Continued.*

- Corset Factories.  
 Corset and Hoopskirt Steel Factories.  
 Cotton Factories.  
 Distilleries.  
 Domestic Utensils Factories.  
 Dress Shield Factories.  
 Drop Forging Factories.  
 Dye Works.  
 Edge Tool Factories.  
 Electric Machinery Factories.  
 Electrotype Foundries.  
 Emery Wheel Factories.  
 Envelope Factories.  
 Extracts and Essential Oil Factories.  
 Felt Factories.  
 File Works.  
 Flax Mills.  
 Foundries  
 Fringe and Tassel Factories .  
 Fruit Dessicating Factories.  
 Furniture Factories.  
 Furriers' Workshops.  
 Galvanized and Pressed Ironwork Fac-  
 tories.  
 Glass Works.  
 Glove Factories  
 Glucose Factories.  
 Gun and Small Arm Factories\*  
 Hair Cloth Factories.  
 Hames Factories.  
 Hammer Factories.  
 Hat Factories.  
 Hinge Factories.  
 Horn Comb Factories.  
 Hobby Horse Factories.  
 Hosiery Factories.  
 Iron Bridge Works.  
 Jams, Jellies and Pickle Works.  
 Jewellery Factories.  
 Kaoka Factories.  
 Knitting Factories.  
 Knitting Machine Factories.  
 Knitting Needle Factories.  
 Lace Factories.  
 Lamp Goods Factories.  
 Last Factories.  
 Laundries.  
 Laundry, Bluing and Washing Cry-tal  
 Factories.  
 Lead Pipe and Shot Factories.  
 Linen, Cotton and Bag Factories.  
 Lithographers' Workshops.  
 Lock Factories.  
 Locomotive Works.  
 Machine Shops.  
 Machine Screw Works.  
 Mantel Piece Factories.  
 Marble Works.  
 Match Factories.  
 Matting Factories.  
 Mattress Factories.  
 Metallic Shingle Factories.  
 Mill Furnishing Works.  
 Mirror Factories.  
 Nail Works.  
 Necktie Works.  
 Oil Mills.  
 Oil Refineries.  
 Organ Factories.  
 Organ Reed Factories.  
 Ornamental Moulding Factories.  
 Paint Works.  
 Paper Box Factories.  
 Paper Collar Factories.  
 Paper and Pulp Mills.  
 Paraffine Factories.  
 Patent Medicine Factories  
 Piano Factories.  
 Piano and Organ Key-board Factories.  
 Picture Frame Works.  
 Pin Factories.  
 Planing Mills.  
 Plated Metal Works  
 Potteries.  
 Printing Ink Factories  
 Pulp Factories.  
 Rag-sorting Workshops.  
 Rattan Goods Factories.  
 Reaper Knife Factories.  
 Rivet Works.  
 Rolling Mills.  
 Rope Works.  
 Rubber Factories.  
 Saddlery Hardware Factories  
 Safe Works.  
 Salt Drying Factories.  
 Sash and Door Factories.  
 Saw Factories.  
 Saw Mills.  
 Scale Works.  
 Sewer Pipe Factories.  
 Sewing Machine Works.  
 Shirt Factories.  
 Shoddy Factories.  
 Shovel Factories.  
 Show Case Factories.  
 Silk Factories.  
 Skate Works.  
 Soap Works.  
 Soda Water Factories.  
 Spice and Coffee Mills.  
 Spool Factories.  
 Stained Glass Factories.  
 Starch Factories.  
 Stave Factories.  
 Stay Factories.  
 Steel Wire Factories.  
 Straw Works.  
 Sugar Refineries  
 Suspender Factories  
 Syrup Factories.  
 Tanneries.  
 Terra Cotta Works.  
 Thread Spooling Factories.  
 Tin Stamping Works.  
 Tobacco Factories.  
 Toy Factories.  
 Trunk Factories.  
 Tub and Pail Works.  
 Type Foundries.  
 Varnish Works.  
 Velocipede and Bicycle Factories.  
 Vinegar Works.  
 Waggon and Sleigh Factories.

*Industries under Factories Act—Concluded.*

Wall Paper Factories.  
 Watch Case Factories.  
 Wax Paper Factories.  
 Whip Factories.  
 Window Shade Factories.

Wire Goods Factories.  
 Woodenware Factories.  
 Wood Pulley Factories.  
 Wood Screw Factories.  
 Woollen Factories.

## REGULATION OF SHOPS. R. S. O. 1897, CAP. 257.

*An Act Respecting Shops and Places Other than Factories.*

No child, young girl or woman shall be employed in or about the shop on any day of the week, other than Saturday or the day next before a statutory holiday, before the hour of seven o'clock in the morning, or after the hour six o'clock the evening.

