Farmers and the Road Question.

HAVING been appointed a delegate to this congress by the Department of Agriculture of the Province of Ontario, it is with some degree of timidity that I attempt to address so large and distinguished an assemblage of public spirited representatives gathered from so many distant States and European countries, on so important a subject and of such wide national interest as that of good roads.

Having followed with deep interest the progress of the good roads movement of recent years in both the United States and Canada, I desire briefly to touch upon a few points of the good roads question from the farmer's point of view.

If it is sound public policy and the true function of government to do in the interest of the community as a whole all those things which the individual cannot well do by himself, does it not appear clear that the State should pay the whole cost for improving its main thoroughfares? These are to be the leading arteries connecting all business centres, and continuing from county to county across the entire State and separate from the many other local roads to be cared for by the local authorities.

The principle of State built highways appears to be as old as civilization itself, being adopted by the first extensive builders of good roads—the Carthaginians and Romans. Not since the building by the latter of the Appian Way and the 53,000 miles of solid roads across that ancient empire, and which remain as monuments of their wisdom to this day, has any country obtained the priceless boon of good roads without some measure of State aid. Let the State first build its main highways and they will be ever present object lessons to the local authorities for constructing the other roads.

The length and number of streets in the city are short and small compared with the compact concentration of wealth, thus making the burden of cost comparatively light for street improvement. In the country districts the length and number of only the leading highways to be improved are so far out of proportion to the sparsely settled and scattered wealth of the farming communities that it is entirely out of the question for the farmers alone to think of paying the much larger comparative cost for such first class stone roads as are required. The farmers have always borne their share, sometimes more than their fair share, of needful taxation, and will not object to paying their just part for State built good roads.

Partial measures of State aid are steps in the right direction, so far as they go. I would not say anything in disparagement of the good work and the very commendable degree of progress that has been made under the partial systems of State aid for good roads in those leading States of New Jersey, Connecticut and New York. But in the foremost State, Massachusetts, which has adopted more nearly the European and Roman systems, we find the nearest to the ideal plan, a continuous system of good roads built across the entire State, under competent State authority. The work is projected and the roads properly located where they will be of the greatest good to the greatest number. The State builds the roads and pays the whole cost, and afterwards charges one-fourth of it to the county through which the road is built. This far less complicated system overcomes an immense amount of difficulties, drawbacks and delays with the less enterprising local authorities of county or township.

Let the general governments of the United States and Canada build ideal continental highways from ocean to ocean. Let the States and provinces build similar highways from border to border. Let the European nations expend some of their war millions in building ideal highways from Europe across Asia, thereby placing Western civilization in closer touch with the Chinese and other Orientals. Let the United States and England build good roads in the Philippines and South Africa, and they will more effectually pacify the Filipinos and Boers at far less cost than by use of the cannon.—J. F. Bean, Vice-President Ontario Good Roads Association, at the Buffalo Good Roads Congress.

Roads That Bring Comfort.

Before all things the United States is an agricultural country. It is the possibility of large returns for labor in this direction which keeps up the price of labor in our manufactories and in all our industries, and thus brings comfort and ease within the reach of all. Good roads, by lessening the cost of agricultural products, form the most effectual means of maintaining the condition of comfort and even luxury of which America is so proud.—H. W. Conn, Department of Biology, Wesleyan University, Middletown, Conn.

A Prediction.

When in the years to come our public roads cease to be a reproach to our beloved land, farmers will wonder how they were ever content to struggle through beds of mud or over roads frozen into a succession of miniature hills and valleys. The bicycle will then be such a frequent visitor in rural districts that "Hail, Columbia!" will have a double meaning to the American people.—S. Jennie Smith, Syosset, Queens County, Long Island.

A Sure Indication.

Good roads and broad highways for good citizens; alleys, slumways and cowpaths for the vicious, the depraved and the lawless.—Charles N. Day, New Haven, Conn.

WHAT WIRELESS TELEGRAPHY IS

Modern Physicist's Views Regarding Electrical Phenomena.

In order to follow intelligently the advance of wireless telegraphy from the beginning, some rough idea must be had of the modern physicist's views regarding the nature of electrical phenomena. To this end all space must be regarded as permeated by a something termed the luminiferous ether. Not only does this ether permeate the spaces between the heavenly bodies and our atmosphere (which conception offers little difficulty to the lay mind), but it also permeates all solids. Further, its nature is such that the movement even of solids is not in the least restrained by such permeation, the closest analogy being that of a sieve, representing the solid, being moved about in water representing the ether.

The ether is the seat not only of all electrical phenomena, but also of all the phenomena of light and heat. All of these, apparently so distinct, are but the result of vibrations or waves on the ether, the apparent differences being due only to differences in the length of the waves and the rapidity with which they occur, just as one musical note differs from another in the same particulars, only that the sound waves are air waves and not ether waves.

