

The Outlook.

The farm question is not peculiar to this country. The world over, the tiller of the soil is coming to the painful realization of the fact that he is bound to be beaten in the race of life. Take any average pair of brothers, one of whom remains on the farm while the other goes into business or enters the professions. In the old days the farmer brother was the man to be envied. He started life with a home ready-made and with all the implements of his calling. The other brother went bachelored into the world to fight his way. A writer in *Belfast's* says: "Tillage of the soil, with all that belongs to rural life, has furnished the favorite theme for poets and essayists from Hesiod and Virgil to modern times. Both on its poetical and practical side, with all its various and voluminous treatment it has received. It is the one business which includes, as no other single activity does, the entire necessities and some of the choicest comforts of life in primitive times and until a very recent period it called for no panacea, and invoked no pity. To control your own vine and figtree, and to have these things to control as one's own possessions were things not to be despised, but rather to be coveted. To-day this is no longer so. The brother who has the capital, the home and the accumulations of his father's lifetime to begin with, is the one to be 'compassionated,' while the fellow who is given neck-and-rop into the world is thought to have the better chance. Surely it is plain that something is radically wrong when this state of affairs obtains."

The Queen's Highway.

In pleading for good, smooth highways the usual argument is one of economy connected with the durability of the pavement or road. There is another, indeed two others, well worth consideration. The first relates to the wear and tear of vehicles and motive power. The second to comfort and timesaving. A rough, broken road terribly strains all vehicles that pass over it, and therefore destroys them much sooner than they otherwise would be. What this destruction annually costs no one can say, but it is ought to be plain that the lifetime of a vehicle depends mostly upon the number of shocks it receives. The wrenching, twisting and pounding of rough roads shortens the lifetime of usefulness of vehicles. The same must be true of motive power, whether of machines or animals, and though there is no datum on these two points, each observer's experience will justify the conclusion that in making good roads there is an economy that does not stop with mere durability in the roads. It may be that if this truth could be known, a good, smooth road saves in running gear and motors much more than is saved even in the road itself. About the comparative comfort of good roads over bad or half-bad ones in the matter of travel need not be said. Every traveler senses this fully. As long as "time is money" a good road needs no apostle, for it is a time-saver of the first order. Good, durable roads are known to be impossible unless they are built on good foundations. The subject of good roads is now before the public. Let it not be forgotten that the saving in vehicles, in power, in comfort and in time are all factors in the computation that should not be overlooked. A half-good road will not fill the bill, because it will only half regard the four matters above suggested and usually neglected by American road builders.

Electro-Horticulture.

In a bulletin from the Cornell University Agricultural Experiment Station, issued by Prof. L. H. Bailey on the relation of electric lighting to plants grown in glass houses, he publishes the following summary:

1. The influence of the electric arc light upon greenhouse plants is greatly modified by the use of a clear glass globe or the interposition of a glass pane which is much injured by a naked light which is benefited by a protected light.
2. As a rule plants are earlier under the electric light than when grown in ordinary conditions.
3. The light can be suspended above the house with good effect.
4. Lettuce is greatly benefited by the electric light. An average of five hours of light per night hastened maturity from a week to ten days, at a distance of ten and twelve feet. Even at 40 feet, in only diffused light, the effect was marked. The light appeared to injure young, newly transplanted plants.
5. Radishes were also benefited by the light, but not to a great extent. When the light was hung in the house, however, whether naked or protected by a globe, radishes were injured.
6. Beets and spinach appeared to be slightly benefited by the light.
7. Cauliflowers under the light tended to grow taller than in ordinary conditions, and to make fewer and smaller heads.
8. Violets and daisies bloomed earlier in the light house. This corroborates results obtained with other flowers in our earlier experiment.
9. The electric light does not appear to determine or modify the hours of growth of lettuce and some other plants which have been studied in this particular. Plants which are benefited simply grow more rapidly during the customary periods.
10. I am convinced that the electric light can be used to advantage in the forcing of some plants.

Commercial Fertilizers.

The three most valuable materials in commercial manures are potash, phosphoric acid and available nitrogen. Each of these has a commercial value, and the worth of any given quantity in the market may be stated in dollars and cents. The State laws of Michigan enact that before any commercial fertilizer is sold or offered for sale, the manufacturer, importer or party who causes it to be sold or offered for sale within the State, shall file with the secretary of the State Board of Agriculture a certified copy of the analysis and certificate referred to in section one, and shall also deposit with said secretary a sealed glass jar containing not less than two pounds of such fertilizer, with an affidavit that it is a fair sample of the article which is to be sold or offered for sale.

