

ther made last year's crop the greatest in our history. Make two charts, one representing the annual rainfall of your district in the last 20 years, and the other the yield of your chief field crops for the same period, and you will find the ups and downs in one to fit over those in the other with a correspondence that will be startling. The only safe system of farming to follow is the one that is designed to save every drop of water possible for the growing crops. They will generally need it all.

Evaporation from the soil is continuous while it is uncovered with snow. Even from frozen soils there is some evaporation. With unhoed crops there are three or four months between the time when they are well above ground and harvest time, during which the soil cannot be cultivated for moisture conservation. But this period can be considerably shortened. The surface crust can be broken, and a new dust mulch established when grain is well above the ground. I saw the packer put on a field of oats in Manitoba when they were six inches high. The wise ones shook their heads and said those oats would never point skyward again. That fall I saw them threshed, and they went a little better than 70 bushels to the acre. The packer had broken the crust and firmed the ground, re-establishing capillary action between the surface of the soil and the sub-soil, and with the increased supply of moisture, the oats had soon recovered from the effects of the packing. Breaking that crust that forms after the rains that generally come just after seeding, is one of the ways of increasing the value of subsequent rains, though it may appear at the time to be rather drastic.

#### Salting Down the Rainfall.

"The King is dead. Long live the King!" That is the way the death of one sovereign and the accession of another is announced. It implies that no time is lost in transferring allegiance from the dead king to his successor. The speed with which the dry farmer transfers his attention from the old crop to the new one, is not exceeded by the most ardent courtier in hastening to pay his obeisance to the latest thing in kings. In fact, the new crop is sometimes a usurper. In the dry belt, I once saw a big tractor pulling an eight-foot binder and an eight-bottom gang. The binder was kicking the sheaves out on the plowed ground. It is not uncommon, for men and horses are plentiful, to see the disc harrow following the binder, the sheaves being deposited on the newly disked land. In such cases, very little moisture escapes in the few minutes that elapses between the time when the grain is cut and the land, or most of it, cultivated. Where the rainfall hovers around the 12-inch mark, it is necessary to work moisture conservation down to a fine point.

In eastern Canada it is not necessary to "follow up" so closely, but early after-harvest cultivation is part of the "dry farming" system suited to the east. Not for years has it been so necessary to pay attention to this matter of after-harvest cultivation as it is this season. Excessive rains, followed by excessive heat, have provided ideal conditions for brick making. Some of the clay fields I have visited recently are literally as hard as pavement. They will need the most careful attention if the soil is to be restored to its usual till. Simply turning it upside down with the plow will not do this. The plow will do nothing but break it up into indigestible clods that next season's crop will starve to death on. Nor will any amount of cultivation after plowing make a suitable seed bed. The surface may be disked, harrowed and raked, until it is as fine as is needed, but there will still be a layer of hard lumps just above the sub-soil. Between these

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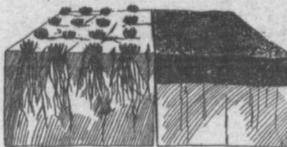
## Ingenuity and Concrete

### They Make a Productive Combination

If the farmer would combine a little ingenuity with concrete he could make many useful things from a single unit or pattern, just as he could cut up a board for sundry purposes. The manufacture of concrete lumber of this type is a simple matter. Consider, for example, a simple concrete board or slab. Some of the uses to which this cement lumber could be put are as follows:

If two of the boards were firmly planted in upright position and a third slab placed across the top, the farmer would have an everlasting stone bench.

Two of the boards planted longitudinally with



#### Why Stubble Should Be Disked.

The undisked ground cracks and loses valuable moisture and food elements as in the illustration at the left. The picture at the right shows stubble disked immediately after the harvest—a profitable investment of a little time and labor.

a third board placed upon the top would make an excellent culvert or cover for a small drain.

