

IMPORTANCE OF CULVERTS.

When Properly Made, They Save Much Time, Trouble and Money.
This question of culverts is really quite an important one, since they bear almost the same relation to roads that keystone do to arches. Culverts made by putting together jointed cement or glazed earthenware pipes are the most satisfactory, being easier handled and comparatively inexpensive, and when laid a certain distance below the surface run little or no danger of being broken. But to obviate this they should be laid diagonally across the road, which pre-



VIEW OF ROAD IN ENGLAND.

vents the weight of wagons from bearing upon it with two wheels at once and also gives them a better fall.

On hills it is advisable to lay some 3-inch pipes at reasonable distances apart, dividing up the gutters into short runs instead of attempting to give the mass of water free flow down the entire hill.

A short steep hill needs only a single pipe placed near the foot of the hill. These culverts have an advantage over all others—namely, a concave bottom, with a smooth glazed surface, which allows the water to rush through so freely that it carries all obstructions before it and permits no rubbish to choke up the pipes. These require no further attention than a slight examination every spring to see if the frost has cracked a joint or the ubiquitous country boy has taken it upon himself to stop up the opening by stuffing small stones into it.

When carefully built, stone culverts are not bad, but they are expensive to make well, and as a rule their sides are laid up so carelessly in dry walls of such small sized stones that they are liable to upheave and be thrown down by frost. Moreover, the flat stones laid across the top are often so badly dressed and fitted together that the gravel covering them keeps shifting through the cracks, filling up the culvert and exposing holes on top, which are either chinked up with cobblestones or left bare until some horse gets hurt and a row is made, with the only result that more earth is spread over, and the same process is kept up ad infinitum.

Left entirely to himself, the native roadmaster prefers a more primitive culvert of his own make, which has the enormous merit in his eyes of being cheap, quick and easy of construction. His method, delightful in its simplicity, consists in digging a trench across the road and bridging it over with a few split green chestnut rails cut by the roadside, which are afterward covered with earth or sod heaped above the level of the road in such a manner as to make a disagreeable "break."

Besides its liability to become choked and useless, this sort of culvert is particularly objectionable because it is always neglected and forgotten, being left to rot until at last some horse's foot crashes through it, and the driver may consider himself lucky if the animal escapes with nothing worse than a slight wrench or scratch.

During harvest, when it is almost impossible to get men to do any continuous work not connected with farming, to save time we are sometimes obliged to put in a temporary box culvert, made of planks nailed together like a long narrow box open at both ends. These culverts are a slight improvement on the local ones made from chestnut rails, inasmuch as, being quite flat on top, they do not destroy the road's level surface, but unless care is taken to have them made of oak-planks they rot out even more quickly than the others.—Harper's.

Material For Telford Roads.

The finest material for roads is trap rock. The material for foundations may be of any durable stone, laid by hand close together and sledged, and if round they should be broken, as round stones come to the surface. The foundation should not be less than 6 inches thick. Before putting in the broken stones it is better to spread a thin layer of loam, sufficient to fill the spaces of stone and make an even surface. When the stone has been put in, it should be properly rolled by a roller weighing about two tons, easily moved by two horses. While a top coating of screenings is desirable it can be dispensed with. The repairs on a road are the most important of the work. If a road is built properly, it should wear uniformly, and when its thickness is so reduced that it is necessary to re-cover it it should be done in sections, from a mile to one-half mile, and it should be laid, spread and rolled in the same manner as described for the building.—Boston Herald.

India Rubber Roads.

Now ideas in paving have lately attracted attention, says Sittings. Among these is the paving of a bridge by a German engineer with india rubber, the result having been so satisfactory as to induce its application on a much larger scale, a point in its favor being that it is much more durable than asphalt and not slippery.

In London a section of the roadway under the gate leading to the departure platform of the St. Pancras terminals has for some time past been paved with this material, with the effect of deadening the sound made when being passed over on wheels, besides the comfortable elasticity afforded to foot passengers.

Another material which is being satisfactorily introduced for this purpose is composed of granulated cork and lithium pressed into blocks, which are laid like bricks or wood paving, the special advantage secured in this case being that of elasticity.

To the 43 vessels already in active service in the United States navy are to be added next the fine gunboat Machias, which can make 16 miles an hour, and, as soon as she gets her machinery and guns aboard, the Massachusetts, the second heavy battleship of the new navy. The Machias is of the class that fills the greatest need at present—that of small vessels light enough to ascend rivers and navigate inland waters.

A Great Fish.

There was landed recently at Stromness, Orkney, a halibut of extraordinary dimensions, measuring 6 feet 10 inches in length and weighing no less than 343 pounds. The fish was discovered by two lads who were engaged in hauling lobster creels at the back of the Holms, a distance of about 1 1/2 miles from Stromness pier. It was observed on the sand apparently asleep, and as they had no appliances with them with which to attempt a capture they marked the spot and returned home to acquaint their father.

Armed with a kind of harpoon, to which a line was attached, they went back to the place and found the huge fish had not moved. Carefully watching an opportunity, the father succeeded in planting the harpoon in the back of the halibut. The weapon entered the spine and rendered the fish powerless, but on account of its size and weight it was only after considerable difficulty that it was got on board. It proved a splendid specimen of the halibut and was in a first rate condition. In its stomach was found a variety of small fish, which weighed upward of six pounds. It was at once carefully packed and dispatched by steamer and rail to the London market.—London Field.

Emperor William's Defeat.

The defeat of the German army bill, from whatever point of view it is regarded, is a very serious affair. In the first place it increases, only a little, perhaps, but still increases, the probability of war. The emperor, rebuffed at home, cannot accept any kind of rebuff abroad and will be far more sensitive than before about slight incidents and more inclined to believe that France or Russia is taking advantage of his situation.

Moreover, Frenchmen will think that the internal struggle will weaken Germany, as it would weaken France, and the hope of finding a moment to fight Germany when she is weak is exceedingly keen. Too much must not be made of this danger, because the rulers of France are much better informed than their journalists and can see that a declaration of war would at once reunite the German people, but still it exists and must be recorded. In the second place, it is probable that the rejection of the bill does leave Germany weaker than she should be.—London Spectator.

English Sporting Terms.

We reprint the following from an English paper as a curio in sporting literature: "We learn with great pleasure that Lady Hilda McNeill, young Lord Stradbroke's sister, who since her marriage to a nephew of Sir John McNeill has been living at Rothley Grange, near Loughborough, is rapidly recovering from the nasty fall she lately experienced in the hunting field. Lady Hilda is an accomplished horsewoman, and her fall throws no discredit upon her as a cross country rider. The accident was the result of a cannon, another horse colliding with hers as she negotiated a stiff fence."

Edwin Booth's Tobacco Habits.
Edwin Booth's physical disability is generally ascribed to excessive indulgence in tobacco. The cigars which the famous tragedian smokes are marvels of strength, yet it has been smoke, smoke from morning till late at night for many years. When he was playing, Mr. Booth used to have his valet stand at night at one of the entrances to the stage holding a cigar and a light, so that as soon as the scene was ended Mr. Booth would have his favorite weed at hand.—Exchange.

Davenport Against Bernhardt.
Miss Fanny Davenport desires to debar Bernhardt from putting on Sardou's latest play in this country, because she produces plays "in an incompetent way." And the vexatious part of it is that it will take two years or more to get it through the Gallic head that this is an American joke. It is annoying to be obliged to protest to Parisians that we believe that in some ways the Bernhardt can give the Davenport points.—New York World.

A very shocking and irreverent horticulturist has tortured a well known Scripture injunction into the fruitgrower's first commandment as follows: "Watch and spray."

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