Saturday labor shall not commence before the hour of seven o'clock in the morning nor continue after the hour of ten o'clock in the evening.

There shall be allowed for each child, etc., so employed not less than one hour for the noonday meal, and not less than forty-five minutes for the evening meal.

If any child, young girl or woman is employed in a shop on the day next a statutory holiday until ten o'clock in the evening, in that case such child, etc., shall not be employed after six o'clock in the evening on Saturday of the same week.

Nothing in this section contained shall apply or be in force as to any shop, from the 14th day of December to the 24th day of December, inclusive, in each year.

In any shop where females are employed, the employer shall at all times provide and keep therein a sufficient or suitable seat or chair for the use of every such female and shall permit her to use such chair when not necessarily engaged in her work.

Any person offending against the provisions of this Act shall be liable to a fine of not less than \$10.00, nor more than \$25.00, with the costs of prosecution, and in default of immediate payment of such fines and costs, to be imprisoned in the common gaol of the county for not less than one month or more than three months.

The provisions of his Act relating to the sanitary conditions of shops, and the means of extinguishing fire, etc., are practically the same as the provisions of the Factories Act in this respect.

The Inspector shall have the right to exercise such powers as may be necessary for carrying this Act into effect.

*Bake Shops.*

All bake shops to which this Act applies shall be constructed as to lighting, heating ventilating and draining in such a manner as not to be injurious to the health of any person working therein, and shall be kept at all times in a clean and sanitary condition, so as to secure the production and preservation of all the food products therein in a good, and wholesome condition.

Every bake shop shall be supplied with a proper washroom, closet and other conveniences necessary for the health and comfort of the persons employed therein.

The sleeping places of the employees shall be entirely separate from the bake shop and no person shall be allowed to sleep in such shop.

No employer shall allow or require any employee to be in any bake shop to work on Sunday, nor to work more than twelve hours on any day, or more than sixty hours in any one week, except by permission of Inspector.

No employer shall knowingly require or permit any person to work in his bake shop who is affected with consumption of the lungs, or with scrofula, or with any venereal disease, and every employer is hereby required to maintain himself and his employees in a clean and healthy condition, while engaged in the manufacture, handling or sale of such food products.

Any employer who violates any of the provisions of this Act which relate to bake shops shall for the first offence pay a penalty of not less than \$20.00, besides costs

thereof, and not more than \$50.00; and for the second offence shall pay a penalty of not less than \$50.00, besides costs, and not more than \$100.00, and in default of payment shall be imprisoned in the common gaol of the county in which the offence is committed, for a period not less than thirty days, or more than six months, and be kept at hard labor at the discretion of the Magistrate, and for the third and subsequent offence shall be imprisoned in gaol for a period not less than six months nor more than one year, to be kept at hard labor at the discretion of the Magistrate.

#### AN ACT TO AMEND THE ONTARIO SHOPS REGULATION ACT.

S.O., 1900, Cap. 43, provides that every person contracting for the manufacture or coats, vests, trousers, overalls, cloaks, caps, drawers, blouses, waists, waist bands, underwear, neckwear, shirts, or any parts thereof, or any other garment or article of clothing, or giving out for improvement, manufacture or alteration, incomplete material from which the said articles or any of them are to be made, or to be wholly or partially altered or improved, shall keep a written register of the names and addresses, serially numbered, of all the persons to whom such work or material is given to be made, altered or improved, or with whom he may have contracted to do the same; and such register shall at all times be kept prominently posted up in the office of the person thus giving out such articles for manufacture, alteration or improvement.

Every article thus made, altered or improved, as aforesaid, shall bear upon a label attached thereto, the register number or the name and address of the person to whom the same was given for manufacture, alteration or improvement, and any false statement upon such label shall render the person making the same liable to the penalties provided by this Act for making false entry in any register, notice, certificate or document.

No person shall knowingly sell or expose for sale any of the articles mentioned in this section and made in any dwelling house, tenement house, or building in the rear of any tenement, etc., without a permit from the inspector, stating that the place of manufacture is thoroughly clean, and otherwise in good sanitary condition. Such permit shall state the maximum number of persons allowed to be employed upon the said premises, and shall not be granted until an inspection of the premises is made by the inspector.

When any article mentioned under this section is found by the inspector to be made under unclean or unhealthy conditions, or upon any unregistered premises, he shall seize and impound the same, and affix thereto a label bearing the words "unsanitary" printed on a tag not less than four inches in length.

The owner of such article shall, after it has been disinfected, be entitled to have the same returned to him, upon first paying the costs of such seizure and disinfection.

