Farm Problems

Conducted by Prof. Henry G. Bell, Dept. of Chemistry, Ontario Agricultural College, Guelph

1. What fertilizer would you suggest for mangels? How much per acre, and would the same fertilizer be used for sugar beets?

Answer.—In the demonstration tests conducted on a large number of farms throughout the province by the Department of Chemistry, O.A.C., best returns from fertilizers used with mangels have been obtained where 2-12-6 fertilizer was applied at the rate of 375 lbs. per acre. This gave an average yield on loam soils of 49 tons per acre against 36 tons where no fertilizer was used. On clay soils it gave a yield of 33 tons per acre against 27 tons where no fertilizer was used. 2-12-6 gave very good yields on sugar beets but was slightly surpassed by fertilizers a little higher in potash.

2. Will complete fertilizer build up the soil for future crops or are they only good for one crop?

Answer.—In experimental work and field demonstration tests considerable information is accumulating which points to a decided "after" effect from fertilizers. For instance, where fertilizer was applied to alfalfa in 1930 giving an increase of 9,200 lbs. (green weight) per acre, the same plot in 1931 without further fertilizer gave an increase of 2,240 lbs. (green weight) over land which had been unfertilized. In another instance where fertilizer had been applied to barley on clay soil in eastern Ontario in 1930, there was an increase of 13.6 bushels. On the same plot in 1931 without any further fertilizer there was an increase of 4,320 lbs. of clover hay (green weight) over unfertilized land. In a test conducted by the Department of Chemistry, O.A.C., where complete fertilizers were applied to mangels and no further fertilizer applied for two years, there was a gain of 4.1 tons of mangels the first year; 9.7 bushels barley the second year, and 600 lbs hay the third year. Necessarily, attention must be given to keeping up the organic matter of the soil by turning under green crops or adding all the strawy manure obtainable, if the soil is to be improved in its productive capacity.

3. Should a 4-8-10 fertilizer cause scab on potatoes, used at the rate of 500 lbs. per acre?

Answer.—We know of no reason why fertilizers of any kind should cause scab. Scab is a fungus disease which thrives in an alkaline soil. If potato seed is not treated and is planted in a scab-infected soil that is alkaline in reaction, there is every chance of a scabby crop being harvested. Many potato growers find that by turn-under a second crop of clover in preparation of the potato seed bed, the desirable small degree of acidity in the soil which produces clean potato stock results from the decay of the organic matter.

4. How does 6% potash in the fertilizer, say 2-12-6, applied at the rate of 200 lbs. per acre, help the grain to pay extra cash in a spring crop, say oats?

Answer—With oats at the present low prices it is difficult to make a profit from the addition of fertilizers directly to this crop. From results obtained recently in our demonstration work, it would appear that oats can benefit most profitably from the residual effect of fertilizers applied to the crop preceding If, however, oats are grown as a cash crop, 200 lbs. of fertilizer to the acre may be of advantage. Whether or not it will pay will depend upon the type of soil and state of soil fertility. If grain has been taken from the field frequently within the last few years without the return of much fertility, the available potash of the soil will undoubtedly be considerably lowered, in which case a fertilizer such as 2-12-6 will pay well.

5. In how many ways are plant food elements taken from the soil?

Answer.—Plant food elements are removed in crops which are harvested from the soil both in the straw stalk and in the fruit, grain or seed. They are also removed in the bodies of livestock pastured upon the soil, and nitrogen especially is washed out of the soil through drainage water. Small amounts of potash and phosphate in the order named are also removed by this means.

6. Does the gradual elimination of the bases in the soil occur constantly?

Answer.—Certain of the bases in the soil are removed by cropping and by drainage. For instance, lime is thus removed, and magnesium.

If so, does this action create an unbalanced soil condition in which the acid elements predominate?

Answer.—The natural reaction of the removal of lime and magnesium is to produce a condition where acid predominates.

Would a proper application, after liming, of a well balanced fertilizer increase production to an economical maximum?

