

## CONSERVATION OF SOIL MOISTURE

One of the greatest factors in deciding a large crop is the amount of available moisture in the soil. As a rule a dry year will produce a light crop and a wet year a heavy crop. Although every year four times as much water falls as is required to produce a maximum.

The average precipitation of rain for New Brunswick is forty-three inches, but ten inches, if properly controlled, would be sufficient for the crop. However the most of our rain comes at a time of the year when vegetation is dormant, so that the greatest problem with which a farmer has to contend is the conservation of the Fall and Spring rains.

An tillage which will keep the soil in a loose open condition enables the rain to enter easily and prevents evaporation. If the soil is hard and impenetrable the rain cannot enter, but runs off carrying with it available plant food.

Fall plowing and subsequent cultivation leave crevices in the surface of the soil which serve to retain the excess moisture.

Early spring plowing and cultivation provides a warm dry seed bed as well as preserving the moisture. Although the ground should not be tilled before it will pulverize and lay in a light pliable condition when stirred.

When the top-soil is stirred the capillary attraction with the particles below is broken, so that it dries out very quickly, forming a mulch and preventing evaporation.

A great objection to spring is the loss of time entailed in going over the field with a narrow plow, when much more work could be done in the same time by using a harrow.

Any cultivation that will leave the ground in spring in open condition, no matter for what crop, or in what time of the year contributes to the amount of water in the soil.

Increasing the supply of humus in the soil enables it to hold more moisture. One hundred pounds of humus will absorb one hundred-fifty pounds of moisture while one hundred pounds of ordinary soil will absorb from twenty to forty pounds only.

Humus may be increased by; feeding most of the produce grown on the farm and applying frequent applications of barnyard manure; short rotations; plowing under heavy clover sods and cover crops etc.

When the capillary water is gone there is still another form of moisture left which the soil refuses to give up except under application of artificial heat, and which in times of drought prevents the plant from wilting.

Underdrains put the ground in a porous, open condition and increase its power for retaining Capillary water. The small amount of water which is drained off is but a small fraction of that which escapes over the surface when the soil is hard and impervious.

Water exists in the soil in three forms: Gravitational, Capillary and hygroscopic water.

If you dig a hole in a piece of wet ground you will observe foul water in the bottom, this is called gravitational water and will seek a lower level by the force of gravity. It is this water that drains carry away. You will also observe that the particles of earth above the water, are damp. This is due to the film of water adjoining to the soil particles. This water—called Capillary water—runs upwards and sideways, contrary to the laws of Gravity, by the attraction of the soil particles. It is from this source that the plant derives its moisture.

Unless prevented by a board, stone or a dry earth mulch, water will rise through the soil and escape by evaporation, just as oil

is drawn up a lamp wick by capillary attraction. Hence to evaporation the top soil should be stirred as soon as possible so as to form a dry earth mulch.

A clay soil holds more moisture—because of its fine particles which expose a large amount of surface—than a sandy soil with its large particles, which present but a small surface to hold the moisture.

Hence a sandy soil dries out much quicker than a clay soil. If the two soils could be mixed it would be preferable, but this can be done on a small scale only, as in gardening.

A farmer whose land is sandy had best follow a line of farming that will add humus to his soil, thus increasing its water holding power. If he owns a clay soil he should add humus to lighten up the soil and prevent the formation of a hard surface which is very undesirable. Drains in a dry soil keep it loose and friable draining off the fall water and increasing its power to hold capillary water.

The most important means, then, which a farmer has for conserving the soil moisture are: Fall, plowing and cultivation; early spring plowing and cultivation; increasing the supply of humus; and underdrains.

In growing such crops as potatoes, oats and corn additional and more effective means can be applied by the farmer, that is cultivating between the rows, which should be done as soon as the upper surface becomes a bit hard. This process will save a great deal of moisture as well as kill harmful weeds and set fall stored up fertility.

J. R. McCormack.

## MR. DUGAL EXPLODES A STANDARD CANARD

Mr. Dugal, Opposition leader in the Legislature, who was grossly misrepresented in the official report of the Legislature and also in a Fredericton despatch prepared by the official reporter, has sent to the St. John organ of the Government the following:

Edmundston, April 29.

