

depth, and consequently a larger yield. A second advantage will be that such a course will be found to be almost as good as drainage for carrying off superfluous moisture. Finally, in a dry time, the upper soil will act the part of a mulch to the soil below, and while crops that have only had shallow tillage will be parched and dried up, those that have had the benefit of deep tillage will be vigorous and flourishing.

STEAM PLOUGHING.

The New York Farmers' Club appointed a committee to visit Paterson, N. J., to see the operation of a new steam plough. We make the following extract from the committee's report:

We found the engine at the race track, near Paterson, hitched to a gang of seven ploughs, and breaking a tough old sod. It consists of a steel boiler hung between two driving wheels, with a small driving-wheel in front, over which the engineer sits. The cylinder, six by ten inches, as also the cog-work connecting the pistons with the wheels are concealed behind the wheels and below the boiler. The striking feature of the engine is the rubber tires; these are six inches thick, and are riveted to the wheel, but are made a little smaller, and by stretching before going on, the contraction holds them tight. They are made of gutta percha, combined with antimony. The rubber is the best from Para, and the curing with the antimony gives a better and more durable product than any made in this country. The rubber tires are capped or protected from the wear of the road by a steel chain or reticulation so hinged as to yield when the tire yields, and come out when the release of pressure brings the rubber out to a perfect circle. Now for the operation of these remarkable and ingenious wheels. The engine weighs six tons. When running without a load there is a pressure of three tons on each wheel at the point of contact with the earth. This weight flattens out the rubber; so instead of a line of contact an inch in width, as with the iron rim, the pressing surface is nearly a foot. When a load is attached the backward strain compresses the rubber still more, giving a larger and larger friction-surface. In this way the grand problem in traction engines is mastered—the power of the engine is exhausted before the wheels slip on an average firm surface. This elasticity of the wheel enables it to pass over soft places with but little sinking, and it relieves the jolt from stones. Soon after we reached the field the engineer turned his starting-bar, and we saw the amazing and hope-inspiring spectacle of an iron horse moving steadily over the sward and dragging seven ploughs that turned seven as even, regular furrows as fourteen of the best plough horses in the Empire State could turn. The performance we say shows, as we think, this important truth—that we have offered to American farmers a motive power that can pull as hard as 14 horses and on a uniform surface can so continue for a day to move and to plough seven furrows a foot wide and eight inches deep. The cost of this work will be the wages of men, the price of half a ton of coal, and the interest on \$5,000.

RENOVATING PASTURE LANDS.

Something has to be done for the renovation of old pasture land, for as the country grows older, pastures upon which cows are kept depreciate in productiveness. The dairy farms of Ohio, many of them at least, will not now keep more than two-thirds the stock they would fifteen or twenty years ago. The reason for this is, not much more than half of the products the soil consumed by cows is returned to the land again, the herd being driven from the field at night and not returned until next morning.

Pastures upon which sheep are kept do not lose their productiveness, but generally increases in fertility, and when they do not improve it is owing to being overstocked, the injury then arising from the sheep gnawing so closely that the roots of the grass are exposed and die out.

The question arises, how are pastures upon dairy farms to be renovated? To manure them would require more expense than most farmers would like to incur, and to plow them, in most cases, would be out of the question. On large farms improvements may be had by stocking one-half of the land with sheep and the other half with cows, and alternate changes made every spring; but the cows and sheep should in no case be allowed to run together, and the farm should be lightly stocked.

On the small farms where the husbandman is compelled to use his entire pasture for cows, to make a respectable sized dairy, there is a greater difficulty. It may be done, however, in two or three different ways.

First. By an entire change from cows to sheep, and from sheep to cows again, every few years, retaining, of course, a cow or two for family use. But this is not generally a profitable mode, for when a dairy of well chosen cows is sold, it requires considerable risk and expense to establish it again.

Second. Renovation may be done and the cows kept upon the farm without great expense, but it will require considerable labor and care. Keep the cows upon the pasture night and day as much as possible during the summer season, and in winter fodder hay upon the poorest spot, when the ground and weather will admit of it. It is best to feed in the morning, turning the cows from the stable before giving them anything to eat except grain. This will greatly improve grass land, but we would not advise farmers to practice it except when the weather is clear and the ground frozen so, that no feed may be lost.

Third. And perhaps the best mode is to save all the manure possible by scraping the cowyard, the use of muck, composting, etc., and top-dressing certain portions each year in the fall, and giving them a good harrowing as soon as the ground will do in the spring, at the same time stocking with a few quarts of timothy and white clover seed. Seed from the barn floor, sown in the chaff, is as good as any.—*Ohio Farmer.*