Now with the usual telegraphic methods the current, as it is termed, is sent or directed through space by means of a metallic conductor. Actually nothing passes through the wire, as is implied by the use of the word "current." What actually takes place is the transmission of energy along the path of the wire by means of vibrations in the neighboring ether. That is, the metal of the wire acts merely as a guide for the ether waves to the destination desired.

In wireless telegraphy, ether vibrations are also set up at the transmitting station, but these, having no conducting guide, radiate in all directions through space, and a small percentage of them arrives at the receiving station, and by means of suitable apparatus are made appreciable by the senses or recorded.—The Great Round World.

A Lapland Clock.

Perhaps it is not realized by many persons that in the higher latitudes clocks become more and more a convenience, if they are not a prime necessity to the housekeeper. When the sun is above the horizon for weeks together there is little difference to be noted between day and night. An English traveler describes a clock he met with in Lapland:

"An ordinary solid clock does not take the Laplander's eye. He likes something flimsy, and if possible, something novel.

"At one place, hung on a peg driven into the logs of the wall, we were condemned to gaze hourly upon the exasperating device of a dentifrice advertisement connected with a clock. In this a smiling young person drew a toothbrush briskly across a beautiful set of cardboard teeth between every tick.

"I was much wishful for sleep and forgetfulness, but neither would come. Hour after hour I was condemned to lie awake and stare at the toothbrush clock, and to read the legend, printed in my native tongue, that it was 'made in Germany,' and that the dentifrice was put up in neat packets, priced sixpence, or one shilling, and that it could be had of any chemist with the least presumption to call himself respectable.

"I argued at the time that the clock had drifted far from the land to which the ingenious advertiser had destined it, seeing that the letter-press was English, and that the Laplanders do not use tooth-powder, even if they could have read about it."—Youth's Companion.

A Traveler's Predicament.

A traveler getting outside St. Petersburg discovered, when he tried to reenter the city, that he had left his passport in the bedroom of his hotel. The guards refused to let him pass; refused to send for the passport. "According to you," said he, "the only thing for me to do is to throw myself in the Neva!" "No!" said the sentry, "suicide in Russia is strictly against the law."—London Globe.

FARM AND GARDEN.

When to Water Hogs.

Always water hogs before feeding, and never afterwards. If this is practiced and the animals are given ear corn on a feeding floor, fourteen pounds of corn will produce two pounds of gain. In other words, every bushel of corn ought to produce ten pounds of pork. If this is not being accomplished something is wrong.

Cost of Milk Production.

You ask for the approximate cost of producing milk at the prevailing prices of feeds, etc. This is a difficult question to answer, depending on whether the cows are fresh or strippers. Assuming that they are good, ordinary cows, and as the ordinary dairy goes, some fresh and some strippers. We will take a good average dairy, say of twenty-five cows, all in milk, no boarders, and they will produce not to exceed eight quarts apiece, or 200 quarts per day. This is the average dairy, remember, not pure-breds.

Corn and wheat feeds average $30 here; hay, $10; silage, $3 at least. We will feed each cow as follows per day: Forty pounds silage at $3 would cost six cents; ten pounds hay at $10, five cents; ten pounds grain at $30, fifteen cents; hired labor, two cents. Thus making a total per cow per day of twenty-eight cents, or $7 per day for twenty-five cows. On the assumption that these cows produce 200 quarts of milk per day, the cost of production is three and one-half cents per quart. I have let the good farmer work for nothing and board himself, and have put nothing for the use of the cows, buildings, etc., considering only direct cost of feed and labor.—H. T. Coon, in American Agriculturalist.

Geese and Ducks.

Although many farmers refuse to allow ducks or geese to be kept on the farms because, as they say, they are too troublesome, nevertheless both are easily kept and exceedingly profitable when rightly managed. During the spring and summer months both will gather their food in any old pasture where hogs or cattle would starve. They do best when allowed a pond or stream of water to swim in, but they can be kept with only sufficient water for drinking. The young grow rapidly, and after the first few weeks they require no care except to feed. They are never troubled with mites and need no warm house such as chickens must have. They are healthy and seldom die from any disease.

They do not lay during the winter months, but from February to August will average from 100 to 125 eggs each. Dressed ducks and geese always bring good prices during the fall and winter months, and the feathers, which may be plucked during the spring and summer, will more than pay for the cost of raising. They are great foragers, but any kind of a low fence will keep them in bounds. We are inclined to think that the prejudice against them is mostly due to the fact that farmers have not tried the pure breeds of the present day. Every farmer should possess a flock of both ducks and geese.—Home and Farm.

