





# Better Crops

The Pocket Book of Agriculture

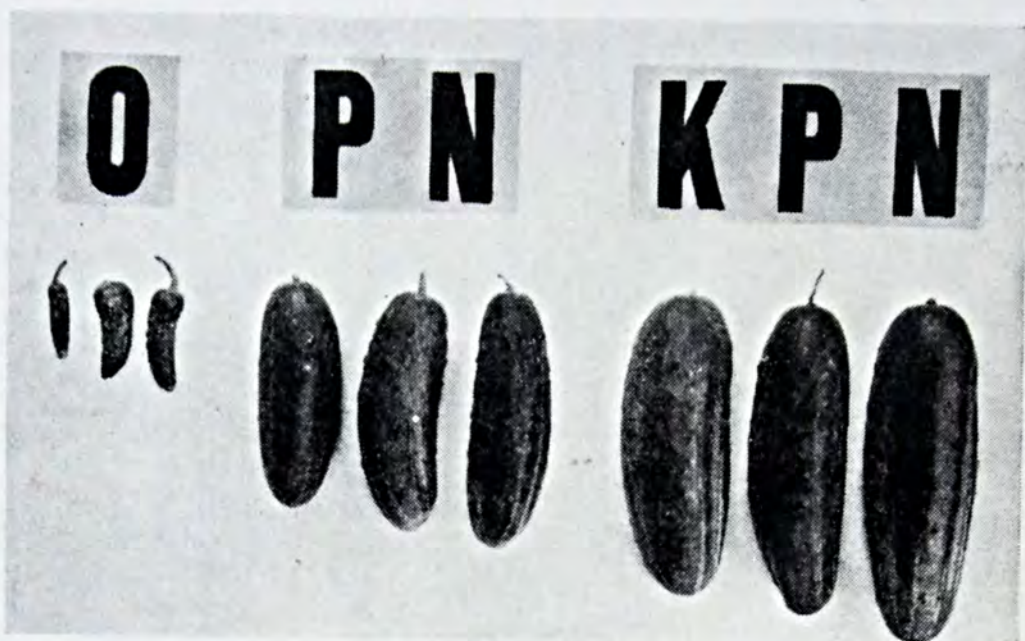
March 1925

10 Cents



Prices and the Farm Problem by Claud F. Clayton—  
Meet Laredo! by H. C. Appleton—Prize Editorial





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# Better Crops

## The Pocket Book of Agriculture

VOLUME IV

NUMBER ONE

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### Who's Who of BETTER CROPS

EDITOR	JEFF McDERMID
MANAGING EDITOR	BASIL PILLARD
PUBLISHER and SECRETARY	VERNEUR EDMUND PRATT
PRESIDENT	E. K. HOWE
VICE-PRESIDENT and TREASURER	H. A. FORBES

Editorial Offices: 461 Eighth Avenue, New York





*Spring Plowing*





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VOL. IV

NEW YORK, MARCH, 1925

No. 1

*In which Jeff tells us that  
we do too many things*

# BY PROXY

By *Jeff McIlernid*

THERE is too much of this "proxy" business. The burden which modern civilization has placed upon us limits our ability, capacity and willingness to do for ourselves—we grow to depend too much on the other fellow.

Civilization is merely organized living—and organized living separates the tasks, doles them out piece-meal, and gives each man a single job to do, forcing him to depend upon the artisanship of others for most of his requirements.

I would not want to go back to the cave-man days when each man hunted his own food, cooked it, built his own house and fashioned his own tools.

But I believe that, in banking always on the rest of civilization for our needs, we weaken ourselves. We become so accustomed to having Gertie "get him on the phone" for us, to save our time, that we are gradually atrophying our own initiative. Is it any wonder, then, that

we fall into the fallacy of thinking that, if Gertie can save a few moments of our precious day by getting a number for us, why cannot Jacob Edwards, our congressman, save our time by doing our political thinking for us?

NOT so many years ago all amusement was home-made—none could be purchased. There were, in the rural communities, no movies,



no radios, no dancing academies, no theatres. The "little club" and the petting party were undreamed of.

To have fun, folks flocked together and made it. The boy who could sing sang, and the girl who could recite gave her spiel. The popular one was he or she who could *do* something—who could originate, create, fructify and evolve a five minute entertainment upon one minute's notice. The idea of *buying* entertainment, all done up in brown paper was *anathema marantha*—each person made his own, and contributed cheerfully to the amusement of others.

Now we press a button and flood the room with jazz. We slip a bill under the brass grilled window and see a movie. We eat at the "little club" and professional entertainers cavort and caper in a vain attempt to peel off the outer layers of our ennui.

Home fabricated fun is forgotten.

Prove it. Get a bunch together anywhere, abjure the liquid which loosens dignity from its moorings, cut the radio antennae, throw a wrench in the works of the mechanical piano, hide the copies of *Puck* and *Judge*—and see what happens!

Will the good folks entertain themselves? Answer: they will not! They will talk dully a few minutes about the latest murder, then relapse into the comatose state, slumped upon their haunches, each wishing that *someone* would *do* something, press some button or buy some new, novel, neat manner of entertainment.

THE self-entertainment cells of the cerebellum are defunct, gone, atrophied and extinct.

"Let George do it" keynotes the moment.

And because this is so, we stand in imminent danger of complete national, mental collapse.

It is the heavy, iron paw of the Frankensteinian monster called Or-

ganized Civilization pressing down and extinguishing our ability-to-do-for-ourselves.

ANY man whose hair is whitening, whose forehead bears the wrinkles of worry and who has tried to organize his business, knows how difficult it is to get anyone to do anything.

He must depend upon others to do certain things for him, if he is to reserve certain hours for thinking and planning. All of which is as it should be, and in keeping with organization practice, for business organization is simply a small scale sample of civilization—a cross-section of the universe, in which each does his task, screws the nut on Bolt No. 4, and leaves his wrench in the air when the whistle blows.

But in depending upon others, we find that the others, too, are depending upon still others, who in turn are depending upon others!

And there you come to the kernel of our trouble.

The office-boy who came home and told his mother he had a new job said he was "the doer" and, in explanation, volunteered that when the big boss pressed the button, his secretary was given something to do, and she told the chief clerk what the something was. The chief clerk ordered the bookkeeper to do it, but the bookkeeper passed the word on down to the stenographer, who turned to the office boy with a winning smile—and *he did the job*—he was "the doer."

There are too few "doers" and too many button pushers.

We are becoming too familiar with the proxy system. We even buy our prayers by proxy, depending upon the learned Rev. who spontaneously spouts splendid prayer for us, while we slip a button on the plate, heave a sigh and hope that we are inoculated with

(turn to page 48)



# How Effective Club Work Can Be Done

By W. L. Wilkinson

County Agent, Edna, Texas

**P**RACTICALLY all of the fundamental principles laid down by the Extension Department of the A. & M. College of Texas for community up-building were brought out in this year's well rounded program in the Deutschburg Community of Jackson County, Texas. The community leaders played an important part. The club leaders had their duties to perform. The club boys and girls were a necessary factor. Our District Agents and Extension Specialists were used to advantage. It was necessary to have both the County and Home Demonstration Agents.

And it took the following logical plan to put the work over:—We first made an analysis of the com-

munity. Then we made a program of work. Then at a community meeting the program and its purposes were explained and adopted; and finally with enough individuals sufficiently interested in the place in which they live to give time and thought to the program we were able to carry out the work with the Holland \$1,000.00 Contest to spur us on we went forward to success and to victory.

In answer to a letter written early in the Spring of 1924 by one of the leaders of the Deutschburg Community asking us to come down and help them line up plans for their year's work, we called on three of the leading citizens and with them made an analysis of the

*(turn to page 45)*



Members of the Deutschburg Community Joint Club with W. L. Wilkinson, County Agent, at left and Miss Hazel Allen, Home Agent, at right.





Counting boll weevils in Spanish moss. There are two tons of moss in the pile collected from 15 plantations

# Weevils You Count—Weather You Can't

By C. E. Gapen  
U. S. Department of Agriculture

*Scientists are trying to get a line on what the weevil will do this year.*

**I**N the South the emergence of the cotton boll weevil receives much more attention than the emergence of the groundhog receives anywhere, and this is as it should be, for Mr. B. Weevil casts a bigger shadow any day in the year than all the groundhogs in the world. He has cast a persistent, dismal umbra over almost the entire cotton belt. The United States Department of Agriculture has made a special study of the emergence of this insect, and

every spring estimates are made of the relative numbers of the pests to expect as the foundation stock to start the production of the hordes which annually ravish the fields.

The methods employed by the entomologists to determine the probable emergence of weevils are simplicity itself, yet they are interesting and the results have proved to be of value to the cotton grower.

Sometime in March the Govern-



ment gets out its first statement on the boll weevil prospects for the season. It is based on a count of the live and dead weevils in Spanish moss which is collected in small quantities here and there on fifteen selected plantations in northern Louisiana. The moss is a favorite hibernating cover for the insects. About two tons of the moss is collected and sent in to the station maintained by the Bureau of Entomology at Tallulah, Louisiana, where it is gone over bit by bit and all the weevils counted. By comparison with the number of live weevils found in preceding years, and taking in account what happened later, it is possible to get some idea of what may happen if the weather conditions during the summer are favorable or unfavorable to the bug.

**L**AST year the count of live weevils in the moss was very low, indicating that the enemy of the cotton fields would start out at a disadvantage. But the entomologists warned that such reports should not lull growers into a sense

of security so that they would do nothing to fight the weevil. On the other hand, they said the condition offered a good opportunity for the industrious farmer who would put up a fight to raise a good and profitable crop. You see, weather conditions may turn out to be so good for the health of the pest as to make a few of them increase enormously unless precautions are taken.

But last year weather conditions turned out to be good for the planter instead of favorable for the weevil. The cold snap in the winter which reduced the ranks of the hibernators was followed by a dry, sunny summer. The weevil is not a dry advocate, so he suffered, and it was not such a big job for planters to grow a good crop. Many of the growers, as a result, have developed a false sense of security, thinking the tide has finally turned against the insect.

The second report on weevil emergence comes out early in May, and for this the scientists make elaborate preparations. At the Tallulah station they have about  
*(turn to page 41)*



*A boll weevil greatly enlarged, but he looks even bigger to the southern planter*



# CORN CHAMPION

## Tells How He Won

# SUCCESS

By J. C. Allen

*“The application of sound principles brought this corn grower record breaking returns.*

**J**. D. HULL of Columbus, Indiana, newly elected President of the Indiana Corn Growers' Association, also won Grand Champion Ribbon on ten ears of Johnson County White corn at the Indiana State Corn Show held in connection with the Agricultural Conference at Purdue University, January 12-16.

In telling of his experience Mr. Hull said: “The ten ear sample of Johnson County White Dent corn, which won Grand Champion Sweepstakes for me at the 1925 State Corn Show, was produced only after several years of untiring effort. This corn was grown on bottom overflow land along Flatrock river, Flatrock Township, Bartholomew County, about five miles north of Columbus, Indiana. The land in this part of our county is what is called Hawpatch soil, a sandy loam soil underlaid with gravel. The river bottom land is black loam with a sand mixture. We can raise better corn on this land when there is plenty of moisture, therefore this past season has been more to our liking for a good crop rather than a dry year would have been, although we had too much rain at the planting period this year.

“The field on which this corn was grown contained about twenty acres on the lowest parts of which the corn drowned out causing the entire field to average only 77 bushels which is below the average obtainable on this land under fair conditions. (I have entered the five acre corn club three different times with yields of 100.6 bu., 103.3 bu. and 92.5 bu. per acre.) The field was plowed the latter part of April. After several rains had fallen on the plowed field it was not necessary to do a lot of work to obtain a firm seed bed. A drag once over and spike-toothed harrow twice over the field before the planter was all that was necessary to prepare a splendid seed bed. The planting was done on May 11th and 12th. A heavy rain fell soon after and continued wet weather caused a delay in cultivating. The field was first rolled, next harrowed with a spike-toothed harrow, then plowed with single row cultivators reasonably deep once and three times later on about one week apart and not very deep.

“On soil that is not easily packed I like to use the roller between the first and second cultivation and on



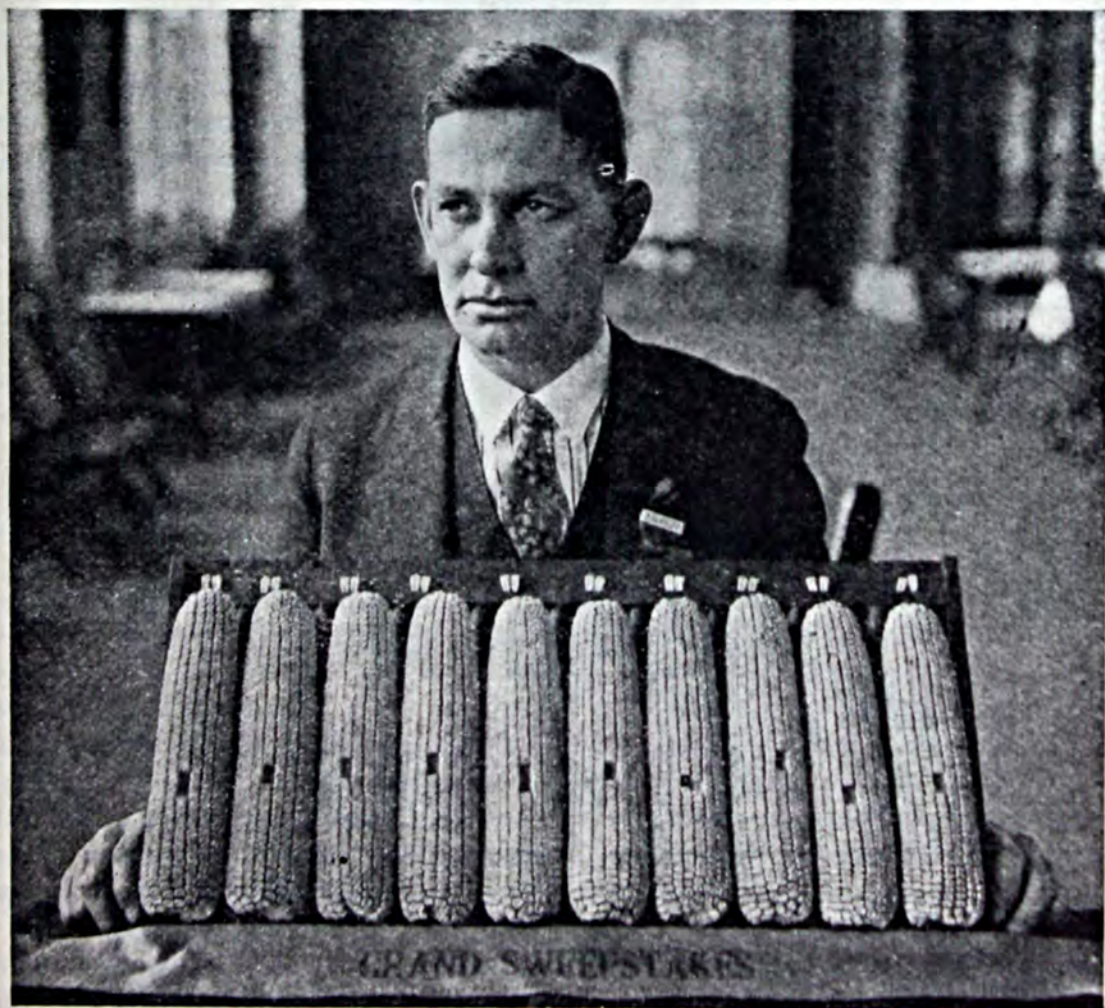
dry seasons after the second cultivation. My planter is set for 3 feet and 2 inches between the rows, and on rich soil corn is drilled 18 inches in the row and on less productive soil I drill 24 to 26 inches apart in the row. The reason I like this width of rows is that the average one row cultivator will stir the dirt over the entire space between the rows. Also when drilling wheat with the small drill in the corn, very little land is wasted where the corn row has been, and it makes it possible for the discs on the wheat drill to be spaced at a more desirable distance apart, approximately seven inches.

“**T**WELVE years ago I became interested in the production of better corn and all seed I have used for the last eight years has been tested for disease as well as germination. The type of ear and kernel

of my choice is in strict accord with the Indiana type as recommended by the Indiana Corn Growers' Association. I have attended the short course at Purdue University for several years and took the special course in corn judging for three years before I obtained a judges' certificate. My recent winnings were only possible with the knowledge I obtained at those short courses even though I might have grown a good yield of corn without it.

“In all experiments I have tried I have found commercial fertilizer to give good results especially on soil of the average fertility. Of the several tests I have made on fertilizing corn my most successful method was an application of 80 pounds per acre of a factory mixed 2-12-4 fertilizer in the row, but not in direct contact with the seed and another application of 150

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J. D. Hull and his prize-winning corn.



# Raspberry and its

By C. E. Baker

Purdue University Agricultural Experiment Station

**D**URING the last decade black raspberry culture in the United States has been on a marked decline and in some sections where raspberries were profitably grown in former years, there is no longer the slightest trace of a once thriving industry. One cause stands out, far above all others, for the failure of profitable raspberry growing. That is the dread disease that is present wherever black raspberries are grown—anthracnose.

So severe have been the ravages of this disease in the past ten years that some states have reported as great a decrease in acreage as 80%. Other states report an annual loss of 25% to 50% of the berry crop, due directly to the effects of this disease alone.

Comparatively few growers have realized the damage being done by anthracnose, due to the fact that in many cases the loss comes through the weakening of the plant, rather than as a direct attack upon the fruit. The effect of this disease is especially noticeable in dry weather, and consequently the weather often

receives the blame and the grower takes his loss and hopes for better luck next time. During the past few years progressive growers have been realizing that all is not well with their plantations, and are seeking further knowledge regarding the cause of their failure.

Raspberry anthracnose is a fungous disease of wide distribution, being common throughout Europe, Australia and America. As it is found everywhere on wild raspberries, it was probably universally distributed before the commercial varieties of raspberries were introduced. While occasionally found, also, on blackberries, dewberries, purple-cane raspberries and red raspberries, the black-caps generally bear the brunt of the



Typical anthracnose lesions on a raspberry cane. At this stage the spots are gray or whitish with reddish purple margin. (Courtesy Purdue Exp. Sta.)

attack. Although there is some difference in comparative varietal susceptibility, this is not sufficient to serve as a control measure, for no variety is known to be entirely immune to the disease.

Anthracnose first appears in the spring, as small reddish or purplish, slightly raised spots on the young



# Anthracnose Control

*¶The best methods of combating a disease which has caused incalculable damages.*

growing canes. As the infected cane continues to grow the anthracnose spots enlarge, becoming oval in shape. The centers soon become gray or whitish, outlined with a purplish margin. Later they become sunken and tiny cracks appear on the cane. Sometimes several of these spots run together and often in the cases of a heavy infection, near the base of the cane, the latter is girdled and killed. This often takes place just before the fruit ripens and the small dried up fruit is wrongly attributed to the effect of unfavorable weather conditions.

Anthracnose lesions also occur on leaves and individual fruiting spurs when the infection is heavy.

This disease lives over winter in the one year old canes and about the time the new shoots are beginning to grow the following spring, spores are formed in the old lesions and spread by rain and other means to the young succulent growth of the young canes. In this manner disease is carried over from

year to year in the old patch.

How then, does the disease get into the new patch when there are no wild berries or any apparent source of infection near?

Black raspberries are propagated from the rooted tips of canes that

grew the previous season. When the new plants are dug it is the general practice to leave a few inches of this old growth upon the plant for a "handle." The plant is set with this old growth projecting above the ground and in a large majority of cases this old growth contains anthracnose lesions. Consequently the grower is unknowingly planting a source of infection right beside his new plant and giving it every possibility to pass on the disease to a majority of the plants in the new bed. As the new

shoot springs out of the ground, the first rain carries a host of anthracnose spores from the old stub to the new shoot and another plant contracts the disease.

Therefore, the first step in an-  
*(turn to page 43)*



*Young raspberry canes in the correct stage for receiving the delayed dormant anthracnose spray. Notice the anthracnose lesions on the cane at the left. (Courtesy Purdue Exp., Sta.)*



# Prices and the FARM PROBLEM

By Claud F. Clayton

Agricultural Economist

*Will rising prices solve our agricultural troubles? "No," says Mr. Clayton emphatically and he shows why. You'll find food for thought here.*

**O**F course, we hear most about the "farm problem" in periods of agricultural depression, such as we have experienced since 1920. In periods such as this (and they are recurrent) attention is centered on farm relief measures, the assumption being, apparently, that the great problem before the country is to ameliorate the conditions which especially beset farmers, as a class.

Usually what actually results is this. There is widespread agitation. Programs for farm relief are brought forward. Proposals for legislative action are in the foreground. The virtues of cooperative marketing are extolled. In the midst of the general palaver, a national election usually occurs, into which the prevalent discontent of a large section of the voting population injects a flavor of uncertainty as to the choice of Dick or Harry, the opposing candidates for office, which adds greatly to the newspaper possibilities of the situation. The ingenious reporter is able to work out surprising combinations, possibilities, upsets, to supply the dramatic suspense demanded by the reader of the Sunday supplement.

Interest in a crisis which is a national calamity, carrying ruin to thousands in its course, degenerates to the level of speculation concerning the specious issues involved in a kind of national cross word puzzle.

What is done about farm relief? You know the answer. Someone, cleaning out the family garret, comes across a copy of Samuel Smiles, out of which he drags a bright, brand new idea which he proceeds to unload on a suffering world. It is this: the farmer must help himself. Is that all? No; the thought takes hold. It grows. If the idea works, it's good. No pragmatist denies that. Does it work? Observe it work.

From 1910 to 1920 the prices of farm products compared with non-agricultural products—taking the average prices from 1910 to 1914, the five pre-war years, as a basis for the comparison—showed an approximate parity between the two.

In 1918 and 1919, after this country had become a belligerent, it is true that farm products rose more rapidly than non-agricultural



products, due to rapidly increasing cost and heavy demand. But then came the slump in 1920. Conditions were worse in 1921. They were not much better in 1922 and bad enough in 1923. Note now how the formula begins to work. True, the ratio of prices of farm products to non-agricultural prices was 69 in 1921 and only 78 in 1923, but the trend, observe, makes a steady improvement. In January, 1924, the ratio was 82. It had moved up to 86 in October and the upward trend continues strong.

**W**HAT is the sequel to all of this? The answer you get is that the "self help" formula has vindicated itself. The farmer is curing himself of the thing which afflicted him. The little sparrows of optimism begin to twitter and chirp, while they hop about picking up the frugal seed of their endeavors. Things really are coming out all right. That swollen and inflamed member of the body politic, the farmer, throbs less violently. Of course, the problem of relief is still with us, but not in that acute and painful form which threatened to drag the limping citizenry to the polls in a spirit somewhat too recalcitrant and vindictive to suit the proper purposes for which elections are held.

Possibly you have not sensed the hymn of thanksgiving that now sounds through the press at this happy turn of a right messy state of affairs. The tune is taken up rather tentatively, it is true, so that the congregation may not get ahead of the choir, but the volume increases steadily to that ultimate and inevitable crescendo where farm product prices achieve parity with the prices of other goods.

"Is not this, then, a consummation devoutly to be desired?" inquires a pompous person on my left. There you are. It most emphatically is not. Allow me to explain. I am not saying that it is not desirable

that either farm product prices rise relatively, or that other products fall relatively. Not only is this desirable, but such an adjustment, one way or the other, is inevitable.

To borrow the phraseology of my questioner, the consummation which I strongly object to is the prevalent assumption that a rise in farm prices represents any sort of a solution of the farm problem.

This slump in prices, followed by recovery and renewed "prosperity," is, of course, a commonplace phenomenon in our industrial history. The real problem involved in the recent agricultural depression, therefore, is not touched by the appearance of rising prices. To assume that the farm problem is relieved by the appearance of high prices is like assuming that a caterpillar pest is destroyed by the appearance of butterflies.

The rise of prices is but one phase of the "life cycle" of the economic microbe from which the farmer periodically suffers. Our problem, then, is to isolate this microbe, study its life history, and combat the disease.

Is this, then, a farmers' problem exclusively? Certainly not. It is a national problem. The important thing is that we do not allow the upward swing of prices which, apparently, is before us to develop an illusion of health, when, in fact, the phenomenon of rising prices is at the very root of the disease.

But the phenomenon of the "business cycle" is not restricted to the farmer. Why must the whole country turn wet nurse for agriculture every few years, while other industries appear to obtain enough provender to subsist, at least, without quite so much hullabaloo?

**C**ERTAIN observations suggest themselves in connection with this question:

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# JARDINE

## Comes Back Home

By Ted Butlar

BETTER CROPS' Washington Correspondent

**W**ILLIAM JARDINE, who came to the Federal Department of Agriculture in 1907 as assistant cerealist after putting in several years as a Montana "cow puncher" and then left in 1910 to continue his agricultural career with distinction in the state of Kansas, came back to Washington on March 4th. This time he returned as the Secretary of Agriculture having been appointed by President Coolidge from a list of 200 candidates to assume the agricultural portfolio which was left vacant when Howard M. Gore returned to West Virginia as Governor.

Needless to say the Department of Agriculture gave its new Chief a spontaneous reception on his arrival in Washington. To most Department workers he was received as "Mr. Secretary," but to a small group of his former associates he will be known as "Bill." His choice has been given universal approval, and there is complete consensus of opinion that he will give the agricultural department a sympathetic and positive administration.

Secretary Jardine's training in agriculture has been broad, and because of his great energy it has been intensive as well. He is a trained, experienced, scientific farmer, and is an eminent authority on dry-land farming and cereals. He knows farmers and he knows agriculture because he has been intimately associated with both.

He is no believer in the miraculous power of legislation to improve farming conditions and, although, he insists that the Federal government must extend every legitimate service, at the same time he recognizes that the farmer to a great extent must work out his own salvation. He is credited with the statement that 90 per cent of the agricultural difficulties must be worked out "back home." But if the time arrives when it is felt the Government should extend relief to the farmer through legislation of a constructive nature, Secretary Jardine will be out in the front rank fighting for it in a positive fashion.

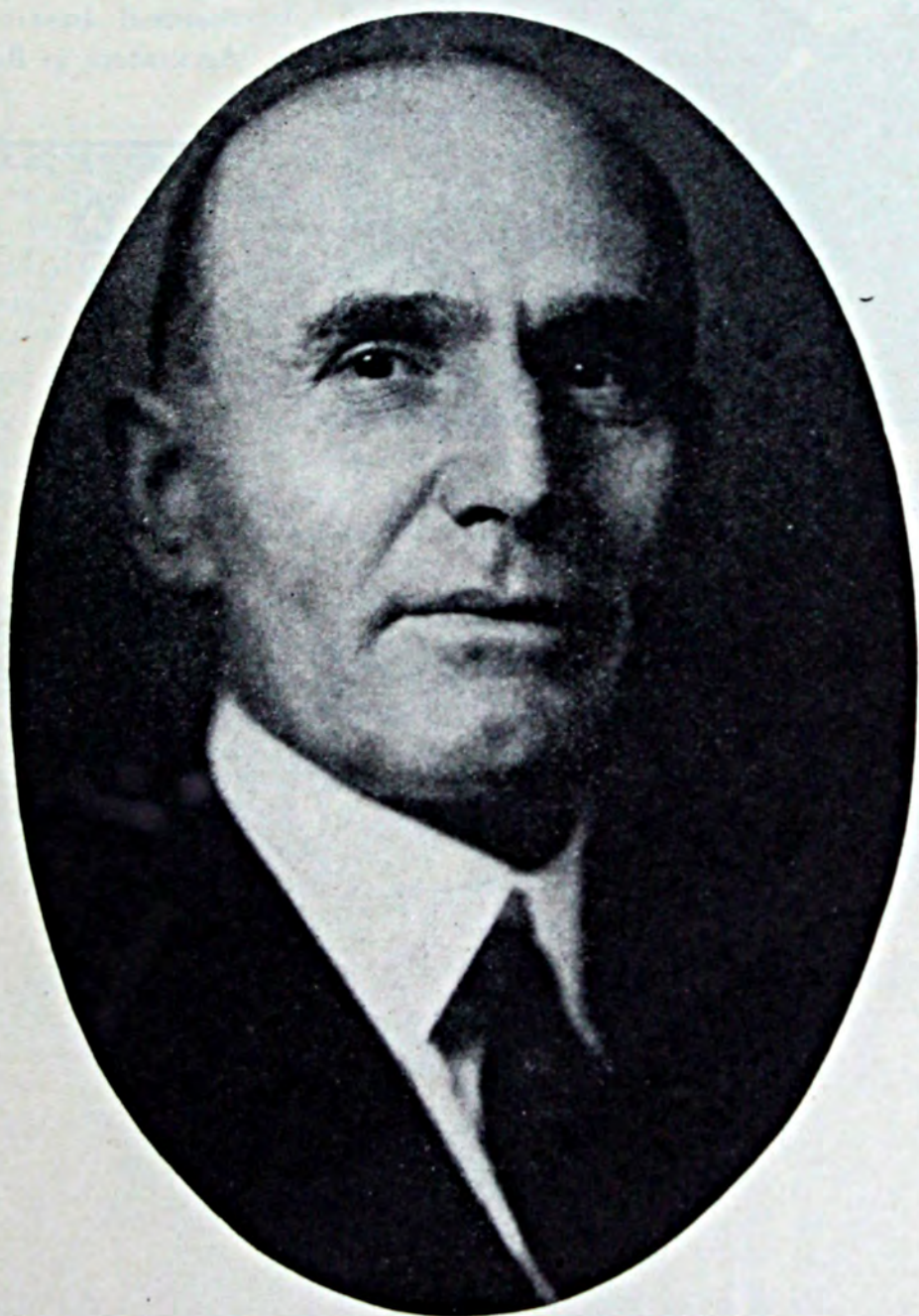
**B**ORN 46 years ago in the Malad Valley of Idaho of Scotch-Welsh ancestry, the new Secretary spent the first few years of his life on his father's ranch where he performed the usual rigorous duties of a ranch hand. He "punched cattle," broke broncos for 25 cents each, and attended the district school three or four months each winter. During his entire lifetime schooling was secured under trying circumstances, consequently his education has been permanent and of the practical kind.

He left his father's farm when 17 years of age and went to the Big Hole Basin area in Montana where he earned his first "salary"

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*Better Crops'*  
ART GALLERY  
*of the month*



Welcome to William Jardine, the new Secretary of Agriculture! His career is described in the article on the opposite page by Ted Butlar.





Leon Estabrook, the distinguished statistician of the U.S. Department of Agriculture. Mr. Estabrook for the past two years has been loaned to the Argentine Republic to develop crop reporting and statistical methods there. Now he has been appointed Director of the World Census of Agriculture by the International Institute of Agriculture in Rome.



Purdue Horticulture judging team that won first in the judging contest recently held at Columbus, Ohio. From left to right:—W. B. Yates (alternate), R. F. Hennis, D. A. Sherwood, O. J. Heacock, O. G. Anderson, coach. The team identified and judged 20 classes (60 plates) of apples, making 11,118 points out of a possible 12,000.



# Neglected Hints on Soil Feeding

By H. Thurston

*Much can be learned  
from observation of our  
every day experiences.*

**O**LD FATHER NILE is one of the most astute farmers in the world. His farm is a narrow strip of alluvial land extending for hundreds of miles through the heart of Egypt. Take away that farm and there would be no Egypt.

Father Nile has always been a great believer in high fertilizing. He has been practicing that for thousands of years. He has established on his farm a system of permanent agriculture. It consists of putting into that soil every year an abundance of plant food. Abundantly-fed lands produce abundantly, under right conditions of heat and moisture.

Father Nile, ever since man has known him, has been gathering plant food elements in the rainy regions of Africa and has been carrying them thousands of miles to enrich his farm. The rains have helped him dig the potash and the phosphates from the soil and the nitrogen from decaying vegetation. He is annually distributing these on his farm, where grow the enormous crops to feed a nation.

**E**GYPT is the one land where the soil robber has not been able to impoverish the soil. This is because old Nile puts into the soil every year as much plant food as can be taken out by the crops.

It is a wonder to me that men have been so slow to take the hint given by this old farmer.

The whole world must turn to doing what Father Nile has been doing so long. Onto the farm lands of the world must go annually as much plant food as is removed in all the crops and animals grown. Then only will the world have a permanent system of agriculture.

As the agricultural world has been slow to see the lesson illustrated by Egypt, so we Americans have been slow to draw conclusions from the many home-demonstrations in supplying the needs of plants.

**W**HEN I was a boy on the home farm there was one ridge in a timothy field where the grass grew so thin that it was hardly worth cutting. It was determined to spread on that ridge all the hard wood ashes made during fall, winter and spring. This was done; and when we cut that field in July the grass on that ridge was so rank that we had to carry a large part of it into another part of the field to find room for drying it.

The logical thing to do would have been to buy potash for treating the other fields where the grass



was thin, as it was the potash in the ashes that had caused the increases in crop. The lime in the ashes might have been credited if the crop had been clover instead of timothy. I can safely assert that had the hint been taken, the hay yield of that farm would have been doubled.

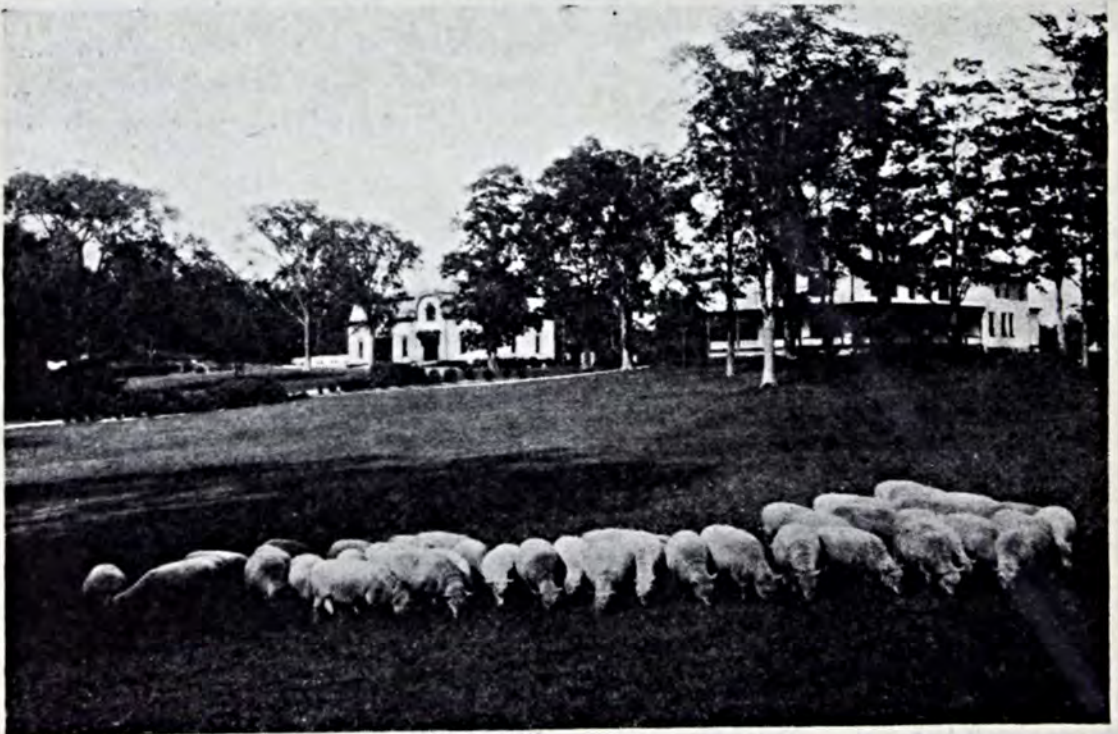
At that time also it was the custom to burn a pile of brush over the area that was to be planted to cucumbers; for the sake of the potash in the ashes. Yet none of the people I then knew thought far enough to buy potash for use on other land.

There was one grass field that was low and swampy. We drained it and manured it; but it never seemed to respond to manure as did the fields on higher ground. We could not understand the reason then; but I do now. It was because barnyard manure carries only about one-half per cent of potash; and it would have required an immense amount of manure to supply the potash needed by that particular field. We ought to have known that this field needed potash from our experiences on the pieces

of land where we had burned brush to help the cucumbers.

**I**N twenty-five years I have visited farms and experiment stations in many states. The one need that has impressed me above all others is the need of making sure that there is enough available plant food in the soil to produce the biggest possible crop in the shortest possible time.

The time required to grow a crop is shortest if there is an abundance of all kinds of plant food in the soil. A few years ago much of the corn in the Middle West failed to harden before frost took it. I noticed then that the fields that had been freely fertilized, and which were well supplied with nitrogen, phosphorus, and potash, were the ones that yielded good corn. One Wisconsin farmer, the only one in his township to use commercial fertilizers, told me he was the only man in the township that had any hard corn. Yet most of these farmers knew of experiments in crop feeding and also knew that underfed crops means late crops,—probably always.



*A Flock of Southdown sheep at the U. S. Morgan Horse Farm, Middlebury, Vt. This is one of the most picturesque of all Government experimental farms which are to be found in various parts of the country.*



# A Tribute to Common People

B y E . W . H o w e



ONE of the brightest men known in history is Thomas H. Huxley. He not only had the advantage of a complete education, but a huge mind. In the world's list of brainy, scholarly men, Huxley was possibly one of the first dozen. He was a famous scientist; which means that he fairly and accurately investigated many things, and was accepted as an authority by thousands of workers in the same field. This man did not share the notion that the people are mainly fools, and once wrote the most generous tribute ever paid them. He said: "The longer I live the more I am disposed to think that there is much less either of pure folly or of pure wickedness in the world than is generally supposed. When I have brought to the inquiry the patience and long-suffering which becomes a scientific investigator, the most unpromising specimens have turned out to have a good deal to say for themselves from their own point of view. And sometimes calm reflection has taught the humiliating lesson that their point of view was not so different from my own as I had fondly imagined. Comprehension is more than half way to sympathy, here as elsewhere." (I was thinking it over just now, and do not believe any man ever coaxed me to do wrong. On the contrary, all my life I have been within hearing of loud declarations from men of the importance of good behavior. I never pick up a book or newspaper that the same thing does not stare me in the face. I have made many mistakes, but believe every one was the result of accepting my own judgment in defiance of much good advice from men and I have associated mainly with the common people: workmen, farmers, small tradesmen. (We like to say, "Society is rotten." I do not see much rottenness, I think the people are rather well behaved, considering everything. The "awful rottenness" we talk about is exaggerated, and refers to only a few. When we truthfully consider what we actually know of each other, we must admit that people restrain themselves pretty well. I know a few tough stories to be true; but only a few. The great bulk of the people I have known flirt with sin occasionally, but when it comes to engaging in the higher walks of it, they are afraid; we have been whipped into a good deal of order.



# Meet LAREDO!

By H. C. Appleton

Georgia State College of Agriculture

*Soy beans have had a sensational career in recent years. Mr. Appleton tells the story of one of these newcomers that has decidedly made good.*

**T**HE Laredo soybean has had an interesting history since its introduction to America. Whether for the best or not, the course of the Laredo since its introduction has been somewhat spectacular.

Several years ago seed of this variety were obtained by the United States Department of Agriculture from Yangping, China. In 1917 seed were distributed to certain Agricultural Colleges and Experiment Stations. At this time the variety was designated by the number S. P. I. 40658, and was not known as Laredo.

Now appears one of the interesting and amusing incidents of its history in the United States. At several of the Colleges and experiment stations the seeds sent out by the Department were either misplaced and not planted at all, or they were planted and the results of the first year's trial did not indicate that the Laredo was a variety of any special promise, so it was dropped from the variety tests. Agronomists at some stations, on seeing the wild bullish market for Laredoes develop in other states, laughingly chided the Department Officials for not letting them in on the good thing. They were, of course, somewhat chagrined to learn that they had been supplied with the seed, but at the time Laredo sailed along

under the not very striking designation of S.P.I. 40658.

The attention they failed to get at other stations was certainly bestowed on them at the Georgia State College of Agriculture. And why shouldn't it have been? A soybean variety yielding at the rate of 37 bushels of grain and 2.70 tons of hay per acre would not likely be discarded without further trial at any place. Such was the yield the first year at the Georgia College. In the Georgia tests it has not again equaled the first year's yield, but it has proved to be an excellent and consistent yielder of grain and hay. Year in and year out it has done well. It has been ranked slightly by two other varieties in yield of grain, but neither of these can be considered really good varieties for hay production.

The Mississippi Station Officials were favorably impressed by the performance of the Laredo. After testing it for several years at their Station and Sub-stations they felt that it could be given their stamp of approval, and could be recommended to the farmers of Mississippi. They make a special point of its adaptability to wet lands in the Delta. Accounts of the performance in the Delta and the unusual demand for seed in that section surely indicate that the



Laredo has not been a disappointment.

IN 1920 or perhaps before that time small quantities of seed had reached the hands of farmers. No one had many, but those who had any hoarded them as if they had been gold. And some of these early growers did reap a golden harvest when they multiplied the small handfulls with which they started into a crop measured in bushels. 1922 seemed to be the year that the wild scramble for seed began, and this scramble has continued unabated up to the present. When the supply will catch up with the demand is still problematical.

In 1922 one grower sold seed at the rate of one dollar per quart. He thought this was rank profiteering, and that surely some evil would come to him for taking such an advantage of his fellowman. Imagine how much like a piker he felt when the next year, with Laredo seed much more plentiful, they sold at a higher rate, even when sold in lots of a bushel or more.

The crop of 1922 began to move in the fall at ten to fifteen dollars per bushel. There was no semblance of a market price, no one seemed to know what price to set on them. Some named a price of ten dollars, all the while believing that such a price was so outrageously high that no one would pay it. They were surprised to find that such a price brought a perfect deluge of orders. By the early spring of 1923 those who had sold at ten dollars per bushel had come

to regret their hasty actions of the preceding fall. Laredo beans were now all out of the hands of those who considered them to be worth no more than ten to fifteen dollars per bushel. Now, anyone who wanted to buy them had to pay prices that ranged from twenty to thirty-five dollars per bushel. There was still no market price; the only way one could get a supply of seed was to find someone who had bought them for his own use and begin making offers gradually

raising the offer until the temptation to make a quick and easy profit became too great for the owner of the seed to resist. A rumor, that the writer was unable to verify, had it that one bushel was traded around from one to another until it finally brought a price of more than forty dollars. Verily it was a bullish market.

Even with purchasing seed at almost unheard of prices most of the people who grew a crop of Laredoes in 1923 made money. To begin with, each bushel of seed was made to plant ten to

twelve acres, and in some cases even more. The yields obtained ran all the way from five to thirty bushels per acre. Ten to twelve bushels per acre seemed to have been the most common yields. Eight and ten dollars per bushel was the price offered in the fall. Gradually the price worked up to \$12.50, at which price the greater part of the crop was sold. Then the antics of the preceding year were repeated; prices went to fifteen and twenty dollars per bushel. It is doubtful as this is being written (June) if any

(turn to page 35)



*Two mature Laredo soy bean plants from which the leaves have been stripped to show the seed pod.*



# A Remarkable Potato Crop

*(This remarkable achievement has aroused universal interest. This account is republished from the American Fertilizer of February 21, by permission.)*

A REMARKABLE potato crop was grown last year by Frederick H. Rindge, near Stockton, San Joaquin County, Calif. Mr. Rindge's potato patch consisted of 1,500 acres, which is a good-sized field even in California. It is part of the 250,000 acres known as the delta of the San Joaquin River, which has become famous for the large-scale production of potatoes, onions, beans, asparagus, celery and other profitable field crops. The soil is peat, which has been reclaimed, and is irrigated from beneath, that is, by raising the water in the ditches to the desired height.

There were six varieties of potatoes planted, but the best proved to be the "Burbank," developed by the famous California botanist. The yield of a carefully surveyed acre was 962½ bushels, and four surveyed acres averaged 937 bushels. No previous American record has approached this remarkable accomplishment. Yields of about 700 bushels have been reported from Maine, and from Nevada County, Calif. The previous world's record is believed to have been held by Great Britain, where 896 bushels were dug from a surveyed acre.

The peat soil of the delta, formed by decaying vegetable matter, is high in nitrogen, and does not need any nitrogenous fertilizer.

The formula used was 0-21-21, which fertilizer men will recognize as unusually high grade, even for use on a peat soil. A ton per acre of this highly concentrated fertilizer was applied broadcast in February, as part of the preparation for planting. The fertilizer was distributed from wagons by a broadcasting device, the wagons preceded by a disc harrow being drawn across the field by a tractor. Another tractor-drawn harrow, with the discs set at a sharper angle, followed, thoroughly mixing the fertilizer with the soil.

THE report states that 36 bushels of seed per acre were planted. If this is correct, uncut potatoes of good size must have been used. The seed was chemically treated in the usual way prior to planting, but no spraying or other treatment was given the growing vines. Harvesting was with the usual mechanical diggers, both tractor and horse drawn.

The production cost of the crop was nearly \$200 an acre, but as the whole tract yielded between 500 and 600 bushels of merchantable potatoes per acre, the net return was quite satisfactory to the owner. It is a well-known fact that peat soil requires special treatment. The methods of these delta farmers cannot be applied to ordinary farm land, whether it be fertile or im-



poverished. But the delta farmers of the San Joaquin valley, whose crops sell for \$45,000,000 a year, have learned how to grow full crops—something a majority of farmers do not know. There is land in northern Ohio and in Illinois, to mention only two localities convenient to good markets, where the production could be doubled, and the profits more than doubled, by simply adopting the San Joaquin method of using a ton of fertilizer per acre.

*NOTE:—Although it is claimed that this is the world's record potato crop, according to Dr. W. Stuart in the Potato News Bulletin, that record is held by W. J. S. Sturgis of Buffalo, Wyoming. In a contest conducted by The American Agriculturist in 1890, he raised 974.8 bushels on an accurately measured acre of land. Nevertheless, Mr. Rindge's is a remarkable achievement.*



# Soft Corn Feeding Test

## By G. L. Winright

County Agent

The soft corn problem has been especially interesting during the fall and winter to those farmers who were obliged to buy and also land owners who had their share for sale, and as no definite information was available on the subject, arrangements were made with a farmer in McCook county to conduct a feeding experiment with sorted corn, using the soft corn for one bunch of hogs and the sound corn for the other pen.

The corn used in the experiment made a field run of 50% soft and the remaining half was sound corn. A sample of the sound corn graded No. 3 at the local elevator and was worth \$1.10 at that time. The soft corn was no grade stuff and was worth about 1c. lb. to feeders.

The method of procedure and results are shown in table below:—

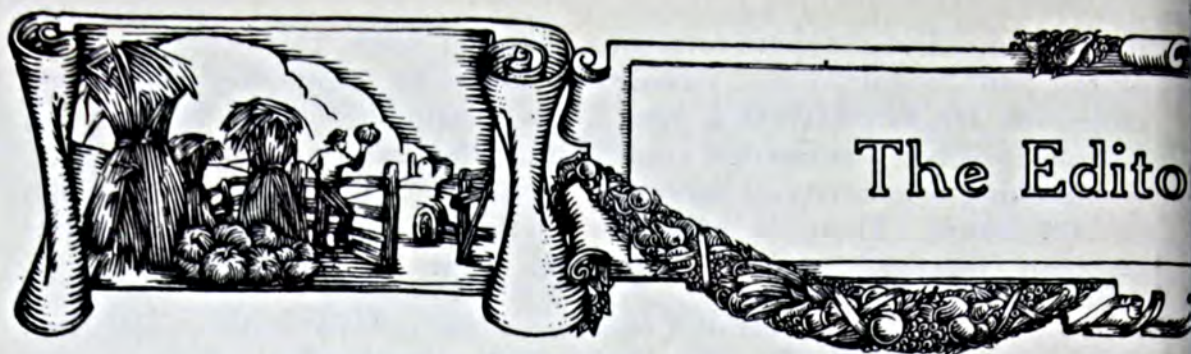
A summary of the table shows that 2 pounds of No. 3 corn equals approximately 3 pounds of soft "no grade" corn and that pork was produced at a cost of \$9.10 cwt. with the soft corn figured at 1c. per pound or the No. 3 corn at \$1.10 per bushel.

According to these results corn running half merchantable and half soft has a feeding value of 87½c. per 70-pound bushel with pork at \$9.10 or 180-lb. to 200-lb. hogs which was the price at the time this experiment was conducted.

Present market conditions give the feeder an additional gain on the original 150 pounds weight, due to the fact that there is an over supply of light weight hogs on the market and the price is favorable to heavier hogs.

	No. 3 Corn	Soft, No Grade
Number of hogs fed.....	7	7
Average weight of each.....	152 lbs.	151.5 lbs.
Average weight after 10 days feeding.....	171 lbs.	169 lbs.
Average Daily gain per hog.....	1.9 lbs.	1.75 lbs.
Lbs. corn consumed per hog per day.....	11.43 lbs.	16 lbs.
No. lbs. corn to make 1 lb. pork.....	6.0 lbs.	9.1 lbs.





ARE  
FARMERS  
PEOPLE?

"The farmer wants a higher tariff on agricultural products." "The farmer will not stand for any governmental interference in his work." "The farmer is naturally conservative and will always resist scientific advance in agriculture."

I offer these as specimens of a type of thinking and talking, that all of us indulge in at one time or another, but that can become a foolish and dangerous habit if persisted in.

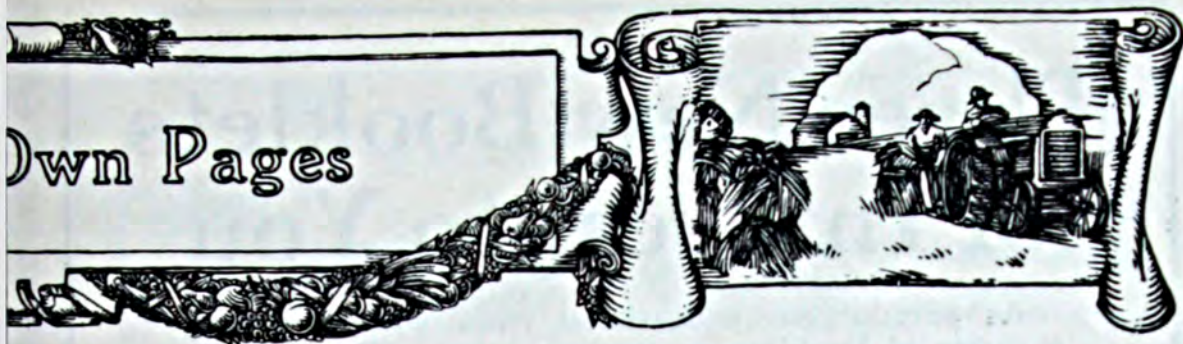
Generalizations have their uses at times but, when anyone goes to the lengths indicated in the above quotations, he needs a sharp reminder of the fact that he is getting dangerously near to falsehood.

This method of generalizing about the farmer always makes me wonder about the mental processes of the speaker or writer. He seems to regard farmers as a kind of animal or insect. You can observe a cow or a mosquito and from its actions make a number of generalizations that apply to all cows or all mosquitoes. But when you start doing that with human beings, particularly with their mental processes, you head straight for trouble.

I go into one county, let us say, and hear a lot of complaints about the county agent. Am I, therefore, correct in announcing to the country that "The farmer is disgusted with county agent work and it should be abolished?"

Absurd! you say, but I have known a number of people who used just that kind of logic. People who have superficial minds do it on all sorts of topics and somehow the farmer seems to be the goat for more of it than any other class.





Farmers are not cattle who move in a herd. They are people, and as people they comprise all shades of intelligence, temperament, opinion and habits. Let us remember that when we start to talk about what "the farmer" wants or does not want, or likes or dislikes. Generalizations are usually a substitute for accurate thinking and expression. Never trust generalizations—not even this one.

IS SCIENCE            I have been reading some books lately  
OUR SLAVE OR        that I should like to recommend to your  
OUR MASTER?        attention. They are not directly connected with agriculture, but they are concerned with problems that touch everyone of us. They are two small books which cost only a dollar a piece and they present two different views on the future of science particularly in its relation to mankind.

The first is called "Daedalus" and is by a distinguished biologist, J. R. S. Haldane. The second is "Icarus," by a mathematician and philosopher, Bertrand Russell. Mr. Haldane is generally optimistic about the future of science. He sees it as a great liberating, progressive force in human civilization. Mr. Russell takes the opposite view and pictures mankind as enslaved and perhaps destroyed by science.

This is a big subject and it grows more important as time goes on. These books do not cover the subject completely, but they certainly provide food for thought. Does science control us or do we control it? Think it over and read these books before you give your answer.

*Jeff McIlernid*



# Three New Booklets of Interest to You

As part of our educational work we are issuing a series of booklets on various crops. The purpose of these booklets is to show by facts and figures how proper fertilization brings the farmer a greater income both through increased yield and improved quality.

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# Why We Should Diversify Crops

By Paul Tabor

Associate Professor Farm Crops  
Georgia State College of Agriculture

*(This is the second of the prize editorials contributed by our readers.)*

THE diversification of crops tends to minimize the fluctuations of over-expansion and depression in farming. When times are bad for the farmer I always remember the case of George Langford, Madison County, Georgia. I have heard him tell that his best years of farming came when cotton was selling at five cents per pound. By making his living at home, and having some corn, fruit, meat and butter to sell, he managed to clear about five hundred dollars per year when the neighbors, growing only cotton, failed to break even. The five hundred dollars went for land at five to ten dollars per acre, the value of which is now five to ten times as much. Starting as a hired man receiving less than a dollar per day, Mr. Langford has acquired about a thousand acres of land, and the money for all of it has come from the sale of diversified products. I don't believe there has been a year that Mr. Langford has failed

to make money. Some years his neighbors making good cotton crops and getting high prices would make more money, but they never made it as consistently as Mr. Langford did.

Diversification is a means of soil protection. Vandiver Jenkins a young farmer of the same county, uses a three year rotation of cotton, small grain and corn. His neighbors grow cotton on their best lands until there is apparent deterioration and then change to one of the other crops for a year or two. Mr. Jenkins' farm is one of the show places of the county. It is getting better each year, while those about it are gradually going down or barely holding their own in spite of a considerable amount of commercial fertilizer used each season.

Diversification of crops fosters the philosophy of conservative progress. With less money during the boom times than the one crop



farmers, there is less temptation to speculate. Conservatism becomes second nature with the man who diversifies his crops. On the other hand, diversification insures more money during hard times. This encourages constant progress. Oftentimes a small amount of money will do more in hard times than a large amount in good times. This is especially true in buying land. The case of Mr. Langford comes back to me. He never went in debt to any extent in buying his land. He nearly always purchased it when prices were low. During periods of high prices he seemed ultra-conservative, during periods of depression he has always been constructive.

Diversification of crops reduces the number of failures during periods of extreme depressions. About once in a generation a period comes that tests the value of different systems of farming to the limit. We are passing through one in Georgia at this time. Over much of the state the deflation of prices and the boll weevil came on us at the same time. It has been very much like twin cyclones. Prices and production of our principal crop were slashed in half. Through this trying time the farmers practicing diversification have fared much better than those depending on cotton alone. George O'Kelly of Clarke County is already re-established on a firm basis with his diversified program, while many of his neighbors specializing in cotton have been unfortunate in losing their farms. Before the depression, these neighbors were making money much faster than Mr. O'Kelly. These periods of extreme depression seem to be one of the greatest risks in farming. In the community where I was reared one of the oldest citizens recalls that every farmer there who has specialized in cotton production alone for thirty years has been forced to give up his land. County Agent L. S. Watson of Morgan County, Georgia, long

associated with the stress of the first five years of boll weevil infestation says the man with the greatest diversification is the one that has suffered least.

Diversification stimulates the fullest development in a farmer. A specialist in a certain crop learns the requirements of this crop and is not stimulated to further study. Oftentimes he has a portion of the year left for idleness. Very few people can resist the temptation of loafing, and loafing rarely adds to a man's development. The farmer with diversified crops must learn the requirements of several crops instead of one. His work too, is extended over the year to a greater extent. Nearly always, livestock are kept on a diversified farm to a greater extent than on other farms. These present additional problems requiring time and thought. Greater development is thus forced on the farmer who diversified. With increased development there usually comes the ambition for still greater development, and shortly it is translated into reality.



## Why Should We Diversify?

By J. W. Firor  
County Agent, Athens, Ga.

*(Here is another point of view on the same subject which the judges deemed worthy of publication.)*

May be we should not. If by "we" reference is made to the farmers individually, and by "diversify," to the growing of several leaders as cash or market crops, then it seems that experience has demonstrated that we should specialize instead of diversifying.

With over 12 years experience in agricultural extension work in nearly two hundred counties, I am



prepared to state that of the many farmers with whom I am acquainted and with whom I have worked, the outstanding, successful group is made up of specialists and not of diversifiers.

I know highly successful farmers, who have specialized in dairying, or sweet potato production, or the growing of nursery plants, or cotton. Of all those farming less than 400 acres, I know but one, who has made a success of growing three or more cash crops, counting trucking as one crop.

Each crop grown as a cash crop, if produced with energy and in sufficient amounts to justify marketing, requires special knowledge, special skill and efficient equipment. Therefore, diversification on average size farms means expensive production and unusual hazard.

On farms large enough to justify a skilled manager for each leading crop grown, and large enough to wear out a variety of machinery diversification is practicable; still on second thought these units would be specialized units after all.

The actual experiences of a number of farmers points the way to some worth while conclusions.

Let us look at the development that has taken place in the southern part of Georgia since the boll weevil arrived in 1915. Prior to that year, this large section produced cotton almost exclusively.

The boll weevil wiped out the sea island cotton industry apparently forever, and put a crimp in upland cotton production. Farmers turned to diversification in this emergency. The cotton acreage was cut materially—in half of the counties from 25 to 75%. The acres released were planted to peanuts, sweet potatoes, watermelons, pecans, peaches, cane for syrup, truck crops, tobacco, and feed for livestock. This is what they understood by diversification and this is what they did.

What has been the result? Are

these farmers still diversifying after a decade? No, they are specializing. In some counties cotton production has been reestablished. In some ten or fifteen other counties farmers are now specializing in producing bright leaf tobacco. The growth of the tobacco industry has been from less than 1,000 pounds in 1914 to over 30,000,000 pounds in 1924 worth six and a half million dollars. From Montezuma to Macon, a distance of fifty miles, there is almost a solid peach orchard today. Albany section expanded its pecans, Cairo, its syrup, Tifton, its early vegetable plants, and Moultrie, its watermelons.

Through actual experiences, in the schools of hard knocks, these farmers have become specialists, while the section as a whole has become diversified, *fortunately so*. This diversification by communities, counties and sections has given southern Georgia an agricultural strength undreamed of ten years ago. In 1923 when the cotton production was very low, peaches, pecans and sweet potatoes proved profitable. In 1924 when peaches and pecans did not produce any net profits, cotton and tobacco brought prosperity to the section.

At the beginning of this discussion, I stated that specialists in farming were outstanding and successful farmers. Of this group those who have supported and abetted their specialties with secondary, and complimentary crops are at the top. Those who had a leader, and at the same time used other crops to round out their farming operations, so as to use, to the fullest, their animal and man labor, to permit of rotation and upbuilding of soils, to use their implements and machinery the most number of days possible, to grow food and feed crops needed for farm, and to utilize any part of a crop, that would go to waste otherwise,—these are the leaders among the successful farmers.





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## Practical Science

*Crop and Soil Management, by J. F. Cox. Published by John Wiley & Sons, Inc., New York, 1924.*

Dedicated to the new generation of American farmers, "Crop Production and Soil Management" has given to this great class of students, young and old, a valuable compilation of farm experience, experimental and practical.

The author, Professor J. F. Cox, head of Farm Crops at the Michigan Agricultural College and Experiment Station, has placed between the covers of his book some 500 pages of interestingly written and fully illustrated information pertaining to the economical production of crops and the maintenance of soil fertility. He has drawn heavily on the mass of research and investigational work, but only as found applicable in farm practice. The pages are rich in experience derived from the farmer's fields.

In the selection and presentation of the contents of this volume, the author has had in mind the fact that the "ultimate consumer" of his subject matter is the man on the farm, whether received through the medium of an instructor, a county agent or from the printed page. He has met the prime requirements of the great majority of students—both on the farm and in the classroom—that the teachings be scientific first and practical always.

As the title suggests, the book considers the growing crops and the handling of soils with the great objective of reducing costs, improving quality of products and

maintaining fertility. The problems of crops and soils are treated, not as separate and distinct farm problems but, rather as interlocking and interdependent considerations in the business of farming.

The volume is divided into two parts. The first deals with the major "operations" of producing crops and maintaining fertility; the second deals with the specific operations or steps in growing each of the crops common to the corn-belt and northern states. This is a not illogical arrangement since it takes the reader from general to specific or from specific to general as his problem may require.

To illustrate, chapter 7, "Maintain the Fertility of the Soil," outlines and discusses the general schemes of soil maintenance and building, not from the standpoint of any one crop or section, but in its broadest sense. Then, in Part Two, information and recommendations are given as to the best soil management practices for the specific crop under consideration and for the kind of soil.

Some of the major operations included in Part One are: choice of crops, testing of seed, soil preparation, rotation-planning, fertility maintenance, planting methods, weed insect and disease control and harvesting and storing of crops. These chapters, in themselves, constitute a well-ordered general course in the fundamentals of economical crop growing.

In Part Two a chapter is devoted to each of the 16 principal crops of



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By JOSEPH F. COX, B.S.A.  
Professor of Farm Crops, Michigan  
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the cornbelt and northern states including corn, small grains, sorghums, potatoes, sugar-beets, beans, soybeans, clovers and alfalfa. Chapters on hay and pasture crops and on conducting crop exhibits and contests complete the work with exception of appendix and index.

The chapter in all cases is developed "chronologically" in so far as possible or feasible. For example, chapter 14, "Corn Growing," classifies and presents the subject matter in the order in which each operation or step is performed. Selection, care and testing of seed, preparation and fertilization of the soil, planting and cultivation, harvesting and utilization of the crop—these are considered as the successive and essential operations in the best production of corn.

Under the heading "General Information" a part of each chapter is given to the many interesting and valuable facts which afford the reader a more general knowledge of the crop than merely that of producing it. Origin, importance, distribution and market classification of crops are included as part of the general information.

A new and very useful feature in the make-up of the book is the "community survey" or study given at the end of each chapter. This is in accord with the modern and most effective methods of teaching i. e., by projects or problems. County agents, instructors, extension and community workers will find the surveys and studies outlined a suitable basis for development of project work.—H. W. Warner, Iowa State College of Agriculture.



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## By Ted Butlar

BETTER CROPS' Washington Correspondent

Everything looks encouraging on the horizon for the coming crop year, says the annual outlook report of the U. S. D. A., in its comparison of prospects with the past few years. General business prosperity during the first half of 1925 will maintain the domestic demand for farm products, it is felt, and should stimulate the demand for the better grades of certain products.

The foreign market for most American farm products promises to be as good at least as during the past year, Federal officials conclude, and the foreign situation is further brightened by the fact that European economic conditions are on the mend. The short grain crops in 1924 coupled with high purchasing power in industrial centers and better facilities for financing imports are favorable for continued sales of American wheat and rye, at least until the next harvest. Despite increased prices, the demand for American pork products in Germany has continued strong.

The wheat belt has been the bright spot in American agriculture during the past year. In the opinion of Government experts, if there is an average world crop of wheat in 1925, the present high price cannot be expected although prices are expected to be better than in 1923. Growers of hard spring wheat are cautioned by the Department of Agriculture not to increase production above domestic requirements. The Department contends

that if the spring wheat acreage is held to that of last year, and an average yield is secured, the production of hard spring wheat should about equal domestic requirements.

It is hard to see continued gloom in the livestock after studying the outlook report, even though cattle raisers are entering upon the fourth year of short profits. Beef cattle prices should average somewhat higher than last year, according to the report and in other quarters there is evidence that a serious cattle shortage faces the country because of forced liquidation of breeding stock for a few years. This later situation, say experienced cattle men, will result in much better prices.

Hog producers, the report points out, entered 1925 with 18 per cent fewer hogs than a year ago and there is every indication that prices during the next 18 months will be higher than at any time since 1920. Six to eight million fewer pigs will be born this spring than last. Fewer sows will farrow next fall than last fall if producers respond to the unfavorable relation of corn to hog prices as they have done in the past, it concludes.

We have heard a lot of talk these days about there being too many farmers in the United States. Much of this discussion has terminated as agriculture gets back to a uniformly better condition. But Dr. H. C. Taylor, Chief of the Bureau of Agricultural Economics, comes forward with a coldblooded consideration of the subject on the



basis that too many farmers are a detriment to the nation. "In 1820," he says, "approximately 87 per cent of those engaged in gainful occupations in the United States were in agriculture. The percentage engaged in agriculture in 1920 was 26. This movement of country to city went on gradually throughout one hundred years, but between 1910 and 1920 the movement was more rapid than in any period since 1870."

This movement, Dr. Taylor contends, should be looked upon as desirable within certain limits. He touches a resounding note when he concludes; "The danger in the movement is that the process will be selective, taking the best stock from the rural community and leaving the weaker elements of the population on the farms to the detriment not only of agriculture, but of the nation as a whole. The movement should operate in such a way as to leave in the country those elements of our rural population best suited to an efficient type of farming, a higher standard of living on the farm and in the rural community, and a standard of rural citizenship commensurate with the needs of our democracy."

Leon Estabrook, veteran statistician in the Federal Department of Agriculture with an international reputation as an expert on crop statistics, has been appointed by the Interantional Institute of Agriculture at Rome as Director of the World Census of Agriculture to be made by the Institute in 1930. This census will be the first effort ever made to inventory the world's agriculture, and is expected to yield valuable statistical data that will enable the leading agricultural countries of the world to organize their production of food and fibers to meet world demands.

In 1923 Mr. Estabrook was loaned by the agricultural department, where he was chairman of the Crop Reporting Board, to the Argentine Republic for the purpose

of developing a crop reporting system and statistical methods there. He then made a statistical survey of agriculture in South America for the Federal Department. No sooner had this work been completed than he was called to take over the important assignment in Rome.

The American consumer is eating more meat. Compared with the calendar year of 1923 the figures for last year show an increase of almost 1,000,000 animals slaughtered under Federal inspection, there being a total of 79,432,614 animals slaughtered in 1924. The increases for cattle, calves and sheep approximate half a million in each case, while there is a decrease in the number of swine. It will be recalled that the swine slaughtered for 1923 was several millions higher than any previous year, so that the 1924 total, although slightly less, is still close to the record.



## Corn Champion's Success

(From page 9)

pounds per acre of 0-10-10 factory mixed, between the rows with a hoe wheat drill when the corn was about ten inches high. This gives a good yield of highly finished grain and I believe is a test which will respond on almost all types of soils that compare favorably with central and southern Indiana.

"It should be kept in mind, however, by the successful corn grower that at no time should he ever miss the opportunity to plow under some kind of cover crop, manure or anything possible to maintain humus in his soil.

"I also breed and raise Reid's Yellow Dent Corn which I like very much for lighter soils and late planting as well as for feeding purposes. I operate a 400 acre farm and aim to raise 100 acres of corn each year. All corn raised on this farm is either used for seed purposes or fed to livestock."



## Meet Laredo

(From page 21)

quantity of Laredo bean seed could be obtained at twenty dollars per bushel.

By taking advantage of the situation, several Georgia farmers made downright "killings" growing Laredo seed. A few random examples will be cited. A college student planted a bushel on nine acres. His summer vacation gave him ample time to make and gather the crop. He harvested 140 bushels from the nine acres, which brought in a gross return of \$1,100. He sold the greater part of his beans at eight dollars per bushel. A lady harvested the seed from three or four acres and sold \$600 worth. One farmer reports a crop that brought him \$3,000. These examples and others that might be cited, show that those who have been growing Laredoes have received rewards somewhat more tangible than an expression of thanks from their neighbors.

