



Shawood Alfred.

Shorthorn bull, with 70 years old Jack Robbins, herdsman in three reigns in the last 30 years.

as 15,000 weed seeds per pound, and alsike 49,330. The Seed Control Act forbids such wholesale robbery, and fixes a standard below which samples must not fall; but Government standard is not high, and, while a person may buy Government standard seed, he may also be buying many weed seeds he would rather be without. All other weed seeds must be watched. The sources of contamination must be watched. The Department of Agriculture at Ottawa examined 74 samples of bran, middlings and various meals, and they contained, on an average, 900 vital weed seeds per pound. This illustrates the necessity for precaution.

Some weeds prefer a damp soil, hence under-drainage is beneficial. A moisture-loving weed easily killed on drained land is the common horse-tail or scoured rush.

A systematic crop rotation is very beneficial, especially if it is one of three or four years.

Some advocate a bare fallow. When carefully carried out, it is very effective, but no crop is obtained for a year, and a portion of the soluble nitrates is lost by leaching, so it is not to be recommended, except in very heavy land, where the loss would be more than counterbalanced by the improved mechanical condition of the soil and the increase in the subsequent crops.

Many mineral fertilizers retard the weeds and stimulate the grasses. Heinrich, a noted German, found that gypsum gave the best results. Salt is very good for destroying orange hawkweed.

SPECIAL METHODS OF ERADICATION.

Unfortunately, some weeds are so tenacious of life that special methods of eradication are necessary. One of these is the perennial sow thistle. It may be eradicated by carefully carrying out the following method: Plow shallow in the spring and then give frequent and thorough cultivation until the middle of June; then manure heavily and work again. Ridge up in low ridges 26 inches apart, and sow pasture rape at the rate of 1½ pounds per acre. Cultivate at short intervals, until the growth makes further cultivation impossible. Pasture or cut in the fall, plow, and follow with a hoed crop the next year. This method is also reliable for a field infested with couch grass or bindweed.

Wild Oats.—All cereal crops should be dropped from the rotation for a few years, and hay and root crops substituted. Two root crops in succession, followed by clover, with barley as a nurse crop, is very effective.

Mustard or Charlock.—It is successfully controlled by spraying with iron or copper-sulphate solution. If copper sulphate is used, dissolve 9 pounds in 45 gallons of water, and spray with a power spray when the plants are coming into bloom. When iron sulphate is used, dissolve 100 pounds in 50 gallons of water, and spray when the buds are nicely formed, but before any bloom appears. The spraying must be continued for several years, until all the seed in the ground has germinated. These spraying solutions do not injure the growing grain.

Scores of other spraying solutions have been tried, but, with the exception of sodium arsenite, applied at the strength of 1½ to 2 pounds per 50 gallons of water to Canada thistle, they have proved impracticable.

Small patches of weeds can be eradicated by covering them with tar or heavy building paper, and leaving it there until the roots are exhausted.

Although some of our weeds seem able to withstand nearly everything, agriculturists should rejoice in the knowledge that there is no weed but can be eradicated by persistent effort. May the day soon come when more will demonstrate this for themselves.

C. W. STANLEY.

Middlesex Co., Ont.

Concrete Culverts on the Farm.

The many places cement-concrete may occupy in all construction work to-day is as remarkable as its permanency.

It is in construction work on the farm that cement-concrete more particularly fulfils its purpose, and what a grand thing it is that we can at least build so that our efforts and achievements will survive us. The life or durability of wooden structures is comparatively short; each succeeding generation finds it necessary to replace much of the work of its predecessors in this material. This is particularly the case in regard to wooden culverts, although the effort in building them be ever so painstaking, and the material used the

