

root it will have to be dug out. It is much better to take out a few of the worst trees in this way than to cut them all down. This may seem a small matter, but if on one side we put the money saved by cutting the stumps instead of grubbing them, and on the other the losses, due to broken axles, smashed buggies, and sometimes broken necks by horses falling over them, by delays and profanity, we will see which method is cheapest in the end.

Another point to be noticed is that roads should be completed from the centre of head quarters of the shire outwards, so that a selector in bringing his goods to market can reckon so many miles of bad road, and a good one to the end of his journey. For example, suppose the road is twenty miles long, and in at least passable condition throughout, but that here and there very bad places occur; now so long as one of these bad places is ahead, the team necessary to pull the waggon through them will have to continue to travel, although it is far stronger on the good portions than it need be. On the other hand, if he has a few miles of bad road before him, after passing which all the rest is good and hard, he will, by a system of loading and unloading, carry far more goods with less horse power in a given time.

In connection with roads, culverts and side drains are often required; now the construction of them, though of the simplest kind, may give rise to many difficulties in connection with the disposal of storm water and the deposits from the bottoms of the drains. The following two cases from his own experience are examples of what may often occur. A drain was constructed along the side of the road cut in a sandy hill, the water flowed into its old course in a gully, and so over some pasture land; so far, no harm was done, but the farmer soon found that more than water was being carried over his grass—he was getting a large deposit of sand as well. Now we could not practically keep the sand from culting out of the drain, so we had to form a barrier of logs, &c., behind which the sand

would deposit itself, and from which it was carted away from time to time.

In another case the Council were sued by a farmer because they had allowed the water from the road drains to go into a swamp on his land. He admitted that they did not cause any extra flow, but said that the water which formerly flowed gradually over his land was concentrated in one place. He lost his case, but if he could have proved that any water had been diverted from its natural and usual flow on to his land, he most likely would have recovered damages.

The author has not sufficient space to say much upon the subject of bridge construction—indeed, it would hardly come within the scope of this paper to do so; but he will just allude to two ways out of the many in which money can be badly spent in this class of work.

First: if, on the grounds of economy, they are built at such a low level as to require very steep approaches at either end, it may make it necessary for lighter loads to be carried, or more haulage power to be employed all along the whole length of the road than would be the case if the approaches were nearly on the same grade as the rest of the road. This, it must be seen, is a bad policy.

Secondly: if the bridge be constructed, as it often is, with three stringers instead of four, the saving in labour and material is far outbalanced by the shortened life of the bridge decking, as, in the first case, the weight of the waggon is merely supported by the decking, while in the latter case the weight bears directly upon the stringers.

We have now glanced very shortly at the position of the Shire Engineer and some of the duties which pertain to his office, and will now proceed to discuss the relative systems of working before mentioned.

Under the Irish system, when a vacancy occurs, an examination is held by the Civil Service Commissioners, and the candidate who is considered fittest is examined by a medical

board; he then presents credentials as to his moral character, and, if all is satisfactory, he is appointed to fill the vacancy. He then takes office directly under the Grand Jury, to whom he is responsible, and who, of course, are men of position and intelligence. To assist him in his work he is allowed to appoint assistant surveyors, who reside in remote parts of the district, set out and measure his work, and keep him fully informed as to the condition of the roads, and as regards the progress of contracts. Once in each year he makes out a list of all the works he considers necessary to be carried out, and, when agreed to, he proceeds to carry them out in his own way, and without the slightest interference from any one. His tenure of office is during good behaviour, and he can only be removed by the Viceroy under representations from the Grand Jury.

In Victoria, the intending Shire Engineer must obtain a certificate from the Municipal Surveyor's Board, which will be granted upon his passing an examination in the following subjects:—Field Work, Topography, Laying-out and Constructing Roads, Road Maintenance, Town Improvements, Bridges, Culverts and Retaining Walls, Collection, Storage, and Distribution of Water. This list being again subdivided into sections, dealing with almost every branch of Civil Engineering. With the granting of this certificate the duties of this Board are ended, so far as the Engineer is concerned, and, officially, they take no further interest in him.

