

MAKE YOUR NITROGEN

Growing Legume Crops Will Help You Do It.

Clovers, Peas and Vetches Store Up Nitrogen From the Air—Good Bacteria Will Work for You—Determining the Need of Chemical Fertilizers.

(Contributed by Ontario Department of Agriculture, Toronto.)

Nitrogen costs money when purchased through the medium of the chemical fertilizer dealer, usually about twenty cents a pound. Some of our farmers are spending from ten to forty dollars per acre a year for nitrogen to increase crop production. With five million pounds of nitrogen floating as a gas over every acre of land such expenditure may not always be justified. That nitrogen is highly valuable as a plant food is appreciated by comparatively few of our farmers. If those who do appreciate its value are willing to pay twenty cents a pound for it, and these are the men working on small areas with intensive culture crops, why don't those larger area farmers who have a few billion pounds of nitrogen floating above their farms wake up and get at least a small quantity into the soil of their fields?

The Fertilizing Value of Legumes.

Legume plants such as the clovers, peas and vetches, together with the bacteria that are parasitic on the roots of this class of plants, form a link between the nitrogen of the air and the plant food nitrogen of the soil. This link is an implement always available to the farmer. A ton of alfalfa or clover or vetch may contain as much as fifty pounds of nitrogen. The roots that go with the alfalfa plants covering an acre may contain as much as three hundred pounds of nitrogen. The roots of the red clover or vetch plants that cover an acre may contain as much as one hundred and fifty pounds. The roots from wheat, corn or oat plants covering an acre may contain twenty-five pounds of nitrogen.

The Bacteria Work for Nothing.

The point is, a great quantity of nitrogen is collected by the bacteria which alone work on the clovers, peas, vetches and other legume plants. With one million dollars' worth of nitrogen over every acre of land would it not be good policy to make sufficient use of legume crops and their parasitic soil bacteria to at least provide the needs of the farm in crop production. The nitrogen accumulated by growing legume crops is taken largely from the air, while the small quantity accumulated by corn, oats or wheat roots is gathered from the soil.

All Gain and No Loss.

There is no loss of nitrogen in growing legumes but considerable gain. There is a distinct loss with all other classes of farm crops. Plan to use clovers, peas and vetches and thereby tap the fertility supply now resting above your land for future use in the soil of your fields. If you can figure out a rotation to suit your own special needs and have legume crops growing two years out of four there will be little used to worry about the nitrogen supply.—L. Stevenson, Secretary Department of Agriculture, Toronto.

ABOUT SOIL FOODS.

Determining the Need of Chemical Fertilizers.

The appearance of the growing leaves and tissues can frequently be taken as an indicator for the presence or absence of nitrogen in sufficient quantity to satisfy the maximum demands of plants. A yellowish tinge or a dull green is an indicator of abundant nitrogen. Drought and excessive moisture may also cause the yellowing or weakening in the coloration of foliage. Failure of clover on lands that at one time produced good yields may be taken as an indication of a shortage of lime and phosphorus. A decline in the wheat grade after years of wheat production can generally be attributed to a shortage or failure in the phosphorus supply.

How to Make Experimental Plots.

However, these generally observed conditions are not sufficiently accurate to be a definite guide, and should be supplemented by a miniature field test, using square rod areas with various chemical mixture applications. This is accomplished by simply staking off a representative area one rod wide and six rods long, and dividing it into six plots. This done apply before seeding on plot one, nitrogen; on plot two, phosphorus; on plot three, potash; on plot four, nitrogen and potash; on plot five, nitrogen, potash and phosphorus; on plot six, potash and phosphorus. The adjoining soil will serve as a check plot for all areas. By watching the plots during the crop season and the following two years, a fairly definite conclusion relative to the needs of the field can be secured.

Every soil area should be studied by itself, since the requirements of one field may differ from the requirements of the field adjoining.—L. Stevenson, Secretary Department of Agriculture, Toronto.

Gestation Period of the Cow.

The gestation period of the cow is nine and one-third months, or two hundred and eighty days. Sometimes a breeder figures it as nine months to the day, and then worries because it seems to run over a couple of weeks and the calf is not born when supposedly due. For example, a cow bred on January 1 would be due about October 7 and not October 1. A cow bred on February 1 would be due about November 8, not on November 1. The date of calving is found by counting forward the two hundred and eighty days from the date of service.

