Forty Miles an Hour.

A correspondent of the *Albany Journal*, in an article under the title of "Railroad Accidents and Legislation Thereon," speaking of speed at forty miles an hour, says:—

"Men who are used to the railroad, and to the working of the rolling stock, know what such a rate of speed is and how wonderful is the operation. Let us examine it. An engine, tender and train of four passenger cars and one baggage car, when properly loaded, will not be much less than eighty tons weight. This body at the rate of forty miles an hour, moves about sixty feet in a second. That is, between two beats of a clock, it flies across a common street. The driving wheels, if six feet in diameter, revolve three times in a second. The common wheels of the cars revolve about eight times in a second. The revolutions of the driving wheels are produced by the motion of the piston. Thus there are six motions of the piston to the second, and at each of these motions a valve is opened or closed, for the taking or exhausting steam from the cylinder. This must be a complete and perfect operation, each time, to produce the speed. But there are two cylinders, working at opposite sides of the engine, and at different points on the crank of the wheel, or axle, as may be, and they do not move at the same instant, or, rather, they alternate, and thus, each performing the same office, they divide a second into twelve equal parts or periods, in each of which the perfect and complete operation of taking or exhausting steam is performed, and at the end of each motion the piston actually stops and turns the other way. Now, the eye could not count or comprehend these motions. The ear could not distinguish the exhausts, though each is as perfect and distinct as when the engine is drawing a heavy load four or five miles an hour, when it seems to labor and to cough as if struggling with its load. This is a speed of forty miles an hour analyzed. Now must there not be very greatly increased liability to accident at such a rate of speed? Who can see the strains upon parts of machinery that may result in a fracture when moving at this rate?"

Ingenious Hoisting Apparatus.

The Detroit *Tribune* describes an ingenious contrivance in use at the Central Railroad Depot in that city, for hoisting flour. The apparatus resembles a treading mill in an upright position, the top of which projects about one foot above the floor of the upper story, and the bottom the same distance below the ground floor. From what would be called the revolving floor or bed (were it a treading mill) projects four pairs of arms equi-distant from each other, or about ten feet apart. The barrel is rolled against this revolving bed, and as a pair of arms come up from beneath the floor the barrel is taken and carried into the story above. Immediately it arrives at the top of the bed its momentum carries it on an inclined plane, and it rolls away to the side of the room. Thus it unloads itself, and only seeds one person to feed it below. It is said to save the labor of five men.—It has been operated for a few minutes so as to hoist at the rate of one thousand barrels an hour. The bed commonly makes three revolutions per minute, carrying four barrels at each revolution, 720 barrels per hour. The apparatus is worked by steam in connection with the grain elevators in the same building.

Value of Book Farming.

The few thoughts expressed last week were suggested to my mind by an incident, which, as it strongly exemplifies the value of "book farming," I will relate.

My neighbor D. and I were getting in a crop of Ruta Bagas. At the commencement of the year, when I renewed my subscription I gave him an invitation to subscribe also. But no. He was not going to fool away his money so. He could get along well enough farming from his own head without book farming it. In the course of the season I noticed an article in the Farmer, recommending the soaking of turnip seed for 24 hours in fish oil to prevent injury to the young plants, by flies or bugs. I mentioned it to my neighbor, at the same time intimating I should give it a trial. A little rivalry had existed between us, as our feels joined, and the more so, as he was fond of cracking his jokes at the expense of book farming. So this determination of mine only subjected me to a greater degree of his railery. He'd show me turnips as were turnips, and beat me out of sight and hearing, Guessed I'd got satisfied with book farming.

However, I kept quietly on, determined to oil-soak my seed, knowing I could re-seed with the flat turnip if the ruta bagas should fail. In the character of the soil, our ground was very nearly or quite alike. His had been cropped once, while mine was newly broke. We both expended considerable labor and got the ground in high tilth. I had one and a quarter acres, which, after I had thoroughly harrowed, I burned every grub, root, stick and turf of grass, and removed the stones, raking the ground with a fine rake, after which, I pulverized it with a heavy coal rake, to the depth of four inches. I soaked my seed in the oil for 48 hours, rolled them in ashes and sowed broad cast, covering lightly; after which I bestowed no more care upon them till they were harvested, as the ground was free from weeds. Neighbor D. sowed his in like manner, but without soaking, and one day earlier. They came up so evenly and looked so finely, he could but indulge in his own propensity again. "See, neighbor Tower, how nice they look—don't you think I'll show you the turnips over there." "Better wait and see what the bugs say to it," I suggested.