Up until the present nothing has been said that would indicate that the Laredo is a valuable addition to the soybean varieties of the country, unless the high prices paid

for seed indicate such. Its history in the United States has been spectacular and for that reason interesting. The unusually high prices paid for Laredo seed and the resultant speculation may not be for the best. Only time can tell. However, the writer knows of nothing that will bring about such an increase in the supply of seed of a newly introduced plant as will a high price and active demand for such seed.

NOW that we have seen what might be called the frenzied finance side of the Laredo business, let us examine it and see what it promises to Agriculture. The man who will grow Laredoes in the years to come will be little concerned as to whether the seed sold for one or one hundred dollars per bushel during their early days in this country. He will be vitally interested in what they will do in the field.

Soybean culture in the United States may be said to have begun in the South. In the Northern part of the Cotton Belt and the



A field of Laredo soy beans near the blooming stage.



territory immediately North of the Cotton belt the Mammoth Variety of soybeans was widely grown before much thought was given to soybeans in other parts of the country. The Mammoth produced good yields of seed but the seed being large it took a considerable quantity to plant an acre. Its coarseness of stem was objected to. It was soon seen that if a variety having finer stems could be found that it would have advantages over the Mammoth. If such a variety should yield more than the Mammoth it would seem that the perfect soybean variety for the South would be found. Just such a variety was the Ootootan. The early history of the Ootootan, by the way, is an exact parallel of that of the Laredo.

THAT the Ootootan was not a perfect variety (none are) was soon apparent. It made hay enough to satisfy anyone and the hay was of good quality. Its two faults were lateness and its poor yields of seed. Being late amounted to little in the Cotton Belt, but was a serious fault in some of the old Mammoth territory. Its shyness in producing seed was a disadvantage to all, and soon there were growers who were ready to trade for a variety producing a little less hay, if it was necessary, but one that would produce at least fair yields of seed. A variety that had many of the good points of the Ootootan, but which was early in maturing and was a good producer of seed was not long in appearing. It was the Laredo.

The Laredo is a fine stemmed leafy variety. The branches arising from the main stem grow upward and attain a height almost equal to that of the main stem. In habit of growth it is almost a semi-vine. However, lodging is not excessive except on very rich land. It bears both purple and white flowers. The seed are black and

very small, 466,500 to the bushel.

It can be classed as medium early. It matures for hay in September and the seed ripen in late September or early October.

In the following table are given the average yields of hay and grain of the three leading hay varieties of soybeans at the Georgia State College of Agriculture. For the sake of comparison and to show why the Georgia farmers are replacing cowpeas with soybeans the yields of the three leading varieties of cowpeas are included.

*Seven Years Average Yield of Three Leading Varieties of Soybeans and Three Leading Varieties of Cowpeas, at the Georgia State College of Agriculture.*

Variety	Ave. Yield of Hay (in tons per acre)	Ave. Yield of Grain (in bushels per acre)
Ootootan soybeans.	1.52	9.21
Laredo Soybeans.	1.57	18.12
Mammoth Soybeans	1.40	15.79
Brabham cowpeas	1.03	6.30
Iron cowpeas	1.00	8.77
Whipoorwill cowpeas	.82	8.71

That the results have been favorable to the Laredo at the Mississippi Station would certainly be inferred from the attitude of the Agricultural authorities of that State. In listing the services performed by the Experiment Station for the farmers of Mississippi, the work with Laredo soybeans is specially mentioned.

The results of the Georgia College trials show that the Laredo has yielded more hay than the Ootootan. This is at variance with results obtained at other stations, and the general belief held by farmers. However, no one believes that the Ootootan will make much more hay than the Laredo, and there isn't the slightest doubt but that the Laredo is far and away the best yielder of grain.

A fact that is of great importance in certain sections of the South is that the Laredo is resistant to



**Rootknot and Wilt.** In areas where these two diseases are prevalent non-resistant varieties of soybeans and cowpeas are very often completely ruined by them.

**T**HE other end of the seed price has been purposely withheld until now. It is true that \$12.50 is a high price for a bushel of soybean seed, but the farmer who has seed to buy is not so much concerned with price per bushel as he is with price per acre. This spring seed of the Mammoth variety sold for as much as \$3.00 per bushel. One bushel of Mammoth seed will plant about two acres, one bushel of Laredo seed will plant eight to ten. It will not take much figuring to demonstrate that the price of seed necessary to seed an acre

was about the same for each of the two varieties. In this connection it should be mentioned that Otootan seed sailed skyward this spring, selling for ten and twelve dollars per bushel. A bushel of Otootan seed will plant six to eight acres.

When writing about a single variety of one of our Agricultural plants it is hard not to leave the impression that the variety in question is "the one best variety." This the writer hopes he has not done. The Laredo is a variety of soybeans that possesses undoubted merit. If the writer may be allowed to make a suggestion it would be that the Laredo be tried out even in territory that is considerably north of the Cotton Belt, as it will mature for hay if not for grain, in sections far above the Cotton States.



## It Didn't Work

E	D	I	C	T		R	A	N	E	E
N		E	A	R		A	S	H		X
S	E		N	O	R	M	S		D	C
U	R	N		T	A	P		H	I	E
E	D	E	N		I		N	O	E	L
			A	E	O	L	I	A	N	
T	Y	P	E		I		B	E	G	S
S	A	T		O	N	E		Y	A	K
A	M		O	R	G	A	N		G	A
R		F	R	A		T	A	M		T
S	N	A	I	L		S	P	O	R	E

This is the answer to the cross word puzzle published in our last issue. One reader, M. A. Thorfinnson of Hallock, Minnesota, sent in the correct solution.

Ye Ed. has decided that cross word puzzles are not very popular with our readers. He finds, moreover that editing them correctly is a job beyond his capacity. After taking the most particular pains to have the one that appeared last month correct in every respect, something slipped somewhere and the definition of 30 horizontal ap-

peared as "a wind" when it should have been "a unit."

Since Ye Ed. abominates errors of this kind in the puzzles he undertakes and since he does not seem able to avoid them in the ones he prints, he has decided to leave the publication of cross word puzzles to the experts in that field.

Jeff





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## Prices and the Farm Problem

(From page 13)

(1) Farmers are more vociferous but perhaps less persistent and insistent in their demand for public help than producers in certain other industries which come readily to mind. This is due, in part, to the nature of the farm business which requires relatively small units of organization and entails consequent difficulty in massing those large resources to the support of a cause or the vindication of a principle, which, of course, are at the command of industries possessing the advantages of large scale production and potentialities for monopoly.

(2) Farm products are produced, not in a continuous stream which can speedily be augmented or diminished, but seasonally. Producers of farm products, therefore, are able to make very slow and uncertain adjustments to changes in price. And producers who are adversely affected by price changes suffer about in proportion to the speed with which they can adjust output. Who comes last in this list? Right the first time.

(3) Our consumption of the necessities of life varies much less with given changes in price than is the case with luxuries. Hence, there is much less opportunity to turn over an excess of a "necessity" through stimulating demand than is the case with a luxury. In case of the "over production" of a necessity, therefore, what happens? Yes, the price falls, and great will be the fall thereof. Among those who produce "necessities," who comes first in the list? You are one hundred per cent so far. Try this one.

(4) You can't have your cake and eat it, too. True. Equally true that you can't eat your cake unless you have it. Production precedes consumption. If you produce the entire output of a commodity, you have to do some

guessing: (a) How much it will cost you per unit to produce so many units. You have to guess because you can't be sure what the prices of your materials, etc., are to be. (b) How many units can be sold at a price to cover this estimated cost, including risk, plus that reasonable profit so often talked about and so seldom seen?

But suppose you produce only a very small fraction of the total supply of a commodity? You have to make the same two guesses, but now enormously complicated by the fact that you have to gamble not only on yourself, but on the thousands of other producers as well.

Now suppose that the success or failure of your venture depends, in addition, on whether it rains on the fourth of July and snow is on the ground at Christmas.

At this point you quit. The odds are too heavy. But right here, approximately, is where farming begins. In the rank of possibilities for controlling the amount of output, and the conditions of production, with the consequent power of predicting the returns to be expected from his efforts, does the farmer stand at the foot of the list? The ayes have it.

ALL roads which point to a solution of the "farm problem" lead ultimately to price stabilization. But price stabilization implies intelligent production, efficient marketing, and rational consumption. Under the fog of optimism engendered by rising prices, it behooves us, therefore, to keep these fundamental propositions in view:

1. That the development of farm organizations under intelligent leadership is essential to place the agricultural industry on a parity with



others in vigor of thought and unity of action.

2. That economic research must be the starting point in solving the complex problems of agricultural production, marketing and finance. Much valuable work is being done by the government, by universities and agricultural colleges, and by private agencies, but special aspects of many problems are best handled, and some can only be handled, through scientific analysis undertaken by farm organizations which are actually functioning in the production or marketing process.

3. That agricultural depression finds no panacea in high prices; that the sense of security which is stimulated by rising prices is one of the worst dangers in the situation; that the only real approach to a solution of the farm problem is through intelligent organization and careful study, with a canny eye on the aphorism that "history repeats itself."



## Jardine Comes Back Home

(From page 14)

as a helper on a dairy farm. Following this extremely rugged background, young Jardine entered the Agricultural College of Utah at the age of 21 and was graduated in 1904. He paid part of his way through college by teaching in nearby grade schools, and after graduation had done so well that he was requested to continue as an instructor in agriculture.

It was in 1907 that he came to the Federal agricultural department as assistant cerealist. In this position he travelled extensively in the grain growing states of the West and came in direct contact with the problems over a wide area. One year he spent in studying Canadian agriculture.

When he left Washington in 1910 to head the agronomy work at the Kansas State Agricultural college, he was recognized as an authority on grain crops.

The new Secretary enjoyed a steady and successful career after he went to Kansas. Three years after he went there he was made dean of agriculture. In five more years he was made President of the institution and relinquished this position with an indefinite leave of absence when President Coolidge selected him as the best fitted man in the United States to undertake the arduous duties as Secretary of Agriculture.

**D**URING the World War Dr. Jardine had charge of agricultural production in Kansas and won a national reputation for his results in this field. Besides his college connections he has been enlisted in other agricultural capacities, among them being agricultural advisor to the American Bankers Association and a lecturer at the national school for the training of chamber of commerce secretaries. He long has maintained an enviable reputation as a writer and lecturer on agricultural subjects.

It was last summer that Dr. Jardine won particular prominence from a national standpoint. The McNary-Haugen bill had been introduced in Congress designed to set up an export corporation for the handling of surplus products. The middle west, practically to a man, supported the measure. But to Dr. Jardine this piece of legislation appeared to be unsound with the thought that it would work permanent hardships on American agriculture. Being of a positive nature, he launched a bitter attack on the proposal and was largely responsible in turning the state of Kansas against it as being fundamentally unsound.



## Weevils You Count

(From page 7)

a hundred hibernation cages with screen walls which are weevil proof. Each cage is of standard size and constructed in exactly the same way as all the rest. In the fall various kinds of hibernation shelter are placed in the cages, materials which weevils ordinarily use as cover for the winter. Included in the list of materials used are oat straw, cotton stalks, corn stalks, chips, Spanish moss, and many other things found about fields and woods.

Starting in early September, weevils are collected in the cotton fields and placed in the cages at weekly intervals until killing frosts cut off the supply. In other words, weevils are put to bed in the cages at just about the same rate as they turn in when free to do as they please in the fields. Usually about 500 weevils are tucked away in each cage, and by the time winter sets in there will be somewhere between 35,000 and 50,000 in the entomological bunk houses. So far as his wintering conditions are concerned, the shut-in weevil does not know he is in a cage. But in the spring when he emerges from his long sleep he finds his liberty very much limited, for he must stay and be observed and counted.

The first weevils come out in the cages in the locality of Tallulah

about the first of March, and they continue crawling out of the "hay" until the last drowsy ones yawn and begin looking for breakfast early in July. Most of them come out in May. However, it has been found possible by correlating the amount of emergence, in March and April with the weather during these months, to predict roughly what the total emergence will be. The emergence in the cages shows what it will be in the same latitude outside if the weather has been the same in the region considered.

The main purpose of the cages is to provide detailed information on the relative efficiency of the different kinds of hibernation shelter, but they have great value in giving information on emergence of weevils.

THE entomologists are very particular to say that they can not give exact information on what the weevils may be expected to do in the way of raising families and damaging the cotton crop. "We can only predict," says B. R. Coad, in charge of the Tallulah station, "in a very general way the abundance of weevils when they come out in the spring. All of the records are made in one district and can be applied to other districts only by



Bungalows for the boll weevil on the Department of Agriculture Farm in Louisiana. Here weevils are kept over winter and counted as they emerge in the spring. It's valuable information.



comparing the weather experienced. The emergence is not at all a positive criterion to the final damage to the crop, but has many important bearings on the control program. It does mean that in a year of fairly light emergence, such as last spring, the damage to the 'bottom' crop will be definitely reduced. At the same time, the final injury to the crop is very largely a question of rapidity of multiplication of these weevils, and that in turn depends on the rainfall during June, July and August. Light emergence means that the farmer has the advantage at the start of the fight, but unfavorable weather may offset this advantage."

The estimates of the weevil situation have been made with this cage-collected information every year, beginning with 1916. Last year the records showed the months of March and April were unusually cool. In spite of the cool weather, however, the percentage of weevils emerging was greater than in 1918 or 1919, and nearly as great as in 1917 and 1920. There were plenty of weevils to produce normal damage to King Cotton, if the summer weather had not been what it turned out to be.

Apparently counting weevils is a help in sizing up the situation, but the farmer will be unwise to count too much on this counting, especially when it shows the weevil is down on his luck. The weather man may deal him some good cards.

**M**OST of the information on the coming weevil army is yet to be obtained, but observations made last fall and during the winter give something to work on. In spite of the dry, sunny summer of 1924 large numbers of weevils went into hibernation in at least half of the belt. There has been some cold weather this winter that probably gave many of the sleepers a jolt, but the counts in March and later

will best tell the tale. And then there is the weather to gamble on again. Many planters, probably half of them, still insist on gambling more than they need to. They remember last summer and the weevil of worry is not for them. But professional observers, among them the entomologists, say the pest has not been permanently impaired.

A great deal of progress has been made in fighting the weevil, although the favorable season of 1924 may cause a slump. The damage done to the crop last year was only 5 or 6 per cent of the damage done in 1923 in some of the States and ranged up to about 68 per cent in Mississippi. An association devoted to fighting the boll weevil conducted a questionnaire and found that as yet only a few farmers buy calcium arsenate ahead of the season so as to be ready to dust the pest into subjection. In most sections farmers gave nearly all of the credit for favorable results last year to the weather, although in practically all localities some of them recognized the importance of poisoning, fertilization and of improved cultural practices. More poisoning would have been done last year if the weather had been rainy.

**G**EORGIA is said to be the most progressive and best organized state for the weevil fight. In this state and in North Carolina about 50 per cent of the growers are said to have used poison last year, or prepared to do so had it been necessary. In the other States, with the exception of one or two, from 15 to 20 per cent of the planters prepared to use or did use poison dust. One of the leaders in the campaign has said that if all cotton States would take hold vigorously, with what is known of control methods, the problem would be practically solved.

In Georgia it is estimated that



75 per cent of the cotton farmers last year practiced destroying cotton stalks to reduce the hibernation shelter. In some of the other States it is thought half of the farmers are now following this practice. A considerable percentage throughout the South have adopted quick-maturing varieties, along with better fertilization to get ahead of the insect, and close cultivation.

At the same time scientists are not relaxing their efforts to find better means to beat the weevil. Among other things they are making a thorough study of the constituents of the cotton plant which serve to attract the insect. Once they are well understood, the villain, B. Weevil, may be easily lured to his destruction—perhaps.



## Raspberry Anthracnose

*(From page 11)*

thracnose control is to avoid this practice. All of the old cane that comes with the plant should be removed at planting time by cutting off the stub just above the crown. The entire plant is covered with soil and there are no stubs left to spread the disease to the new plants.

In the case of blackberries the plants are usually pruned so as to leave two or three inches of the old cane above the ground, but if a large number of the plants show anthracnose lesions they should be treated the same as raspberries.

Other preventative measures, along the line of general sanitation, include keeping the rows well cultivated and free from grass and weeds.

THE only sure way of controlling this disease, however, is by careful and thorough spraying. The most important application is the delayed dormant spray of liquid lime sulfur

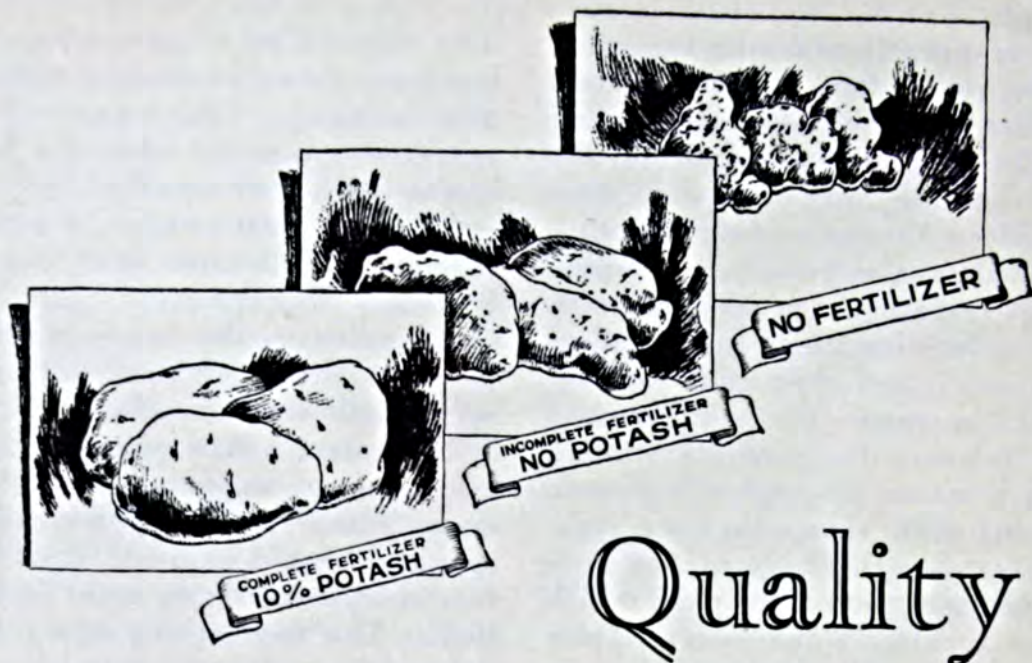
one gallon to ten gallons of water. The addition of a casein spreader has been shown to be of considerable value in this spray. This application is made when the first leaves are about one-half inch in length and must cover the entire surface of each cane, from top to bottom. This spray, of course, is of no value to the newly planted patch as it does not come until the spring following the planting.

To protect a new planting from infection, an application of Bordeaux mixture 2-12-6, plus a casein spreader, should be made when the new shoots are six to eight inches high. The next spring apply the delayed dormant as described above, followed by a Bordeaux spray about a week before blossoming. Beginning with the third season, use only the delayed dormant spray each year. This system of spraying will protect the patch sufficiently so that the yield or the life time of the patch will not be seriously affected, while at the same time it avoids the danger of injury to fruit and foliage, that so often results from summer sprays of either Bordeaux or lime sulfur in this region. Work in this and other states indicates that the injury from summer sprays is often very serious in this locality.

When it comes to cleaning up an old infected patch, it is often necessary to use a summer spray of 2-6-50 Bordeaux, when the new shoots are six to eight inches high, in addition to the delayed dormant spray and in this case injury to fruit and foliage may be reduced to a minimum by using a 45 degree angle nozzle and applying the spray to the young canes and the base of the fruiting canes only.

In any case it pays to spray. Even if one crop of fruit is sacrificed, thorough spraying for one season may save the patch. On the other hand, permitting the disease to grow for one season may mean the weakening of the entire patch to such an extent that it cannot again return to a fruitful state.





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# How Effective Club Work Can Be Done

(From page 5)

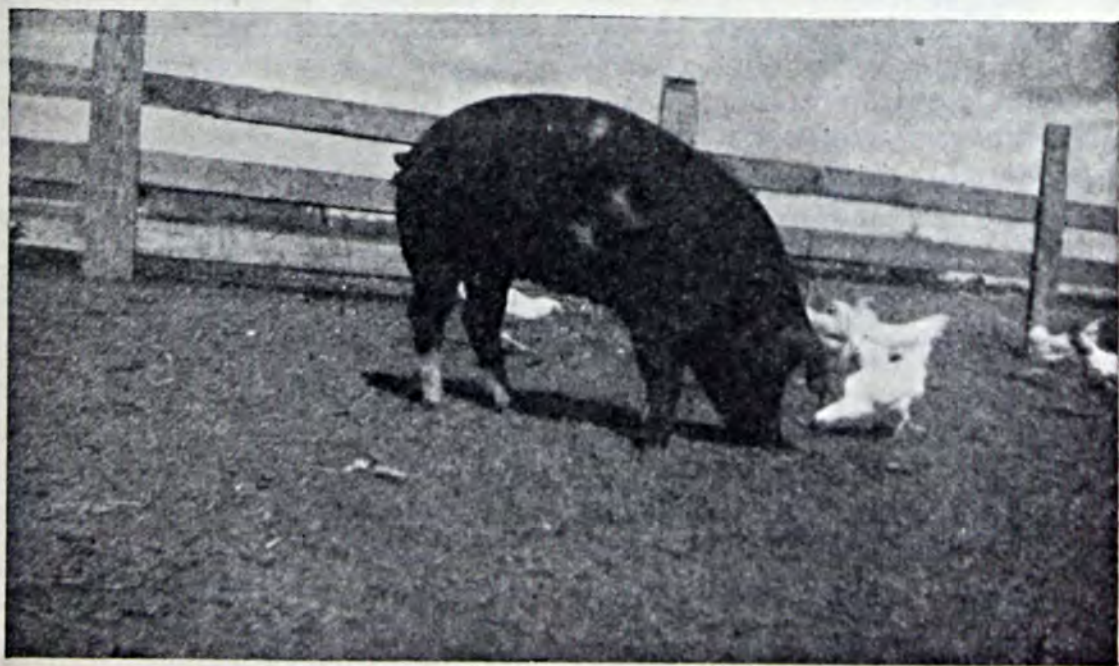
community. Though dairying and poultry raising are the chief courses of income, the analysis showed that there were only four hogs in the community and that there was a great deal of skimmed milk going to waste, and that there was very little canned goods put up from the fruits and vegetables grown in the orchards and gardens of the community, and that there was practically no neatness and taste shown in the clothing worn by the women and girls of the community.

To our surprise instead of the analysis showing the need of better dairy sires, better poultry houses, more culling and balanced rations, it showed that the great needs in the community were for pigs to consume the skimmed milk, for arrangements to be made for putting up more canned products and for giving lessons in sewing and selection of materials. In making out the program of work with these same three leading citizens it was decided to enlist the boys and girls into the service of hog raising, canning and sewing. The parents, club leaders, county and

home demonstration agents with what help we could secure from outside forces got behind these club members and helped them put the work over.

When this plan was presented to the people of the community at a regular meeting they heartily agreed to it and promised their support. As a result every girl in the community between the ages of twelve and eighteen years of age joined the club, and every boy in the community between the ages of ten and eighteen with one exception joined the club. This gave us a membership of six girls and seven boys.

On May 21st, 1924, we organized these thirteen club members into the Deutschburg Community Joint Club. This club met once each month and the boys and girls met at the same time in the same room in the same building with the same presiding officers. We had a *Joint Club*. All seven of the boys were present at each and every joint meeting. All seven of the boys joined the pig club and each one of them bought a registered Big



The gilt that won first place at the Deutschburg Community Fair was raised by a club boy.



Bone Poland China pig. In order to make a well rounded program of work as was suggested by the Swine Specialist, Mr. A. L. Ward, of the Extension Department of the Texas A. & M. College, each of the seven boys built pastures and shelter for their pigs. And the third project was to raise feed for these pigs. Each of the seven boys planted an acre of feed stuff for his pig making three projects with the pigs as a basis.

On September 18th, each of these seven boys brought his pig to the Deutschburg Community Fair and also an exhibit of his acre of feed stuff. Each of the seven boys have turned in complete record books of their work.

ALL six of the club girls were present at joint meetings with few exceptions. All these girls joined the poultry club. Each secured three settings of pure bred eggs and hatched them under hens borrowed from their mothers. These girls had the entire care of these eggs and chicks. They kept a complete record of how many hatched, how many were sold, how many they are keeping for breeding stock for next year, how many died and the amount of feed consumed. Comfortable houses were built for their poultry. Each of the six girls exhibited a pen of their poultry at the Deutschburg Community Fair in September. They also carried a complete exhibit of required sewing, food preservation and home improvement. All six of the girls sent in complete record books and histories of their work. Each of these girls planted a garden so they would have something to can.

There was a lack of interest taken in gardens and canned goods by the parents in the community, but by using poultry as the productive project we succeeded in getting each girl to plant a small garden, out of which they canned 279 jars.

This amount was more than the entire community was in the habit of putting up. Improving the quality of poultry was the main project, but it brought about what was most needed, more canned vegetables and better workmanship and selection of clothing.

THE Deutschburg Community is not an exceptional community in which to work. Neither is it favorably located nor are the people peculiarly adapted for doing joint club work. They are a class of hard working people, most of them owing a good deal on their farms. We had difficulties to overcome and some we did not overcome. We would have had 100% of the boys in the club if one of the farmers had not refused to let his boy join. Once when the occasion demanded, one of the club leaders took her own car went out to the hay field and brought one of the members in off the mowing machine in order that this girl might get the benefits of the joint meeting.

In order to create interest among kiddies who live ten miles from any town and very seldom get out the Deutschburg adult community club arranged to furnish a gallon of ice cream and cones for their boys and girls at each of their monthly joint club meetings. The fact that we were helping the parents help their children do a definite piece of work was the thing that went such a long way toward the success of the club. Our monthly meetings were not just a parliamentary form or a place for some yelling and fun. We got right down to business. You see the club members did not get their record books until the close of the year's work, but each one made a book in which to keep his records and what he did each month. After the meetings were called to order each member would stand and read



what he had been doing with his projects during the month in answer to roll call. The boys would tell just how many pounds their pigs had gained that month and just what and how much they were feeding their pigs. They would report on the feed crops they were growing and about sheds and pastures they had made for their pigs, etc. The girls would give in answer to roll call the number of chicks hatched, what they had canned that month and what sewing they had done.

The County and Home Demonstration Agents also had a note book in which they took down the reports as they were given out and would ask questions on certain parts of the work, and would assist and give advise about any changes that ought to be made with reference to rations, etc. By the time we got through with the roll-call the hour would be nearly gone, but we certainly had spent it profitably. Once in a while we had a little time to practice yells before serving ice cream cones, but usually we had some social matter such as a community fair or a visit of some specialist to talk about and arrange for and did not have much time for play.

Prizes valued at fifty dollars were given these club members at the Deutschburg Community Fair. We held our last joint meeting with this club in November, at which time all record books were filled out and stories of the various projects were handed in. These records and stories with the secretaries' report were sent in to the judges of the Holland prize. As a Christmas present we received notice that the Deutschburg Community had won third highest place in the state and was rewarded a hundred dollar prize.

This year's work in the Deutschburg Community was a big constructive demonstration. It demon-

(turn to page 48)

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## About Ourselves

**B**ETTER CROPS is a monthly magazine edited primarily for those who act in an advisory capacity to the farmer.

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SUBSCRIPTION PRICE — \$1 per year. Single copies 10c each.

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**BETTER CROPS  
PUBLISHING CORP.**

461 Eighth Ave. New York

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## By Proxy

(From page 4)

sufficient of the heavenly Virus to carry us over another week.

My cook, trained to grille the garlic with gas that some unseen genius generated, is lost when the gas goes off. There is a coal stove. Yes, but who will get the coal? Have we some arrangement for automatically bringing in the coal? Or must one soil one's lily white fingers by lugging it in oneself?

Hully Gee!

To what are we coming, and to which?

ONLY yesterday, George Baldwin, who farms the forty northwest of me, was in to complain about things in general—and Congress in particular. He asked of me, and of Divine Providence, when those blankety-blank dumb-bells in Washington were ever going to get some legislation going to help the poor farmers—George Baldwin, especially.

It seems that Baldwin had just been down to the village to haggle over a new harrow with Henry the harness-man. The price was eighty-one dollars—just thirty dollars more than the last one he bought seven years ago—and Congress was responsible, because “nearly all of that thirty dollars was *freight*, I tell you, *freight*.” The farmer ought not to have to pay freight on stuff for tilling the soil—Congress ought to fix that.

When I asked him what was the matter with the old harrow he said it had “*rusted itself out*” and wouldn't work.

I said no more. But harrows, well cared for, do not “rust out” in seven years. The trouble was that good friend Baldwin had left his harrow in the weeds at the side of his corn field to stand the elements as best it could—for seven seasons—and now Congress should help him get another for thirty

dollars less than it was worth!

What we cannot or will not do for ourselves we want others to do for us—by proxy.

I get terribly tired of this proxy stuff—it breeds indifference, lackadaisical carelessness, and dowdy decrepitude—it weakens moral fibre, saps the strength of the sinews and leaves its victim unable to cope with life's realities.

I do not for a moment advocate complete self-dependence, knowing that no one can assume full responsibility for creating everything he eats, wears and uses—we must fall back upon the rest of the world for what we need.

But my plea is that we do not depend too far—that we do enough for ourselves to keep in practice, at least.

The only time to say “Let George do it” is when your name is George—and even then change your phraseology to “*Make George do it*” and if he won't do it, overboard with him—feed his carcass to the sharks—let's sail on.

Abas! This proxy stuff!



## Effective Club Work

(From page 47)

strated that the principles of work laid down by the Extension Department of the A. & M. College of Texas are workable, that Joint Club Work is practical, that club members can do a great piece of work if we will get behind them and work with them along business and profitable lines. Though his profession makes the farmer a little individualist, this year's work showed that if the farmers in a community realize that their community is not perfect and happiness alone is found in making the corner in which they live better, they can work together on a year's program and carry it out to completion.

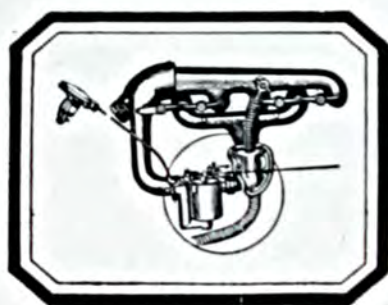


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April 1925

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The Farmer's Springtime Outlook by E. G. Nourse—  
Articles by E. M. Harmon—Albert Hansen—E. W. Howe





# The profit start

WINNING sportsmen always keep in mind the old proverb, "A good start is half the victory." And wise farmers do likewise—

To start well—to show an increase in your income this season—you must be sure that you are using a fertilizer that will bring best results. In Lapeer County, Michigan, Mr. T. G. Graham grew sugar beets on adjoining plots of muck soil. At a flat rate of \$7.00 per ton his yields showed that 500 lbs. of a complete fertilizer containing 18% potash produced \$76.90 *more income over and above the cost of the potash* than when the same fertilizer *minus potash* was used. In addition—

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# Better Crops

## The Pocket Book of Agriculture

VOLUME IV

NUMBER TWO

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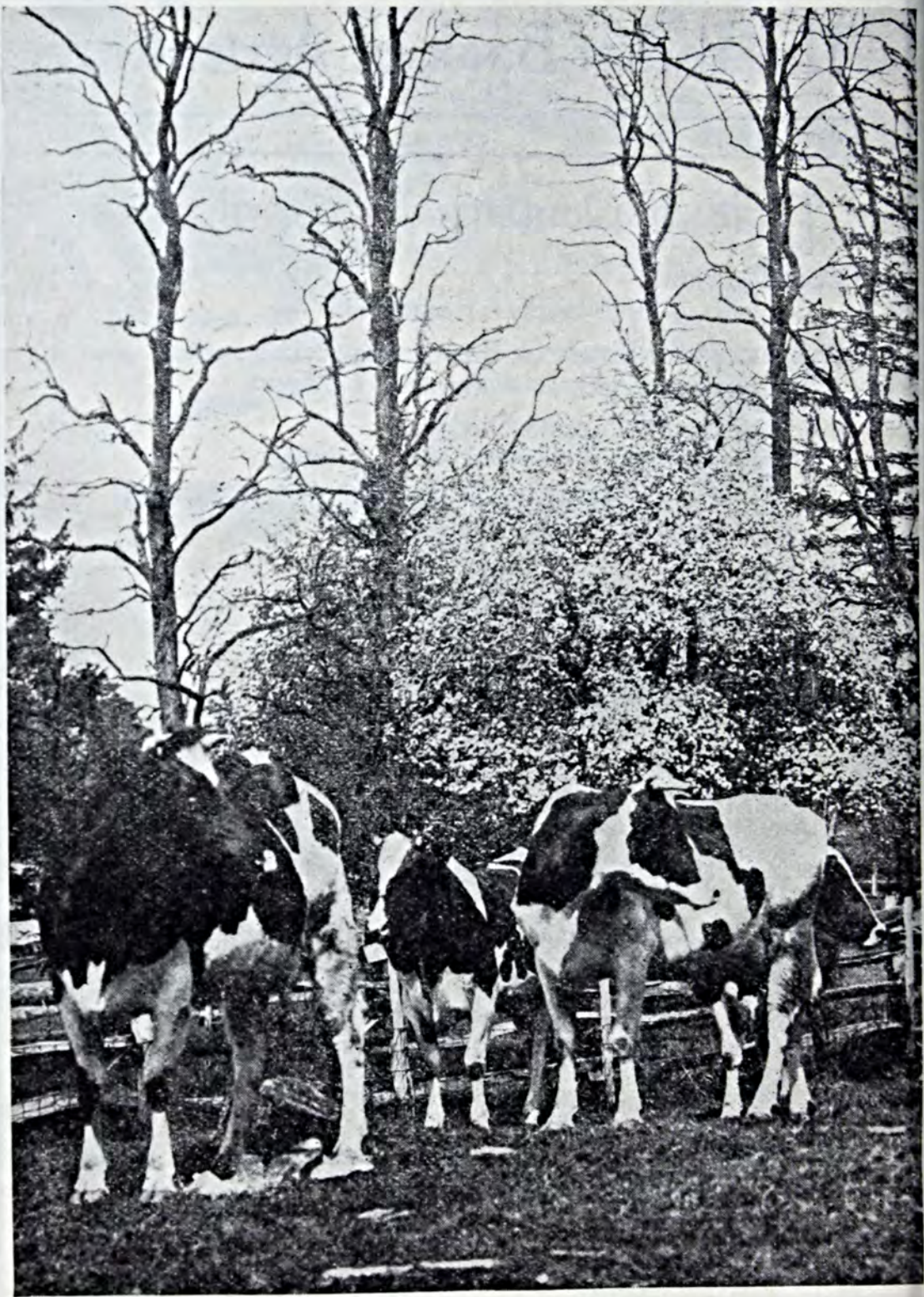
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*The first breath of Spring*





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VOL. IV

NEW YORK, APRIL, 1925

No. 2

*In which Jeff gives us a whiff of his sustaining and livable philosophy.*

# CREDO OMELETUS

By *Jeff McIlernid*

WELL, Esmeralda, I have been accused—of being a philosopher! In fact my accuser says I am a “Stubblefield Philosopher.”

And, as they say in the Common Garden Variety of after dinner speeches, “That reminds me of a story.” A man rushed up to another at a busy street intersection, poked him in the nose, hewed him down to the asphalt with vicious chopping punches, tromped on his features and otherwise ruined him. As the bystanders pulled him off his victim a belated cop pried his way through the excited, seething swarm of wondering onlookers and took charge.

“Why did you hit this man,” bellowed John Law.

“He called me an Ornithorhynchus!”

“When?”

“A month ago!”

“What! Why did you wait ’til now to smite him?” asked the astonished cop.

“Because I just came from the Zoo, where I saw an Ornithorhynchus!”

SO just here, in order that we may understand whether my accuser has complimented, teased, maligned or insulted me, a defini-



tion is in order of what manner of being a philosopher might be.

A philosopher is one who philosophizes. And to philosophize is to be philosophical; while Webster says that to be philosophical means to be rational, wise and temperate.

But there *are* philosophers. Therefore the definition is wrong. I will give you a new one.

A philosopher is a man who prepped at the Tough Breaks School, who is a Graduate of the University of Hard Knocks, and who, with diploma in hand, has transacted business, hated, loved, cheated, turned honest, looked at pictures, sang, got religion, lost it, pulled political wires, made money, lost it, trusted men, got stung, given up, started again, failed, arisen, preached, laughed—and who, out of a chaotic, busy life has woven from its strands a *Credo of Living* that fits him and his experience,—a *Credo* that is no earthly good to anyone else.

So that is a philosopher. And, ergo, you are one; and my accuser has complimented me, albeit unwittingly or unknowingly.

**P**HILOSOPHY is the art of knowing that all is in a state of flux—that when a thing freezes into rigidity it is no longer interesting, beautiful nor useful. When a feeling, whether of ecstasy or fear, can be reduced to a formula, it ceases to be a feeling and is a *corpse undelectable*.

A philosopher dare have no air-tight prejudices or convictions, for, as Nietzsche says, "convictions are prison."

Philosophers understand life. To understand life you must live—and to live you must work, laugh, love and play, according to your *Credo*, always reserving the interesting, unalienable and necessary right to change your *Credo* whenever it interferes with that insight which develops new understanding and perception.

Isn't that simple? Or is it?

Life is a struggle away from complexities toward simple understanding.

As we grow older we place less and less dependence upon books, words, prayer, formulae and inanimate things; but love, men, friendship and Nature mean more to us.

**I** LEARN, through living, that laws and texts are often false, that crime not always leads to punishment, virtue to happiness, nor work to riches. I discover that life is a series of days that bring what they will, willy-nilly. And this being so I had best succumb, and suck my thumb of philosophy contentedly, peacefully and without fear.

The laws which inject happiness or misery into a life are not discoverable through a Newtonian Apple. Blessings and curses drift into days on the wings of chance—but this I know: that the active, busy man moves so swiftly that he dodges the most of the drops of misery and so survives.

I know that to help others is to help yourself, *only* if you carefully pick "the others;" that the world's prizes decay in the hand that grasps them, and yet are nonetheless worth grasping for; that a sincere desire to serve brings riches; that a greed for gold cheats the grabber and he grabs air.

I know that life is worth the living only with a goal, and that with the goal in sight life is not worth the living; that a prescription of love, laughter, song, study, play and sweat will make the sick well, the weak strong, the pessimistic optimistic, the cynical faith-full.

I know that I may trust men, not all men; and none too far; that to be busy is to be happy; that he who loves his work never works but always plays; that friendship is the touchstone of a drab existence which throws a mellow, golden

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# How Successful Livestock Breeders Are Made

By J. L. Merritt

Clemson College, South Carolina

*“The club boy of today is  
the breeder of tomorrow.”*

**S**UCCESSFUL livestock breeders are not found at every turn in the road, but Lancaster County, South Carolina, will certainly contribute its share of the “best breeders”—if the successful Calf Club Show held at Lancaster, S. C. last fall—means anything. Thirty farm lads—some of them only “little shavers”—fitted and showed 30 registered Jersey heifer calves, and what’s more they showed them from start to finish in a way that would have been a credit to some of the “old heads” in the game. B. O. Williams, State Boys’ Club Leader, says “it was one of the most outstanding pieces of club work ever done in South Carolina”; this statement is also backed up by Dan Lewis, Assistant State Boys’ Club Leader, who was as happy and interested in the show as any of the farm lads.

County agent W. F. Howell, who believes that the “boy route” is the surest and “quickest route” to better dairying in his county, deserves much credit for this excellent undertaking. C. G. Cushman and W. J. Keegan, Extension Dairy Specialists, judged the calves and pronounced them among the best that they had ever seen in a calf

show, not only of club work—but of any kind. Charles Oliver, of the American Jersey Cattle Club, was present for the club show, and said, “the event is of great significance to the dairy industry of Lancaster County.” Mr. Oliver thinks that this show will certainly put the Palmetto State in the lead in calf club work.

“That the calf club boy of today is the breeder of tomorrow,” was the impression left on the minds of the many interested people that saw the calf club show.

In commenting on the value of this show to the “farmers of tomorrow,” Mr. Cushman says: “A boy and his calf are close rivals of a boy and his dog. Constant and jealous attention, much rubbing, brushing, polishing and friendly bantering not only reflected the boys’ pride in their calves, but was of greater significance—for here were being developed not only great milk cows of tomorrow—but farmers of tomorrow with a true appreciation of livestock, its care and attention. All because a boy was given something of value, something alive and growing and to call his own, something which

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# *The Farmer's* **Springtime** *Sunshine Overhead—*

By E. G. Nourse

Institute of Economics, Washington, D. C.

**T**HIS is a time of year when the farmer naturally looks at the business barometer and listens to economic weather prophets in the hope that he may get some guidance as to how to plan his year's business. Fortunately, there is much that is encouraging in the indications presented by the spring of 1925.

At the same time, it is well to remember that one must think not merely of conditions prevailing at the moment, but must also consider carefully the prospects for the rest of the season and even for the whole of a production cycle. No weather-wise farmer would think of knocking down all the hay in his fields just because the sun was shining brilliantly at nine or ten o'clock in the morning, while clouds lurked on the horizon. He would not expose himself to the chances of bad weather on more of the crop than he was reasonably sure of being able to take care of before such a change for the worse could overtake him. I am very much inclined to think that this is the present situation also with reference to the outlook for the business weather conditions that agriculture should prepare for in the not distant future.

Let us get the pleasing part of the picture before us first by con-

sidering the relatively favorable situation which agriculture enjoys at the moment. Our heavy crop carry-overs have been absorbed, surplus livestock has in the main been liquidated, and re-adjustments of production have taken place in many lines. At the end of the war, our producing machine was geared up to a capacity considerably in excess of normal peace-time demands. It happened also that from 1919 through 1923 general weather conditions were more than ordinarily favorable, and hence the farmer's labors produced a more than average return. During these years, therefore, our farmers experienced great difficulty in getting their production adjusted to the consuming power of the market and, at the same time, European nations were quite unable to bring their purchasing power back to the 1913 level.

It is a matter of common knowledge that 1924 weather slowed down this rate of agricultural production, and that meanwhile the consuming market was making progress toward regaining its pre-war absorptive power. The present winter has seen most of the burdensome surpluses wiped out, and for the first time since 1913 we enter the year's business on the basis of an



# O u t l o o k

## Clouds on the Horizon

*A keen and unflinching survey of the agricultural situation by one of the foremost economists of the country.*

"even start." Of course, such a statement does not apply equally to all commodities. The position is relatively strong in wool and wheat and corn. It is just gaining strength with respect to hogs. It is rather weak in the case of tobacco, dairy products, potatoes, grapefruit, and some minor items. The cattleman has complained of his continued misfortunes and, even though substantial liquidation has brought some improvement, he is by no means yet in a satisfactory situation.

**O**BVIOUSLY, the actual course of prices during the coming year will depend more upon growing conditions than upon any other single factor. No guess as to what these conditions may be can possibly be hazarded so early in the season. We do know, however, in a general way that the higher prices of this winter tend to check acreage reduction programs and even to show a measurable increase in several significant directions. The Kentucky tobacco producers talked of a cut-out of the crop. This did not materialize, and a year of ample production would put them in a very weak, not to say dangerous strategic position. Cotton pro-

duction prospects point to a crop somewhat smaller than last year, and this should assure fairly good prices if the current revival in the European textile trade is maintained.

Since world wheat surplus has now given place to something verging on shortage, anything but extraordinary growing conditions would seem to leave the wheat grower in a position at least nearly as favorable as this last season has been. The pork producer is certain to be prosperous under any ordinary set of conditions. Nothing but another short corn crop or a business depression could spoil the coming year for him. The dairy industry has had to absorb a good deal of productive effort turned to it from lines which have been less profitable during the last three years. It has hovered on the verge of a depressing surplus, but seems now to be in a fair way to hold its own if present high rates of consumption of both fluid milk and butter can be maintained.

**T**HIS raises an "if" which unfortunately must be constantly kept within the farmer's range of vision. We must not fail to realize that such moderate prosperity as



agriculture is now enjoying depends upon a certain strengthening of the European situation, combined with an extremely favorable domestic market condition. While there are no clear evidences of any immediate slackening of industrial activity in the United States or prospects of widespread unemployment or falling wages, it is a certainty that, should such conditions develop even in moderate degree, they would seriously threaten the farmer's present improving situation. Only a home population fully employed at high wages could maintain the consumption of beef, butter, fruit, out-of-season vegetables, fluid milk, and tobacco, which is just barely spelling the return of moderate prosperity to our agriculture. The items listed all fall on the edge of the luxury class, and their consumption is sure to be sharply curtailed when consumers are forced to count their pennies.

And yet it is almost certain that some slackening in business activity will develop before any great length of time has passed. Business does not always move at full speed, and there are at least two particular considerations which forecast a slowing down from the high pace which we have been maintaining. One is the general "catching up" process. The housing shortage of which we have heard so much has now largely been met. Railroads are in good repair, and have met the most pressing needs for extensions and betterments. The feverish good roads campaign is meeting a setback from the economy and tax-reduction program universally agitated and to some extent practised by legislators and executives, from President Coolidge down.

THE present writer is by no means so foolhardy as to prophesy definitely that these influences will mean a serious falling off in the market for our industrial products

during the present year or early in 1926. But he does insist that a wise agricultural industry will keep constantly scanning the horizon to note the gathering of such clouds somewhat in advance of the actual storm, and to order its own business operations conservatively in the light of all such possibilities. He might ask himself why the very optimistic business talk and stock market boom that was launched last November seems to be flattening out this spring.

Furthermore, there is a second reason for caution. We should not let the moment's enthusiasm over European improvement run away with us. It is true, of course, that there has been substantial progress toward settlement of the most acute European problems. But it is true also that there has been added to this a more or less artificial stimulus resulting from the resumption of leading operations by the United States to Europe in the form both of bond flotations and commercial credit accounts. Naturally there has likewise been something of a sentimental uplift coming from the mere expectation that the Dawes plan has really solved the problem.

However, it still remains to be seen how rapidly and in how large volume the European countries can restore domestic production and international trade upon anything like the basis which existed before the war. If they do not succeed in doing this, their power to purchase our products, agricultural and otherwise, will be proportionately checked. On the other hand, if they do succeed in re-establishing themselves quite completely in the markets of the world, they will become keener competitors of our own manufacturers and export trade. Hence, it cannot be too strongly emphasized that, even in the happier situation of today, there are distinct limitations upon the world's capacity to buy American farm products at prices which

(turn to page 45)



How can we make  
spraying more effective?  
Here is good dope  
from an expert on

# Some Factors Responsible for Spraying Failures

By C. E. Baker

Purdue University Agricultural Experiment Station

THE orchardist's troubles are many. In this respect at least, he is like all other tillers of the soil. His constant fight against the enemies that would destroy his crop and his ever watchful vigilance against new, unknown foes give him a well deserved place among the modern pioneers. Just as the battle seems to be about won, his own weapons of defense and attack sometimes apparently fail to function.

Spraying is the orchardist's chief means of resisting the attacks of insects and fungous disease, and when spraying fails, the results are disastrous. While it must be understood in the beginning that spraying is not often 100% efficient, it can usually be depended upon to effect a highly satisfactory control, when its application is thorough, timely and of the proper material to combat the pest for which it is applied. There is no cure-all, there is no spray that will perform its duty when carelessly applied, and there is a right time for applying each particular spray.

Any spray, therefore, to be effective must be applied at the right time. Spray schedule for all fruits

are prepared by Experiment Stations for their respective states and these should be carefully followed. Much time and energy has been expended on their preparation. They are not merely written by some one who sits at a desk, and writes them to pass away the time. They have been perfected from years of study in the field, by the past experience of success and failure and by a study of the life history of the pests against which they are directed.

In order to plan an effective spray schedule, the writer must necessarily be familiar with every phase of the life history of the disease and insect enemies. He must know at which stage in its life history the pest is most susceptible to control measures. For instance, it is a waste of time and expensive material to spray for apple aphid after their injury has become severe enough to be noticed. By this time they are protected beneath the curled leaves where it is difficult to reach them with spray material or, as is the case with the grain aphid which attack the apple, their work on the apple is done and they have migrated to other crops. The



time to kill them is early in the spring, as soon as they hatch. Each pest has some vulnerable point in its life cycle at which it may be most easily exterminated. Treatment at any other time may be useless.

The successful grower knows these things and follows the spray schedules. He knows that the reason that the schedule says to apply the first codling moth spray after the petals fall but before the calyx lobes close, is that some 90% or more of the first brood codling moth worms attempt to enter the apple through the blossom end. By thoroughly spraying the fruit clusters with an arsenical, the poison is retained when the calyx lobes close, thereby keeping the poison where it is ready for the worm to feed upon and be killed before he has an opportunity to ruin the apple.

And yet there is considerable carelessness regarding the time of application — and consequently many failures due primarily to this cause.

The improper mixing and dilution of sprays is another contributing factor to spraying failures. It is impossible to consider here the manner in which the different sprays should be prepared, but the information is readily available for those who wish to follow it.

Too many times the use of the hydrometer is omitted in preparing lime-sulfur sprays of various dilutions. It is true that this takes a little time and is a little inconvenient, but it may save trouble in the form of injury from too strong solutions or poor control due to their being too weak. It is usually sufficient to test each barrel of concentrate and then figure the amount required for any dilution from a lime-sulfur dilution table which any Experiment Station will be glad to furnish.

The violations of proper methods of preparing spray materials are numerous, but they are all based upon carelessness and consequently subject to correction.

Hand in hand with the proper  
(turn to page 46)



A barrel outfit is sufficient for a few trees or a small young orchard, but an orchard of more than 100 bearing trees requires a power sprayer for greatest efficiency.  
(Courtesy Purdue Exp. Sta.)



# The Place of LEGUMES

## on the Dairy Farm

By E. M. Harmon

University of Missouri

*How to gear up production in  
the cow factory for greater profits.*

**D**AIRY production has been increasing very rapidly during the past few years. This is true not only in the Corn Belt but throughout the United States and many foreign countries. With this rapid increase in production, it is probably well to hesitate and survey the dairy situation as well as its future possibilities.

We find first that consumption of dairy products has kept pace with production surprisingly well. In the last twenty-four years the annual consumption of milk has increased in the United States from twenty-two to fifty-three gallons per capita with a similar increase in the consumption of other dairy products. In fact, at no time has there been a real surplus till this year. We entered this winter with over 50,000,000 pounds of surplus butter in storage—probably due mainly to a poor ice cream season last year which diverted millions of pounds of milk from ice cream plants into our butter factories.

This excess of storage butter is having the immediate effect of holding down butter fat prices. In

fact, there is every probability that it will take an entire season of low butter fat prices to keep butter prices low enough so that the consumers will absorb the surplus. Such a condition coming right in the face of rapidly increasing feed prices can mean but one thing and that one thing is that the dairyman who is to make a profit during the next year must study his production costs. It is always true that the dairyman who so balances his farming operations to produce at least cost, makes the most profit, but during the coming year he is likely to be the *only* one who will make any real profit at all.

When we study production costs, we find that it is only the comparatively high producing cow that produces economically. Our average Missouri cow is credited by the U. S. Department of Agriculture with 120 pounds of butter in a year. In 1923, in Missouri, cow testing associations found that those cows which averaged 120 pounds of butter produced that butterfat at a cost of 41 cents per pound or more than the average price.\* On the

\*These costs of production figures are obtained by first allowing 40 cents per hundred pounds for skim milk and considering feed cost as half of the cost of producing butterfat. While subject to some question as to absolute accuracy they are equally fair to the high and the low producing cow.



other hand, those cows which averaged 300 pounds of butterfat in the same herds, produced it at a cost of only 19 cents a pound, leaving their owners a handsome profit.

It is evident from this that one class of dairymen will make a good profit while another class will be losing a great deal of money on the same market. How to make all of our dairying profitable is the all important question.

**T**HERE are different phases of this problem not the least of which is that of getting rid of those inferior cows which are not capable of making a profit. And right along with this is the fact that about five-sixths of our dairy bulls are scrubs or grades. Year after year they are siring crops of daughters who, like their ancestors, will be unprofitable and will do their part toward robbing the dairyman of the profits he should be keeping for himself. The problem of the scrub is a serious one.

But some cows are unprofitable not through any natural tendencies on their own part but because of the fact that they are given "scrub" feeds and "scrub" care. A cow must have feeds and the right kinds of feeds to produce milk profitably. This problem is fully as important as that of better breeding. Furthermore this matter of feeding for profitable production is one that any dairyman can handle immediately while it will take him years to breed up a good herd. Any man in the corn belt can so arrange his cropping system as to raise most of the feeds necessary to produce milk at a profit. As a matter of fact, under our present methods of feeding the average cow does not have a chance to make her owner a profit because she does not get the feeds necessary for economical milk and butterfat production.

A cow is a factory. She is able to consume feeds of the right kind

and transform them into milk and butterfat. If an automobile manufacturer starts out to make automobiles, he considers the kinds of materials he will need and then assembles them in just the proper proportions. He doesn't buy a lot of materials which he could not use in automobile manufacture. Neither does he get a surplus of one kind of materials and get his different kind of supplies out of balance, thus increasing his production costs.

In the same way the dairyman should consider the needs of his factory — the cow — and what materials are needed for milk production. Some feeds satisfy one demand and some another. On the other hand, some feeds have very little value as milk producers. It is up to the dairyman, if he desires to make the most profit, to find out just what feeds are needed and in what proportions. Then he should plan his cropping system, as nearly as possible to provide the proper amount of the different kinds of feeds needed.

**W**HEN we study the composition of milk we find that it contains four general kinds of constituents. These are water, mineral (mostly lime) protein, and carbohydrates or fats. Some feeds contain large amounts of one or two of these constituents but very little of the other. If we grow only the kinds of feeds that are rich in one of these constituents and fail to provide the other requirements, the cow's production will be limited because we do not have the proper balance in the ration. In such cases much of our feed is wasted.

Water, the first constituent, is more important than we usually realize. Ordinary milk is 87% water. A cow giving three gallons of milk a day must have fifteen gallons of water daily and she needs three additional gallons of water for each extra gallon of milk produced.

(turn to page 37)



# Feeding the Bean Crop

By H. E. Young

*What one bean grower learned about plant foods.*

THE bean growers of Michigan produce about two-thirds of the white bean output of the entire country. The crop is grown more or less generally as a cash crop, and is one upon which many farmers are dependent for a large part of their annual income. As a farm crop beans usually prove very profitable, provided a satisfactory yield is secured. Market conditions are as a rule fairly satisfactory, and in many seasons the demand and prices are such as to give profitable returns even though production is below average.

As with all farm crops, the extent of profit to be realized in the production of beans depends very largely upon the yield per acre. Growers are therefore highly interested in production methods. In the case of beans, too, high yields make low cost. The use of barnyard manures and commercial fertilizers are important factors in the production of this crop. Bean growers have been using the former for years, and with good results, but the latter are not as yet in such common use. The application of fertilizers is a matter in which bean growers are generally interested and it is a question of importance to all farmers. Experience in their use offers the best guide as to the benefits to be gained from the commercial manures.

SOME farmers have tried them and can testify to their effective-

ness. Such a man is Mr. S. J. Hanna, of Mason, Michigan. Beans are a regular farm crop with Mr. Hanna. His soil is a sandy loam. In order to thoroughly test the value of commercial fertilizer with this crop he tried it out under average field conditions. This is the kind of experience which counts and is of the greatest value from the standpoint of the practical farmer.

Mr. Hanna followed a crop of rye with beans. After preparing the soil thoroughly, he applied to a part of the field 1,000 pounds of a complete fertilizer analyzing 2% nitrogen, 7% phosphoric acid and 10% potash. Another portion of the field was treated alike except that the fertilizer mixture lacked potash. A third portion of the field was left without fertilizer as a check against the other two. The fertilizers were applied about the middle of June, and the crop was planted two weeks later. The season proved very unfavorable, and the beans blighted to a certain extent. The results at harvest were as follows:

Where no fertilizer was used the yield of beans was 5 bushels per acre. On the land treated with the complete mixture, containing nitrogen, phosphoric acid and potash, the yield was 22.7 bushels per acre, or an increase of 17.7 bushels per acre, over the unfertilized. On the soil receiving nitrogen and phosphoric acid, but no potash, the yield was 13.3 bushels per acre, or an

*(turn to page 39)*



# Welcome, Mr. Dunlap!

By Ted Butlar

BETTER CROPS' Washington Correspondent

*(The new Assistant Secretary of Agriculture is a real food authority.)*

A MAN who has been vitally interested in food from the time it was produced until offered to the consuming public has been appointed by President Coolidge as aid to Secretary Jardine. The new Assistant Secretary of Agriculture, second in command of the Federal Department of Agriculture, is Renick W. Dunlap of Ohio, lifetime farmer and for a number of years Dairy and Food Commissioner of his state. He has been a producer of good food and in his official position has vigorously administered laws in seeing that nothing but pure and unadulterated products were permitted to enter the channels of commerce. He has been actively interested in both ends of the business of agriculture.

Selection of Renick Dunlap for his new position entrusts the U. S. D. A. in the care of two farmers. Both Jardine and Dunlap come from a long line of farmers and both of them have been active farmers for a long number of years. But that is hardly sufficient. It takes more than farming experience to run the Department of Agriculture as it is now constituted. Both men are executives. Jardine was president of one of the country's leading agricultural institutions before taking his new post and as head of the Kansas school he won a national reputation as an executive. Dunlap has won his spurs as an executive through successful ex-

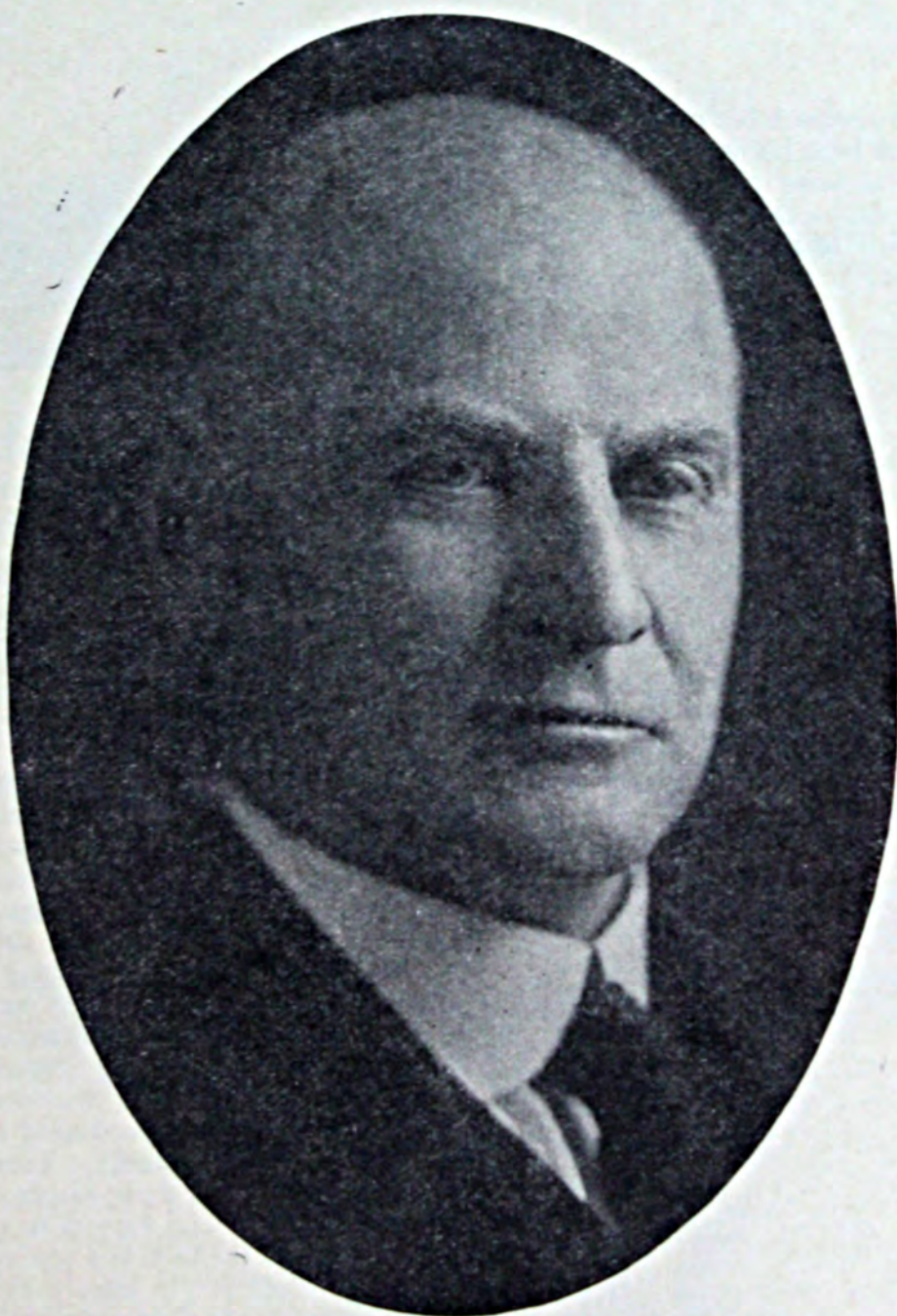
perience in large farming operations and as the state dairy and food commissioner in Ohio. Still that is not all sufficient. Both men are fighters. As a diminutive star on a Utah football team in the early day Jardine won a reputation for crossing goal lines which lives to this day in the mountain district. He carried this same fighting spirit to Kansas where he put across a real agricultural program. As a member of the University of Ohio football eleven while in school Dunlap was star left end and captain during his senior year. He, too, carried the same fighting spirit into his life's work with success. They are both farmers, executives and fighters. That completes the picture.

NELSON J. DUNLAP, father of the new Assistant Secretary, began farming on one of the farms he now owns and operates, soon after his return from the Civil War and is known as the best farmer in Pickaway County, Ohio. He now owns more than one thousand acres of excellent farming land, which is in addition to three fine farms he has given his children—all of which he acquired from profits derived from the soil. His style of farming has been the successful combination of grain and livestock.

All of Mr. Dunlap's ancestors, his  
(turn to page 40)



*Better Crops'*  
ART GALLERY  
*of the month*



Renick W. Dunlap, the new Assistant Secretary of Agriculture.  
His story is given on the opposite page.





How Mr. H. L. Haeh of Coyotte, California, discovered the missing plant food in his soil. At left a spinach bed where no plant food was used.



At right a spinach bed on plot where brush had been burned. Both plots planted at same time. This comparison shows the need for potash on this soil.



Alvin T. Staser, Princeton, Indiana, winner of the livestock judging contest in the eight weeks winter course at Purdue University. He made 358 points out of a possible 400 in judging horses, beef cattle, sheep and hogs. This is the 16th annual livestock judging contest for eight weeks winter course students specializing in Animal Husbandry. This course is particularly adapted to the man who expects to go back to the farm and produce livestock. In almost every instance the winter course man is leader in his community.



# CONCENTRATED FERTILIZERS for Economy

By John A. Crawford

*¶ The effect of high analysis fertilizers on various crops as tested by the Massachusetts Agricultural Experiment Station.*

CONCENTRATED mixed fertilizers appearing on the market a year ago with twice as much plant food as the ordinary preparation could boast, again brought up the question, "Do high analysis fertilizers burn the seed or injure the plant?"

For some years, the Massachusetts and other agricultural experiment stations had recommended concentrated mixtures, having found the low analysis combinations were comparatively uneconomical. War production had given weight to this advice, and the campaign in 1919 by the Soil Improvement Committee of the National Fertilizer Association had given impetus to their recommendations for greater use of it. Testimony in favor of richer chemical dressings thus had found its way to the farmers, and since then the proportion of high analysis fertilizers in the nation's consump-

tion has substantially increased. Massachusetts farmers have been among those to accept the advice, and the proportionate use of high-and-low-analysis fertilizers in this state has changed in the past five years as shown in table below.

The query "Do concentrated fertilizers injure crops?" has, nevertheless, persisted, and the Massachusetts Agricultural Experiment Station at Amherst concluded it would reply to doubting Thomases with evidence to be gained from crops of tobacco, sweet corn, potatoes, beets and hay that they would grow with concentrated complete fertilizers from the 1924 market on the one hand and with home mixtures of half that strength on the other.

They planned to treat two to five plots of each of these five crops,—excepting the hay, that ranged in size from a 9' x 40' area to a fifth of an acre of well-drained,

Grade	1920	1921	1922	1923	1924
High-analysis . . . . .	65% of total	73	84	87	89
Low-analysis . . . . .	35	27	16	13	11



fine, sandy loam on the Station lands, in these two fashions, and they selected their concentrated and common fertilizers for use in the following amounts and ratios:

season's observations on the stands were summarized.

The young tobacco plants betrayed no more injury from concentrated fertilizers than from the

Crop	Approximate Grade and Ratio of Plant Food	Pounds of Fertilizer Used Per Acre†	
		Normal Mixture	Concentrated Mixture
Tobacco.....	5-4- 5*	3,000	1,500
Sweet Corn.....	4-8- 4	2,000	1,000
Potatoes (late).....	4-6-10	2,000	1,000
‡Beets.....	4-6-10	1,000	500
Hay.....	9-8- 0§	(a)300 (b)...	136.3 272.6

\*Figures refer to percentages of  $\text{NH}_3$ ,  $\text{P}_2\text{O}_5$ , and  $\text{K}_2\text{O}$ , respectively, in normal mixtures.

†Furnishing chemically equivalent plant food in normal and concentrated mixtures.

‡Included four varieties of mangels and one of sugar beets.

§A mixture of 150 pounds of sodium nitrate and 150 pounds acid phosphate, a concentrated ammoniate.

THE fertilizers were applied in varying manners. On one plot of each crop, the concentrated ones were drilled in the row and stirred well with the soil before the planting, the tobacco lands, where both the ordinary and concentrated mixtures were spread broadcast, being an exception. A chemically equivalent amount of an ordinary mixture was drilled into the rows of certain plots and stirred well with the soil. On a third set, concentrated fertilizer was sowed broadcast and raked in.

The experimenters desired conclusive evidence about burning. The tests had to be severe. The fertilizers, containing 28 to 40 per cent plant food, were applied close to the seed. Later Nature intensified the experiment by sending only 8.35 inches of rainfall instead of the 25 year average of 15.47, between May 1 and September 1, the most active growing period. Much moisture would have lessened the danger of burning.

All through the summer, these plots were scrutinized, and the stand counted from time to time, and finally each yield, except the hay crop, was weighed and the

ordinary mixtures, as the normal amount of resetting had been done on both plots. The stands of sweet corn and potatoes had suffered a slight injurious effect, especially where the fertilizer had been drilled in the row. The beet and hay stands were uninjured.

THE yields under these different treatments did not vary greatly, but if any significance is allowed to the variation, says Prof. A. B. Beaumont, who directed the study, it will favor the use of concentrated fertilizers over ordinary mixtures. Though in two of the five plots there was a slight reduction of stand where the concentrated fertilizers were applied,—more especially where drilled in the row, but to some extent where it had been sown broadcast,—there was no reduction in the yield of the crop. The yields ran as shown in table on page 47.

Greenhouse tests that compared the concentrated with low-analysis fertilizers added another bit of evidence about conditions under which burning does not result from the use of the more powerful fertilizers.  
(turn to page 47)



# Watch Out

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B y E . W . H o w e

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HERETOFORE public prosecutors, in making preparations for the fall elections, have attacked the railroads, street railways, gas companies, electric companies or other utilities. But lately, the poor old utilities having been sufficiently hammered, a bright fellow out West has thought out a new scheme; he has jumped the county officials and with surprising results. The taxpayers are crazy about him, as he has unearthed tremendous frauds.