Having qualified himself, he looks about for a suitable opening, and when one occurs he sets about to obtain it. Under this system candidates for office must be prepared to work hard and earnestly; they must never forget the class of men in whose hands the appointment rests, and they must by various means seek to induce each one of them to support him, and he will find that tact, patience, and perseverance are indispensable qualities when setting out on his tour as an office-seeker. Canvassing on behalf of oneself is extremely unpleasant and harrassing work; but, wrong as the system is, it is not easy to

see in the present form of municipal government how any other method can be adopted. What are the results of securing the councillors' votes and interests the author has before endeavoured to picture.

With the road system of this colony you are all familiar. All the works connected with the roads and bridges are carried out by the Public Works Department, who are guided in the granting of money by their own officers. In this system the most the people themselves can do is to induce their Parliamentary representative to induce the Government to construct works for them.

From the consideration of the best points in each of these systems, as well as from his own experience, he would suggest that the sections of any Municipal Act affecting the position of the Engineer, should be based upon the following considerations :—

1. The Engineer, after passing the required examination, or otherwise proving his fitness, will have his name placed upon the register kept by the Roads and Bridges Department, in exactly the same way as the names of land surveyors are registered.
2. When a municipality requires the services of an Engineer, notice will be sent to the Department, by whom and the Council the amount of salary has already been fixed. The name of the Engineer whose turn it is will be sent up, and, if the Council have no tangible objection to it, he will be appointed.
3. His appointment should be practically a Government one, but he should be under the orders of the Council, all of whose lawful commands he shall obey.
4. He shall be allowed to appoint one or more assistants at a small fixed salary, to be paid by the Council; these assistants to be directly under his control, and he being responsible for their work.

5. A schedule of necessary works is to be prepared at the commencement of each year, and in the carrying out of such works as agreed upon, the Engineer is to be completely independent, and should not be interfered with so long as they are progressing in a satisfactory manner.
6. The Council to conduct its affairs mainly by committees, so that every subject will be discussed previous to being brought before the Council.
7. The Engineer to be allowed to expend a certain small amount in each month upon the carrying out of urgent and necessary works.
8. No Councillor to be allowed to interfere in any way between the Engineer and his contractors, or to endeavour to coerce him into employing any particular labour or materials.
9. In cases of dispute between the Council and the Engineer, either party may appeal to the Examining Board, whose decision will be final.

If upon the above lines a perfectly qualified Engineer was appointed to take charge of a Shire, and to carry out its public works, it would be to its lasting benefit. The labours of the officers of the Council, as well as of the Councillors themselves, would be much lightened, and the whole municipal machinery would work smoothly and harmoniously.

And now, having pointed out what the position of a Shire Engineer is, and what are some of his duties, and having shown in what ways his standing might be improved, and his duties lightened, the Author will leave the matter in the hands of those who have the framing of its laws, and the making or the marring of the destinies of this colony.

The advantages to be derived from a system of Local Government can so easily be understood, and have been so often pointed out, that the wonder is it should not long ago have become law.

This Municipal System, by compelling the people to act and think for themselves, in a way that the Parliamentary system

can never do, helps to teach them this great lesson—that the happiness and welfare of a country depends in great measure upon their own individual efforts—for as John Stuart Mill says, “The worth of a state in the long run is the worth of the individuals composing it.”

For all the reasons set forth in this paper, and for many more which might be mentioned, the author considers that the granting of Local Government to the Country districts of this Colony should no longer be delayed, and he hopes and feels sure, that with the introduction of so wise and beneficent a measure a new era of power, progress and prosperity, will be ushered in, and that the Local Government Act of New South Wales will be one of the most useful upon its Statute Book.

In conclusion, he expressed a hope that when this bill does become law, its clauses dealing with the chief executive officer of the Municipalities, will be of such a liberal and comprehensive a character, as will induce a class of men to devote themselves to a work so nobly inaugurated by such men as Metcalf, Telford, and McAdam, who will prove of great advantage to the districts in which they are called to labour, and who, by their lives and characters, will tend to elevate in public estimation the name and position of the Shire Engineer.

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