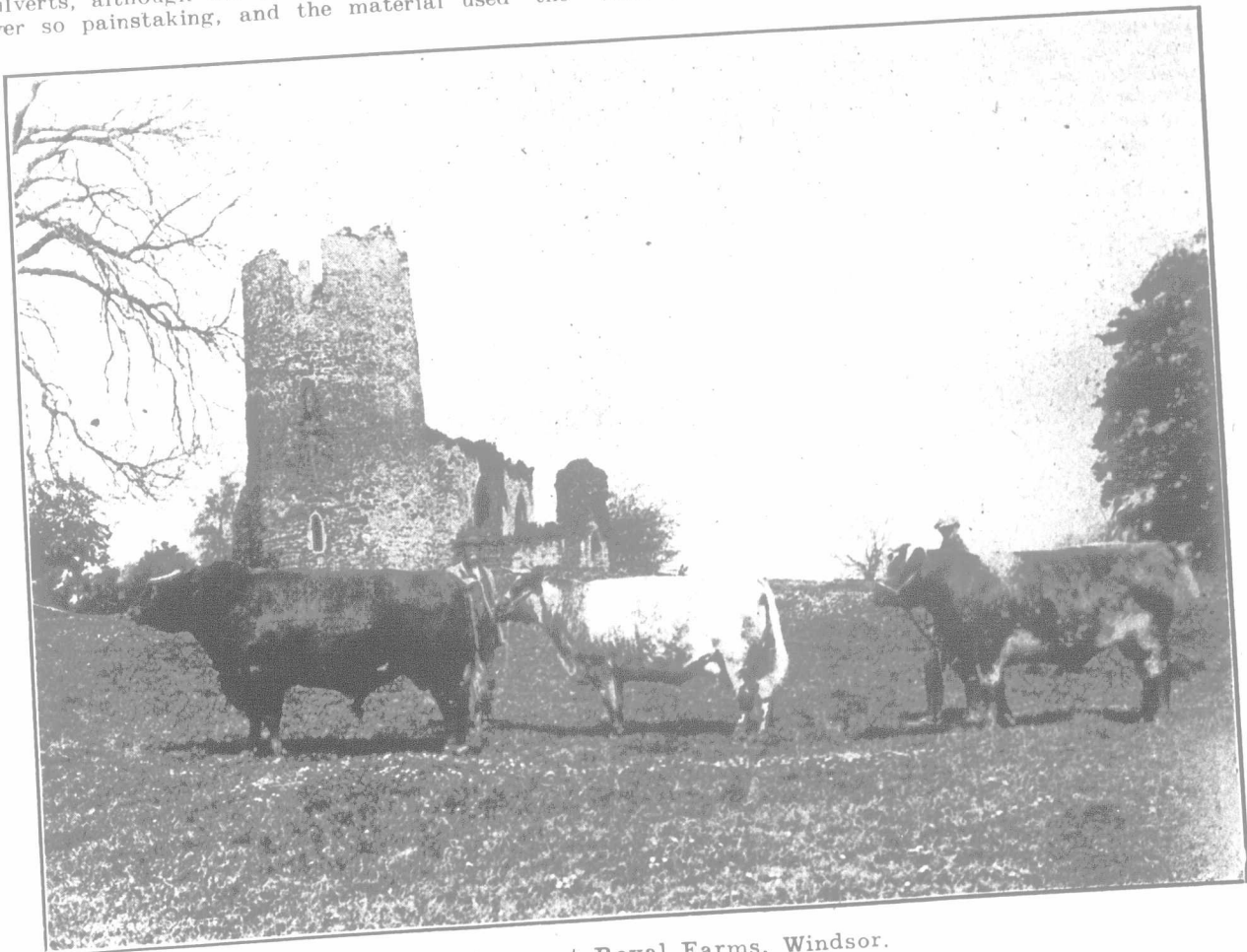
best, they last but a short time, and are never in as good repair, or the roadway they cross as safe for traffic, as when a material like cement-concrete or iron is used, and the roadbed levelled as before the installation of the culvert. Concrete culverts are always there, and may always be depended upon to carry your load; they do not float away with floods or break through.

In replacing some of our old wooden bridges or culverts, we have used the cylindrical cement tile for such purposes, as produced by the manufacturers of these tile. These tile are very satisfactory, and only slightly more expensive than wood; while, from the standpoint of durability they are practically everlasting.

But we now put our concrete culverts in at a great deal less cost, while they are just as satisfactory and durable as the manufactured cement tile. We evolved the idea some time ago of building a concrete culvert where it was needed, and have found it to prove all right. In constructing a culvert now, after first getting the materials on the ground, viz., gravel, cement, water, and necessary lumber, we proceed to clear out the channel necessary, making the bottom four or five inches lower than the ditch bottom we intend draining. The width of the channel should be equal to the width of the concrete work we are putting in, which will depend on the size of the opening we purpose leaving through our culvert. We now place in position good stiff inch boards, or, better, two-inch planks, across each end of the channel to act as a mould for the concrete. This mould extends from the bottom of the channel to the height the ends of the culvert are to be built, being well reinforced by stakes and braces, so that the concrete can be well stamped against these boards. We are then ready to mix our concrete at a good strength, say, five to one, if you want a particularly strong job (although we have often thought weaker would be all right), and with this concrete filling the bottom of our channel to a depth of four or five inches, stamping it down well and smoothing carefully with a steel trowel, just as you would an ordinary floor.

We are now ready to place in position our mould, which is a simple one of the length our culvert is to be, and of such a width that when the two are placed together they will make an opening the size desired. By using narrow boards, it may be made very small, equal to a six-inch bore in tile, or, by using wider boards, made of any size desired, this depending on the volume of water that is to pass through. We place the edges of these boards together so as to form an L, or at right angles, and nail them. To place this mould in position, we simply invert it over the concreted bottom already made, which will leave or form an opening through the culvert the shape of an inverted V, through which the water passes. With our mould in position, we are now ready to resume our concreting, which can be finished without further delay.

Having taken care that the concrete of the bottom extends far enough on either side of the mould to allow a thickness of wall about five inches, we continue building from this foundation up over the mould, banking it over, so to speak, with an even thickness of good strong concrete,



Shorthorns at Royal Farms, Windsor.

Bull, Royal Clipper; cow, Lancastrian Gaity, and two-year-old steer.