The primary object of the Michigan State law referring to commercial fertilizers is to give information in regard to the composition of commercial fertilizers, and to protect farmers from imposition and loss. The question of their agricultural value, and relation to crops and different kinds of

soils, says a bulletin issued from the experiment station of the Michigan Agricultural College, requires a separate examination for determining the relative value of any given fertilizer with reference to different soils and crops. The farmer can settle for himself such questions by trials of the fertilizer on a small portion of a field and comparing the results with other parts of the same field and crop on which no fertilizer has been applied. The conditions of crop, soil and climate are thus brought home to him more completely than any investigation in other places and conditions can furnish.

The Dairy.

Blackacker asserts that milk contains a starch-like ferment which is destroyed by a temperature above 100° Fahrenheit. Milk sugar, it is asserted, is destroyed by prolonged heating; the casein is changed so as to be rendered less coagulable by rennet; while a portion of the albumen is coagulated, as we all know, and forms a "scum" on the surface of milk. This last, however, comes only with a temperature near to the boiling point.

Dr. Freudreich has found that the cholera bacillus, if put into milk drawn fresh from the cow, dies in an hour, and in five hours if put into fresh goat's milk. The bacillus of typhoid fever takes 24 hours to die in cow's milk, and five hours in goat's milk. Other microbes suffer a like fate in varying periods. He has found further that milk maintained for an hour at a temperature of 131° Fahrenheit loses its power to kill microbes. Again, the microbe-killing properties of milk become weaker the older it gets. Cow's milk after four days, and goat's milk after five days, cease to have any effect upon micro-organisms. Now in sterilization, to render suspected milk safe, a temperature of at least 160° Fahrenheit must be maintained for 20 or 30 minutes.

Orchard and Garden.

Prof. L. H. Bailey, in a bulletin issued from the Cornell University Agricultural Experiment Station, calls attention to three diseases which attack rough tomatoes, at least two of which are serious. One is an obscure blight which appears to be caused by a bacterium, but for which no remedy is known. Removal of diseased plants, and thorough renovation of the house if the disease is serious, are recommended. The second is the common blight, or cladosporium, which is to be treated with a spray of ammoniacal carbonate of copper. The third is the nematode root-gall, the exact indications of which do not appear above ground. The prescribed treatment for this injury is the removal of plants and soil, and the washing of the beds or boxes with lye; but there are indications that freezing the soil or treating it heavily with salt may destroy the nematodes.

THE HORSEMAN.

Horses differ in the amount of food they do best on, just as they differ in the amount of work they require. A limited proportion of cracked or ground food is beneficial in all cases and essential in some. Horses that are inclined to bolt their oats, in whose solid excrements are observed whole grains, will get more nourishment from broken than from whole grain.

Now that the ringers and drivers are well provided for, attention ought to be paid to the judges. Penalize by fines judges who will allow any outsider in the stand, whether that outsider be millionaire or groom. Expel any judge who suppresses the truth. Why not? It is dishonest, and if you wink at dishonesty in the judges' stand the whole foundation shakes and in time will tumble.

It is a duty that trotting horse drivers owe the public to wear colored caps, so as to be able to distinguish the colors of the cap or the numbers on the arm across the field without a glass, and unless one is familiar with the horses he is utterly at sea as to their positions, whereas a colored satin jacket distinctly marks the horse at the farthest point in the mile. The rules should be changed, making it imperative for drivers to wear colors.

The purpose of a window is to let in light and air. House windows are cleaned frequently, but stable windows are not. They are rarely covered with a thick collection of spider webs and dust. In this condition they are neither very useful nor ornamental. A wonderful and beneficial change might be made with a broom and a pail of water in a few minutes. Try the experiment on a rainy day, when there is little else to do, and see if the result will not be satisfactory.