There is a suggestion in this western incident for public prosecutors everywhere. We have squeezed most of the water out of the public utilities; but what has been going on behind the scenes in court houses, city halls, at meetings of school directors? What have road overseers been doing during these recent days of tremendous extravagance? Has cheating been going on there also?

How about the stores where you buy supplies? The offices where you seek advice? How about the committee men asking a donation? Are they asking too much? The only safe rule is to watch everybody: the man who is honest may be careless, or so dull that crooked

associates easily lead him astray. The public corporations are so closely watched that they have become rather honest.

The man or institution most closely watched is the most honorable: many a man is saved from being a thief by finding a policeman or neighbor on guard when he feels a disposition to go astray. Watch everything as closely as you watch the public utilities. I am not above suspicion; you are not. And I am as certain about you as I am about myself. "Watch Out" is good gospel.

And while about it, watch yourself. Men originate their own troubles. You can get rid of most of yours by going over your faults candidly, and remedying the more serious ones. I am an old fellow, and have been through the mill rather thoroughly. I have concluded the people themselves are to blame for the wrongs they complain of so bitterly. Suppose we try the plan of everyone doing a little better. That may bring the relief we need so much. And our first reform should be to watch ourselves carefully to see that we are as honest, efficient, polite, healthy, industrious and helpful as one should be.



A well-known plant  
pathologist writes about

# Plant Food and its Effect on Diseases

By C. T. Gregory

Purdue University Agricultural Experiment Station

<sup>66</sup> **I**F there was only something that could be added to the soil to prevent those plants from dying. I have often thought that perhaps there is something like lime or a fertilizer which could be used on my cabbage to keep it from turning yellow and dying." So spoke Jacob Goepper, a market gardener and he was unconsciously voicing the belief and desires of scores of other gardeners and farmers. They feel that something is needed to add to the soil to prevent all diseases and fertilizer is the first thing they think of applying.

It is an old and well established thought that vigorous plants are most resistant to diseases, hence the belief that fertilizers must help in controlling disease. However, the question of plant vigor and its corollary, the relation of fertilizers to plant diseases, is not a simple matter. Certain diseases, like the rusts, actually thrive better on vigorous, well fertilized plants than on weak plants. On the other hand there are diseases that can only attack weak plants. So while in most cases fertilizers are of great benefit there are instances when the one or other ingredient or combination of fertilizer constituents may further the development of certain diseases and aggravate the crop injury.

It is claimed that the use of nitrate fertilizers will control the

bacterial spot of peaches since the trees are made more vigorous and can better withstand the attacks of the bacteria. Such treatment should necessarily be accompanied by other cultural practices which will keep the trees in vigorous growing condition. The yellow berry disease of wheat in Colorado is claimed by Headley to be the result of an improper nitrogen-potash ratio in the soil. Nitrates will correct this trouble but the application of this fertilizer must not be over done because it will cause the grain to be shriveled.

**A**TTEMPTS to reduce the ravages of the black stem rust of wheat by the use of fertilizers have not always been attended with much success. A careful study of this question was made in Minnesota by Stakman and Aamodt who found that in certain cases the amount of injury caused by the stem rust may be reduced by the use of phosphate and potash. Oddly enough, however, the actual amount of rust is not affected. Their explanation is that these two fertilizers increase the stiffness of the straw, preventing the lodging of the grain, and also promote the early maturity of the crop. In other words the length of the growing period is cut short a week or more, thus reducing the time



that the wheat is exposed to the rust, since after the maturity of the wheat rust can no longer do any harm. This beneficial action was much more marked in soil deficient in phosphate and potash. These same experiments proved that nitrates had the opposite effect, lengthening the growing period of the wheat and thereby increasing the rust damage.

It is well known that pear trees are much more susceptible to the fire blight if they are forced into a rapid growth by any means, including the use of nitrates. Moreover, the use of nitrate fertilizers, if applied late in the season, will usually cause a late soft growth which winter kills very easily. In general, nitrate fertilizers are prone to increase the susceptibility of plants to disease. Butler states that potatoes are rendered more subject to late blight, grapes to the gray rot disease, mangolds to rust and various plants to the mildews.

POTASH fertilizers have a reputation of increasing the natural resistance of plants to diseases and this is certainly borne out in many instances. Lutman and Cunningham claim that among other things potash salts decrease the scab of potatoes. Hoffer has shown that potash and phosphate will largely prevent the iron and aluminium accumulations in the nodes of the corn. Tobacco responds rather quickly to a deficiency in potash by a crinkling or curling of the leaves which are also overcast with a bronze or copper hue. This condition is called potash hunger. Cotton rust is also said to be due to potash hunger. Butler has made observations on the effects of potash on several diseases. The rust and mildew of wheat were less severe when the plants were sufficiently supplied with potash, though no amount of this plant food could overcome the susceptibility induced

by nitrogen. He states that in greenhouses diseases of tomatoes could be checked by the use of potash, but he does not mention the exact diseases in question.

Other substances have also been found to be active in their effects on diseases. Lime, wood ashes and fresh horse manure are known to increase the amount of scab on potatoes. Wheeler states that ammonium sulfate will aid in reducing scab by its tendency to sour the soil. The root rot disease of tobacco is also favored by an alkaline or "sweet" condition of the soil. Club root of cabbage, on the other hand, can be prevented by the use of heavy applications of lime to the soil. The sand drown disease of tobacco, as it is called, is an uneven yellowing of the leaves and oddly enough it has been found to be the result of a deficiency in magnesium. Only small amounts of this substance are needed to correct this trouble. Sulfate of potash magnesia is usually recommended where sand drown threatens to infest the crop. Another tobacco trouble, known as frenching, is thought to be the result of improper balance of food substances in the soil, but the exact relation has not been worked out.

The plant's diet of fertilizer is an important factor in disease control. Not only must there be plenty of food present in the soil but it should also be in well balanced proportions. A strong, vigorous plant is usually most resistant to diseases but merely because a plant is making a heavy, succulent growth is no proof of its vigor. The most vigorous plant may not make the most rapid growth. From the plant disease point of view the well balanced fertilizer is most important and, moreover, the fertilizer must be made to fit the needs of the soil. For some soils a well balanced fertilizer may only be potash or phosphate, while others may need only nitrogen.



# The Relation of SULFUR to Soil Fertility

PART TWO

## Effects of Sulfur Under Semi-Arid Conditions

By Dr. Robert Stewart

University of Nevada

THE relation of sulfur to soil fertility in a semi-arid region is very different from that existing under humid conditions. The soil in a semi-arid region has been formed by the processes of physical disintegration rather than those of chemical decomposition which prevailed in a humid area.

The soil of a semi-arid region, therefore, retains more nearly the composition of the original rock material out of which it was formed. Many of the most important agricultural soils in a semi-arid region have been derived from the weathering of the sedimentary deposits of ancient saline seas and lakes. The original soil material is therefore heavily impregnated with soluble salts or alkali. The limited rainfall of a semi-arid region has not been sufficient to leach out the soluble salts to any appreciable extent and they have accumulated in the soil. Under cultivation and irrigation these salts frequently accumulate by seepage and concentration in certain areas so as to cause considerable difficulty to the farmer from alkali accumulations.

The composition of the alkali varies, of course, depending upon its location and origin. Almost invariably, however, sulfates of calcium, magnesium or sodium are present in excess. The presence of these sulfates in many irrigated soils and the possibility of the addition of sulfates in quantity in the irrigation water modifies in a very material way the requirements of crop plants for sulfur under semi-arid conditions.

On the other hand the absence of large industrial centers, limited coal consumption, small rainfall and vast open spaces decreases in a very material way the possibility of any appreciable quantity of sulfur being added from the atmosphere by the precipitations.

THERE are in certain regions special types of soils derived from volcanic material of a basaltic rock which do not have these alkali accumulations and which have been found to respond in a most remarkable way to applications of sulfur bearing materials.



Such soils are found in Oregon, Washington and Idaho.

Powers of the Oregon Agricultural College believes that there are at least 100,000 acres of soils of this kind in Oregon largely devoted to alfalfa production which would be materially benefited by sulfur fertilization.

Experimental work has been carried on in Washington, Oregon and Idaho regarding the effect of sulfur on crop production and some really interesting and significant results have been obtained.

In Oregon the experimental work has been in process since 1912. The early work was carried on in a desultory way and the results obtained are only indications of the sulfur possibilities. In 1916-17-18 some results were obtained with adobe clay near Medford, Oregon which readily indicate the marked influence of sulfur bearing materials on the yields of alfalfa and are typical of a large amount of similar data now available.

there is something radically wrong with the productive qualities of the soil.

(2.) The application of rather large amounts of either of the accepted constituents of commercial fertilizers, nitrogen as sodium nitrate, potassium as muriate of potash and phosphorus as monocalcic phosphate have no appreciable effect on the yield of the alfalfa.

(3.) The application of materials containing sulfur in almost any conceivable form exerts a marked effect on the yield of the crop.

Eight different materials containing sulfur were used and the average yield from the soil receiving these materials was 5,056 pounds, while the untreated plots yield only 893 pounds. The application of 100 pounds of sulfur produced an increased yield of over two tons of alfalfa hay or 441 percent increase!

(4.) Magnesium sulfate, a common constituent of many alkal

Treatments	Amount of Material Applied	Amount of Sulfur Present	Three Year Average Yields
None (ave. results of 3 concordant check plots).....	0	0	893
Muriate of potash.....	540	0	1040
Nitrate of soda.....	558	0	1060
Monocalcic phosphate.....	316	0	953
Flowers of sulfur.....	100	100	4000
Gypsum.....	595	100	5470
Superphosphate.....	823	100	5493
Sulphate of potash.....	549	100	5093
Iron sulfate.....	869	100	5273
Magnesium sulfate.....	782	100	5513
Sulfate of ammonium.....	423	100	4893
Sodium sulfate.....	1093	100	4720

*The effect of sulfur on alfalfa.*

*Application and results recorded as pounds per acre.*

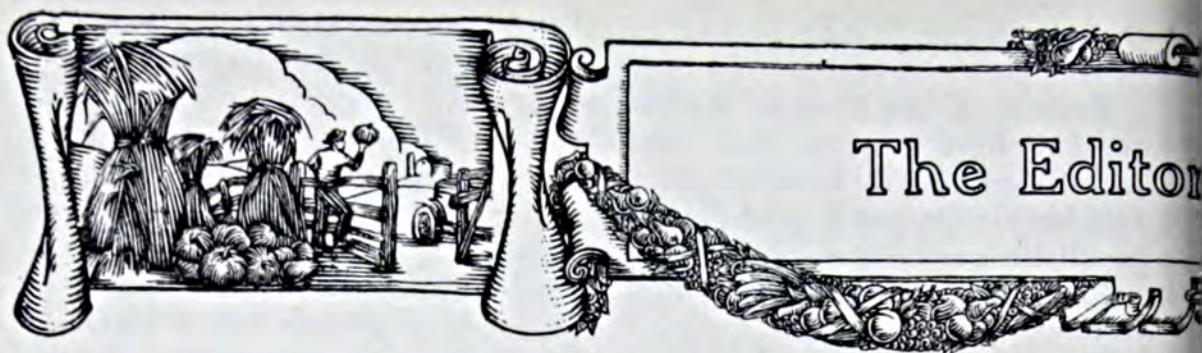
THESE results are truly remarkable. There are a number of significant points presented by the data.

(1.) The untreated soil is very unproductive. A yield of 893 pounds of alfalfa, less than one-half ton as an average for three years, indicates quite clearly that

soils of the arid west, gave the largest increased yield. Sodium sulfates, the common alkali of alkali soils, gave an excellent increased yield. These two substances occur in an abundance in many of our irrigated alkali soils of the semi-arid west.

(turn to page 41)





## GET OUT OF THE SQUIRREL CAGE!

How easy it is to become a slave to routine! We undertake a new job with tremendous energy and noble resolutions. As time goes on we get things organized. Then we should begin to reach out, to study and do research and open up new fields of work.

"Yes" we say "I mean to do it but, confound it, I've got so much on my mind now that I haven't got a minute to study." And so we find ourselves locked in the squirrel cage of routine, endlessly going over the same jobs in the same way.

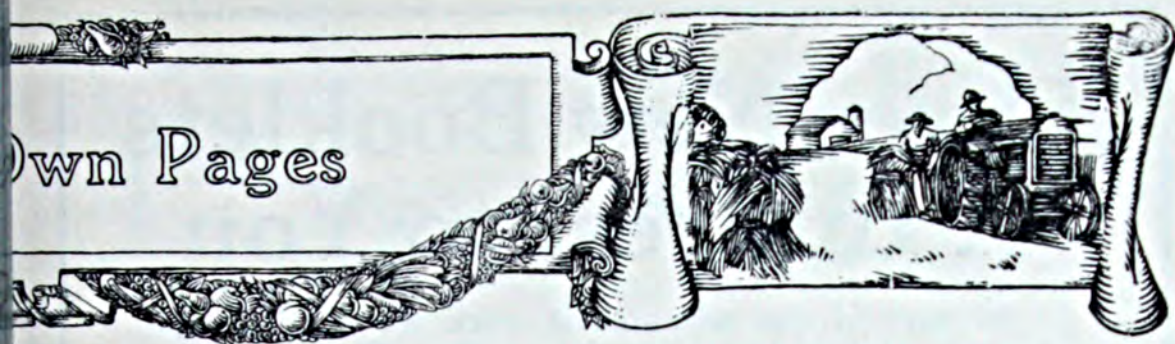
It's a hard job to keep growing. It requires intellectual curiosity, a great amount of determination and a creative urge—and not many of us possess all these qualities.

One of the most commendable undertakings of the state and national county agent associations is their attempt to find a way by which county agents can continue study and research. I believe that some states have already made it possible for county agents to take a year off for post graduate work of the agricultural colleges. If this becomes a general practice I believe it will greatly increase the usefulness of county agent work.

I wish that farmers as well could be persuaded of the value of doing something of this kind. I know that many of them would think anyone crazy who suggested that they take six months or a year off occasionally to study their problems. Yet those farmers who do take time off for short courses at the agricultural colleges and for other kinds of study are the men who are making real progress.

To be sure, not everyone can lay aside his routine tasks and devote himself to uninterrupted study, whenever he





feels like it but everybody can set aside a little time for gathering new information.

The individual or organization which has lost the habit of studying, which hasn't any time to learn something new, has definitely assigned itself to the rearguard.

**BEST WISHES!** In this connection I am glad to note that this summer there will be held during July and August at the University of Pennsylvania, a four weeks' conference on cooperation.

A number of the leading farmer organizations have formed the American Institute of Cooperation under whose auspices this conference will be held. A week's study and discussion will be devoted to each of the following topics: economic principles and legal structure of cooperation, organization and membership problems, operating methods and management problems, sales policies and price problems.

This is an ambitious undertaking. In view of the factions and rivalries that exist in the cooperative movement, it is a courageous undertaking. If the various groups interested in cooperation can be persuaded to put aside personal ends and study objectively and impartially the cooperative movement in its various aspects, this conference will be a memorable occasion. At any rate, it offers cooperatives a fine chance to get out of their squirrel cages.

**BETTER CROPS** wishes the Institute well. It promises much; it is founded on a sound ideal. Its work cannot be judged yet but we believe that every one should help, as far as he can, to make it fruitful.

*Jeff Mc Dermid*



# Three New Booklets of Interest to You

As part of our educational work we are issuing a series of booklets on various crops. The purpose of these booklets is to show by facts and figures how proper fertilization brings the farmer a greater income both through increased yield and improved quality.

Each booklet has been written by an authority in the field who is in touch with the latest reliable information on the subject. This information has been presented in a popular, readable form with numerous illustrations of actual results. The following booklets are now available for distribution.

**BETTER TOBACCO:** This is a new edition of the booklet that was in great demand last year. It has been completely revised to cover all types of tobacco and all tobacco growing districts in the country. It includes as well a valuable section on sand drown.

**BETTER TRUCK CROPS:** This 48-page booklet deals with the cultivation and fertilization of the principal truck crops. Each crop is treated separately and information on seeding, varieties and proper fertilization is given for each crop.

**BETTER POTATOES:** Methods of seeding, planting, cultivation and fertilization are discussed in this 48-page booklet. The various potato-growing regions of the country are treated separately making this an unusually comprehensive work.

Any or all of the above booklets will be sent free upon request to any reader of **BETTER CROPS**. If, after reading your copy, you desire more for educational work, we shall be glad to furnish them as long as our supply lasts.

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# The Value of Maintaining SOIL FERTILITY

By Harold M. Vaughn

County Agent, Manistee, Michigan

*The third plank in BETTER CROPS' platform is "Maintain soil fertility," and this is the prize winning editorial on that subject.*

**T**WO questions of vital importance are continuously before the farmers of America. They are: What will bring about an increase in prosperity to our farms? The second is contingent upon the first: How will they get whatever it is they need for prosperity?

The answer to the first question is efficiency in production, whether the crop is cotton or corn or the 101 other crops. No cooperative or congressman can make a crop profitable unless it is produced profitably and economically. The idea of a "co-op" making 60 bushels of potatoes or 25 bushels of corn profitable by clever marketing is beyond the wildest dream of the

most rabid "co-op" supporter.

Let's turn to the second question and find out, if possible, how to get what farmers need, which we have decided is efficiency of production. It is up to the man himself. The depletion of soil is the result of mismanagement by the farmer, rather than the fault of the soil itself, and it can be corrected. Efficient production can usually be assured only when the soil is new and productive or when its fertility has been maintained by sensible cropping practices.

Ask any of the older generation of farmers about crop production, 25 years ago and now. They will point out farm after farm which



used to produce big crops, which now show low yields or are abandoned entirely. Our average yields have steadily decreased and are a disgrace when compared with figures from many of the better individual farms. You may know, as I do, of farmers who are clearing a new small field of land for potatoes every year, or others who have cleared up and worn out every available foot of land and are now planting potatoes and beans along the road-side. Ten years ago, any man who did that would have been laughed at. Yet, today, many are doing it and we don't laugh. It would be more proper to cry over the tragedy of the destroyed acres and the lack of foresight. It is hardly less than a crime for one generation to destroy the means of livelihood of their children and grandchildren, handing down an old wornout thing in place of a productive farm. Yet we wonder why the sons and daughters leave the farm. Why shouldn't they? Who wouldn't leave a sinking ship unless she could be saved, and we may be sure there is no hope for agriculture under the old methods of soil robbing.

Instead, soil building is the solution, and fortunately this does not mean a large expensive outlay before any results are obtained.

Soil sweetening is usually the first step. You hear now and then a man who denies the truth of this fact but before you believe him, find out what his production has been during the past five years and don't be misled by tales of what he did years ago. After you have visited his farm, visit the farm of a consistent lime user and if you aren't convinced of the truth, quit farming—there's no hope for you in the field of agriculture.

With the sweet soil there will be the growing of soil building legumes. All legumes are good. Alfalfa and sweet clover are usually best. The proper methods of culture and rotation of these crops are essential to success, but that is another

story. In most cases the application of commercial fertilizers and barnyard manure has been found essential to economic production at the very outset of establishing a rotation of this sort. Generally farmers will adopt this practice without any urging after seeing the benefits from soil sweetening.

There is probably no other project of soil fertility to which Agricultural Extension men in northern Michigan have devoted so much of their time, as lime and legumes. While the results have justified this expenditure of time, the fields are scarcely touched. To this end, we have exhausted almost every ingenious device excepting the passage of laws making it a criminal offense not to use lime. Lime in various forms has been placed almost at the individual farmers' front doors, yet comparatively few have taken advantage of their opportunities.

Let's pause a while and check up to see where lies the cause of all this tremendous inertia, towards progress. I am convinced that it lies with the men themselves who are farming. We have hundreds of them who have no interest in or respect for the qualities of their soil. They farm it because they have to. They do as little thinking or planning as they can. Time which could well be devoted to development is spent in damning the supposed causes of their misfortunes, the legislature, taxes, county agents and even neighbors and wife.

Here and there we find a different type of man. One who looks upon his land as something to be studied and understood, something to be fed and nourished, not to be cudgled into bringing forth a crop with its last dying effort. To the men who have this understanding of land, there is no soil problem. Their farms can be handed down to their sons and grandsons at a constantly increasing worth.

Soil fertility is one way to spell "success."



# Some Other Angles on Soil Fertility

By Sam D. Preston

County Agent, Flint Hill, Virginia

*(This contribution ran a close second for the prize and is well worth your consideration.)*

THIS value of maintaining soil fertility is indisputable. The farmer who plans systematically to leave his soil in as good, or even better condition when a crop is taken from it, as it was at seeding time, is usually a successful and happy man. He is the farmer who complains least about labor conditions and the prices he receives for his products. The farmer who takes good care of his land usually takes good care of his workers, furnishing them comfortable quarters and paying them a living wage. He also takes care of his livestock and everything about him.

A farmer said to me last spring, when others were complaining about help, "I have all the help I want. In fact I turned down some help yesterday." When asked how he accounted for this condition on his place he replied: "I give my help comfortable homes and good treatment." He also pays his men well and makes money for himself. This man could not afford to give comfortable homes and good salaries if he did not look after the fertility of his soil—and this he does well. He not only maintains the fertility of his soil, but he increases it up to certain profitable limits. The average yield of wheat for this section is ten bushels. This man makes from sixteen to twenty-two bushels. The average yield of corn is thirty-five bushels, but this soil builder

gets from fifty to sixty-five. He usually tops the market with his fat steers. I was to see him a few days ago and he said that he had two car loads of cattle to go to market,—and they were fat too. It is a little late to be putting cattle on the market from this section, but this farmer, unlike Mr. Soil Robber, was able to hold his steers through the period of low prices and maintain weight. The poor soil manager must sell in order to make ends meet.

It is readily seen that when soil fertility is kept up to a point where production is almost double the average, the labor requirements are cut proportionately. It takes approximately the same labor to produce wheat at the rate of ten bushels per acre as it does to produce twenty bushels on the same area. The same thing is true of corn and other crops. Of course the expense is greater in the case of high yields, but up to certain limits it is not at all in proportion to the increased yields. Maintaining soil fertility not only increases yields, but improves quality which usually means larger returns. The consuming public is paying much more attention to quality now than ever before, hence the better the quality the greater the increase in revenues.

During apple packing season I visited the orchard of the farmer whose activities are mentioned



above. It was plain that his apples were larger and smoother than those in the neighboring orchards. When asked how he accounted for the difference he replied: "You see I cultivate a part of my orchard each year and seed it to some kind of legume. The part that I do not cultivate is given an application of nitrate of soda. In that way I keep the soil in good condition all the time." This man was proud of his orchard because he could see results in the size and quality of his apples; he was proud of it because he was able to pack a higher percentage of the fruit produced; and most of all he was proud of it because he was able to show larger returns per barrel than his neighbors who set out their trees and complained because nature would not do all the rest.

In the good old days that we read about there was a plenty of land and cheap labor. When one field became too poor to produce it was easy to move on to another. And too, poor land could be farmed with some profit because of the cheap-

ness of labor. It is different now. Land is not so easily obtained; labor is no longer cheap and the farmer who tries to maintain bulk of production on poor land with high priced labor is doomed for the poor house. The farmer of today who is doing best is the one who maintains bulk of production on a smaller acreage and with less labor. This can only be done by maintaining soil fertility at the highest state of profitable production.

It is possible to be just as imprudent in the matter of increasing soil production as it is to allow land to depreciate. That is, it is possible to run the cost of soil improvement beyond the point where it is profitable. If the maximum profitable yield is twenty-five bushels of wheat per acre, that is the point of productivity at which the soil should be maintained.

To maintain or improve soil fertility, the farmer must know his soil; he must be interested in the project; and above all he must keep cost accounts, for they are the only true guide to success.



A close up of county agent J. R. Clark, of Columbia, South Carolina, showing a farmer the "why" of growing velvet beans in every other row of corn on light sandy soil.





## By Ted Butlar

BETTER CROPS' Washington Correspondent

Two resignations of more than usual importance from the Federal Department of Agriculture have been announced since the last issue of BETTER CROPS. Dr. E. D. Ball, Director of Scientific Work since the position was created about three years ago, has tendered his resignation to Secretary Jardine. "The development of research work should progress rapidly," Dr. Ball said in making his wishes known to the agricultural chief. Chester Morrill, officer in charge of the Packers and Stockyards Administration since the Act was passed, resigned to accept a responsible position with the War Finance Corporation.

Even though the Federal Government keeps constant vigil at ports of entry to prevent introduction of insects and diseases which are doing millions of dollars damage annually to American agriculture, they continue to enter though not to the degree they did before quarantine restrictions were laid down. Just the other day a gentleman from East Africa stepped into the office of Dr. J. R. Mohler, chief of the Bureau of Animal Industry. After a journey of 9,000 miles this fellow had come to Washington with a sample of hog blood containing a disease much more deadly than hog cholera. He was looking for assistance in combating the scourge. Dr. Mohler, as soon as he could get his hands on the bottle, immediately took it upstairs and consigned it to the incinerator.

Less than a month ago a Swiss, armed with a bottle of attenuated virus of foot-and-mouth disease, came to Dr. Mohler's office with intentions of experimental work. Likewise, it was consigned to destruction. And the Swiss was told that if he wanted to experiment with a disease which had cost American livestock interests and the Federal Government millions of dollars he would have to select some other country for his workshop. Dr. Mohler recently issued a statement that there was reason to believe that the recent outbreak of European fowl pest was the result of introductions made by well-meaning scientists. At least the disease was first found in states where scientists had been working with the disease.

Dr. Mohler believes—and who could take issue with him—that studies of plant and animal disease should be made in countries where same are prevalent. With this belief in mind Dr. Mohler and his people went before Congress and were given \$75,000 to carry on a study of foot-and-mouth disease in Europe. As soon as the funds had been made available Dr. P. K. Olitzsky of the Rockefeller Institute for Medical Research, Dr. Jacob Traum of the University of California and Dr. Harry W. Schoening of the Bureau of Animal Industry were named to proceed immediately to Berlin and other points to conduct a comprehensive investigation of the livestock scourge. Fond hopes are that new and scientific



means of combating the disease might ultimately be discovered to replace the slaughter method now in use.

Not all of Secretary Jardine's time is given to thinking about corn and credit, plows and prices. He is a great lover of flowers and contends that the American farmer has a genuine appreciation for esthetic beauty. "Plant life of the flower garden plays an important role in a satisfying rural life," he said in a recent speech. "The flower is the universal vehicle of expression whether it be of joy or sorrow. The flower is the common language of all peoples."

The enormity of expenditures for motor cars is shown by every subsequent report. Nearly \$80,000,000 was collected from the motorists in the form of gasoline taxes in 1924, according to the Federal Bureau of Public Roads. Thirty-five of the 48 states and the District of Columbia imposed a tax, the rate ranging from one to three cents a gallon with the exception of Arkansas which levied a four-cent tax. Most of the money

was spent for road construction or maintenance, say recent reports.

There is one motor vehicle for every 6.4 persons and one passenger car for every 7.3 persons, the Federal government has found in its study of the motor situation at the close of 1924. Motor vehicle registration in the country reached a total of 17,591,981, final figures show. The total gross receipts from license fees amounted to \$225,492,000. What will we find in the next generation?

Representatives of European and American cotton associations recently met in Washington with Federal officials for the purpose of preparing 40 sets of the Universal Cotton Standards to be used in international cotton trade during the coming crop year. A number of these sets will be distributed among the various exchanges in foreign countries. All dealing in American cotton is done on the basis of these standards, which are guarded very carefully during all stages of preparation to guarantee their correctness.



*Mary Elizabeth Skinner of Lafayette, Indiana, feeding an orphan lamb.*





## The Youngest Farmer

Virgil Schoepple of Berryville, Arkansas, is the youngest farmer in the United States.

He started farming when he was five years old. He is only six now. He is the youngest club member working in cooperation with the Extension Service, College of Agriculture, University of Arkansas.

Young Virgil started farming before he started to school.

He is the son of Mr. and Mrs. H. A. Schoepple. He shears his own sheep, feeds his own pigs, cares for his own chickens and makes his own garden.

Virgil is primarily a truck farmer. He has a garden all his own and does all the work in it except the plowing. All he wants is a little more time and he will take over that phase of the work. Virgil furnishes the table with beans, peas, sweet potatoes, cabbage and corn.

When beet canning time came he put up his own jar all by himself. He canned peas, soup mixture and tomatoes from his garden. These he displayed at the community fair along with his selected corn, his pigs and his chickens.

He has learned to milk and to separate the cream so that he may

have milk for his pigs and kittens and the inevitable dog.

Last spring he grafted some buds on apple trees. Enough lived to show that young Virgil knew what he was doing.



*He is a real truck farmer*

This young farmer loves to play. He is just a boy like other boys and runs barefoot and hatless the sun glistening in his blond hair. He has learned many things already that are still unknown to many veteran farmers.

He started "play farming" and enjoyed it so much that he developed into America's youngest farmer.

It would be interesting to read a story about his agricultural accomplishments thirty years hence.

—Gus. M. Oehm.



### Extra Value in Soy Beans

Out of any group of twenty farmers in Wright County, you will find from one to three who say soy beans won't furnish protein for the hogs because the hogs won't eat the beans. The remainder of the crowd, if they have had experience with soys, will disagree.

We'll agree that some hogs won't take readily to soy beans, neither



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# About Ourselves

**B**ETTER CROPS is a monthly magazine edited primarily for those who act in an advisory capacity to the farmer.

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THE PUBLICATION of an article over an author's name, pen name or initials does not necessarily imply that we endorse the opinions expressed therein. We print articles for their interest and merit regardless of whether they accord with our own opinions.

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461 Eighth Ave. New York

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will all men take to cooperative marketing; but both are here to stay and if we can't whip the farmer into line on the soy bean proposition in one way, possibly we can on another, and since soy beans are a comparatively new crop it's only logical that we should find new and important uses for them as time goes on.

We know that soys are a legume, that they store nitrogen from the air into the soil, but Henry Bruhl, southwest of Clarion in Wright County, Iowa, likes soy beans because of another quality they possess.


Last year Bruhl had a good field of sod corn. It sprouted good, came up good, and stayed good all season. Last fall he picked a good lot of corn from the field. Bruhl planted soys in every hill of his sod corn.

Near Bruhl's place there was another sod field, about the same condition, planted the same time. The kernels started out in good shape and the sprouts were cut back by the cut worms. The entire field was riddled; the crop turned out almost a complete failure. No soys were planted with the corn, and, while beans were dropped in every hill of Bruhl's field, there were only a few plants later in the season, for they, instead of the corn, bore the brunt of the cut worms' attack.

Bruhl's hogs like soy beans, but if their presence will insure a corn crop against the cut worms he's ready to put them in every year in every hill of sod ground, or on the other land since during the past few years all of the land has been more or less infested with cut worms.

Other men in the neighborhood have had similar experiences to Bruhl, and all are hailing the soy bean as the miracle crop. Certainly it has worked wonders with the cut worms in the way of making a good stand of corn.—Paul C. Tomlinson, County Agent, Clarion, Ia.





## LETTERS TO THE EDITOR

### The Fortunate County Agent

Dear Jeff:—

To the county agent who does all his letter writing and filing usually after he gets home from his trips, it sure does make him feel sort of jealous to read about the county agent in Kansas who carefully looks over the farm papers, checks them and then turns them over to the stenographers.

He did not say how many were employed. They tabulate the articles on 4 x 6 cards which are filed alphabetically, and are then convenient for handy reference. This was copied from the February issue. Happy man! I am wondering how many of the 2,700 county agents are as well blessed. I have met many from different states and they are not as numerous as they should be.

With the advent of the Farm Bureau and other organizations that are financed sufficiently to support clerical work, the county agent, if he is the man he should be, should be able to obtain considerable help in this manner. But the agent whose work is poorly supported by the county or where there are no supporting agencies will certainly have to do lots of this work himself. And then it certainly does make you feel good if your wife can lend you a helping hand.

Speaking from nearly 12 years experience as county agent, I have always contended that the agent's efficiency could be increased many fold if he were provided with a good office and an efficient assistant. The office should be open six days

a week, supplied with the best farm papers, telephone and a serviceable radio so that the assistant could keep in touch with the market news. In the vicinity of large cities the farmers' ability to get the market prices would be the means of large savings. Just recently the farmers and hucksters lost large sums of money due to a heavy drop in poultry and eggs. If the farmers were as interested in their business office as are the manufacturing and other industries the above described office would be a reality instead of a dream.

Very truly yours,

H. B. DERR, *County Agent,*  
*Fairfax, Va.*



### A Correction

Dear Jeff:—

My copy of the March number of BETTER CROPS has just arrived and I notice one very serious error in the article on raspberry anthracnose. This occurs in the second column on page 43, second paragraph, giving the formula for Bordeaux mixture, as 2-12-6. In looking over my copy of the article, I find that this error was made by my stenographer in the original copy and consequently is no fault of yours, and I should have caught it before it was sent out. I guess that she was thinking of fertilizer formulas instead of Bordeaux formulas. This should have been written 2-6-50 and if there is any way that it may be corrected I would appreciate it.

Very truly yours,

C. E. BAKER, *Ass't in Pomology,*  
*Purdue University, Lafayette, Ind.*



# Quality Pays,

## Mr. Tobacco Grower!



Two ways are open to you to increase your profits from tobacco growing: Increase your yield per acre or improve the quality of your tobacco.

Since the best prices are received for high quality leaf, it is natural that growers should be most interested in improving their grades. When this can be done and the yield also increased, you have a combination that spells real profit.

And it can be done! The experience of many growers, confirmed by scientific experiments, proves that you can both increase your yield and improve your grade by the use of fertilizer containing plenty of sulfate of potash.

Take the case of Mr. L. B. Knott of Wake County, N. C., who raises Bright Flue-cured. Where he used no fertilizer he got 320 lbs. per acre of 15c to-

bacco; where he tried 1000 lbs. per acre of 8-4-0 (no potash) fertilizer he got 620 lbs. of 18c tobacco and on the plot where he applied 1000 lbs. of an 8-4-10 PNK fertilizer (containing sulfate of potash) he raised 760 lbs. of 23c. tobacco. Sulfate of potash costing only \$6.00 brought him \$63.20 more income per acre.

Sulfate of potash makes tobacco with a longer burn and better aroma and these are the qualities that command higher prices. Wherever there is a possibility of sand drown, you should use sulfate of potash magnesia which is a potash salt especially adapted to combat this disease.

The new edition of "BETTER TOBACCO" explains just how sulfate of potash should be used for quality results. You can secure a free copy by writing for it now.


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# Legumes on the Dairy Farm

(From page 12)

It is needless to say that a cow cannot digest this much water unless it is provided frequently and at a reasonable temperature.

Mineral in large quantities is essential for a high-producing profitable cow. Milk contains large quantities of lime. A quart of milk contains as much lime as 33 pounds of beefsteak or 23 pounds of potatoes. That is one of the reasons why it is the best of all human foods. We use this lime in our own bodies to build teeth, bones, and muscles. This is the reason why most people who drink lots of milk from infancy have good teeth and strong bones and muscles.

But if a cow is to give us large quantities of a product which contains lots of lime, that lime must be provided in her rations. Which feeds contain lots of lime? We find the common feeds classified as follows:

Kind of Feed	Pounds of Digestible Lime per ton
Alfalfa Hay.....	39
Soy Bean Hay.....	34
Red Clover Hay.....	32
Corn Stover.....	12
Sorghum Hay.....	8
Blue Grass Hay.....	7
Wheat Straw.....	6
Timothy Hay.....	5

ALL the grain feeds are so low in mineral content as to be negligible. For that reason we must look to our roughages for mineral for our cows. From the above, we see that there is just one class of feeds that contain liberal amounts of lime. That is the legume hays. No cow can consume enough of the other feeds to produce large quantities of milk for any great length of time. It takes 43 pounds of timothy hay to provide enough lime to make a gallon of milk.

Six and a half pounds of soy bean hay will provide the same amount of lime.

The cow may be able to produce large quantities of milk for a little while without legume hays. But unless a mineral mixture is substituted in some other form her production will soon drop because the cow does not have enough mineral in her feeds. Alfalfa, clover, soybeans, and cowpeas all supply lime in sufficient quantities to produce liberal quantities of milk. A cow should have all of one of these hays that she will clean up once a day throughout the entire feeding season. She should also have a liberal amount of clover in the pasture. On many farms in the Corn Belt, cows are held down in production, and profit, and much feed wasted because there is not enough mineral supplied with the ration. A herd cannot return the most profit unless a legume hay is provided in liberal quantities.

Not only does a lack of sufficient mineral reduce production and profits but it often also results in a run down diseased condition of the animal. Such a practice may even result in the cows dropping crippled, immature and even dead calves. Great numbers of the dairymen's troubles are directly traceable to this one fault. It is true that minerals may be purchased and added in the grain ration and, in the case of high-producing herds, it is well to do this even after legumes are fed. However, there is some question as to whether or not the cow gets as much good from minerals in that form as they do from those supplied in legumes.

ANOTHER feed constituent which is very deficient on the average corn belt farm is protein. Protein is used in our bodies to



build muscles, hair, skin, and bones. Milk contains large quantities of protein but in order to produce this product, the cow must be given feeds that contain a great deal of protein. A cow weighing a thousand pounds and producing three gallons of five per cent milk daily must have 2.4 pounds of protein and she must have about six-tenths of a pound of protein for each additional gallon of milk.

Some feeds contain large quantities of this protein while others contain very little of it. Corn stover contains 2.2 pounds of protein in each 100 pounds. In other words, a cow would have to eat 164 pounds of corn stover a day to produce five gallons of five per cent milk. Timothy hay, millet, oat straw, and the sorghums all contain about the same amounts of protein and a cow must eat just about the same amounts of them to produce milk as she must of corn stover. She may overcome this difficulty for a little while by taking protein from her own muscles and bones to make milk, but before long her milk will have to be reduced unless she is given one or more feeds which contain large quantities of protein. Some of the common feeds with the amount of protein per ton are as follows:

Feed	Pounds Protein Per Ton
Soy Bean Hay .....	234
Alfalfa Hay .....	212
Red Clover Hay .....	152
Oat Hay .....	90
Prairie Hay .....	80
Timothy Hay .....	60
Sorghum Fodder .....	56
Corn Stover .....	44
Soy Bean Oil Meal .....	794
Cottonseed Meal .....	740
Linseed Meal .....	604
Wheat Bran .....	250
Crushed Oats .....	194
Corn Chops .....	142

From the above it is seen at a glance that the legume hays in-

cluding alfalfa, soybeans, and the clovers are the cheapest source of protein. The cow must have an abundance of this protein if she is to be a profitable producer and the cheapest way to get it is to raise a legume hay. Timothy hay averages a little over a ton to the acre in Missouri and produces about 66 pounds of protein to the acre. Soybeans average about one and a half tons to the acre and produce 351 pounds of protein to the acre.

WE must remember that some of these feeds that are low in protein contain a great deal of carbohydrates or starchy feed and we must not do away with them entirely. But we must raise more legume hay to supply this protein if we are to develop profitable herds. Where they will grow, we can raise protein cheaper with clover and alfalfa than with soybeans because we don't have to cultivate or seed so often. But on farms where it is not possible to grow clover and alfalfa successfully, it is always possible to grow soybeans. There is not a farm in the country that will not produce some legume hay and we must grow these legumes if we are to make maximum profits from our cows.

Real dairy prosperity in the corn belt does not depend upon a large expansion of the dairy industry. But it does require a thorough study of the fundamental principles of profitable production and the application of those principles. One of the most important of these and one which will spell millions of dollars in boosting dairy profits in the corn belt is the slogan offered by the Dairy Extension Service of the Missouri College of Agriculture — "An Acre of Legumes for Every Cow on the Farm."



## Feeding the Bean Crop

(From page 15)

increase of 8.3 bushels over the unfertilized.

With the price of beans at \$1.90 per bushel, the value of the crop from the untreated land was \$9.50 per acre, compared with a \$43.13 per acre crop from the completely fertilized soil. The increase in crop value due to the use of the fertilizer was \$33.63 per acre. Where the potash was omitted from the mixture the increased crop value amounted to only \$15.77. In other words, 10% of potash in the fertilizer more than doubled the increase in crop value, as compared with the increase produced by the incomplete fertilizer without potash and is thus responsible for an increase of 9.4 bushels per acre.

The cost of the complete mixture used by Mr. Hanna was \$13.70 per acre. It returned \$33.63 in increased crop value. Deducting the fertilizer cost from the value of the increased crop leaves a net profit of \$19.93 per acre. With-

out the potash the fertilizer cost was \$8.30, and returned \$15.77 more per acre, leaving a profit of only \$7.47 after paying the cost of the fertilizer.

From these figures it will be noted that the net returns from the complete mixture was more than twice as large as that resulting from the application of the incomplete fertilizer. The use of \$5.40 worth of potash returned \$12.46, an increase of 130% on the investment. Such results indicate very clearly that a 10% potash mixture can be used with profit on the bean crop.

In considering Mr. Hanna's experience it is also well to note that the rate of application is more than three times that which is usually recommended for beans in Michigan. This, of course, greatly increased the cost of the fertilizer. Nevertheless, very good profits were secured from its use, which, after all, is the real test in the application of plant food mixtures.



Comparative Navy Bean Yields in Experiment of S. J. Hanna, Mason, Michigan.

No Fertilizer.

Complete Fertilizer with Potash. 200 lbs. Sulfate of Potash, 500 lbs. Acid Phosphate, 160 lbs. Blood.

Fertilizer Without Potash. 500 lbs. Acid Phosphate, 160 lbs. Blood.

Yield per acre 5 bus.

22.7 bus., increase 17.7 bus.

13.3 bus., increases 8.3 bus.



## Welcome, Mr. Dunlap!

(From page 14)

uncles and most of his cousins, on both sides of the family, are or have been farmers and breeders and feeders of livestock. His great grandmother was a granddaughter of Benjamin Franklin.

After his graduation from the college of agriculture, Ohio State University, in 1895, Mr. Dunlap returned to his farm where he has been actively engaged most of the time with the exception of a few notable achievements in lines closely connected with agriculture. Shortly after college days he was chosen by the Ohio State Board of Agriculture as a lecturer for state farmers' institutes and spent his time for three winters in this work.

His father and mother became members of and active workers in the National Grange shortly after its organization in 1873 and he became associated with the organization as soon as he was old enough to join. He has been a member of the Farm Bureau since its organization and in other ways has been active in rural association activities.

It was Renick Dunlap who first introduced and demonstrated the practical use of commercial fertilizer in his community. The first year after graduating from college, by the proper use of commercial fertilizer, he raised more wheat on fifty acres than his father raised on one hundred and fifty acres without commercial fertilizer. He was the first friend of alfalfa in his community and gave his section of the state its first silo. Renick Dunlap always has been in the front rank of progressive agriculture.

**T**HERE is every reason to believe that the practical livestock experience of the new Assistant Secretary will make him especially valuable

to the U. S. D. A. in the administration of the Packers and Stockyards Act and other livestock activities. He has been an extensive feeder of cattle. He has either bought or sold livestock on the following markets: Chicago, Buffalo, Pittsburgh, Kansas City, East St. Louis, New Orleans, Jacksonville, Fla., Fort Worth, Cincinnati and Columbus, Ohio. But not all attention has been given to feeding cattle for market. He has been a breeder of pure bred shorthorn cattle and Duroc hogs and has judged horses, cattle and hogs at many fairs and expositions.

After serving in the Ohio state senate where he was chairman of the agricultural committee, Mr. Dunlap served two terms as state food and dairy commissioner. He has several notable accomplishments to his credit as a result of his work in this office dealing with misbranding and adulteration of good and drinks.

For a short period he was Secretary of the Ohio State Board of Agriculture and then resigned to manage a 60,000 acre ranch in Florida. At the time President Coolidge summoned him to Washington to assume his new position, Mr. Dunlap was managing his own Ohio farm as well as those of his father located in the same community.

The U. S. D. A. is fortunate in securing Renick Dunlap for its assistant chief in charge.



*In our next number you will find articles by Albert Hansen, D. S. Burch, E. W. Howe, Jeff McDermid, and a number of other interesting writers. Don't miss this issue*



# The Relation of Sulfur to Soil Fertility

(From page 23)

Sulfur also gave increased yields on soil producing red clover. The increased yield produced by sulfur is not so large with red clover as with alfalfa. It is perhaps even more significant since the untreated soil produces a good yield of two and one-third tons of clover, yet the flowers of sulfur increases this to four and three-fourths of a

ton, an increase of over 200 percent! This is really a very marked increase for a soil treatment and the yield of red clover hay obtained is very large. In case of the alfalfa, while the increase produced was very marked, the actual yield from the sulfur treated plots was only two and one-half tons, which is only about 50 percent of the normal yield which might be expected on irrigated alfalfa land in a semi-arid region. Yet the yield of red clover hay from the sulfur treated soil is above the maximum for very productive soils even under humid conditions.

dicates that there are at least 100,000 acres of alfalfa on semi-arid and arid land where the yield of alfalfa can be increased at least one ton per acre where the sulfur applied will not cost over \$1.00 per acre.

The principal crops benefited by sulfur treatment have been alfalfa, red and alsike clover which have

Treatment	Amount of Material Applied	Amount of Sulfur Present	Yield Per Acre
None.....	0	0	4680
Flowers of Sulfur.....	100	100	9480
Gypsum.....	590	100	7250
Superphosphate.....	820	100	7290

*The effect of sulfur on red clover. Application and results recorded as pounds per acre.*

THE Oregon investigators have checked their results by the analysis of soils and crops and their results seem to indicate that sulfur is the limiting element of plant food on these basaltic soils and that the increase in yield has really been caused by sulfur as a plant food and that it is not due to indirect action to any extent. A conservative estimate by Powers indicates that there are at least 100,000 acres of alfalfa on semi-arid and arid land where the yield of alfalfa can be increased at least one ton per acre where the sulfur applied will not cost over \$1.00 per acre.

The principal crops benefited by sulfur treatment have been alfalfa, red and alsike clover which have really responded in a very marked degree. In the case of wheat and potatoes slight increases have been obtained. The increased yield produced by sulfur upon the yield of potatoes is due in part at least to the effect of the sulfur as a fungicide upon the potato scab and other fungous diseases. Applications of sulfur have had practically no effect upon the yield of field peas, beans, corn, kale, rape or sunflowers.

Chemical analysis of the soil of the red hill regions in Oregon contain only from 150 to 400 pounds of sulfur per plowed surface of the soil and field experiments prove conclusively that sulfur applications increase the yield of grain and clover from 25 to 50 per cent and that the increased yield is larger from sulfur than from acid phosphate.

Investigations of the virgin and cropped soil indicated that the cropped soil of representative soil types now contains about 200 pounds of sulfur per plowed acre, while the virgin adjacent soil contains 300 pounds. This indicates a loss of 100 pounds of sulfur per



acre during 60 years of cultivation or only 1.6 pounds' per acre per year.

Yet lysimeter studies indicate that from forty to forty-five pounds of sulfur are annually lost in the drainage water while only five or six pounds are annually added by the rainfall.

No explanation has been offered regarding the apparent discrepancy of the results. It is difficult to conceive how the initial supply of sulfur in the soil of 300 pounds could be reduced to 200 pounds after 60 years of cropping, representing a purely nominal consumption of only 1.6 pounds annually and yet over forty pounds removed in the drainage water with only six pounds added in the rainfall. Is there some other possible increase of sulfur supply?

It does seem fair to assume that with an annual removal of forty pounds in the drainage water and an initial supply of only 300 pounds per acre that it should all be removed in seven and one-half years by the drainage alone if the crop did not remove any at all. Yet crops have actually been growing on this soil for 60 years and two-thirds of the initial supply of sulfur is still present!

**I**N harmony with results elsewhere the Oregon data indicated that sulfur materials have a markedly stimulating effect on crop growth. Applied sulfur has produced visible results within two weeks after application. The applied sulfur aids nitrification immediately and is of value in stimulating the production of nitrates early in the season when nitrates are needed by the young growing plant and their supply has been largely depleted from the soil by the winter and spring rains.

The Oregon experiments also in-

dicating that the continued use of flowers of sulfur produces an acid soil condition and that its long continued use will increase the need for lime materials for correction of the acidity produced. Other forms of sulfur bearing materials such as gypsum, acid phosphate, iron sulfate, are available for use, however, and perhaps will be found to be more economical to use.

**T**HE results obtained from the use of sulfur materials on certain soil types in the Pacific Northwest are truly remarkable. It must be always remembered, however, that these results have been obtained on special soil types derived largely from volcanic material of basaltic origin. The climatic conditions, also, are arid or semi-arid. Such results obtained on special soils and under such climatic conditions should not be used as a guide for the use of sulfur under other soil and climatic conditions.

It seems quite certain that the basaltic regions of the Pacific Northwest offer a very fertile field for the profitable use of sulfur bearing materials as fertilizers. Basalt, the parent rock out of which the soils have largely been formed, contains only very limited amounts of sulfur.

Semi-arid soils derived from sedimentary deposits are rich in alkali sulfate and furthermore there are always such sulfates being added in irrigation waters which provide an abundance of sulfur for the plants' use.

The soils of the eastern and southern states receive an appreciable amount of sulfur in fertilizers, manures and in the precipitation which contains varying but still large amounts of sulfur because of the heavy coal consumption in these areas, so that the sulfur problem in the two regions is materially different.



## How Successful Livestock Breeders Are Made

(From page 5)

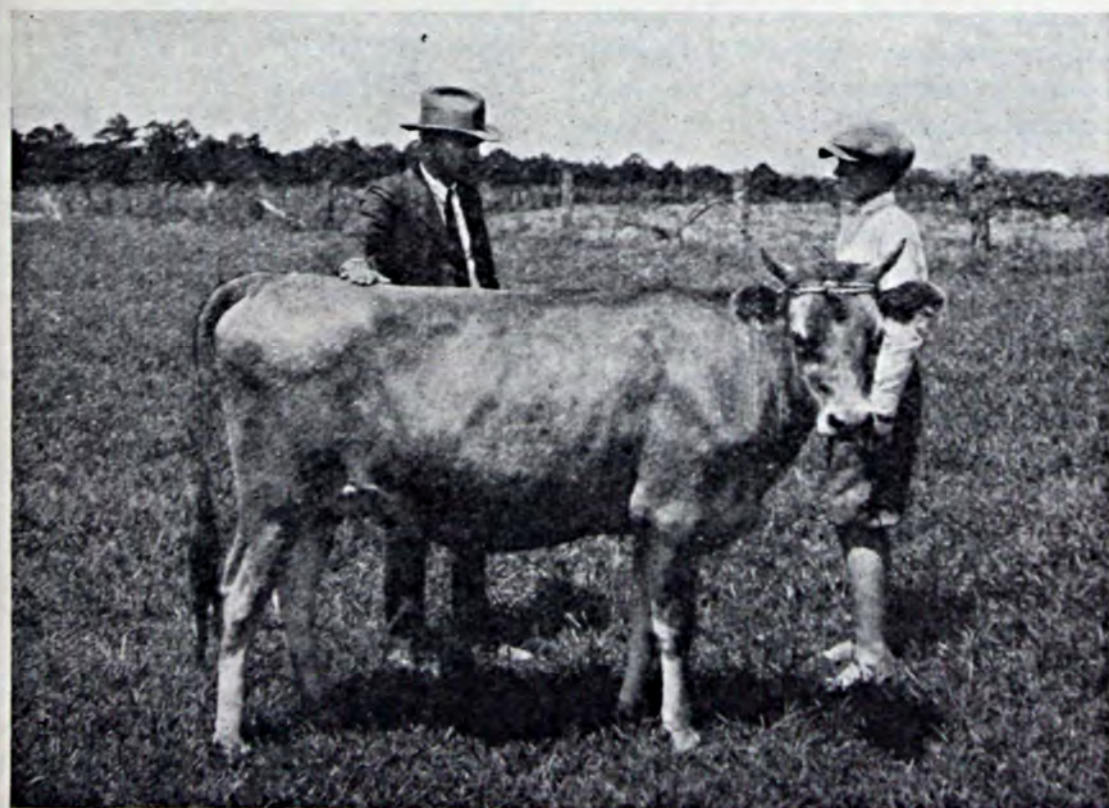
he could have pride in seeing grow and develop, and unconsciously in the youthful mind is developing a knowledge and appreciation of blooded cattle not gained except in work with the animal itself.

"The boys' calves were well trained to show, and of still greater importance were growthy, well developed and in good show condition. The horns were polished, the hair clipped, and they were also blanketed, all of which showed that some preparation had been made for the show ring. A boy in the above respects may be a successful calf club member with a very poor individual, if the calf's care and attention has been what it should. In this work with its far-reaching significance Mr. W. F. Howell, county agent, has been the leader."

**T**HE 1924 calf club show is the second show put on by the Lancaster calf club.

At the first show only 16 calves were shown, this year 30 calves were shown by the clubsters; and what's more they not only increased in number—but also improved in quality, condition, etc. The grand champion heifer last year was only senior champion this year, all of which indicates the progress being made. By next year some of the calves will have developed into mature cows, and will have produced a calf, which means that the youngsters will be getting a return on their investments.

Every boy got a prize. The prizes were as follows: Grand champion, a suit of clothes and a cream can. Junior champion, \$7.50 in cash and a pair of milk scales. Senior champion same prizes. First in class, \$2.50 in cash, pair of shoes and a subscription to a dairy journal. Other first in class winners received the same prizes. Seventy-four other prizes were



County Agent W. F. Howell giving a Lancaster calf club boy some pointers on fitting and showing his purebred calf.



awarded in addition to the ones mentioned above.

Woodrow Wilson won grand champion over all classes on Fern's Kitty 629546. He also won junior champion and first in the Junior Calf class. Furman Hammond won senior champion in the Senior Yearling class on Oxford's Robbie, 589755. Alger Poag won first in the Junior Yearling class on Selyn's Stockwell Beauty 611484. Earl Roberts won first in Senior Calf class on Brookhill's Buttercup 629545.

The best fitted and closest class was that of the junior calves and five entries were lined up. Competition was very keen between Fern's Kitty 629546, owned by Woodrow Wilson, and an un-named heifer owned by Elbert Faulkenberry. However, the former had the advantage in the length of rump and smoothness of tail setting, and showed a decided superiority in udder development and finally took the blue.

The first prize junior yearling and senior yearling heifers were next brought out to determine the senior champion. Last year's grand champion and this year's first-prize senior yearling, Oxford's Robbie, owned by Furman Hammond easily took champion honors due to her great depth of barrel, spring or rib and udder development.

In the afternoon a parade of the entire show was made through the business section of the thriving town of Lancaster; the boys led their heifers proudly through the streets which were lined with farmers and their wives, and business men of the town.

**A**N amusing incident which shows the intense interest that was manifested by the boys' fathers in the show is told by Mr. Williams, about Mr. Hammond, father of Furman Hammond, the club boy who carried away the grand champion honors last year.

According to Mr. Williams, Mr.

Hammond was on hand the first day and was as much interested as any of the boys in everything that happened. However, at the end of the first day he told everybody good-by, and departed for his home, quite a distance away in the county, saying as he left that he was very sorry to leave, but that he had some important farm work that had to be finished the next day. But! Lo and behold, one of the first spectators to reach the show ring bright and early the next morning was Mr. Hammond.

When asked about it, he said: "Well, last night I got to thinking about the boys and the show, and who the prize-winners would be; and I just couldn't stay away—because I thought 'my boy' might win the Grand Champion Prize again this year."

The slogan for this year is "A Bigger and Better Calf Club Show for 1925."

What does this progress point to? It cannot be measured in terms of one year. It is paving the way for a profitable livestock industry in the South; and for successful breeders, who will make good use of the many advantages we have for raising livestock in the Sunny South. Progress has been made in this line in recent years, but it will take the inspiration and enthusiasm of the "Breeders of Tomorrow" to give it the necessary momentum.



## Credo Omeletus

(From page 4)

radiance on the passing years; that to love, to breathe deeply and joyously is to live.

My philosophy, then, is a scrambled understanding of men and things, life and letters, cause and effect—a sort of *Credo Omeletus* which nourishes after a fashion.

Who is that knocking at that door?



# The Springtime Outlook

(From page 8)

spell profit to the American producer. To rush ahead and expand production beyond these limits is simply to invite a return of the conditions of 1920-23.

IN the long run, it is to our interest to have Europe restored. For only prosperous countries can make a profitable market; only peoples whose high rate of productivity enables them to enjoy a high standard of living can create the sort of consumptive demand which our agricultural industry imperatively needs. It is well to reconsider from this point of view the significance of this year's price situation as it bears on the European problem. It has, of course, been a welcome relief to American wheat growers and others to receive higher prices for their products during the last few months. Such high prices, however, were due in large measure to scarcity abroad, particularly of breadstuffs. It has been estimated that the relatively poor crop yields of the current year have caused Great Britain alone to pay £64,000,000 more for her food bill than she otherwise would. The same situation of course applies also to France and Italy and the other importing countries on the Continent. But every one of these countries needs every pound or franc or lira that it can lay its hands on to pay its pressing debt obligations and to help as rapidly as may be to re-establish its industry and trade. The necessity for these extraordinary outlays for mere food this year has, by just so much, slowed down this important process of general economic restoration.

A certain gentleman who has attracted some attention by his predictions of world-wide weather

conditions for a long period in advance is forecasting an extremely unfavorable crop year in Europe, and a somewhat unsatisfactory season in other important producing regions. This includes the promises of another poor crop in the United States. Should such a condition materialize, agricultural prices would, of course, maintain their present level or even advance somewhat. It would, however, be at the cost of a very serious interruption in the process of the world's economic reconstruction, and it is doubtful if the benefits even to our farmers would be as great as their ultimate losses. Should weather conditions be normal, it is to be expected that there would be some drop in prices, particularly of wheat, whose high price this year has stimulated a rather general increase of acreage.

Pending a solution of this riddle of the weather, the safest guess is for a national agricultural income next year, little, if any, less than that of the past season. The spring of 1925 should therefore invite the farmer "to make hay while the sun shines," but to be very cautious about expanding his activities or extending his commitments beyond the strictest limits which are necessitated by current operations. It is by no means impossible that we are about to pass the crest of domestic demand and to start on a general downward revision of values.



*In next month's issue will appear the fourth and last of the prize editorials written by our readers. — "How Cost Account Records Help the Farmer," by R. W. Wallace.*



## Spraying Failures

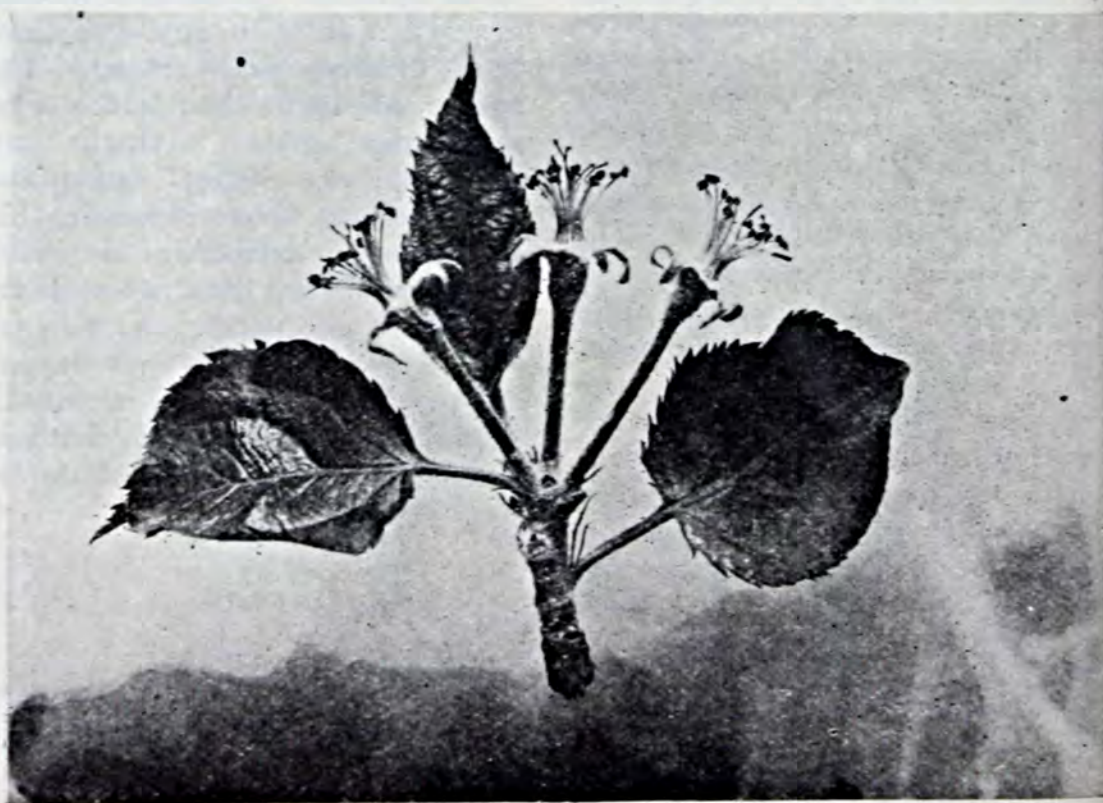
(From page 10)

time of application and the correct mixing of materials comes thoroughness of application. A spraying job haphazardly done is not efficient. A thorough application means that every particle of surface should be covered, and this should be the aim of the grower each time he puts on a spray. Just consider a moment what careless spraying means. Nearly any orchardist is familiar with San Jose scale and in most parts of the country he has to fight it constantly. He applies a caustic spray when the tree is dormant, to kill the scales upon the twigs and branches. Even if his job is well done, some scales are sure to get through unharmed, but if his job is carelessly done the number of scales surviving increases rapidly. A single scale insect has a possible progeny of 150 to 200 young each brood, and as there are several broods during the season, the number of new scales from those surviving the spray applications

runs into the billions by the next fall. This is only one of many typical examples that might be cited as a result of careless spraying. Can we afford to be careless?

There are many causes for lack of thoroughness of application, some of which the grower may be unconscious of. One common mistake is the use of too little spray material. A mature apple tree in leaf requires seven to ten gallons of material per application. From this figure, some idea of the amount required for trees of various sizes may be estimated. Use plenty of material and spray all parts of the tree uniformly and until the material begins to drip.

Faulty or inadequate equipment also tends to prevent thoroughness of application. A barrel sprayer that works properly is satisfactory for a small orchard, but for an orchard of more than 100 bearing trees a power sprayer is essential for greatest efficiency.



Apple blossom clusters at the right stage to apply the first codling moth spray. A few days later the calyx lobes will be closed. (Courtesy Purdue Exp. Sta.)



The best form of spray is a mist or fog applied at relatively high pressure. This is accomplished by forcing the material through a small hole in the nozzle disk. These holes gradually enlarge from wear, and the disks should be replaced frequently. Although they cost but a few cents a dozen, it is only too often that the same disk serves throughout the season and though the spray becomes coarser and coarser, no one seems to notice. This leads to needless waste and a poor distribution of materials.

Another common mistake along this line is the use of spray guns with low pressure and low capacity outfits. Spray guns were designed to apply a large amount of material in a short time and consequently require a high pressure to secure a mist-like spray. When two guns are used on a spray outfit whose normal capacity is two nozzles at

250 pounds pressure, the result is not only a poor job of spraying but it means that the outfit is working at a constant overload. This leads to breakdowns and expensive repairs.

Regardless of whether a hand pump or power sprayer is used, sufficient spray hose should be provided so that the operator can easily get at any portion of the tree. Each lead of hose for ground work should be at least thirty feet long and forty feet is a better length in most cases.

These are only a few of the possible reasons for spraying failures. They are very typical, however, and they indicate that most of the trouble can be overcome by the orchardist himself by giving greater attention to details and by better acquainting himself with the fundamental principles underlying the operations.



## Concentrated Fertilizer for Economy

(From page 18)

	When Fertilizer had Been Applied in Row		Fertilizer Applied Broadcast	
	Conc.	Normal	Conc.	Normal
Tobacco, (average of 3 plots)	.....	.....	1,780.8 lbs.	1,701.6 lbs.
Sweet Corn, (average of 5 plots).....	1,110*	1,079*	1,019*	.....
Potatoes, (average of 3 plots)	220.9 bus.	209.1 bus.	188.4 bus.	.....
Beets, (average of 5 plots) ..	24.2 tons	23.6 tons	23.8 tons	.....
Hay, (4 plots).....	Actual yields were not taken, but the plot with 272.6 pounds of concentrated fertilizer appeared best at harvest.			

\*Dozens of marketable ears.

izers. When thoroughly mixed with the soil, more thoroughly, in fact, than would be practical on the farm, a 4.6—10.7—4.1 chemical fertilizer without filler, applied at the rate of 7,868 pounds to the acre, produced satisfactory plants.

The Experiment Station's new evidence now seems to furnish a final answer to our doubting Thomases: "High analysis, concentrated fertilizers, such as the

ones used, are safe to use when they are well mixed with the soil." There is much economy in them. "Although it is in the interest of national economy," Professor Beaumont points out, "for low grade materials not to be entirely displaced, an increasing confidence in concentrated fertilizers will give them a larger and larger bulk on the American fertilizer market."



## Improving Tobacco Fertilizers

The growing of a profitable crop of tobacco depends largely on the use of proper fertilizers, and Mr. H. A. McGee, Tobacco Extension Specialist of the State College of Agriculture at Raleigh, North Carolina, has covered this matter very well in a circular just published, and called "Fertilizers for Tobacco." The circular states:

"The kind and quantity of fertilizer used" (on tobacco) "will determine largely the yield per acre, as well as the quality of the leaf grown. The fertilizer that gives the best results may cost more per ton, but the increased value of the crop grown will more than offset this additional cost.

"Commercial fertilizers are used for the purpose of supplying the plant food that is lacking in the soil. . . . The sources from which these plant food elements are derived are very important. Only high grade 16 per cent. acid phosphate is desirable for tobacco.

"Potash salts containing chlorine are objectionable. Chlorine is not a plant food in any sense of the word, it is only a stimulant. An excess of chlorine will retard rather than aid plant growth. It also renders the leaf unfit for smoking purposes, for which it is chiefly grown.

"Experimental tests have shown that Double Manure Salts (Magnesium - Potassium - Sulphate,) because of its magnesium content, and German high grade Sulphate of Potash (50 per cent) in connection with magnesium limestone are the best sources from which potash may be obtained.

"Another very important element of plant food for tobacco is magnesium. Recent tests have shown that it is relatively of as much importance as potash in

keeping the plant healthy, and in helping to ward off leaf spot diseases. It is one of the essential elements of plant food."

In recent years scientific authorities have come to agree that the presence of chlorine in the tobacco leaf impairs the flavor and burning quality of the tobacco. Experiments conducted by the University of Ohio have shown conclusively that cigars made from tobacco fertilizer with sulphate, which is practically free of chlorine, are superior in burning quality, flavor and aroma to those fertilized with other forms of potash.

The Pennsylvania Legislature has taken cognizance of these developments by amending their Fertilizer Law on March 16th. The Amendment follows:

"No commercial fertilizer containing less than one per centum of ammonia or one per centum of available phosphoric acid, or one per centum water soluble potash nor any mixed fertilizer or mixture composed of two or more ingredients containing less than fourteen per centum of total plant food, namely, not less than one percentum of ammonia or one per centum of available phosphoric acid or one per centum of water soluble potash shall be sold, offered for sale or exposed for sale in this Commonwealth. No commercial fertilizer having the word 'tobacco' as part of its brand or trade name shall contain muriate of potash, manure salts, kainit or any other commercial potash combined with chlorine as chloride of potash. This amendment shall take effect and be in force January 1, 1926."