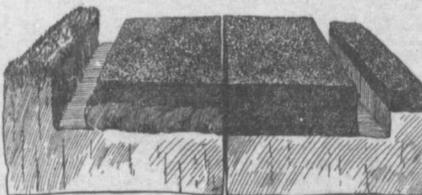
By providing proper supports, whether of concrete or other convenient material, these slabs would serve as steps.

Laid upon the ground, one after another, they would make an excellent walk.

Planted at the sides of the garden walk they would keep the vegetable or flower beds in position. The walk between could be composed of a series of slabs.

If made sufficiently wide they could be utilized for the sides of a hot bed or cold frame.

Made a little thicker and stronger they would constitute an excellent pavement for a cellar, carriage-house or ground-level porch.



Land Disked After Plowing.

A good seedbed, but air spaces left in the bottom of the furrows where the plow did not fill in.

Land Disked Before and After Plowing.

A perfect seedbed clear to the bottom of the furrow. This will pay well in increased crops.

Another convenient type of concrete lumber is the small beam. In a box of required length could be cast 4 x 6-inch sections of concrete corresponding to timber of that dimension, or in larger size if desired. These would be reinforced with 3/4-inch rods, one in each corner. Four of these firmly planted would carry a large slab, thus making an indestructible, weather-proof table. They could also be used for posts or supports.

For making boards or slabs the farmer should have a shallow box or form that will hold concrete to the depth of two or three inches. It may be of any desired length and width. A layer of

concrete placed in the box to one-half the depth of the latter would be the first step in the manufacture of the board. Upon this would be placed a layer of woven wire and the box then filled to the top.

#### Other Devices.

In brief, as stated, the farmer would have so much concrete lumber on hand, and if he were to exercise his ingenuity he would find many uses for it other than those described above. It would not be necessary in every case to purchase lumber for making forms for some types of construction. For example, there is the case of a builder who utilized some old kegs for making supports for a building, and in another instance several kegs were piled one upon the other to make a strong concrete column, the concrete subsequently being wrapped with wire and plastered to bring it into proper shape. Again, a man desiring a flower screen at a point where it was impossible to dig, merely divided an old store box into two compartments and placed therein some five inches of concrete. In the centre of each block was imbedded, while the concrete was soft, a section of 3-inch pipe. The two timber supports for the flower screen were inserted in these pipes and proper cross pieces attached from top to bottom. After serving this purpose throughout the summer the supports came into play in other convenient ways, one of them being used as a base for a Christmas tree, and on another occasion it was called into service on the lawn as a support for a large sun-shade.

A mixture consisting of one part Portland cement, two parts clean, sharp sand and four parts crushed stone would make a strong and dense concrete. The concrete should be used at once after mixing and be given ample opportunity to cure thoroughly, which would require from a week to 10 days. In the meantime it should be kept out of the hot sun and wind, and should be sprinkled daily. The forms in which slabs or posts are cast should have a simple locking device and hinges to facilitate removal after the concrete has set.

The purpose in adopting concrete rather than lumber would be to eliminate all outlay for renewals and repairs, such as are essential when wood is used. Time and exposure to the elements increase the strength of concrete and hence for the various devices specified it would serve the purpose as long as required.

The dairy cow as a converter of raw material into the finished product has many advantages over the fattening steer. In the first place she will return more money for the feed and where the skim milk is fed to the pigs or calves, the amount of the fertility returned to the soil is only about five per cent, less than when the same feed is given to the steer. Winter dairying also gives a better division of labor, more milk per cow for the whole year, and where property looked after, fall calves get a better start and are easier to raise than spring calves.

Cement floors and mangers are best from a sanitary and economic standpoint. The stables should be whitewashed every fall, which will add much to their light and sanitary condition. The manure is removed from gutters twice daily and the cows curried and brushed every day.—Henry Glendinning, Ontario Co., Ont.

The one condition that is prevalent in farm values throughout Ontario is that a man who buys unimproved land and improves it can never get out of it the value of his improvements. That is a condition which is general.—E. C. Drury, Simcoe Co., Ont.