

will reach the culvert in the hour in which it falls. If a certain water-shed is composed of a thousand acres, then the heaviest rain-storm will pour out upon this water shed about 377,000 gallons per minute, and if the water shed is made up of steep side hills and rocky slopes the water will run off quickly and reach the culvert soon after it falls; while, on the contrary, if the water-shed is composed of flat lands, gentle slopes and porous soils, the water will reach the culvert more gradually, and much of it will be absorbed by the earth.

If drain pipe should be used, it is well to remember that where the road surface is only a short distance above the culvert stream, and the road-maker is thus prevented from using a large pipe, as he otherwise would select, he may avoid the difficulty by using two or more lines of pipe, laid side by side across the roadway, building them into the abutment at each end, as already described in the case of a single pipe.

#### CONCLUSION.

Many people who have not studied the subject of improved roads do not understand the immense benefit which they bring to a community; yet, of all the thousands of miles of good roads that have been made in this and other countries, the first mile has not yet been found that has not proved to be profitable. The increase in land values alone is always more than enough to pay for the improvement. Some benefits and advantages we cannot always compute in dollars and cents, and some things our common sense impels us to take for granted. No farmer in this country can tell the money value of an education, and yet each farmer concedes its value and sends his children to school, and watches carefully their advancement in knowledge. Good health is of infinite value, and the farmer seeks it and guards it, but he cannot tell its value in dollars and cents. The same is true of good habits, good morals and good clothes. Do not, therefore, waste any time in doubting the value of a good road. The people of other countries who have used bad roads and now use good ones are well satisfied that every dollar spent in this work is a good investment, and not one of them would tolerate the miserable dirt roads with which so many farmers seem to be content.