



Roads in Missouri.
According to the statement of the President of the Missouri Good Roads Association the people of that State spent \$490,000 during 1896 for road improvement, while it cost them just \$900,000 for road supervisors. In other words, it cost the State \$1,000,000 during the year for \$490,000 worth of road improvement.

Broad Tread Wagons.
A law has been prepared in Rhode Island forbidding the use of wagons with narrow tires on the public roads of that State. This is an excellent requirement, and while in the beginning it may work hardship upon individuals it will in the end be to the advantage of all. A heavily loaded wagon with narrow tires is bad for roads at any time, but in the springtime, when the frost is coming out of the ground, it is ruinous. These narrow wheels cut through the "metal" on the macadam roads and necessitate constant and expensive repairs. There is no law in Maryland against narrow tires, but in some of the counties they have been driven out by a better method. After the war the State was filled with army wagons which the farmers had bought at government auctions. They had narrow tires, and in Washington, and perhaps other counties, it was found they were ruining the turnpike roads. Rates of toll were so adjusted that the narrow tires had to pay much more and farmers soon found that it was too expensive to own them. It was also found that the wide tires on ordinary roads are much lighter draft and in that respect also are more economical. It is said that at this time a wagon tire less than four or six inches wide is rarely seen in Washington County.

The Good Roads Movement.
A review of the progress of the good roads movement in this country which comprises part of the paper on the subject read by S. T. K. Prime before county farmers' institutes in Illinois shows a hearty co-operation of all interests towards making the desired improvements. But Mr. Prime has found, after extended investigation, that most communities do not take advantage of the opportunities they possess for permanently remedying the bad road evil, but content themselves with "make-shifts" in the way of work to make roads passable after storms and waste in discussion time and energy that should be devoted to action. This is especially the case in Illinois, in the opinion of Mr. Prime, and there is no reason why the roads of the State should not be nearly perfect, since cheap brick, stone, and gravel can be obtained in abundance.

Mr. Prime points out that the first requisite of any good road is thorough drainage. This principle, which has been used to reclaim thousands of acres of land, has latterly been applied also to roads with the same beneficial result. But next to the drainage as a necessary adjunct of the good roads, Mr. Prime places the road scraper. He says:
"If your road is tile drained, after the rain is over just as soon as you are able to get on the road scrape your road and fill up the ruts and you will have no trouble about impassable roads. The more you scrape the roads the harder they get, and when the rain falls and beats upon them they shed the water almost as easily and quickly as a duck."

Mr. Prime treats the subject from a broad standpoint and recognizes that farmers are not the only persons who have suffered and do suffer from bad roads. He has learned that the residents of villages and the cities are equally concerned in the improvement of the highways, but with that appreciation of the broadened scope of the subject he makes a plea for a more equitable division of the burden of obtaining the good roads. He urges a general State tax, with the counties and villages both contributing their proportions and the farmers being the last to be levied upon. The changes of the last dozen years, he shows, have made the farmer really less dependent on the good roads than the dwellers in the thickly settled communities. The farmer now sells his grain for "future delivery," and "all he has to do is to go to his warehouse, sell his grain for whatever month he wishes it to be delivered in, and he has from sixty to ninety days in which to make the delivery." Referring to this custom, Mr. Prime says:
"Before this new order of things was in general use, constant grain traffic, when the roads were bad, cut them up, almost destroyed them, and made our roads impassable; this is almost now practically done away with. Ten or fifteen years ago, any one who would have made such a statement as this, and prophesied that in the near future we should market our grain under such conditions, would have been laughed at and ridiculed. This new order of things, in my mind, alters almost entirely the ways and means to which, and through which, we must ultimately reach the general improvement of our country roads. The burdens which in the time referred to were put upon the

farmer ought now to be divided up and spread over the entire State."
Mr. Prime does not forget the cyclists when he allots the credit for the work that has been done in obtaining good roads. He pays them this well-deserved tribute:
"I firmly believe there is no class of the community to-day to whom the country at large is more indebted for the educational, legislative, and practical progress which has been made during the last four or five years along the line of good roads than to the cyclists. It does not make any difference what they want good roads for, they have a laudable, commendable, public-spiritedness which prompts them in all their work, and there is every prospect to-day that the oldest of them will live to see their fondest hopes more than realized."