Answer.—In the system of farming commonly pursued in Ontario, lime should be applied once in four or five years on the average, in soils that are naturally short of it. Crops are rotated so as to introduce a legume crop once in four or five years. The second growth of this crop is usually turned under as green manure. It also adds considerable nitrogen to the soil if legumes predominate in it. A fair amount of livestock is usually kept and manure is returned as generously as possible. In addition to these practices, suitably balanced fertilizers applied to money crops or to crops of relatively high value has been found to increase yields at considerable profit. Of course, the degree of profit will depend among other things upon the quantity of fertilizer employed. We mean that while three bags of fertilizers per acre may give a highly profitable return on wheat or corn or sugar beets, the addition of eight bags to the acre, which would entail a much greater cost, would in all probability consume the additional profit. The Ontario farmer has to determine this point for himself, in view of the type of his soil, the cropping system which he follows and the amount of fertility that he is able to return in barnyard manure and green manures.

7. What is the maximum phosphoric acid that one can use in a potato fertilizer? For the last two years we have used 4-12-6 for early potatoes and 2-12-6 for late, and the results have been very good. We have a sandy loam soil and usually put on a light coat of manure.

Answer.—Results in our demonstration fertilizer tests throughout the past three years point distinctly to the value of 2-12-6 fertilizer on potatoes under general conditions. In our tests of 1931 where 2-12-6 and 4-8-10 fertilizers were compared, we found the latter gave a little higher yield on light soils and loamy soils, but the difference on loam soils hardly overcame the difference in cost of fertilizer. The reverse order was found to prevail on clay soils. From the rather extensive investigational potato work conducted by this station we are of the opinion that as least 12% phosphoric acid can be used with good results in fertilizers for early potatoes. It would appear that while your choice of fertilizers for the early potatoes, namely 4-12-6, is quite as we would recommend, yet the results of our tests indicate that you could get slightly larger yields by substituting 4-8-10 for the late potatoes on the light soil. This will depend, of course, upon how heavy a coat of manure you apply. In the tests conducted to which we have referred, no manure was applied. In the event that you have a fair coating of manure to apply, 2-12-6 will give you a better balance of plantfood with manure than 4-8-10.

Mahogany Used as Fuel

In the interior of the Republic of Panama one often sees valuable mahogany being used as fuel in the carboneros, or charcoal burners, doing the cooking for the villagers and planters. Mahogany is cheap and makes the best charcoal, but the Canal Zone authorities are planning to introduce other fuel so as to save the valuable timber.

Ancient Mexican Art

A decorated skull unearthed by Professor Alfonso Caso leader of expedition in Mexico. This unusual specimen is adorned with carved sea shells in the eye sockets, a piece of flint in the nose cavity and the whole finished off with turquois.

What New York Is Wearing

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THE LOVE TREE

Love is like a tree—vegetating of itself, striking deep-roots through all our being, and often continuing to grow greenly over a heart in ruins. And, inexplicable as it is, the blinder is this passion the more it is tenacious. It is never more firmly seated than when it is without a shadow of reason.—Victor Hugo.

Sunday School Lesson

February 14. Lesson BII—Jesus and the Man Born Blind—John 9. 1-11; 30-38. Golden Text—I am the light of the world: he that followeth me shall not walk in the darkness, but shall have the light of life.—John 8: 12.

ANALYSIS.

I. THE BLIND MAN CURED, John 9: 1-7.

II. "I WON'T BELIEVE, John 9: 8-34.

III. WITH CHRIST, OR AGAINST HIM, John 9: 35-41.

INTRODUCTION—Chapters 7 and 8 show the gradual hardening of the Jewish hearts against Jesus. Many of his own disciples no longer walked with him. The shadow of the approaching crisis was already darkening his way. He knew that the end could not be far off. The "man born blind" is a type of the Jews who received Jesus. The Pharisees in the story represent the prejudiced stubbornness of those whose hearts were hardened by Jesus' life and teaching.