The above amendment was sponsored by James W. Kellogg, Assistant Director-Chief Chemist of the Pennsylvania Department of Agriculture.



# Over 100,000 Stromberg Carburetors and Hot Spots Sold

## for Fords!

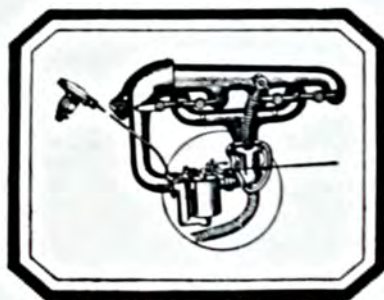
A Carburetor sales record never before equalled — and made possible only by the fact that the STROMBERG CARBURETOR and HOT SPOT for Fords delivers more mileage—more power—than any other Carburetor offered. It makes possible quicker get-away and much easier starting—four great essentials that every Ford owner is looking for.

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# OLIVER

## BETTER PREPARATION — BETTER CROPS

One acre of ground properly prepared for seeding is worth two acres that is deficient in available plant food and that is full of clods and air spaces.

Preparation of the ideal seed bed involves an application of the proper fertilizer, if the soil is deficient in any of the available plant foods, and in properly discing, plowing and firming the soil until it is uniform from surface to subsoil.

Before plowing use the disc on

the surface, cutting all trash and mixing it with the surface soil. This will eliminate clods and air pockets. Next plow the land, using a combined rolling coulter and jointer, so that all weed seeds and eggs and larvae of insects may be laid on the bottom of the furrow. Then, as a final preparation, use disc and pulverizer in pulverizing and firming the soil.

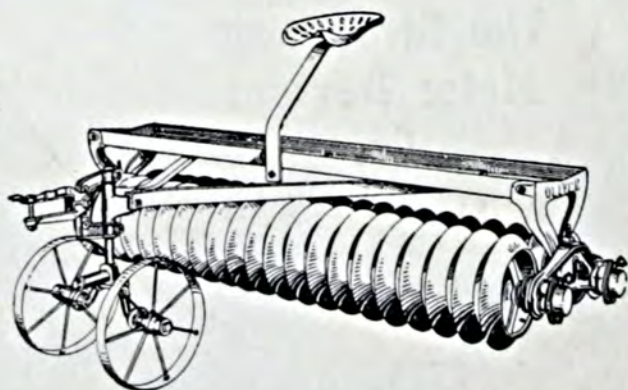
The result will be a seed bed that will be the greatest asset to the farm and to the farmer.

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## OLIVER CHILLED PLOW WORKS

*Plowmakers for the World*

South Bend, Indiana





# Better Crops

The Pocket Book of Agriculture.

May 1925

10 Cents



See Page 26 for Prize Contest Announcement





THE Potash Importing  
Corporation of America,  
importers of Genuine  
German Potash Salts, an-  
nounces the removal of its  
New York Offices, on  
May 1st, 1925, from No. 81  
Fulton Street to 10 Bridge  
Street, New York City.

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CORPORATION *of* AMERICA

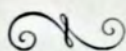
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# Better Crops

## The Pocket Book of Agriculture

VOLUME IV

NUMBER THREE

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Editorial Offices: 461 Eighth Avenue, New York





*The City Boy's Story*





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VOL. IV

NEW YORK, MAY, 1925

No. 3

*Jeff suggests some unusual answers to the question:*

# What is Failure?

By *Jeff McIlernid*

**D**IAMONDS are worth several hundred dollars a karat at the moment, simply because women are willing to buy more diamonds than can be mined. Let a fabulous mine be discovered that floods the world with them, and they will drop to ten cents a bushel. No one will wear them.

Man wants what is valuable, and ignores what is common. And value is the progeny of a short supply.

If gold were more plentiful than iron, men would build automobiles of cheap gold and buy expensive iron wedding rings.

The law of supply and demand is the second law of the land, written in the ancient statute books immediately following "The Law of Self Preservation" which is the first.

There are few successes and many failures among men. Success is

scarce—and is thus something to be desired.

**I**F all men were successful, none would be successful, for there would exist no failures for use as comparison. Success, like most things, is comparative—we must have an established yardstick to measure it with. And our yardstick is the average man's inability to make the grade.

This matter of success and failure is a delicate one—a matter of relativity. If one is trying to be a



failure, then is not one a success if one fails?

Success consists in accomplishing what you set out to do. And this being so how is any man able to judge of the success of another unless he knows what the other is attempting?

Most of us dream of success as that condition that yields plenty to eat, ample leisure to enjoy ourselves and assurance of a comfortable old age. All of this involves the accumulation of money; and so we say that a man who has made money is a success, and he who has none is a failure.

That this may or may not be so, we know, but we accept the world's dictum, and so rate success as the ability and failure as the inability to collect dollars.

Out of every one hundred grocers who enter business ninety-five fail. Only five succeed. There are ten thousand workmen for every boss. The world is in the hands of the few and has ever swayed to the dictates of a slender, but intelligent minority.

**I**T is demonstrably easier to be a failure than to be a success.

But it is not so hard to be a success.

Every physically able man has in him the power and ability to become independent.

And, further, The Day is not far away when there will be no poverty; when every man will do work he loves and is fitted for; when there will be work enough for all, and all will work.

The reason some men must work too hard is because some work not at all. There is just so much to be done, and so many to do it; and when a few loaf, their burden falls on others' shoulders.

Every man has in his knapsack the marshal's baton of success. I believe this—and will continue to believe it until some stronger soul bends me to disbelief; and it will have to be with more powerful

arguments than I have yet heard. No man is a failure.

Men do not work from choice. Only a few are genuinely ambitious and continue effort after the need for further effort has vanished. As proof of this I offer the fact that most men retire as soon as they have accumulated that sum, the interest on which will keep them alive.

It seems to me that this also proves that these men must have been working at tasks they abhorred, or if not abhorred, at least at jobs they merely tolerated but did not enjoy. For if a man is working at something he really loves why should he quit? Where else can he find equal enjoyment?

Few men love their work. And this is because few are fitted for what they are doing—it is no fault of the work.

The man who loves his work never works at all. He plays. When the right man hits the right job the sparks fly.

But this is a world of misfits—and therefore, failures.

**S**OMEWHERE in this world for every man, is a woman who could make him happy; a job that will make him contented and rich; a place in the sun.

The trouble is that the right woman and the right man seldom meet. And most men are square pegs in round holes when their fitness for their tasks is considered.

We breed hogs, racehorses and fighting cocks, selecting mates by scientific formula, and thus evolve a better race of porkines, Man-of-wars and cocks.

But men still breed mongrel-fashion like the dogs in the street, with the expected result. The boy marries the girl next door, not after carefully considering whether her temperament, education, color and heredity are complements of his own. No, Lester!

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# Some Funny Experiences I Have Had

By F. N. Darling

County Agent, Huntington, W. Va.

*Every county agent has his store of amusing experiences. Brother Darling gives some unusually good ones. Can you match them?*

**P**ROBABLY there is no fellow who has had a greater variety of experiences, funny, serious—all kinds—than that official receiver of the “buck,” the County Agent. I am one of those fellows and during my eleven-year term I’ve had my share. Here are a few of the more humorous episodes that bobbed up as I drove “Old Henry” across the County.

One evening a poultry specialist, we’ll call him Smith, and I were holding a meeting in one of our rural sections. Smith, being a good speaker, was going fine, and everything would have ended well, if some old fellow in the back part of the room hadn’t asked a certain question.

“Professor,” said he, “you have been telling us about that new method of killing chickens. Suppose you show us how to do it.” “All right” replied Smith, “bring on the bird and I’ll show you.” Very shortly afterwards a farmer returned with some neighbor’s rooster, and Smith proceeded to demonstrate. He very soon reached the feather picking stage when, lo and behold, what did that darn rooster do but

suddenly come to life and move quite quickly away from his executioner! Well such hooting and laughing I have never heard before or since. Those old farmers simply went wild. It was no joke to Smith, nor for that matter to me, at the time. Needless to say, I never heard the last of it as long as I remained in that particular County. As for Smith, he never visited the neighborhood again.

**A**NOTHER thriller that still lingers had to do with a butter making demonstration given before a group of fifty or more farm women. It seems that we could find no one locally well enough qualified or willing to help us out. So it fell to the lot of a leading official of the Bureau of Animal Industry who happened to be in the County at the time on another mission. After much persuasion on my part, he finally agreed to assist me. Well, everything went along all right for about fifteen minutes during which time I was cranking the barrel churn at a lively rate while he

*(turn to page 43)*





*The U. S. motion picture truck carries portable projector, generator, batteries, electric lights, power cable and repair parts. The outfit shows clear, bright, first-class pictures.*

# MISSIONARY MOVIES

By D. S. Burch

U. S. Department of Agriculture

*“The methods of modern agriculture are being carried into remote regions in a novel but effective way.*

**A**BOUT two decades ago a theatrical troupe, making one-night stands from the eastern seaboard westward, got as far west as Kansas City and went broke. Among the actors was a young man, Ed. F. Pickering, who was sufficiently determined and versatile to “carry on.” Obtaining a job on a newspaper he became a successful reporter and finally established himself locally, through his persistence, as a good writer and speaker. The vicissitudes of his career led him to accept, in time, an opportunity to enter the service of the United States Department of Agriculture.

But unlike most positions in that Department, or elsewhere in the Federal service, his new job is much like the old one that originally took him West. Although a Government employee, Mr. Pickering is again on tour making one-night stands with a show under his own direction.

The show consists of a one-ton motor truck carrying an electric generator, batteries, a complete motion-picture outfit including screen, a string of electric lights and assorted films, all prepared by the U. S. Department of Agriculture and dealing with modern farm-



ing methods. But unlike the showman who for business reasons seeks the cities and the more densely populated communities, Mr. Pickering is under instructions from Uncle Sam to carry the light of modern farming into the more remote districts. His reports frequently mention that many persons in the audience had previously seen neither motion pictures of any kind or even electric lights. He supplements the pictures with a brief talk concerning them. No admission is charged nor are collections permitted for any purpose.

Although Mr. Pickering has been on Chautauqua circuits, has accompanied revivalists in the capacity of a professional singer, and has had wide experience in addressing meetings, he reports that his present mission as an agricultural evangelist is fascinating beyond description. "Why, I didn't know that Uncle Sam knew we were alive," one grizzled mountaineer told him after one of the shows, "much less sending a first-class entertainment like this for our pleasure and instruction."

**F**EW showmen receive so many invitations to dinner as Mr. Pick-

ering gets from appreciative farmers' wives, anxious to have a representative of the United States Government sample their pastry, jellies and other culinary products. But his mission is one which permits few luxuries of that sort, for on the morrow he must be at the next school house, church, grove, or other location which the advance man has selected and designated. The advance man, it may be explained, is not part of the outfit but some local person—usually a retired mail carrier or local official—who can be induced to distribute handbills and announce the time and place of the event. The coming of the motion-picture truck and the speaker is truly an event in the localities which Uncle Sam's show is visiting.

In official parlance the project under which Mr. Pickering operates is "Preliminary Tick Eradication." This is an activity conducted by the Tick Eradication Division of the Bureau of Animal Industry, U. S. Department of Agriculture. For years cattle in the South have been the unwilling carriers of ticks which cause enormous losses through emaciation, unthriftiness, reduced milk flow, and death. The tick is

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The heroine of "Mollie of Pine Grove Vat," a three-reel production that is making friends in Dixie for the work of eradicating cattle ticks, and preparing the way for better livestock.



CA method that was worked out under actual field conditions and proved extremely practical is described in this article on

# DOUBLE DUTY

By Melville D. Bowers

Maryland Agricultural Extension Service

THE usual methods of applying dust or spray for the control of the two black and yellow cucumber beetles are ordinarily as practical as attempting to put salt on the saucy sparrow's tail.

*Diabrotica Vittata* and *Diabrotica Duodecempunctata*, by which Latin names these two cunning plant enemies are known, are altogether as formidable as their names indicate them to be. They occur pretty generally throughout the United States and with their Western cousins, which show some slight modifications in type and coloring, compose a vast army whose sole purpose seems to be the immediate and utter destruction of any and all cucurbits.

*Diabrotica Vittata* is the fellow with the three black stripes down his yellow back. He feeds on numerous plants other than cucurbits but his special delight is to break his winter fast on the tender and succulent leaves of young cucurbits. *Diabrotica Duodecempunctata* is distinguished by his twelve black polka-dots on a yellow background. His appetite is similar to that of his striped relative. The female of this species, however, has a decided fondness for depositing her eggs where the larvae can feed upon the roots of corn. The species, therefore, not only bears the name of the twelve-spotted

cucumber beetle but also that of the southern corn root worm.

THE most severe damage done to cucurbits by either species is probably inflicted upon the young plants. Not only do the pests eat the tender leaves but they carry the bacterial wilt of cucurbits and are the only known agencies for the spread of this serious disease. All through the season the beetles feed upon the leaves and bloom of the plants; and their larvae, once hatched, assist in the destruction by feeding upon the roots and sometimes upon the fruits which lie upon the ground. There is a second brood which likewise is accused of damaging the fruit by eating holes in the rind.

In many respects these two insects are the evil genii of the conscientious gardner who undertakes to grow cantaloupes, cucumbers, squash or any of the other species of the cucurbit family. They are the canny crows of the insect world; for the eyes they have are used to see with, the wings they possess are used to fly with and the discretion that they certainly appear to have is employed at disconcerting times.

Past experience has taught the grower of cucurbits that ordinary measures for insect control are likely to prove ineffective against



# DUSTING

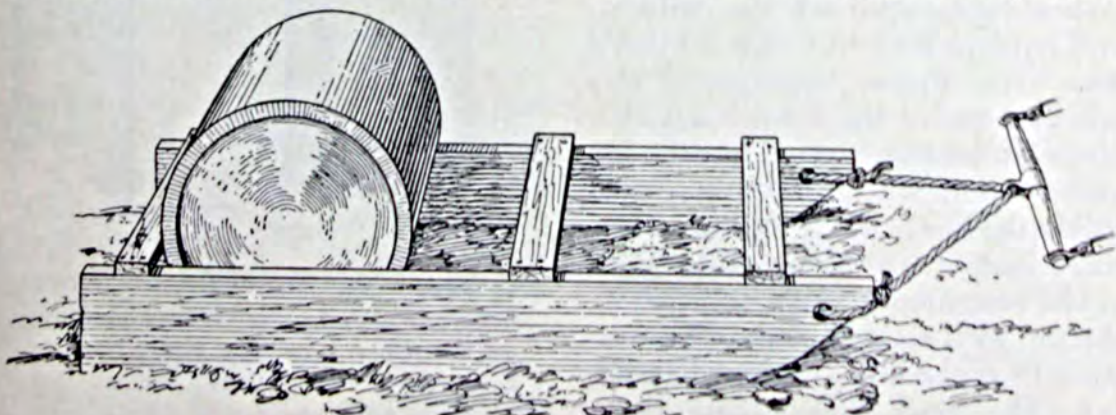
these two pests. Sprays and dusts have been tried. For the trouble of applying them the grower has usually had the dubious pleasure of watching the winged retreat of these insect enemies before his attack. Sprays and dust have served as repellents but not as effective controlling agents. The beetles, apparently, think entirely too much of their delicate digestive organs to derange them by feeding on the choice poisons which the grower so temptingly provides.

Resorting to other tactics, the hard-driven grower has tried covering his young plants with screen cloth or else has adopted the expedient of planting trap crops. Ordinarily, however, when he has escaped without great loss he has had to attribute his good fortune to the fact that he has produced more plants than the pests could possibly destroy rather than to the effective-

ness of the control measures he has employed.

Having to bear all the losses which the cucumber beetles are capable of inflicting would seem to be sufficient tribulation for the grower of cucurbits. There are other pests, however, for which he must be constantly on the lookout. Among them is *Aphis Gossypii*, otherwise known as the cotton or melon louse. Called by his true name this insignificant pest may lose some of his dignity but none of his reputation as a destroyer of plant life. By sheer numbers, it is possible for melon aphid to destroy a field of cucurbits almost before their presence is detected. They can, of course, be controlled with nicotine dust but the application must be very carefully and thoroughly made.

II T was while engaged in trying to



The farm sled can be used effectively to mix nicotine dust in large quantities.



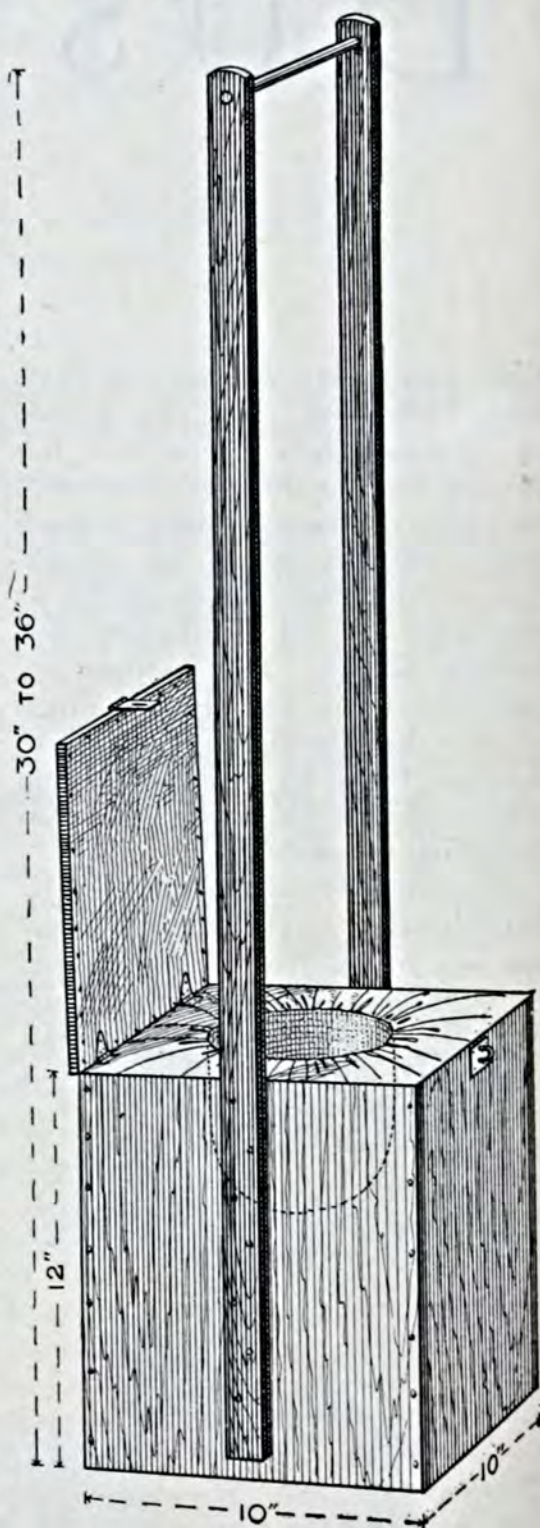
solve some of these problems involved in the control of the principal insect pests of the cucurbit family that S. F. Potts, working under the Department of Entomology at the University of Maryland, developed a device that promises to make life easier for the grower and considerably harder for the insects. The efforts of Mr. Potts were confined entirely to the effective use of dusts, which growers generally find more convenient to apply than sprays and which usually are as effective when conditions are favorable. The chief difficulty in the use of dusts for enemies of the cucurbits, however, has been to secure favorable conditions with ordinary equipment.

Cucumber beetles are inclined to be cautious and any unwonted disturbance, such as attends the usual performance of dusting, is sufficient to send them off and away. Aphis have acquired the disconcerting habit of sticking to the under side of leaves and stems and so are difficult to reach effectively even with the best of equipment. The wind is also a disturbing element and even on a comparatively calm day is likely to frustrate some of the efforts of the grower.

Working on the Eastern Shore of Maryland under the actual field conditions which the average grower encounters, Mr. Potts soon saw the necessity for some improved method of applying dusts. He constructed in an experimental way a small wooden box about ten inches square by about twelve inches high, open at the bottom, and equipped on top with a hinged lid. Over the upper edges of this box and under the lid he tacked a piece of loosely woven muslin to make a shallow bag that hung down inside the box. Next he nailed two three-foot strips to opposite sides of the box, joining them together at the top with a small piece of broomstick to make a convenient handle. Into the cloth bag about three pounds of a two per cent nicotine

dust were placed and the lid of the apparatus closed.

FROM the outset this simple implement demonstrated some advantages. It was used merely as a  
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Fumigator and duster found effective in control of cucumber beetles and aphis on cucurbits. It may prove a more desirable and effective means for applying both insect and disease controlling dusts to other truck crops.



# A Million Dollar Idea

By Paul Tabor

Georgia State College of Agriculture

*(How a little more plant food saved a lot of money.)*

IN 1919 the farmers in south-east Georgia had started growing bright leaf tobacco on such a scale that a specialist was appointed by the State College of Agriculture to help in the production of this crop. Only two or three years before, there was practically no tobacco of that type grown in the State. The damage to the cotton crop by the boll weevil caused a few to try small areas. These were so successful that the acreage increased tremendously.

The new growers would hire a practical tobacco producer from the Carolinas or Virginia to supervise the growing and curing of the crop. These men employed the same practices that were common in the bright tobacco districts of their native states. One of them was the use of 600 to 1,000 pounds of an 8-3-3 commercial fertilizer per acre. In the South, where most of the commercial fertilizers of the country are used, an 8-3-3 formula means 8 per cent phosphoric acid, 3 per cent ammonia and 3 per cent potash.

The summer of 1919 was wet. The tobacco crop did not ripen properly and as a result a lot of rather poor tobacco was cured and sold for a low price. In travelling over the tobacco area, the college specialist, Mr. E. C. Westbrook noticed some fields producing better tobacco than others.

In many cases a higher per cent of potash had been used. This idea was tried out by a large number of growers in the next two years under the direction of Mr. Westbrook, and the results were uniformly good.

IT was then recommended. A conference with the fertilizer manufacturers was held and the results of more potash in the tobacco fertilizers made such a good impression that practically every one of them agreed to thereafter have at least 5 per cent of potash in their goods. In this way an 8-3-5 became the recognized tobacco fertilizer for Georgia.

In 1923 the summer was again wet. The rains came throughout June, paused a little in July and came back strong in August. The tobacco growers were expecting another lot of poor grade leaf. Instead of it they cured out a good quality product, due it is believed largely, to the extra two per cent of potash. It was estimated by Mr. Westbrook that a million dollars was saved to the growers in that year alone. The addition of two per cent was a great idea—it went over big, so big that a tobacco grower in south Georgia now must send to North Carolina if he wants an 8-3-3 tobacco fertilizer.



# A Painless Method of Killing Canada Thistle

By Albert A. Hansen

Purdue University Agricultural Experiment Station

*“This weed of weeds can be conquered by simple means, says this well known authority.”*

**F**RED LOEW was a Hoosier County Agent until Huntington College inveigled him into accepting a professorship. But the urge of the land became too great, so Professor Loew purchased a farm not far distant from the college and found profit and recreation from academic routine by occasionally donning the overalls of a dirt farmer in place of the professorial gown.

The most irritating feature on his farm was the presence of two large patches of husky Canada thistles. Always a believer in lime and legumes, farmer Loew decided to practice what he formerly preached, and so it came about that the thistle-infested land was seeded during April to alfalfa. Two years later I visited the farm and inspected the field that was formerly a prickly mess of thistles. Mr. Loew challenged me to find even a single thistle in his alfalfa patch, but the only place the pest could be found was along the fencerow. The line between the almost pure stand of alfalfa in the field and the pure stand of thistles in the fencerow was a striking object lesson of the value of the legume in conquering the prickly pest. Mr. Loew informed me that although it was necessary to use the hoe against the thistles in the young alfalfa

during the first season of growth, the alfalfa was plainly the victor without assistance the following season and by the time the stand was three years old the thistles had been totally vanquished.

**T**HE experience on the Loew farm has been repeated by a number of other Indiana farmers. There is Arthur Sheetz of Bremen, for instance, who fought and conquered a persistent acre and a half patch of thistles with Grimm alfalfa. On one of the Purdue demonstration farms, a field heavily infested with the dreaded thistle was plowed during the fall of 1921 and planted to alfalfa. A good stand was secured and when the alfalfa finally died out, blue grass came on naturally and the turf was practically free from thistles. Not only in the Hoosier state has alfalfa demonstrated its ability to conquer thistles, but from Rock Rapids, Iowa, comes the statement of County Agent Lester Shepard that a number of farmers in his county have reported that alfalfa has killed Canada thistles on their farms. Across the line in Minnesota we learn from County Agent M. E. Teeter that demonstrations in Rock County have shown conclusively



that a good stand of alfalfa will eradicate Canada thistle. In one case the ground was worked thoroughly, the alfalfa seed was sown during early summer and but few thistles survived the following season. During the third year diligent search by Mr. Teeter and a number of others failed to reveal a single thistle shoot in the entire field.

In another neighboring State, Wisconsin, we learn from Director K. L. Hatch that a half acre patch of thistles on a farm in the southern part of the State was conquered by a stand of hardy alfalfa, much to the astonishment of about 75 farmers who attended the demonstration. Many of the farmers were skeptics who had traveled many miles to witness what they thought was impossible.

In spite of the many favorable

reports regarding the efficiency of alfalfa as a weed exterminator, this is by no means a fool-proof method. For instance, I know of one farmer who tried to start alfalfa on wet land peppered with a scattering growth of thistles and when he failed to get a stand he cursed the thistles without realizing that alfalfa is a crop that refuses to tolerate wet feet. In order to destroy Canada thistle, a good stand of alfalfa is absolutely essential and the nearest approach to making the method fool-proof is not to neglect any of the recognized essentials of alfalfa production. This means liming where the soil is sour, drainage where the land is wet, inoculation when necessary and the use of genuine Grimm or Cossack seed of known origin,

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*These thistles were cut during July but sprouted again. Note the cut stems and characteristic creeping root.*



# Feeding the CORN Crop

By James S. Morse

*Mr. Morse is a practical farmer up in New York State and the results of his experiments will interest all corn growers.*

THE Eastern States have become so thickly populated with dairy cows that more stable manure is becoming available every year. The land is therefore becoming richer. The effect of this increase in the use of stable manure on profitable crop production is a practical and important question. In fact some extension workers tell us that too much stable manure is being used, especially on some crops.

Oats, for instance, often lodge where too much manure is used. This is because the nitrogen in the manure is not balanced properly with the other plant foods, phosphoric acid and potash. It is well known, of course, that oats that lodge do not fill well and do not yield the best crop. The profit on the crop is smaller.

With corn there is not so much danger from unbalanced fertilization, as more plant food is required to grow a heavy corn crop than is required for oats or other cereals. Corn is hard on the land.

WHILE this is true, however, it is sometimes surprising to learn the importance of phosphoric acid

and potash on the corn crop, even when manure is applied. As already pointed out these two plant foods are somewhat lacking in stable manure.

Some years ago an interesting and instructive experiment with fertilizers on corn, along these lines, was conducted on my own farm. The soil, on which the experimental plots were located, was a clay loam, all of which had been previously treated with stable manure. We were then still growing the old flint varieties of corn.

The results of this work were particularly satisfactory as this experiment, conducted under practical field conditions, proved conclusively the need of a complete fertilizer for corn on such soil as we have here in this particular section of central New York.

The details of the work were as follows:—

Treatment		Bushels shelled corn per acre.
Plot 1.	No fertilizer . . . . .	52
Plot 2.	81 lbs. dried blood . . . . .	84
	360 lbs. acid phos . . . . .	
	99 lbs. muriate potash . . . . .	
Plot 3.	81 lbs. dried blood . . . . .	70
	360 lbs. acid phos . . . . .	

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# *Better Crops'* ART GALLERY *of the month*

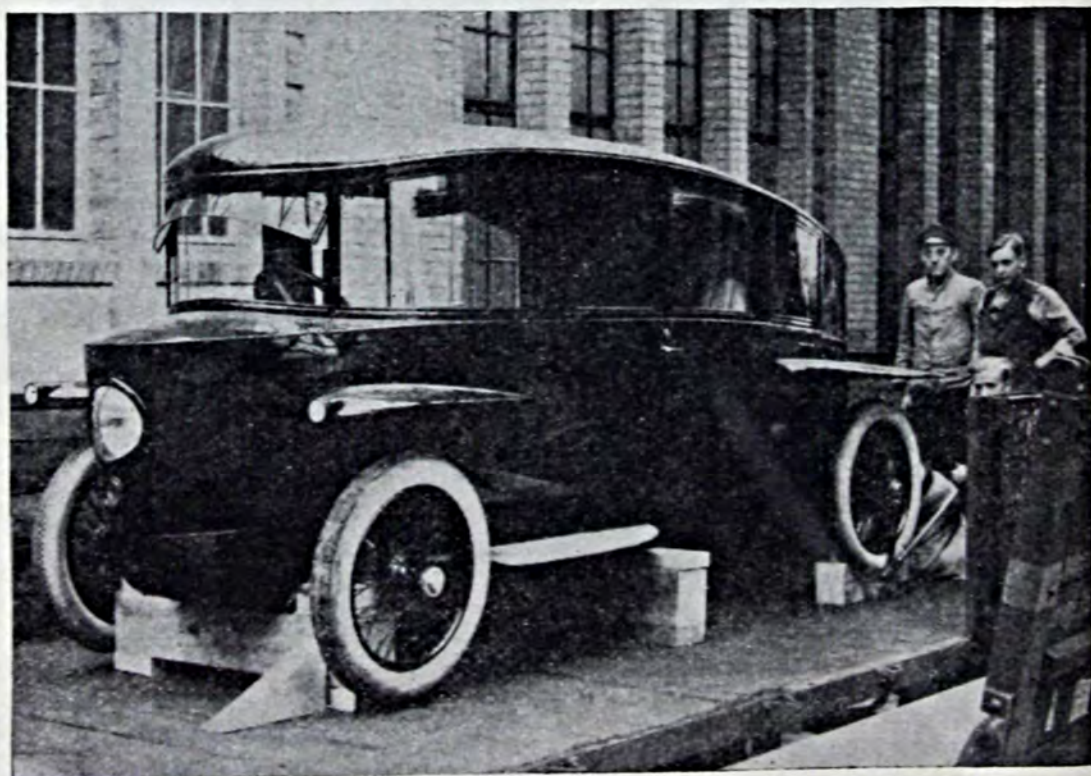
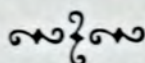


Celebrating a quarter century of service to Nebraska agricultural education and livestock advancement. Dean E. A. Burnett of the College of Agriculture, University of Nebraska, which he has built up from a small department to one of the leading agricultural colleges of the country. Dean Burnett is a graduate of Michigan Agricultural College and has the honorary degree of Doctor of Science from that institution.





J. B. Cunningham, County Agent at Albion, Indiana, Claude Harper, in charge of sheep extension work at Purdue University, and Grover Favinger of Albion guessing on the weight of one of Mr. Favinger's choice lambs which he has entered in the Hoosier Gold Medal Lamb Club



Remember in our April issue how Jeff pictured an ideal motor car and said it ought to have the motor in the rear? At that time he was just imagining, but it turns out that such a car is actually in existence. It is pictured above ready to be shipped to the Wembley Exposition in England last summer. It is a Rumpler limousine with motor in the rear which gives greater comfort to passengers and greater efficiency in operation. So far this type of car has not appeared in this country.



# ECONOMICS and the FARMER

By Arthur P. Chew

*“Somehow that word “economics” has a deadly sound, but Mr. Chew shows that it can be a very vital and valuable concern of the farmer.*

CARLYLE called economics the dismal science.

He did so because economics in his day assumed that the pursuit of wealth is the only concern of man. Today it is recognized that the self interest principle, although the foundation of economics, is not a universal truth but simply a mode of looking at life for scientific purposes. It is a working hypothesis.

Indeed, Adam Smith, the father of economics and the originator of the doctrine that men always seek to gratify their desires with the least exertion, knew that selfishness is not the whole of man. He wrote one book, *The Wealth of Nations*, assuming that it is, and another book, *The Theory of the Moral Sentiments*, assuming the opposite.

This was not perverse inconsistency. It was a result of Smith's perception that everything has its other side, and that you can not look at both sides at once. But if Carlyle's charge that economics turns man into a monster of greed is not true, it is true that most people find economics dismal for another reason, namely, that it is apt to be dry.

Certainly the subject has not the same wide appeal as, say, astronomy, which unfolds the wonders

of the heavens, or biology, which lifts a corner of the veil shrouding the mystery of life. Yet economics is not dry to those who know its practical uses. For proof observe the enormous amount of economic material published in newspapers, magazines, trade papers and financial papers. Economics is evidently interesting to a large circle of readers.

But farmers are not yet much in love with economics. Plenty of it is dished out to them by Federal and State government agencies, by extension services, and by their own organizations. But it is not a favorite dish. One sign is the small place held by economics in the farm press. Editors know what their readers like. If they thought their readers wanted economics, they would give it to them. Most farm publications specialize in production information. They advise their readers how to raise better hogs, more wheat to the acre, improved varieties of cotton, and so forth. They devote but little space to the problem of selling crops after they have been produced.

WHAT is the reason for this attitude?



The answer is that the farmers have not waked up to the value of economics in their business. This does not mean that they are stupid. Economics had no great practical value for the average farmer until recently, because it was mostly theory. Economic fact-gathering was in its infancy.

Economic theory is no good to the farmer who wants to know what he should grow so as to make the most profit. When he is considering what crops to plant, it doesn't help him to know that the law of supply and demand will punish him if he decides wrongly. What he wants is information as to the quantities needed of different crops.

It helps us to understand the farmer's attitude to remember that until the war and its aftermath disturbed things, the production and consumption of farm products were in fairly stable balance. Farmers accordingly did not have to be constantly shifting their crop and livestock enterprises. Indeed, it was better for them to maintain steady production than to try to anticipate all the ups and downs of prices.

But since 1920 it has been necessary for every farmer to change his production plans in accordance with the ever changing market situation. Production and consumption have been in highly unstable equilibrium. It would have been ruinous for the farmers to keep their production constant, while the market for it was in continual flux. Economic information, that is to say information about markets and prices and the probable trend of demand, then became of crucial importance.

Some farmers were quicker to recognize this fact than others. As a result, a somewhat absurd controversy sprang up as to the relative importance of production and marketing. One group maintained that in the long run prices take care of themselves and return the farmer a fair reward for this

work, and that his best policy is to be efficient in production and let marketing alone. Another group, going to the other extreme, held that in production the farmer is efficient enough, and that all his troubles come from inefficiency in marketing.

The obvious truth is that production and marketing are inseparable phases of a single economic operation. Which phase needs the greater attention at any given time depends on circumstances. There can be no question as to the need of attention to marketing when markets are upset and continually shifting. Only in times of stable markets can the farmer afford to keep both eyes on the weather. When prices are in flux, he is courting bankruptcy unless he keeps at least one eye on the trend of the commodity markets.

**F**ARMERS can do this readily with the assistance of the United States Department of Agriculture, which has brought its crop estimating and reporting service to a point where for the first time it becomes possible intelligently to adjust farm production to the demand. By means of surveys and statistical services developed in the last few years, the department is now forecasting markets and enabling the farmer to know what he can profitably grow in time for the knowledge to be of practical use.

Thousands of farmers have been ruined in the last five years by not knowing how to adjust their production to market tendencies. Although an enormous readjustment of crops has been effected, the job has been done more or less blindly, under the stimulus of immediate price changes and without assurance that the course taken was sound from a long time standpoint. It is true that the crop shifts the farmers have made, in a general way, are economically right. Yet costly mis-

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# The Black Flag

B y E . W . H o w e



ONCE read of an island in the West Indies which, many years ago, was inhabited by pirates and their followers.

From the island went forth expeditions to prey on the commerce of the world. To it returned the men of the black flag, with their loot and wounded.

No one lived in the community except murderers, thieves and abandoned women, yet it was found best, for convenience, to adopt the main rules of civilization. Those who failed to obey were punished. The wretched women who occupied every house adopted, so far as they could, the habits of decent women; the thieves and murderers, on returning from their wild forays, preferred gentleness and politeness to profanity and drunkenness.

These bold buccaneers captured rum as well as gold; intoxicating liquor was as free in their town as water, but they did not drink it without restraint; not because they were Good Templars, but because a drunken pirate is an inefficient pirate, liable to run his ship on the rocks, or into the vicinity of a warship. So drunkenness was discouraged.

The citizens of this community were at war with the world, but fair with their associates. When two of their number had a controversy, the verdict went to the

one who was most industrious, temperate and capable.

And it is to be noted that these thieves and murderers did not practice the equality recommended in Russia. If one of their number was a particularly fierce scoundrel, and very effective in handling the cutlass in a fight, he was made captain; those under him received less of the loot when a treasure ship was captured. Those rogues who could not fight well were made cooks on the pirate ships, and mopped up the blood on deck after a battle, while the abler men attended to their wounds. Rewards were for those who earned them, as is the rule in civilized lands.

It is a mighty tribute to civilization that even pirates found they got along better by adopting some of its rules; the simple virtues of temperance, industry, politeness, fairness, pay so unmistakably that ruffians have a certain respect for them.

Morality is not a cranky notion of preachers, teachers, parents and neighbors, but the well-tryed experience of the ages.

R. Herbert Spencer once said: "Men at last go right because they have tried all possible ways of going wrong."

God in His infinite mercy is not so much interested in my behaving as I am myself. If I go wrong, God may dismiss me, along with millions of others, with a tear; but going wrong is a serious matter with me; I am punished.



# SOIL ACIDITY

By F. J. Sievers

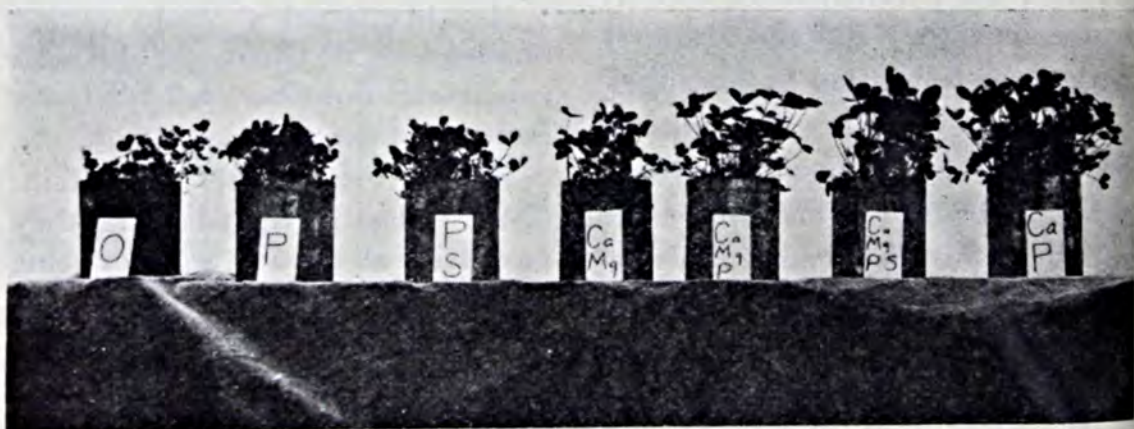
State College of Washington

*Many agriculturists think that lime is the infallible remedy for soil acidity. Prof. Sievers goes deeper into the matter and presents some new aspects of the subject.*

**P**OSSIBLY no phase of agricultural research has received more attention from the investigator than that of soil acidity. Results are available from experiments conducted in the laboratory plant house and field in almost every state in the Union and in every leading European country. The accumulation of data from research has developed many changes in viewpoint and although nothing absolute is known concerning the nature of soil acidity or what it indicates, there is reasonable assurance that many of the interpretations at one time considered correct are no longer to be accepted. Many attempts have been made to correlate all available soil acidity data in the hope that conclusions might be reached that would serve as a basis

on which to make recommendations or prescriptions to the man in the field.

One of the first interpretations of acidity was, that it had a direct effect on plant life to the extent that some crops were injured, some benefited, and others unaffected by an acid soil reaction. This led to the classification of agricultural plants on the basis of acid tolerance and resulted in the development of several qualitative tests for soil acidity of which the litmus paper test, the ammonia test, potassium nitrate paper test, and the acid test for carbonates are good illustrations. It developed that among those crops sensitive to soil acidity there were many that were considered very essential to profitable and permanent agriculture. This applied



An acid sandy soil gave best results for red clover where both phosphorus and lime were used. In the field best results were obtained where potassium also was added.

O—Check

P—Phosphorus

Ca—Calcium (lime

Mg—Magnesium

S—Sulphur



especially to such legumes as red clover and alfalfa, as well as other closely allied crops that are considered essential to any satisfactory crop rotation. Since results from investigations apparently justified the contention that these crops would not grow well unless the soil acidity was neutralized, interest in research centered around the development of methods whereby acidity could be determined quantitatively, in order that the amount of lime necessary to neutralize the acidity could be accurately calculated. The potassium nitrate method, the limewater method, the potassium thiocyanate method, and the zinc sulfate method, attempted to accomplish this. Apparently none of these, however, give a true measurement of the active acidity present at any one time, for when an attempt was made to use such quantitative determinations as a guide for lime applications, it was found that the results from the different methods were not in agreement, nor could they be relied upon for field recommendations. In other words, the same soil did not necessarily show the same amount of acidity with the different tests, nor did different soils, showing the same lime requirements according to test, respond equally to the same treatment. This led to the conclusion that the former tests did not correctly indicate the amount of active

acidity and out of this grew the hydrogen method which no doubt is a more accurate measure but, nevertheless, little more satisfactory as a basis for soil management recommendations in the field.

II In reviewing all these methods and also the work required for their development, one cannot help but reach the conclusion that the investigator in his enthusiasm to develop something that was simple, fool proof, and therefore popular, frequently became more interested in the chemical than in the agricultural phase of his problem. Furthermore, prescriptions based on tests that are apparently mathematically accurate or that give a more or less spectacular reaction naturally attract the investigator and make a strong appeal to the farmer. The result had been and still is that the emphasis in soil acidity work is frequently misplaced in that we look upon acidity itself as the problem, when in most cases it may be nothing more than an indication that there is something fundamentally wrong with the soil. This wrong may be so distantly associated with acidity itself, that in many cases the solution is reached without the need of neutralizing acidity or even treating for it. It is contended by some that acidity

*(turn to page 44)*



Red clover on acid muck soil was not improved by using lime, but showed best results where soil was treated with both phosphorus and potassium.

O—Check

K—Potassium

P—Phosphorus

Ca—Calcium (lime)

Mg—Magnesium

S—Sulphur



# Starvation of Potato Plants

*These facts are not widely known but are of interest to every potato grower.*

**W**HEN a potato plant does not receive sufficient amounts of the three essential plant foods—nitrogen, phosphoric acid and potash—in available form it starves. The effects of starvation are plainly shown. Nitrogen, phosphoric acid and potash starvation can be distinguished from each other in their effects on the leaves and vines.

In the case of the potato plant, nitrogen and potash starvation are, generally speaking, more common than evidences of a lack of phosphoric acid, though all might occur.

A lack of sufficient nitrogen produces a pale yellow color of the leaves and lack of vigor, with certain other characteristics that are commonly known.

**E**VIDENCES of potash starvation are not so familiar. They were, however, a common occurrence in the potato fields, especially on certain soils of the Atlantic Coast potato areas, in 1916 and until potash was again available as a fertilizer.

The first authentic reports came from Maine where, due to the scarcity of potash, a fertilizer containing 5 per cent ammonia and 10 per cent phosphoric acid (and no potash) was used. The symptoms are described in Maine Bulletin 288 (June, 1920) as follows:

"A 'new potato disease' made its appearance in July of that season (1916). The foliage of the affected plants, instead of being a normal healthy dark green, showed first a peculiar bronzing and yellowing. As the disease progressed the plants had, on casual observation, much the appearance of potatoes just previous to ripening. In the final stages the leaflets hung limp and the entire plant wilted. Usually discolored areas appeared on the various parts of the stem. A very characteristic feature of the trouble was the formation of a dry, discolored, spongy area which involved the whole stem just at the surface of the ground. Following this discoloration of the basal portions of the stem the tissues would dry out, the stem would become hollow at that point and the plant would fall over . . . It was soon discovered that this so-called 'new disease' occurred only where the 5-10-0 fertilizers were used . . . ."

Potash starvation of potatoes was also reported in Connecticut\* in 1917 and 1918. It occurred especially on the poorer soils. Similar evidences of insufficient potash were further observed in potato fields in Florida\*\* in the same years.

For a photograph showing a comparison of affected and healthy leaves see the accompanying illustration.

\*Connecticut Agricultural Experiment Station Bulletin 222.

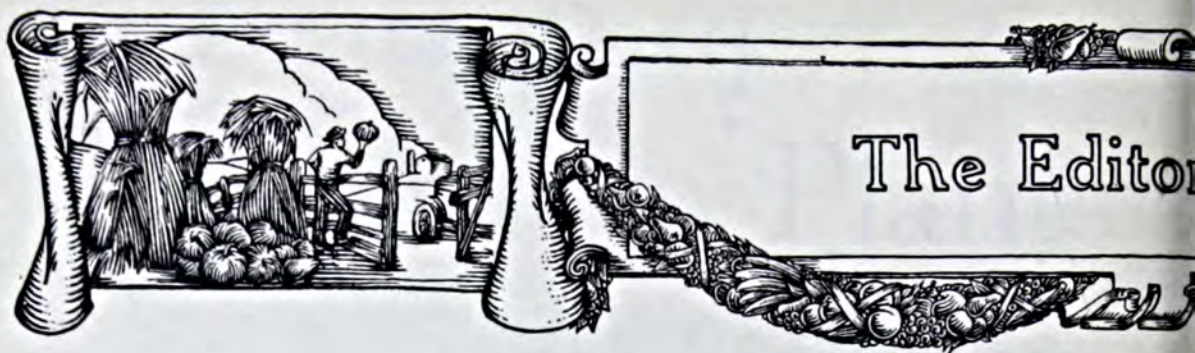
\*\*Florida Quarterly Bulletin, Volume 29, No. 3, July 1, 1919.





The three normal leaves at the top are from potash fertilized plants. The eight crimped leaves below with yellowish spots are from plants fertilized without potash. (Experiment Station of the Duchy of Anhalt, Bernburg, Germany)





## SEE IT THROUGH!

Here comes summer! Lots to be done and only a short time to do it. Everybody begins to feel ambitious. "Guess I'll try intercropping the orchard this year" says the farmer. "Why not undertake a couple of new projects this summer?" thinks the county agent. "We ought to lay out more new experiments," cogitates the experiment station man.

That's a fine idea, brother. By all means let your work grow. *But* be sure you are ready to see it through.

The greatest difficulties I have encountered in my work have been either because I undertook more than I could carry out, or because I depended on someone else who failed to carry through.

The time was when I tried to please everybody and do everything I was asked. Result . . . a lot of slovenly, worthless work. Nowadays I think before I say "yes" and when I have said "yes" I try to stick to the job until it's finished.

Even then I fail occasionally and, of course, a good many people think I'm a gruff old dog because I sometimes say "no."

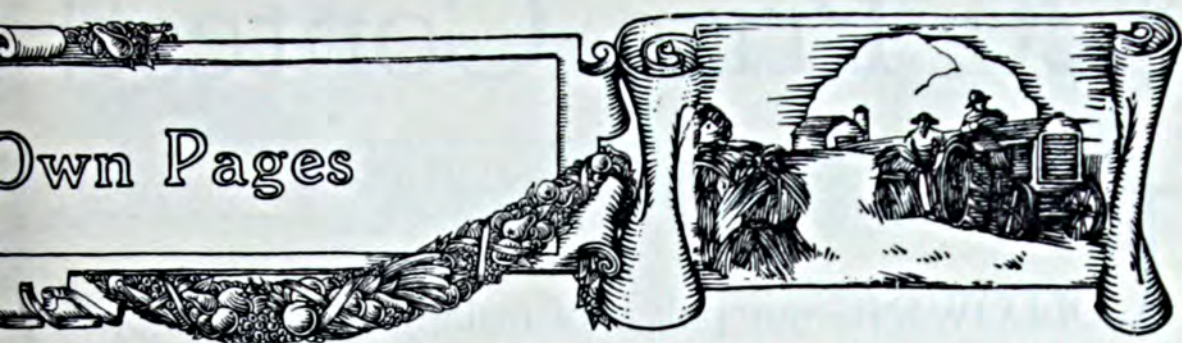
Don't be afraid to say "no" when well meaning people try to overload you with responsibilities, or when your ambition sets too fast a pace. Better one bushel of harvested corn than a thousand acres of good intentions!

## DOWN WITH EVOLUTION!

Some of our Southern states have been occupying a good bit of newspaper space lately by reason of laws proposed or passed which forbid the teaching of evolution in the public schools or colleges.

I used to think there was something in this theory of man's growth and advancement but the fact that such laws are proposed and, in one state at least, enacted is pretty conclusive evidence that I was wrong. You'd have to go some now to convince me that man has "evolved" in any vital respect since the days of his pre-historic ancestors.





## STENOGRAPHERS FOR COUNTY AGENTS?

In a recent issue of *BETTER CROPS* a county agent spoke of having his stenographer file farm magazines. This casual reference to stenographic help has started a discussion among some of our county agent readers. I commend the letter on this subject by J. W. Firor in this issue to your attention.

It has long been my personal conviction that most county agents are overburdened with detail work. If a county agent is worth anything, he ought to be too valuable a man to be permitted to type all his letters, keep his own files and carry the drudgery attendant upon his position.

I have known several promising young men who took up county agent work with every prospect of doing fine progressive things. Yet, somehow, the detail work of their jobs engulfed them and, instead of becoming leaders, they became community ash cans. All the junk that others didn't want to bother about was piled on them. Some of them got disgusted and quit, and some of them have continued to struggle along as best they could.

Get me right, I'm not saying that every county agent should be provided with a walnut-paneled office, a secretary, a filing clerk and a telephone girl. Such paraphernalia might be more of a hinderance than a help.

First off, I think a county agent has got to justify his own employment. It may take him several years to prove his own worth to his constituents. During that time he has got to do his own typing and other routine work.

Then the time will come when he has won some measure of recognition and he can properly ask for a larger appropriation and relief from petty details. And what if he gets turned down then? There's a problem.

Perhaps some of our county agent readers who have successfully faced this problem will write and tell us how they did it. Their experience should be helpful to other county agents who are still struggling to keep their heads above the quicksand of petty detail.

*Jeff McDermid*



# \$20 Prize Contest!

**F**OLLOWING our policy of making BETTER CROPS a forum for the discussion of live agricultural topics, we are starting another prize editorial contest.

Each month, for the next five months, I am going to ask a question and offer a prize of \$20.00 for the best answer received. The question this month is:

## *Does It Pay to Raise Quality Crops?*

Answer it any way you like. Remember, though, that *facts* are the most powerful argument.

**Answers to this question must not exceed 800 words. They must be mailed before midnight June 5th.** The winning answer will be published in our July issue. The judges will be Jeff McDermid and Basil H. Pillard, editors of BETTER CROPS. In the event of a tie, the full amount of the prize will be awarded to both contestants. The judges reserve the right to withhold the award in the event that none of the answers is deemed worthy of publication in BETTER CROPS. BETTER CROPS reserves the right to publish any manuscript submitted in this contest at the regular rate of one cent a word. No manuscripts will be returned.

**Send your answer before June 5th to:**

JEFF McDERMID

*Better Crops Publishing Corp.*

461 EIGHTH AVENUE

NEW YORK CITY





# How Cost Account Records Help *the* Farmer

By R. W. Wallace

County Agent, Chillicothe, Ohio

*(This is the fourth and last of the prize winning editorials written by our readers on various planks in the BETTER CROPS platform. It's a mighty interesting piece of reading.)*

“**G**REAT GUNS!” cried Ed Steel, as he finished his poultry records in the County Agent’s office one afternoon late in November. “The average number of eggs laid per hen in a year’s time is less than 60 and here my flock has an average of 138.3. And what’s more, they made a profit of \$2.23 apiece, therefore my flock of 260 hens made me a profit of exactly \$579.80. I never would have believed it either, if I didn’t have the figures right down here in my poultry record to prove it.”

Bill Foster, from Carroll County happened to be in the office that afternoon and added his bit to the discussion on Farm Cost Accounts.

“A little over a year ago we organized a Cow Testing Associa-

tion up in our county,” said Bill, “and at the end of the first year, our records showed that out of 182 cows in the Association, almost one fifth of them were losing money for us.” He continued to explain how the records brought out the fact that the ten lowest producers in the Association gave a little over 3,400 lbs. of milk for the year and lost their owners \$22.00 apiece, and that the six best producers gave over 12,000 lbs. of milk for the year and netted the owners a profit of \$129.00 apiece.

**T**HE above bits of conversation, overheard in the Farm Bureau Office of a southern Ohio county, serve to illustrate the two outstand-



ing rewards to be gained from keeping Farm Cost Accounts on the average American farm, the former from the standpoint of an individual, the latter from the standpoint of a community. First, let us discuss the former.

One of the first things done in any sort of accounting is the taking of the inventory, which involves three steps:

First, the listing of all farm property, which, if carefully done, often brings to light many items which the farmer had forgotten he owned.

Next, there must be a classification of this inventory, charging so much of it to the hogs, a certain amount to the cattle, a part to the corn crop and so on. In so doing he must necessarily put a value on each article listed which is the third step mentioned. The farmer thus finds out how much he is worth at the time of taking the inventory.

If nothing more were done throughout the year, the inventory would denote the annual progress. A carefully made inventory is also a distinct advantage in securing insurance adjustments and in obtaining credit.

After the inventory, comes the listing of the receipts and expenses which alone is worth while but which is made a great deal more valuable with the inventory. It would often be of immense value to the farmer to be able to look back over his records and find what he had paid for an article together with the date of purchase.

**B**UT the final reward is received at the close of the year when the year's records are summarized and an analysis is made of the year's business. Some crops will show a profit. Others may show a loss.

One bunch of hogs which was pastured on a good clover pasture will have a different tale to tell from those fed in the dry lot.

Perhaps it was "Old Spotty" and "Roan's" cream checks which kept the grocery account balanced. Or, it may be that the feeding of that balanced poultry ration caused the chickens to lay twice as many eggs as the same number of hens did last year. At any rate, the farm cost records are the only means of analyzing the farm business to ascertain just which of our farm operations are yielding us a profit and which are not.

From the standpoint of a community in which a number of farmers are keeping records, the above advantages are multiplied.

The results enable them to pick out that type of farming which is best suited to that particular community. If one of their number is making a profit and another is not, what is the factor which makes the difference? Perhaps, it is too large a farm; perhaps it is too much overhead expense in buildings. Perhaps the tractor is not economical on so small a farm. It might even be the failure of a clover crop which caused one farmer's profits to dwindle, but *why* did that clover crop fail?

The records will not answer the last question for you, but *they will point an accusing finger at that particular part of your farming operations which caused the loss.*



## What Agriculture Needs

A more universal cooperation—more diversified crops, more intensive farming—looking to building up of our lands by growing legumes. I must compliment your BETTER CROPS bulletin.—*W. H. Staudy, M.D., Town Creek, Ala.*

Equalization of credit to conform to that of other industries in rate and time. Values for products produced equal to value of products of other industries, pro-rata. Cooperation. Business and all industries cooperating with agriculture.—*G. M. Bridge, Farming, Somerton, Arizona.*





## Every County Agent His Own Stenographer?

Dear Jeff:—

I read with a great deal of interest the letters from county agents in Kansas and Virginia about office methods and assistance. I happen to be a county agent without any help either in the office or field. Naturally, I often feel as though my work could be made many times more effective if I only had someone to do the details. Whether or no this would follow it is always difficult to say. However, in spite of the lack of assistance in the office, I have managed to keep all letters that it seemed worth while keeping filed away under subject matter divisions, answer most of the questionnaires that arrive (of course no one would expect a county agent with a dozen stenographers to attempt to answer all of the questionnaires received,) write on the average one news or instructional article on agricultural subjects for the local paper daily, keep all important bulletins from the states and government filed under a card index system, and do other odds and ends around the office. I average about one full day each week at office work.

From the viewpoint of most any county agent, to have stenographic assistance is exceeding desirable. Just to think to have someone in the office all the time, not to have to hunt and pick on a typewriter, to be able to gather together information about all sorts of agricultural lore for the benefit of the farmers and to have it filed away

on neat cards, and may be to act as a clearing house for farming information through some system of cards and letters for one's county—surely all this is desirable.

But then, there are several viewpoints besides this one. County agent work, I have been told over and over again, is purely educational. If the county agent has excellent office equipment and abundant assistance, it may so happen that very often he will be doing many things for the farmers individually and in groups that from a merely educational viewpoint it would be better for them to do themselves. If the financial support for this assistance should come from certain groups of farmers, I have an idea that he certainly would do a lot of routine work that could hardly be designated, tagged, classed or interpreted as educational work.

To illustrate, supposing a group of farmers have a certain product to sell. They, the members of the group, as a group are supporting the fund which employs the stenographical assistance of the county agent. Naturally, they ask the county agent to find them a market, supervise the assembling of the product, quote it out, and in fact do the selling. I assume from letters that come to my office rather regularly that this is being done in many cases. I do not mean it is not worth while work. But the question naturally is—should a county agent do it? If he did not have the facilities, may be this group of farmers would, with his advise and assistance, do it them-



selves. They would undoubtedly benefit by the doing, while on the other hand they have merely made a business agent out of the county agent.

There are other viewpoints, some in favor of expanding the work of the county agent and some against it. Certainly, I believe that I could do more—much more—follow up work in connection with demonstrations, field meetings, boys' clubs, organization of groups, if I had office help and field assistance.

Then it might so happen that if the work were expanded too rapidly, the natural rapid expansion would bring about a natural reaction which would hurt the work itself. In the counties where the farmers have had a very difficult time for the last few years, the question of taxes alone might cause so much opposition as to seriously cripple the extension work in agriculture. I know some counties that would not stand for a budget which called for the expenditure of \$15,000 for county agent work, even though it was needed and worth while; and even though it meant but a few cents per farm. It looks too big. By working along gradually, in time all of the desirable phases of the work can be taken care of, in my opinion, and ultimately more will be accomplished than if we have a drive for rapid expansion.

I have written this in spite of the fact that I have asked for stenographic assistance in each of my last two annual reports and expect to do so again.

Very truly,

J. William Firor, *County Agent,*  
*Athens, Ga.*



## Sulphur and Soil Fertility

Dear Sir:—

It is in an effort to supplement the verdict passed on the role of sulphur in present day agriculture as presented by Dr. Stewart through your columns recently that the

following points are submitted. We all appreciate the fact that while data are perpetual as records of actual happenings, the interpretations placed on those results undergo change, as our store of direct and correlative information increases. It is, therefore, on these honest differences in interpretation that another side of the sulphur question merits presentation.

Considerable weight is attached to sulphur brought down in rainfall as a factor in the maintenance of a sufficient supply of that element. Amounts ranging from as little as 3.38 lbs. per acre in Iowa to as high as 400 lbs. per acre in Kentucky are reported in the American literature. Unfortunately many of the data were taken in or near cities, where a generous contamination of the air with sulphur compounds is effected. Such data afford an excellent chemical means of taking an industrial census; but as criteria for estimating the sulphur returned in rural sections they are subject to considerable discount. MacIntire finds, for instance, that whereas the sulphur returned in the heart of the City of Knoxville is 95 lbs. per acre, at the Experiment Station in the suburbs it is about 50 lbs., and at a distance of 7 miles it is only 18.6 lbs. per acre. The average of six rural stations in Tennessee is about 20 lbs. of sulphur per acre. At the Iowa Station it is about 18 lbs., and Wisconsin 7 lbs. As a fair average for rural districts in the Mississippi Valley probably not over 15 lbs. of sulphur are received per acre per annum in rainfall, with over half of it coming outside the growing season. It so happens that the Mississippi River carries into the sea the equivalent of 15 lbs. of sulphur per acre of its watershed.

To reduce the problem to a simple basis let us assume that the soil is totally devoid of sulphur. Average crop requirements so nearly balance the sulphur brought down in rainfall that a hundred per cent utiliza-



tion of rainfall sulphur would need to be effected to enable the production of a full crop. The Cornell data show that sulphur leaching goes on unimpaired by a growing crop, and whether the plant could utilize sulphur when it is present in very limited quantities, as is true of nitrogen, is not at all indicated. The sulphur leached away in the Cornell lysimeters is in excess of that returned in rainfall by 13.7 lbs. on the cropped soil and 17.9 lbs. on the uncropped. To return to the original assumption of there being no sulphur in the soil, rather than 800 lbs. as is actually the case, would the tendency of sulphur to leach, which seems forcefully indicated, continue to prevail, or would the plants grasp the sulphur with the greater avidity? No answer is forthcoming on this point from any experimental work that I have noted thus far.

By abstract reasoning it is apparent that the sulphur brought down in rainfall is no greater than that removed by drainage; for were an excess so brought down it would automatically result in an accumulation of sulphates. Analysis of the soil, however, shows sulphur content to be quite low. Leaching results substantiate the above postulate also, in that sulphur removed exceeds that returned in rainfall. Such comparisons likewise as have been made of cropped and virgin soils show a substantial loss in sulphur over and above that actually removed by crops, except as replacements have been made through manure or fertilizer.

That rainfall sulphur of itself is entirely inadequate finds ample proof in many places where sulphur fertilization yields remarkable results, and the soils even in those cases are by no means devoid of sulphur. It follows, therefore, that a deficiency of available sulphur is manifest long before total exhaustion is approximated, and a certain soil supply must be maintained if

crop yields are not to suffer. With crops and leaching removing more sulphur than is being returned in rainfall, it becomes only a matter of time before additional sulphur in some form need be applied.

The necessity for sulphur fertilization has not exhibited itself forcefully along the Atlantic seaboard, for the reason that commercial fertilizers, used ostensibly to supply nitrogen, potash, or phosphorus, have quite generally carried sufficient sulphur in combination to circumvent a shortage, or if indeed a sulphur shortage existed, the credit for all increases has generally been attributed to other factors.

Yet in spite of an annual application to the soils of the Atlantic seaboard of more sulphur, unit for unit, than either nitrogen, potash, or phosphorus, it is not difficult to find numerous places where sulphur, in addition to the generous application made through fertilizer, has given beneficial results.

In illustration, the results of Adams' work on sweet potatoes at the Delaware Station might be cited. Bear in mind that 1,000 lbs. of 2-8-8 fertilizer, enough presumably to more than satisfy the crop requirements of nitrogen, potash, phosphorus, and sulphur, were applied. An additional broadcast application of 200 lbs. of sulphur resulted in increases in the yields of from 24 per cent, where no disease was found, to over 70 per cent where disease was a factor.

Like increases have been noted on Irish potatoes on Long Island, and on certain vegetables in Maryland. Isolated instances of phenomenally increased yields from sulphur are to be found in the literature from the leading countries of Europe as well as our own, and they serve chiefly to prove that the need of sulphur becomes manifest by the toll of time, of cultivation, or the prodigality of the agricultural practices.

Very truly yours,

H. Clay Lint, *Ph.D.*



# Three New Booklets of Interest to You

As part of our educational work we are issuing a series of booklets on various crops. The purpose of these booklets is to show by facts and figures how proper fertilization brings the farmer a greater income both through increased yield and improved quality.

Each booklet has been written by an authority in the field who is in touch with the latest reliable information on the subject. This information has been presented in a popular, readable form with numerous illustrations of actual results. The following booklets are now available for distribution.

**BETTER TOBACCO:** This is a new edition of the booklet that was in great demand last year. It has been completely revised to cover all types of tobacco and all tobacco growing districts in the country. It includes as well a valuable section on sand drown.

**BETTER TRUCK CROPS:** This 48-page booklet deals with the cultivation and fertilization of the principal truck crops. Each crop is treated separately and information on seeding, varieties and proper fertilization is given for each crop.

**BETTER POTATOES:** Methods of seeding, planting, cultivation and fertilization are discussed in this 48-page booklet. The various potato-growing regions of the country are treated separately making this an unusually comprehensive work.

Any or all of the above booklets will be sent free upon request to any reader of **BETTER CROPS**. If, after reading your copy, you desire more for educational work, we shall be glad to furnish them as long as our supply lasts.

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By Ted Butlar

BETTER CROPS' Washington Correspondent

THE writer hastens to record certain definite changes in the administration of the Federal Department of Agriculture which have been brought about by Secretary Jardine since the last issue of BETTER CROPS. They have in them the element of efficiency as well as economy in Federal expenditures.

When Secretary Jardine came to Washington he found a number of offices reporting directly to the head of the Department whose work dealt with personnel and business management problems. Like a good executive the Secretary saw the necessity of heading this work up under a single directing head. So he appointed Dr. W. W. Stockberger as Director of Personnel and Business Administration. It will be the duty of this Director to act as a clearing house on matters of personnel and business administration. It was a popular move with Department workers.

Another important change has to do with the appointment of N. A. Crawford of Kansas as Director of Information. He started his new duties on May 1 and will have supervision of the Press Service, Office of Publications and possibly other branches of Department work having to do with getting the printed word out to farmers. Crawford comes fully equipped to his new job, having worked for a number of years under Secretary Jardine at

Kansas State Agricultural College as head of the journalism department.

Evidently Secretary Jardine is not wholly contented in sitting at the helm of his Department and watching things at long distance. The writer is informed that he will heed the call "back home" the last of this month and will take a six week's trip through the West to see the work of the Department in the field. The importance of an inspection trip of this kind is seen in the fact that approximately 16,000 of the 20,000 workers in the U. S. D. A. are located in field offices. The Secretary is going to give special attention to work on National Forests, construction of roads, the foot-and-mouth disease situation in California, and other lines, but he will take an equal opportunity of getting down to plain talk with farmers on the way to see what conditions they are facing and what they think of the status of agriculture at the moment.

GOVERNMENT experts are showing continued interest in the deadly cycles through which prices of major farm products constantly go in hopes that some means of ironing them out might be reached. They have just found, for instance, that the ups and downs in the price of hogs occur with such regularity that the cycle can be



smoothed out by the American producer without the producers in any other part of the world. It could be done, says the government, if producers would drop their present method of gauging their production plans on the basis of current corn and hog prices and instead base their breeding operations on the official outlook statements issued periodically by the U. S. D. A. When hogs are high in price or corn low, farmers go in for hogs. When the next crop is ready for the market there are too many of them. We have had these vicious price cycles since we have had an American agriculture. Perhaps they can be ironed out. We'll hope so.

Officials of the U. S. D. A. are not content with knowing something about farm prices for the early past, the present or the future. On the assumption that history sometimes repeats itself they are going back into the annals of history to find out how farm prices have been acting during the past 100 years. C. F. Sarle and a corps of workers are going through files of country newspapers, private diaries and records, in fact, any document which will give data on the price of farm products and the things farmers had to buy over this period.

**O**HIO has had to give way to Kentucky in the campaign to improve livestock through the use of "Better Stock-Better Sires." A report just issued shows that a total of 3,118 livestock owners in the Bluegrass State have signed declarations to the effect that they are using purebred sires exclusively for all classes of livestock raised. Ohio, which at the beginning of the year still held the premier place among all states in this campaign, is second with 2,970. Virginia is third with 2,281 purebred-sire farms. Joe Nageotte, who does the county agent work in Breckenridge county,

Kentucky, has the high record for the period from January 1 to March 31. Joe added 71 members to his roll of farmers using nothing but purebred-sires.

In connection with the energetic campaign being conducted to improve the class of farm livestock as carried on largely through county agents, the U. S. D. A. has just given out some rather striking information. About 62 per cent of purebred livestock is marketed directly for meat purposes. Strange as it may seem purebred animals cost slightly less than scrub stock to raise to maturity and only about one half of the purebred animals in the country eligible for registration have been listed in the books. There is the further fact that 96 per cent of persons who give the use of purebred sires a fair trial stick to the general principle of using them for all classes of livestock. These statements are based on the results of a questionnaire covering 45 states in an intensive way.