In speaking of the work that has been done in this State Mr. Prime asserts that "Illinois owes its thanks very largely if not exclusively to the railroads of this State, which twenty years ago came forward and encouraged the drainage, and when tile factories were scarce hauled tile to nearly every portion of the State at the bare cost of transportation." It is reassuring to find an expert like Mr. Prime taking such a hopeful view of the future of the good road movement. He makes plain, however, that it will be necessary for all to lend a helping hand.—Chicago Tribune.

A Fortune in Any of the Following.
A perfect and cheap insulator for electric wires for one thing.
In a nailless horseshoe that will not contract the hoof.
In a hand seed planter, adjustable for all kinds of seeds.
A safety mauling envelope that costs no more than the ordinary one.
In a street car fender of such merit as to induce general adoption.
A device for opening and lighting street lamps from the ground.
In a snow melting device for clearing sidewalks and street car tracks.
A cheap hat holder, both of men and women from blowing off.
An artificial building or paving block, equal to and cheaper than dressed stone.
An effective fog signal to prevent ships running aground or coming in collision.
An effective tire tightener, to be operated without removing the tire from the wheel.
In a cheap and effective carpet stretcher and mauler combined, that will not tear the carpet.
A collar fastener in place of the collar button that will allow of different sized collars being worn.
In a perfect device for sharpening calks of horseshoes without removing the shoe from the hoof.
In a cheap thermal fire alarm, to be placed in dwellings, that will unerringly give an alarm at any abnormal increase of heat.
A device for cooling the atmosphere of railway cars by fans operated by wind-wheels extending through the roof of the car.
In a coal wagon that will deliver the coal from the side of the wagon, and thus avoid the blocking of narrow streets while unloading.
In an adjustable rack or device for displaying different classes of goods in "show windows." "Window dressing" is now a recognized profession, and there are a lot of show racks, but none seem to quite fill the bill for all purposes.

Not Long Enough.
People who expect persons of brain to be willing to serve them in a menial capacity continue to have trouble with their servants. A certain man hired a valet and the very next morning sent him to a closet to fetch a pair of shoes. The valet returned presently with two shoes.
"Stupid!" said the master. "Those are two rights!"
The valet took the shoes and went back to the closet. After a few moments he came back with the same shoes and said:
"I'm sorry, sir, but the other pair in there are both lefts."
This is matched by the experience of the lady with her new maid.
"Mary," she said to the girl, "take this tape line and measure the width of your room. I am going to give you a new carpet."
In a few minutes the girl came down looking perplexed.
"I'm sorry, num," she said, "but I can't measure the room."
"Why not?"
"The tape isn't long enough."

Too Refined and Too Late.
She kissed the old man, says an exchange; she showered upon him kisses and tears. She told all the people how good he was. I thought if she had only given two of those kisses a quarter for the last ten years how the tender-hearted old gentleman would have smiled through his tears. But now he took it all very coolly. He was dead. He was old and poor, and she was young and rich. She had ten rooms, but no room for father. Yet he had made room for her when he had only two. The "old man" was not educated. She was, at his expense. He had fed and clothed her for twenty years at home and at college, until she had risen into more "refined and cultured society," and married among them. The old people's dress and dialect were too coarse. She kissed him, and buried him in a beautiful coffin. "Dear father" is to have a costly marble monument. A warm kiss while living is better than cold marble when dead.

Without a Contest.
Preacher—The meek shall inherit the earth.
Scoffer—Yes; the graveyards are full of them.—Brooklyn Life.

We would rather be a fat man than a fat woman.