I. THE BLIND MAN CURED, John 9: 1-7.

It is probable that the blind man was at the entrance to the Temple. On the Sabbath, however, he would neither be begging nor receiving alms. The rapidity with which the news of his cure spread suggests some religious festival—perhaps the Feast of Dedication, 10: 22. The "disciples" (9:2) may have been the Judean group, and not the Galilean. Would fishermen be interested in the theological question?

The question which they are made to ask in the story indicates the two main views which the people of John's time in Ephesus held regarding trouble. The Jewish view—as old as Job's comforters—was that trouble is the punishment for the sin a man commits—or the sin which his parents commit.

The Greek view was that in some previous state of existence a man did something wrong for which he is made to pay in his next incarnation. "Who sinned, this man, or his parents, that he was born blind? v. 2. So strong were the old legalistic tendencies of the disciples, that the sight of suffering aroused, not the impulse to help, but the desire to discuss.

Jesus' answer (v. 3) did not mean that sin does not bring suffering—for it does. He did mean, however, to discourage the tendency—still among us—to think uncharitably of suffering as punishment. Let a non-churchgoer, say, be killed in a motor accident on a Sunday and some one will be sure to say, "God's judgment!" We are not in a position to say. Our duty in such a situation is made clear by Jesus' reply to his speculating disciples, v. 3. We are to ask, not—"Why do such things happen?" but "What can I do to help?" So will the works of God be made manifest.

The elaborate process of wetting the clay—sealing the man's eyes, sending him to the Pool of Siloam, is symbolism. The clay symbolizes the act of creation, Gen. 2: 7. The Christian, the man whose eyes Christ has opened, is a new creation. Sealing the eyes means that our spiritual blindness must be brought home to us. Siloam means "sent." John saw in the name a reference to Jesus Christ, "sent" by God. The command to "wash" is part of the sacramental tendency of this Gospel. Only after the rite of baptism does the believer enter fully into the new life.

II. "I WON'T BELIEVE, John 9: 8-34.

The story begins with the healing of physical blindness, but it soon shifts to the Jews who, in spite of the conclusive evidence, remain stubbornly unbelieving. They fastened upon the work involved in wetting the clay on the Sabbath, and made it the basis of the charge against Jesus, v. 16. "A good man would not break the Sabbath," said some. "A bad man could not work a miracle," retorted another. So the controversy went on.

Failing in their purpose, the Jews degenerated into abuse, v. 34. They hated Jesus. Therefore they would neither see nor admit any good in him. What about our attitude toward the deeds of people whom we dislike?

III. WITH CHRIST, OR AGAINST HIM, John 9: 35-41.

Resourceful and bold as this man proved to be, he could not but have felt keenly his excommunication. His hope of employment would now be gone. He would be shunned as the outcast he was. One could imagine him moodily wishing that he had been left as he was, where he could at least have had society provide him his living. But, meeting Jesus, who, hearing of his punishment was probably looking for him, he found a friendship which more than compensated for any loss which his loyalty may have caused him. To him as to many another, beset by life's misfortunes, Christ became "all and in all."

Jesus, summing up the meaning of the "sign," declares that his coming into the world is like a judgment. It brings out the characters of men, v. 39. No one ever comes in contact with him without being compelled to side with him or against him. The choice he makes determines his destiny.

Sounds of Night in the Jungle

It was early spring in the tropics. The final period of pipe and fiddle had not yet arrived, so that there was no hum from the underworld. The flow of sap and the spread of petals were no less silent than the myriad creatures which, I knew, slumbered or hunted on every side. It was as if I had slipped back one dimension in space and walked in a shadow world. But these shadows were not all colorless. Although the light was strained almost barren by the moon mountains, yet the glow from the distant lava and craters still kept something of color, and the green of the leaves, great and small, showed as a rich dark olive. The afternoon's rain had left each one filmed with clear water, and this struck back the light as polished silver. There was no tempered illumination. The trail ahead was either black or a solid sheet ofl ight. Here and there in the jungle on each side, where a tree had fallen, or a flue of clear space led moonwards, the effect was of cold electric light seen through trees in city parks. When such a shaft struck down upon us it surpassed simile. I have seen old paintings in Belgian cathedrals of celestial light which now seem less imaginary.