Since the first of the year six new counties in four states have received official recognition as tuberculosis-free areas following the completion of testing of all cattle within their borders. The new counties are in California, Iowa, Minnesota, and North Carolina. This swells the total to 59 counties and more than 400 counties are engaged in the work. At the beginning of March there were unfilled applications for testing representing more than 2,500,000 cattle. This gives some idea of the progress being made in this very important Federal project.



*Among the good things scheduled for publication in the June issue of BETTER CROPS are "Growing Dewberries in the Carolinas" by R. B. Fairbanks and "Cutting the Waste in Food Handling" by Frank George.*



## A Painless Method of Killing Canada Thistle

(From page 13)

because a long time stand is essential where Canada thistle is to be destroyed.

Another and important point, the thistles must first be weakened before attempting to grow alfalfa, since the tender young alfalfa seedlings will be brought into direct competition with the hardy thistle shoots. If the alfalfa is to be seeded in the spring, it is usually worth while to plow the land deep the preceding fall, thereby setting back the thistles and giving the alfalfa a better chance to get a good start in the world. Then when the alfalfa is seeded, be sure to prepare the seed bed thoroughly in order to further weaken the thistles and give the alfalfa seed a decent place to germinate. To continue the thistle-weakening process further, a little diligent use of the hoe in the young alfalfa patch will sometimes help

the alfalfa materially in the life battle with its spiny competitor. When a good stand of the legume is secured, not only will the alfalfa roots crowd the thistle roots, but the alfalfa will enjoy being clipped several times, which is death to the weakened thistles. The fact that alfalfa grows more rapidly than its prickly neighbor also adds the power of shade to the legume legions in the battle for supremacy.

I cannot state as a positive rule that alfalfa will always eradicate Canada thistle. Nature simply doesn't work by rule and every farm is a little world all by itself that differs from every other farm in the universe. But I have never seen a good stand of alfalfa fail to drive out Canada thistle. The alfalfa method seems to offer a bright ray of hope in the battle against the weed of weeds.



Some farmers do not believe that Canada thistle forms live seeds, but this patch of seedlings grown from Indiana seed proves they are wrong.



## Missionary Movies

(From page 7)

a blood-sucking parasite and also carries and transmits a disease known as Texas fever, because of which the U. S. Government has established a quarantine line between the North and South, above which southern cattle are not permitted to move.

The nature of tick eradication calls for suitable State and local laws and compulsory dipping, since the failure of one cattle owner to bring his animals regularly to the designated dipping vat may delay or even defeat the loyal efforts of his neighbors. It is to meet this situation and to show the work clearly by the compelling evidence of motion pictures that the department has sent Mr. Pickering into the field with the outfit described. That is also the reason why he is instructed to visit the more outlying localities where the people have had slight opportunity to enjoy the advantages of travel, of agricultural enlightenment, and education that prevail elsewhere.

THE feature picture of the entertainment is a three-reel production having the melodramatic title, "Mollie of Pine Grove Vat." This picture, which was prepared especially for the purpose, tells in story form how the people of a community where the cattle were infested with the blood-sucking ticks got rid of these pests largely through local sentiment and the heroism of a young woman. Unlike the average so-called educational movie, "Mollie of Pine Grove Vat" deals with real life and problems of the South. There is not only a villain in the picture but two of them, and both are of the gun-toting type. There are of course, also, the necessary hero and heroine.

Recognizing the unfortunate fact that misguided citizens in the South

have destroyed hundreds of dipping vats by dynamite, the picture contains scenes typical of such blind opposition. There is a good fist fight, a liberal comedy element, and several dramatic crises. But woven into these entertaining and realistic scenes there are educational portions dealing with the cattle tick, the necessity for strict adherence to educational measures, and an appeal for public support. The reward of such support is the definite assurance that tick eradication is feasible and that the wiping out of the loathsome pest will mean greater happiness and prosperity from the time of accomplishment.

In the picture, Mollie Sawyer, the heroine, through her pluck and ability, wins an appointment as range rider after her husband, who had been serving as range rider, was disabled by a sniping shot from one of the villains. She carries the work through to completion with the assistance of loyal citizens, and in one scene arrests the two villains whom she catches red-handed in dynamiting the local dipping vat.

"Mollie, though a fictitious character, is winning friends in Dixie," Mr. Pickering states. "In one locality where several vats have been dynamited and the work hindered, the showing of the pictures had a profound effect. The citizens, on their own initiative, found the men responsible for destroying the vats, had them prosecuted and jailed and then rebuilt the vats and resumed dipping." On another occasion the leader of a well-organized anti-tick element, who had previously boasted that he would break up the show and was present with his gang, approached the Government representative after the meeting and shook hands, with the explanation that he "was all wrong." Audiences include many women and children who have a



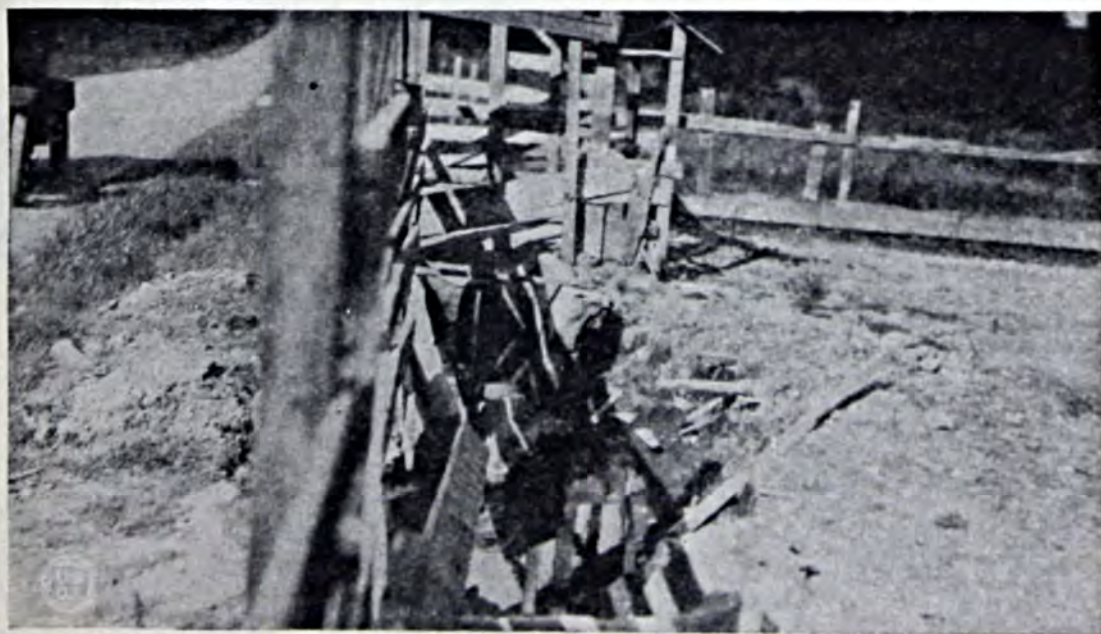
profound influence, experience shows, in sentiment for better methods of livestock raising and agriculture.

THE States visited thus far by the movie outfit making its one-night stands have been: Alabama, Arkansas, Louisiana, Mississippi, North Carolina and Oklahoma. The regular schedule is six shows a week regardless of weather conditions, roads or other barriers. Some of the roads are through forests and it is not uncommon to detach the electric generator from the body of the truck and carry it to the place of meeting on muleback. The condition of some of the unimproved roads, as observed by the writer who spent several days with the truck recently, is almost beyond belief to persons accustomed to improved highways. It is a common occurrence to drive up to a stump in the middle of the road and then jack up the wheels to permit the axles to pass over the stump. Mr. Pickering is accompanied generally by a mechanic who assists in driving the truck and in operating the projector. The show is strictly first-class from a technical motion-picture standpoint, having

ample electric power to show pictures practically as clear as those of the best motion-picture theaters in the cities.

In addition to the tick picture, the pictorial repertoire includes other agricultural subjects, scenic wonders of the National forests, and generally a picture of horse training and broncho busting for the benefit of the youngsters. "People everywhere, but especially in the South," declares Dr. R. A. Ramsay, a Department official under whom the field force in tick eradication operates, "like pictures with a story and with action enough to make them interesting. We believe that pictures are none the less educational because they have sufficient human-interest features to entertain as well as to instruct."

Beginning in January of this year, the U. S. Department of Agriculture equipped a second and similar motion-picture truck which is operated in Florida under the management of John F. Fahey, whose qualifications are the same as those of Mr. Pickering. Dr. Fahey has made a careful study of the agricultural and tick situation in Florida and concludes that the State is losing, each year, more than five million dollars' worth of



A cattle-dipping vat maliciously destroyed by misguided opponents of dipping to free South from ticks.



milk in feeding cattle ticks. The estimate is based on careful calculations. A 42 per cent reduction of milk flow due to cattle ticks and a short lactation period of only 200 milking days in the year cause a loss per cow of \$60 annually. Applied to the 97,000 dairy cows in Florida, the loss exceeds five million dollars by a considerable margin.

Dr. Fahey reports public interest and appreciation similar to that experienced by Mr. Pickering. Due perhaps to more favorable weather

conditions, but also to large attendance, about one-half the showing which Dr. Fahey has made were held out of doors. "The average schoolhouse, church or other available building is too small" he reports, "to accommodate the persons desiring to see the pictures." On some occasions where it has been necessary to hold them inside, the crowd out of doors peering through the open doors and windows was nearly as large as that in the building.



## *Economics and the Farmer*

*(From page 18)*

takes have been made. In view of the fact that the readjustment process is by no means over, the opportunity to continue it in a scientific manner, by using the department's forecasts of market tendencies, is one that the intelligent farmer will not overlook.

Briefly, the object of the department is to get farmers into the habit of regulating their production by anticipating market requirements. It is no use talking about orderly marketing without some regulation of production, because a heavy oversupply of any product will wreck the best marketing scheme ever devised. Anticipating market requirements means forecasting prices. It may look risky to anticipate the future, but in agriculture it is more risky not to anticipate it. Because of its long turnover, agriculture needs to anticipate the future more than any other business. Once crops are planted and livestock bred, the farmers can do little toward coping with an unfavorable market situation. Adjustment of production can only be done before crops are planted and livestock bred.

Accordingly, the department is combining crop forecasts with analyses of price cycles to indicate price tendencies. Already it forecasts hog price trends months in

advance. It predicted last fall that the price of hogs would probably go to \$14 early this year, and the prediction was fulfilled in March. The forecasts are based on semi-annual pig surveys indicating the probable number of hogs to be marketed the following season, and on various economic data including the corn-hog ratio and the state of general business, all taken in conjunction with the known periodicity of the hog-price cycle.

In 1922 the department forecast heavy production and low hog prices for the following year. Hog marketing in 1923 and 1924 was the largest ever known. Some shrewd farmers had confidence in the forecast, cut down their hog production, and avoided losses. In the same way some farmers are making money out of hogs now, because on the advice of the department they resisted the influences that set the stage last year for underproduction of hogs.

**M**ANY other practical recommendations based on economic studies are regularly made by the Government. In February it urged potato growers to make no increase in acreage, declared increased tobacco production undesirable for most



types, predicted that sugar prices probably would not be higher for the coming season, notified growers of flax how much they could increase flax acreage without undue risk of oversupplying the domestic market, warned peanut growers that an increased acreage might mean lower prices, and sketched the outlook for vegetable crops, grains, and livestock. This was applied economics.

In agriculture, as in business, high prices are usually followed by low prices and vice versa. Apart altogether from their seasonal price trends, most farm commodities have a definite price cycle. Economists are learning to chart cycles in advance, and to predict their phases as astronomy predicts the phases of the moon and the due-dates of comets.

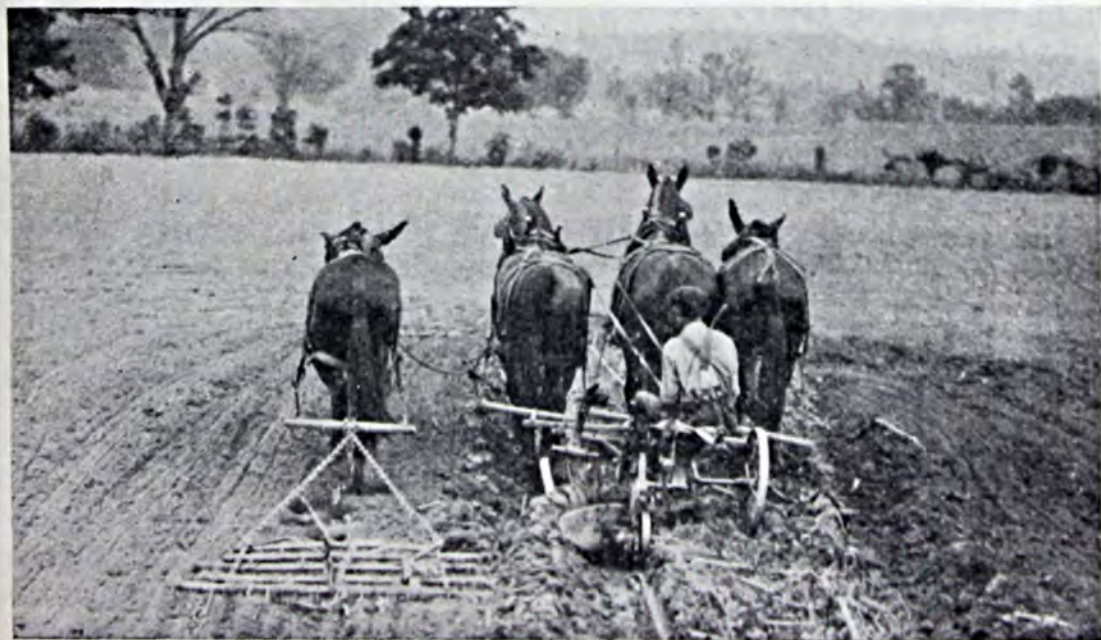
As yet only main trends of prices are predicted. It is impossible to allow for all the perturbing influences that may introduce unforeseen jogs into a price curve. But the time is near when abundance of crop and market information, and skill in its interpretation, will put price forecasting on a sound basis.

Indeed, some authorities believe, because agriculture is normally

more stable than business, that it will be easier to flatten out the hills and valleys of the agricultural cycle than to do the same thing with the business cycle.

Economics is dry when it is academic, when it has no visible relation to practical life, when it is a purely abstract study or merely a confusing mass of statistics. It is emerging out of that stage. In the purchase and sale of farm products, economic knowledge often means all the difference between profit and loss. When it is not the farmer, but the other fellow who has the knowledge, it is a fair guess whose columns at the end of the year will have the greater number of entries in the red.

Sometimes the Department of Agriculture has been criticised for putting out market information, because packers and grain buyers, and commission dealers are more skilled in its use and make more use of it than do the farmers. The remedy is obvious. It is not to go back to the old days of blind fumbling for everybody, but to see that the farmer gets an even break in utilizing this new means of putting the trade in farm products on a business footing.



*This is the method worked out by Ross Atkinson of Paoli, Indiana, for saving time and for working down the ground when it is most easily done, immediately following the plow.*



## Double Duty Dusting

(From page 10)

duster and was dropped down over the hills about as fast as the operator could walk along the row. The dust descended nicely from the suspended cloth onto the plants below but the rate of mortality among the insect tribes was not sufficiently high.

The next efforts of the experimenter, therefore, were devoted to discovering what would happen if the box were left in place for a short time to confine the dust and fumes. Various periods of time were tried with the final discovery that one minute of fumigation was sufficient to end the earthly career of every cucumber beetle. In other words, one hundred per cent of the cucumber beetles confined to the dust and fumes of the nicotine preparation for sixty seconds were killed. Shorter periods showed lower percentages of mortality.

Satisfied with these results from the use of nicotine dust in his new apparatus, Mr. Potts next devoted his attention to the calcium cyanide dust, one of the more recent insecticides. This chemical when exposed to the moisture of the air gives off a poisonous vapor known as hydrocyanic acid gas and leaves behind, after all the gas is evolved, nothing more dangerous than ordinary air slaked lime. As the effective agent is the gas and as the dust is likely to damage the plants, it was found necessary to make some modifications in the new device. This consisted of nothing more complicated than an extra thickness of cloth to hold the dust and keep the particles from sifting through.

Time experiments with calcium cyanide gave varying results which on the whole were not quite so satisfactory as those obtained with nicotine dust. One minute of fumigation, however, was sufficient to account for the majority of the

cucumber beetles and for 94.5 per cent of the aphids.

Repeated trials with the new device demonstrated its great advantages over former methods of applying dust. In the first place it trapped the winged cucumber beetles. It made dusting a far less disagreeable task for the operator. It eliminated the wind as a disturbing factor. And finally and most important of all, by confining the dust and the fumes, it greatly increased the efficiency of dusting as a means of controlling both cucumber beetles and aphids.

There were numerous other important considerations in its favor. It could be easily and cheaply constructed. Its operation in the field was so simple that dusting could be made a mere matter of employing ordinary labor. Furthermore its great economy in the use of dust compared with other means of application recommended it highly.

IT was apparent, however, that the new device, even though so obviously efficient, would have little practical value if the operator was required to wait for a minute at each hill while the dusts got in their deadly work. This problem proved one of easy solution.

All that was necessary was to equip each operator with a battery of ten or twelve fumigators. This, of course, speeded up the work of dusting and automatically regulated the time that each fumigator remained in place. It worked out simply enough. The first fumigator was placed over the first hill in the first row. The second fumigator was dropped over the first hill in the second row, the third fumigator over the first hill in the third row, etc. By the time the last fumigator had been placed, the first one was



ready to be moved up to the next hill in the row and the entire operation across the rows repeated. If the operator works fast more fumigators can be used. It is estimated that with ten or twelve of the fumigators, one operator can dust an acre of cucurbits in about two hours.

**T**O secure the best results with the fumigators the soil should previously be worked up loosely about the plants so that the apparatus will fit snugly to the ground. With the nicotine preparation the fumigator should be dropped in place over the hill with sufficient force to give the plants a good coating of dust. With the calcium cyanide, the fumigator should be set in place lightly. If the air and ground are particularly dry, the liberation of gas from calcium cyanide can be hastened by dampening the cloth screen or the inside of the box. With either preparation, the fumigator should remain in place over the plant for a full minute.

About three pounds either of the nicotine or calcium cyanide dust will be found to be the right quantity for each fumigator. This amount can be used up before losing its strength and the supply can be replenished handily from cans placed at regular intervals throughout the field.

Calcium cyanide is a commercial product and can be purchased as a dust. Fifty to one hundred per cent crude calcium cyanide dust should be employed. Two per cent nicotine dust can be bought in prepared form or can be made by mixing forty per cent nicotine sulfate (black leaf forty) with hydrated lime in the proportion of one pound of the former to nineteen pounds of the lime. About ten pounds of either dust should be ample to treat an acre.

**M**R. POTTS has devised an in-

genious method which makes the mixing of a two per cent nicotine dust a very simple and easy operation. An ordinary farm sled, consisting of two runners held upright by strong braces nailed across the top in front and in the rear, an ordinary insecticide drum of two hundred pound capacity, and a few large stones, are all the equipment necessary. In the drum 95 pounds of hydrated lime are placed and five pounds of forty per cent nicotine sulfate are poured into the lime. The stones are then placed in the dust and the opening of the drum is closed. The drum is then placed between the runners of the sled, a horse hitched to the apparatus, and the drum is rolled over the ground until the dust is thoroughly mixed. After being screened it is ready for use. If the sled is made large enough several drums can be rolled at the same time.

The combined fumigator and duster, developed by Mr. Potts, is expected to increase greatly the popularity of dusting. While it was developed in connection with experiments to control the insect enemies of cucurbits, it would seem to have almost unlimited possibilities for the truck grower. Other uses for it will suggest themselves when it is pointed out that it can be made in varying sizes and be employed successfully with other dusts.



### *Feeding the Corn Crop* (From page 14)

Stated in terms of a ready mixed fertilizer the above treatments would equal on plot 2,600 pounds per acre of a 2-8-8 fertilizer, and on plot 3, 600 pounds per acre of a 2-8-0 (no potash) fertilizer per acre.

By comparing the yield on plot 1 with plot 2 the effect of the complete fertilizer is determined, while a comparison of plot 2 (complete fertilizer) with plot 3, same fertilizer but no potash, gives the effect of potash.



# About Ourselves

**B**ETTER CROPS is a monthly magazine edited primarily for those who act in an advisory capacity to the farmer.

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The season was fairly favorable. What was the result of the experiment?

**T**HE increase in yield per acre, due to the effect of the complete fertilizer, was 32 bushels shelled corn per acre. The cost of the amount of fertilizer used should not exceed \$11.50 per acre. The return in increased yield was 32 bushels, which at an average value of \$1.25 per acre equals \$40.00. This shows a profit of about \$28.00 for the complete fertilizer.

The increase in yield due to potash was 14 bushels of shelled corn per acre. To produce this 100 pounds muriate of potash per acre was applied. This shows that the potash contributed to the profit on the complete fertilizer.

These results persuaded me that I could not afford to do all the work of growing the corn crop without supplying the plant food necessary to assure a full yield. And although we are no longer growing the old flint varieties of corn we still use the complete fertilizer except when an abundance of stable manure is used and in such cases we use a mixture of 10 per cent phosphoric acid and 10 per cent potash.

It is true that these results are only for one year; and that soils and cultural treatments vary in different parts of the State. The result of this experiment, together with our general practice, however, has convinced us that manure should be balanced with phosphoric acid and potash when applied to the corn crop.

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*Watch for our June issue which contains "Use of Stilts in Tree Wiring" by Lloyd Austin and "The Tie That Destroys" by Albert A. Hansen. Plenty of other big features as well!*



# Some Funny Experiences I Have Had

(From page 5)

explained the proper methods. But the seventeen different varieties of cream which we necessarily had to use didn't change into the butter stage as quickly as the speaker desired. For thirty minutes everything worked out wrong. The cream got all gummed up, whereupon we both picked up the barrel out of the rack, and began shaking it; meanwhile, the ladies were all tittering and laughing, while my friend was perspiring very profusely and saying some awful things under his breath. The agony lasted for thirty-five minutes, and the demonstration was pronounced a satisfactory one considering the unfavorable conditions.

After the crowd had all left my friend said to me "The next time any County Agent asks me to give a butter making demonstration I'll politely tell him to go straight to Hades. From now on I'll stick to my own job."

**A**ND then there is my famous "Horse Case."

In a remote part of the county lived a farmer, a retired minister, who not only possessed a wooden leg but a strong vocabulary. One day he called a young veterinarian to look over his horse which apparently had a broken leg. The doctor after making a preliminary examination said: "This horse in addition to having a bad case of mange, has a broken leg. If you will shoot the horse I'll prove its leg is broken when I make the post mortem." But when the post mortem was made, no broken bones could be found. So the old farmer flew into an awful rage, exclaiming, "You have caused my valuable horse to be killed, now what are you going to do about it? It will cost you just one hundred dollars."

Of course, they couldn't come to any settlement and without my knowledge or consent I was named the chief affixer of damages. So one day they both came strolling into my office to present their case. Try as I could, I was unable to duck, for they had me cornered. An argument which could be heard two blocks away soon started. At one point the veterinarian intimated that he would knock the farmer's block off, if it were not for the fact that he was so old and crippled. This was too much of a challenge for the farmer to ignore passively and he immediately started for his adversary, hopping as fast as he could on his one good foot, and saying some things that were not exactly biblical. Of course, I had to step in between them to prevent further trouble.

They had already taken up over one hour of my time, and I could see no way out, but to render a decision. So I finally fixed the amount of damages at \$25 which the veterinarian very reluctantly paid.

I got the usual reward of the peace-maker—neither of them ever spoke to me afterwards. Naturally I took it much to heart but, looking back now, I can see a lot of humor in the situation.



*We have just had bound a few copies of Vols. II and III of BETTER CROPS comprising the issues of March 1924—March 1925. They are bound in black buckram and stamped in gold. Readers may procure them as long as the supply lasts for \$3.50 apiece, postpaid, which represents cost to us. Make checks or money orders payable to*

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## Soil Acidity

(From page 21)

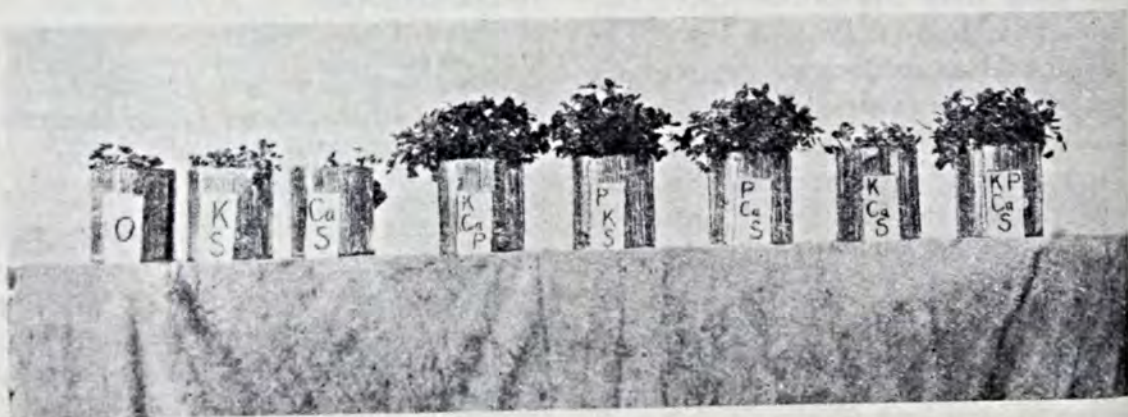
may indicate the presence of toxic bases, like aluminum, iron, manganese or magnesium. Others hold that acidity indicates the lack of proper and specific plant nutrients in the soil and especial emphasis is placed on the element calcium, especially in the carbonate form. A relationship between soil acidity and available phosphorus in the soil is recognized by many, and results in the field have shown that acid soils will frequently respond to an application of some form of phosphorus fertilizer.

It is quite evident from all these findings that much time and energy has been consumed in an attempt to develop a soil acidity test that would find universal application for all soil types everywhere. Unfortunately the lack of a full appreciation of the apparent fact that soil acidity may be the result of many different causes and must therefore be dealt with not as a condition itself, but as an indication of one or several of many possible conditions, has resulted in little more than controversies among investigators.

**I**T seems that the time has arrived when we should make an effort to determine the various factors re-

sponsible for soil acidity. This should be followed by the development of accurate means to identify the factors responsible for the acid condition in order that specific recommendations may be made on the basis of such identifications. This problem needs a real diagnosis, if we are to avoid some of the mistakes that have been made in the past. Too many recommendations concerning the use of lime have not been justified on the basis of results obtained.

Soils in Western Washington, that portion of the state west of the Cascade Mountains, are acid in reaction to a very pronounced degree. Some of these soils show a "lime requirement" of as high as 30,000 lbs. per acre, and it is almost impossible to get clover or alfalfa to grow on them. This is as it should be and since the value of these desirable legumes is fully appreciated, applications of ground limestone and quicklime were recommended. With practically no exception, the farmer failed to get results and this was not as it should be. The only explanation that seemed reasonable to his advisors was the fact that the amount of lime applied was not sufficient to neutralize the acidity and clover and alfalfa could not be expected to flourish unless this was



Red clover on acid silt loam soil was not affected by lime, but responded to the use of phosphorus.

O—Check

K—Potassium

P—Phosphorus

Ca—Calcium (lime)

S—Sulphur



done, or that there was another limiting factor not recognized in the lime application. This explanation, which in a way seemed fairly logical and consistent with the findings of the investigators, gave the farmer no relief because the cost of neutralizing the acidity of his soil and correcting its fertility problem was prohibitive. He was, therefore, confronted with a real soil management problem. The solution of this problem called for field and laboratory work with the result that it was found that lime applications and the neutralization of soils were not only unnecessary, but apparently had no influence on the growing of clover.

Silt loam soils that would not grow clover in their untreated condition grew clover and all other crops well when treated with a phosphorus fertilizer in the form of superphosphate. Lime applications apparently had no influence since clover grew just as well where the phosphate fertilizer was used alone as it did where used in combination with a lime treatment.

Peaty marsh lands would grow no clover in their native state, but when treated in this case with about 300 lbs. of superphosphate and 100 lbs. of muriate of potash per acre, the clover grew abundantly. Here again lime applications had no apparent effect.

Sandy soils on the other hand produced their best results with clover only when lime was used in combination with both a phosphate and a potash fertilizer. It was evident, however, that even here there was no relationship between "lime requirements" as found in the laboratory and the amount of lime applied.

Other illustrations might be given pertaining to intermediate soil conditions in Western Washington, where practically all soil types are represented, showing how they vary in their response to treatment, but these will suffice to serve the purpose. All of these soils come from

practically the same locality and without exception gave a positive reaction to all tests for lime requirements, while in the field only the sandy soil responded to lime applications. To make general recommendations for uniform lime applications or even for applications at a rate consistent with the results from test for acidity or "lime requirements" would not only be unscientific, but decidedly ill-advised.

**W**HAT then do acidity tests indicate and how should results from such tests be applied to field conditions? It is the contention that this question cannot be answered in the abstract. Before safe and satisfactory recommendations can be made, there must be a diagnosis of what acidity might indicate from the standpoint of plant development under the existing condition of soil composition and climate in the region where acidity exists.

In Western Washington, for instance, the precipitation is very heavy and by far the greater portion is received during the dormant season. Whatever leaching takes place must therefore occur during the dormant season when there is little or no plant growth. Due to the fact that the climate is mild there is very little frost in the ground during the winter, and leaching takes place without difficulty.

Contrast this condition with the climate in the Eastern part of the United States where the ground is frozen during the winter and where the precipitation is heaviest during the growing season, and it is not difficult to imagine that the resultant effect of leaching may be quite different. This is borne out by results from analyses that show in a general way that these Western Washington soils are all very low in calcium carbonate, in spite of the fact that they contain a very high percentage of calcium. Furthermore, all of these soils will respond



to the use of a phosphate fertilizer, while analyses show that many of such soils are surprisingly well supplied with total phosphorus

**S**UNLIGHT also may have a bearing on this subject of soil acidity. In view of the recent findings in the field of animal nutrition where sunlight has been shown to have a direct effect on calcification in the animal body, is it not reasonable to suppose that there may be a similar relationship between sunlight and calcification in the plant? In other words, legumes growing in western Washington under conditions of much cloudiness and a

limited amount of direct sunlight, may not require as much calcium to complete their development as might be necessary to grow this same crop under conditions where sunlight is more abundant and more direct. If this is a fact, then this would seem like at least a partial explanation for the difference in the effect of soil acidity on plant growth.

Many other illustrations might be given to justify the contention that soil acidity in itself is not a safe basis for recommendations concerning soil treatment and it is hoped that we will not continue to confuse the symptom with the disease as we apparently done too much in the past.



## What is Failure?

(From page 4)

He marries her because she has such a cute way of looking side-long at him. He cannot resist her delicious, tantalizing come-hither-in-ness.

And having married, mongrel fashion, this specimen of *Homo Sap* gets a job driving a bakery wagon, advances to the position of baker's helper and finally when the boss' son dies he takes over the bakery—and makes a beautiful failure of it. All because of propinquity, chance, and jumping joyously into a job that he fits like a Number Three foot in a Number Eleven boot. His wife leaves him. Bankruptcy. Divorce.

Just around the corner from this lad was a girl with whom, science says and can prove, he would have been happy. Right up the street was a chemical laboratory where he could have learned a profession in which he would have been immensely successful—he was eminently fitted to be a master chemist.

Failure—how common!

Success—how easy!

Most men only go as far as they are pushed. They are only as successful as they have to be. They have no self-starters but their self-quitters are in wonderful shape—farmers especially.

A farmer is a man who attempts to coerce Nature into yielding him a living. Sometimes he coerces her, more often he curses her.

Farmers often fail because they are unfitted for the work—more often because they are lazy, unambitious, unintelligent.

I leaned over the fence to talk to a farmer once. I said, I can show you how to double the yield of almost every crop you are raising there.

He yawned and replied, Shucks, I ain't farming half as good as I know how, *now!*

**I**T is easier to fail than to succeed at farming. Any man who tells you what a cinch it is to run a farm at a profit is either a liar or just a plain damn fool. City business



men, who themselves are simply long-odds gamblers, often attempt to take an abandoned farm and make a quick success. They soon find it cannot be done. It *can* be done, but they do not know how.

When land was cheap and productive, these city men could have made a success of farming. Their small knowledge, inefficient manual dexterity and slight technical ground work was in those days sufficient to yield a profit from crop-raising.

But times have changed.

Farming is now no snap, I freely admit.

Farmers are dependent upon the same waves of prosperity and slump that affect Big Business. Farmers have their lean years, their fat years. Right now nearly a million farmers are bankrupt, not always through any action of their own, or lack of action, but because they are going through the tail end of the deflation period. More will go broke before the period ends.

But many farmers fail—as many business men fail—because they will not use the knowledge they have; because they will not take advantage of the knowledge available to them.

And because they will not pioneer.

Not one farmer in five will experiment with new methods for making profits. And the other four will wait years before they adopt his successful plans. Not one in ten will actually farm the way he *knows* is best! Whether from laziness, or pure thoughtlessness, I cannot say, but most farmers seem bent on being failures simply through overlooking the very things they know how to do—but do *not* do.

ONE farmer right in back of me spent all last winter figuring out the best fertilizer formula and the rate of application for each of his crops. He carefully and studiously made up a chart showing how he would apply a thousand pounds of 5-8-5 to each acre of cauliflowers, five

hundred pounds of 2-10-4 on his corn, and so on, *ad fertilizem*.

I checked up his work, and found that, for his soil, his chart conformed to the latest, best and safest experiments.

I complimented him on his work.

What was my surprise, later, then, to hear that he had chipped in with two other farmers who had bought several carloads of straight 3-8-5; that he was going to standardize on this mixture for all his crops, regardless!

Hell's belz! Of what use is knowledge if folks will not avail themselves of it! What good are plans not followed! Of what value are scientific experiments the results of which are ignored!

It would seem to a man up a tree that most folks are trying to fail—and are succeeding in failing!

THE rules for failure are simple, and easy to follow:

First, without any thought as to your fitness, enter the nearest business at hand, or take the first job that comes along. Make no analysis as to your leanings, likes or dislikes. Just jump in.

Next marry a girl simply because you like the way her eyelashes curl. Don't let the fact that both of you are blondes stop you; and, though you know she detests studious people, and you are studious, remember love will fix that. It will *fix* it—all right!

Now you are ready to fail.

From this point on the rules are simple.

1. Spend more than you earn.
2. Don't use the knowledge you have.
3. Absorb no new knowledge.
4. Laugh at those who are sincerely trying to pioneer.
5. Don't work too hard; find the easy way.

Success — monetary success — is not compulsory. It is not a matter of the statutes. There is nothing in the Bible that either prohibits



success, or, on the other hand, that commands that man attempt to corral the elusive dollar.

It is simply the scarcity of success which throws around it an allure that leads men on. I think it might be safely said that most men would rather not be failures. Though the urge may not be strong toward success, at least failure is repugnant.

There is more to life than dollars.

There are luxuries money cannot buy—freedom, love, laughter, life in a cottage, vegetables plucked fresh from the ground with your own hands, children's giggles and shouts, the love of a life-work.

There are causes which money can aid; more that money cannot help. A man does not need money to have friends—in fact, as soon as he has money, his friends are not friends, but yes-men who agree with him on all the things about which he is mistaken.

Many folks want success, riches, acclaim—because they feel that, after their own needs are taken care of, they can afford to be generous with others.

The fact is, as we now know, that the training gained in garnering gold is no training for doing good; and that, having made a success, a man finds it just as hard to be generous on an income of a hundred thousand as on ten or one.

Money does not stimulate generosity—it atrophies it.

Getting rich is the art of discovering that, having made your own way, you cannot have it.

Dollar-success is only one kind of success.

There is no happiness in dollars.

Henry Ford cannot eat any more than John Jones. A man can only eat so much, wear so much, and have so much shelter—any more is useless.

And when a man begins to accumulate things, he finds that, contrary to his understanding, the things own him—rather than he owns the things. He is at their beck and call—they run his life, and ruin it.

When dollar-success has furnished a home, a livelihood and assurance of food, clothing and shelter during old age, it has done its duty. More should not be asked of it.

Beyond this point dollars are a commodity to be bartered and sold like horses. Some want more; some less.

We pay for money in liberty.

The law of compensation is ever at work.

"The cost of a thing," says Thoreau, "is the amount of what I will call Life which is required to be exchanged for it."

To get we must give up something.

So, now we get the proposition:

Any man is a success who is furnishing his family enough to eat, enough to wear, plenty of shelter; and who is putting away enough dollars to guarantee a continuance of these things in the future.

But any man who does this much and no more is a failure. *Think that out for yourself!*

## EDWARD G. PROULX

The death of Edward G. Proulx, of Purdue University, State chemist and seed commissioner of Indiana, at Lafayette, Ind., on March 31st, is a matter of deep regret to agriculturists all over the country.

Mr. Proulx was born at Hatfield, Mass., December 3rd, 1880. He graduated at Massachusetts Agricultural College in the class of 1903. After serving that college as chemist until 1907 he removed to Purdue University. In 1918 he became State chemist and in 1921 State seed commissioner.

In his profession Mr. Proulx enjoyed a high standing. He served last year as president of the United States seed control officials. He was also a member of several technical societies and of local organizations. By his death, agriculture loses an able leader and a devoted servant.





## A difference of 31 prunes to the pound!

**T**HE effect of high analysis fertilizer on the size of prunes is clearly shown in an experiment recently made by Herschel Johnson in Santa Clara County, California.

Crop comparisons were made on five plots of ten trees each. One plot was not fertilized, while the four remaining plots were each fertilized with a different mixture.

The ten trees on the unfertilized plot gave the lowest yield, averaging 89 to the pound. The highest yield, averaging 58 to the pound, was produced by the ten trees fertilized with 100 pounds of a 4-10-10 mixture.

This experiment shows that trees fertilized with a mixture containing sulfate of potash produce heavier yields and larger fruit.

This season, when you order your supply of fertilizer, keep the above facts in mind. You'll find that **POTASH PAYS!**


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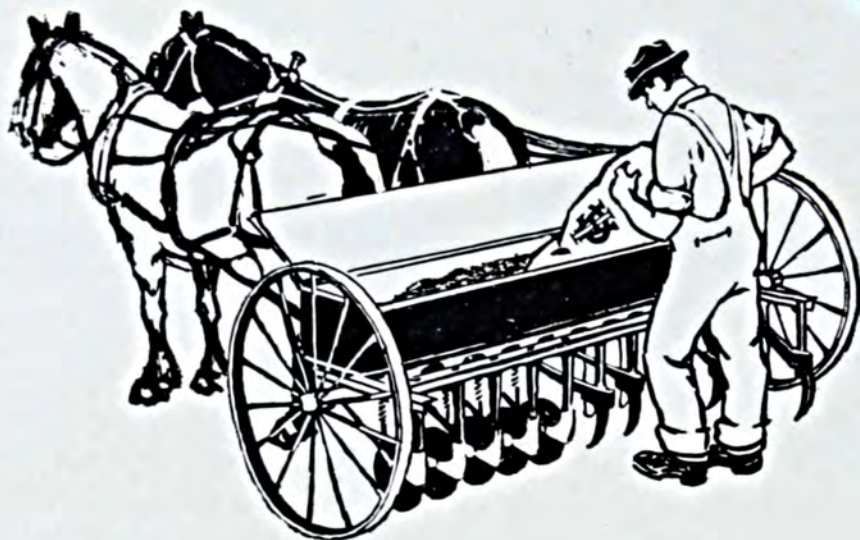
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# Better Crops

The Pocket Book of Agriculture.

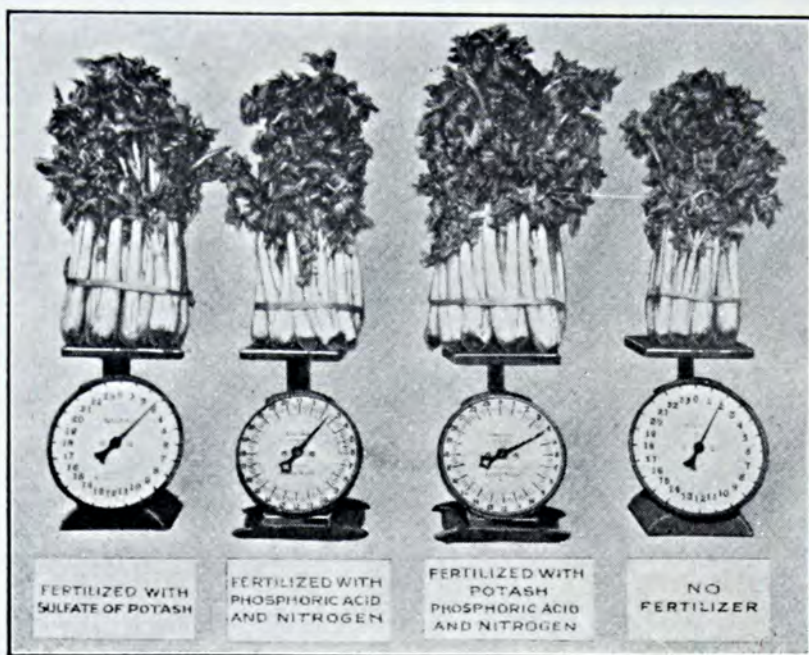
June 1925

10 Cents



Early Days in County Agent Work by D. W. Frear—  
Second Prize Question—Jeff McDermid—Ed Howe





## For a good crop of crispy celery

Crispness and tenderness—these are the two qualities that a profitable celery crop must have.

But the amount of profit increases with the yield of quality celery and that accounts for Mr. Koster's success. On his farm in Kent County, Michigan, on muck soil underlaid with marl, Mr. Koster planted four plots to celery.

Crop results showed that the plot fertilized with a 2-7-10 mixture brought an extra profit of \$116.40 over the plot fertilized with a no-potash mixture.

The kind of fertilizer to choose varies with the type of soil. Some of the recommended formulas are: 5-6-7, 0-10-10, 0-12-12, 0-8-24 and 2-8-16.


Use a well-balanced mixture containing a high percent potash—not only on celery, but on all your truck crops. You'll find that Potash Pays!

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# Better Crops

## The Pocket Book of Agriculture

VOLUME IV

NUMBER FOUR

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*Now for a feast—*





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VOL. IV

NEW YORK, JUNE, 1925

No. 4

And here we have a  
unique dissertation on

# Fear

By Jeff McIlernid

I HAVE just been chasing a *paranoiac* leghorn—a fowl of the genus *hen*.

Somehow or other she got out of the chicken yard and, that the dogs might not get her and liberate her cackly soul, thus upsetting my own plans for her demise a few months hence, I opened the gate and tried to shoo her back in.

She wouldn't "shoo". She tried her best to escape behind me, undoubtedly fancying she saw in my eye attempted murder. She couldn't understand that I was really trying to aid her by putting her beyond reach of the hounds.

Such a hubbub you never heard. All the hens and cocks in the yard, sympathizing with the apparently doomed bird, set up vociferous, raucous cackles, fear-trembly and shrill.

When I finally got her back, after a deal of effort, she sneaked for the

bushes with lowered wings, undoubtedly praying her thankfulness to chicken Heaven for her miraculous deliverance.

A *paranoiac* leghorn!

PARANOIA is a nervous disease, which brings on the feeling that someone is about to get you.

Every doctor has had experience with at least one case of *paranoia*—in which the victim, covered with cold sweat seeks a secluded retreat, in fear and trembling, from an



enemy whose existence lies only in the fearful one's imagination.

This is *acute paranoia*.

But we are all victims of this disease to a greater or lesser degree. Only we laymen call it Fear.

Fear is sometimes the result of a sour stomach; often it comes from a generally weakened physical condition.

But usually it is simply the absence of mental power to overcome obstacles. It is the disease of the weakling among men—of the man, by Nature intended always to follow abler men, who suddenly finds himself in a position of power. Immediately fear sets him by the heels; fear that he will not make good; fear of what others will think of his decision; fear of loss of business, of money, of health, of friends, of prestige, or of his job.

"Only the unknown is terrible" said Victor Hugo, and the man who knows, and knows he knows, is the man without fear.

He realizes that if he lose one friend, he can get another; that the dollar lost can soon be replaced with one found; that if he loses one customer or client, there are a thousand more, all probably more appreciative, who are about to clamor at his door for admittance.

The sense of impending loss is not a stranger to him; but it does not stagger him. He does the best he can with what he has, with chin in air, breath deep, courage high—and accepts the world's favors and penalties with a grin.

But most men are in bondage to fear—you can hear their chains clink-clank as they talk. The hunted look in their eyes betrays them.

**F**EAR is a disease, and should be treated as such. It is a germ left in our feeble bodies from the days when we scrambled up the trees to avoid the curling, slithery python; when we huddled around the fire at night, looking often over our

shoulders into the deep, surrounding darkness—into The Unknown full of terrifying we-knew-not-whats.

Fear is a disease of the mind, and not of the body. Children and imbeciles, with perfect bodies but unformed minds, do not fear. Children fear only that which has harmed them and which through nervous reaction upon the brain has left an impress on its convolutions.

Verestchagin, famous painter, remarked that "man, enveloped in the fog of ignorance, quakes and trembles at every phenomena of Nature. Wonder prompts him to ask—he wants to know."

And as soon as he knows, fear departs.

The savages, during an eclipse, flatten themselves on the ground in abject fear of the frightful "devouring of the sun by angry gods." But modern man, anticipating the phenomena to the minute, prepares to study it through powerful telescopes, all fear removed by his knowledge of what is behind the dimming of Sol's rays.

So fear is a disease of a mind that does not know.

Fear is a weed in Stupid's brain garden that should be yanked unceremoniously out and the space used for the flower of Knowledge.

Abolish fear and every man is a genius, a success, a friend to all. A man, like a horse or a hen, is useful only until he falls into the fateful clutch of impending doom.

Fear paralyzes the will, kills initiative, stops the flow of pleasing and vital gastric juices, stagnates thought and poisons the disposition.

Some folks are literally scared to death. Every time a man spends a week in fear that he will lose his job, he shortens his life a year. When he worries that the sheriff is about to waltz in and paste his little pasteboard on the door, he cuts his longevity down immeasurably.

Because worry is the child of fear. And worry kills.

(turn to page 47)



# Early Days in the County Agent Work

By D. W. Frear

Extension Associate Professor of Field Crops, University of Missouri

*All the old timers know D. W. Frear who was formerly State Leader of County Agents in Colorado and, though he is too modest to say so, a real pioneer and leader in this work.*

ALLYN H. TEDMON'S story "In The Old Days" in your January, 1925 issue of some of his early experiences and recollections as a county agent was exceedingly interesting and recalls to my mind some of the same instances that he mentioned as well as many others. His tribute to Bill Lauck is well deserved. Lauck was not only the first full time county agent in Colorado but one of the earliest, if

not the first, in the entire west. In addition, he was among the outstandingly good agents of his entire period of service, which means that he would rank the same today.

Lauck had vision, was full of original ideas as well as always ready to accept worth while suggestions from others. He had a personality and a way with him that inspired the respect and con-

*(turn to page 44)*



County Agent W. H. Lauck enroute to Bald Mountain to organize a Boys' and Girls' Potato Club, February 19, 1915.





*Damaged grapes at terminal market.*

# Cutting the Waste in Food Handling

By *Frank George*  
U. S. Department of Agriculture

*Preventing waste is a good  
way of increasing profits.*

A RECENT study at New York showed that of some 4,563 carloads of perishable farm products inspected by Department of Agriculture officials, fully 3,676 carloads contained damaged produce. Losses on account of plant diseases, insect pests, mechanical injury, and temperature extremes run as high as 50 per cent of a carload in some instances.

The New York City Board of Health condemns annually some 8,000,000 pounds of fruits and vegetables as unfit for human consumption. Over 70 per cent of these condemnations are at rail-

road terminals and docks, but the figures do not begin to show the actual quantity of bad produce received, inasmuch as condemnation is made only when the damage is more than 25 per cent in a shipment.

It is possible to go on indefinitely piling up figures showing the tremendous waste of farm products after they have left shipping points. Freight loss and damage claims paid by American railroads have run as high as \$14,000,000 a year on fruits and vegetables alone; butter, cheese and dairy products \$800,000; eggs \$1,000,000, and livestock \$3.-



475,000. A conservative estimate places the loss of food at not less than five per cent of the volume reaching the consumer.

Much of this damage is preventable. The principal causes of loss and damage indicated by the records of railroads, express companies, and members of the trade are improper grading, delay in transit, rough handling, improper refrigeration and ventilation, freezing in transit, faulty packing, improper loading of cars, theft, shrinkage, insect pests and diseases, and condition of the market.

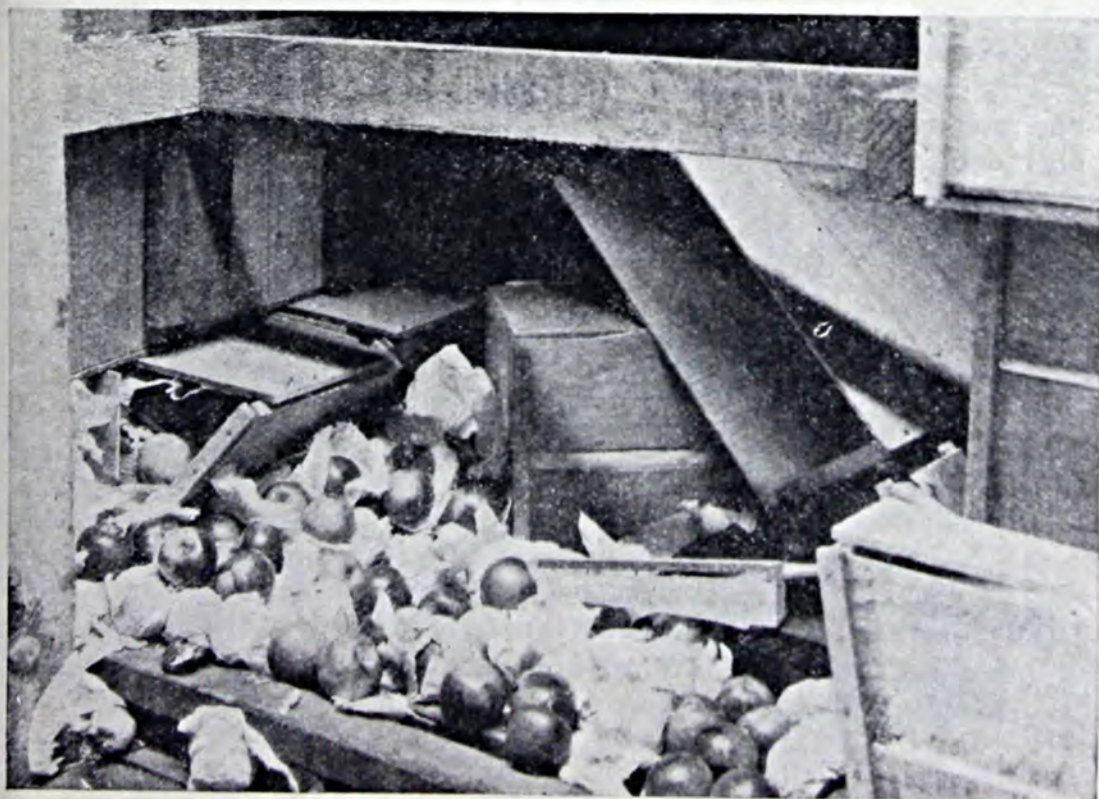
Fifteen years ago, receivers of citrus fruits in New York City considered themselves fortunate if a car contained as little as 10 per cent damage from decay. The loss since that time has been reduced to less than one per cent, due to standardization, rapid transit, better methods of refrigeration, and the policy of the shippers to regard "every doubtful orange a cull."

Public and private marketing experts consider that similar results can be achieved with all perishable products. Fruits and vegetables

are sometimes shipped when too ripe, so that they reach the market in such a deteriorated condition that their value is reduced below handling costs. It is not uncommon to find much food reaching consuming markets that is not of sufficient value, because of poor quality, to pay transportation charges even in a period of high prices.

**S**TANDARDIZATION and shipping point inspection are held out as two effective methods of correcting this situation. Grading based on accepted standards is necessarily first, topped by official inspection before the products are loaded for shipment so that only the quality of product that can withstand shipment to market will get into the channels of trade. It has been demonstrated time and again that a smaller quantity of high grade produce will often bring more money than a much larger quantity of inferior quality.

A cause of loss closely associated  
(turn to page 35)



These boxes of apples were improperly loaded with the result that the bottom layers were destroyed.



# Growing DEWBERRIES in the Carolinas

By R. P. Fairbanks

*“There is money in this crop if it is handled right. Mr. Fairbanks sums up the best practical advice obtainable on raising it successfully.”*

THE largest dewberry growing section in the U. S. is in the sand hills of North and South Carolina and Georgia. The industry started on a commercial scale in the Southern Pine section of North Carolina about 20 years ago, and has gradually developed and spread until now it is one of very considerable commercial importance.

This delicious berry thrives on the sandy soils of these three states. While they will grow on almost any kind of soil, they seem to do best on the deep sandy soil that prevails in the section of Southern Pines, Cameron, Hoffman, Hamlet, N. C., Cheraw, McBee and Camden, S. C., and McRae, Ga.

The Lucretia variety is the one grown, as it is unquestionably the best one for that section.

The dewberry grows well on poor soil, but liberal amounts of plant food must be supplied. It grows deeply in the ground and is therefore not as likely to suffer from drought as blackberries and raspberries. Because of this deep rooted habit, it is naturally more subject

to injury from wet soils than blackberries and raspberries. The ideal soil is a coarse sandy loam that has a clay subsoil, as such a soil is usually well drained and yet there is enough moisture down deep in the ground properly to supply the plants.

THE dewberry, once established, will last over a long period of time. We know some fields that are already 15 to 20 years old. It is generally believed by the most successful growers, however, that it matters not how well the plants may have been cared for, it is desirable to reset a new field at the end of 15 to 18 years.

On account of the plants occupying the land over such a long period of time, it is highly desirable that the ground be very thoroughly prepared before setting. It is customary among the best growers to break the ground broadcast deep in the fall of the year, leaving it loose and exposed to the freezes and rains of winter. Then in late winter or



early spring, the ground is cross harrowed with disc and other harrows going over the field a number of times.

Where the soil is reasonably poor, it is customary among the best growers to grow and turn under a cover crop of cowpeas, soybeans, or some other legume crop, the year before the berries are to be set. It is desirable to devote the ground to some cultivated crop for two or three years before being set to dewberries, and for these crops to be well fertilized, in order that the soil may be reasonably free of weeds and grass seed and in A No. 1 condition.

THE plants are usually set in late winter or early spring. The rows are laid off five feet apart each way in checks. Then the plants are set in these checks. In this way the expense of cultivation is reduced, because it enables the grower to cultivate both ways.

Care is necessary in setting the plants. The roots must be spread out as nearly as possible in their natural position. The plants are usually set about three inches deep and the old stem is cut back to a

height of about six inches. The plants are allowed to remain in this shape until spring, when cultivation is started. Cultivation is kept up until the vines have run sufficiently to make cultivation impracticable. It is not desirable to turn the vines, unless the grass and weeds should become very troublesome. Usually the horse cultivation is kept up until late June or early July on the newly set berries.

THE dewberry produces fruit on the second year wood. Therefore no crop is secured the first year after setting, but in order to get a maximum yield the second year after setting, every effort is made to secure strong, vigorous wood growth. An application of 800 to 1,000 pounds per acre of fertilizer is usually given by the leading growers. One analyzing 8-4-6, or eight per cent phosphoric acid, four per cent ammonia, and six per cent potash has been found to be the best for dewberries in the sand hill section. The potash is highly essential in order to give the berries carrying qualities. This application of fertilizer is given just as the

*(turn to page 41)*



*An ideal dewberry farm of 30 acres located at Hamlet, North Carolina.*



# The Burning Question

By C. A. Dawson

*Mr. Dawson is a teacher of Agriculture in South Africa and one of our long distance readers. What he has to say here, however, applies to the United States as well as Africa.*

**T**O burn, or not to burn, that is the question," as Hamlet might have put it if he had been a twentieth century farmer. The question is answered in the affirmative every year in Russia, where sunflower stalks are burned to produce thousands of tons of ash. To a lesser extent the same practice is followed in South Africa. Bringing the subject a little nearer home, the burning of refuse matter on American farms has not entirely disappeared. The practice is sometimes justified, but there is generally a better way out, and it will be worth while to consider the alternatives before we set a match to the pile. The writer's apology for taking your valuable time and space—for this space is yours when the Editor has done his best with it—is that he has been up against the problem pretty frequently, and has had to answer the question which has been stated above.

Watching a pile of stalks or straw going up in smoke, one might ask, "Why do we grow crops?" We grow them for food for man and beast, to produce raw products for manufacture, to add nitrogen and humus to the soil, to provide bedding for animals, and to provide smokes for mankind (and to some extent womankind.) If you include timber crops, wood for every purpose may be added to the list. Then

there are by-products—straw used for thatching—sugar cane bagasse pressed into sheets for wall and ceiling boards, and boxes—and others too numerous to mention. There are plenty of ways of utilizing crops and crop residues, and there doesn't seem to be any need of burning anything for want of a better way of disposing of it. If burning is necessary in order to control serious crop pests, then it is justified. Even in this case it will be shown that there are alternatives that can be frequently employed.

**W**HAT happens when a pile of straw or corn stalks or sunflower stalks is burned? For every pound of potash that is obtained, half a pound of nitrogen and a hundred pounds of dry humus-forming material, more or less, are thrown away. Most of us are familiar with the wonderful growth of crop plants that takes place in patches in a field where there have been bonfires. I remember the big grape-brush bonfires that we used to have at home, and how the patches showed up when the next crop was grown. Part of the effect is due to the potash. We can obtain this more economically by buying potash to apply to the soil than by sacrificing nitrogen and organic matter by burning in order to obtain in readily



available from the small amount of potash that plant refuse contains. Part of the effect is due to sterilization of the soil, and probably some other factors about which we have relatively little knowledge at the present time. That they are beneficial, there is no doubt. That we can afford to pay the price in nitrogen and organic matter may be very seriously questioned. Excepting for very special purposes in some forms of very intensive agriculture, the answer is obviously in the negative. As an example of a possible exception to the principle stated, we have the method of sterilizing tobacco seed beds by burning piles of brush and straw over them. Steam or chemicals may be used, but sometimes burning is the most convenient and cheapest.

The effects noticed when crops are grown where refuse has been burned often mislead people. They see the dollar in the crop and overlook the fiver that has gone up in the smoke. An expert came to me one day. I have a license to talk, because I used to be an expert too, until I heard what Henry Ford said about experts—then I decided not to be an expert any longer. This man gravely informed me that growing sunflowers would *improve the soil*. I happened to have some pretty good evidence to the contrary, and it was technically and in all common sense correct and reliable. But I wanted to hear what he had to say. It was the same old story. He burned the stalks, and the ash had a wonderful effect on the next crop. I protested, but it wasn't any use. "No," he said, "You haven't been here very long, but you can take it from me, sunflowers improve the soil." I gave it up—he was sold on the idea and you couldn't sell him another one. He will go on thinking he's right until he has to start buying nitrogen and spending more money putting organic matter back into the soil. Then he'll wake up—perhaps.

Burning stalks and straw seems alright until we get to the point where we must replace what has been destroyed. Then it seems all wrong.

THE primary use of crops is to feed man and animals, directly, or through the medium of animals, to clothe man. An important secondary use of crops is to furnish raw materials for manufacture of commodities other than those used for food and clothing—linseed oil, alcohol and other drugs, and so on. Crop residues which are not suitable for any of the above purposes can be used for bedding, or can be ploughed in to improve the soil or can be burned to provide potash. This is the order of values—a crop is worth more for feed than it is for manure, and it is worth more for manure than it is for producing ash.

Considerations of the cost of handling and transporting the materials are mainly responsible for the fact that crop residues are often used at a lower place on the scale than their face value seems to warrant. Hence we have the header-thresher, the corn-picker followed by the stalk-cutter, and similar devices for feeding the soil what we cannot, under certain conditions, feed to stock, or utilize to better advantage in some other way. Nevertheless, when we have the facilities for using them, crops and crop-residues are worth more for feed or for bedding than they are for direct application to the soil, and they should only be used in the latter way when a better way cannot be found.

There are cases, however, when it is difficult to effectively dispose of stalks by ploughing them in. There may be a lack of capital to purchase a stalk-cutter, or an insufficient acreage to justify one, or a stony soil on which the blades are almost continually dull and ineffective. The statement that the

(turn to page 39)



# A New Demand for Lower Freight Rates

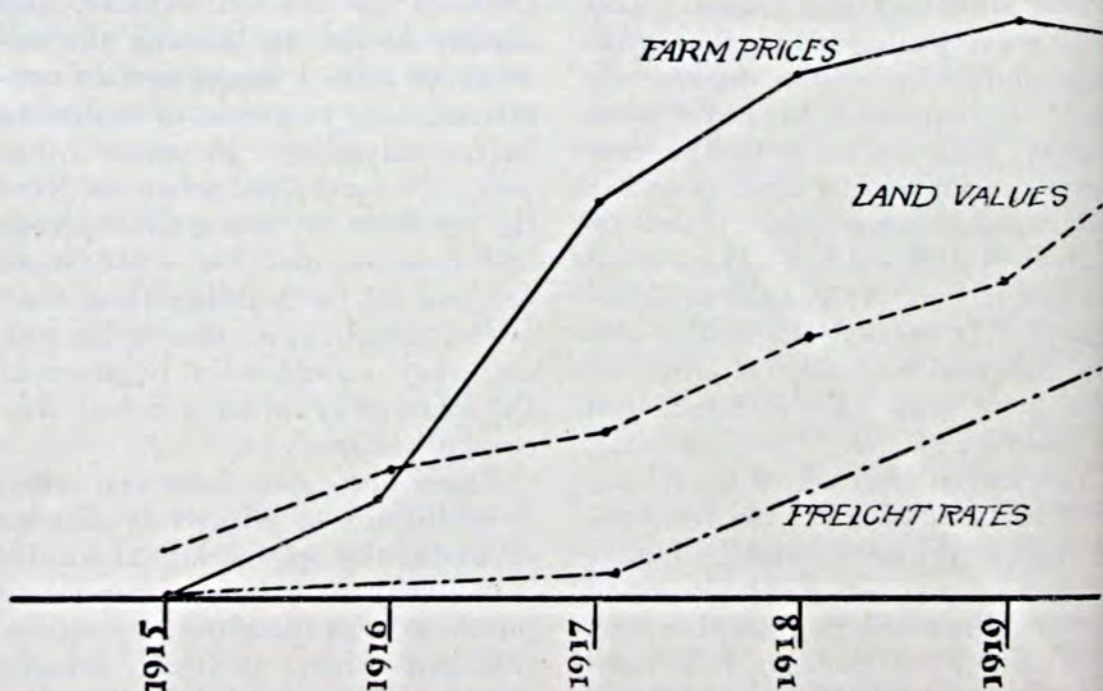
By A. M. Loomis

*(The subject of freight rates is one of the most complex problems of the day. The Grange, after making a careful study of the matter, has presented a very sane and sensible brief to the Interstate Commerce Commission. BETTER CROPS invited Mr. Loomis, who assisted in the preparation of the brief, to sum it up for our readers. He accepted the invitation and you will find his article a sound presentation of this vital subject.)*

**R**AILROAD rate experts and traffic organizations were rudely shocked by the announcement broadcast from Washington on May 15, the day for final filing of briefs in the Hoch-Smith investigation now being conducted by the Interstate Commerce Commission, that The National Grange had entered the traffic rate field, and had presented a brief for a blanket revision of rates on agricultural products.

During a five year discussion pro and con on this subject The Grange had contented itself with a formal and dignified statement of its views that freight rates on farm products were too high, and had seemed to believe that the mere formal expression of this belief would bring about some relief.

Following this up with more vigor, however, during the session of Congress which closed in March



This chart shows relative levels of agricultural prices, land values and railroad rates from 1915 to 1924. The base line is 1910-14 average. Freight rates are based on changes in freight rates of 50 representative agricultural commodities.

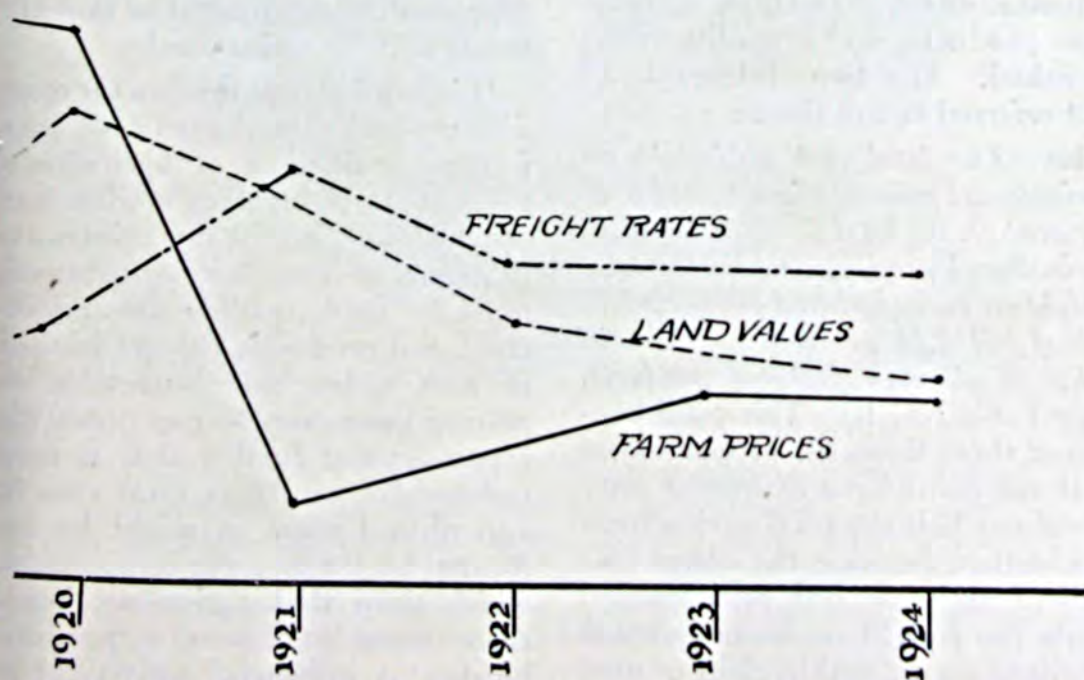


The Grange had endorsed the Hoch-Smith resolution, and had added the weight of its approval to the general demand for its passage. As a result Congress had passed this resolution, and now the Interstate Commerce Commission has started work as thereby directed.

Readers of *BETTER CROPS* need no introduction to The National Grange, nor to its representative in Washington, Dr. T. C. Atkeson. Dr. Atkeson has represented this great national organization of farmers as its Washington spokesman ever since the World War. Prior to that in addition to his duties as Dean of the State College of Agriculture in West Virginia, he had been active for many years as a member of the legislative committee of The Grange, and was recognized as one of the leading men in this organization as well as one of the soundest thinkers and safest counsellors in its official personnel. During six years work in Washington he has made a record of advocacy for safe, progressive, and resultful agricultural legislation and has established a reputation for ability and statemanship not ex-

celled by any other representative of any organization no matter what its field. It is this record and reputation of Dr. Atkeson, perhaps as much as the tenor and arguments of the brief which he has presented, which have resulted in centering the attention of the traffic world just at this time in the Grange demand for a readjustment of freight rates on all farm products.