Mine came up also, in good order, the leaves showing a darker color, which they continued to sustain as they grew larger. Their growth was rapid, as they were not troubled by any insect whatever. But in the adjoining field of my neighbor, the little pests soon came in myriads, making riotous work, sweeping the tender things down so clean that hardly one was left. And what were, were so stinted they could not grow to any thing worth harvesting, and in fact my neighbor did not gather a single bushel,—whilst I, after freely feeding six head of cattle all through the fall from the field, harvested *nine hundred bushels*, which, with those fed to the stock and not measured, must have made the yield nearly if not fully twelve hundred bushels.

By this time I had the laugh all on my side, and my neighbor became a strong convert to book farming. Before this he could not be induced to take any publication. But he soon became a regular subscriber for a half dozen.

Mr. Tower's method of harvesting his turnips was new to me. After turning in his cows to feed down the tops, he hitched his team to a three-cornered harrow, adding weight enough to make the timbers hug the ground, when he started it through the field. The wings would press the turnips out, and as the team advanced leave them in winnows, between which he drove with his wagon and flung them in. This method not only saved him a good deal of time, without injury or bruising the turnips, but left the ground in fine order to receive a seeding of wheat, which I understood him to say he gave it.

Brief Hints.

Potatoes designed for planting, and especially for early use, should be taken from the cellar and spread upon some floor where the sun may fall upon them part of the time. They will vegetate much more readily, and can be brought to maturity earlier by so doing. A few could be started in the hot-bed or by placing them in a warm situation and covering them with horse manure.

If you want good radishes, spade in a good quantity of manure, so as to make the ground light and rich. They will then grow rapidly, and of course be tender and nice. You can have them in this way, without the trouble of mixing half sand with the soil, as some old cultivators contend.

In setting young trees, after the holes are dug, make a little "*hill*" in the whole upon which to stand the tree. Press and work it down so as to fill up perfectly among the roots on the under side, that there may be no vacuums or hollows.

Recollect that the high price of butter is owing, in a great measure, to the vast amount of poor butter. If it were not for the tons of rancid, worthless butter, we should not hear of its being sold at 37 1-2 cents per pound. The remedy is very simple, *work out all the buttermilk!*

Farmers are mostly agreed in the opinion that small potatoes are just as good for seed as the larger ones. But as the "eyes" are the germ of the plant, and as a small potato may have nearly the same number of these that the larger have, care must be taken not to seed too highly. High seeding will certainly produce a small crop of small potatoes.

The Pig.

Few animals yield less waste matter, after being dressed for market, than the pig: every part is useful, as a sailor would say, from stem to stern; the head for baking, the tail for roasting. Every part is made palatable and useful—feet, minister's face and shanks, are all admired, when properly "soused" and cooked. The rich and poor alike admire a meal from the pluck and portions of the loin; the intestines make excellent envelopes for sausage meat; the blood makes a savory pudding, and the bristles a brush for purposes "too numerous to mention." The pig is a short lived but useful animal; and "works his own passage" through life by mixing muck and making manure for his owner. At death he invariably goes squealing out of his pen into "lard, and pork, and bacon," and is soon off on a voyage at sea in pursuit of a whale.