If the inspector finds evidence of unhealthy conditions, or of infectious or contagious disease present in any workshop, tenement or dwelling, where any of the articles herein mentioned are manufactured, etc., he shall forthwith report the same to the local board of health, and the board shall issue such order as the public health may require, or may condemn or destroy all such infectious and contagious articles, or any articles manufactured under unsanitary conditions as aforesaid.

#### IMMIGRATION OF CHILDREN.

R. S. O., 1897, Cap. 262, provides that no child shall be brought or caused to be brought into the Province of Ontario by any society or agent, or by any person other than the parent of the child, or person standing in loco parentis to such child, from any port in Great Britain or Ireland, unless a certificate has first been obtained from an examiner stating that he has satisfied himself that the child named in the certificate has not been convicted of any crime, nor displayed any criminal tendencies, and that in other respects he is a child who may lawfully be brought into the Province.



Every society or agent shall maintain a careful supervision over every child caused by them to be brought into the Province, until such a child attains the age of eighteen years, and shall provide a permanent home or shelter, to which such child may be returned after being placed out in a foster home, or as an apprentice, if the person with whom the child has been placed is unable, or unwilling to retain the custody of the child; and the address of such shelter shall be specified in every agreement made with persons receiving children into foster homes or as apprentices, and every such person shall, when so required by the society or agent, furnish full particulars as to the health, conduct, progress and welfare of such child.

Any complaints received that a child placed out in a foster home, or as an apprentice is being ill-treated or overworked, etc., shall be immediately investigated by the society or agent, and the necessary steps taken to protect the child from future ill treatment or neglect.

Every society or agent having the custody of any child brought into the Province shall be entitled to send such child to the public or separate schools of the municipality in which the child resides, in the same manner as the child of any ratepayer.

If any child hereafter so brought into the Province of Ontario, within three years thereafter, becomes dependent on public or private charity, the society or agent, if so ordered by the Inspector, shall pay to the Province or to any person maintaining the child, the cost of the maintenance of the child, and may be required to return the child to the place from which he came into this Province.

Any Society or agent who brings into the Province any child, who from defective intellect, or disease or physical infirmity, or any other defect, is unable to follow any trade or calling, or any child of known vicious tendencies, or any child who is known to be an habitual criminal, or whose parents have been criminals, lunatics or idiots, or weak-minded or defective constitutionally, or confirmed paupers or diseased, shall be liable to a penalty of not more than \$100 or less than \$10, and in default of payment shall be imprisoned for any period not exceeding three months.

#### HORSE POWER FOR THRESHING MACHINES.

R.S.O., 1897, cap. 265,—provides that all persons owning or running any threshing machine, wood-sawing or other machine, which is connected to a horse-power, by means of a tumbling rod or line of shafting, shall cause each of the knuckles, couplings and joints, etc., of such tumbling rod or line of shafting to be safely boxed or secured while running, with wood, leather or metal covering, in such manner as to prevent injury to persons passing over or near such tumbling rod, etc., and shall cause all oiling cups attached to arbors or journals to which driving belts are attached, to be furnished with tubes of tin or other material, which shall extend above the belt so as to prevent damage from oiling when the machine is in motion; and shall further cause a driver's platform to be placed on any horse-power used for driving machinery, of such size as to cover the gearing and to prevent accident to any person from contact with said gearing.

Any person who refuses to comply with the provisions of this Act shall be liable to a fine of not less than \$1 nor more than \$20, over and above the costs of prosecution, and in default of payment shall be imprisoned in the nearest common goal for a period of not less than two or more than twenty days.

#### TECHNICAL SCHOOLS.

R.S.O., 1897, Cap. 301,—provides that the trustees of any high school or board of education may, by resolution passed at a special meeting, called for the purpose, establish a technical school, or may change any high school already established into a technical school, providing that such resolution shall not take effect until ratified by by-law of

each municipality composing the high school district, and also by the county council (if any) required by the High School Act to contribute the equivalent of the legislative grant towards the maintenance of such high school.

The provisions of the High Schools Act shall apply to technical schools, subject to any regulations of the Education Department, with respect to fees, etc.

#### *Technical Schools for Adults.*

It shall be lawful for the municipality corporation of any city or town to appropriate such sums of money as may be deemed expedient for the establishment of a technical school for adults within the meaning of this Act.

The general management of the schools for adults shall be vested in and exercised by a board of management, to be appointed as provided in section 9 of the Public Libraries Act. In cities and towns where there is a Public Library, technical schools for adults shall be under the control of the board of such library.