THE brief itself, however, outlines a position, and quotes facts, arguments and authorities, which entitle it to serious consideration. It opens up the whole economic relationship of railroad transportation to agricultural and industrial development. It charges that traffic men made rates back in ancient history days, without knowing or caring much about economic results, that vast and fundamental changes have since taken place in both agricultural and economic conditions which ought to be taken into consideration and have not been so considered. It comments on the disparity between the economic



Note the partial correction of the apparent inequality of levels effective January 1, 1922. A similar chart showing levels of freight rates on most manufactured commodities would show many manufactured commodities still above the line of freight rates, and a weighted average of all, 10 per cent or more above the level of agricultural commodities.



status of industry and agriculture, points out that horizontal changes made when the original distribution of costs is out of line still leave resulting rates out of line, and winds up with a statement of economic principles which operate to the disadvantage of agriculture more seriously than to other industries whenever freight rates are out of proper balance.

The material used in the preparation of the brief is taken from reports of the Interstate Commerce Commission itself, and from the records, investigations and report of the Joint Commission of Agricultural Inquiry, of which Hon. Sidney Anderson was chairman. These reports and recommendations are imposed upon two fundamental statements of fact, which have not been disputed, and which it is believed cannot be disputed, and put up to the Interstate Commerce Commission so strong a support of the direct mandate of Congress as expressed by the Hoch-Smith resolution, that it is not likely that the Commission can escape the necessity of at least making the full inquiry which is demanded as to the economic effect of the high rates on farm products, and a readjustment as asked. The two statements of fact referred to are these:—

1st—*The total cost of freight on agricultural products is a tax of 6.23 per cent on the total farm value of all agricultural products, while the total freight on manufactured products is a tax of but 2.11 per cent on the total value of all manufactured products.* (See Table No. 1.) This total burden of three times the proportion of that on manufactures moves only about one half the total agricultural production, because the other half is kept at home and used locally; while the freight on manufactured products moves within eight or nine per cent of the total volume.

2nd—*The average freight rate on agricultural products is \$3.49 per ton on primary products, and \$4.97 per*

*ton on animals and products; while the freight rate on all manufactured products is but \$2.54 per ton.* (See Table No. 2.)

SINCE this brief was filed and its text made public Dr. Atkeson has received evidence of great interest and approval from widely scattered interests and localities. Incidentally he has also received some expressions of dissent and opposition. This is to be expected. However the chief basis for most of the opposition and dissent has come from what appears to be a misunderstanding, perhaps from a failure to properly analyze the whole content and intent of the revision of rates which The Grange asks for. The brief does not only ask for a revision downward on agricultural products in general, but it predicates this request upon the assumption and stipulation that the existing volume of freight receipts must be maintained at a level sufficient to properly pay the cost of operation and of financing the railroads, and may not be arbitrarily reduced, but must, if agricultural rates are decreased, be readjusted so that the totals may be maintained.

It is implied that this is a far more difficult and complicated task than a mere reduction of agricultural rates, that it involves studies and conclusions in which intricate problems of economic adjustments must be made, calling for agricultural and economic experts instead of men whose sole interest is in getting the money to pay operating expenses; and further that it may not involve nearly as great cuts in agricultural rates as might be indicated by the forgoing comparisons which show that agriculture bears three times as heavy a pro-rata burden as industrial activity, but that by properly lowering some agricultural rates, and carefully raising other rates, a well balanced

(turn to page 30)



# *Better Crops'* ART GALLERY *of the month*



Dr. William A. Orton, the new director and executive head of the Tropical Plant Research Foundation, an organization of eminent scientists who are going into the Tropics to study plant diseases. Dr. Orton was for years one of the leading authorities of the U. S. D. A. on plant diseases. His work on cotton wilt and potato diseases has been of great value.





This photograph and the one below were taken by county agent H. S. Agster of Jasper County, Indiana, on the experiment field which has been maintained for several years by Purdue University. Corn was planted on mucksoil. The check plot, pictured above, yielded absolutely nothing as can be seen from the bare ground.



This plot received 500 lbs. of potash per acre (250 pounds in 1919 and 250 pounds in 1921.) It has averaged 44.7 bushels during the past five years. A good proof of the effect of potash in reclaiming muck soils.



# A New Tobacco Disease

*(A concise explanation of sand drown and the best remedies.*

A NEW tobacco disease that has recently played havoc with many a field on the light soils of the eastern and southern tobacco districts, has been named "sand drown" since it occurs most often on sandy soils in wet seasons.

This disease puzzled both growers and scientist for several years until Dr. W. W. Garner and his associates in the Bureau of Plant Industry of the United States Department of Agriculture discovered and proved that it is due entirely to a lack of magnesia in the soil. The disease is more severe in wet seasons on account of the more thorough leaching of the magnesia from the soil.

According to Dr. Garner, sand drown usually occurs in the field after the plants "have attained considerable size, more commonly after topping, so that the leaves usually attain the normal size and shape." The leaf gradually bleaches out and finally becomes almost white except that the veins usually remain green. The bleaching begins at the tip and around the margin and moves toward the base and central part of the leaf. The white portion of the leaf does not die and fall away as in the case of lack of potash. The cured leaves appear dull and faded—hence the disease may greatly lower the market price of the crop. The weight of the leaf is also greatly reduced.

Sand drown, its cause and method of prevention were all discovered at

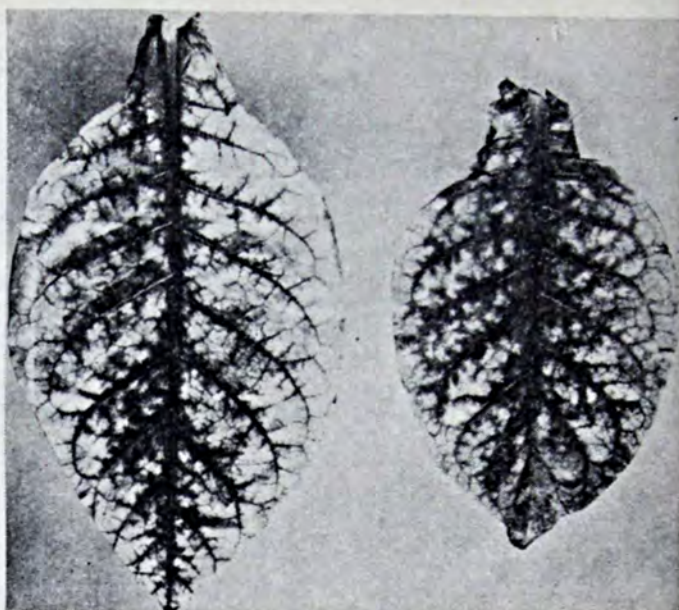
the Tobacco Station of the North Carolina Department of Agriculture at Oxford in cooperative investigations with the United States Department of Agriculture. The story of these important discoveries is very interesting but too long to be given here in full. Several experiments, conducted during the past 12 years, however, have shown conclusively that the application of material containing magnesia aids in controlling sand drown. The cheapest and easiest way to supply magnesia is to use a fertilizer that contains this ingredient in addition to the ammonia, phosphoric acid and potash that are present in all complete fertilizers. Fortunately one form of potash, called sulfate of potash magnesia, is on the market and should be used in all fertilizers for tobacco on sandy or sandy loam soils.

Other potash salts, such as kainit and "manure" salt, contain magnesia and for this reason will control sand drown, but they also contain a lot of chlorine which injures the burning qualities of the tobacco. Muriate of potash usually contains considerable magnesia and to a certain extent helps in controlling this disease, but it contains a high percentage of chlorine and should not be used on tobacco that is intended for smoking purposes.

Experiments have also shown that the application of lime or limestone containing a high percentage of magnesia will control sand drown,



*Leaves of Connecticut Valley Cigar Wrapper Tobacco showing advanced stages of sand drown which is due to a serious lack of magnesia in the soil.*



Photograph used by courtesy of the United States Department of Agriculture

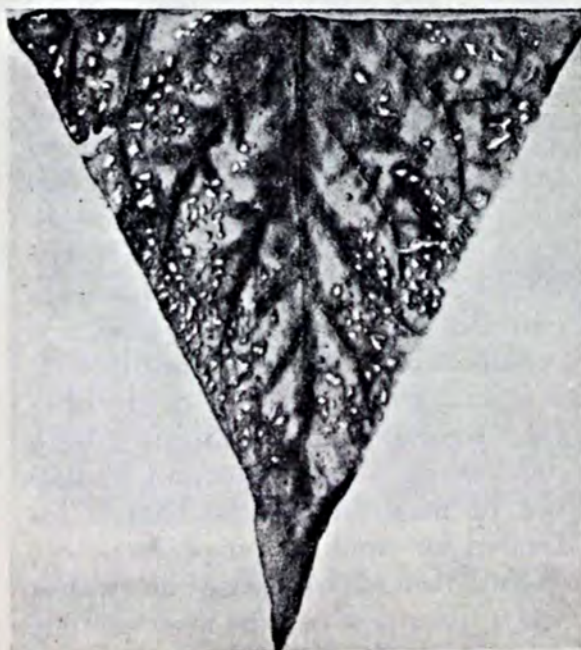
but this form of lime is not available everywhere and, of course, liming is not always necessary.

Cottonseed meal also contains a small amount of magnesia—a fact which probably accounts for a part of its popularity as a source of ammonia for tobacco fertilizers. It, therefore, helps to control sand drown, but should not be depended upon entirely.

On the heavier soils of Pennsylvania, New York, Ohio, Kentucky, Tennessee, West Virginia, Indiana and Wisconsin, the disease has not yet made its appearance and there is little if any need for magnesia in

the tobacco fertilizer in these districts.

On the light sandy soils of the Connecticut Valley, the Maryland export district, in the New Belt of North and South Carolina and in Georgia and Florida sand drown occurs frequently and growers in these districts should make sure that their fertilizers contain plenty of magnesia, and, for the sake of smoking quality, little or no chlorine. This means that the potash in the fertilizer should be derived from the potash salt called sulfate of potash-magnesia, formerly known as "double manure salt."



*Tip of tobacco leaf showing effect of lack of Potash.*

Photograph used by courtesy of the United States Department of Agriculture



# A Great Commoner

B y E . W . H o w e

A NAME for which I have profound respect is that of Henry Wallace, the elder, one of the Great Commoners who have distinguished this good country.

He was farm-born and farm-trained, and, late in life, wrote one of the best books on the rural life of New England I have ever read. His tribute to the excellent people found on farms, and the comfort they may find in life, in spite of hard work, will in time become a classic, I hope.

In spite of poverty, he found opportunity for schooling, and became a preacher. I never knew the man personally; I have only heard of him, as I hear of so many others. And it always seemed to me he was a good preacher. Some preachers drive men away from religion. I am sure Henry Wallace never did, he was himself so decent, so intelligent, so useful.

Joining the mighty procession that marched to the West, he settled in Iowa, and became a farmer; a good one. In time he became a country editor, farmer and exhorter; always an example and inspiration to those who knew him. He preached good farming as well as good living; those familiar with his example saw that it was so worthy

that they longed to follow it.

His final work was as editor and owner of one of the earliest of our notable agricultural publications. In this he preached good farming, industry, politeness, thrift, good citizenship, courage, so persistently that he became a national figure. He was gentle, intelligent; a man of education who taught in a modest, acceptable and effective way.

There was tuberculosis in his family. He attacked the taint, and overcame it by proper living. And when he died at seventy-eight, the printed tributes to his memory filled a great book.

It has always pleased me that this man was so widely appreciated, in spite of his modesty. He refused many positions of distinction, preferring to remain one of the people, share their burdens, and assist, so far as he could, in solving their problems.

I know of no name I respect more than that of Henry Wallace. He could turn a furrow, talk intelligently in public, or write helpfully for print.

And he always preferred to remain in the ranks, and assist in helping his fellow soldiers to more comfort and effectiveness. No Great General did more for his fellow men than did this Great Commoner.



# Use of Stilts in Tree Wiring

By Lloyd Austin

University of California

*A new time-saving method of wiring fruit trees to prevent breakage.*

**D**O you know that the use of wooden props to support the limbs of fruit trees is now antiquated on the Pacific Coast? Up-to-date growers are rapidly adopting the new wire bracing system to hold up the limbs of their fruit trees. Of course the use of wires is, in itself, nothing new. Farmers occasionally wire up weak limbs that are heavily laden with fruit. Until recently, however, whole orchards have never been wired in a systematic manner. Heretofore the wires were usually wrapped around the limbs which they were to support, and as a natural consequence these limbs were generally girdled completely, unless the wires were removed at the end of each season. It will be of interest, then, to see, just how modern wiring is done in commercial orchards of the Pacific Coast.

Briefly, the method consists in first fastening wires to the various limbs of the tree which need support, and then these wires are all brought to a harness ring or washer near the center of the tree. Ordinarily the ring should be suspended in the open space, several feet above the place where the main limbs arise from the trunk. The uninitiated will wonder how the wires are per-

manently fastened to the limbs without causing injury to them. The method is simple. The wire is fastened to a staple or screw eye of suitable size. Screw eyes number 209 are commonly used on the larger limbs, while chicken wire staples are useful for the smaller branches requiring support. If care is taken to leave the staple or screw eye parallel to the limb, it will soon be grown over and no injury to the tree will result. This method of fastening the wires to the limbs is much preferable to that of passing the wire around the limbs and using wooden blocks or pieces of hose to prevent it from cutting in.

**O**NE of the principal advantages of this method of wiring is that it is possible to balance up a tree much better than could ever be done by the old method of wiring from limb to limb. The central ring distributes the strain of a particularly heavy limb over most of the other limbs of the tree. The use of the ring also makes it possible to hold up many limbs which are in such a position that they could not be held up by running a wire to another limb.



It is desirable to have the wires radiate out from the ring in as nearly a horizontal plane as possible. Ordinarily the ring is placed in the center of the tree, about equidistant from the various main limbs which it supports. It is a mistake, however, to assume that the ring should always be in the center. Whenever a tree is encountered that has a number of heavy limbs on one side and only two or three, perhaps weaker ones, on the other side, care should be taken to locate the ring,

not in the center, but nearer the stronger limbs. In this way the strain will be equalized and the tree will be much better balanced than would otherwise be possible. Certain outer limbs will be in such a position that a wire cannot be conveniently taken to the center of the tree, without rubbing on an inner limb. In such cases the outer limb can be held up by a short wire running to a staple on the outside of the inner limb.

*(turn to page 36)*



*The use of stilts instead of ladders in wiring trees to prevent the breakage of limbs. The arrow points to the ring suspended in the center of the tree. Wires go from this ring to the limbs where the two men are working, and also to the other main limb.*





*Ground cherry; harbinger of tomato and tobacco mosaic.*

# Controlling Diseases by Destroying Weeds

By Albert A. Hansen

*(An investigation into the causes of plant disease and the remedies.*

SOMETIME ago I was a member of a curious crowd that watched a large freighter from tropical waters dock at a pier in New Orleans. Each rope that connected the ship with the shore bore a strange-looking plate-shaped disc and upon inquiry I learned that the object of the discs was to prevent rats from going ashore. Rats, I learned, may carry bubonic plague which in turn may be transferred

to the human through the agency of fleas.

Figuratively speaking, there are rats, plague and insect carriers in many of our fields. The rats in this case are the four common weeds: bull nettle, ground cherry, pokeweed and milkweed; the plague is a virus disease called mosaic and the patients inoculated with the deadly virus are tomatoes, tobacco, cantaloupe and cucumbers. But



there are no discs to prevent their entrance; instead the weed disease carriers must be exterminated in order to destroy the source of contamination.

One of the commonest and most destructive diseases of tomatoes is mosaic, evidenced in the field by crinkled and mottled leaves and seriously decreased yields. Since it was known that the virus responsible for the trouble was carried neither on the seed nor in the soil, the source of the disease has for years been a mystery. Recently, however, due to some excellent detective work in which Dr. Max Gardner and James B. Kendrick of the Purdue University Agricultural Experiment Station were the principal sleuths, the baffling puzzle has been unravelled, much to the profit of tomato growers.

Like most other mysteries, it is all perfectly simple when explained. After running down a number of clues, the scientific detectives discovered that the dangerous mosaic virus is harbored in several weeds,

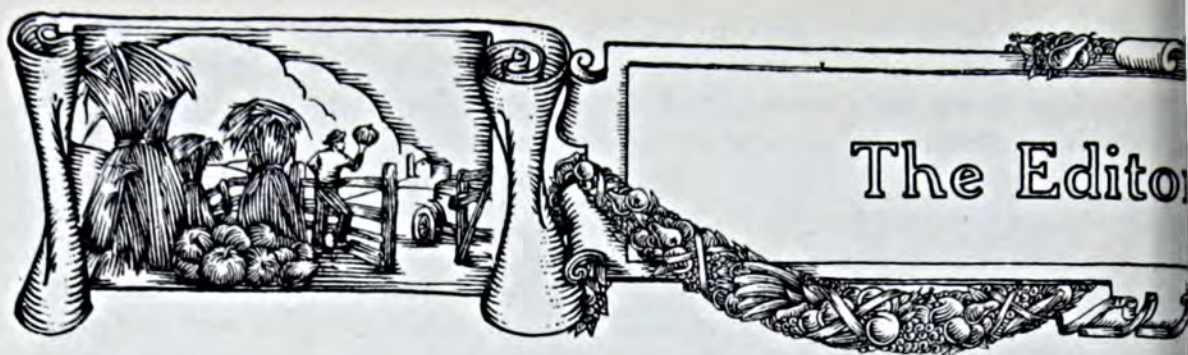
principally ground cherry and bull nettle, from which it is carried by plant lice and other insects and inoculated into the tomato plants. The mystery may properly be called a deep mystery, because it was learned that the disease-producing virus is carried over winter in the deep-seated creeping and perennial roots of the weeds and made accessible to the insect carriers as soon as the sprouts appear in the spring. Furthermore, it has been demonstrated under actual field conditions that if all ground cherries and bull nettles are destroyed in and near the plant beds, mosaic in the field can be effectively controlled. One farm on which this was satisfactorily demonstrated belongs to Ralph Kemp of Tipton County, Indiana, one of the largest growers of tomatoes in the leading tomato state in the union and a former president of the Indiana Canners' Association.

This interesting discovery opened up many new clues that were run  
(turn to page 28)



The wrinkled, mottled tomato leaves to the left are typical of mosaic. The branch to the right is healthy.





## DIFFERENT CROPS NEED DIFFERENT FERTILIZERS

When I was a boy I lived next door to a very thrifty old couple. The woman died and, having left unconsumed several bottles of medicine for feminine ailments, her husband consumed them. When my father remonstrated with him he said, "Well, it's good medicine and 'twould be a shame to waste. Maybe it'll do me some good somewhere."

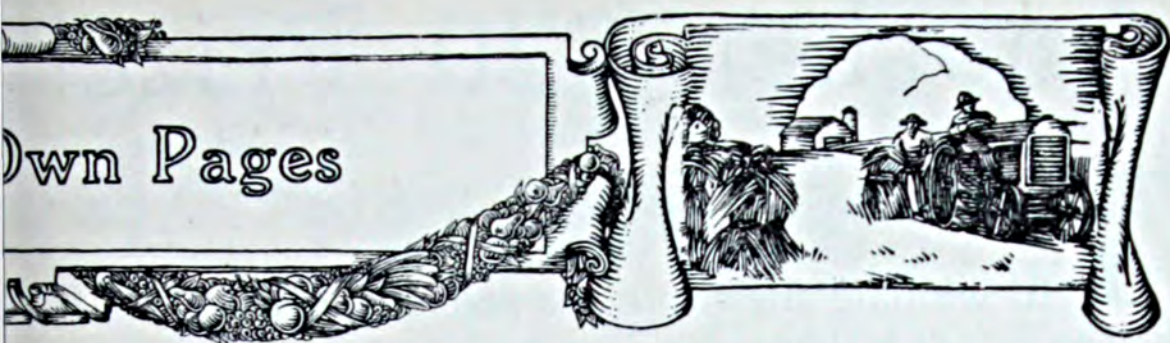
I think that many farmers buy their fertilizers on some such theory as this. "Give me some of that \$30.00 fertilizer," I've heard a farmer tell his dealer. What was in it or whether it suited his needs didn't seem to concern him. So I have known farmers to apply a good wheat fertilizer to potatoes with no apparent realization of the different needs of these two crops.

## PLANT FOOD IS THE BIG FACTOR

It would be a fine step in the direction of better farming if farmers would begin to think of fertilizers in terms of the number of pounds of actual plant food they return to the soil. Instead of putting price or brand or formula first, you start by finding out your soil type. Then, taking into consideration the crops you plan to raise on this soil, you can determine with some degree of accuracy the number of pounds of actual nitrogen, phosphoric acid and potash which you should apply to insure the best returns. Then work out the formula and rate of application and come as near it as your budget will permit.

Thirty-five bushels of wheat would take from an acre of land, approximately 59 lbs. of nitrogen, 24 lbs. of phosphoric acid and 31 lbs. of potash. Two hundred bushels of potatoes would take from that same acre, 46 lbs. of nitrogen, 21 lbs. of phosphoric acid, and 74 lbs. of potash. A well balanced fertilizer for wheat would be way out of line for potatoes.





A thousand pounds of a 4-8-6 mixture or five hundred pounds of an 8-16-12 mixture contain the same amount of plant food:—40 lbs. of nitrogen, 80 lbs. of phosphoric acid and 60 lbs. of potash and the latter formula, if bought in quantities, is likely to be cheaper because of the saving in freight and handling.

Begin to think of fertilizer in terms of the actual amount of plant food it contains and you will begin to farm more efficiently and consequently more profitably.

## MORE

## ECONOMY!

Now that our Federal government is seriously putting through a program of economy and tax reduction, our state administrations would do well to follow this example.

Wasteful and unjustifiable expenditures of taxpayers' money are going ahead merrily in many of our states. You have a voice and a vote, Mr. Tax Payer. If you let your state government issue bonds for unnecessary highways, bonuses and the like, without voicing and voting your protest, you are failing in your duty as a citizen.

## WASHINGTON IN MAY

The wonderful trees and gardens—the tourists — the good hotels — the poor restaurants—the conventions—the amazing number of autos—the pleasant welcome at the Department of Agriculture—the perfect strawberry shortcake at the cafeteria near the Department—the Frear Gallery, an ideal art gallery—the incomprehensible trolley car system—the sight-seeing auto busses—the florist shops everywhere—the splendid plan of the city, a capital worthy of our country.

*Jeff McIlernid*



# Another \$20 Prize!

THE winning answer to the first question, "Does It Pay to Raise Quality Crops?", which we asked last month will be published in our July issue. If you didn't send in a contribution, try your hand at the interesting question proposed for this month:

*"Should Farmers Organize to Improve Their Economic Condition?"*

This is the second of five questions which will be asked monthly in our pages. The best answer will receive a prize of \$20.00. There are no restrictions except on length. Answer it any way you like. We want a clear and convincing presentation of why you believe as you do on this subject. Just make your argument brief and to the point.

**Answers to this question must not exceed 800 words. They must be mailed before midnight July 6th.** The winning answer will be published in our August issue. The judges will be Jeff McDermid and Basil H. Pillard, editors of BETTER CROPS. In the event of a tie, the full amount of the prize will be awarded to both contestants. The judges reserve the right to withhold the award in the event that none of the answers is deemed worthy of publication in BETTER CROPS. BETTER CROPS reserves the right to publish any manuscript submitted in this contest at the regular rate of one cent a word. No manuscripts will be returned.

**Send your answer before July 6th to:**

JEFF McDERMID

*Better Crops Publishing Corp.*

461 EIGHTH AVENUE

NEW YORK CITY





## A Stenographer Well Worth Her Cost!

Dear Jeff:—

The articles in your May Issue of **BETTER CROPS** relating to stenographic help for County Agents have caused me to give the matter some serious thought. Possibly the experience I have had in running a County Agent's office without any help and with help add somewhat to the ideas that have already been expressed, and will possibly be of some assistance to County Agents who are at the present time debating the question.

My experience teaches me that no County Agent's office should be without stenographic help, if it is at all possible for him to secure it. My first year as County Agent was spent without any office help whatever, and I found that whenever it became necessary for me to do field work my office had to be locked. This according to the figures in my annual report, was two-thirds of the time. This meant that farmers coming in from the country wanting to receive information from the County Agent's office were disappointed two-thirds of the time.

The following year I was successful in securing office help full time, and as a result my annual report showed just twice as many office calls as the previous year. This was not due, except in probably a small sense, to the additional interest I had aroused in the work, as there had been agents in the county four years previous to my going there.

In order to prove to myself and to our directors that it was an in-

vestment and that the County Agent's office could be operated more efficiently with office help than without, I kept a record one day of the office calls and found that fifteen farmers called on this particular day and that twelve of them received the information they were seeking without seeing the County Agent. The other three made arrangements with the office girl for dates when they could consult me concerning their problems. This day, instead of fifteen farmers going away from the office dissatisfied and kicking against Extension work, they went away boosters, satisfied that the taxes spent in this work were entirely worth while. Many of them had driven twenty or twenty-five miles and one could not have blamed them for being dissatisfied had they found the County Agent's door locked.

In addition to the above advantages, there is the great advantage of having someone who is able to take care of correspondence at a time when it should be taken care of. I well remember that when I was struggling along alone that sometimes very important correspondence was left unanswered owing to the fact that the time was not available to answer it. When a farmer writes in to the County Agent's office for bulletins or information, it will always be a boost for the work and he will be better satisfied if the next mail brings him the desired information, or a letter stating that such information is being secured for him. It demonstrates to the farmers that the person in the County Agent's office is alive and that he is on the job.



Then too, the County Agent's office should be, in my estimation, a storehouse of information, but this information will be of no value if it cannot be located when wanted. Without good filing systems, which will enable information to be located on the spur of the moment, the greatest advantage is lost. How many of you have had a farmer call in your office and ask for a method of treating some crop for disease or insect control, and possibly you were not as conversant with this as you should be and started to look for the information and could not find it? Such a situation is always embarrassing and leaves a bad taste in the farmer's mouth. If you could have lain your finger immediately on the desired information and pulled out a bulletin and said "This bulletin will cover your situation entirely" you would have made a friend and booster out of this man.

Of course, the office help in the County Agent's offices should be of such a character that they can grasp the idea of the work in a broad sense. They must realize that they are there for more than just writing letters, filing, and keeping the office

open. Many a time have I come into the office and caught my stenographer discoursing with some farmer relative to improved methods which she has heard me discuss with them in the office at some previous time. She has been able to locate information desired for these farmers because she was interested in the work. When I had occasion to move from this county into another county and my stenographer, being my wife, naturally went with me, I believe that the farmers regretted seeing her leave the office as much as they did myself.

I hope that the above discussion has brought out some ideas relative to stenographic help, and I firmly believe that the efficiency of a County Agent's office can be doubled through the employment of wide awake office help. As a consequence the farmers will receive a greater benefit and service from the County Agent's office, and, it has been my experience, will demand that those having power to appropriate funds for its continuance shall continue to do so.—*H. W. Biedermann, County Agricultural Agent, Dawes County, Chadron, Nebraska.*



## Controlling Diseases by Destroying Weeds

(From page 23)

down with fruitful results. It was discovered that tobacco mosaic, which is likewise distinguished by mottled leaves, is also harbored by virus-infested bull nettles and ground cherries and once again a campaign of weed destruction is recommended in and near the plant beds. It is further urged that both tomato growers and tobacco farmers keep the plant beds clean of weeds throughout the year instead of permitting them to "run to weeds" as is so frequently done after transplanting time.

There are other mosaic diseases that are similarly harbored by weed

culprits; of special importance you be mentioned white pickle disease in cucumbers and an unnamed trouble that causes melons to become stunted and poor in flavor. One authority informs me that the presence of the mosaic disease white pickle in cucumbers has been the main reason why the industry that supplies the principal ingredient of the well known 57 varieties has gradually been driven westward to escape the ravages of the virus. The trouble shows up in the form of mottled, unthrifty fruits the green warts of which have whitish backgrounds. In this case com-



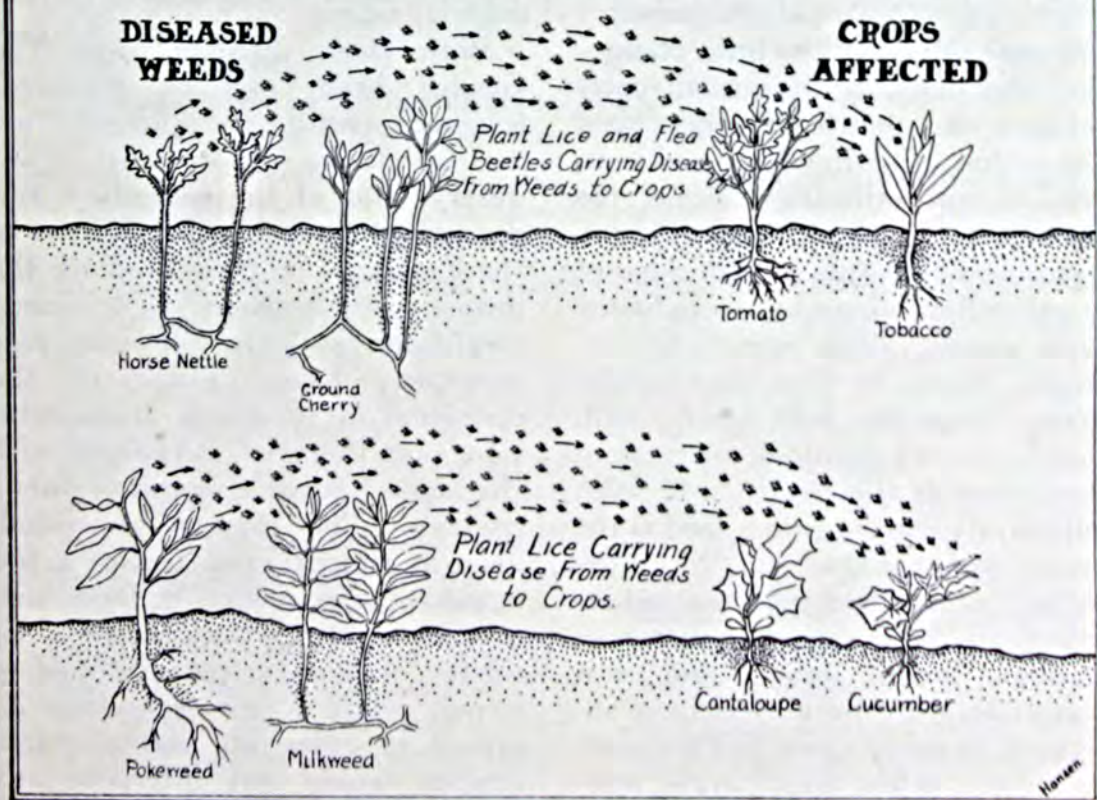
mon pokeroot and milkweed are the weed reservoirs of the disease and the contaminating virus is transferred to the crops through the agency of plant lice and the striped cucumber beetle. The virus lives year by year in the deep running roots of the milkweed or the fleshly underground parts of pokeroot and the shoots that arise in the spring offer the first opportunity for the insects to carry the disease to the crops in the field. Once again, field tests have demonstrated the practicability of preventing white pickle and the stunted melon disease by destroying milkweed, pokeroot and wild cucumbers in the vicinity of cantaloupe and cucumber fields, particularly in and near the plant beds.

Pokeroot is usually destroyed by grubbing. Occasionally old plants possess such massive roots that grubbing is a difficult operation; in such cases pouring some waste

automobile oil on the roots or applying a pound or two of salt will effectively prevent sprouting. Where milkweeds grow in profusion, the use of the knife or gopher blade cultivator combined with hand hoeing in the hills or rows is an excellent method of starving out the creeping roots.

There are a number of other plants in which destructive diseases lurk, among the most familiar of which are the common barberry, carrier of black stem rust of wheat, and the common Juniper or red cedar, harbinger of apple rust. In these cases, however, the wind acts as the distributing agency and trouble is due to fungi instead of viruses. The discovery of the virus-inoculating insects is a big step forward in our knowledge of plant disease control and emphasizes more strongly what undesirable citizens weeds really are.

## HOW WEEDS AND INSECTS SPREAD PLANT DISEASES





## A New Demand for Lower Freight Rates

(From page 14)

structure may be developed, which makes for both agricultural flexibility and industrial stability. The Grange argument goes more deeply and more searchingly into this whole problem than any other brief presented, and forms a complete reason and defence for both the action of Congress in adopting the Hoch-Smith Resolution and for the Interstate Commerce Commission in making a freight rate structure readjustment.

It is therefore evident that the opposition expressed in terms of defence of the railroads is not an answer and not called for: Nowhere in the brief is there an effort to indicate that the *total* income of railroads from freight rates should be reduced.

**I** BELIEVE the readers of BETTER CROPS will be interested in the economic argument made in this brief relative to the injurious effects of existing rates on both industry and agriculture. The brief charges that the existing division of costs between the points of origin, and conversion, and the points of conversion and utilization is far too heavy on the origin to conversion sector and that this is injurious not to agriculture alone but to industry as it exists. With wheat, for example, there is first the freight charge from the field to the mill, that is, to the point of conversion; then there is the freight rate from mill to city consumption, that is the second sector of the cost. Since the freight rate structure was established, the brief says, the distances through which foods and raw materials must be hauled have increased in many cases 100 per cent, or more. When freight rate principles were established New York got its wheat from the Genesee valley, now it comes from the center

of the state of Kansas. But the industrial center of the United States still stays on the Atlantic coast, or nearby.

The high freight rates on food stuffs and raw materials, is pinching the industrialist whose place of residence is in the industrial center, where he is tied by economic bonds. This is threatening the industrial fabric of the country. Factories can move; additional freight charges, at best a mere incident in the final price of the manufactured article can be passed on to the consumer, but agricultural shifts are in accordance with laws of weather, soil adaptability, the depletion of fertility or the cost of its maintenance, and the freight cost, about the only constant in the problem of determining the actual cost of a farm product at any particular time, is hard to pass on to the consumer. So agriculture suffers. But along with the suffering of agriculture is the disturbance of the whole industrial fabric.

Both these diseases, says The Grange brief, can be modified, lessened, spread over a longer time, and wholesale dislocations of industry, and of the secondary and dependent agricultural industries of the East, can be prevented by the proper consideration of economic conditions in a new freight rate structure. Every phase of the operation of interstate transportation, says the brief, is charged with the highest possible degree of public concern. The present out-of-balance in freight rates causes a bar against the free flow of foods and raw materials to the centers of industry, and an increase in cost of living, while a corresponding increase in rates on manufactured articles would not interpose any such bar against their free flow, and industries conducted under cover, humanly controlled in the main, not



subject to climatic and weather vagaries and risks, can, and may, move as economic conditions make necessary. They should be compelled to move just as little as possible, so that industrial stability may be disturbed just as little as possible. Flexibility of rates on agricultural products as centers of production vary, and fair consideration of economic relationships, should become the policy of the Interstate Commerce Commission.

**S**ECRETARY of Commerce Herbert Hoover is quoted by Dr. Atkeson as follows:—

“Another vivid question in this connection is that of the rates themselves. In an era of wide disparity between farmers’ income and, that in, and of industry, the transportation rates have proven to be a heavy burden on agriculture. On the other hand, under present conditions railway earnings are obviously not large enough to assure railway expansion. Some relief both to railways and to the farmer may be obtained by thorough reorganization of the rate structure.”

The report of the Anderson commission is freely drawn on for support and statistics. Following are some abstracts:—

“Freight rates are still too high to permit the production and marketing of hay at a profit.”

“These tables show in a most emphatic way the effect of an out of line relation between the price level of farm commodities and the price level of transportation, and establish the necessity of freight rate reductions upon barley, corn and oats.”

“Freight rates on perishables normally take about one third of the selling price, frequently running as high as two thirds; these rates in periods of low price levels and slight demand constitute a very heavy burden on this traffic.”

“The Commission makes the following recommendations:—

That the transportation rates on many commodities, more especially the products of agriculture, bear a disproportionate relation to the prices of such commodities; that there should be immediate reductions in transportation rates applied to farm products and other basic commodities. \* \* \*

That the pyramided per cent advances in rates which have been authorized by the Interstate Commerce Commission or made by the United States Railroad Administration caused the dislocation of long standing relationships between rates upon agricultural products and rates upon industrial products. \* \* \*

That in establishing the general level of rates and commodity and class rates the Federal and State Regulatory bodies give greater consideration to existing and prospective economic conditions.

The brief concludes with the following pointed reference to the railroads’ tacit acquiescence in the demand for lower agricultural rates when the attention of the public was turned toward the question of Pullman sur-charges:—

“Many spokesmen for the railroads recognized the force and justice of the demand for lower rates on agricultural products by their statements and arguments made but a few months ago when the question of reduction of the sur-charges on Pullman rates was up in Congress. A much used argument by the railroad interests and one which was specially directed to the agricultural organizations that stood very solidly in favor of the elimination of the gross injustice which is found in the present arrangement of making a passenger pay a much higher rate for passenger service if he uses a Pullman coach than if he uses a railroad coach, was an argument directed at the self



interest of agriculture in about these terms. 'We will not be able to grant you the reduced freight rates to which you are now entitled, if this revenue from Pullman sur-charges is cut off.' Agriculture took the railroad

spokesmen at their word, and is now asking that their part of the implied bargain be kept, and the freight rates reduced."

Two statistical tables and a chart are made use of in The Grange Brief, as follows:—

The average contribution made by agriculture to the maintenance of the railroads through freight charges is out of line with the average contribution made by the only other comparable freight producing industry, namely, manufacturing.

Table No. 1

	Total Value Annual Production, 1919*	Total Contribution as Railroad Freight Rates Payments, 1923†	Per Cent
Farm Products, incl. Forest Prod.	\$21,425,633,614	\$1,343,967,000	6.23
Manufactured Products. . . . .	62,418,078,773	1,319,111,000	2.11

\*Census 1919. †I. C. C. Statement No. 24,187.

The freight rate charged against each ton of agricultural products handled by the railroads is out of line with the freight rate charged against each ton of other products.

Table No. 2—Revenue

	Tons Carried (000 Omitted)	Revenue (000 Omitted)	Per Cent of Total Revenue	Rate Per Ton
Agriculture . . . . .	220,518	\$672,433	14.5	\$3.49
Animals and Products. . . . .	48,878	242,730	5.3	4.97
Minerals . . . . .	1,250,314	1,466,592	31.7	1.17
Forestry Products . . . . .	222,570	419,807	9.1	1.84
Manufactured articles. . . . .	517,915	1,319,111	28.5	2.54
L. C. L. . . . .	73,589	503,726	10.9	6.81
Total . . . . .	2,333,787	\$4,624,399	100.	....

(All figures in this table are from I. C. C. Statement No. 24,187 except column 4, compiled from Columns 1 and 2.)



## Cutting the Waste in Food Handling

(From page 7)

with delay in transit but for which the carrier is not wholly responsible, is the failure of the shipper to avail himself of the best service, for his purpose, furnished by the carrier. This is especially true in express shipments. Heavy losses on dairy products have been found to be due usually to failure to forward the products on trains rendering the quickest service.

Most food products are subject to injury if not carefully protected and handled. If bruised during picking or packing the products start to the market under handicaps. During transit, cars are often handled roughly. Packages are broken and the products are bruised. Deterioration is begun and its pace is rapid.

An indication of the magnitude of loss from rough handling is shown in the fact that railways in the United States paid out over \$6,000,000 in damage claims on foods during 1921 because of rough handling of goods and cars. Failure of refrigeration and ventilation equip-

ment to function properly cost an additional \$2,500,000 in damage claims in that year.

**M**OST food products require protective packing for the marketing process not only to protect the product from injury, but to facilitate handling. The practice of packing food commodities has become almost universal, but much damage comes from faulty packing. A pack may be too slack, permitting the contents to shift in the package and become bruised, or the packing may be too tight and result in crushing the contents.

Much of the damage from faulty packing comes from containers not sufficiently strong to withstand the handling to which they are subjected. In proportion to the amount carried, eggs form the heaviest item of railway and express damage, the losses being due in large measure to the use of second-hand cases and fillers.



*Salvaging decayed potatoes received at terminal.*



Faulty marking of packages in express consignments and less-than-car-lot freight shipments are other causes of loss. Packages are often so poorly marked that delivery is impossible and the perishable products are left on the hands of the carriers, to be resold to cover transportation charges.

Investigations show that even well-packed products are not likely to go through transportation in good shape unless the packages are properly loaded into the car. Loose loading, improperly braced, allows the package to move about and in many instances results in destruction of containers and serious damage to the contents.

Most food products are subject to loss through shrinkage. In some cases this is a natural loss occasioned by time, and it cannot be prevented. It is estimated, for example, that the shrinkage on potatoes arriving at New York averages approximately 21 bushels per car. On this basis the total loss on some 20,000 cars coming to New York City in the course of a year is around 420,000 bushels.

Shrinkage occurs not only in transit, but while the potatoes are in storage and in the hands of the wholesale and retail merchants. The loss while in the hands of the country shippers averages around 1.75 per cent, which, added to loss in transit, brings the total shrinkage to five per cent for the period between the time the potatoes leave the farm and their arrival at terminal markets.

**L**OSSES on account of insect pests and diseases emphasize the fact that good marketing depends in no small measure upon good farming. The conditions of transportation tend to bring to light concealed defects caused by insects and disease during the development period of the products. Improved marketing methods may help to deter development of these defects

but they will not eliminate them. Elimination must be done by growers through improved farming methods.

The records show that 59 per cent of all defects appearing in 3,676 cars of produce inspected in New York City by the United States Department of Agriculture was from disease. Nearly all of the defects in cherries, grapes and watermelons came from that source. Heavy losses are shown also on lettuce, peaches, potatoes, tomatoes, cabbage, and other products. Nine per cent of the condemnations by the Board of Health was due to insects.

Fresh fruits and vegetables made up 31 per cent of the total railway claims for loss and damage. These expenditures do not cover all losses, inasmuch as considerable loss is due to causes, the responsibility for which is not assumed by the railroads. For example, in the matter of eggs arriving at New York City, the settlements average about one-half of the amount claimed.

The railway and express companies have made a more exhaustive study of egg losses than those of any other commodity. Educational campaigns among producers and shippers have greatly reduced the losses on eggs in recent years, but the losses still run well over 250,000 cases annually at New York alone.

The data here presented were developed in a cooperative study made by the United States Department of Agriculture and the Michigan Agricultural College. They present striking evidence of the great need for better preparation and transportation of farm products if marketing costs are to be reduced. Their elimination means higher prices for producers, more efficient use of transportation and marketing agencies, and lower prices to consumers.

There will always be circumstances in which it will be more economical to permit the loss of product rather than to incur the



necessary expense to save it, but in the main the losses are preventable and they can be greatly reduced. To do so requires cooperation all along the line from producer to the ultimate distributor, encouraged by the dissemination of practical information by county agents as the representatives of the agricultural colleges and the Federal Department of Agriculture.



## A Wheat Experiment

By James S. Morse

WHEAT is one of the crops that does fairly well on many Eastern farms and fits into the rotation in various ways as it does not conflict with the other grain crops, either at planting time or at harvest time. The plowing and fitting of the wheat ground can usually be done at a time when the teams or tractors are not busy at other regular farm work; besides thorough cultivation of the ground during the month of August is a splendid way to destroy weeds. In many sections we find that the best way to get a good seeding of timothy and clover is to sow the seed with wheat in September, or in the early spring when the wheat ground is still loose and soft.

The straw from the wheat, especially the beardless varieties, is ideal for litter as it lies up loose and light and absorbs moisture well.

At present, the outlook for fair profits from wheat seems to be good. While the bears have made a great effort to hold the price of wheat down for the past few months, the price is gradually coming back and eastern millers are forced to bid up in order to supply their needs.

Wheat is not normally a high yielding cereal, as in some states the average yield is only twelve bushels per acre; yet under favorable conditions, and with an adequate supply of complete fertilizer, we

have been able to raise forty bushels per acre and sometimes even more. In one experiment which was carried on on my farm, on land which had not been manured for some time, we had quite a remarkable result from using a liberal application of complete fertilizer. The following is an accurate report of the experiment:

Plot one, with no fertilizer, yielded only thirteen bushels per acre, while plot three with about six hundred pounds, of 2-8-6 per acre, yielded forty-five bushels per acre, or thirty-two bushels more than plot one. The cost of six hundred pounds of 2-8-6 fertilizer is now about fourteen dollars and wheat is selling readily as poultry feed at two dollars per bushel. Deducting the cost of the fertilizer, which is \$14.00, from the value of the increased yield of wheat, which was \$64.00, shows a profit of \$50.00 from the fertilized plot over the plot with no fertilizer. This is the result of the wheat crop alone, but this is not all; the plots were all seeded to alfalfa, and for three years the effect of the fertilizer could be readily seen on both the first and the second crop of alfalfa.

With the present outlook for better prices of wheat, I am persuaded that it is wise to use a liberal application of highgrade fertilizer.



## What Agriculture Needs

The greatest help to agriculture will be the improving of working and living conditions on the farm. The atmosphere of farm life and farm work must be changed so that agriculture will attract instead of repel the young people who would naturally follow that work. The keeping or attracting of a more intelligent class of young people would soon put agriculture on an equal footing with other businesses. —L. C. Kerns (ex-farmer), St. Joseph, Mo.



## Use of Stilts in Tree Wiring

(From page 21)

The question is often raised as to whether or not a harness ring is preferable to an iron washer for use in the center of the tree. Both are in use at the present time. From the experience which I have had I would certainly recommend the use of a harness ring in all cases. The principal advantage of the ring seems to lie in the fact that a wire fastened to the ring is not bent as sharply as it is when it is fastened to a washer. The thinness of the washer causes a very sharp bend in the wire, and this in turn seems to cause the wires to break frequently at this point several years after the wires are installed. In addition to this, the washers rust sooner than the harness rings, which commonly have the black japanned finish and are an inch and a half in diameter. It is true that the rings are slightly more expensive than the washers, but it is poor economy which thinks not of the future.

When the various details are properly attended to, the system of wire braces should, in most cases, be as lasting as the trees themselves. This is an outstanding advantage of the wires as compared with wooden props which have been so commonly used for the same purpose. The materials necessary for wiring an average tree requiring eight wires will cost about twelve cents, while eight props would cost in the neighborhood of fifty cents. The props are good for four or five years, while the wire braces are good for twenty to thirty years or more. Is there any question as to which method is the most economical as far as materials are concerned?

Now suppose we look into the matter of the relative amount of labor required by the two systems. Of course, wooden props can be put up somewhat quicker than a system of wires could be installed. But over a period of twenty years, the

amount of labor required to set up the props each year would be greatly in excess of that required to wire the orchard once and for all. So it is evident that it is much cheaper to support the limbs by wires rather than by props, *both* from the point of view of materials and labor.

In addition to being cheaper, the wire braces are decidedly better and more efficient. They do not interfere with cultivating, irrigating or harvesting, as do the props. The wires can be installed at almost any season of the year, when there is a slack period with little else to do. Props are frequently dislodged by windstorms and the overloaded limbs break off. This cannot happen in an orchard that is braced with wires.

THE latest development in tree wiring is the use of stilts instead of a ladder in attaching the wires to the limbs and to the central ring. This method is well shown in the accompanying illustrations. One of the photographs shows two men working on an old peach tree. The man at the left is fastening the wire to the screw eye, while the one at the right is starting a screw eye with a hammer. Both men are wearing carpenter's aprons to hold the necessary screw eyes, rings and staples. The ring may be seen suspended by wires in the center of the tree. It may be observed that the stilts are constructed with the foot supports about four feet from the ground. This proved to be just about the right height for working on the trees in this particular orchard, which happens to be that of Eugene G. Cutter, of Sacramento, California.

Those who have tried the method say that after they are once used to walking on stilts, it is much





*A close-up view, showing the construction of the stilts used in tree wiring.*



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# About Ourselves

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easier and quicker than to move a ladder from place to place in order to reach all of the limbs. One does not feel as tired at the end of the day's work as if he had been climbing up and down a ladder all day long. The work can be done entirely from the stilts and there is ordinarily no need to get down during the operation. Before beginning the work, about 200 feet of wire should be uncoiled in the opposite direction to that in which one intends to move down the row from tree to tree. When working on the stilts, the end of the two hundred foot wire is first fastened to a screw eye. The wire is then run to the center of the tree and cut off, leaving just enough extra to fasten the wire to the ring. When making the cut, care should be taken not to drop the end of the main wire, but instead, hook it over a nearby branch where it can remain until needed for attaching to the next screw eye. In this way a supply of wire is always available for continuing the work. When a tree is finished, the end of the main wire is taken to the next tree and the work progresses in the same manner.

The other illustration shows a close-up view of one of the workers on stilts. It may be seen that the stilts are home-made and that there is a block on the bottom to prevent their sinking into the loose orchard soil. The stilts are made of 1" x 3" material, well braced with wires held under tension by short pieces of wood perpendicular to the stilts. A good support is furnished for the feet, including a piece of metal bent up at the corners to keep the heels from slipping off, and a strap over the toes. An old piece of harness was utilized to make the support at the top of the stilts going around in back of the operator.

This new method of doing the wiring has proved so successful that it would seem well worth trying out wherever there are trees in need of supports.



## The Burning Question

(From page 11)

accumulation of stalks interferes with future cultural operations and hinders the movement of moisture in the soil, is true to a certain extent, but is generally much overrated. A more valid objection is, that when a hay crop for market follows corn or sunflowers, some stalks are apt to be raked up with the hay and reduce its market value. In all of these cases, if the ground is first disked and cross-disked, there will be little further trouble. The effect on the soil ought to repay the cost of disking. When a hay crop follows, the roller should be used after seeding, to leave a smooth level surface for the mower and rake. The maximum cut will then be obtained, with the minimum of foreign matter gathered up with the hay.

It may be objected that the use of the roller should always be followed by the spike-tooth or some other harrow, to re-establish a mulch. This, too, has been overdone. Rolling compacts the soil and brings up moisture more rapidly by capillary attraction. The effect on evaporation of soil moisture is opposite to that of mulch. But with small seeds that *must* be planted shallow, the roller must be used to insure a sufficient supply of moisture for germination and early growth. The drier the climate, the more necessary it is to use a roller for this purpose. After the crop is well started, the mulch may be re-established by harrowing. Sometimes it pays to do so, and in other cases there is very little effect, because the crop increasingly reduces evaporation by shading the ground and reducing the wind velocity at the ground surface. If the harrow is going to loosen up partly buried stalks so that they will be gathered up when raking the hay, the advisability of harrowing may be reconsidered. It will be

most needed on heavy soils to promote aeration—on such soils the stalks are most likely to stay put anyhow. The smooth surface produced by the roller gives a longer cut, because the cutter bar may be set lower, less wear and tear on the machinery, less dust and rubbish in the hay, and it is easier on the man who rides the mower.

WHEN the crop residues contain insect pests it is generally considered necessary to burn the material. The maize stalk-borer furnishes a case in point. The South African species is not the same as the European, which has recently invaded the United States, but its habits are similar, especially the habit of wintering over in the stalks. The statement that burning is the only remedy is, however, not correct. The stalks must be cut off at the ground surface and disposed of in some way that will destroy the borer. Making stover silage will do this—so will placing the stalks in a small feeding yard where they will be thoroughly trampled. On a smaller scale, for example, in market gardening, they can be dumped into a compost pit and thoroughly soaked with water. These methods can't always be applied, but where they can, they are better than burning. The pupae that remain in the stumps can be "spiked"—this is easier and better than stumping and burning.

Ash is very useful, for feeding to stock to supply calcium and phosphorus and for fertilizer. It should never be wasted. But we shouldn't be in too big a hurry to produce it when there's a better way of using the material.

The cheapest way to get potash is to buy it. Some people think differently, but they are wrong.





## The weak link in muck soils

**T**HE strength of a chain depends upon the strength of each link. When one link is weak, the whole chain is weak. Likewise, the fertility of your soil depends upon each of the essential plant foods—

Potash—and sometimes phosphoric acid—is the weak link in muck soil. To produce good crops on muck soil, apply plenty of potash.

In Portage County, the Wisconsin Experiment Station grew potatoes on two adjoining plots of peat soil. The

yields showed that 400 lbs. per acre of a 0-8-24 mixture resulted in an increase of 103.7 bushels of Early Ohio and 119.8 bushels of Rurals, than when no fertilizer was used. In other words—

*The Wisconsin Experiment Station found that the use of a mixture containing 24% potash produced a good paying crop of potatoes on muck soil.*

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## Growing Dewberries in the Carolinas

(From page 9)

young plants commence to grow in the spring.

The plants are not staked the first season. They are allowed to grow on the ground as they will. Stakes are usually driven in the ground next to the new plants during the second winter, but the plants are not tied up to the stakes until late March or early April. It has been found advisable not to tie them up until danger from freezing weather has passed.

Stakes from one to one and a half inches square and from six to seven feet long are used. They are driven in the ground about twelve inches deep, and two or three inches from the crown of the plant.

THE vines are tied at two or three places on the stake. The first tie is usually two to two and a half feet from the ground, and another at the top, which is about five to six feet high. If the vines are quite heavy, another tie is made half way between these. A soft cotton string is used. The vines are clipped off above the top of the stake, usually one and a half to two feet above it. This tying up and clipping is done early in the spring, usually around April 1, and immediately afterwards cultivation is started.

Just ahead of this first cultivation in the spring, 800 to 1,000 or more pounds of commercial fertilizer is applied. An 8-4-6 the same kind that was used soon after the plants were set, is considered best. If the soil is quite rich of course the nitrogen may be reduced and in this case an 8-2-5 or an 8-2-6 is commonly used. Cultivation is kept up until late May or early June.

Immediately after harvesting is completed, the strings are cut loose and the old vines and new growth cut off smoothly with the ground.

All of this material is either burned in the field or hauled out and burned. A common practice is to pile these old vines in every other middle, allow them to dry for a few days and then burn them. They are put in small piles so the burning will not interfere with the stakes or crowns.

The stakes are left where they are, and immediately after the vines are cut and burned, cultivation starts. It is customary to do what is known as bar off the rows shallow, which consists of running a turning plow furrow up close to the plants on either side and throwing the soil to the middle of the row. At this time, another application of 800 to 1,000 pounds of 8-4-6 commercial fertilizer is given, as new plants must now be produced for the following year's crop. Shallow cultivation is kept up throughout summer and into early fall. The vines are allowed to remain on the ground throughout the following winter and up to March 15 to April 1, just as they were handled the first year, and then are again tied to the stakes around April 1. This operation is repeated year after year.

THE following method is practiced by the growers who produce their own plants for setting new fields. Cover the tips of the vines that are hanging over on the ground. Cover with about as much dirt as is ordinarily used for covering corn. Throw it on the tips and pack it. Do this in early fall. Allow them to remain late in winter. Then cut off the stem of the old plant, leaving the stem to the new plant five to six inches long. Then dig just as any other plant is dug.

A rule that many growers follow to determine when the plant roots are developed enough to be dug, is



to wait until the roots show a brownish cast. If they are white in color, this indicates that they are too tender, and not yet ready for digging and transplanting. As soon as the brownish cast is taken on, however, which is usually in late February or early March, they are ready for digging.

The harvesting season usually commences from May 25 to June 10, depending on the season. Normally the picking season lasts from three to four weeks. The vines are gone over every two to three days. If the berries ripen quite rapidly then every other day is not too often, but every third day is all right if the season is not favorable for rapid ripening.

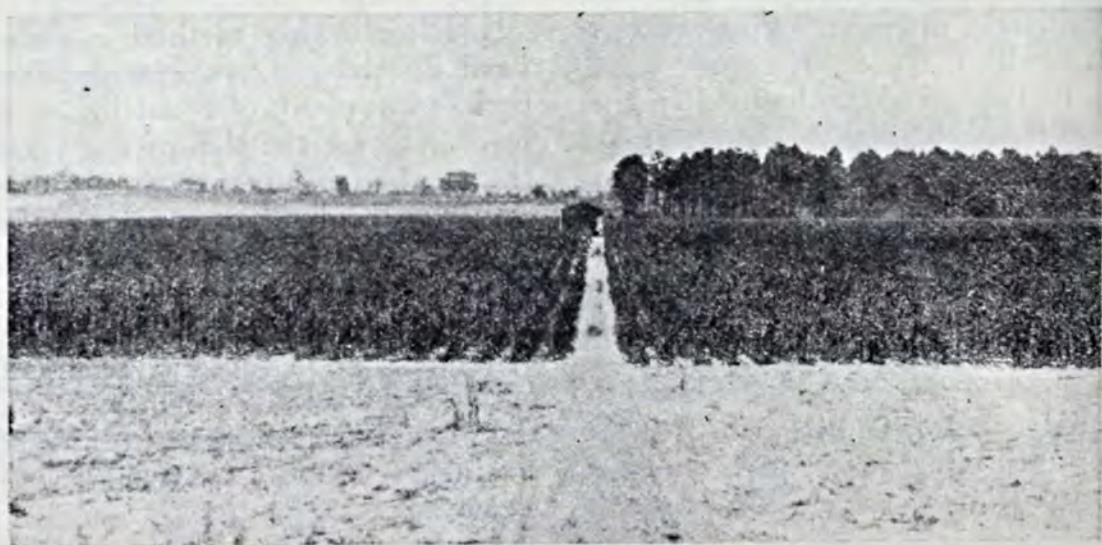
**S**HIPPING dewberries is a very treacherous proposition. They do not carry as well as strawberries. Therefore it is of the utmost importance that the picking be done most carefully and that the berries be handled and shipped with extreme care. Berries that are overripe, bruised, immature, or inferior in any respect, must be avoided if they are to be put on the Northern markets in good condition.

The ordinary tray used by strawberry pickers is used in picking dewberries. These trays hold eight

quart berry baskets. It is absolutely necessary in picking the berries that they be taken out of the sun immediately after they are picked. If left in the sun for any length of time, they turn to a brownish red and appear somewhat scorched. The pickers do not handle the trays. Men come through the fields, take up the trays immediately after they are filled, and carry them to a wagon, where they are immediately hauled to the packing shed. The berries are hauled on wagons with springs and pads in order to avoid bruising.

The berries are picked with the caps on them. They go down quicker if the caps are pulled off. Immediately after the berries are packed, they are put in the ordinary 32-quart strawberry crate, which is the one almost universally used. They are then loaded into refrigerator cars. On account of being so difficult to ship, they are always sent to market in refrigerator cars. Because of being so perishable, dewberries cannot be packed as many crates to the car as strawberries. They are only loaded two high and six wide. An average carload is around 192 crates.

The average yield is around 75 to 100 crates per acre. Some growers have produced as high as 250 crates per acre on an especially good piece



*The farm of J. Dockery at Hoffman, South Carolina, where 20 acres of dewberries are under cultivation.*



of ground, and where special attention was given the plants. Before the world war the berries sold for an average of 10c a quart on Northern markets, and the grower received a fair profit. Because of increased freight rates, and the increase in cost of everything going into the production of dewberries, including rates, labor, etc., this price will not now give the grower a profit.

**A** DISEASE known as anthracose has given the dewberry grower considerable trouble in recent years. This is a fungous disease which attacks the plant and produces small purplish spots which gradually change to a dirty white or grayish color. It spreads rapidly. It not only attacks the canes, but the leaves and fruit. Usually however, the most noticeable signs of the disease are on the canes or the fruit. When it attacks the fruit, it causes

it to turn a brownish color. Often the berry becomes dry and woody. Not only is the fruit thus lessened in value but unless the disease is checked, the vines are killed.

Usually this disease appears when the canes are from 12 to 18 inches high. A fair degree of control can be brought about by spraying with 4-4-5 Bordeaux mixture. The first application is given when the vines are 12 to 18 inches long and is repeated once every three or four weeks until frost appears. Further precaution necessary is to see that all old vines are cut off immediately after harvest and burned. Also, all dead leaves should be immediately plowed under. In addition to the above, spray in the spring with Bordeaux, just as the leaves begin to come out. About the time the leaves are well developed, give another application. Spray the third time just before the blossoms come out.

## Whatever Your Question



Be it the pronunciation of **vitamin** or **marquisette** or **soviet**, the spelling of a puzzling word—the meaning of **overhead**, **novocaine**, etc., this “**Supreme Authority**”

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## Early Days in the County Agent Work

(From page 5)

fidence of the farm people which enabled him to get his work before them in a manner that made it of great and lasting value and made permanent friends for the work.

THE early county agents not only had to do good work after they were established but they had to blaze entirely new paths into the understanding and confidence of the people through walls of total ignorance and suspicion of what a county agent was and of what he was supposed to do. At the outset much of the agent's time was devoted to the farm visits and personal service. For it was only in this way that they could win a place for themselves among their farmers. Nevertheless the early county agent soon discovered the impossibility of covering an entire county or group of counties by individual farm visits and some agents soon developed community organizations and groups with whom and through whom they carried on much effective work.

Financing county agent work was then somewhat more simple and less laborious than it is now. There were no farm bureau memberships to be kept up nor for the county agent to worry about. In many counties a number of business men, bankers, the commercial club secretary, or a group of progressive farmers would start the movement to get a county agent, either at the suggestion of the state leader of county agents, or from hearing of the work in some other county. Then a committee of business men and farmers would ask the county commissioners for an appropriation for the support of the work in co-operation with the State and Federal Government. Frequently funds would come from other sources, such as commercial clubs,

railroads, and county high schools. In a number of states some counties received money from the crops improvement committee of the Council of Grain Exchanges of Chicago and the \$1,000,000 fund offered by Julius Rosenwald.

IN Boulder County, Colorado, C. L. Hoover, a very progressive and prosperous farmer, was the leader in securing a county agent as well as in organizing an agricultural-commercial association which functioned similar to the present farm bureau. He was assisted by other farmers and the Boulder and Longmount Commercial Club. In Morgan County there were several local organizations which were federated into the Morgan County Federation of Agricultural Clubs. Each club had two representatives on the county board.

Frontier life was still in evidence in many parts of Colorado. One day J. A. Sexton, Superintendent of the Logan County High School, C. L. Hinman, State Superintendent of Farmers Institute, D. C. Bascom, Logan County Agent, and myself were chased 10 miles across the prairie by two men with a gun who claimed someone in our party had spoken discourteously to the waitress in the restaurant at Haxtun where we had eaten our supper. The man with the gun was intoxicated and, as we were somewhat doubtful as to what he might do, we left him and his companion standing in the road where they had stopped us after arguing with them a while and drove on our way. Another time Prof. Gilbert and I went down into the Paradox Valley of Southwest Colorado to hold a series of meetings. When we arrived at the railroad station on the narrow gauge railroad to take the stage coach for a 75 mile drive in-



and, the man who was to meet us was in jail for killing a man the previous day. Several times on the trip the driver would point out spots where someone had been killed. We breathed sighs of relief when the two weeks' trip was over and we were once more back on the train bound for home. The stage-road up from the river to the plateau valley was so narrow that when two vehicles met, it was necessary for the passengers to dismount, and to back one stage or wagon out on the edge of the cliff, in order to allow the other to pass by on the inner side.

**W**• H. LAUCK and D. C. Bascom were the first two agents in Colorado, L. M. Windsor the third, Stanley D. Smith the fourth, A. C. Cooley who succeeded Windsor the fifth, William Harrison the sixth. H. H. Simpson was the seventh agent in Colorado, in place of the third as stated by Tedmon.

Windsor had the entire San Luis Valley, a vast mountain empire of 7,000 to 8,000 feet elevation surrounded by lofty mountains on all sides. It comprised five counties Conejos, Costilla, Rio Grande, Saguache and Alamosa. He and his successor, A. C. Cooley, who was later Extension Director in New Mexico and I spent many days

riding over the valley through the sand and alkali dust visiting widely scattered and isolated farms to establish and visit demonstrations and to conduct meetings and tours.

The agents in the San Luis Valley held meetings in the southern part of the Valley among the Mexicans where they had to talk through an interpreter.

One day Windsor and I went up into the mountains around the valley to see Piper in charge of a biological survey party about rodent poison. To reach the camp we descended a steep hill covered with loose rocks and gravel. When we tried to go back the E. M. F. Roadster would not pull the hill on account of the loose soil, and about the time we had given up in despair to wait for Piper's boys to return from their day's work and give us a lift, a sheep herder rode up. He uncoiled his lariat and had one end fastened to the car and his wiry mustang dug his feet into the hill and gave enough pull to take the car up the hill in quick order.

**T**HE agricultural tour was a popular and profitable enterprise with many agents. From a dozen to seventy-five cars would go along to study dairying, silos, alfalfa, summer tillage, and all manner of



County Agent Smith in foreground and D. W. Frear demonstrating the construction of a pit silo.



farm practices. Smith and Lauck held a good many pit silo construction demonstrations. These consisted of digging a circular trench about a foot deep and six inches thick just the diameter of the silo. This trench would be filled with concrete. When the concrete was set the inside would be dug out to the proper depth. As the digging progressed downward the sides of the silo would be cemented directly on the silo so when the bottom of the soil was reached the cement wall was finished.

One night after a late meeting Lauck and I were invited to stay at a farmer's house out about 30 miles east of Colorado Springs. As is my custom I placed my watch under my pillow so as to be able to see the time in the morning. I went away the next morning forgetting my watch. When the farmer, who was an ex-preacher, discovered my watch under the pillow he was quite angry. He said it had been placed there because I was afraid it would be stolen and by doing so had insulted his family.

One of Lauck's cooperators and demonstrators was an ex-Chicago League baseball player by the name of Childs who was trying to wrestle a living out of a dry farm in Eastern El Paso County, Colorado.

THE definitely written project as the basis of county agent work was the dream of many of us early in the work, and in 1914-15 the major lines of work in Colorado Counties were placed under written projects which were more general and more elastic than the formal project which is in use in Missouri today.

Boys' and girls' club work developed rapidly in many of the counties and soon became one of the major lines of work to be carried on. Bascom printed a complete boys' and girls' club circular about 1913 or 1914 which was possibly the first publication of its kind to be issued in the west.

In the sparsely settled counties of the west it was not unusual for a county agent to carry food supplies and bedding in his car in anticipation of being stalled at night out on the prairie or desert, miles from town or even a house.

In the early days it was customary for everyone, including county agents, state leaders and specialists and directors, if any, to attend the annual conference in Washington. Here is where some of us met for the first time W. J. Spillman to whom must go the credit for starting the work in the northern and western states; C. B. Smith, at present in charge of the work for the entire country; and O. H. Benson, the rapid fire boys' and girls' club leader. To D. W. Workings belongs the credit for establishing the work in a number of western states, in the pre-Smith-Lever days. Others that I remember at earliest conference are: Crocheron of California, Hibshman of Pennsylvania, Dodge of the New England states, Wilson of Montana, Evans of Utah, Bowman of Wyoming, Burritt of New York, Coverdale of Iowa, Wilson and Baker of Minnesota, Hatch and Otis of Illinois, Cook of Ohio, Mumford of Michigan, Cooper of North Dakota, Johnson of Kansas, Pugsley of Nebraska, Hunter of Washington, Gilbertson of New Jersey, as well as many others.

Of the Department of Agriculture there were also Clinton, Brodie, Thompson, Lloyd, Goodrich, Dixon, Goddard and many others who always participated in our conferences, in addition to the lone woman worker in Home Economics, Miss Bailey, I believe. Last, but not least, there was always on the job, Spillman's efficient secretary, Miss Nellie V. Price, whom to know was to like.

At the first large conference in Washington a quartette, composed of Bascom, Lauck and Windsor of Colorado and Bowman of Wyoming, entertained the crowd with several

(turn to page 48)



# Fear

(From page 4)

The enemy of worry is knowledge and knowledge is the result of work. So we see that work brings knowledge and banishes worry.

Everything in Nature has its natural enemy—the mouse, the cat; the chicken, the hawk; the rabbit, the dog.

And, the fear-thought's natural enemy is the joy-thought. To stamp out fear, be joyous, even if you think you have nothing to be joyful about. It can be done. It *has* been done.

