

## Home Course In Road Making

### II.—Advantages of Improved Roads.

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**N**O road is as expensive as a bad road. We spend about \$100,000,000 a year on our roads, and they are costing us in addition a bad roads tax of at least \$250,000,000 annually. It actually costs the average farmer as much to haul a bushel of wheat from his farm to the railroad as it does to ship it from New York to Liverpool, 3,100 miles.

The loss to the people of the United States annually on account of bad roads would more than pay for their general and widespread improvement. The burden of bad roads bears heavily upon the shoulders of the entire



UNIMPROVED EARTH ROAD—MAXIMUM LOAD FOR TWO HORSE TEAM, ONE BALE OF COTTON, 500 POUNDS.

people, for such roads diminish the profits of the farmer because he must haul fewer loads, make fewer trips and market his products when the roads are passable and not when prices are best. They are a burden which compels the consumer in the city to pay heavily, not to swell the farmer's earnings, but to help the farmer to pay the money value of the absolute waste of energy and property due to bad roads.

There would be an immediate and tangible saving by road improvement in reducing the cost of hauling. How much this saving would amount to in dollars and cents would depend upon the character and extent of the improvement and the amount of traffic passing over the road.

In 1908 the railroads of the United States handled about 800,000,000 tons of freight originating on the respective railroads. Of this amount about 265,000,000 tons represented agricultural, forest and miscellaneous products, all of which moved over the country roads at initial or terminal points or both.

The average haul from farms to shipping points in the United States is about nine and one-quarter miles. The average cost of hauling on the country roads is about 23 cents per ton per mile. The total cost of hauling 265,000,000 tons would therefore be about \$2.16 per ton, or a total of \$572,930,000.

The possibilities of saving by the improvement of the roads may be understood when we compare the cost of hauling in Germany, France and England with the cost of hauling in this country. The average in these three countries is about 10 cents per ton per mile, and in many cases it is as low as 7 cents. If we cut the rate in the United States exactly in half by the improvement of our main roads we would still be 1½ cents over the average for the three European countries named. If we could do this it follows that our annual saving would be in the neighborhood of \$250,000,000 on hauling alone.

The wear and tear on horses and vehicles due to bad roads may seem a trivial matter until we take into consideration the fact that there are about 25,000,000 horses and mules in the United States, valued at \$2,770,000,000, and about 1,500,000 carriages, buggies and wagons, valued at about \$83,000,000. If by the improvement of the roads the vehicles would last one year longer and if one-tenth of the amount paid out for repairs were saved the resultant sum would run far into the millions.

Property is much more valuable on an improved road than on an unimproved road. This increase in the value of the land adjacent to the improved road has been sufficient in many cases to pay for the improvement. An effort has been made to estimate the general increase in land values due to improved roads, and the average has been placed at somewhere between \$2 and \$9 per acre. There are positively thousands of examples where farms have been sold at an increase of from \$50 to \$200 per acre over their value before road improvement.

An investigation recently made in Ohio shows that there are sixteen agricultural counties in the state that have less than 10 per cent of the roads

improved, while there are forty-five agricultural counties that have more than 10 per cent improved. The average price of farm lands in the sixteen counties, according to the report of the United States census, was \$48.50 per acre, while the average price of land in the forty-five counties was \$65.79 per acre. In other words, the average price of farm lands in the good road counties was \$17.29, or 35 per cent more than in the poor road counties. When we consider the fact that there are 873,000,000 acres of farm lands in the United States the possibilities along this line are rather startling. Even assuming that the land would be increased only \$5 an acre the total enhancement on farm lands alone would be \$4,365,000,000.

Improved roads will yield an additional income by enabling the farmer to cultivate with profit land which otherwise would be less profitably employed.

There are about 400,000,000 acres of unimproved farm land in the United States. An average annual profit of 50 cents an acre on this land would mean a net gain to the wealth of the United States of \$200,000,000 a year.

Truck products and small fruits must be delivered quickly to market if any profit is to be realized. Truck and small fruit farms cannot be maintained with profit if a long haul over bad roads intervenes between them and the railroad station. A network of first class hard smooth roads will almost immediately increase the number of truck, fruit and dairy farms in any community. While the average value of wheat per acre is only \$7.03 and corn \$8.72, the average value of vegetables per acre is about \$40 and of small fruits \$80.