WHEN THE CLOUDS GATHER

Birth of Thunderstorm, as Seen by Airman, is a Remarkable and Beautiful Spectacle.

Have you ever been in the air to watch a thunderstorm grow? asks Popular Mechanics Magazine. If you were merely on the ground looking up, then you saw only the bottom of it. The airman is the one who sees just what is happening in a thunderstorm.

A few hours before the sky was, perhaps, perfectly clear. All at once a few white patches become visible to the eye, and if they quickly begin to dot the whole sky, it is a warning sign. Each fluffy cloud represents the point where moisture rising from the earth has begun to condense. The rapid formation of the clouds means uneven heating of the surface of the earth and the presence of lots of moisture in the air. The clouds grow together, forming a continuous rolling mass of dense vapor, cutting off the flyer's view of the earth.

So far the storm has only been threatening. The clouds have spread sideways as far as they can; now they begin to grow heavier. The heated air from the earth below pushes through the heavy layer and bulges it upward. Higher and higher it is pushed while more and more moisture condenses, and this great bulging mass of vapor, sometimes three or four miles high, has become a thunder cloud. Its bulging tops are called thunder peaks or thunder heads, and they are responsible for the lightning, the heaviness of rainfall, and the hail we sometimes have in midsummer.

The energy of a thunderstorm is amazing. A single great cloud may contain billions of pounds of water vapor. The flashes of lightning from cloud to cloud are sometimes 20 miles in length, and when we stop to think that it takes a current of 15,000 volts pressure to produce a spark an inch long, we can only wonder at the immense amount of electricity involved in a single flash. Sometimes the wind from a thundercloud, or the squall, as it is called, is violent enough to level trees and small buildings, and is improperly called a tornado. There is a big difference. A tornado is a violent whirlpool of air that sweeps across the country and twists off trees and roofs in its path. The wind from a thunderstorm blows straight away from the storm and never twists.

Broadly speaking, there are three general stages in the development of a thunderstorm. There must be strong currents of moist air rising from the earth, as indicated by the appearance of the white patches of cloud. This condition must continue until the sky is covered. And lastly, the force of these upward currents must be great enough to push the clouds up into thunder heads. A thunderstorm then results.

Opportunities on the Farm.

There was a time when the idea was altogether too common, that the occupation of farming was a sort of junk pile where fate threw human discards who lacked ambition, intelligence or perseverance enough to succeed in any other calling in life, observes the Christian Herald. Then along in the late nineties there was a "back to the land movement," and "mossback" and "hayseed" were relegated to the columns of obsolete slang.

The farmer sees life and growth on every hand. Even in winter, in the localities where the landscape seems a symbol of death with snow and ice holding everything in its grasp, there is the hope of renewed life, or resurrection as it were, typified by the stores of seed grain laid away for the next spring's planting.

Truly, on the farm there are special opportunities for observation and thought and happy is the farmer whose thoughts go deeper than the bottom of his milk pail and whose pasture fences are not the boundaries of his horizon.

Making Starch From Potatoes.

The manufacture of starch from potatoes is not a complicated process, the drying, however, being somewhat painstaking. The tubers are first cleaned, then ground. This sets the granules of starch free. The ground mass is then washed with cold water and the starch settles at the bottom. This is collected into vats, spread out on shelves and artificially heated. It dries into lumps and is then the commercial starch. The residue from this manufacture is like alcohol mash, a valuable cattle food. It may also be used as fertilizer. With characteristic wastefulness we in this country have thrown it away.

English Call This Humor.

Dobson—I've got a fine riddle for you, old man.
Hobson—Really? Out with it.
Dobson—If there's a pile of boxes outside a drapery store, and a man walks round them, what is his name?
Hobson—Haven't the faintest idea.
Dobson—His name is Mitchell.
Hobson—How do you make that out?
Dobson—Because his father's name was Mitchell, you silly chump!—London Tit-Bits.

She Wanted to Know.

"John, I want to ask you something."
"Well, my dear?"
"When we were married, didn't you say: 'With all my worldly goods I thee endow?'"
"I did."
"Then I want to know why you issue them to me on the installment plan, in such small lots and only after wearisome urging?"

Omak Once Cossack Center.

Fedor Dostoyevsky, the Russian Dickens, wrote his famous novel, "Crime and Punishment," out of his experiences with criminals at Omak, which was for a time the seat of government of the regime of Admiral Koichak. In this work Dostoyevsky pictures a future Russian people freed from bonds of force, but united by ties of mutual trust and kindness.