**T**HERE is an intelligent fear which cannot be banished—an instinct of self-preservation, the aversion to death, which results in a natural clinging to life. We refuse to follow Blondin across Niagara on the tight-rope because we fear our ability to balance ourselves as he does—and we know a slip means Eternity.

This is normal fear, and is good. It is sub-conscious. We do not have to watch it.

But the daily fears which catch us by the heels and threaten to throw us are not normal nor good. They paralyze the circulation.

Doctors know that fear sometimes stops the heart completely. We say the man was frightened to death. But in a lesser degree each of our fears impairs the circulation, although not noticeably—just enough to prevent true digestion and cause gastric disturbance.

And a sour stomach causes *more* fear—a vicious circle, like the hoop-snake with its tail in its mouth, rolling on to demnition.

The imminence of doom regulates the degree of fear. Tell a man he will lose his job five years from next Wednesday and he will laugh and say, What of it? But tell him

his pink ticket comes this Saturday and his fear mounts, visions of terror frustrate him and pictures of the consequences flow through his mind as the acts of his life pass before the drowning man's eyes.

The future is only calculated through the imagination.

And because so few have imagination the future holds no terrors. It is Today that counts. Few folks save money because the rewards come in the dim future, and What, say the imagine-less, Is the future? Not one man in fifty buys insurance or makes a will, because these things are not of Today but of Tomorrow.

Do you fear Tomorrow?

Out with it! *Abas! Oscar spiel!*

What have you to fear? What have I to fear? What has anyone to fear?

Analyze it like this: What can happen to me; what is the blackest thing that can happen? I may die? So be it. It takes more courage to *live* than to die. I do not fear to die. Others have done it successfully—and are perhaps better off for the experiment.

I may be sick? Why *fear* sickness? The fear of sickness brings it on. That some fellow may hit you in the eye? Well, for goodness sake, Terence, a big, two-fisted fellow like you! What's a little pain? A thousand years from now no one will remember that your eye got in the way of a brace of knuckles. Forget it!

I may lose something? What? A job, a client, a customer, a dollar, a friend, an opportunity? There are just as good fish in the sea as ever were caught. Some folks say the best fish haven't been caught *yet*.

Analyze your fear. Set it up on a little pedestal in front of you. Look it over. Then break out into



a good, hearty laugh. Laugh hard, so that you shake all over. Then draw in your brows, set your jaw, grit your teeth, clench your fist, draw back your arm and get ready to knock that little plaster-of-Paris Fear-figure to smithereens.

You'll get a surprise.

When you swing at it, you'll hit only empty space. It won't be there to hit. It will have *vanished!*



## *Early Days*

(From page 46)

songs, one of which was entitled, "Alfalfa Hay and Sugar Beets."

Well do I remember how C. B. Smith would sum up in a few short, terse paragraphs, each headed "We Believe," the work of the entire conference so completely that they were unanimously accepted as the consensus of opinion of the entire group as expressed in the daily discussions.

Many who have seen the entire growth of the county agent work have had a pretty good idea of what is supposed to be done, but just what steps the county should take to accomplish it has been the big problem. Growing as rapidly as it has, the county agent work has found it impossible to progress in methods as fast as numbers have increased. Rapid turn-over of agents and addition of new agents has made it necessary to devote so much time to establishing the work that there has been all too little time left for working out better methods of carrying the work on.

Yes, Tedmon, the old days are gone. It was harder work then perhaps, but it was a lot more fun before it got to be such a cut and dried formal proposition that an agent or a specialist knows a year ahead of time just where he is supposed to be and what he is supposed to do and then is expected to deliver 100 per cent, and spend hours and days in reporting on what he has done.



A "Livestock Investigation or Conference" on the farm of Wm. Robbins, Greensburg, Ind. Wm. H. Robbins, Jr. and his dog "Beauty" are on the pony.





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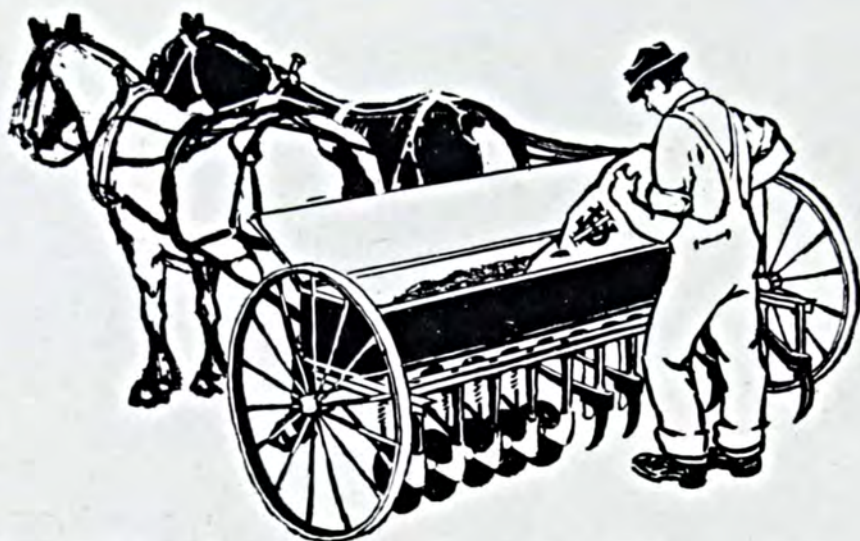
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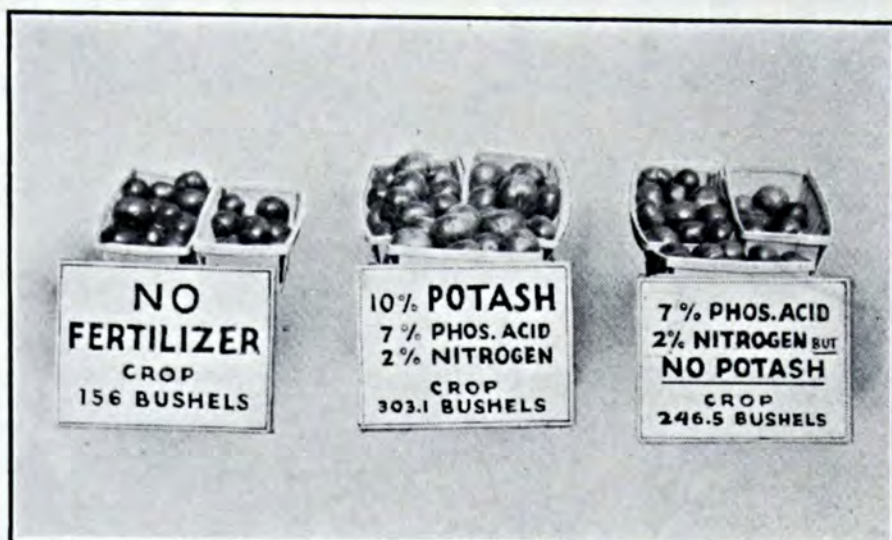
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# Better Crops

## The Pocket Book of Agriculture

VOLUME IV

NUMBER FIVE

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*"Don't be scared"*





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No. 5

# How Many Leaves on an Apricot Tree?

By Lloyd Austin

Division of Pomology, University of California

*(An ingenious and unusual experiment which gave interesting results.)*

THE question "How many leaves on an apricot tree," reminds us of our childhood days when we used to wonder just how many leaves a tree did have, along with the question of "how many stars in the sky." Both queries went unanswered, as we did not care to attempt to actually count them. At first thought the problem as to the number of leaves on a tree might not seem to merit serious consideration. Yet, if we wish to really understand the responses of fruit trees to the various cultural operations, such as pruning, fertilizing and cultivation, we need to know all we can about the leaves. And why? Because the leaves are the

tree's food factories. The larger the leaf area of a tree, the more plant food it can manufacture for use in the growth of the fruit and of the new shoots and spurs.

It will be interesting to see just how the leaves function in the normal activities of the tree. We know that trees, like other plants, have two sources from which they obtain the elements which they need. From the soil the trees take up, through their roots, water and mineral elements dissolved therein. Among the most essential of these are potassium, phosphorous and nitrogen, which are the ones most commonly supplied in the fertilizers that we use to correct soil deficien-



cies. These crude food materials are transported to the leaves by the conducting vessels of the trunk and branches. The leaves absorb carbon dioxide from the atmosphere. In the presence of sunlight and of the chlorophyl in the leaves, the carbon dioxide combines with the water from the roots to form sugar, which is the basic substance from which all plant foods are derived. The mineral elements are utilized in the formation of proteins and other complex products. Thus we see that the elaborated plant foods required by the tree are made in the leaves, which are, therefore, essential to its growth and fruiting.

We can now appreciate the fact that the efficiency of an orchard tree may well depend upon the number of leaves which it has, or more accurately speaking, upon its leaf surface. This point is of special interest in connection with the pruning problem.

In years past it was the custom in California to give bearing fruit trees a severe annual pruning, consisting of a thinning out and heavy cutting back of the new growth—in other words, short pruning. This was done almost without regard to the kind or condition of the tree. Today progressive orchardists are coming to realize that maximum returns can only be secured by adapting the pruning to the needs of the trees. Some trees need heavy pruning; others rebel against such treatment, and show their dislike for it by refusing to fruit as they should.

**I**T is often difficult to understand why different trees should respond so differently to the same operation. The writer thought that a study of the relative number and distribution of leaves on trees pruned in different ways might throw considerable light on the subject. Accordingly it was planned to determine the leaf area of four five-year-old apricot trees at several

different periods during the growing season. The trees used were in the experimental pruning blocks at the University Farm. Two of the trees had been short pruned since the beginning, while the other two had been pruned by the method commonly designated as long pruning, and consisting mainly in a thinning out, with an occasional cutting back to laterals.

In order to determine the leaf area of a tree it is first necessary to actually count the number of leaves on the tree. This might seem like an almost hopeless task, but it was facilitated by the use of a little device which recorded the counts as one went along.

The average size of the leaves must also be known to accurately obtain the total leaf area of a tree. A hundred typical leaves were secured from each tree and the area of each was determined by the use of the very ingenious instrument called a planimeter. By simply tracing around the leaf with the point of this instrument, one can read off the *area* of the leaf in square inches (not the circumference as one might suppose). The total leaf area of a tree would naturally be the average area per leaf multiplied by the number of leaves on the tree.

The leaves on all four trees were counted at three different times during the summer. The first count was made during the first week in April, when the new shoots were only a few inches long. The leaves were counted again early in May, and finally during the first week in October, supposedly at the time of maximum leaf area.

**N**OW as to the answer to our original question, "How many leaves on an apricot tree?" We find that the answer depends not only upon the pruning treatment which the tree received, but also upon the time when the count was made. The number ranges from about  
(turn to page 47)



# Building a "For Service" Organization

By Wayne Bishop

*Starting a local Farm Bureau is no easy job, but this one went over big because it was started right.*

LATE in the year of 1923 ten progressive farmers of Columbia County, Washington, received an invitation to dine with the secretary of the Walla Walla County Farm Bureau at the Dayton Hotel. So along about noon they put on a clean shirt and a pair of overalls, and climbing into their Fords hit out for the feed.

They enjoyed themselves immensely and not only did they receive an excellent dinner, but also a bright alluring vision of a service they might render their fellow citizens and themselves. Their host spoke interestingly and convincingly on the subject of farmer's organizations and their benefits. He told them how to organize their farmer friends, when to do it, and where to get any further help they might need. In fact, he went a step further and had these men organize themselves into the Columbia County Farm Bureau.

From that time on those men talked Organization-Farm Bureau-Cooperation to all their farmer associates and soon additions were made to this little group. A few weeks after the dinner a county

meeting was held where officers were elected for 1924, and a generous program was adopted part of which was a goal of 300 members during the year. So with this little group as a motivating power the Farm Bureau rolled onward and onward gathering, contrary to the proverbial stone, more and more members as it rolled.

DURING those first active months, in the winter of 1924, most of the emphasis was put on the social phase of organization. The County was divided into seven divisions, each usually centering around a school district, making a rural school house available for the farmer's meeting place.

Meetings were held each week where the people were entertained by programs and discussions of interesting topics. Each division had a special feature such as a negro minstrel or humorous play, and the participants made the rounds of the other six divisions and shared it with them. Not only were the social activities of the

*(turn to page 37)*



¶The contest announced in our May issue produced a number of excellent manuscripts. If space permitted I should like to publish every one, for I found every one worth reading. After careful deliberation Mr. Pillard and myself selected Mr. Blackwell's answer as the best. We are also publishing Mr. Hawkin's and Mr. Young's contributions as having special merit and would like to mention the answers submitted by Paul Tabor, Stewart Leaming, F. Joe Robbins and J. William Firor for their outstanding excellence.

Jeff

# Does It Pay to Raise Quality Crops?

PRIZE-WINNING ARTICLE

By C. P. Blackwell

Soil Improvement Committee, Atlanta, Ga.

THE writer believes that it generally pays to raise quality crops but sometimes it does not pay. For this reason we believe a farmer needs to use a bit of judgment relative to how much money he spends to produce a quality crop. How well it will pay to raise a quality crop depends on how much the consumer is willing to pay for a quality product. It also depends on marketing facilities and machinery for classifying and shipping a product to the consumer who is willing to pay a premium for quality. There are places in the United States where marketing facilities are poor and where wheat is wheat and worth \$1.40 per bushel; cotton is cotton and worth 20c per pound; eggs are eggs and worth 40c per

dozen. In these places quantity is the only thing that brings in any money, and it will not pay a farmer to sacrifice quantity for quality on such a market. There are other places where a premium is cheerfully paid for a product of superior quality.

As a general rule, the trouble in securing a premium for quality is in the marketing end and not inherent in the consumer. The consumer is a factor, however. Naturally people prefer fresh eggs to stale ones, but there are some who admit their preference for the fresh eggs but refuse to pay the price either because they have a dislike for parting with their money or because they have not the money from which to part. Most people also prefer to eat



peaches that are known to have no worms, but occasionally we find a fellow who is willing to take a chance rather than pay a premium.

I believe that all cotton goods manufacturers admit that a well bred cotton of uniform staple is better in every way and gives less waste than ordinary irregular cotton, but many of them will not pay a premium for this quality. The same may be said about length of staple. Generally, however, a farmer may secure a premium for staple cotton if he has proper marketing facilities available.

THE best example we have ever known of quality paying was the case of a certain well known South Carolina farmer who raised quality cotton. We have not the permission of this man to use his name but his name is well known to agriculturists throughout the country. We personally believe the statement which he made to us to be true because we know his farm and saw his crop. In 1919 he had one field of 60 acres in long staple high quality cotton. We forget his exact figures, but remember the total distinctly. He produced nearly two bales of this high quality cotton per acre and sold it for slightly more than a dollar per pound. He said he actually sold the cotton from this 60-acre patch for \$60,000. He had a good crop on his general field the same year but this was his best land and produced his best cotton. The same yield of ordinary cotton have brought only about \$400 per acre, or \$24,000. So a quality crop

on this 60-acre tract of land made this farmer a profit of something like \$36,000 in one year. This is the most striking case the writer has ever known of the value of a quality crop.

There are many other examples in the South where quality pays. Fortunately most of our southern crops are crops that do pay a premium for quality. This is especially true of our tobacco, peaches, apples, tomatoes and many other cash crops.

It is not uncommon to see a pile of tobacco sell for 60c or 75c per pound and another pile the same day and grown on an adjoining field sell for 10c or 15c. Quality tobacco nearly always pays wonderfully well. Quality cotton generally pays well. Quality fruit and truck crops nearly always pay well.

South Carolina Experiment Station Bulletin 219, gives data showing that a variety of long staple cotton, Deltatype, was worth \$29.08 per acre more than ordinary short staple cotton as an average of two tests each running four years. These were years, too, in which high premiums were not paid. That is \$29.00 per acre net profit for the production of a quality crop of cotton.

It costs more to grow quality crops. Quality crops must be well bred, well fertilized, well cultivated and carefully graded. This makes them cost more, but there is little doubt but that cash crops of quality pay better, if we have anything like proper marketing facilities through which to place them in the hands of the consumer.

---

## Fulghum Oats Return \$15,000 Extra Profits

By E. W. Hawkins

County Agent, Clark County, Ohio

FROM a meager start with 30 acres of Fulghum oats in 1922, Clark County, Ohio, farmers received

\$18,000 extra oats money in 1924 from 3,000 acres of this improved  
(turn to page 33)



# MAKING PEAT

By A. A. Burger

**T**HE land in the upper Mississippi valley is overlaid with a soil that many have thought was inexhaustible. It is without question, one of the richest areas of land in the world, and yet today it is all too evident that crop production is not what it should be; this is especially true of certain farms where no attention has been given to "keeping up the land." Many thousands of analyses made of this soil indicate that there is in most cases plenty of nitrogen and potash, but that in many places phosphorous is the limiting element. We have found out that lime on most of our soils, and that manure and plant residues, on all soils, are basic fertility requirements.

But there are some farms in this great region, and this is especially true of certain sections in Iowa, Minnesota, Wisconsin and the northern part of Illinois, where potash is the limiting factor. This

is not the general condition, but there are nevertheless areas of limited size throughout this section where there is a deficiency of potash, and the result is that the decreased yields of these sections have the effect of decreasing the general average of the yield of the entire crop.

These potash-deficient soils are generally to be found on what are known as peat deposits. This soil has been formed by the decay of plants for organic matter, and it is usually to be found in, or especially around the edges of low, flat or at one time, low boggy places or ponds. Sometimes they are found after all traces of the wet, swampy nature of the land has disappeared—strictly speaking in such places that have been well tiled.

**I**N 1900, Nathan Northey came to Waterloo, Iowa, and shortly



On the right potash was used; on the left, where none was applied, there was not even the sign of a weed to show that the land was productive.



# SOILS PRODUCTIVE

*Mr. Burger is a former county agent and speaks here from long experience.*

after purchased several farms in that vicinity. On some of these he found some low, flat land. This in time was drained. This land appeared to be very fertile, and being new land he was very much surprised to find that there were certain crops that did not do well. Naturally, the first crop was corn; but to his surprise corn did not do well; in fact, there were places where the corn refused to grow at all, and where the ground at husking time was as bare as a floor—not even the evidence of a weed. A little farther out on the edges of these patches, where some of the heavier clay soil had washed in there was a little corn. Perhaps it grew from six to eighteen inches in height, but in a short time it took on a rather sickly, yellow, sometimes a slightly reddish color, and it either died in July or August or made no further growth. Mr. Northey was not the type of man

that could be easily bluffed out. He had rather inquisitive turn of mind, and he determined to find out what was the matter. If possible, he intended to make these spots productive.

From his knowledge of land, he knew that this light, soft, fluffy black soil, which never baked, had all of the characteristics of peat; and he knew that peat soil was deficient in potash. So he decided to apply some potash; first, to find out whether it would improve the crops; and, second, whether its use would be profitable and practical. He wasn't farming for his health alone, but for profit. When the neighbors found out what he was doing they made fun of him. They thought that he was an ultra scientific man, a town man without practical judgment. They laughed at what they thought was book farming. "Your land is no good," they said,

*(turn to page 45)*



*A 92-bushel yield of Iowa oats where potash had been applied three years before.*



# Selling an AGRICULTURAL IDEA by MAIL

By P. H. Stewart

Nebraska College of Agriculture

*Have you ever tried enlisting the postman in putting over projects? Here is one successful instance that could be adapted to a number of other projects.*

**D**ID you ever clip off a corner of an advertisement for a set of books, the ownership and reading of which would, so the ad said,—put you in the \$10,000. salary class? Or, if you are one of those rare fellows to whom finance has but a remote attraction, perhaps you have returned a slip which promised to tell you how you might, by spending only eight minutes a day, learn to discuss deeply on any subject which might be broached by the village school ma'am, the parson, the druggist, the president of the Farm Bureau, or anyone else.

If you ever answered one of these advertisements, and you may as well admit that once you did,—do you remember the inflow of letters that followed? Perhaps letter No. 1 stated that they were glad you were

interested; letter No. 2 followed and further developed the idea that you needed these books, while letter No. 3 and all the rest that followed attempted to make you feel that your future was blasted, your advancement ruined, and all would be lost if you did not buy the books. If you didn't finally buy, probably you were the exception, because evidently a goodly number do buy or this form of follow-up selling would not be continued by commercial concerns.

In some of our Nebraska Counties for the past two years we have made an effort to use this same sort of a selling idea in our Agricultural Extension work. Not that we wanted to make ourselves as obnoxious as a book agent or to become a pest to the farmers, but



we wanted to put across an idea which we felt was a sound one, the general adoption of which would be of state-wide benefit.

**F**IRST,—let us get the setting. Nebraska's farms, just as is true of those of similar states, are gradually losing their organic matter and nitrogen. Using virgin sod land as a basis it can be said that the average eastern Nebraska farm soil, especially on rolling land, has lost from 20 to 30 per cent of its organic matter, while many eroded farms and fields have lost as high as 50 to 60 per cent. It is unnecessary here to give the reasons why this loss is a very serious one from the standpoint of soil fertility, erosion, and the soil tilth and management. Legume crops and farm manure are, of course, the mainstays for maintaining organic matter.

Although Nebraska ranks right at the top of the list of states in alfalfa acreage and is among the leading sweet clover states, with also a very appreciable amount of red clover, the per cent of cultivated land in all legume crops is not as high as it might profitably be. Instead of having about seven per cent of the cultivated land in legumes, as is now the case, those who have studied this proposition figure that this percentage might well be doubled. It was, then, to sell the idea that our Nebraska soil problem is largely one of organic matter maintenance and that more legumes should be grown, that a series of four letters were composed, for mailing to farmers in certain counties.

The letters were so written by the subject matter specialists that they would cover a number of counties having similar problems. They were printed on the regular Farm Bureau stationery of the county in which they were to be used and were signed by the local County Agent. The plan was to start with letter No. 1, followed at

intervals of a week or two by letters No. 2, 3 and 4. Letter number four enclosed a return addressed card and was also arranged so that the recipient might check certain bulletins on soil erosion, alfalfa or sweet clover, or on which he might ask for a call for assistance on terracing, building brush or soil-saving dams, or in working out the best method of seeding legumes.

**Y**OU may be skeptical as to the number of cards that were returned to the County Agents. Take Custer, a large central Nebraska county, having a rolling, fertile loose soil, but one on which soil erosion is a problem. In this county M. L. Gould, the County Agent, had more than 100 cards returned asking for bulletins and definite help on certain problems. "I never had a project" said Jerry Gould, in reporting on this *More Legume Crops—Erosion Campaign*, "that created such widespread interest and from which I got so many good responses and contacts from all parts of the county. Fortunately for us this year these letters were sent out in late winter and early spring when roads were practically impassable and it was impossible for us to hold meetings or do any organization work. The mail man did the work for me in selling *More Legumes* by mail."

A feature of these letters was that each one had at the top a picture which was the chief subject of the body of the letter. A farmer opening the letter saw the photograph and, once his attention was attracted, he stopped to see what it was all about. It is believed that this was an important and essential part of the letter campaign.

The following letter written in an attempt to create interest, in short pithy statements, was number one and was used to open the subject. Letter number two and three followed at intervals.

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# The TIE that Destroys

By Albert A. Hansen

Purdue University Agricultural Experiment Station

*CA pest that threatens  
to be severe this year  
and how to deal with it.*

**A**NNO DOMINI, Nineteen Hundred and Twenty-five promises to be a banner year for dodder. This judgment comes from the fact that of 531 samples of clover seed gathered at random throughout Indiana during 1924 and representing shipments from most of the clover seed-producing areas of the United States, 116 were found to be contaminated with dodder, while of 111 samples of alfalfa seed analyzed 33 were infested with the seeds of the pest.

Furthermore, more complaints were received against dodder during 1924 than at any time during the previous ten years, and we learn from B. F. Sheehan, former State Seed Commissioner of Idaho, that the encroachment of the pest is threatening the small seed industry of Idaho where it is found in virtually every seed-producing section of the state. And Idaho is one of the principal sources of clover and alfalfa seed in America.

This may not be as bad as it sounds, however, because Idaho is now engaged in a campaign against the pest that is materially reducing the dodder content of Idaho-grown legume seed. One of the methods that has been successfully used in the war against the parasite, is the use of arsenite of soda solution applied with a knapsack sprayer as soon as the dodder is noticed in the field.

This method reminds me of the story of the tramp and his wonder-

ful soupstone. With the claim that his soupstone was capable of making excellent soup, he gained admittance to many a household. He placed the stone in boiling water, requested salt, pepper, vegetables and other ingredients of good soup which were added to the stone and the result was a very tasty soup, much to the astonishment of the curious housewife and the satisfying of the tramp's appetite. The arsenical spray is merely a soupstone, because similar results can be as easily obtained by cutting and burning the dodder patches. But the Idaho farmers supposed that the spray would be an easy method of eradication, purchased comparatively expensive knapsack outfits and sprayed diligently. When they discovered that they were well repaid for the time spent in ridding their fields of dodder, the spraying method became an established practice. The spraying outfit proved to be a good soupstone that is largely responsible for the improvement of Idaho clover and alfalfa seed.

We are also pleased to note that a dodder-destruction campaign has been launched in the alfalfa seed-production areas of Utah, where the dodder problem is looming large and serious. In Carbon County the problem was tackled by careful and systematic hand weeding of the dodder-infested alfalfa plants. One seed grower who treated half of a ten-acre field in this fashion, received

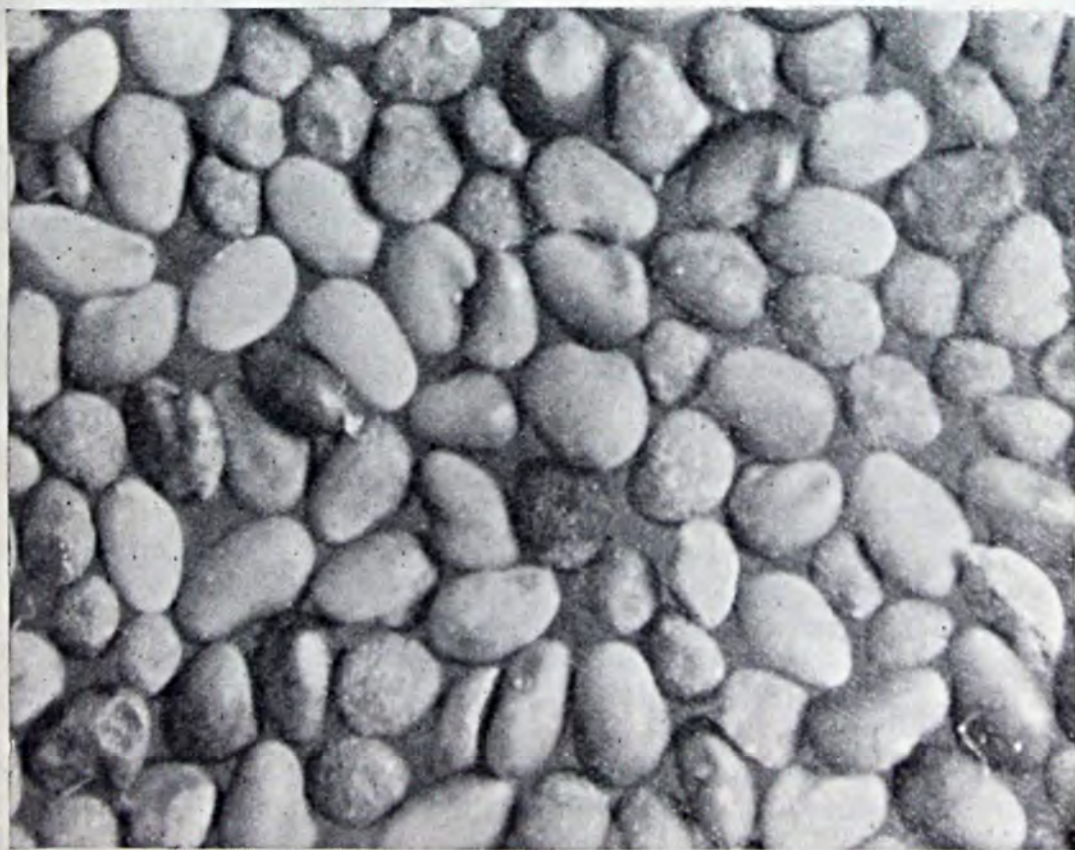


four cents per pound more for the seed from the cleaned area, which paid him handsomely for the extra work.

THE biggest factor in dealing with the dodder problem is the use of clean seed, but this is sometimes a difficult proposition because there is no practical method in use in America by which dodder can be separated from clover and alfalfa seed. Recently, however, a new separation method has been invented in England in which a magnetic powder that adheres to the rougher-coated dodder seed is the medium by which the noxious seeds are separated magnetically. We understand that an English company is now undertaking the manufacturing of the device and perhaps this will eventually solve the vexing problem.

For the present, however, when dodder has already been introduced on the farm, main reliance must be

placed on keeping a sharp lookout for the appearance of the tell-tale yellowish patches that usually show up in clover and alfalfa during June and July. As soon as noted, the patches should be cut close to the ground, covered with straw or saturated with oil and burned without loss of time. This will prevent the formation of seed, which is an important consideration since once the soil is infested with dodder seeds, they may remain alive for an indefinite number of years, awaiting a favorable opportunity to attack future crops of legumes. Extension workers will do well to put a notice in the local paper this year advising their farmers to be on the lookout for the first appearance of the pest and suggesting the cutting-burning stunt. Of course, since dodder does not ordinarily attack corn, cereals, soybeans, cowpeas or velvet beans, these crops can be used on dodder-infested land, but they may not be convenient as a  
(turn to page 35)



The common method by which dodder is introduced on the farm is by means of impure clover and alfalfa seed. Here is a bad mixture of clover and dodder.



# BRAND Goes to New N. F. A.

By Ted Butlar

BETTER CROPS' Washington Correspondent

**I**N selecting for their Executive Secretary and Treasurer Mr. Charles J. Brand, the New National Fertilizer Association is to be congratulated on securing the services of one of the ablest men of the U. S. Department of Agriculture.

During the past two years, Mr. Brand has been Consulting Specialist in Marketing to the Secretary of Agriculture and chief of the Economic Section of the Packers and Stockyards Administration. This title, however, gives but a vague indication of the varied experience which Mr. Brand brings to his new position. Born and raised on a farm in Lac-qui-Parle county, Minnesota, he taught in the grade and country schools of South Dakota and Minnesota while preparing for college. After graduating from the University of Minnesota he was appointed Assistant Curator of Economic Botany at the Field Museum of Natural History in Chicago.

This was followed in 1903 by an appointment in the seed laboratory of the Bureau of Plant Industry, U. S. Department of Agriculture. Here he made rapid advancement. For six years he was in charge of clover and alfalfa investigations during which time he introduced many strains from foreign countries; discovered the value of the Peruvian alfalfa that yields one or two more cuttings per year than our ordinary kind in the hot, irrigated valleys of the Southwest and also proved the

Grimm alfalfa of Minnesota, the most cold resistant kind in the world.

For the next three years he was in charge of paper plant investigations making pulp, paper, fiber board, etc., from corn, broom corn and cotton stalks, flax and rice straw, cotton hull fiber and many other waste materials. Following this he was placed in charge of cotton handling and marketing investigations and assisted in organizing among the first cotton cooperative enterprises and in establishing the Arizona-California long staple cotton industry.

**A**FTER a fruitful year of this work he was made organizer and chief of the U. S. Bureau of Markets. This bureau began in 1913 with about six men and an appropriation of \$50,000 and in the six years of Mr. Brand's service grew to 2,000 men and \$14,500,000 for regular and emergency work. In this position Mr. Brand started and supervised the work on market surveys, methods, costs, grades, city marketing and distribution, the Federal Telegraphic market news services on fruits, vegetables, livestock, meats and other products, operating over 15,000 miles of leased wires.

Many laws such as U. S. cotton futures, grain standards, warehouse, standard container, food products inspection and others were drafted under his supervision.

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*Better Crops'*  
ART GALLERY  
*of the month*



Charles J. Brand, the recently appointed executive secretary  
and treasurer of the New National Fertilizer Association.





Training community leaders in Indiana camps under the auspices of the Agricultural Extension Department of Purdue University. Two successful camps were held last May which 214 persons from 54 centers attended. This picture shows one of our best known contributors, Albert A. Hansen, helping one of the girls to get her first experience as a song leader.



The Greenfield, Indiana, team were winners in the livestock judging contest at the Boys and Girls Club Round-up held for Indiana 4-H club members at Purdue University. They defeated the 48 other teams participating and secured permanent possession of the Kingan trophy because of their consistent work. This team was made up of George B. Simmons, Lester Duncan and Keith Elsbury, reading from the left. W. C. Kolb, teacher of vocational agriculture at Greenfield, and the county agent, M.E. Cromer, share the honors in coaching these teams



# MIDDLEMEN

*and*

# MILLENNIUMS

By Lawrence Flournoy

*(An amusing story that has  
a point worth meditating on.)*

LET us put the middlemen in jail and make a better world of this old earth. There are lots of them and it may take a few additional jails but it will be worth it. We can then put them at productive labor. They can make nice little baskets for the farmer to use in carrying his produce to market. They can make good strong jute sacks into which the farmer can put his potatoes. They can build rock bound roads over which the farmer can drive to market, stopping along the way to jeer at the prisoners and to rattle the coins which he will find in his pockets now that the robbers are out of the way.

What is the provocation for banishing the middleman?

This noon I stopped at the push cart of a street vendor and bought two apples which cost me five cents each. The farmer not over ten miles from here cannot sell his apples for over fifty cents a bushel. The shirt which I am wearing cost me two dollars and a half and the farmer who grew the cotton received but twenty-five cents a pound for the cotton and there cannot be over a pound of it in the shirt. The bread

which I had at breakfast this morning was purchased at nine cents for a pound loaf and the farmer receives less than three cents a pound for his wheat.

My dollar, the experts tell me, causes a scramble among those engaged in the marketing of agricultural products similar to the scramble caused by throwing pennies into a crowd of small boys. When I look at some of the charts which the economic experts have compiled, it seems that the farmer must be small and timid and that some husky brute of middleman with a bullying attitude and a long arm reaches out and grasps most of my dollar before the farmer is able to get his hands upon it.

HERE are some of the facts why I want to get rid of the middleman:

Bread which is sold in New York City returns to the farmer less than 16 per cent of the wheat the consumer pays. Why, even the retailer who has nothing to do but wrap up the package and take in the money gets that much and sometimes the



bread comes to him already wrapped.

Rolled oats treat the farmer a little better according to an official of the Smithsonian Institute who evidently got tired of mounting dinosaurs and started to see what he could do with some agricultural price figures. Less than eighteen per cent of the money which you and I pay for rolled oats finds its way into the jeans of the farmer and of course he has his creditors sitting on the front porch waiting for that eighteen cents to reach him.

And so the story goes. The Southern California orange grower receives less than 40 cents of the consumer's dollar. The cotton grower obtains 15 per cent of the money that my wife spends for gingham. Onion growers usually get about 30 per cent, but I haven't much sympathy with them for I don't like onions and restaurants will get hold of them and slip them into my salad before it reaches me.

**M**USING along this line one evening, I sat before an open hearth. Was it the warmth of the fire which stimulated my imagination, for the hearth became a stage and the characters of the play were the farmers, the middlemen and the consumers. The scenes were the farm, the markets and the homes of the consumers.

A law had been passed which had sent all the middlemen to jail and the farmers were joyous. Early the following day, the farmers arose and went into the fields and dug their potatoes and harvested their truck. A song was on the lips of each farmer for with the middlemen gone it was assured that the dollar of the consumer would become the dollar of the farmer for each farmer was to carry his own produce directly to the consumer.

Soon the roads to the city were crowded with the wagons and trucks of the farmers. Polite policemen clad in pocketless uniforms of spot-

less white directed the orderly moving of the huge procession.

Trucks of the farmers lined the streets of the city and the consumers came and bought. Men in the offices left their desks and went to the streets and purchased the family's supply. Housewives left their dishes and let the floor go unscrubbed while they went to the trucks to get the food which before had been delivered to their doors. Mothers took their children in their arms while they went out and purchased the milk so necessary to the health of their babies.

It was a busy day for the farmer. Toward noon some of the leaves of his lettuce began to wilt and it was necessary to sell a little cheaper than he anticipated. When afternoon came he was tired and as he started home he was a little disappointed with his return, for he had not taken in as much as he had expected and there were still some vegetables which he had not been able to sell.

That evening he was tired and, after he had milked the cows and done the evening chores, he crawled into bed. He awoke the next morning with the sun in his eyes.

There was an early conference that morning with his next door neighbor over the fence beyond the corn patch. It was arranged that the neighbor should carry the produce to the city for the both of them for the tired farmer found that he had to plant his beans and plow the four acre patch and he would not have the time if he were to go again to the city.

The neighbor soon sold his farm for, as he was making regular trips to the city carrying produce for several, the daily trips took his entire time. A clerk in the city who wanted the freedom of the country purchased the farm. Within the city this farmer decided that he could sell better if he bought a small stand where his regular customers would be assured of finding him.

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# The Plagiarism In Philosophy

By E. W. Howe

I HAVE often remarked the plagiarism in philosophy. The philosophy of the ancients is finally so much alike that one man might have written it all. Finally, also, they did not seem to know anything we do not know today. The experiences of mankind are so simple, and so much alike, that there is only one way to tell them.

[ And now comes a modern philosopher, George Santayana, whose followers pretend that he brings much that is new to the consideration of human problems. But he denies it. In "Scepticism and Animal Faith," which is said to outline his new system, he says:

"My system is not mine, nor new. I have a great respect for orthodoxy; not for those orthodoxies which prevail in particular schools or nations, and which vary from age to age, but for a certain shrewd orthodoxy which the sentiment and practice of laymen maintain everywhere. I think that common sense, in a rough dogged way, is technically sounder than the special schools of philosophy. I am animated by distrust of all high guesses, and by

sympathy with the old prejudices and workaday opinions of mankind; they are ill expressed, but they are well grounded."

Here is comfort for every man of common sense. I lately read a book in which the author attempted to summarize the wisdom of all ages. Not only the noted philosophers were included, but the sayings of common people persisting from age to age. All seemed anxious to give warning that will keep others out of trouble. This is a brief summary of it: 1. All insisted on the importance of good conduct; 2. All advocated temperance, fairness, industry and thrift as first helps in making life as endurable as possible: not one recommended theft, drunkenness or idleness; 3. All advocated the adoption of simple, just rules, and observance of them; 4. Without exception all declared man is master of his own destiny, and that, in helping himself, he should respect the plain rights of others.

Here is no philosophy you have not long been familiar with, for the reason that there is no other worthy of the recollection of men.





*The swamp on Mr. Robinson's farm which was incorrectly drained.*

# Get Rid of That SWAMP!

By P. A. Young

County Agent, Gallia County, Ohio

*How one farmer put his  
unproductive land to work.*

**I**T has been said that the most important improvement ever made in agriculture is drainage. There are many, no doubt, who do not agree with the above statement, but the fact remains that proper drainage is a very important factor if farmers would bring their acres up to the maximum of productivity.

In some sections of our country the land is so swampy that nothing will grow on it but swamp vegetation. To drain this land so that it

would grow farm crops would be a herculean task. There are thousands of acres of this water-soaked land in such places as the Great Dismal Swamp and the Everglades of Florida. Farm crops will not grow on this swamp land for the following general reasons: the temperature is too low, and the soil ventilation is inadequate.

But there are thousands of acres of swampy land in our country on which is produced little or nothing. With proper drainage they could



be made very productive. Practically every farm in the country has wet spots that the farmer dodges entirely during wet seasons and on which he produces about one-fourth of a crop when the season happens to be dry.

Farmers in many sections, who have much swamp land to contend with and who farm on a very large scale, have learned the proper system of drainage. In other parts of the country, where farming is done on a small scale and where there is not a great amount of swamp land, the question of drainage has concerned the farmers very little. Hence, when many of them drain a tract of land, they do it in a slipshod fashion and apparently without any thought as to whether the water is going to flow north, south, east or west. Many farmers of Ohio, and especially those in the southern part, have not yet learned the proper system of draining. As a result they have wasted much time and money placing, digging up and replacing tile.

**A** CASE in point, which came under my observation, was the draining of a six-acre plot on the farm of Anderson Robinson of

Gallia County. An attempt had been made to drain this plot by the man who owned the farm before Robinson took possession of it, but without success. This man spent much time and money placing tile only to discover after the job had been completed that the water still remained and his system of drainage was useless. The owner of the plot gave up in despair, declaring that it could not be drained.

For five years Robinson had to plow around about one acre in the middle of this six-acre plot on account of its swampy condition. Not only was the one acre absolutely useless, but the entire six acres was rendered more or less nonproductive. A year ago Robinson had this land in cow-peas, and he lost about half of his seed on account of the extreme wetness.

Discouraged, but determined not to be outdone, Robinson decided to take up the old tile and put in a new system. So one day during last March he came to the County's Agent's office and asked me if he could get someone to survey the plot. I got in touch with Virgil Overholt, extension specialist in Agricultural Engineering at the Ohio State University and asked

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*Beginning work on the new system of drainage on the Robinson farm.*



# Cover Crops for the Apple Orchard

By C. E. Baker

Purdue University Agricultural Experiment Station

*⌘ A useful summary of the main factors in growing cover crops*

**S**TUDIES of the different systems of soil management in the apple orchard have occupied the time of many horticultural investigators during the past two decades or more. Different methods of soil management have proved especially beneficial under certain sets of conditions. For example, on rolling land or hillsides some form of sod mulch is usually the system of soil management practiced. In some cases a heavy mulch of straw about the trees has been successful in

maintaining vigor and productivity, in other cases yearly applications of a nitrogenous fertilizer are depended upon to maintain satisfactory tree growth and productivity.

One of the most important and universally practical means of promoting growth and vigor of apple orchards is by cultivation. In some cases the orchards are cultivated continuously through the growing period and the ground left bare over winter, but more often



A cover crop of rye in a young orchard. When properly managed, rye makes a very satisfactory cover crop and furnishes large amounts of vegetation for plowing into the soil.

(Courtesy Purdue Experiment Station)



what is known as a cover crop is sown in the orchard during the latter part of the growing season and permitted to occupy the ground between the trees over winter and until cultivation is resumed the following spring. In discussing cover crops, therefore, we are assuming a system of cultivation during the spring and early summer.

When orchard soils are cultivated continuously with no provision being made for returning organic matter, they soon become low in fertility, as continuous cultivation "burns out" the humus in the soil. Consequently, one of the chief duties of a cover crop is to supply humus for the soil by producing vegetative material which may be turned under and incorporated with the soil.

A second function of a cover crop is to increase the moisture—retaining qualities of the soil. Soils low in organic matter are, as a rule, poor in moisture retaining qualities. Darker soils, higher in organic matter, are usually more moisture—retentive than soils low in organic materials. The continuous addition of vegetable matter year after year by the turning under of a cover crop tends to improve the physical condition of the soil and to increase the ability of the soil to retain moisture where it may be used by the trees.

Another important function of a cover crop is the taking up of excess moisture from the soil at the time it is not needed by the trees. Often young trees or vigorously growing bearing trees continue their growth late into the fall; so late sometimes, that they go into the winter in a very immature condition, instead of slowing down in their vegetative growth during the early fall and permitting the growth already made to "ripen" or mature before cold weather. This is especially likely to be the case if a warm rainy fall follows a dry summer. Under such conditions especially, a cover crop is decidedly beneficial in assisting the trees to dispose of this excess moisture.

Some cover crops have the additional function of protecting the ground from washing during winter and under some conditions they protect against excessively deep freezing of the soil.

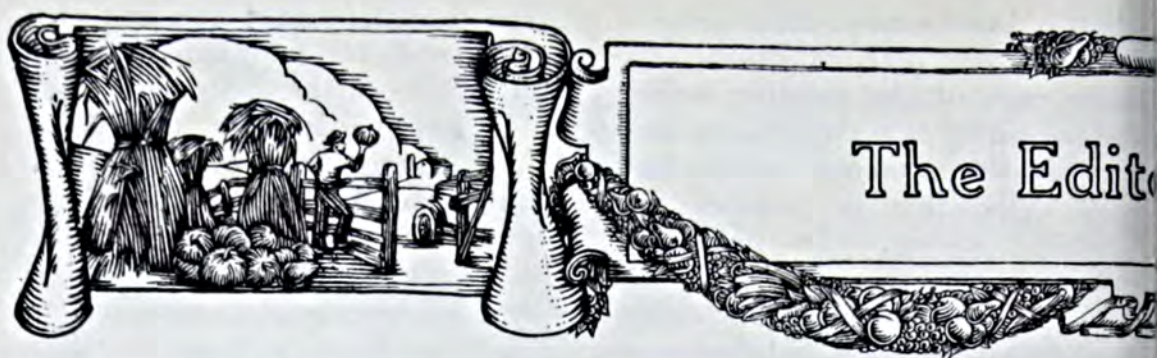
**C**OVER crops may be divided into two main classes—leguminous and non-leguminous. When properly inoculated the leguminous cover crops have the additional advantage of increasing the total nitrogen supply of the orchard soil as well as of increasing the amount  
(turn to page 45)



Millet used as an orchard cover crop. It grows well between the trees, but will not grow in the shaded areas beneath the trees.

(Courtesy Purdue Experiment Station)





## OUR PRESENT CIVILIZATION ONE PROBLEM

On what is our present civilization founded? Professor J. H. Brested, a noted authority, states that the fundamentals have been four:—agriculture, the use of fire, the art of writing, and metals—.

Agriculture is placed first—Why?—One reason is that agriculture includes the use of land. The one purpose of land is to support the life of man; but the number of food producing acres is known. Beyond a certain number they cannot be increased. Opposed to this, the world's population is increasing very rapidly. As this increase takes place arable acres must become more valuable, more specialized in production, more costly to buy and to operate.

The land problem in its simplest terms is therefore to assure two things:—a just return to the man on the land, that he may be induced to produce food,—and the assurance to the mass of the people of an abundance of food at a reasonable price so that the standard of living may be maintained.

The assurance of these two things is one of the fundamental agricultural problems. Contributions to its solution in appropriations, in work, and in patience are not made to one group only. They are to civilization itself.

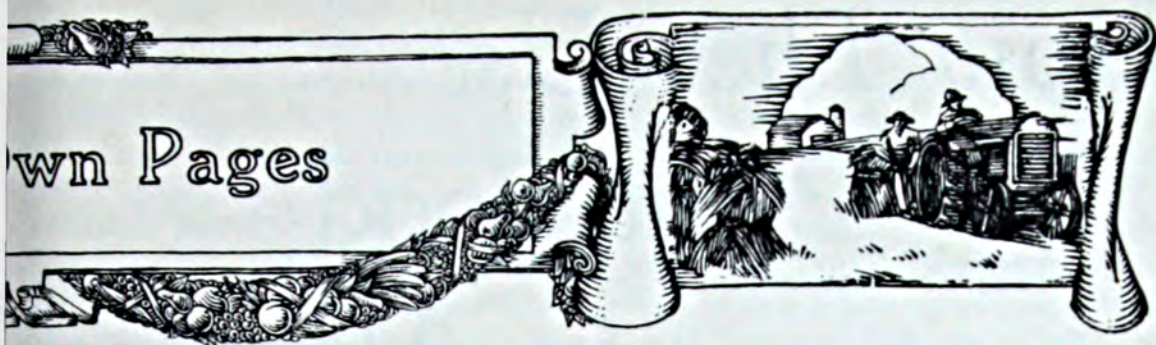
## A GOOD MAN IN A GOOD JOB

On another page of this issue you will find a picture of Charles J. Brand, the newly appointed executive secretary and treasurer of the New National Fertilizer Association, together with an account of his career.

I was glad to learn of the combination of the two previous associations and gladder still to hear that they had chosen Mr. Brand for such an important position in the new association. There are few men who can equal him in breadth of experience and grasp of the fundamentals of agriculture.

Readers of BETTER CROPS will recall him as the author of a number of articles on the subject of cooperative marketing that have appeared in our pages. Yet this is by no means the only subject on which Mr. Brand can write as an authority.





He knows the scientific and the practical phases of agriculture as well as the economic.

This wide yet thorough knowledge of so many different aspects of agriculture is not so surprising when you know the man. I recall my first meeting with him very vividly because he asked such *intelligent questions*.

Most of the people you meet want to talk to you about themselves and their concerns. They prefer *giving* information to *getting* it. But Charles Brand is one of the exceptions. He tries to learn something new from everyone he meets. He talks about you and your business. That does not mean that he refuses to talk about his own interests. But, unlike many men, he does not put them first.

You can learn something from every person you meet if you ask him the right kind of questions and you can also win his friendship and confidence. Mr. Brand has this happy faculty in addition to many others.

A man's sized job awaits him. We wish him and the new association success!

## INTERNATIONAL AGRICULTURE

"Foreign" has in the past been a word suggesting at least remoteness, and — under certain conditions — even hostility, but with the modern annihilation of space and a mutual dependence of peoples it is fast becoming essential to know and understand what is happening in other countries. This applies with special force to agricultural activities in the practical and industrial fields.

For this reason the publications dealing with foreign and international agriculture, published by the Department of Commerce at Washington, are becoming more and more important. This work is essential to our agricultural prosperity and deserves all the support that can be given it.

Jeff McIlernid



# How They Use Plant Food in Alabama

By F. E. Boyd

Alabama Extension Service

*There's economy in high analysis fertilizers and high grade materials. Mr. Boyd shows how Alabama farmers have come to appreciate this fact, particularly in regard to potash.*

**A** CAREFUL study of the fertilizer used in Alabama during the three year period from 1923 to 1925 reveals some very interesting facts regarding the kind and amount of plant food elements used by the farmers of the State. This study has made available data showing

Allowing some phosphoric acid and ammonia as such for legumes, corn and oats the plant food materials in the 1925 tonnage are approximately in the proportion recommended by the Alabama Experiment Station for cotton, which received 80 per cent of the total fertilizer consumed.

Plant Food Elements	Plant Food in Total Tonnage—Tons			% Increase 1925 Over 1923
	1923	1924	1925	
Phosphoric Acid...	46,188	48,414	55,479	20%
Ammonia.....	11,321	18,188	23,867	110%
Potash.....	9,553	12,462	17,789	86%
Total Tonnage of Fertilizer.....	436,870	472,240	577,000	....

the amount of phosphoric acid ( $P_2O_5$ ), ammonia ( $NH_3$ ) and potash ( $K_2O$ ) in the total tonnage.

Studying the available data further shows the proportion of phosphoric acid, ammonia and

Year	Pounds of Plant Food Per Hundred			Total Pounds Plant Food Per Hundred
	Phos. Acid	Ammonia	Potash	
1923.....	10.6	2.6	2.2	15.4
1924.....	10.3	3.8	2.6	16.7
1925.....	9.6	4.1	3.1	16.8

These data show that the ammonia and potash plant food has practically doubled since 1923.

potash per 100 pounds of average fertilizer.

The above data shows that



farmers are gradually decreasing the phosphoric acid content and increasing the proportion of ammonia and potash in the fertilizers they use. The total tonnage used each year is divided approximately 50-50 between separate ingredients and factory-mixed fertilizers. Practically all of the potash in the separate ingredient tonnage is derived from kainit, manure salts and muriate of potash. The total amount in the separate ingredient tonnage from each source is shown herewith.

Source and Per Cent Plant Food	Year and Tonnage		
	1923	1924	1925
Kainit, 12%	16,879	14,749	15,433
Manure Salts, 20%.....	333	436	854
Muriate of Potash, 48%.....	2,641	5,341	9,661

In connection with this study it is interesting to note a tendency to decrease the tonnage of the lower grades and increase the amount of the higher grades of potash consumed each year.

The Alabama Farm Bureau Federation is the largest single user of separate ingredient fertilizer in the State, and data taken from their official records show the same tendency towards high analysis sources of potash. The data is presented below.

Source	Year and Tonnage		
	1923	1924	1925
Kainit.....	5,651	3,608	2,765
Muriate of Potash....	789	2,844	4,140

That the Farm Bureau is very much interested in delivering to its membership a high quality source of potash at the lowest cost per unit of plant food, accounts for the fact that it handles muriate of potash very largely. The chief reason why they handle any kainit is that there are a good many farmers who believe that kainit has certain

qualities absolutely essential to normal plant growth not contained in any other form of potash. From a practical standpoint this belief has been disproven as far as general field crops are concerned.

The general recommendation from most Experiment Stations is to use that source which can be delivered on the farm at the lowest cost per unit of plant food. On this basis, muriate of potash, which contains about four times as much plant food as kainit, can be delivered to the farm much cheaper than kainit or other low grade sources, due in a large measure to the saving in transportation and handling charges.



## The Farmer

IT is no Fun to be a Farmer  
Who, when to woo his Feline  
Charmer

The Early Morning Cat me-ows,  
Must brave the Dark to milk the  
Cows.

While Sparrows chirp their Obbli-  
gatos

He gathers Beans and props Toma-  
toes.

About the Time the Sun is up  
He gets his Breakfast Coffee Cup.  
He spends his Leisure Plowing,  
Sowing,

Manuring, Pulling Turnips, Mow-  
ing,

And Praying, as he views his Grain,  
For Lots of Sun or Lots of Rain.

When Anxious Farmers get together  
They Wish for Varied Kinds of  
Weather;

And when the Weather comes along,  
No Matter what it is, it's Wrong.

Good Cause the Farmer has to  
grumble!

If Crops *are* good, the Prices tumble.  
He never even thinks he's through;  
There's always Something Else to  
do.

And when for Rest he's Fairly Crav-  
ing,

They Stretch his Day with Day-  
light Saving!

—Arthur Guiterman, in "Life."



# \$20 Prize Question

TWIS month we are publishing on page 4 the prize-winning answer to the first of our prize questions which was asked in our May issue. The answers to the second question, "Should farmers organize to improve their economic condition?" will be printed next month. Here is the next question for you to answer:

## *What Can We Do to Get Lower and More Equitable Taxes?*

This is the third of five questions which will be asked monthly in our pages. The best answer will receive a prize of \$20.00. There are no restrictions except on length. Answer it any way you like. We want a clear and convincing presentation of why you believe as you do on this subject. Just make your argument brief and to the point.

**Answers to this question must not exceed 800 words. They must be mailed before midnight August 6th.** The winning answer will be published in our September issue. The judges will be Jeff McDermid and Basil H. Pillard, editors of BETTER CROPS. In the event of a tie, the full amount of the prize will be awarded to both contestants. The judges reserve the right to withhold the award in the event that none of the answers is deemed worthy of publication in BETTER CROPS. BETTER CROPS reserves the right to publish any manuscript submitted in this contest at the regular rate of one cent a word. No manuscripts will be returned.

**Send your answer before August 6th to:**

**JEFF McDERMID**

*Better Crops Publishing Corp.*

461 EIGHTH AVENUE

NEW YORK CITY





## Making Information Available

Dear Jeff:—

I thoroughly enjoy your paper and especially your editorials. With reference to stenographic work in County Agent's office I fully agree with your comments on page 25. In this respect, however, the efficiency of the office will depend in large measure upon the executive ability of the County Agent. As years add to his experience he should accumulate a vast fund of information, some of which he will always have at his command, but a great portion of which will be hidden away in files.

To my mind it is unfortunate that the vast fund of information compiled by the U. S. D. A. and published in Farmer's Bulletins, Department Bulletins and Year Books, is hidden away in such manner as to make it almost impossible to find anything. The brief lists that have been published are not one per cent efficient in helping to find information contained in the Bulletins. The Experiment Station index is entirely too complicated for a County Agent's office.

I am contemplating at the present time compiling an index of the subject matter of these Bulletins and hope to confine it to about 6,000 cards with from three to ten cross indices on each card. If I do work this out I may be able to get it up in such a way that duplicate lists can be prepared if there is

sufficient demand for them. What do you think about it?

Very truly yours,

CHARLES H. ALVORD,  
*County Agent,*  
*San Antonio, Texas.*



*Mr. Alvord has hit upon a very sound idea. There is unquestionably a need for such an index as he describes. I would like to see it put through and I suggest that if you are interested you write Mr. Alvord. If this work could be done once and for all, it would save a lot of duplication and bother.—Jeff.*



## A Correction

Dear Jeff:

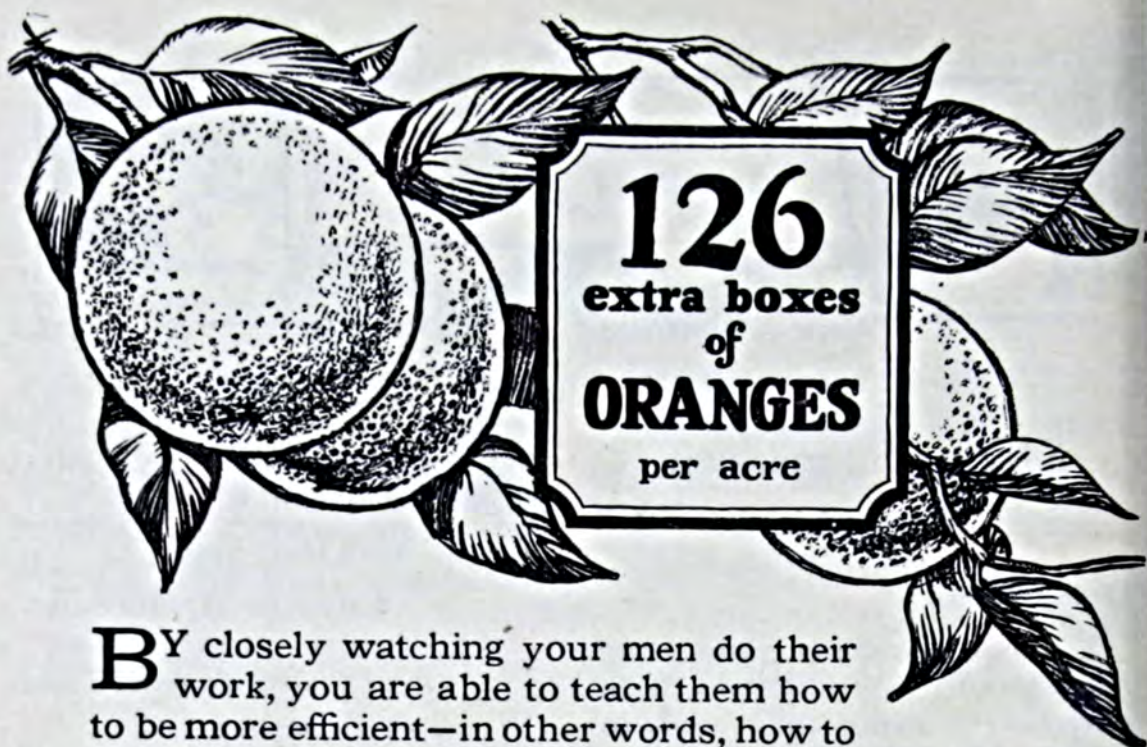
In reading my article in June BETTER CROPS I find a mistake due to the omission of a line in the original copy. Hatch and Otis belong in Wisconsin instead of Illinois and Handschin of Illinois and Doane of Missouri should have been included. I should also have included Warren, Livermore and Scoville of New York. These pioneers always participated in an energetic and constructive manner in our conferences, and many of our methods developed from the seed which they sowed.

I want to commend your articles on failure and fear in the last two issues.

Very truly yours,

D. W. FREAR,  
*Ext. Assoc. Prof. of Field Crops*  
*Missouri College of Agriculture.*





**B**Y closely watching your men do their work, you are able to teach them how to be more efficient—in other words, how to *produce more* with the same effort. In many ways, your orange trees are the same. . . .

By proper supervision and treatment, you can make your trees produce *more fruit*, and thus, *make more profit for yourself*. The fertilizer you use exerts a strong influence. W. E. Sprotts, of Tulare County, California, picked—*126 extra boxes of Navel Oranges per acre when he used a fertilizer which contained potash*. [The potash used cost Mr. Sprotts only \$5.00 extra.]

Besides influencing the weight, sweetness and flavor of the fruit, potash also helps to sustain vigor in the tree. When potash is not available in the needed quantity, there is an excess of immature wood and the tree's resistance to cold is low.

Keep these facts in mind when you order fertilizer this season. Potash pays!

**FREE** A booklet called "Potash Pays!" is being mailed free to orange growers. The data it contains will help you increase your income this year. Write for your copy now.

### POTASH IMPORTING CORPORATION OF AMERICA

10 BRIDGE ST., Dept. BC, NEW YORK

Baltimore

Atlanta

San Francisco

Genuine  German  
**POTASH**





## The Farmer's Psychology

*"Our Rural Heritage," by James Mickel Williams. Published by Alfred Knopf, New York, 1924. Price \$4.00.*

"Our Rural Heritage," by James Mickel Williams is a non-statistical study of a much neglected rural problem: the social psychology of rural development.

Dr. Williams proceeds by clear, simple narration to analyze a typical New York rural community of the period dating from the American Revolution to the agricultural depression of the seventies. He assumes, and rightly so, that the characteristics of this community were common to most other rural sections of the United States. The author brings to this study a wealth of experience with rural communities, and intimate contact with the Blanktown community and an acumen for uncovering interesting and pertinent historical data. This work, together with its companion volume might well be called a social history of a typical American rural community of the 19th century.

The entire field of rural development in the United States is divided into three periods. The first period begins with the rapid extension of our frontiers after the Revolutionary war and extends to 1874. During this period great emphasis was placed on adherence to customs. Conformity to the demands of the group was paramount. Agriculture in the beginning of this period was almost wholly self sufficing. Transportation was difficult. Labor was hard and exacting. Life was a battle. The group of people who

pushed their way across the mountains and founded new homes were hardy, independent pioneers. Those who were less adventurous remained at home and maintained old customs. Expansion was rapid, however, and by the end of the period agriculture had changed from a self sufficing type to a commercial type. Many railroads had been built and great railroad systems were being projected to bring the West to the East. Industrial centres supplying factory-made goods to the farm folk grew rapidly and thus increased the demand for farm products.

The second period extended from 1874 to 1900. It is marked particularly by radical departure from custom, rural depopulation, low prices and increasing competition.

The third period dates from 1900 to the present time. Its chief characteristic seems to be organization especially for promotion of scientific agriculture.

"Our Rural Heritage" deals with only the first period. The second and third periods are treated in another book, "The Expansion of Rural Life," which is ready for publication, and which gives promise of adding much to our scant literature on rural social psychology.

After four general introductory chapters dealing with rural development, rural social psychology methods and social and physical environment, the behavior and attitude of rural folk are discussed in an effort to determine first, what they are and second, wherein they differ from those of city people.



The differences, according to the author, are due to four factors: (1) The farmer's exposure to and dependence on the uncertain weather conditions and the seasons for the fruition of his crops. (2) His isolation. (3) His constant contact with nature and consequently fewer contacts with people. (4) The hard and confining nature of his occupation.

While these factors are not the only determinants of rural behavior, they are the dominant ones. The stern demands on a farmer gave a fixity, a finality, to his customs and ways of looking at things that were not common to people uninfluenced by rural conditions.

"Our Rural Heritage" is not a chronicle of historical events. The attitudes discussed in the twenty-five chapters constitute the psychological basis of our rural civilization. Because of the predominance of rural over urban attitudes in our national development they, likewise, constitute a considerable part of our national life. In the early days the manufacturer, the storekeeper, the lawyer and the doctor were either part-time farmers or were so closely associated with farm life that they reflected similar attitudes toward rural life. Like the farmers, they were men of action.

The author's account of the relation between husband and wife, and between parents and children vividly portrays that period in our history when the male considered himself, and was so accepted by the women and children, the most significant animal in family life. Woman had not yet reached her majority. "Husband and wife are one and that one the husband" was the formula in legal proceedings. Woman was not expected to speak in meetings. For justification, St. Paul's injunction was applied. Modernism in church and state had not yet lifted up its head. Though there was not an opportunity for the economic independence of

woman, she was economically indispensable to man. While she may have been suppressed, a condition common to her sex in rural life in all lands, her lot was not so hard. By psychological methods she managed man, and thus indirectly she often became the interpreter of family life.

As might be anticipated, the economic factors and their effect on the mental attitudes of the people occupy a prominent place in the book. In the chapter on economic interpretations, especially, one is impressed with the fact that the present attitude of the farmer toward certain fundamental problems is about the same as it was fifty years ago. For instance, "the farmer's attention has centered not on education but on taxes."

While the author has a special community in New York state in mind, the facts related are of such general application that one is not conscious of the fact that it is not his own community of fifty or one hundred years ago which is being discussed.

All in all—"Our Rural Heritage" is an interesting and instructive study. It impresses one as the personal narrative of a man who has actually witnessed and participated in the activities described. To write thus, it is necessary for the author to be very familiar with the literature descriptive of the period and likewise to have an imagination enabling him to visualize the time of which he writes.

We must not expect to find in this work, however, the final word in rural psychology. As Mr. Williams indicates, this book together with its companion volume, "The Expansion of Rural Life," constitute a survey of the field which may lead in the future to much needed studies in social psychology.

R. G. BRESSLER,

*Prof. Rural Sociology,  
Pennsylvania Experiment Station.*



## Fulghum Oats Return Extra Profits

(From page 7)

variety. This extra money is net too, because it costs no more to raise a good variety of any crop than a poor one.

This sudden turning to a new variety of oats did not come about by some curious individual sending "away out west" for some seed or by bringing back a pocket-full of seed from the Canadian exhibit at the International Hay and Grain Show. Much to the contrary it was the result of a well defined campaign put forward by the Farm Bureau to standardize on one particular variety of oats. The plan of the campaign was nothing out of the ordinary and would never have succeeded if the variety had not given a good account of itself in every case.

**T**HERE is the way it happened. Early in the spring of 1922 the Crops Department of Ohio State University announced that they had for sale a small quantity of Fulghum oats for seed. This fact was brought to the attention of a few of our more progressive farmers and two men secured the seed and planted it. The records on these two crops and the records of the Experiment Station induced us to adopt the sowing of Fulghum oats as one of our major extension projects in the Spring of 1923.

In carrying on this project an attempt was made to get five men in each of our ten townships to try this variety. We succeeded in getting thirty men to do so. A careful check was made on the yields of all these crops and it was found that the average yield was 40.5 bushels per acre. This was not a high yield, but it was approximately 12 bushels per acre above the average of other varieties. On the 300 acres that were grown this meant an increase in production of approxi-

mately 3,600 bushels of oats worth about \$1,800.

In other words, the thirty men who tried the new variety of oats netted about \$60.00 each on the average by doing so. In fact, practically all of them did better than this due to the fact that they were able to sell their entire crop for seed at about twice the market price.

After the encouraging experience with Fulghum oats in 1923 many more men were anxious to try them in 1924. By checking up the seed sold it was found that 120 men sowed approximately 3,000 acres of Fulghum in the spring of 1924. This was a much better oats season. The records were again carefully checked and it was found that the average yield for the 3,000 acres was 55.2 bushels per acre which was again about 12 bushels per acre above the yield of other common varieties. This increase of 12 bushels per acre on the 3,000 acres amounted to a total increase in production of 36,000 bushels of oats for the county. At 50c per bushel this meant an increased income of \$18,000 or an average of \$150 per man. The value of this variety is not in the increased yield alone but also in the quality. The average weight per bushel was 33.5 pounds. One man who fertilized with 200 pounds of 10-10 fertilizer per acre produced 70 bushels per acre of oats that weighed 36 pounds per bushel.

**I**N the spring of 1925 the demand for Fulghum seed exceeded the supply. As the corn for 1924 was short many men resorted to oats for feed. Consequently the entire crop of 36,000 bushels was not available for seed this spring. However, after making a careful survey we found that approximately 15,000 bushels were used for seed.



