

Underdraining and grading should be carried on simultaneously. Unless drained, the traffic during the ensuing autumn and spring will usually leave the graded road as shapeless and rough as a pioneer wagon track can be. If drained, there will be a foundation for the gravel to rest on when applied.

There is some dissension among roadmakers as to where underdrains should be placed. Some prefer one tile drain along the centre of the roadway; this with the mistaken idea that the water will be caught as it percolates through the road bed. A road bed, however, nicely crowned and well compacted under the roller, will shed the surface water to the side gutters without permitting it to pass into the roadbed to any extent. It is better practice to place two tile drains, one under each of the surface gutters, where they may serve as outlets, catch-basins being provided when natural outlets cannot easily be obtained. Underdrains intercept the water rising upward in the soil from the impervious strata underneath, very little of the water passing downward being inter-

cepted by them. The advantage of the two drains, one on each side of the roadway, over the plan of having one drain in the centre are several. The two drains are more effective in securing perfect drainage than one could be; the aftermath of settlements in the centre of the road is avoided; the drains on an old road can usually be placed at a greater depth if at the side; the expense of placing one drain in the centre of an old road is often greater than that created by placing two drains at the sides; when at the sides they may be more easily used when needed as outlets for surface drains.

There may be instances on very light land where underdrainage is so perfectly provided by nature that artificial drains are not needed. But as a usual thing, in this climate (Ontario), tile drainage is very much needed on our roads. It may be stated, as a rule, that, although underdrainage will not do everything for all roads, it will do something for every road, and everything for some roads.

THE INDUSTRIAL EXHIBITION OF WINNIPEG.

(By OUR SPECIAL CORRESPONDENT)

The Industrial is again a thing of the past, and has been the most signal success yet achieved by the Winnipeg Industrial Exhibition Association. I have seen every exhibition since its inception, and this past one was unquestionably the best. With the new and the enlarged buildings there was just about enough accommodation for the exhibits. There was a distinct improvement in nearly all classes of stock, and some of the stock exhibited would be hard to beat even in Toronto.

PIGS.

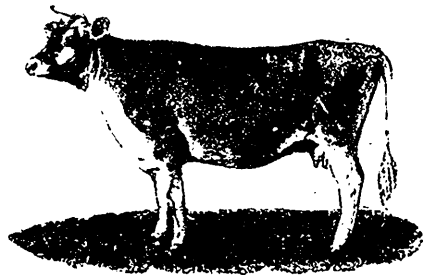
In the pig classes, F. W. Brown, of Portage la Prairie; Lang, of Oak Lake; Carter, of Portage; and R. McKenzie, of High Bluff, showed some outstanding fine specimens, many of them Manitoba bred.

SHEEP.

In the sheep barn, a grand Cotswold ram of Brown's, and Oxford Downs of Bray, of Longburn, and the Shropshires of Oughton's, Crystal City, are worthy of special mention. The Shropshire and the Cotswold are still the favorite sheep up here, with the Leicester, the Southdown, Oxford Down, Lincoln, etc., gaining in favor. But until prices for mutton improve in Manitoba, a big sheep will be more in favor than a small one, the question of feed being a minor consideration at present.

CATTLE.

In the cattle classes the Shorthorns predominated, about as many as all the others put together. Lister's Gravesend's Heir was placed first, with W. Lynch's Village Hero 2nd, and J. G. Barron's Topsman 3rd. These are all grand bulls, and there was considerable discussion amongst the visitors as to the first and second awards being reversed, many favoring Village Hero for the



Pet of Portage,

(James Bray, Longburn), Prize-winning Jersey.

premier position, though I fancy Messrs. Dryden and McTurk, the judges in this class, placed the awards where they should go.

In younger bulls, two sons of Royal Don, ex-