

holding water. The sides of the road have often square shoulders (Fig. 2) which obstruct the water and, as a result, it lies on the surface until it is absorbed by the material or evaporated by the sun. If allowed to remain too long, holes and ruts come quickly and grow bigger and bigger.

SUB-DRAINAGE.

In open or pervious soils, surface drainage in connection with heavy rolling is usually quite satisfactory, provided the slope is good and the traffic not heavy. In close, impervious or clayey soils, sub-drainage is often necessary and is neither expensive nor difficult. Where springs exist in the soil, the roads should be tapped by blind drains of stone or brick or clay pipe leading diagonally to the side ditches. Where sidehill roads are sprung, deep open ditches on the higher sides will often suffice. Horizontal drains under the roadway, which should empty into the open drains or the natural watercourses at frequent intervals, are advisable on earth roads that are inclined to continue wet. Besides they help to carry away quickly when the snow goes or after a heavy rain. If the road surface is composed of heavy soils, two or three drains, but if the soil is open, one drain in the centre of the travelled way will often be sufficient. The depth to which drains should be

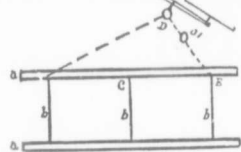


DIAGRAM OF THE SPLIT LOG ROAD DRAG

laid will depend upon the character of the soil as well as the depth of the frost line. They can be placed parallel with the surface of the road in rolling countries, provided they are a foot or not less than three-tenths of a foot to each two feet. Outlets to side ditches, or preferably into the adjacent fields or streams should be made as often as practicable. The size of the drain will depend upon the distance between outlets as well as the grade of the ditch. Ordinarily, if the distance is 500 feet or less, a 3-inch pipe will answer. If the distance is greater than that, the size of the tile should be increased about 1 inch in diameter for every 400 feet in length.

But, while sub-drainage is advisable and necessary in many cases, the great majority of earth roads can be much improved by surface drainage. A good crown on the road, so that water will quickly find its way to the ditches, is about all that is necessary on most roads. The section in the middle must be the highest part, and the travelled roadway should be made as impervious to water as possible so that the rainfall or melting snow will flow freely and quickly into the gutters alongside. A good shape for a cross section of an earth road is an arc of a circle with a gradual fall from the centre to the sides of about 1 in 20 after the surface has been thoroughly rolled or

compacted by traffic. Such a surface can be constructed and repaired with the road machine and a roller can be used on it to some advantage. When the surface is not kept smooth and compact, the crown should be a little steeper than 1 in 20, but should under no circumstances exceed 1 in 12. Too much crown is as detrimental as too little.

THE SPLIT-LOG DRAG.

There is no place where the split-log drag can be used to so much advantage as on an earth road. Placed in skilful hands and used frequently during the season, an earth road can be kept in fair condition by this implement. It is cheaply made and is a most useful instrument for road-

THE ROYAL DUBLIN SOCIETY'S SPRING SHOW

I left New York on April 10th, at 4 p.m., and reached Kewtown on the morning of the 18th. We landed about 7.30 a.m., and I proceeded at once to Dublin, where I hoped to witness the last day and a half of the above exhibition. But the train was too slow, taking the whole day up to 5.30 p.m. Friday was the last day and all showing and parades had been completed. However, I was able thoroughly to inspect all the animals.

The Royal Dublin Society hold two shows. One devoted mainly to an exhibit of bulls and farm machinery, to which is added a few classes of horses. The second show is held in August and is devoted exclusively to horses. It is a fashionable event and is largely attended by all interested in horses.

VETERINARY INSPECTION.

This horse show is well managed and has some features which are unique. All animals except the driving horses are subjected to a thorough veterinary inspection before being allowed to enter for competition in the respective classes. No less than fifteen vets. are employed in order that there may be no delay. Two of these are always held in reserve, to whom the owner may appeal in case he deems himself wronged. To facilitate the inspection, a full equipment is provided, consisting of an oval arena which contains a hard and also a soft, frictionless track. The horses are galloped around these in order to detect any weakness in feet, limbs or wind. In addition, there are two dark boxes provided with appliances to detect weakness of the eyes, and two others supplied with forges, etc., with blacksmiths in attendance, so that when desired shoes are removed at once, and after examination of the foot replaced. The vets in attendance have no knowledge of which horses they are to examine until the officer in charge calls them in. It will be seen how difficult it is for a horse with any unsoundness to obtain a premium as they cannot compete unless the veterinary inspection is favorable. At the spring show, however, none of this inspection is deemed necessary.

THE BULLS.

The bull show of the exhibition just closed was, I believe, the largest in the total number exhibited of any held in the country. As I believe also contained more specimens of great renown than ever before. By far the largest class was the Shorthorns, although there was a creditable display of Herefords, Polled Angus and a few of the speckled dairy breeds. The Shorthorn yearlings were divided into

making. Take the two halves of a split-log ten or twelve feet thick and seven to nine feet long. Set the halves flat sides to the front, fasten 30 inches apart with strong stakes, the ends of which are wedged in two-inch auger holes, bored through slats. Put a solid plank platform on the stakes for the driver to stand on. The hitch is made of strong wire or chain, the long end fastened to stake over the top of the front slat, the short end should be put through a hole made in centre of slab and near the end to prevent the slab slat tilting forward. Face four or five feet of the ditch end of the front slab with iron. An old wagon tire, worn share or road grader or any piece of flat steel will answer the purpose.

three classes—those calved in 1906 between Jan. 1st and March 1st; 2nd, between March 1st and May 1st; and third, all after May 1st. The first class consisted of 120 yearlings, 158, and the third class thirty in all 283 yearling bulls. The two-year-old bulls were divided into two classes, those calved in 1905 before September, and those calved in 1905 after September. In the first class there were 96 entries and in the second 58, total two-year-olds, 134. One more class of aged bulls containing 42 entries included all calved prior to 1905.

It will be easily seen that the judges had no small task in selecting the winners where the numbers were so great. They included many of the most noted show bulls in Great Britain. At the head of the aged bulls stood "Linkfield Champion," now owned by Mr. Miller, the great South American exporter, winning not only 1st in his class but also the "Chalmers Plate Championship." This bull is a very fine specimen, being remarkably smooth with a fine carriage and few faults. It will be remembered that this bull was placed 1st at the Royal last year and 1st at the Dublin show a year ago. In his class he had a good second in Mr. Harrison's bull, "Pioneer," a roan bull from the King's herd at Windsor and sired by Ronald. In the two-year-old classes an easy winner was found in "Shenley Victor," sold at Birmingham for 1000 gs. and owned by Mr. McLennan. He was followed in his class by "Extra Stumpy," owned by Sir Hugh Smiley, while a third was found in Mr. Harrison's bull, "Elvetham Sweetmeat." The first was well entitled to his honors, and is a massive, strong constitution bull, standing wide and deep and an all-red of the precise fawn shade. He was awarded the champion silver medal in the two-year-old classes. In the yearling classes the top bull was "Village Purple," owned by W. Garne & Son, and owned also by Mr. Miller. His sire is Village Beau (86651), dam by Bapton Crown (728288). He was purchased by his present owner at Birmingham for 600 gs.

GENERAL QUALITY GOOD.

It would be expected in such large classes that a portion would be inferior, and a very careful inspection proved the fact in this case. A considerable number should be in the positions as steers. They would not excel there but they could do no harm to the breed. Beyond a small percentage this class was a balance view of good quality. The inspectors

the Dept. attendant on their judgment, premium subject 1 year fro

culture. (those of ticket those white bulls, and feel similarity interior. They were