#### EMPLOYMENT OF PRISONERS.

R.S.O., 1897, Cap. 316,—provides that the Lieutenant-Governor in Council may, from time to time direct the employment upon any work or duty, the nature of which is to be specified, beyond the limits of any common gaol, of any prisoner who is sentenced to hard labor under the authority of any Statute of Ontario, or for breach of the by-laws of any municipal corporation in this Province. Every prisoner shall during such employment be subject to the rules and regulations of the gaol so far as applicable. No prisoner shall be so employed, save under the strictest care and supervision of officers appointed to that duty.

An account shall be kept of the amount earned by the labor of prisoners, and shall be divided between the Province and the county in proportion to the amount contributed by them respectively towards the maintenance of such prisoners.

On April 4th, 1900, the following resolution was passed by the Legislature of Ontario:

Resolved, that in the opinion of this House all Government contracts should contain such conditions as will prevent abuses which may arise from the sub-letting of such contracts, and that every effort should be made to secure the payment of such wages as are generally accepted as current in each trade for competent workmen in the district where the work is carried out, and that this House cordially concurs in such policy, and deems it the duty of the Government to take immediate steps to give effect thereto; and it is hereby resolved that the work to which the foregoing policy shall apply includes not only work undertaken by the Government itself, but also all works aided by a grant of provincial public funds, and that the aforesaid policy shall be forthwith applied to every Department of the public service, and to all parties now performing services for the Government. That this House is further of the opinion that in all appropriate cases the legislation of this House should be in harmony with this resolution.

#### S.O. 1900, CAP. 14. AN ACT RESPECTING THE BUREAU OF LABOUR

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. There shall be attached to the Department of the Commissioner of Public Works a bureau, to be styled "The Bureau of Labour;"

2. The Lieutenant-Governor may appoint a Secretary of the said Bureau, and may also appoint such other officers as may be necessary for the proper conduct of the Bureau.

3. It shall be the object of the Bureau to collect, assort and systematize and publish information and statistics relating to employment, wages and hours of labor throughout the Province—co-operation, strikes, or other labor difficulties, trades unions,

labor organizations, the relations between labour and capital, and other subjects of interest to workingmen, with such information relating to the commercial, industrial and sanitary condition of workingmen, and the permanent prosperity of the industries of the Province, as the Bureau may be able to gather.

An Act Respecting Aid to Certain Railways, S. O., 1901, chap. 22, contains clauses for the protection of workmen engaged thereon, as follows:—

8. The workmen, laborers or servants employed on or about the construction of the said railway, each of them shall be charged fair and reasonable prices for any board, provisions, clothing and other necessaries of life and reasonable comfort, supplied by the company, their agents or any person or person authorized by the said company to supply such goods and accommodation, and upon the breach of any of the provisions of this section or in the event of exorbitant charges being made by the railway company, their agents or other person or persons authorized by the railway company, there may be deducted and retained from moneys payable in respect of such unearned subsidy, or hereafter to be granted subsidy, such amount as the Lieutenant-Governor in Council may think proper.

12. The Lieutenant-Governor in Council may instruct the Secretary of the Provincial Board of Health to enforce such reasonable sanitary regulations on the works and in the camps connected therewith during the construction of the said railways, as may be deemed necessary to maintain proper sanitary conditions and accommodation, and contractors shall have at such camps a tent and store, where in case of emergency a patient suffering from a contagious disease may be isolated at once, so as not to endanger the men in the camp.

18. All the provisions of the "Act to secure payment of wages for labor performed in the construction of public works," of the "Act respecting subsidies to railways and to encourage the manufacture of railway steel and iron in the Province," and of "The Ontario Railway Act." shall apply to the subsidies granted by this Act, and the wages paid on any of the said works shall be such as are generally accepted as current for competent workmen in the respective districts where such railways are to be constructed.

An Act Respecting Sanitary Regulations in Unorganized Territories, S. O., 1901, chap. 34, provides that the Lieutenant-Governor may from time to time make regulations applicable only to those parts of the Province which are without municipal organization.

(1) Respecting any particular industry, and the conditions under which the same may be carried on, for the purpose of preventing nuisances and the outbreak or spread of disease.

(2) For the cleansing, regulating and inspection of lumbering camps, mining camps, and railway construction, and other places where labor is employed.

(3) For providing for the inspection of houses and premises.

(4) For providing for the employment of duly qualified medical practitioners by employers of labor in lumber and mining camps and railway construction and other works where labor is employed, and for the erection of permanent or temporary hospitals for the accommodation of persons so employed.