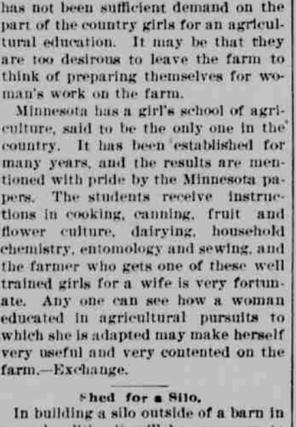


Cultivator Follower.
Cultivating the growing crops is highly conducive to growth, but in times of dry weather there is an enormous evaporation from the soil that has just been stirred by the broad teeth of a cultivator, the land being left in loose ridges. Some advocate hanging a board behind to drag the surface of the earth down smooth. This has a tendency to pack the surface, which is not desirable.



Fair Farmers.
Well, why shouldn't farmers' girls study agriculture? Is there any good reason why the State should provide for the education of the farmers' boys and allow the girls to get their training wherever they can? Wouldn't it be a good thing to introduce coeducation at the agricultural colleges? These questions may have been raised before now, but we do not think they have been adequately discussed. Perhaps there has not been sufficient demand on the part of the country girls for an agricultural education. It may be that they are too desirous to leave the farm to think of preparing themselves for woman's work on the farm.
Minnesota has a girl's school of agriculture, said to be the only one in the country. It has been established for many years, and the results are mentioned with pride by the Minnesota papers. The students receive instructions in cooking, canning, fruit and flower culture, dairying, household chemistry, entomology and sewing, and the farmer who gets one of these well trained girls for a wife is very fortunate. Any one can see how a woman educated in agricultural pursuits to which she is adapted may make herself very useful and very contented on the farm.—Exchange.

Shed for a Silo.
In building a silo outside of a barn in some localities it will be necessary to provide some means of protecting it from the extreme cold. This may cheaply be done by means of a cover shed, an outline of which is shown in the illustration from Country Gentleman. The space between its walls and the walls of the silo could be filled with straw or leaves, and thus be made to serve a double purpose, furnishing storage room and also protecting ensilage.



Rye Exports.
While rye is always prone to follow wheat in its fluctuations, the price has been at a much greater discount than an average, one year with another. To this must be accorded the sharp increase in the export business, which amounted to nearly 6,000,000 bushels during the past nine months compared with only 333,000 bushels the same period a year earlier. Were there any adequate outlet, however, we could spare much more of our annual crop, which approximates 30,000,000 bushels. It is here seen that low prices help rye exports.

Systematize the Work.
Systematizing the farm work more thoroughly will give good results in both time and amount of work done. Ten hours a day in the field, keeping steadily at it, except occasional stops of a minute or two to rest the horses, with a little brain work will accomplish more in the sun of the season than fourteen hours of aimless toil.

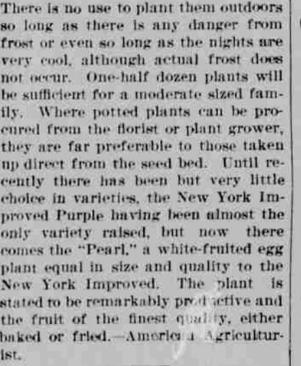
Prunes Are Profitable.
There ought to be much more extensive planting of the German prune. We found it years ago the most paying fruit we could grow. It was always in good demand and at better prices than plums. The prune is also a surer bearer than the plum, unless we may except some of the new Japanese varieties. Yet, though the prune may be grown nearly everywhere, it has been

planted so sparingly in the East that a large part of our supply of dried prunes comes from the Pacific coast States, where its cultivation, to market 3,000 miles east, has been found very profitable.—American Cultivator.

Sweet Corn for Feeding.
There are a good many farmers who grow sweet corn for market who do not care to grow any other kind, because having only small places, if the two kinds are grown, there will be more or less mixed grains in the ears. What corn they cannot sell green they grind and feed to stock. The sweet corn dries down harder than will the corn whose carbon is starch rather than sugar. It is also much lighter than the field corn after its surplus of water has dried out of it. Sweet corn ground with the cob makes a meal that cattle and horses are very fond of when fed with cut feed. But as its weight is less than the field corn meal, more must be fed to secure the same results. It is not more nutritious than common corn meal, if so much so, but it may be used sometimes to tempt the appetite of an animal that has been cloyed and thus restore digestion to its normal activity.