There is, says a practical writer, no one cause that produces more shoulder sore than a heavy load and a rough road, with continual jerking of the neck yoke from side to side as the fore wheels of the heavy wagon drop into ruts. The jerking caused by ruts and sharp, heavy pulls are fruitful sources of strains and sprains with their accompanying evils of ringbones, spavins and curbs, especially in horses predisposed to the ailments. In horses of a nervous temperament the continual wrenching upon rough roads causes fear, and what is true of man—"fretting and worry put individual down faster than work"—is equally true of a horse.

Why is it that so many farmers' wives and daughters are so dependent upon men folk in the matter of harnessing, and driving horses, who have the theory, and who have the best opportunities to become good managers of horses? How many times must they forego the pleasure of an afternoon ride just because there is no one to harness the horse, or maybe there is nothing in the barn to use but a new-york-broked colt which no woman knows enough to touch safely. There is no reason why girls may not be accustomed to horses and colts that they may govern them just as well as their brothers can. It is not often mere physical strength that does the controlling. It is the manner, the quiet, firm voice, combined with strength. Every girl should insist upon learning how to harness and drive, and do it well, too—not hold in awe in each hand a foot above her lap, and creak and yank a horse to desperation, but be just as safe to handle a green colt as her brother John, and may not be half as careless. A farmer's daughter, whether edu-

cated in the common school, or at Alma College, is not "unhitched" if she can harness a horse. It is not the art of driving. It is an art natural to some, to many acquired. The hands and dress may get soiled, but wash the hands, and when working about the horse wear a long sleeved apron over the dress. Being about the horse is healthy work, too.

THE PATRONS' PLATFORM

As Defined by Grand President Mallory at London.

In his address at the Patrons' demonstration in London in reply to the welcome extended by Mayor Spencer, Grand President Mallory took occasion to refer to the objects of the Patrons of Industry, and made a timely explanation of the platform of the order, which by many has been misunderstood. He said:

"It is now scarcely three years since the Organization of Patrons of Industry was introduced into the Province of Ontario. In that time it has spread throughout the Province until now there is hardly a county which does not contain many associations of earnest and enthusiastic Patrons. Found together they are for the protection of the interests of the great industrial classes, they have marched steadily on, increasing in numbers and influence, until to-day they have enrolled as members a great majority of the prominent and influential men of the Province. It is estimated that we have now 100,000 members in this Province alone, with new organizations being daily reported from their various counties. No institution in Canada can boast so rapid a growth, and no organization has ever taken such a hold upon the farmers of the land."

"Its objects are such as to command themselves to all, and are to improve the condition of Canadian farmers and laborers, as far as may fairly be done by united efforts to gain all financial advantages that are honestly possible to develop our social relations by meeting together as brethren and visitors on a common level; to cultivate and improve the talents with which we have been endowed; to make such united demands upon our rulers as will result in legislation in our interest and, if necessary, to show by an independent use of the ballot that the interests of the great majority are above the ties of party or the whim of party leaders. These objects demand our attention, and we believe are worthy of the great organization by which we are united."

"Our success in the accomplishment of the objects enumerated has been all and more than the most sanguine could have expected. Our people are beginning to realize that this land of ours should be owned and controlled by the class whose labors have changed it from a howling wilderness to the fairest gem in Britain's crown. They are beginning to realize that there is sufficient talent (if properly developed) among the farmers of Canada to sustain in the management of our own affairs instead of delegating the control of all our interests to men who know little or nothing of our needs."

"Combining and monopolies are beginning to tremble at the extent of an organization the object of which is to break their power. It is now felt that an organization the members of which are willing to bind themselves for 500 car-loads of salt per year for the sake of bursting a monopoly is worthy of consideration, and that the people of this country are beginning to realize the value of their own efforts. The great cereals combine, controlling as it does not only the manufacture and sale of binder twine throughout this continent, but also the world's machinery for its manufacture, and the profits of which are 5,000 tons manufactured in Canada are said to exceed \$1,000,000, notwithstanding the reduction in price, it struck with amazement at the audacity of Patrons of Industry in appearing upon the scene during a temporary disorganization among the same monopolists, and purchasing a plant sufficient to break their ring in the Province of Ontario, and raw material for a year's supply, having formed a Patrons company with stock already taken in a single county to the amount of \$50,000, and the profits of which are intended, as they do, with the assistance of other countries, to break the implement combine as well as that of binder twine."