Using Weeds and Litter For Bedding.

Such forms of vegetable production as weeds, vines, stalks, etc., if gathered and burned return but little value to the farm. If allowed to remain on the ground they hinder plowing. Weeds will grow, and they are productions of our lands and have removed from the soil a portion of its fertility. How to return this to the soil in the most convenient form and get other benefits from this refuse should be considered by every farmer.

Near large cities straw has become almost too expensive an article for bedding. Shavings and sawdust are not entirely satisfactory. Upon the farm we have that which can take the place of these for stable litter. By a little extra labor and care weeds and rubbish can be gathered and secured for bedding. Although not as soft as straw, they are clean, absorb much of the liquid manure, and soon decay in the manure pile. When the seeds of weeds have matured they had best be burned, but rather than have the weeds scattered on the ground I would chance them in the compost heap, where a large portion of them will be destroyed. The leaves from trees can be easily gathered and stored for stock bedding. These may be considered by-products of the farm that have been going to waste. Utilize them by returning them to the soil and let them carry in their tissue some fertility from the stable.—J. H. Bowerman, in New England Homestead.

Sorting Potatoes.

Good order and execution are meritorious in any and every kind of work we have to perform, and invariably they have their reward, yet a phase of neglect or absolute slouchiness seems to characterize much that many do, and encroaches more or less on what we all do. To know an evil well is to suffer the inconvenience of our own failures, so we feel confident to portray the shortcomings of others.

During the time of potato digging I had occasion to drive past several fields where potato digging was going on, and talk with several about their crop. I asked the question of several, if they sort their potatoes when they pick them up. In most cases the reply was, "Oh, no! I expect to have more time when I market them!" This idea may seem plausible to some, but if there are 100 bushels of small potatoes among the 500 bushels put away, then there are 100 bushels that must be handled over twice if they are not sorted out in the field at the time of picking up, and is it not easier to separate them at that time than when indiscriminately mixed in the bulk of a pit or bin of a cellar? Yes, and even when sorted in the field there will still be enough to exclude when you come to sell. Then, if you have your potatoes in a bin with a floor, the end of which bin is removable, you can shovel out into crates a load and get to market with despatch, avoiding the inclemency of the weather, while if you await a fine day to take out your potatoes, it will take you that day to sort and prepare your loads, and as you are aware, in winter time the next day after a fair one is apt to be stormy. If potatoes are kept until nearly spring without sorting, if it occur that they are all mixed, it takes a pretty good eye to tell this from the other, and the sorting will be a little uncertain, so if a man be not so conscientious as to what he sells, he is liable to injure himself with what he plants. We think that there is one way to do work which is a little better than any other way, and it pays well to learn which way that is, and while doing it, see that you have it done.—Farm, Field and Fireside.

PROFITS IN RAISING TREES.

Forestry Experts Point to the Telegraph and Cross-Tie Markets.

It has been estimated that the telegraph lines of the country require nearly 600,000 new poles every year. The cost of these is more than $1,000,000.

It is also estimated that there are more than 620,000,000 cross-ties in use by the railroads and that 90,000,000 ties are required every year for renewals.

The telephone and light companies use nearly as many poles as the telegraph companies, and the street car systems of the cities use nearly as many cross-ties as the steam railroads.

To awaken the farmers of the West to the need of raising plantations of wood to supply these needs of telegraph, telephone and railroad companies, the forestry division of the Agricultural Department has issued a bulletin to show that such work is profitable.

The prices of pole and tie timber have gone up nearly fifty per cent. in the last ten years. J. Hope Sutor, of the Ohio and Little Kanawha Railroad, an expert on the tie question, told the Central Association of Railroad Officers in Louisville a year ago that in ten years more the prices of ties would be fifty per cent. greater than at present. He also said:

"No material has yet been found as a substitute for the wooden tie, and no satisfactory economical method of preserving the life of the wood or prolonging its durability has yet been discovered, and, excepting the minor questions of properly seasoning and piling, the use of the tie plate, suitable ballast and perfect drainage and incidentally climatic conditions, no serious consideration of the future tie supply has yet been had."

It is for this reason the experts say:

"From every reasonable point of view it appears that great profits are to be made in the growing of forest trees in the next twenty-five years."

It is declared that operations should begin in the middle West. There has already been a great deal of tree planting on the treeless prairies of the central West, especially in Kansas and Nebraska. The forestry experts have found one plantation near Hutchinson, Kan., planted with catalpa trees which in ten years has produced a net value of $197.55 to the acre.

In Iowa, near Menlo, a twenty-five-year-old plantation of red cedar showed a net value of $200.54 to the acre. Osage orange, locust and hardy catalpa are the best trees to grow for these commercial purposes.—New York Sun.

