

A New Implement for Deep Plowing

Prof. John Evans, O.A.C., Guelph, Ont.

The proper preparation of the seed bed is not an easy task. In accomplishing it one must move and disintegrate large quantities of earth. No tool has hitherto been invented that will do the work thoroughly, but the machine as pictured on



Getting Away Down Deep

this page goes a long way to realize the desired consummation.

Experiments have demonstrated beyond a doubt that, with but few exceptions, the best seed beds are made by deep plowing to a much greater depth than has been the common practice. Work of the character required is beyond the capacity of the ordinary plow. It requires an implement that will penetrate the earth and turn it to a much greater depth.

WILL PLOW 16 INCHES DEEP

The machine referred to is especially adapted for tilling to a depth of from eight inches to 16 inches. It consists of a massive frame, composed of heavy castings, structural steel and forgings. This frame is mounted on three wheels running on chilled journals, in large chilled bearings. The discs are 24 inches across and have a special bevelled edge, which adds greatly to its strength; they are placed with respect to each other, so that the front one is higher than and partly to the landside of the rear one.

ABOUT DEEP CULTIVATION

In support of deep cultivation I would have Farm and Dairy readers consider the following:

"No principle in agriculture has been more thoroughly demonstrated than the value of a deep, thoroughly pulverized seed bed. The Romans plowed on an average nine inches deep—always three times for a crop, and in stiff lands nine times. They did not call three inches 'plowing,' it was only 'scarifying.'

"The Flemish farmers were the first to follow the better lines of agriculture after the dark ages. They devoted their efforts to three main points: (1) The frequent and deep pulverization of the soil, (2) the accumulation of manure, and (3) the destruction of weeds.

"A deeper and more thoroughly pulverized seed bed was the foundation upon which England built an improved agriculture, and this principle has been generally accepted there for more than 160 years, until the average production has increased nearly fivefold."

ADVANTAGES OF DEEP SEED BED

"Concretely stated, a deep, thoroughly pulverized seed bed filled with humus has the following advantages:

(1) It provides more food, because it increases chemical action and multiplies bacterial life in a larger body of soil.

(2) It stores more moisture rapidly on account

of its cooler lower strata and the presence of more humus.

(3) It increases the number of roots that a plant will throw out.

(4) It allows plants to root deeper and find permanent moisture.

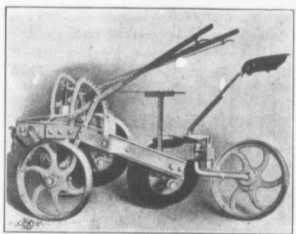
(5) It largely obviates the necessity of terracing, because it holds so much water in suspension that heavy rainfalls will go to the bottom and be held by the drier earth above until they can be absorbed by the subsoil.

(6) Humus enables the soil to store more moisture, increases its temperature, makes it more porous, furnishes plant food, stimulates chemical action and fosters bacterial life."

A Factor in Root Culture

Most Farm and Dairy readers, we reckon, are like our editors in one particular at least, that they would rather have a horse to pull a wheel hoe or cultivator than to push a hand wheel hoe. There is, however, a large and important place for the hand wheel hoe on every farm where an acre or more of roots are grown and where there is a kitchen garden.

With an ordinary horse cultivator or scuffer fitted as well as is possible to devise and set the cultivator teeth, it is not possible to get closer to the row of roots than about three inches on either side of the row. This means leaving a strip at least six inches wide, and often it is 10 inches or more in width which must be hoed by hand. With the hand wheel hoe it is possible to get within an inch of the row on either side and to cultivate the very day after the rows can be discerned. And because of this fact the hand



Side View of Deep Tilling Plow

wheel hoe is an important factor in the successful culture of roots.

The young plants of mangels, sugar beets, or turnips are exceedingly tender, and as ordinarily happens they are handicapped in getting to the light of day and making an early growth on account of a crust which has formed over the surface of the soil. The hand wheel hoe, made use of as soon as it is possible to see the rows, breaks this crust, allows the air to get into the soil, conserves the moisture, and aids greatly in forcing the growth of the young plants.

It may seem to Farm and Dairy readers, as we confess it did to us at one time, that the hand wheel hoe is an impracticable proposition for a large acreage of roots. When one considers the matter, however, it will be found that the use of the hoe becomes more and more necessary the larger the area to be cultivated. While discussing this matter in Ottawa recently with Mr. John Fixter, of the Macdonald College Farm, he said that at the College they grew from 15 to 18 or 20 acres of roots each year, and all of this area was hand wheel hoed.

Mr. Fixter believes in the hand wheel hoe as being one of the secrets of successful root culture—this together with sowing plenty of seed. The hand wheel hoe costs only about \$6, and one man working with one of these implements will do the work of six men hoeing in the usual way.

Boys and Manure Spreaders

N. C. Campbell, Brant Co., Ont.

It cannot be said of our farm boys that they are afraid of hard work. They object, however, to doing that hardest kind of hard hand work, spreading manure, when it can be done even with pleasure by a manure spreader, which machine, although costly, has been demonstrated to be a paying investment on any well stocked 160 acre farm.

I can imagine a lad of from 16 to 20 years standing on the shady side of an old straw stack, four feet high and well rotted, on a hot day putting on his load. We will watch him as he drives it to the field and then see him toiling scattering the manure on a strip from 20 to 40 feet wide, his clothes wringing wet, his brain weary, patiently waiting for the sun to set that he may go home to rest. This picture, thanks to the manure spreader, is one of the past on many farms to-day.

If the picture may be seen still on your farm, just take into your imagination a picture on a neighboring farm where a lad is loading his load on a spreader; follow him to the field, see him set his machine in gear, chirp to his team, then begin to whistle "What's the matter with father? He's all right!" It is reasonable to guess that the boys will stay at home on that farm all right.

Manure spreaders have come to stay. They are a great labor saving device and they are a most profitable machine. Distributed with a spreader, manure will go from three to four times as far as if spread as ordinarily by hand, and it will do more good since it is pulverized and spread evenly by the spreader thus enabling the roots of the plants to get the full value of the manure.

The advantages of the manure spreader are well known to progressive readers of Farm and Dairy. We have used one on our farm for some years now, and while it took us quite a while to decide—before we bought it—that it would be a good and paying investment, we have had no doubts on that point since we had it spread the first few loads. We look upon our manure spreader as an indispensable part of our farm equipment.

One first principle in handling any live stock is to be master of the situation. One cannot get full value from a horse until it is completely under control. It is the same with bees. To be a successful bee-keeper one must be a bee-master; not in any cruel sense any more than with a horse. To manage a horse one must know a horse. To manage a bee one must study their habits and disposition, and learn as far as possible why and how they do things. This takes time, but it is well spent.—Morley Pettit, Ontario Provincial Apiarist.



Not the Most Satisfactory way to Handle Manure

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