The report in the St. John Standard of this date in reference to my remarks in the House of Assembly is not in accordance with what took place. I did not say that I had no charges to make against any members of the House and that I did not charge that anything of a dishonorable nature had occurred in connection with the purchase of the patriotic gift of potatoes. I did say that I had made neither charge nor insinuation against any member of the House, but when I had any charges to make I was manly enough to make them. I said that I was not in the public accounts committee when the items relating to the purchase of the patriotic gift of potatoes were considered and passed. I made no mention of charging or not charging that anything of a dishonorable nature had or had not occurred in connection with such purchase. I did not in any way repudiate the opposition organizers, Messrs. Carter and Veniot, but expressed my great appreciation of their work in the public interest during the session and the assistance they had given me, and I stated that they had a perfect right to work in connection with me as they had done.

The Standard's story as to what took place between Messrs. Carter and Veniot and myself after my statement in the House is a pure fabrication without the least foundation. I also was in the House in the afternoon and I made enquiries there and voted on the dental bill after the occasion referred to, and attended to my business as usual.

I will ask you to give this denial the same publicity as the false report in today's issue.

L. A. DUGAL, M. L. A.

### Distorting the Facts

Discussing an incident which occurred in the Legislature on the closing day of the session, in which Mr. Dugal, the Opposition leader, and B. F. Smith, figured, Commodore Stewart, M. P. P., in



his paper, the Chatham World, has this to say: "The Government papers are making desperate efforts to twist the French speech of Mr. Dugal, in reply to B. F. Smith, into an English certificate of character for the latter. Mr. Smith had denounced him for having insinuated charges against him by means of questions asked of the Government. Mr. Dugal replied that he had insinuated no charges against any member of the House, and when he had charges to make he would make them in a manly fashion. These government organs are torturing these remarks into a declaration that he had no charges to make, and knew of nothing dishonorable in the conduct of the member for Carleton.

"The precedent that was established during a previous session, when Mr. Stewart of Northumberland secured for Mr. Dugal the right to address the House in French on the Flemming charges, was followed in this case by allowing Mr. Dugal to reply in French to Mr. Smith's speech. He is a fluent and eloquent speaker in French."

## OUT OF THE MIRE

Ford Left Its Two Ton Companion Behind in Mire—Then Went Back And Pulled It Out

Vermilion, Alta., May 9, 1916.

How a Ford car not only pushed through terrible roads where a large car behind mired, but even went out and pulled the 4000 pound car out of its difficulties is the interesting and indeed unusual experience of which W. A. Fallow, of Vermilion, Alberta, tells, and just to prove his seriousness in the matter he has made a sworn statement of its truth. Mr. Fallow relates the incident as follows:—

"Upon one occasion last summer my car was put to one of the most severe tests and came through it in perfect condition, while one of my friends, the owner of a heavy car, abandoned his car on the road six miles from and came in for a team to haul him home. As he was not able to get the required assistance, I volunteered to go out with my car and pull him clear. The offer at first was taken as a joke, but he finally accepted.

"The big car weighed over four thousand pounds, but I hauled it into town, up and down hill, and across one steep coulee, and the performance could not help but excite the admiration of all who witnessed.

"I purchased my car in April 1913, and since that time have driven more than thirteen thousand miles, and the cost has been astonishingly low, considering the fact that I have given the car the hardest kind of work, over muddy roads, prairies and fields, in every kind of weather. My entire expense during the three years, outside of one set of rear tires, has been only \$3.35.

"During 1915 I travelled over five thousand miles with a total repair bill of just sixty cents. My average mileage has been more than twenty-two miles per gallon. I am a thorough believer in the Ford car, and if I were buying another tomorrow it would be nothing else but a Ford. The car is in perfect running order and I am sure that with ordinary care will serve me for several years to come.

"I am making all the above statements under oath, and will be glad to verify them at any time."

### Two Derailments on International

On Friday four cars of the east-bound regular train on the I.N.R.

branch of the I. C. R. jumped the rails eighteen miles east of Campbellton near Upsalquitch. A wrecking train was sent out from Campbellton but the rescuers also met with disaster, their train also catching the derailment habit and some of the cars leaving the steel. After the wrecking crew had managed to replace their own cars on the track they proceeded on their journey and succeeded in doing a like service for the derailed cars of the regular train which was delayed some seven hours by the mishap.