The Heat of Australia.

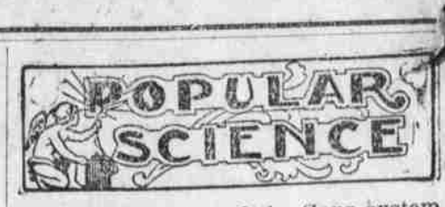
Australia is the hottest country on record. I have ridden for miles astride the equator, but I have never found heat to compare with this. Out in the country in the dry times there appears to be little more than a sheet of brown paper between you and the lower regions, and the people facetiously say that they have to feed their hens cracked ice to keep them from laying boiled eggs.—Sydney Telegraph.

Why He Wept.

The extensive authority of parents under the Chinese laws is well known. A Chinaman of forty years, whose aged mother flogged him every day, shed tears in the company of one of his friends.

"Why do you weep?" he was asked.

"Alas! things are not as they used to be," answered the devoted son. "The poor woman's arm grows feebler every day!"—Sporting Times.



The exploitation of the Ganz system of alternating current trolley propulsion, while not resulting in the official adoption of the system anywhere, has been successful in bringing it to the attention of the scientific world. It is universally looked upon as containing the germ of the future systems of electric traction.

A report from Constantinople is to the effect that the Sultan has engaged the services of Mr. Spurr, an English engineer, for the purpose of having a geological survey made in Turkey. The work will be started in Macedonia and Albany. Mr. Spurr has traveled extensively in European and Asiatic Turkey, and is a well-known geologist.

During the past year the practical application of the light of electric arcs to the treatment of lupus and other skin diseases was a noteworthy feature of electro-therapeutics. The alleged discovery of the efficacy of the X-rays in the treatment of cancerous growths is one of the most promising contributions of electrical science to medicine that has yet been made.

The extension of long-distance electrical transmission in California to an actual span of over 200 miles, and the general employment of voltages as high as 60,000 in that State are epoch-making events. The experimental transmission of power at 80,000 volts is worth recording. This year will probably witness work pushed in this direction to the limit of possibilities of electrical engineering.

According to the Lancet, the essential oil which forms the basis of all perfumes is a powerful antiseptic, and possesses disinfecting properties equal to those of carbolic acid. For this reason a scented handkerchief may not only please the sense of smell, but prove a guard against infection, and it is suggested that this fact may tend to reconcile those who do not like perfumes to their free use by those who do like them.

A London physician tells the Times, in a letter, that he has noticed among patients taking the open-air treatment for consumption beneficial effects procured by riding in motor cars at a speed of from thirty to fifty miles per hour. The swift motion through the air is credited by him with causing, along with a marked feeling of exhilaration, increased appetite, improved sleep, a healthy glow tending, after a few days' treatment, to become permanent, and a diminution of the tendency to cough.

One of the English astronomers, J. J. Atkinson, who visited Sumatra to observe the total solar eclipse last May, made the acquaintance of an old Malay, living on a little island near the Sumatran coast, who owned a huge monkey which he had trained to work for him in gathering cocoanuts. The monkey's business was to climb the gigantic cocoanut palms and throw down the nuts; "which he did," says Mr. Atkinson, "in the most artistic manner, by screwing the nuts off with his powerful arms while he hung by his legs seventy to 100 feet from the ground."

Soldiers and Sewing Machines.

How is the lonely British soldier amusing himself at the South African blockhouse? A writer in the Navy and Army surmises that in nearly every blockhouse would be found a sewing machine. "Above all things, Tommy's heart loves a sewing machine. Although he must know that he can never suceed in getting it home to England, yet if he finds one on a farm he will tow it along with him, overburdened as he already is, upon the march. Wherein the exact fascination lies is a mystery, but grizzled Reservist and callow recruit alike cannot resist this housewife's help." There is a quaintness in the idea of the warrior amusing himself with the mysteries of the sewing machine in his melancholy loneliness. But he that sews in tears will doubtless reap in joy.

The Chaperon in Samoa.

The chaperon is becoming extinct in the United States, but she is an important person in Samoa. She is the constant companion of the taupou, or village guide, who is appointed to entertain strangers, and show them the various sights. Each village in Samoa elects a girl for this office, and it is necessary that she should be the daughter of a chief. Her house is provided for by the village, and she is surrounded by a court of native girls. No man who lives in the village is allowed to enter the sacred precincts, and the taupou goes nowhere without an elderly woman. If the taupou resigns her office, the chief can appoint another damsel of high degree.

Truth About the Burglar.

The industrious burglar is generally doing something, even if it's only time.—Philadelphia Record.