We never liked the long-legged, slab-sided, apron-eared grunters, except for the race course, for the reason that they eat too much food to keep them in decent working order. They might do for a "show" occasionally as fine specimens of a living skeleton, but for porkers give us the short-legged, small-headed, quiet and contented pig, round as an apple and hearty as a buck, with sufficient good sense to know when he has eat enough and where to go and lay down to be rubbed or curried; and, withal, as Uncle Ziba used to say, a "*hog*, with a remarkably *good disposition*."—*Vermont Watchman.*

AMOUNT OF FOOD REQUIRED BY ANIMALS.—Of hay, an ox requires two per cent. a day of his live weight. That is, if the ox weighs 2000 lbs., he requires 40 lbs. of hay. If he is working, he will take two and a half per cent. A milch cow should have three per cent, of her weight, as she is proportionably lighter than the ox, and part of the substance of her food goes to form milk. A fatting ox may be fed five per cent, at first, four and a half per cent. when half fat, and afterwards four per cent. This is independent of other food. A grown sheep will take three and a third per cent. of its weight in hay, to keep in good store condition. Animals in a growing state require most food, and it is very poor economy to stint them. [The Plow.

TO DESTROY LICE IN CATTLE.—Sand must be sifted upon the back, neck and head of the animal to be beneficial. Ashes sifted upon them in small quantities is also good. But the best way is to watch the animals and ascertain when the vermin first make their appearance; the application of a little lard, oil or grease of any kind well rubbed in, "where they most do congregate," will stop their nibbling most effectually. A friend at our elbow who keeps a large stock of cattle, says an effectual remedy is a wash made of a strong decoction of tobacco, or very strong soap suds. Good keeping and cleanliness will produce a soft oily skin, and that is the best preventive.—*N. E. Farmer.*

VALUABLE RECEIPT.—Take plaster of Paris and soak it in a saturated solution of alum, then bake the two in an oven, the same as gypsum is baked, to make it plaster of Paris, after which they are ground to powder. It is then used as wanted, being mixed up with water, like plaster, and applied. It sets into hard composition, capable of taking a very high polish. It may be mixed with various coloring minerals to produce a cement, of any color capable of imitating marble. This is a very valuable receipt, and is worth twenty dollars to many of our subscribers, any of whom can prepare it for themselves.—*Scientific American.*

VOLCANIC ERUPTION IN HAWAII.—The celebrated Volcanic Mountain Mauna Loa, one of the Sandwich Islands, about 100 miles north from Oahu, on which latter Island is situated Honolulu, the capital of the group, was at the last account in full blast.

In 1843 a remarkable eruption took place at this mountain, and burning lava swept down the forests and reached the sea at a vast distance in a current one mile broad. This so heated the ocean that multitudes of fish died in the vicinity. Mariners many miles at sea could see to read during the night by its light; and the fires were distinctly seen from the Missionary station of Hilo, 40 miles distant.

The Mountain it is said would easily contain within its crater the city of New York. On the 17th February last, at 3 A. M., a small light appeared on the summit which continued to increase, and in half an hour a brilliant column of lava shot up against the heavens, and a general burst of blood red fusion poured out of the orifice. This moulten flood rolled down the side of the mountain so rapidly, that in two hours its progress was judged to have been 15 miles, the whole glaring with great brilliancy. The following is the latest intelligence from the Alta California, copied from Sandwich Island letter of March 3.

By advices to Hilo to the 2d inst., we further learn that the stream of lava had burned through the woods to within fifteen miles of Hilo, and that it was still progressing. The current was not so rapid as at first, but it is gradually filling up all the inequalities of the ground, and it was supposed at that date, that it would ultimately reach the sea and discharge itself into the bay of Hilo.

The light at night was very brilliant, and at Hilo it was almost as light as day. Persons who left this city last week, on a visit to Hilo, will arrive at a seasonable moment to witness one of the most sublime phenomena of nature, and one of so rare occurrence that few are fortunate enough to witness it.—*Alta California.*

British revenue.—The surplus revenue of Great Britain for the past year is £2,726,396, one-fourth of which will be applied to the liquidation of the national debt.

ECONOMY OF MISSIONARY EXPENDITURE.—The cost of all the Missionary agency in the Presidencies of Bengal and Agra, in which 159 missionaries are employed, is less than the salary and travelling expenses of the Governor General of India.

A writer in the London *Morning Advertiser* suggests that the British Government should intercede at Washington in behalf of the two captains imprisoned for abduction of slaves. This is proposed as an offset to the American movement in behalf of the Irish exiles.