At last the silence was broken, and like the first breath of the trade-wind which clouds the Mazaruni surface, the mirror of silence was never quite clean again — or so it seemed. My Northern mind, stored with sounds of memory, never instinctively accepted a new voice of the jungle for what it was. Each had to go through a reference clearing house of sorts. Any strange wail or scream striking suddenly upon my ear instantly crystallized some vision of the past—some circumstance or adventure fraught with similar sound. Then, appreciably as a second thought, came the keen concentration of every sense to identify this new sound, to hear it again, to fix it in mind with its character and meaning. Perhaps at some distant place and time, in utterly incongruous surroundings, it may in turn flash into consciousness — a memory-simile stimulated by some sound of the future.

I stood in a patch of moonlight listening to the baying of a hound, or so I thought; that musical ululation which links man's companion wolfwards. I turned to the Indian at my elbow, full of hopeful expectation. With his quiet smile he whispered, "Kunama," and I knew that I had a frog of size and voice well in keeping with these mighty jungles. I could heard the giant tree frog of Guiana—imagine the great goggle-eyed fellow sprawled high near the roof of the jungle, clutching the leaves with its vacuum-cupped toes. The moonlight would make him ghostly—a pastel frog; but in the day he flaunted splashes of azure and green on his scarlet body.

At a turn in the trail we squatted and waited for what the jungle might send of sight or sound. And in whispers Nupee told me of the big frog kunama and its ways. It never came to the ground, or even descended part way down the trees; and by some unknown method of distillation it made little pools of its own in deep hollows and there lived.—William Beebe, in "Jungle Peace."

ELOQUENCE OF WORDS

By words we have it in our power to make such combinations as we cannot possibly do otherwise; by this power of combing we are able, by the addition of well-chosen circumstances, to give a new life and force to the simple object; in painting we may represent any fine figure we please; but we can never give it those enlivening touches which it may receive from words. To represent an angel in a picture, you can only draw a beautiful young man winged; but what painting can furnish anything so grand as the addition of one word, "The angel of the Lord?"—Burke.

GROWING IN DARKNESS

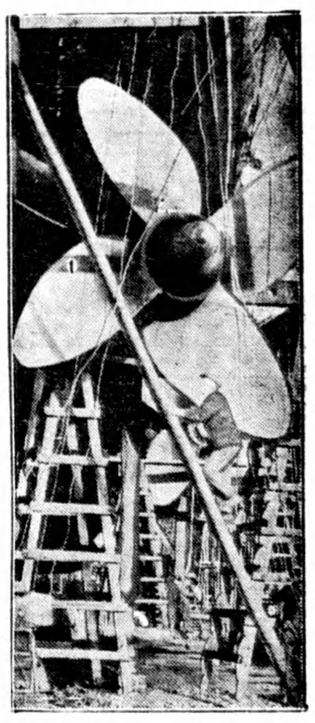
Kind hearts are gardens,
Kind thoughts are roots,
Kind words are blossoms,
Kind deeds are fruits;
Love is the sunshine
That warms into life,
For only in darkness
Grow hatred and strife.

"Where did you find your wonderful follow-up system? It would get money out of anybody."

"I simply compiled and adapted the letters my son sent me from college."

"No new age ever starts from scratch. Each era makes its particular contribution to the future."—Raymond B. Fosdick.

Getting Ready



Here is the Aquitania at the Southampton floating dock, undergoing a thorough grooming in preparation for her next busy season. The propellers each weigh 15 tons.

MUTT AND JEFF— By BUD FISHER

T'was a Dark and Stormy Night—!