White Clover for Pasture.
It is one of the advantages of rough, rocky land that as it cannot often be cultivated nor ever very thoroughly, the surface soil is pretty sure to be filled with white clover seed. It is said to be natural to such land, which means that it has so long occupied the soil that there is plenty of seed to grow whenever it has a fair chance. It is an excellent pasture grass, as its roots run near the surface and quickly respond even to light rains, which will not revive other grasses. It is greatly helped by a dressing of gypsum. On long-cultivated ground, especially where no clover has been thickly seeded, there will be little white clover visible. But even there it is often ready when it gets the chance.

A New Egg Plant.
While the egg plant is grown very extensively as a market garden crop, it is seen far too little in home gardens, and yet there is no difficulty in raising it. The main point to be observed is that the plant is a very tender annual and has to be started in a hotbed or greenhouse. Many fail with it because they set out the "Pearl" egg plants too early. There is no use to plant them outdoors so long as there is any danger from frost or even so long as the nights are very cool, although actual frost does not occur. One-half dozen plants will be sufficient for a moderate sized family. Where potted plants can be procured from the florist or plant grower, they are far preferable to those taken up direct from the seed bed. Until recently there has been but very little choice in varieties, the New York Improved Purple having been almost the only variety raised, but now there comes the "Pearl," a white-fruited egg plant equal in size and quality to the New York Improved. The plant is stated to be remarkably productive and the fruit of the finest quality, either baked or fried.—American Agriculturist.



Horse Hints.
Being gentle with a horse will help him to be gentle.
Keep the colt fat and he will make an easy-going horse.
Sores on horses' shoulders are largely the result of ill-fitting collars.
An excess of food weakens a working animal and disables it from work.
Blood, food, care and training are the essentials necessary for producing a first-class horse.
To a very considerable extent the most costly farming is that done with poor teams.
There are few diseases to which horses are subject but are easier prevented than cured.
Good grooming does not only add to the animal's comfort, but to its healthfulness as well.
Feeding a little wheat bran with the other grain will help to make the horse's hair sleek and glossy.
The best farm horse is the one with a kind and tractable disposition, well broken and serviceable.
The farmers will always be poor who continue to raise 500 horses at an expense of \$100.
The feed and care necessary to raise a poor horse costs as much in every way as it does for one of the best.
A horse needs exercise every day to keep his system properly regulated and make his hair to be bright and sleek.
When the horse is brought in from work he should be given a good drink; if too warm to drink he is too warm to eat.

Farm Notes.
Changing pasturage maintains better thrift.
Cultivate thoroughly whether the weeds grow or not.
It is mistaken economy not to feed young, growing pigs well.
A supply of salt should be kept where the stock can help themselves.
Keep the teams in a good condition by feeding and grooming regularly.
An animal must have a good appetite if you expect stamina and constitution.
The more rapidly an animal is fattened the less quantity of food is needed to maintain vitality.
A thrifty fruit tree is like an animal—it requires good feeding if it makes a vigorous, steady growth.
During the summer especially, sawdust is one of the best materials that can be used for bedding for the stock in the stables.—Farmers' Union.

A DYNAMITE FACTORY IN JERSEY'S WILDS.

RECENTLY the Cuban Junta, located in New York, placed a large order for dynamite, variously estimated at from 50,000 to 500,000 pounds. It was probably nearer the former than the latter figure, but even if it were the minimum amount, it would be sufficient to tear some pretty big holes in the Spanish ranks if properly applied.
The concern that secured this order has made lots of dynamite for the Cubans; it also supplies the needs of Uncle Sam whenever he is in want of anything in this line. For a long time it was kept busy turning out 20,000 pounds of the stuff a day for the contractors at the work on the Chicago Canal. In a year it turns out enough of the explosive to almost blow the earth into smithereens.