#### S. O., 1901, CAP. 35. AN ACT TO FURTHER IMPROVE THE FACTORIES ACT.

1. Sub-section (4) of section 15 of the Factories Act is amended by inserting in the first line after the word "provided" the words "by the owner of the factory," and sub-section (5) of the same section is amended by adding thereto the following:

"And the owner of any factory who does not provide the equipment, accommodation, or conveniences required in sub-sections (3) and (4) of this section within two months after receiving from the inspector notice in writing in regard to the same shall be deemed to be guilty of a contravention of the provisions of this Act and shall be liable to the penalty provided in section 19 of this Act."

2. Section 20 of the Factories Act is hereby amended by adding thereto the following sub-sections :—

(f) Inflammable material such as coal oil or petroleum, benzine and naphtha, and explosives of all kinds shall be kept stored when not in actual use in a building separated from the other parts of the factory, or in a fire-proof compartment of the factory approved of by the inspector.

(g) No boiler shall be used that is not insured in some boiler inspection company duly authorized in the Province for that purpose, or that has not been inspected within one year by a competent inspector, such inspector to be a man who has had charge of a boiler and engine for a period of not less than five years, or who holds a certificate as a stationery engineer, and the manager or proprietor shall, whenever so requested by the inspector, produce for examination the insurance policy or the certificate of inspection.

3. Sub-sections (2) and (3) of section 21 of the Factories Act are hereby repealed and the following substituted therefor :—

(2) The owner of every factory over two stories in height, and where deemed necessary by the inspector, the owner of every factory over one storey in height, shall within six months from the time of the passing of this Act, provide the said factory with one or more systems of fire escape as follows, and shall keep the same in good repair :

(a) A sufficient number of tower stairways with iron doorways within reach of or having easy communication with all the working rooms of the factory: or

(b) a sufficient number of iron or other non-inflammable fire escapes on the outside of the building, such fire escapes to consist of stairways with railing or iron ladders and to be connected with the interior of the building by iron or tinned doors or windows with iron shutters, and to have suitable landings at every storey including the attic if the attic is occupied as a workroom, and the said stairways to start at a distance of not more than eight feet from the ground or pavement; or

(c) any other system or form of fire escape that may be sanctioned under this Act by the Lieutenant-Governor in Council on the recommendation of the Factories Inspectors.

(3) The owner or proprietor of any factory refusing or neglecting to provide the means of safe exit in case of fire prescribed in this section shall upon conviction thereof incur and be liable to a fine or not more than \$500 with costs of prosecution, and in default of immediate payment of such fine and costs, be liable to imprisonment within the common gaol of the county for a period of not more than twelve months.

4. The following is added to the Ontario Factories Act as section 51 :

51. The owner, proprietor or manager of any factory hereafter established and to which this Act applies, shall not begin operations until he shall have received from the Factory Inspector a certificate of inspection of the factory a permit to operate the same; and any such person violating the provisions of this section shall be liable to the penalties provided for in section 19 of this Act.

#### S.O. 1901, CAP. 36. AN ACT TO AMEND THE ONTARIO SHOPS REGULATION ACT

1. Section 13 of the Ontario Shops Regulation Act is amended by adding thereto the following sub-sections.

(3) The owner of every shop shall be held responsible for the providing of the sanitary conveniences provided under sub-section (2) of this section, and on failure or refusal to provide the same within two months after receiving written notice from the inspector, shall be liable on conviction to a fine of not more than \$500; or in default of payment of the same, shall be imprisoned for a period of not more than twelve months.

(4) Where grinding, polishing or buffing is carried on in any shop, the provisions of section 16 of the Ontario Factories Act shall apply to such shop.

2. Section 39 of the Ontario Shops Regulation Act is repealed and the following substituted therefor :

39. No person shall require, permit or suffer any employee in any bake shop to work on Sunday, nor for more than twelve hours out of every twenty-four hours computed from the time when the employee commences to work, nor more than sixty hours in any one week to be computed as commencing on Monday and ending on Saturday, both days inclusive, except by permission of the inspector given in writing to the employer; and a copy of such permission shall be posted in a conspicuous place in the bake shop

#### BARBER SHOPS.

3. The said Act is further amended by adding thereto the following as sections 45 and 46.

45. No employer shall require, permit or suffer any employee in any barber shop to work on Sunday, and no proprietor of any barber shop shall open his barber shop or permit the same to be opened to the public or carry on any business or work therein at any time between the hours of 12 o'clock on Saturday night and 12 o'clock on Sunday night.

46. Any employer or any proprietor of a barber shop who violates the provisions of the preceding section shall on conviction thereof be liable to a penalty of not less than \$20 besides costs and of not more than \$50 besides costs, and in default of payment of the same, shall be imprisoned for a period of not less than thirty days and of not more than six months.

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