### Lower Greenfield School

Following are the results of examinations on work done during the term:

Grade V a—Bernice Kinney 85.5, Winston Sippell 76.7, Emery Kilpatrick 65.6.  
Grade V b—Eva Riorden 71.1.  
Grade IV a—Eva Kilpatrick 62.2, Roy Caldwell 59.5, Arthur Kinney 55.2, Bessie Kilpatrick 53.5, Lida Kinney 53.  
Grade IV b—Florence Caldwell 84.3, Kathleen Caldwell 77.2, Loraine Riorden 58.8, Charles Harris 49.1.  
Grade II a—Everett Elkins 70.  
Grade II b—Kenneth Caldwell 69.9, Walter Kilpatrick 60.1.  
Grade I—Doris Kinney 91.6, Elizabeth Riorden 72.  
Alice J. Stewart, teacher.

Sense of Security.  
"You like the movies?"  
"Yes. When you go to the movies you feel absolutely sure nobody is going to come out and try to make an original. Thank you one and all!"

Opposing Arguments.  
"Why can't those two men agree in their dispute?"  
"Well, you see, the skinny one's arguments are too thin and the big fellow's are too fatuous."

Gentle Methods.  
Ladle—Anything can be accomplished by gentle methods. Cruelty is unnecessary.  
Edna—I suppose instead of whipping cream you would just scold it—Segment Block.

Psychological Moment.  
"Now, this hat really ought to suit her exactly."  
"All right; I'll show it to her first."  
"Bah! That's no way to sell a hat to a woman. Show it to her about fourteenth."

He Knew It.  
"There are things more valuable than money," ruminated the philosopher.  
"Sure," retorted the iconoclast. "That is the reason I need money to buy them."

## For Sale Quick!

A One-Horse Truck Wagon (practically new), also a good farm horse weighing about 1100 (very cheap).

GEO. N. SHAW, Blacksmith, Hartland

## RECRUITS WANTED!

FOR THE Fourth Divisional Train OF THE Army Service Corps

A few men having a knowledge of horses and driving, also a few horseshoers, carriage smiths and harness makers required.

A good chance to get to France by the middle of June.  
Apply to nearest recruiting officer or Lieut.-Col. E. C. Doan, South Barracks, Halifax, N. S.

## OUR PUREBRED Suffolk Stallion

is on the road again this season. This horse has left a large number of fine colts through the county in the two years he has been here. Would advise anyone with a good mare to either look this stallion over or look over your neighbor's colt and be convinced that we have the right type of stallion to breed from. No right type of stallion to breed from. No right type of stallion to breed from. No right type of stallion to breed from.

SHAW BROS., Victoria

Farmers' Telephone.



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Highest Prices paid for Butter, Eggs, Calf Skins and Pelts  
SEED WHEAT.—About 50 bushels of good clean Seed Wheat, from government seed. Ask for price and sample.

## Avondale Woodworking Factory

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Avondale, N. B.

WE MANUFACTURE Doors, Sashes, Sheathing, Spruce and Hardwood Flooring, all kinds of Inside and Outside Finish. Mouldings of all kinds always in stock.

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## The Victor Talking Machine

will give more hours of solid entertainment than anything else on earth of the same cost. I can sell you one at almost any price—\$21 to \$300. I also have two good talking machines for \$15 each. These are bargains and you should come in and hear them.  
If you already have a machine you will want some NEW RECORDS. Hear them at my store—they're fine. Also a full line of needles for all talking machines. Come in and hear the talking machine talk—it tells its own tale. A free concert for you any time you choose to come.

## C. R. VIOLETTE

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For Liquor and Drug Habits

When you have taken this treatment in the privacy of your own home for three days you are just as good a man mentally and physically as you were before you commenced to drink and you will have no desire, appetite or craving for liquor, in any form. Each treatment is specially prepared for each case under supervision of a registered physician. Send for interesting literature etc.

The Home Treatment Co., - Grand Falls, N. B.

## Want to Buy A Farm?

If you want to buy a Farm send for my 1916 Farm Catalogue. Just issued. A postal will bring it.

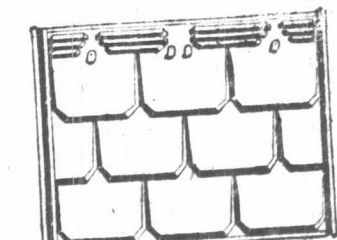
A. D. HOLYOKE  
Woodstock, N. B.

### Horses for Sale

One mare, will be three years old in June; very handsome; sired by Cogswell horse; weight about 1100 lbs.  
One horse four years old; weight about 1300 lbs; and two older horses. All for sale cheap for cash or approved paper.

T. W. CALDWELL  
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