There is a steady trend of population from the country to the city, and this may be attributed to some extent to bad roads. During the ten year period 1890-1900 the cities gained 2,174,000 more people than the country. In 1890 only 16.1 per cent of the population lived in cities, in 1900 the city population represented about 31 per cent of the total, and now it is probably about 45 per cent.

With hundreds of millions of acres of land uncultivated we have the spectacle of hundreds of thousands of human beings crowded into the cities, while year after year the human tide rolls restlessly in from the country to furnish more consumers and decrease the number of producers.

To prove that a relation exists between the question of population and roads the following illustration may be cited:

In twenty-five counties selected from eastern, southern, western and northwestern states it has been found that only 1½ per cent of roads were improved in 1904. These same counties show an actual decrease in population averaging 3,112 for each county for the ten year period 1890-1900. Twenty-five other counties located in the same states containing 40 per cent of improved roads show an actual increase in population for each county of 31,695.

Whether good roads cause good schools, or vice versa, it is true that they exist together and that one of the most important reasons for their improvement is their effect on school attendance in the country. If the country schools are to have a maximum efficiency in training and instruction the children must be afforded facilities for reaching them. With improved roads the graded school and the consolidated school will replace the little one room one teacher schools so prevalent in many sections of the country.

The possibilities of a region of improved roads are made apparent by



WELL BUILT MACADAM ROAD—MAXIMUM LOAD FOR TWO HORSE TEAM, TWELVE BALES OF COTTON, 5,000 POUNDS.

many examples of schools which operate wagons regularly, which gather up the pupils and carry them to and from school. When the roads are placed in such condition as to make this practice general a tremendous impetus will be given to education in the United States.

To illustrate this phase of the subject the following example may be cited: In five states conspicuous for their good roads there was in 1904 an average school attendance of 77.13 per cent, while in five other states having exceptionally bad roads the average was only 59.16 per cent. Furthermore, it has been ascertained that in the five states having an exceptionally high percentage of improved roads the white illiterate rates furnished only three-quarters of 1 per cent of the total population, while in the five states which showed a scarcely appreciable amount of road improvement the white illiterates formed 4½ per cent of the total population, a percentage six and a third times as great as in the former case.

## QUEER MARINE ANIMAL.

The "Portuguese Man-of-war" is a Veritable Fairy Ship.

The "Portuguese man-of-war" is held to be one of the most beautiful of all the so called pelagic animals and is a veritable fairy ship, with sail that can be elevated or lowered, that can throw out a dredge or haul it in—in short, one of the most attractive of all marine animals and at the same time one of the most dangerous.

This little animal has been called a "poem in satin," yet it conceals under its attractive exterior an armament that is capable of overpowering a foe of a thousand times its size. In fact, the physalia stands in the same relation to many other marine animals of its size as a well fitted torpedo submarine boat would to an old line of battle ship of the Constitution class.

If one but touch the purple tentacles a realizing sense of this power is at once experienced. The finger stings as if needles had been thrust into it, and when the tentacles are placed upon a spot where the flesh is sensitive the pain can only be compared to that produced by melted lead or boiling oil.

One scientist nearly lost his life in an engagement with the little craft. The man had a habit of swimming on his side, an unfortunate habit in this case, inasmuch as his view to the right was obstructed when one day he swam over the tentacles of a large "man-of-war." He was in about seven feet of water, and the contact immediately gave the swimmer such a shock that he almost lost the power of motion and sank.

As he struck bottom with his feet he pushed up and partially recovered himself—sufficiently at least to call for help. Some laborers at work near by sprang into the water and carried him ashore. By that time he could breathe only with extreme difficulty, this being the most serious symptom. The purple mass was scraped from the skin with knives and razors, but it seemed to have sunk into the flesh. For six or seven months afterward he could very readily have passed for a tattooed man, the entire middle and lower portion of his body being covered with the most fanciful tracings.—Harper's.

## WHITE WINGED PEACE.

A Great Scheme For Averting Wars in the Future.

