

purchased it should be delivered and stored at convenient points and placed in charge of, and used subject to the order of the commissioner, and in emergency work.

9. He should prepare specifications of all work for which the council makes money appropriations. The work may be done by day labor or by contract awarded to lowest bidder, if proper security is given, the work to be subject to the approval of the commissioner, who should certify to all accounts before payment.

Commissioner and Statute Labor.

The maintenance of snow roads and emergency work at other seasons may appear to favor a continuance of the statute labor system in some form. The construction of snow fences of wire will do much towards preventing drifts in winter. The designation of pathmasters as formerly in townships where statute labor is abolished, with instructions to keep road open and attend to emergency work, and report same within a reasonable time to the working foreman or township commissioner is all that is necessary.

The commissioner system may be operated in connection with statute labor with good results.

The statute labor divisions are usually too small for effective work; they should not be less than three miles in length. Where statute labor is retained, a pathmaster should be a permanent officer, and his division should be such that the most of his travel will lead him over the greatest portion of it. He should not receive a salary, but should, as a slight recompense, be preferred in doing small jobs under the commissioner, where the work is not considered of sufficient importance to be let by contract. He should, in addition, give special attention to all emergency work, such as washouts, broken culverts and bridges. If the time required to oversee statute labor in his division is more than would be needed for his own statute labor, he should be paid for such excess under certificate of the commissioner, the object being to secure proper supervision of all work performed.

The commissioner should consult with all pathmasters and report to the council, showing the number of days' labor in each division, the work to be undertaken, and the amount of money which should be appropriated by the council to properly utilize the statute labor.

He should arrange with divisions desiring to compound statute labor for a term of years, with a view to construction of permanent and finished work.

[This is probably the most important question before township councils to-day. We will be pleased to receive suggestions and publish the experience of others so that all may benefit therefrom.—ED.]

ROAD MAINTENANCE.

Cheap roads are not those which have cost least for first construction, but those which cost least after a term of years. True economy in regard to roads requires that they should be kept in repair. Roads after being properly built should never get out of repair. They become so, only by neglect. A smooth road, one with an even surface, will last much longer than will a road that is rough. Everyone has observed the hollows and pitch-holes formed on both sides of a wooden culvert or bridge projecting above the surface of the road. These pitch-holes form because every vehicle crossing the bridge, drops down with a heavy jolt. Shallow at first, the deeper the holes become, the more rapidly they increase in size and depth because the pounding action of the wheels increases with the depth. Water collects and remains in these holes and assists the wearing action of the wheels.

The same process of wear is going on at many places in the road, other than at bridges and culverts. Wherever

there is a roughness of any kind, a projecting or loose stone, a soft or hollow spot in the road, there is the same pounding action of the wheels, assisted by the collecting of pools of water, which lie in every depression.

In the spring of the year on roads which have been drifted, and on which the snow lies unevenly, the shallow places melt first, leaving the gravel or stone road exposed in spots, with mounds of snow on each side. Here the same action goes on. Wheels drop into the depressions kept soft by the melting snow. Pitch-holes commence, and a few days of traffic breaks up the road and does a great amount of injury.

Roads should receive constant attention. This is the most economical and satisfactory system of making repairs. Repairs should be made not once a year, nor twice, but as soon as signs of wear appear. Special attention is needed in early spring and early fall, as at these two periods much can be done to prepare the roads for the ensuing seasons of particularly severe conditions.

Ruts should not be allowed to form in a gravel or stone road when once properly constructed, but the material should be kept in place by a constant use of the rake. This is especially necessary if gravel or stone is placed loosely on the road and left for traffic to consolidate. Settlements and hollows should not be allowed to hold water and create pitch-holes for want of a load of metal. Drains should not be allowed to become obstructed, thereby saturating and softening the whole roadbed. Culverts should not stand full of water to be burst by the expanding ice because of a neglected outlet. An almost inexhaustible list of these every day occurrences could be mentioned, which in themselves apparently trifling, become in the aggregate of very great importance. Roadmaking is made up of details, none of which can be overlooked, except at a loss.

The overseer should give immediate attention to all emergency work rendered necessary by washouts, etc., either by personal or hired labor. He should be able to send a man over the roads as often as necessary to repair the effect of ordinary wear. Better still, a man should be employed to devote his whole time to a certain mileage of roads, to make repairs as they become necessary. Every farmer, too, should appreciate the value of good roads sufficiently to voluntarily devote time to the roads passing his property, rather than to permit them to become bad or impassable because of neglect.

Where a council, as is commonly the case, provides materials, gravel, tile, etc., for road maintenance out of the general funds, one man with horse and cart and help when required can keep in repair ten miles of gravel or stone road at a cost not exceeding the statute labor along the road commuted at one dollar a day.

It is one of the great advantages of the new systems of road management being adopted by townships and counties, that men can be employed to work on the roads whenever and wherever needed. Neglect to keep the surface of a road smooth and in repair permits it to break up badly in the spring and fall, and the gravel or stone is largely wasted, being mixed with the mud from beneath. When this occurs a comparatively great expenditure is needed to make the road as good as before.

The regulations approved by order in Council for encouraging agriculture and horticulture by rural schools, state that any board providing a school garden shall be entitled to an initial grant not exceeding \$100, and a subsequent annual grant of \$10, provided the appropriation by the Legislature will warrant such payment. The area of the garden must be at least one acre. The trustees must provide the tools for gardening and a shed for a storehouse and working laboratory. The grant will be payable on the report of the inspector.