Omak, under the Russian monarchy, was the crossroad of the routes to Central Russia, Orenburg and Turkestan. It lies along the trans-Siberian railway, running from Moscow to Vladivostok, a 5,385-mile journey. It was founded about 200 years ago and is approximately the size of Birmingham, Ala., or Paterson, N. J. Omak was long a Cossack center. In the principal square stands the church of St. Nicholas, in which hangs a banner reputed to have been that of Yermak, a Cossack bandit of the Volga, who turned over the vast domain of Siberia to Ivan the Terrible, with the result that Yermak procured his own restoration to Moscow court favor.

Trey's summer garden at Port Dover was not demolished by the recent storm, as reported last week, but the building which contained the engine and dynamo for the electric light system was wrecked.

MAIL CONTRACT

SEALED TENDERS, addressed to the Postmaster General, will be received at Ottawa until noon, on Friday, the 20th day of January, 1922, for the conveyance of His Majesty's Mails, on a proposed Contract for four years, Six times per week, over

Jarvis No. 1 Rural Mail Route

Printed notices containing further information as to conditions of proposed Contract may be seen and blank forms of Tender may be obtained at the Post Office of Jarvis, Balmoral, and at the office of the Post Office Inspector:

D. J. McLEAN,
Post Office Inspector,
Post Office Inspector's Office,
London, December 9th, 1921.

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Jarvis No. 3 Rural Mail Route

Printed notices containing further information as to conditions of proposed Contract may be seen and blank forms of Tender may be obtained at the Post Office of Jarvis and at the office of the Post Office Inspector:

D. J. McLEAN,
Post Office Inspector,
Post Office Inspector's Office,
London, December 9th, 1921.

LEGAL

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Visiting Brethren Welcome.

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Empire Press Delegates in Evangeline's Land



(1) Delegates taking a bucket of water from Evangeline's well.

(2) The Statue of Evangeline just after the unveiling by Lady Burnham.

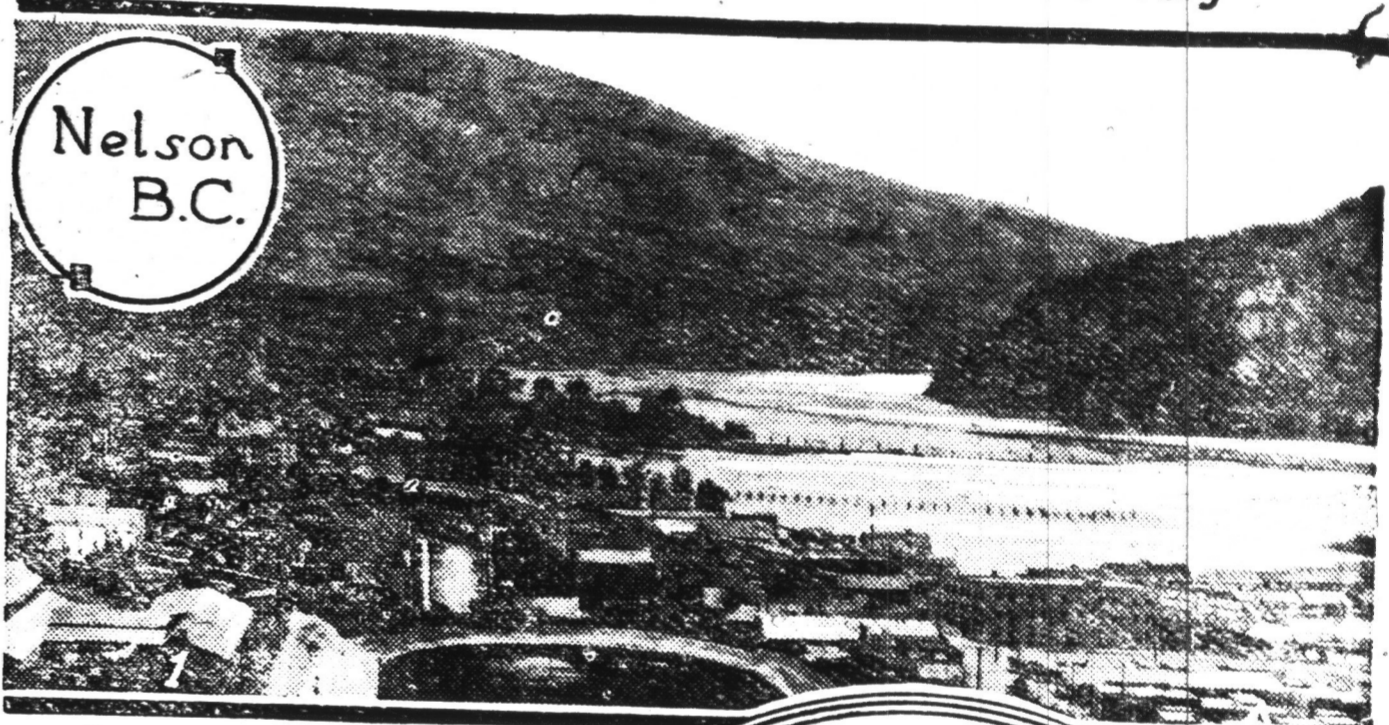
Five continents were represented at the unveiling of the statue of Evangeline, Grand Pre, Nova Scotia. Nearly all those present belonged to the Imperial Press Conference party, and the unveiling ceremony was performed by Lady Burnham, who said:

"Evangeline is the beautiful conception of an American poet whose verses we learnt to read on both sides of the Atlantic when we were children. History has shed another light on the Acadian story. We see today that British policy was not as black as it was painted. Whatever may be the truth of this story, as a woman, and an English woman, I shall always regard it as one of the most painful episodes in our annals. Thank God those cruel old days lie behind us forever, and from the fate of Evangeline has sprung a great wave of sympathy which has been carried on the healing hand of time. It is a good omen that the beautiful sun, God's healing hand, should be resting upon us all today, who are here to do honor to that sweet woman. Under these rays in your wonderful land so full of beauty and promise the old hatred is dead. I have now the great honor and privilege of unveiling the statue of



Evangeline." The statue, which is of bronze, is the work of Henri Hebert from a model by his father the late Philippe Hebert, a descendant of the Acadians of whom Evangeline was one. It is a magnificent work of art, and was presented to the P. C. at Grand Pre by the Dominion Atlantic Railway, which is now part of the C. P. R.

Nelson and The Kootenay



The name Kootenay has long been familiar to the mining and lumbering worlds. Kootenay has extensive, varied and rich mineral deposits and every valley and mountain side is a store-house of valuable timber. The city of Nelson, on the Kootenay Lake, is the distributing centre for the district, from which the wholesale trade of the interior is carried on. Nelson owns the public utilities, electric light, street railway, water works and gas works. Special attention is given to the forestry department in guarding the timber resources of the district. With an unlimited supply of wood in the mountains, there is a great future in the pulp industry. Within a radius of twenty-five miles, there are twenty-five saw mills in operation. The Board of Trade of Nelson is now in communication with New York capitalists regarding the establishment of a pulp mill. Tributary to the proposed mill site are 11,200 square miles of territory from which wood supplies can be procured. The slopes, forested with timber, are easily workable. The population of the region embracing about forty thousand people, is fairly well spread over the entire area. There are about 15,000 inhabitants in ten towns and the balance are scattered on homesteads, ranches, lumber and mining camps through the district. Many, in order to obtain working capital, accept contracts for delivery of logs, trees, shingles, cedar poles and other products from their lands and there are a number of forest product operators around the Lake. It is computed that nearly 14 million cords of pulpwood could be secured, enough to last one hundred and fifty years, figuring three hundred cords per day.

(1) Nelson, B.C., beautifully situated beside mountains and lakes.

(2) The S.S. Kuskanook, one of the C. P. R. boats plying the Arrow Lakes in the Kootenay District.

The maximum distance of raw material from Nelson is sixty-five miles with an average of thirty-five miles. There are excellent railroad connections to market, and there is abundant cheap electric power. The most important power development in the interior of British Columbia is that of the West-Kootenay Power and Light at Bonington Falls. Power and light are furnished to Trail, Rossland, Grand Forks, Phoenix, Greenwood, Boundary Falls, the every Lake and border every stream—these are rich fruit lands. There are exceptional advantages in diversified farming where are combined dairying and the production of hay, grain, poultry, hogs, sheep and a variety of small fruits and vegetables. In the district are many retired military and naval officers who are able to find congenial occupation and for leisure hours there are no waters in Canada that offer greater attractions to the sportsman or lover of the beautiful in Nature, than the Kootenay Lakes and rivers. Beekeeping is a new industry that is making progress.—C. G.