Writing on the difficulties of putting an end to war, F. P. Dunne says in the Metropolitan:

It is an interesting theory that it is not tough minded old statesmen who drive tender youth to war. It is youth itself which tugs on the leash and pulls the unwilling statesmen. We can well believe that this is so. The courage of youth is pure fearlessness. The young are not afraid of death. They regard it as something that cannot possibly happen to them. They apprehend it intellectually, but they do not feel it; hence we propose to our fellow peace commissioners this plan for averting wars in future.

In nearly every country there is a maximum of age limit for enlistment or conscription. It is in the neighborhood of forty years. Now, why, in the interests of peace, would it not be well to make a minimum age limit instead? Suppose we say that on the first call only men over sixty could be drafted, and on the second only men over fifty, and on the third only men over forty, and no man under forty could be permitted to fight.

How long then would wars continue? The first call would be answered by a storm of doctor's certificates, the second by the prompt suspension of all banks, and on the third call a body of resolute patriots who had long been conscious that death regarded them wistfully would proceed at once to the palace or White House or ministry of foreign affairs and lynch the king, president or minister who proposed this outrage on civilization.

## Napoleon on Shakespeare.

Napoleon had a very poor opinion of Shakespeare's plays. According to Thibauden, in his "Bonaparte and Consulate," Napoleon said one day: "Shakespeare was forgotten even by the English for 200 years until Voltaire took it into his head to write him up to please his English friends, and ever since people have gone about repeating that Shakespeare was the greatest author that ever lived. I have read him, and there is nothing in him that approaches Corneille or Racine. His plays are not worth reading."

## Too Late!

"Do you know who her grandfather was? Have you ascertained anything in regard to her pedigree? Those are things you ought to know about the woman you are to make your wife."

"Oh, hang her grandfather!"

"My boy, that's just what they did do."—Youth's Companion.

## He Didn't Understand.

"Then you don't want no cranberries?"

"No; I've changed my mind. I see your cat is asleep in those cranberries."

"That's all right, mum; I don't mind waking the cat up."—Louisville Courier-Journal.

## Justice.

Justice claims what is due, polity what is seemly; justice weighs and decides, polity surveys and orders; justice refers to the individual, polity to the community.—Goethe.

A Hint That He Should Beat It. Staylate (at 11:45 p. m.)—The light is going out. Miss Weary—Are you going to let it beat you?—Boston Transcript.

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## Emotions and Exclamations.

Why do we say "ah" in pleasure, "oh" in surprise and "oo" in displeasure or pain? These sounds are the vocal representations of emotions. Every emotion has certain bodily expressions, some of which are exhibited in movements of the muscles of the face giving the facial expressions, as of fear, anger, pleasure, pity, etc., and some of the facial expressions are associated with other instinctive acts, as movement of the eyes, emission of sounds, raising the arms, clapping the hands, etc. In the emission of sounds the simplest vocalization, the "ah" sound, is produced and modified by the action of the muscles of the lips, their action depending upon the facial expression of the emotion. Expectancy allows reason to act, and we withhold such sounds if we expect the cause of the emotion. The scream of pain is instinctive and in the nature of a means of defense. It has a paralyzing effect on the enemy and, in fact, on every one else. Nobody who has been startled by a woman's scream will forget the momentary paralysis of muscles and mind which it caused.—New York American.

## Where He Falls.

"It's too bad the average man can't be satisfied with a good living and not be hungering for more money."

"The average man is satisfied with a good living. The only trouble is that his idea of a good living grows with his income."—Exchange.

## Counting Up.

"I started to work on my twentieth story yesterday," said the bustling man, "and I tell you I'm making it wáy."

"You are an author?"

"Certainly not! I'm an architect."—Washington Star.

## THE MARKETS.

Portland.

Wheat—Track prices: Club, 85c; bluestem, 92c; red Russian, 87c.

Barley—Feed, \$39 per ton.

Oats—No. 1 white, \$34 per ton.

Hay—Timothy, valley, \$14; alfalfa, \$13.

Butter—Creamery, 33c.

Eggs—Ranch, 21c.

Hops—1911 crop, 40c; contracts, 26c.

Wool—Eastern Oregon, 16c; Willamette Valley, 17c.

Mohair—32c.

## Seattle.

Wheat—Bluestem, 91c; club, 85c; red Russian, 85c.

Barley—\$40 per ton.

Oats—\$30 per ton.

Butter—Creamery, 37c.

Eggs—21c.

Hay—Timothy, \$14 per ton.

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