"If no other good were accomplished by the organization of farmers and laborers on the basis of brotherhood, the power of these great monopolies it would be worth the sacrifice and trouble. But we look to the accomplishment of even greater things than these. We have now an official organ with a circulation of nearly 30,000, and a practical knowledge, non-sectarian and non-partisan, but thoroughly moral and truly political. By its influence and the general teaching of our order, we aim to elevate, socially and mentally, the toilers of the land. We aim to prove to the world that labor is honorable."

"The proprietors of the soil should constitute the highest order of nobility, and we aim to show that hard hands may comfort with gracious manners; that one may be a gentleman, and nobles and nobles may be a gentleman; that manual labor and mental culture may go hand in hand, and that the divine law, 'by the sweat of thy brow shalt thou eat bread,' was not intended to make men and women of the obedient, and nobles and nobles of those who disregard it. The greatest authors, lawgivers and statesmen of the world's history have been from among the sons of the tillers of the soil. Our calling is a noble one, and it is the Province of this organization to so educate our young men while still upon the farm that they will be prepared to battle for the rights of the great seven-tenths of the population of this fair land."

"We have said that we aim to show, if necessary, by an independent use of the ballot, that the interests of the great majority are above the ties of party or the whim of party leaders. To this end we have adopted a platform of political action, the severest plank of which we cannot but commend themselves to the minds of all who desire that the greatest good should be obtained for the greatest number, and to the principles set forth in this platform all Patrons are in honor bound." (Applause.)

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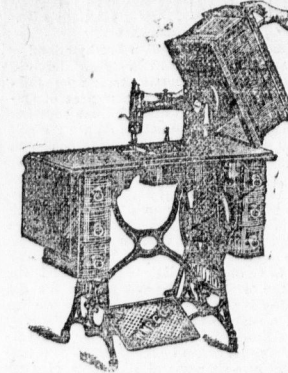
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RAILWAY TIME TABLES

Corrected to June 12, 1902.

MICHIGAN CENTRAL RAILWAY.

LONDON TIME.

Canada Southern Division—Going East.

Leave	Arrive
London	Thames
North Shore Limited (daily)	8:20 p.m.
Niagara Falls and Buffalo (special daily)	8:30 p.m.
American Express (except Mondays)	8:50 p.m.
Atlantic Express (daily)	9:00 p.m.
New York and Boston Express (daily)	9:10 p.m.
Mail (except Sundays)	9:20 p.m.
Limited Express (daily)	9:30 p.m.
Accom'dn except Sundays	9:40 p.m.

Canada Southern Division—Going West.

Leave	Arrive
London	Thames
North Shore Limited (daily)	8:20 a.m.
Chicago Express (daily)	8:30 a.m.
Chicago special (daily)	8:40 a.m.
Chicago L. & N. Express (daily)	8:50 a.m.
American Express (except Mondays)	9:00 a.m.
Atlantic Express (daily)	9:10 a.m.
Mail (except Sundays)	9:20 a.m.
Pacific Express (daily)	9:30 a.m.
Accom'dn except Sundays	9:40 a.m.

Trains arrive in London at 8:25 a.m., 11:40 a.m. and 6:30 p.m.

GRAND TRUNK—Southern Division

Corrected June 27, 1902.

MAIN LINE—Going East.

ARRIVE	DEPART
Limited Express (A)	8:35 a.m.
Mail	8:45 a.m.
Atlantic Express (A)	9:00 a.m.
Day Express	9:10 a.m.
*St. Louis Express (A)	9:20 a.m.
*St. Louis Express (A) (P)	9:30 a.m.
Mixed—No. 24 Freight (A)	9:40 a.m.
Mail Limited	10:00 a.m.

MAIN LINE—Going West.

ARRIVE	DEPART
Chicago Express (A)	6:25 a.m.
West End Mixed	6:35 a.m.
Atlantic Express (A)	6:50 a.m.
Day Express	7:00 a.m.
*St. Louis Express (A)	7:10 a.m.
Accommodation	7:20 a.m.
1 Pacific Express (A)	7:30 a.m.
Mail	7:40 a.m.
Accommodation	7:50 a.m.

Sarnia Branch.

ARRIVE	DEPART
Limited Express (M)	8:25 a.m.
Atlantic Express (M)	8:35 a.m.
Accommodation	8:45 a.m.
Freight Limited (M)	8:55 a.m.
Freight Limited (M)	9:05 a.m.