It would seem that a concern which does all this would be an imposing affair, with a factory or series of factories, with numberless acres of floor space. But it is just the reverse, and a stranger could stand in the very center of the dynamite factory and not recognize it as such.
Dynamite is a peculiar commodity and it is manufactured under peculiar conditions. Uncertainty is the ruling thing about dynamite, and this dominating feature permeates the whole establishment. The factory is located at Gibbstown, N. J., a place so small and in a section of the State so sparsely settled that the outside world would never have heard of its existence, perhaps, were it not for the dynamite.



HUMBLE ABODE OF THE BIGGEST DYNAMITE FACTORY.

Its remoteness from everything was the reason of the factory being located there. A branch railroad runs into the property connecting with the principal railroads and the Delaware River. By these means the commodity is shipped through the country and to the seaports.
The factory spreads over a mile of swamp land and is nothing more than three-score of wooden buildings, one story in height and not very securely built. For the most part they look for all the world like the run-down negro cabins of the South and are just about as handsome. They have one modern appliance, however, and that is an attachment for depriving lightning of its powers.
None of these shanties is very close to the other. Plenty of open space is a necessity when tens of thousands of pounds of dynamite are always lying around. Commercial prudence accounts for the cheap and scattering look of the factory. Experience has taught the owners that a single big building would be a rash enterprise. Explosions occur once in a while, no matter how carefully they are guarded against, and it is an easy matter to replace the shanty.
A more potent reason is the protection it affords to the work people. Were all the business concentrated in one building and an explosion occur in any one department, the shock would cause instantaneous upheavals throughout the building, killing or maiming every one in the place.
Several hundred people are employed in the factory, including a dozen women. Each and every one of them fully realizes the danger of their calling, and they exercise the greatest caution in performing their work. There are certain rules formulated by the company which they must obey, and this

they are only too glad to do. One is that no matches, firearms or explosives of any kind must be carried on the person. Another is that no iron or steel pegs can be worn in the shoes. Wooden pegs are permissible, because they are safe.

This latter rule was formulated some years ago after one of the workmen had stepped on a tiny piece of dynamite, the nails of his shoe causing it to explode. The shock caused quite a quantity of the stuff on one of the work tables to go off, the shanty was blown up and there were some fatalities among the workmen.

There is no need of employing special men to see that the precautionary rules are observed, as every workman is a spy upon his neighbors, for he knows that his safety depends quite as much upon the others as upon himself.

Dynamite is principally a mixture of sulphuric acid, chill saltpeter and box-wood sawdust. There are a good many other things which enter into its composition, and before it takes the shape of the finished cartridge it passes through a variety of hands. There is one thing that the dynamite worker is thankful for, and that is that his job will never be usurped by machinery.

Nearly a dozen of the shanties are chemical houses. They are called "safety buildings" and are used for the storage of the many acids which help to make dynamite what it is.

One of the initiatory stages of the cartridge is "cooking" of the dynamite

gelatine. The product of the cook is nitro-glycerine. Many acids are poured into a big leaden tub, the most conspicuous feature of which is a thermometer. One man watches the thermometer like a hawk and adds chilled water from time to time to keep the temperature of the mixture down. Should it evince a sudden desire to rise there is nothing for all hands to do but run.

After all the acids have been added the mixture is allowed to stand, and then the nitro-glycerine comes to the top like cream in milk. It is skimmed off and carried to another house, where it is mixed with the prepared raw material, principally sawdust.
When the coalition has been effected the result is loose dynamite, looking for all the world like brown sugar. It is conveyed to another building, called the packhouse, where it is stuffed into the cartridges. The loose dynamite is placed in a dampened trough on a damp table and the men fill the long narrow tubes with the stuff, using wooden scoops. Great care is taken that none of it drops on the floor, as a happening of that kind might be the preliminary of a big disaster. In this room the cartridges are packed for shipment.

The women in the factory are employed in a little house given over to making the paper caps for the cartridges. As there is no danger about this work, machinery is employed to some extent, and as a result only a dozen women are employed.
As little finished dynamite is kept on the ground as possible. Stock is never maintained. The dynamite is shipped off as rapidly as it is made into cartridges and the burden of watching it passes on to others.
What use has a man with whiskers for a napkin?