

Good Roads and Their Cost

Much Needed Information Supplied by Ontario Report

To assist smaller municipalities to avoid the expensive and annoying mistakes which have been made by many municipalities during the process of street improvement, the Ontario Department of Public Highways has prepared a special report.

The work is the result of information secured by a survey of 33 cities and towns in Ontario. In the introduction Mr. McLean, Deputy Minister of Public Highways, outlines the growth of city streets from the country corners to the modern urban thoroughfare. The expenditure involved by street improvement is discussed and the mistake of undertaking work of this nature, without consideration of a general plan, condemned. Lack of intelligent and experienced supervision also accounts for much of the expenditure of public funds for no adequate return.

The selection of the type of pavement best suited to local conditions is of great importance, the chief factors in which are: The size and wealth of the municipality, the amount and class of traffic, the class of street, whether business, residential, etc., and the materials available locally.

Another matter to receive consideration is the selection of materials, covering all classes of pavements from the gravel or broken stone surface to the most durable as well as the most expensive forms, such as crossbed wood block, brick and stone block. Streets of cities, towns and villages are classified, and the materials best suited to their construction are shown under the different headings.

The treatment of gravel and macadam roadways with oils and tars is described; the advantage of rounded corners at intersections in order that motor traffic may turn easily and safely is illustrated; the paving possible in avoiding land damages by the establishing of permanent grades and street levels in new subdivisions is shown; and the two important items of drainage and foundations are discussed.

The history of street improvement from the laying of the first roadway is given and the methods used in the construction of pavements, sidewalks, curbs, gutters, street railway track allowances and pedestrian crossings are described. Detailed costs of materials, labour, pavements, sidewalks, curbs and gutters are furnished. Special features such as the construction of bridges, subways, driveways, etc., are fully described and the costs of these various works supplied where possible.

Tabulated data show the extent

of paving in the municipalities, the cost of different classes of pavements prior to 1915, and the cost of the different sections of pavements laid in 1915, forming a valuable record of pavement costs prevalent throughout Ontario. In addition to being a report, interesting and instructive, it will prove a valuable book of reference to those connected with street improvement. Copies may be obtained by applying to Mr. W. A. McLean, Department of Public Highways, Toronto.

Protect the Young Forests

Future Timber Industry Depends on To-day's Fire Prevention

"The fire was confined to the brush; no damage was done." How often do we see this in the reports of forest fires? The "brush" referred to is nearly always compos-

ed of commercial value no one can predict. If the history of stumpage values in the past may be accepted as a guide, it may be safely assumed that it will enhance sufficiently to more than cover the expense of protection.

Canada is beginning to wean about the depletion of its forest. If we protect the young growth which nature is striving to establish, our forest industries will ways be supplied with raw material.—R.D.C.

HUMAN WASTE

Elimination of waste in productive enterprises is one of the most important in the development of Canadian industries. Human waste in modern industry exceeds all other forms of waste, and yet has not received one-tenth of the attention given by employers to other forms of wastage. Efficiency systems have been installed by manufacturers without number, but very few have established a system to develop human efficiency. The percentage of waste in any industry will always depend upon the average unit of intelligence in the force of men employed. The man upon whom you can depend to carry out your system is always more important than your system. A good man nine times out of ten, will make a poor system work well, but a number of poor men, will make any good system work badly.

In modern industry, the human factor has not been given attention. Waste in machinery and material has been carefully checked by most industrial firms, but human waste has not been accounted for in most account systems. Yet the cost of the human scrap heap is greater than that of machinery or material. In human waste is a greater menace to the development of modern industry, along lines profitable to the nation in competition with foreign countries, than any other form of waste.—G. L. Sprague, Principal of Hamilton Technical School.

Efficient Agriculture

With the most efficient agriculture in the world, Denmark is voted almost exclusively to export and herds. It not only obtains the highest average results per acre the cultivation of the soil, but also uses the agricultural production raw material for a national industry in further manufacture. In the finished form of such products contain more labour value and raw material than Denmark exports the output of its agricultural and herding industry. Two-thirds of the population are engaged in agricultural pursuits or in handicraft agricultural products.



Cut No. 100

Harvesting Clover Seed

Grow Your Own Clover Seed

The Agricultural Survey of 400 farms in Dundas county during 1916 by the Commission of Conservation revealed the fact that only three and one-half per cent of the farmers grew their own clover seed. It was also learned that a majority of the farmers were sowing only about half enough seed required to insure a good crop of clover.

It has long since been established that home-grown seed gives best results. Put all these facts together and what is the very obvious conclusion? Much is said to-day about the high cost of living in cities, but what about the high cost of farming which means costly production? It should and can be reduced. If the farmer will grow his own clover seed instead of buying it at a high price, he will be much more likely to sow an adequate amount of seed per acre to insure a good stand. Plenty of clover on farms means abundance of good feed for stock and maintained fertility of the soil.

A thin looking second crop of red clover will often yield a good return of seed. It can be cut with the ordinary mower with a flat table attached to the cutter bar; a man follows and rakes it off into windrows. By making a few simple adjustments, it can be threshed with the ordinary grain thresher if a clover huller is not available. Save a piece for seed each year. Sow plenty of seed per acre. Harvest better and bigger crops.—F.C.N.

of young growing forests, which have not as yet attained merchantable size. One would be quite as much justified in saying: "A thousand acres of wheat was destroyed by hail, but as the crop was not ripe, no damage was done."

Unfortunately, this attitude towards young timber is prevalent even among lumbermen and members of forest protection services whose contact with the forests should enable them to realize the length of time it takes to grow a forest crop and its prospective value. Too often, little or no effort is made to stop forest fires until timber of merchantable size is endangered. The writer was out with a forest ranger in British Columbia not long ago, when a fire was noticed on a mountain-side covered with the finest stand of young Douglas fir and red cedar one could wish to see. When the ranger's attention was called to it, he said, "Let it burn; it's only young stuff." This particular stand was about 20 years old. The largest trees were 3 to 4 inches in diameter and 20 to 25 feet high. It is true that it had no present value for timber, but, in another 30 years, it would, in all probability, cut 20,000 board feet per acre; at the present stumpage value, it would then be worth at least \$1.75 per 1,000 feet, or \$35.00 per acre. Since 20 out of the 50 years of growth had been attained, the present value of the stand can safely be placed at two-fifths of the final merchantable value, or \$14.00 per acre.

What the value of standing timber will be when these young for-