This amount, at the usual rate of seeding, will plant 7,500 acres which is 50 per cent of the oats acreage of the county. With the same margin of production of this variety over other varieties that has held good in the past three seasons the above acreage will yield 90,000 bushels

more oats than would be produced with the other common varieties that were formerly grown in the county.

With these facts before them it is not a difficult matter for farmers of this county to decide what variety of oats to plant.



# Quality Crops Pay

By H. E. Young

Illinois Farmers' Institute

THERE are four principal ways to increase crop profits on the farm, viz., by reducing production costs, by increasing yields per acre, by improvement of quality so that the crop brings a higher price, and by developing better markets and marketing methods. The first three are largely problems for the individual farmer, while the fourth also involves economic conditions, organization and cooperation over which the individual may have no control. Everybody agrees that reducing production costs and increasing yields per acre will tend to enhance net profits, but the improvement of crop quality is not so generally accepted as a profit factor on the farm. Nor are the advantages to be gained therefrom so readily recognized by the average farmer. Just how much quality crops pay is not always so easily figured, and yet no one can successfully deny the fact, that as a general rule, quality crops will bring increased profits in direct proportion as the degree of quality exceeds the ordinary.

Perhaps one of the best and most striking examples of how crop quality may pay is found in the production of corn on muck, or peaty soil, where an application of potash fertilizer often makes all the difference between a sound, marketable

corn crop and soft, chaffy nubbins not worth harvesting. Such a difference is very common on this type of soil, and it often shows to the very row where the potash application has been applied.

The value of sound corn, or soft nubbins is obvious. As a market proposition it may be computed in dollars and cents according to the ruling price of the crop, and from the standpoint of crop profit it means a substantial gain over cost of production, or an almost complete loss of seed and labor involved.

On an Indiana farm, corn on untreated muck soil made 32 bushels per acre, mostly nubbins, soft and very chaffy. In the same field where sulfate of potash was applied at the rate of 200 pounds per acre, the yield was increased to 52 bushels per acre, 48 bushels of which graded as marketable corn and was sold as such. The increase in quality of the crop paid for the fertilizer several times over, say nothing about the 20 bushels increase in yield. Quality paid big dividends here, and will invariably pay with any crop on any farm.

Actual farm experience in Indiana, Illinois, Wisconsin and other States records many instances where corn quality has been raised from practically worthless crops to as high as 50 and 60 bushels of first



class, marketable corn. Quality crops on muck soils are profitable, where ordinary or average crops on untreated fields are unprofitable and many times a total loss.

We speak of corn as it is the leading crop of this section, but the application of crop quality applies equally well to wheat, potatoes, garden truck, and in fact all other crops on the farm. Quality counts in every farm crop and very frequently represents the difference between a substantial profit and an actual loss of the entire crop.

Successful fruit growers are generally as much interested in getting quality fruit as in producing high yields. A small crop of extra fine quality fruit often sells for more money than a large crop of two or three times as many bushels, but of a poorer quality. The net profit in such a case is in favor of the quality crop every time.

A quality peach crop of six hundred bushels, two years ago, brought a Southern Illinois grower more money than the combined crops of several neighbors totaling over nine hundred bushels sold for on the same market. The sole difference was that of crop quality and quality alone.

Quality is an essential factor in all fruit production and no class of farmers realize more keenly just what quality crops mean from a profit yielding standpoint on the

farm. There is always a demand for quality fruit and, while the market price may vary greatly from year to year, depending upon the marketable supply, the quality product invariably finds a buyer whereas a mediocre crop must be disposed of at a very much lower figure, not infrequently below the actual cost of production, or perhaps is left in the orchard to rot and becomes a total loss to the grower. This happens on thousands of farms every year and in the great majority of cases the principal reason is that of quality.

Quality is in standard demand on all markets, in all retail establishments, and in every place where food products are handled. Quality is sought by market men and consumers alike. Because of this universal demand for quality higher prices are paid for such products, and it is these higher prices which make the production of quality crops return greater profits to the farmer. Experiments and experiences in field, orchard and garden have universally proven the value of quality crops in real dollars and cents. Production of quality crops will invariably enhance farm profits, and that is a proposition in which every farmer is interested. High quality crops will pay a profit where average quality crops frequently show an actual loss on the farm ledger.



## The Tie that Destroys

(From page 15)

rotation and it is unwise to ruin land for the production of clover and alfalfa.

Another count in the indictment against dodder is the fact that the plant is strongly suspected of being poisonous to livestock, particularly horses. We have had some complaints along this line in Indiana and the idea seems reasonable enough since dodder is known to contain a

poisonous substance called *cuscutin*. When 15 per cent of dry dodder was introduced into a diet fed experimentally to rats by Dr. E. V. McCollum of Johns Hopkins, the animals all died within a week. The conclusion was reached that the death of the rats was due to the toxic properties of the dodder.

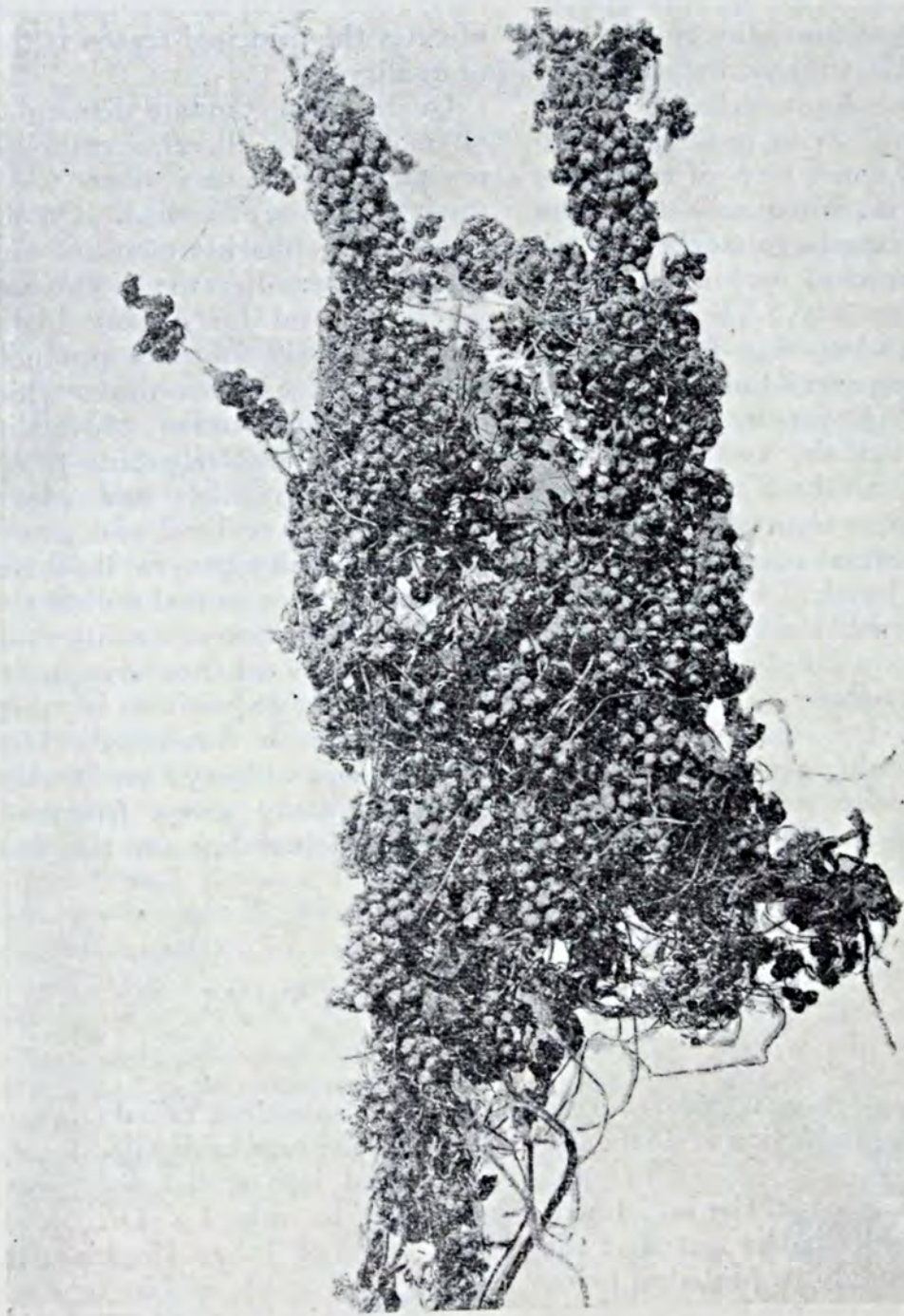
Possibly you do not recognize the plant by the common name *dodder*.



In some parts of the country it is known as *lie-vine* because it ties plants into bunches, while in other sections it masquerades under the amorous appellation *love-vine*, possibly in allusion to the fact that the plants to which it clings are eventually choked to death.

Perhaps, after all, the dodder danger has been much exaggerated. We are quite certain, for instance,

that dodder is not nearly as serious a problem in America as it is in Europe, where the ravages of the pest have practically ruined large seed-production areas. Nevertheless, we believe it will pay to run no chances by avoiding dodder-infested seed as much as possible and by cutting and burning the yellowish patches as soon as they appear on the farm.



A clover plant that has been completely destroyed by dodder. Note that the parasite has gone to seed.



## Building a "For Service" Organization

(From page 5)

rural districts boosted, but a means was provided for bringing every farmer in every community into direct contact with the Farm Bureau. Leaders in the organization lost no opportunities to tell the people what the Farm Bureau was and what it could do if supported as it should be.

Late in 1924 a big drive was made for new members, and by 1925 the officers, chairmen of the various units, and other energetic fellows had increased the membership to over 300.

A paid Secretary was then secured, whose first job was to collect the dues from the members. Then an office was secured and equipped and a "For Service" organization was ready to serve its members. It has not yet been established a half year, yet many of the members have received many times the value of the fee they paid for a year's service from the Farm Bureau.

THE first service was to establish a member's exchange through which members could list any article they wished to exchange. These articles are listed on a bulletin board in front of the office building, and one of the local editors is kind enough to publish them in his paper free of charge. Hundreds of exchange items have been handled successfully, and the practice of advertising through the office is becoming more popular all the time.

In connection with the exchange service an employment agency is provided for the free use of Farm Bureau Members. Men who wish to work list their names in the office and farmers who want men are not slow about calling for them. It is proving to be a big success and will keep a man busy all the time during harvest.

Another more cooperative undertaking has been that of pooling orders for posts, sacks, hog wire, and sugar, and buying in car load lots. This was so successful that orders were taken for four car loads of posts in one month and other supplies in proportion.

CONNECTION has been established with the State College Extension Service which has shown the farmers every courtesy possible. From it and the Department of Agriculture a bulletin supply has been accumulated in the office for the members and any information they cannot secure from these, the secretary gets by writing to the Extension Service. Farmers ask advice about seed; the kind, time to plant and method; they ask questions about poultry, poultry houses and poultry-raising equipment; they ask about the dairy, milk testing, cream testing and T. B. testing of milk cows; they ask—well what don't they ask that should be of interest to them? Organization makes it possible for them to get the right answers easily.

The Extension Service has furnished experienced and capable speakers for the farmers. Four were furnished in one month, one speaking on corn raising, one on Club work, one on potato seed treating, and one on farm soils and the destructiveness of the present summer fallow method employed here. All of these men know their business and are experts in their line which led farmers present at their meetings to declare their instruction is worth real money to them. The community which does not use its College Extension Service, if it has one, certainly loses a lot of free information which it can just as well have as not.



This organization has conducted a squirrel and rat poisoning campaign furnishing poison to members at cost. It has made it possible to have herds of cows tested for T. B. It has furnished service for buying best guaranteed seed for farmers at lower prices than the individual buyer paid for poorer seed. It is now promoting a plan for forming an egg association and this fall it is going to have charge of the biggest, most educative and entertaining fair the County has ever seen.

But measured in dollars and cents the crowning service the Farm Bureau has rendered is that of cooperative marketing of live stock. The only work the farmer has to do is to bring his stock to the loading yards on the shipping day and deposit his check when it arrives—the Secretary does the rest. The advantage of this method of marketing is that live stock can be sent to the larger markets which pay better prices than small local ones, and at the same time it enables the farmer to cull out undesirable stock and sell it in the larger markets, while the small local market could not handle it at all. In cooperative marketing seems to be the greatest opportunity for service in this community, but opportunities for the organization to serve its members seem to be unlimited.



## *Brand Goes to New N. F. A.*

*(From page 14)*

At the time of the war he served as a chairman of the committee on Cotton Distribution of the War Industries Board. He was also a member of the Wool Advisory Committee and liquidating officer to collect and distribute excess profits under the regulations.

In 1919 he left the Department to

become Vice-President and General Manager, American Fruit Growers Incorporated, Pittsburgh, Pa., which conducts extensive production operations in many states and maintains a national sales service, handling over 30,000 carloads of perishables yearly.

In 1922 at the invitation of Secretary Wallace he took the position he is now leaving. During part of 1923 he was Agricultural Commissioner to Europe, investigating economic, commercial and financial conditions in agriculture and was a delegate to the International Congress of Chambers of Commerce in Rome, representing the Pittsburgh Chamber of Commerce and the U. S. Department of Agriculture. He prepared the first draft of the Agricultural Export bill at the request of Secretary Wallace.

In addition to these activities Mr. Brand has developed a large commercial orchard in Western Maryland. He is a member of the American Economic Association, the Washington Academy of Science, the honorary scientific research society, Sigma Xi and numerous other organizations.

Mr. Brand will assume his new duties as soon after July 1st, as possible. The New National Fertilizer Association is a combination of the two previously existing associations—the Southern and the National. Executive headquarters will be located at Washington, D. C., and branch offices will be maintained at Chicago, Atlanta and Shreveport.

Under the direction of the President of the Executive Committee, Mr. Brand will supervise such activities of the Association as soil improvement work, cost accounting, traffic activities, improved trade practices, standardization and public relations.



# Selling an Agricultural Idea

(From page 11)

## COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

State of Nebraska

THE  
UNIVERSITY OF NEBR.  
AGRICULTURAL COLLEGE  
U. S. DEPT. OF AGRICULTURE  
RICHARDSON COUNTY FARM BUREAU  
COOPERATING

Office of the  
RICHARDSON COUNTY  
EXTENSION AGENT  
COURT HOUSE  
FALLS CITY



Dear Sir:

Do you believe that our soils will ever wear out?

I was over in the other end of the county today and happened to hear some fellows talking about land. "No, sir!" said one of them, "hold your land, because it is the best in the whole United States. It needs no lime, needs no commercial fertilizer, and in fact we could dig out our soil down 20 or 30 feet and use it for fertilizer for some of those eastern farms. Our soil is so rich and deep it will never wear out."

Steering the "Lizzie" homeward, I got to thinking over what I had heard. Do we have a soil problem? As I drove by the different farms and noticed the difference in the growth of cornstalks on adjoining fields of different farms I wondered what made the difference of from 10 to 30 bushels in yield.

The other day I ran across an 80 acre farm in the hills. It looked different from the farms around it. Crops were heavy and the soil black, and there wasn't a ditch on it. At the top of this letter is a picture of a part of that farm. The field on the left belongs to one farm and the field on the right to another. Thirteen years ago two farms were of equal fertility, but today one acre of one farm will yield as much as three of the other. I wanted to know why.



"Why should I plow, plant, cultivate, and rush to get over the corn on 50 acres when I can raise just as much on 25 with about one-half the labor and besides have that other 25 acres in clover or alfalfa?" asked the fellow on the good farm.

I had to admit I didn't know why he should and I haven't found anyone yet who does know. But still I find that some farmers do that very thing.

Yours very truly,

JOE BROWN,

*County Extension Agent.*

P. S.—I have been looking into crop rotations, soil washing, soil management, and yields and I am going to write you some more about it next week.

Letter number four closed the subject and enclosed the card. It made the final attempt to sell the idea.

## COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

*State of Nebraska*

THE  
UNIVERSITY OF NEBR.  
AGRICULTURAL COLLEGE  
U. S. DEPT. OF AGRICULTURE  
RICHARDSON COUNTY FARM BUREAU  
COOPERATING

Office of the  
RICHARDSON COUNTY  
EXTENSION AGENT  
COURT HOUSE  
FALLS CITY



Dear Sir:

If you were going to increase the yield of crops on your farm what would be the most likely method of doing it? Forty representative Nebraska farmers to whom this question was put replied, "Grow legumes such as the clovers and alfalfa." These men who have been growing sweet clover for from 5 to 10 years estimate that 2 years of it will increase the yield of corn 64 per cent, of oats 56 per cent, and of winter



wheat 50 per cent. In other words if corn makes 25 bushels, oats 30 bushels, and wheat 20 bushels, 2 years of sweet clover will boost these to 41, 47 and 30 bushels, respectively.

Why do legumes affect the yield in this way? First, they build up the soil in nitrogen and organic matter—the things that are first exhausted in Nebraska soils. Second, they improve the tilth of the soil so that it becomes loose and friable, and in a condition to absorb rainfall rapidly. Third, they decrease weed growth which allows more of the soil moisture to be available for crops since the elimination of weeds is one of the biggest factors in moisture conservation. Fourth, they promote diversification and the keeping of livestock. Fifth, as a hay or pasture, they furnish a cheap protein feed necessary for the economical production of all kinds of livestock. All of these add to the farm income.

I am expecting to devote considerable time during the next year to these matters. You will find enclosed a card, which requires no postage, on which I would be glad to have you mark the things in which you are interested.

Very truly yours,

JOE BROWN,

*County Extension Agent.*

Encl. 1

I am interested in the proposition you have been discussing in your series of letters and I would like to have you call at my farm soon to talk over:—

*(Mark the one that you are interested in.)*

Crop Rotation Plans.....Seeding Methods for Legumes.....

Brush Dams..... Terracing..... Soil..... Saving Dams.....

I would like to have you send me a bulletin on:

Sweet Clover..... Alfalfa..... Soil Washing.....

Signed..... Address.....

Section..... Township..... Range.....

U. S. D. A., U. of N. Agr. College-County Farm Bureau

Cooperating.

SOILS.

This letter campaign supplemented with farm paper and local paper articles, meetings and demon-

strations has worked satisfactorily in Nebraska the past two seasons. Other states may want to try it out.



# Middlemen and Millenniums

(From page 18)

Several days the farmers were disappointed with the returns which their produce brought them. They wanted to know how much their truck was going to bring them before it was taken from their farms. So the one who was doing the hauling arranged to pay them for it and he took the risk of not selling it and of having it decay.

This ideal situation extended for some time. But one day a fearful rumor arose among the farmers. It was whispered that a middleman was again in their midst. What! Had the jails been insecure? Had some of those fiends broken from their confinement? A committee was appointed from their number to make a thorough investigation and to take steps, however drastic, to eliminate the middlemen.

The committee found that they had been betrayed by one of their own kind. The farmer who took over the hauling and who installed himself in the city had become a middleman. Farmers over the entire country had been fooled in the same way by these sheep in wolves clothing. Great indignation reigned and the middlemen were tried, found guilty and hustled off to jail to join those who had gone before them.

Another great harvest day came. Favorable rains and warm weather had combined to produce a bumper crop and each farmer gathered his produce to carry to the city.

Once again the wagons and trucks of the farmers lined the roads to the city but as the procession approached the city, it was noted that the streets were deserted; street cars were deserted upon the tracks and no policemen met them as upon that first great day of direct marketing.

The wagons and trucks were soon arranged in their former places. The farmers cried their wares but

there were no consumers. A few of the more venturesome farmers made their way into the offices and homes but it was found that they too were deserted. No consumers existed in the city.

A committee of farmers gathered to ponder on the situation. Where were the consumers? Why was the city deserted?

The Warden of the jail happened by in his limousine driven by a middleman prisoner. He was hailed by the farmers and asked for an explanation.

"It is simple," he replied, "My jails are so extensive that they make up a city. The farmers gradually became middlemen. The middlemen were sent to jail. The city people went to the farms. Who can be consumers with such an arrangement?" His car glided silently on its way.

What was to be done? Congress was appealed to and in order to provide consumers, an emergency bill was rushed through and all the middlemen prisoners were released and consumers were accordingly provided.

With all the middlemen out of jail, it was no time at all before the old order of things reigned. The farmer grew his produce and marketed it in the same old way. He now was contented and the consumer realized that there was more to supplying food than just raising it upon the farm and selling it.



*Note:—I do not want to leave with our readers the impression that this is the last word on the subject. Mr. Flourney has shown in his entertaining fable that middlemen do perform some necessary functions. The more vital question of whether they should be permitted to have control over prices paid to farmers and by consumers is not touched.—Jeff.*



## Get Rid of That Swamp!

(From page 21)

him to come down and survey the plot, which he did.

THE work in taking up the old tile had not progressed far when the reasons for their failure to drain was discovered. In the first place, the tile had been laid too shallow, only four to six feet from the surface. The outlet of the tile should have been lowered at least four feet, which would have insured more fall and provided for the laying of the tile at a greater depth. This not only would have lessened the danger of the tile being broken, but would have allowed them to draw water from a greater distance.

The water frequently backs up from the Ohio river and covers this plot of land, leaving a deposit of fine mud in the tile. As the old tile was laid with only one inch fall to the 100 feet, the water did not have enough force to wash out the sediment.

Not only was there no system whatever in laying the original tile, but there was not enough tile.

There was 225 feet of the old tile, while 775 feet was used in completing the new job. The new tile was laid much deeper than the old, and was given a fall of 12 inches to the 100 feet. This has removed all danger of the tile clogging, as the water flows with enough force to keep them clear of mud at all times.

The cost of completing this job was tile, \$25, and labor, \$70, making a total of \$95. So it will be seen that the cost of draining this plot was a very small matter, especially in view of the fact that the \$95 was practically repaid from the crop of soy-beans raised on this land last year. Robinson will put this land to corn next year.

Too many tile have been laid without system and have failed to function properly. This has discouraged many farmers to the extent of neglecting this important improvement. But farmers everywhere are beginning to familiarize themselves with the drainage question through demonstration, and the time is not far distant when frog-ponds in the middle of fertile fields will be a thing of the past.



## Cover Crops for the Apple Orchard

(From page 23)

of organic matter. Both classes may be subdivided into those which die in the fall and those which live over winter.

In order to see what factors go to make up a satisfactory cover crop let us notice what takes place when the cover crop is plowed under in the spring. A crop that does not over-winter may be plowed under at any time that the ground is suitable. Crops that live over winter may be permitted to make some additional growth before they are returned to the soil. However,

this must not be permitted to continue too long or the advantage of additional growth may be lost.

When the vegetative material is plowed into the soil it begins to decompose and is worked upon by bacteria which convert this material into a form in which it may be taken up by the tree. These are the various classes of nitrifying bacteria which convert the vegetative matter into ammonia and nitrites and finally into nitrates, in which form it may be taken up by the tree. These bacteria work only at rela-



tively warm temperatures and under moist conditions.

**I**N order, therefore, that the decomposition process may take place as rapidly as possible it is better that the vegetation should be young and succulent. Some crops, such as rye, tend to become tough and woody as they near maturity and decay very slowly. As the season advances the moisture supply in the soil often diminishes, tending to delay the destruction of the crop turned under late. An additional factor in favor of plowing under the crop relatively early in the spring is the possible need by the trees for the moisture being used by the cover crop, especially in the case of a dry spring.

Cover crop investigations conducted by the Purdue Experiment Station since 1912 have been summarized as follows: "The most satisfactory orchard cover crop is that one which, in the locality under consideration, will produce the greatest growth of vegetation, relatively rich in nitrogen."

Some of the most satisfactory cover crops that have a wide adaptation may be listed as follows:—

#### NON-LEGUMINOUS

*Rye*.—This crop has proved very satisfactory under Indiana conditions when properly managed. It is adapted to almost any type of soil and seldom fails to produce a good stand. It produces a good cover that remains on the ground over winter and yields a large amount of organic material for returning to the soil. It should be plowed under while young and succulent for best results.

*Millet*.—Another good crop especially for the young orchard. It grows rapidly and in this latitude makes a good growth before it is killed by the frost. Millet is not so

well suited to the old orchard as it does not grow well in shade. Although it does not live over winter it usually forms a mat of dry stems over the surface of the ground.

*Oats*.—In cool moist climates oats often make a very desirable cover crop.

*Buckwheat*.—This crop is very similar to millet in its behavior and adaptability as an orchard cover crop. It does not form as large an amount of dry matter, however, nor does it afford so good a winter cover.

#### LEGUMINOUS

*Soybeans and Cowpeas*.—In warm regions these crops sometimes make very satisfactory cover crops. In the more northernly localities, however, they often fail to produce a satisfactory ground cover before frost, when planted at the time cover crops are generally sown.

*Red Clover*.—A poor stand of red clover usually results from late sowing. Liming is often necessary to secure a good stand of red clover on orchard soils. Where these difficulties can be overcome red clover makes a very desirable cover crop.

*Crimson Clover*.—Like red clover, this is a very desirable cover crop when a good stand is secured. Much winter killing has been reported on clay soils, but on lighter soils crimson clover appears to overwinter in good condition and produces a large amount of organic matter.

*Winter Vetch*.—This makes a very satisfactory cover crop and produces a large amount of green material. Vetch sometimes winter kills but where this is not encountered good results are secured. Rye and vetch make a very desirable combination cover crop and when plowed under add a large amount of organic material to the soil.

*Canada Field Peas*.—A splendid cover crop for northern latitudes. This crop requires moist, cool



weather and under such conditions makes a heavy growth. May also be combined with oats or rye.

Other crops are especially suited to local conditions. Even under some conditions native weeds have

been utilized and have given very gratifying results. The safest practice is to grow cover crops that are adapted to, and known to succeed in, the particular locality under consideration.



## Making Peat Soils Productive

(From page 9)

"and you can't make it raise anything." "You wait and see," replied Mr. Northey, "and I'll show you how to farm."

And he did. It was in 1903 that he bought his first ton of potash. He applied this at the rate of 200 pounds per acre after the ground had been plowed, but before the corn had been planted. He didn't need to mark the spot where it had been applied; it showed up in the corn shortly after it was planted, and every day afterward made the contrast more pronounced. The neighbors all saw the difference. By fall the potash corn stood up 10 feet high, and yielded 65 bushels per acre; on the adjoining row the corn was less than 18 inches tall, in fact, in some of the worst places the soil was as bare as it was in the spring when it was planted—not even the sign of a weed to show that the soil was productive.

Since that time Mr. Northey has used potash regularly. And when he sent in his order he included the orders of his neighbors. Last year he applied 12 tons of potash on his own farms. He has used potash every year since 1903, with the exception of but one year, and that was during the war when the price was so high that it was prohibitive as well as unpatriotic to use it. This year he has already applied six tons of potash on corn land—three tons on the Wapsie farm and three tons on the Padget farm.

Now all of this peat land raises good corn. Originally it raised fine bluegrass pasture, fair oats, good

timothy, but a very poor, and in some places no crop of either corn or barley. All these crops grow well now. One application of 200 pounds of potash per acre has been sufficient for all succeeding crops since the first applications were made. Two years ago one-half of a forty was treated, with the usual results on corn; last year, this land was seeded to barley, the treated half making 55 bushels per acre and the untreated half not over 25 bushels per acre. On another farm potash was applied five years ago. Oats were seeded last year. While oats do not respond so readily to potash as corn or barley there was nevertheless this difference—oats standing up with a stiff straw and yielding well, and oats with a rather lifeless straw, lodging and producing practically nothing.

HERE are the results on one of Mr. Northey's neighbors—George Baldwin. Last year four rows of corn treated with potash made an outstanding growth during the entire season. The results were similar to what Mr. Northey had secured—40 bushels per acre as against nothing. I saw also, on one of Mr. Northey's farms, a repetition of the same thing last year; here, where potash was used, as good a crop as the season would permit; there, on the untreated ground, nothing, not even nubbins; in fact, it looked as though he had stopped planting corn in the middle of the field.

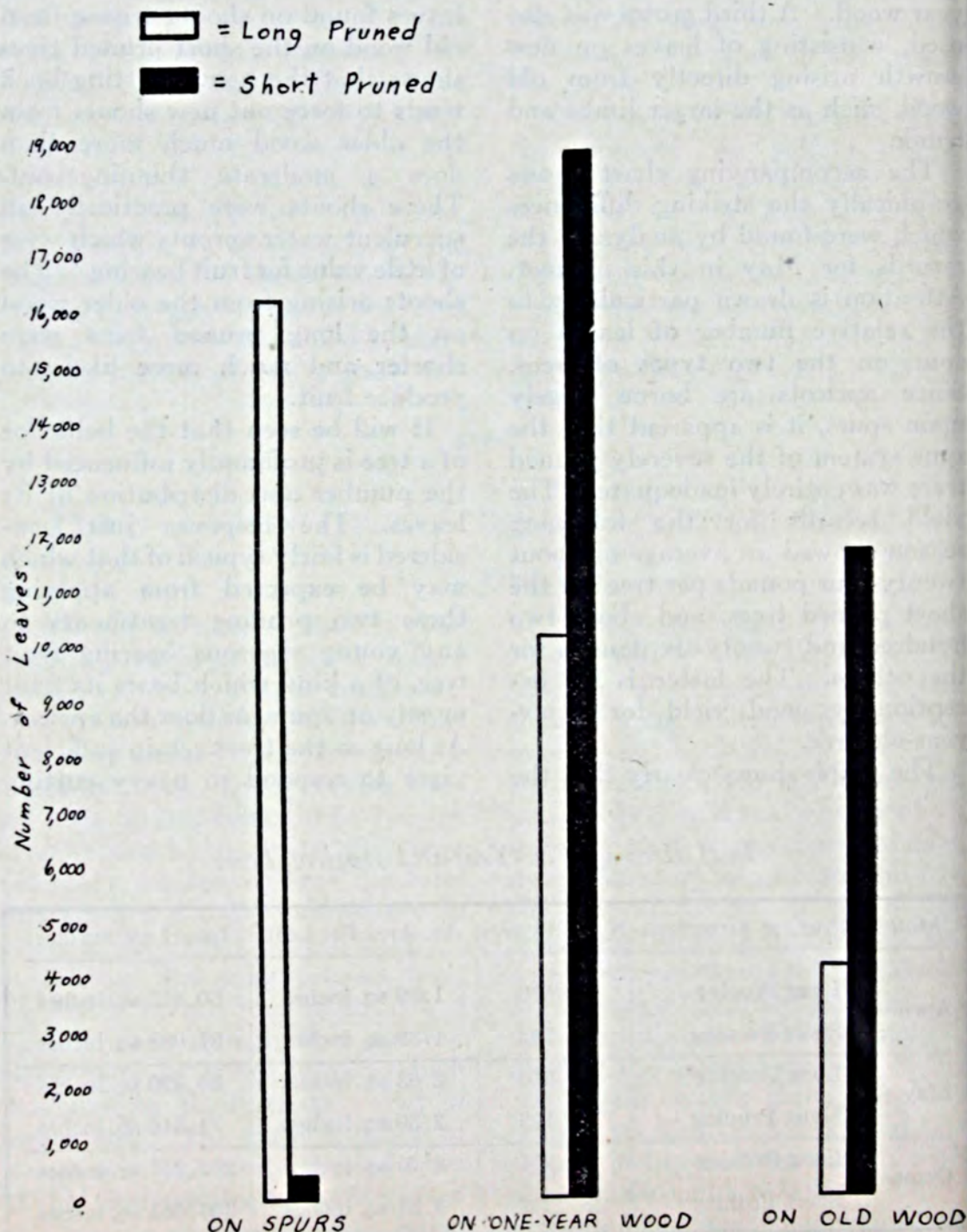
Does an application of potash pay




back with a burst of excessively long shoots, such a treatment is undesirable. As trees become older and weaker, the response to this same pruning treatment may be only short growth or, at most, shoots of moderate length. In this

case the heavy pruning is not only desirable, but necessary. Pruning practices, then, should be based upon tree responses, rather than upon unchanging rules or customs which do not take into account the differences between individual trees.

*Number and Distribution of Leaves on Five Year Old  
Apricot Trees During May*







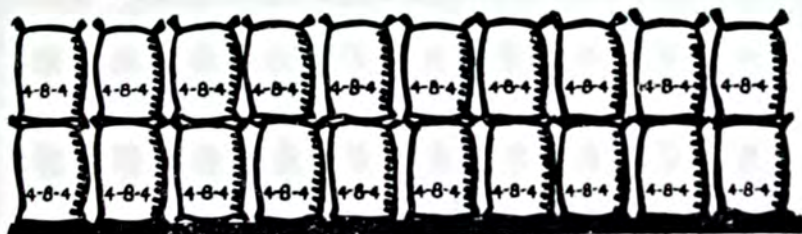
# 10 = 20

## 10 Bags of High Analysis



equal

## 20 Bags of STANDARD Fertilizer



County Agents and Soil Experts are recommending the use of High Analysis Fertilizers because of their high PLANT FOOD content.

Why haul and distribute twenty bags when ten contain the same amount of plant food?

International High Analysis Fertilizers are prepared well in advance of the shipping season. They are well cured and drill easily.

A free booklet, "Fertilizers to Fit Your Needs," is now waiting to give you some helpful information. Write for it today.

### International Agricultural Corporation

Dept. B, 61 Broadway, New York

SALES OFFICES IN FIFTEEN CITIES





## TWO HOURS WORK WHILE THE CLOCK TICKS ONE

### With the Oliver No. 37 Two-Row Cultivator

**C**ULTIVATING days are usually the busiest of the whole farm year. On most farms the capacity of man and team power is taxed the limit in order to keep ahead of the weeds, which grow like magic.

It is during this busy season—a time when there are so many things to do that you will appreciate most the advantages of being able to do two hours' work while the clock ticks one.

Cultivating two rows in the same time that is ordinarily required for one, or sixteen acres in one day instead of eight, results in a decided saving in time and labor required to handle the crop.

The ability to get over the crop quickly, especially after rains, keeping down the weeds and conserving the much-needed moisture means a great difference in the quantity and quality of the yield. Then, too, there is more time for harvesting and the other important farm work.

These advantages all serve to increase profits for the year and warrant owning a two-row cultivator purely from a business basis.



OLIVER CHILLED PLOW WORKS

South Bend, Indiana



# Better Crops

The Pocket Book of Agriculture.

August 1925

10 Cents



This Issue: Laziness—Controlling Farm Production—  
County Agent's Business Partner—Weeds Everlasting



# Same Acreage.....but



## \$10.76 more bushels of *Extra Per Acre* WINTER WHEAT per acre

The Experiment Farm in Cass County, Michigan, in a rotation of Soy bean, rye, and wheat, applied lime, phosphoric acid, nitrogen, and potash. The value of the three crops was \$22.20 per acre.

An adjoining plot with same rotation was fertilized exactly as above—but without potash. The value of this plot's yields dropped to \$11.44 per acre. On each plot, the soil was sandy.

Thus, the extra income from potash was \$10.76 per acre. Potash Pays! For mineral soil, 200 to 400 lbs per acre of a mixture with 2 to 6% potash is recommended. If your wheat tends to lodge, or grain is small and shrivelled—use the higher per cent of potash. For muck soil, about 300 lbs. of 0-12-12, or 150 lbs. muriate of potash alone is recommended.

MANY winter wheat growers did it last year — many will do it next year—you can do it too.

Instead of increasing your winter wheat acreage, get more bushels of grain from each of your acres—grain that is plump and grades high.

Prepare your seed bed a little better than last year; select your seed carefully—and see that your fertilizer is high grade and well-balanced—with plenty of potash in your mixture.

A shortage of hay has been forecasted. Avoid a short clover hay crop next year by putting in clover with your winter wheat—and use plenty of potash in your mixture to improve the stand of your clover—as well as for increased yields of quality wheat. Potash Pays!

**Potash Importing Corporation of America**  
10 BRIDGE STREET Dept. BC NEW YORK, N. Y.

*Genuine German*  
**POTASH**





# Better Crops

## The Pocket Book of Agriculture

VOLUME IV

NUMBER SIX

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*"Yield not to temptation"*





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VOL. IV

NEW YORK, AUGUST, 1925

No. 6

*A timely essay on a popular human failing is this story on*

# LAZINESS

By *Jeff McIlernid*

MY FRIEND, Fred Van Amburgh, philosopher, writer, thinker and doer, discussed with me recently the art of being lazy. Fred told me about the time when he saw a dog so lazy that he leaned his head against the wall while he barked.

And while in this position he attracted the attention of a lazy man who lay down to laugh at the dog!

Fred did not add that, although he had a kodak with him and could easily have snapped this laughable performance, he missed getting a picture of it because he was too lazy to pull the bellows out and adjust the lens. I suspect that this is true, but I am too lazy to ask him about it!

WHEN I was a boy and my dad would come home to find the lawn only partly mowed he would

call to me, "Move on, driver!"

Now, unless you were "in the know" you could not understand that this was his half-serious, half-joking way of calling me the laziest boy in town. For one of his favorite stories was that of the town's laziest man who, while still alive, was being driven to the cemetery by a dozen disgusted fellow townsmen who had often threatened to bury him unless he went to work, and were now earnestly bent on carrying out their threat.



"Hold on there!" said a farmer, as the funeral cavalcade went by his gate, "Who ye buryin'?"

"Hank Bowers, laziest man in town."

"Didn't know he was dead!" exclaimed the farmer.

"Wal, he ain't. But we're buryin' him anyway, to get rid of him. He ain't no use to anybody, he's too lazy to even scare up food for himself, and he's half starved. He'd soon die anyway!" came back from the driver of the hearse.

"Shucks, I got lots of corn!" said the farmer. "Don't bury a man alive. I'll give him a bushel of corn!"

Suddenly, so dad's story went, the lid of the coffin was pushed up and Hank Bowers sat bolt upright, blinking and rubbing his eyes until they got accustomed to the daylight. He had undoubtedly heard through the padded walls of his coffin, the farmer's kind offer.

"Is that corn *shelled*?" he asked.

"Why no, of course not!" exclaimed the surprised farmer.

"Move on, driver!" said Hank, sliding back into the coffin. And the cavalcade moved on to the buryin' ground.

**L**OTS of us laugh at laziness. It is a lovable trait, for those who are lazy are usually good natured.

But laziness is a thief—a hold-up that always does an "inside job" to rob you of precious opportunities. Usually laziness visits you in the welcome disguise of a "much needed rest." You have been working rather hard, and feel that you should relieve your body and mind of all exertion for a while.

And thus disguised, laziness enters your soul and steals your future. For, nine times out of ten what you needed was a *change* of activity, not a rest. It is easier to rust out than wear out. And time is too precious to waste.

Man is naturally a lazy animal. You could count on your fingers and toes the men in your state who

would work whether they had to or not. The rest are lazy by heredity, environment, desire and natural aptitude—they only work to keep from starving to death.

**I**N THOSE regions of the world where Nature bountifully supplies food without asking any labor as payment, no one works. The native sits under a banana tree, breathes a short prayer, shakes the tree by the simple process of leaning back violently once or twice against its trunk, and—his breakfast falls in his lap!

No Fifth Avenue club boasts better service.

In the tropics few are ambitious, and as no great accomplishment is achieved without effort, we find that no invention, no music, no art, no book, no poem, no new thing of any consequence ever came from the tropics.

The men of the north are the conquerors of the world. The great cities are cold cities—the progressive countries are those where winter's icy blasts stimulate ambition, and demand that the lazy one work or freeze. Man is only as active as he is forced to be.

What progress has been made in tropical zones has been made by northerners before they were bitten by the lazy bug.

Florida is even now suffering from a boom thrust upon her by money and men from the north—a boom that will last as long as men from the north maintain their vigor and as long as New York money flows in, but which will collapse like a punctured toy balloon full of sweetened wind as soon as the hookworm of laziness bites the newcomers, outside money ceases to pour in, and Florida has to support them on her own.

**T**HE paths to progress are thronged except at the far end.  
(turn to page 47)



# Weeds Everlasting

By M. A. Crosby

*Are weeds immortal? Read about this test and learn which are the longest-lived.*

**W**HY do countless millions of weeds persist in annually making their appearance in our cultivated fields where none was allowed to go to seed the year previous, or for several years previous?

This is a question that caused many a farmer to scratch his head and ponder on the whys and wherefores of nature. No matter how diligent and thorough he may be the never-ending horde of weeds continues to spring up and pester him.

Those of us who were farm raised will recall spirited discussions among our farmer neighbors in which some would most emphatically assert that "the soil produces weeds spontaneously," and that under certain conditions or practices various crops "turn to weeds." As proof of these theories they would point to the fact that fireweeds always come up where a log-pile has been burned off on new ground, or claim knowledge of where "wheat had turned to cheat" or "red clover turned to sheep sorrel."

With the growth and advancement of agricultural science these "grandfather" notions have been dying out,—but there still remains some who religiously, and even proudly, cling to these old-time absurdities, just as they stubbornly adhere to the same farming practices and methods of their fathers and grandfathers before them. The majority of farmers, however, have long since come to realize that the

seeds of many of our common weeds will often lie in the ground for years and then grow when brought under conditions favorable to germination.

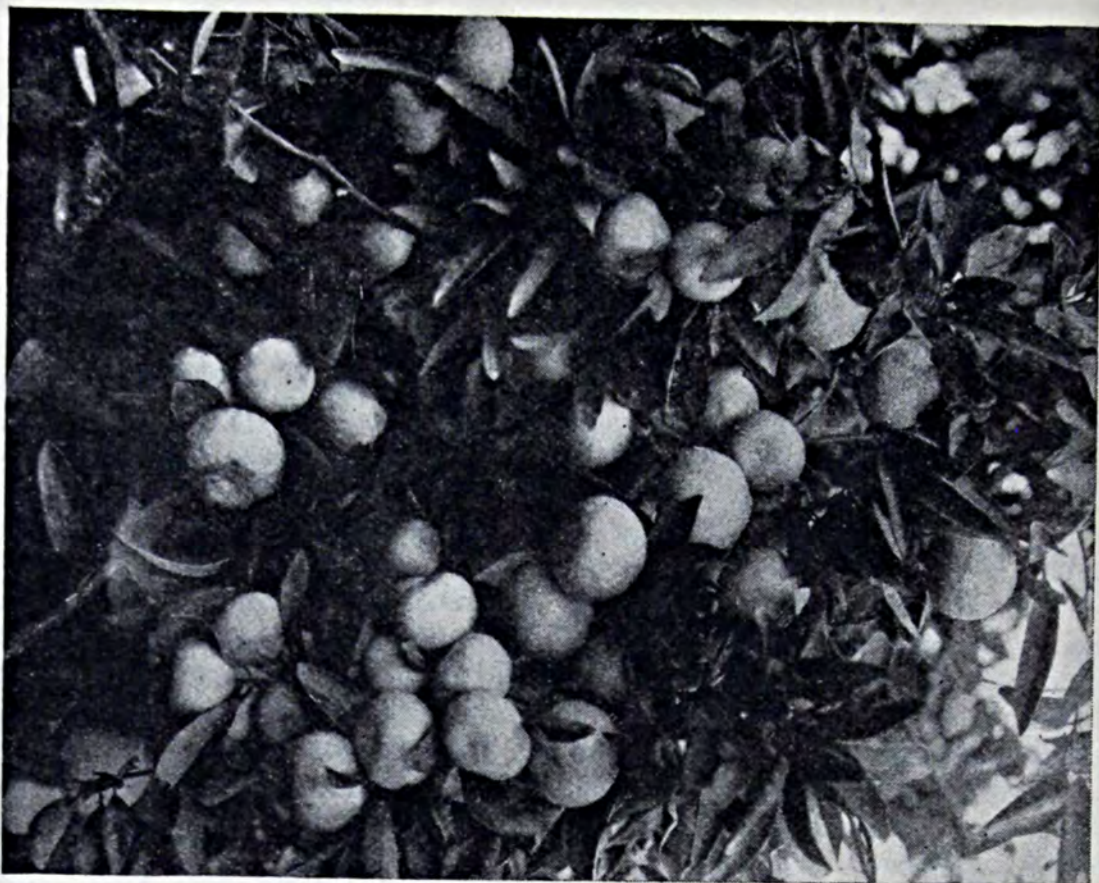
But just how long will the seed of various weeds retain their vitality when lying in the soil? Is it possible, by preventing them from maturing seed for several years, to eventually eliminate weeds from our fields?

**I**N AN attempt to throw some light on this subject the late Dr. W. J. Beal, then Professor of Botany at the Michigan Agricultural College, planned and started an experiment to determine, if possible, just how long the seed of various kinds of weeds will remain in the ground and still retain vitality enough to germinate and produce plants. This experiment was started in 1879, and although it has now been running over 40 years it still has a long road to travel. Dr. Beal fully realized that he was tackling no short-time job, and his plans were laid to have this experiment run for 100 years.

From results already secured it is obvious that Dr. Beal's plans were wisely made, for with the seed of many kinds of weeds there appears to be little if any diminution of their germinating power after having been buried in the ground for 40 years. In fact, some appear to show up stronger at the end of 40 years than in any of the previous years. Note—

*(turn to page 45)*





# SATSUMAS

## *Flourish on the*

# GULF COAST

By R. B. Fairbanks

*“The best methods for  
cultivating this golden crop.*

THE growing of Satsuma oranges in the southern part of Mississippi, Alabama, Louisiana, Texas, Georgia and North Florida is increasing rapidly. Because this fruit ripens earlier than the round orange it generally finds a very ready market. The ease with which the peel slips from it is another

thing in its favor. It is, therefore, no wonder that the growing of Satsuma oranges has reached the stage where it is no longer an experiment and has become an important industry in the Gulf Coast section.

It does well on a great many different types of soil. However,



well drained sandy soil with a clay subsoil a foot and a half to two feet below the surface, seems to be the type best adapted to the growth of the Satsuma.

Where newly cleared ground is to be planted, all stumps should be removed, the ground thoroughly prepared and planted the year before to cowpeas, velvet beans or some other legume crop. It is highly necessary to do this, because the land needs to grow at least one of these legume crops before the Satsumas are planted.

THE trees are usually given a distance of 22 to 25 feet each way. When planted 25 feet each way, 69 trees are required to plant an acre. Many growers with whom we have talked say the trees should never be given less distance than 25 feet each way. Planting in squares is the most common method.

Where crops are grown in between the rows of the young trees, it is advisable to leave a strip of three or four feet on either side, free of these crops, and give this strip frequent, shallow cultivation from early spring until the middle of August. Many of the best growers do not plant anything between the Satsumas, but cultivate the entire ground, except for the time when a summer legume crop is being grown to turn under and enrich the ground. Certainly no effort should be made to grow even any of the truck crops in between the trees after the bearing age is reached. Many of the growers, however, grow a sufficient amount of truck in between the tree rows until the bearing age is reached to almost pay the cost of growing the trees.

IN ORDER to keep a strong, vigorous growing tree, large amounts of plant food are needed. It is advisable to fertilize the trees at least twice a year and many growers give them three applica-

tions. An application of commercial fertilizer is usually given in February or March. The second application is given in June or July. If for any reason the trees are not making the desired growth, a third application should be given in August. When the last application is given, however, the amount of ammonia should be very greatly reduced, in order not to keep the trees growing too late in the fall. Usually the two applications is the method preferred by the growers; that is, the first in February or March and the second in June or July.

In fertilizing Satsuma trees, it is important to use not only the right analysis, but fertilizer made from the right materials. It will not do to make use of the same kind of fertilizer that is ordinarily used on cotton, corn, and other field crops, because these are not the kinds needed by the Satsuma.

It has been found advisable for the nitrogen to come from both inorganic and organic sources. Both nitrate of soda and sulphate of ammonia are advisable as the inorganic source, and tankage, dried blood, cottonseed meal, fish scrap, etc., for the organic source. The rule some of the best growers follow is to use 4% nitrogen, one unit of which comes from sulphate of ammonia, one from nitrate of soda, and the other two from the organic sources.

The phosphoric acid usually comes from acid phosphate, although some bone meal is sometimes used.

WHEN it comes to the potash, only the sulfate of potash should be used. A heavy percentage of potash is absolutely necessary, as it helps to harden the wood, color the fruit, and put it in condition to carry well to market. One thing that was especially noticed in the heavy freeze of early 1924, was the fact  
(turn to page 36)



# Why I Am

*(Although a professor at Bucknell University, Mr. Theiss has as lively an interest in farming as any one I know. His experiments with nut trees are only one phase of his farming operations.)*

THE situation with regard to success is exactly like that in respect to greatness: some men are born successful, some achieve success, and some have success thrust upon them.

My own experience with nuts, in the raising of which I am expecting considerable success, will illustrate both the accidental and the achieved sort of accomplishment, but not the "natural born" variety. I very much doubt if nature ever intended me for a nut culturist. But now that I have become one, and now that my eyes are opened to the possibilities of nut culture, I want to pass the word along, in the hope that it may loosen the scales from some other person's eyes.

I might briefly say that, though my business is the practice and teaching of journalism, I live in the country. When I left the staff of the old *New York Sun* and moved out to a real farm in Pennsylvania. I had no knowledge of farming and even less of nut growing. But a friend offered to send me a seedling Persian or English walnut tree, and I, being willing to try anything once, accepted the offer and planted the tree.

The tree grew and thrived. Also, it filled my head with visions of plentiful nut crops. I set out to learn about nuts. I found that seedling nut trees were just about as worth while as seedling apple trees, and that tender nut trees, like English walnuts, could be

made quite hardy by being grafted on black walnut stocks, and that only such trees were fit for planting in a cold region like our central Pennsylvania.

TO MAKE a long story short, I ordered three varieties of the best English walnuts, grafted on black walnut stocks, that I could get from J. F. Jones, of Lancaster, Pa., our best eastern nut culturist. My trees are now eight years from planting. One has borne twice. Last fall three bore nuts. These nuts were as fine in quality as any I could find in the market, and had thinner shells than any of the commercial nuts. My grafted trees have withstood a temperature of twenty-five degrees below zero unharmed. My seedling was badly hurt by that cold weather.

The trees are stocky, thrifty, beautiful at all times, immune to most diseases and pests. Caterpillars trouble them a little and this past fall what I think was the hickory twig girdler pruned away a few tips. Otherwise, nothing harmful has happened to these trees in eight years, and they have had absolutely no attention, save a little hand hoeing the first year or two after setting.

Fruit trees handled in the same way would long since have given up the ghost. Yet here these nut trees are ready to bear as early as apples, sturdy, and in every way a delight



# Planting NUT TREES

By Lewis Edwin Theiss

to the owner. If my experience in fruit raising is any criterion—I own and personally handle an orchard of eight acres—these trees will bear many nuts within a year or two, and eventually prove a source of much profit.

But English walnuts are only a start. Growing on our place naturally we have an excellent grove of perhaps twenty-five shagbark hickories. We have black walnuts and butternuts, and we had chestnuts. All produced good nuts.

In addition to these nuts I secured two of the best named varieties of black walnuts, the Stabler and the Thomas. These are grafted trees, made from wood of the original Thomas and Stabler trees. My Thomas walnut bore when it was quite small. The Stabler has been set out only a year. The principal objection to black walnuts is the difficulty of getting the meats out whole. The nuts are difficult to crack. The Stabler is a nut with remarkable cracking qualities, as well as excellence of flavor. It will be in great demand.

Among the walnuts I have both the Japanese walnut and the heart nut. The Japanese walnut looks like an elongated English walnut and tastes like a butternut. It is most excellent in quality, but because of interior shell compartments is difficult to crack well. The meats break in getting them out.

But its offspring, the heart nut,

is one of the most remarkable nuts in existence. It is a flat, heart-shaped nut, with a shell like a hickory. And when you tap it with a hammer, it splits along the little ridges that mark its sides, and opens as nicely as a candy box. The nut, heart-shaped and excellent in flavor, drops out whole in your hand. There is no hard-shelled nut that approaches it for cracking quality. Like its parent, it tastes like a butternut. I have both the grafted Japan walnut and the heart nut, and also seedlings of both.

IN MY opinion the heart nut is *the* coming nut. Its hardness makes it possible to grow it almost anywhere. Its precocity is truly amazing. It will fruit from seed in five or six years. But there is no certainty as to what it will produce. It is quite as likely to yield Japan walnuts as it is to give heart nuts. Grafted trees bear still younger, being comparable in this respect to Yellow Transparent apples. The tree is worth planting for its beauty alone, as it is one of the most ornamental trees in this country. The leaves are huge, some of those on my trees being a yard long. The blooms hang in clusters, like bunches of grapes. And of course the nuts are borne in the same way. Last spring I counted many clusters of ten to a dozen blooms on a tree owned by a neighbor of mine.

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# The County Agent's Business Partner

By H. E. McCartney

*“This significant development that is taking place in Ohio will interest every county agent and farmer.”*

THE County Service Manager had come to the assistance of the County Agent in Ohio. This new worker is an outgrowth of development that has come since the Farm Bureau was organized and since that organization became the cooperating unit in the counties of many states in putting over the County Agent work.

The County Agent has always been a busy man carrying a heavy load. When the desire of farmers to organize and to cooperate in marketing and purchasing culminated in a new national organization, there was a natural tendency to let the County Agent do all the local work. Physically, it was impossible for him to do this. At least he could not handle a multitude of business items in addition to his regular tasks. The organization of the Farm Bureau in Ohio had added to the demands for his time to do practical demonstrational work and to assist in boys' and girls' club work and in community activities.

Then came an official letter from the Secretary of the U. S. Department of Agriculture saying in substance, "You can't do it. Lay off all business enterprises. You may tell the farmers that it is wise to cooperate, but you are not to do their business for them after they are organized. This is the law." The

Secretary of Agriculture was interpreting the law and not expressing any personal feeling. Perhaps he would have desired it to be otherwise. Yet, as head of all cooperative extension work, he could do nothing except to obey the law and to see that those of us in his organization did likewise.

It might seem to be a serious situation to get the farmers worked up to a desire to cooperate and then leave them. It might be in some cases. However, when there is a problem to be solved, it usually happens that some one or some group comes forward with a practical solution.

IT WOULD appear that the County Service Manager idea "just grew." Who thought of it first no one seems to know. Which county used one first is immaterial. Perhaps some one jokingly said, "Let George do it." Some other, taking the remark seriously, went out and put George to work "doing it." The result of a recent count showed that 59 counties of the state of Ohio have Service Managers. Perhaps there are more now, for there is probably not a single county in the state that does not hope and expect to have a Service Manager at work before many months.



The employment of a County Service Manager is sponsored by the County Farm Bureau and he works for the Farm Bureau and its allied business organizations. In one county at the time the Service Manager started work he became the responsible head of the County Livestock Shipping Association, the County Grain Co., Manager of the County Unit of a large milk producing association, County representative of the Ohio Sheep and Wool Growers' Association. He assumed responsibility for Farm Bureau memberships and collections and for cooperative buying and in addition became the Secretary of the Farm Loan Board for the County. This is quite an imposing outline of duties and no doubt would be sufficient to keep any good man busy—almost as busy as a County Agent. Surely a county that would outline a list of duties equal to that would be ready for a Service Manager.

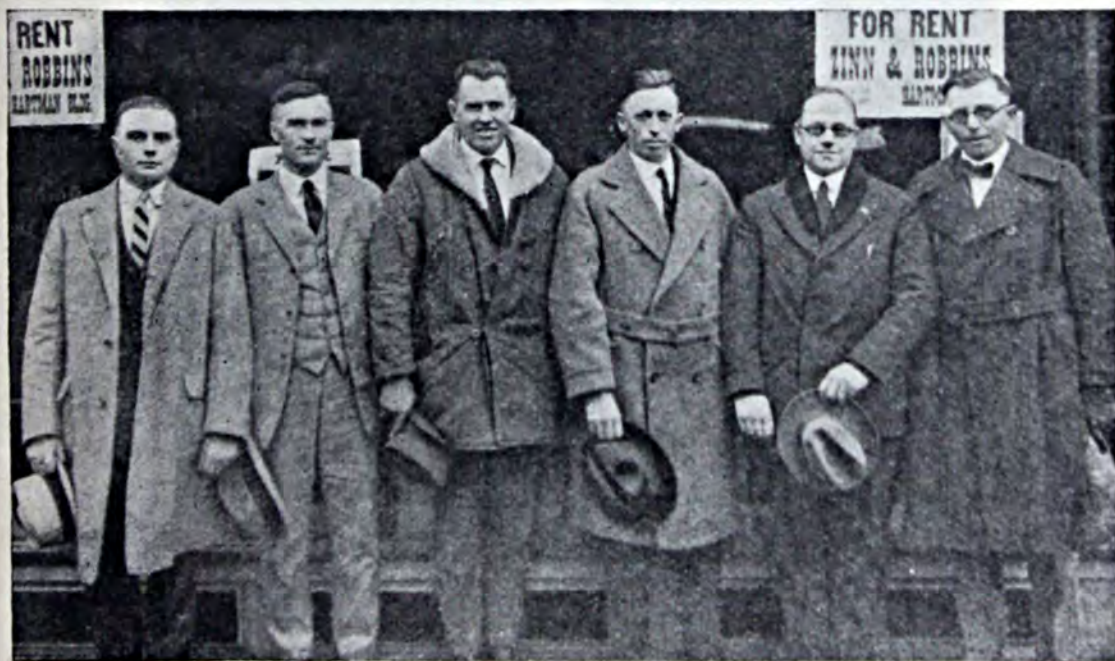
Immediately upon starting work the Service Manager becomes the partner of the County Agent and a most useful member of the firm. In Seneca County, Silas Vance, the

Service Manager, said, "My duties and those of the County Agent cannot be separated. Every single one of our projects overlaps." The County Agent, P. J. Schmidt, and Vance work on opposite sides of a big desk when in their office. No one can see where the space for either begins and where the other leaves off. Just so it was with the people out in the County. Usually they would refer to both men in the same sentence.

"Just what are the duties of a County Service Manager?" was asked of a man who had been on duty for several months in one of the Counties. He replied, "It would be easier to tell what I don't do."

Duties vary in different parts of the state. It may be that in the southern part a Service Manager may spend a greater part of his time on handling the tobacco pool. In others, dairying may be his major activity. In another, it may become his most urgent task to build up the Farm Bureau membership. In others, it may be necessary for him to side track any extensive work on other projects until he has

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Some of the leading Service Managers in Ohio. Left to right: Philip Heim, Columbiana county; M. E. Foltz, Stark county; W. F. Pelle, Clinton county; Wallace Binegar, Madison county; J. D. Van Houten, Brown county; L. R. Kempton, Knox county.

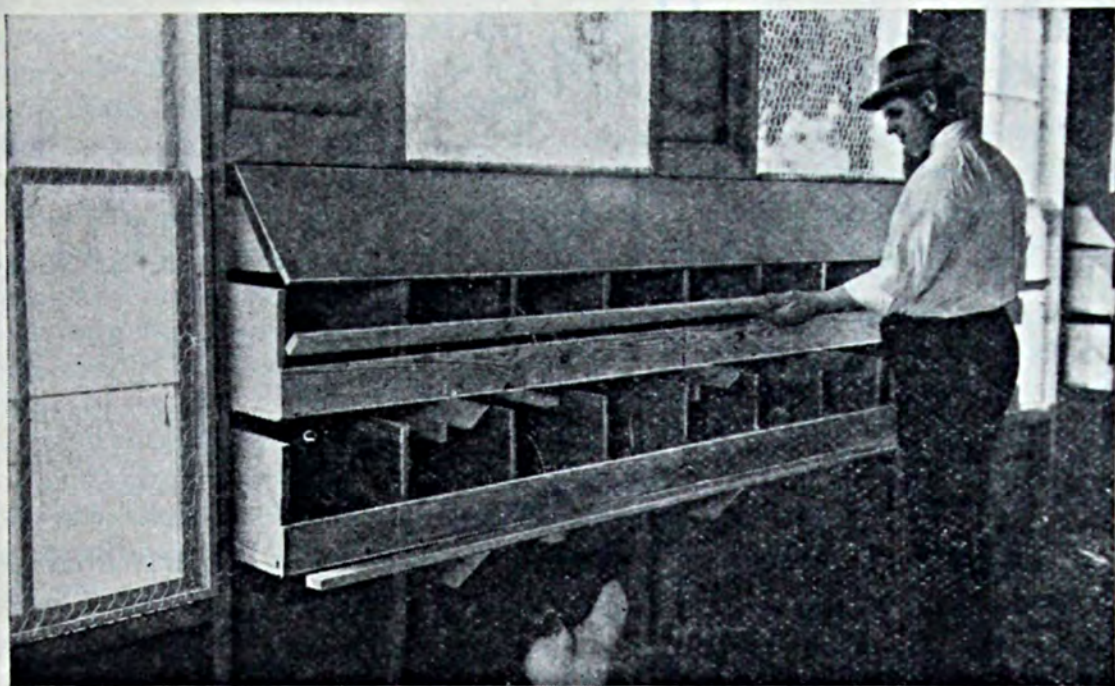


*Better Crops'*  
ART GALLERY  
*of the month*



*Pals*





J. L. Foster, poultryman near Attica, Indiana, and a battery of his nests in one of his laying houses. "I have often found," said Mr. Foster, "that young pullets when they are first put into the laying houses and before they have become accustomed to their regular roosting place, will roost upon the edge of the nests. To prevent this I have made a light strip of pine to slide on two wires as shown in the picture. It takes only a minute to pull this strip up over the nests at roosting time."



"Another fine thing about these nests is that they are so constructed that I can take them apart, clean them out thoroughly and put them back on the wall in a very short time." This system has been worked out by Mr. Foster himself and might very profitably be copied by other poultrymen.



# Controlling Farm Production

By Arthur P. Chew

U. S. Department of Agriculture

*“There is a vast difference between “orderly production” and “limitation of production.” Mr. Chew shows how the individual farmer is in a position to make good profits by utilizing the former principle.*

**W**HENEVER farmers get together there is sure to be talk of orderly marketing. Rarely do they discuss orderly production. Orderly marketing is considered practicable, while orderly production is not. It is supposed to be easier to control the movement of a crop to market than to regulate the size of that crop. Regulated production is thought to require nationwide or even world-wide agreements among farmers as to what quantities of field crops and livestock they should individually raise. As such agreements are clearly impossible, the idea of controlling farm production is usually given up as hopeless.

As a matter of fact, orderly production in agriculture is not only possible but practicable. Without it, indeed, there can be no orderly marketing, because a heavy oversupply of any product will break the shrewdest marketing scheme ever devised. Orderly production is not dependent on any plan for getting all farmers to limit their output. Nor does it call for grandiose programs for regulating the flow of products to market after they are produced. It simply requires the intelligent use of market information by farmers individually.

Regulated farm production has been brought within the range of practicability only within the last few years. It was useless to talk about it previously because the volume of crop and market information necessary to effect a proper adjustment of the supply of farm products to the demand was not available. Today, however, crop estimating and forecasting is at a pitch of accuracy and comprehensiveness that makes it of the highest practical value in adjusting crop production to market needs. Government economists and statisticians now forecast market requirements and main price trends with remarkable precision. Farmers are accordingly enabled to drop their old bad practice of determining their future production in accordance with the prices received for past crops. They can adopt instead the much more scientific system of anticipating markets.

Anticipating the future may sound risky. In agriculture, however, it is more risky not to anticipate it. Once livestock is bred and crops are in the ground, the farmer is practically powerless to influence the relationship between the supply and demand for his products. When



he launches his various farm enterprises without trying to find out what sort of a market he will have, he is assuming the heaviest kind of gambling risk. Economists and statisticians in the United States Department of Agriculture are authority for the assertion that he need no longer assume this risk to anything like the extent that it has been obligatory for him to assume it in the past. Farmers can now inform themselves, at least in a general way, what are the prospects for the overproduction or underproduction of any crop before they plant it.

THE bane of agriculture is unknown production for an unknown demand. This leads to alternate underproduction and overproduction. So regular is the swing of the pendulum that most farm products have a definite price cycle, the phases of which can be predicted. Farmers usually base their production plans on the prices they received for their last crops. They assume that one year of high prices will be followed by another like it, whereas the truth is that one year is followed by another in a course similar to that of previous cyclical price movements. An antidote is now in sight in the shape of regulated production for a known demand. All that is necessary is that farmers should learn to use economic information, and particularly forecasts of market demands and price tendencies, in planning their work.

This is not pure theory. It has had considerable testing. The purpose of this article is to give some instances in which available crop and market information was ignored by farmers with painful results, and other instances in which it was applied with good results. Crop estimating, of course, is not a new function of the Department of Agriculture. But the branches of it that enable farmers to adjust

their production to the probable demand are comparatively new. Estimates of growing crops, forecasts of yields, forecasts of total production, world market information, price reports, and similar studies have been made and published by the Government for many years. Lately the statistical data thus gathered have been made the basis of "outlook reports," in which the department tells the producers of all the major crops what market situation they are facing and in some cases expresses a definite opinion as to what percentage of increase or decrease in production is required to effect a profitable adjustment of the supply to the demand.

Crop and livestock reporting by the department now covers 74 field crops and all classes of livestock. It is done by a staff of statisticians at Washington and in the field and by more than 300,000 voluntary crop reporters, mostly farmers. Agriculture has a long turnover, ranging from six months for field crops to three years or more for some livestock. It has therefore more need than any other business to anticipate the future, if its production is to be rightly adjusted to the demand. Accordingly, the department boldly makes production and price forecasts.

It estimates winter wheat production early enough for the information to be a valuable guide to spring wheat growers. It forecasts hog prices months in advance with remarkable accuracy, on the basis of production surveys and analysis of factors influencing the demand for hog products. It predicts the phases of the cattle cycle and the sheep cycle. It tells farmers by what percentage flax acreage can be increased without danger of putting flax on an export basis. And it gives this information in a form in which the farmer can use it. Instead of telling him in round numbers how many bushels of wheat or pounds of pork will be required for the next market, it advises him what per-



centage of change in production will be required to balance supply and demand. Then the farmer can tell whether he individually is contributing to overproduction or underproduction.

NOT many farmers are awake as yet to the practical value of this service. In 1919 the potato growers received the high price of \$2.24 a bushel for a small crop of 323,000,000 bushels. They were warned not to assume that prices the next year would be equally high. But they did not heed the warning. They increased their potato acreage, raised 403,000,000 bushels in 1920, and had the mortification of seeing the price drop to \$1.32. But this price slump did not stop the leaning toward overproduction. Production was again increased, and in 1922, for a crop of 453,000,000 bushels, the growers received only 74 cents a bushel.

Flax growers paid dearly in 1912 for failing to post themselves on the world trend in flax production. Abundant information on the question was offered them but they ignored it. A short crop in 1910 had brought the high average price of \$2.38 a bushel. Acreage was accordingly increased, and the price went down to \$1.94. Another increase in production the next year forced the price down considerably lower. It was not until 1914 that reduced production of flax again made the crop reasonably profitable. While the overproduction of 1912 was a world affair rather than a purely domestic one, our farmers materially contributed to it by their failure to understand that the high price of 1910 was not a guarantee of continued high prices but was rather a warning to look out for a reaction.

Such avoidable maladjustments in production are one of the main reasons why the farmer has no certainty of a reward for his work. According to the Department of Agriculture, acreage is practically

as important as yield in determining farm production. It has been objected that agricultural output can not be forecast or controlled because it is impossible to tell what the rain and the sunshine will do. The reply is that 50 per cent control is possible through the regulation of acreage, and such a degree of control is not to be despised. It has been established that price changes in cotton are normally about 95 per cent attributable to change in production. Changes in the demand for cotton have only a slight influence on the price. Farmers go wrong in judging their own mass action in producing a crop. It is estimated that changes in cotton production are at least 50 per cent due to acreage changes. This is a controllable factor that is not of decisive importance when the cotton market is undersupplied as it is at present, but the increase of cotton production in other countries may make it of decisive importance before many years have passed.

Orderly farm production, says the department, depends on three things—advance knowledge of probable demand, information as to available supplies, and action by farmers, not collectively but individually, in regulating acreage and livestock breeding. There is no difficulty as to the first two essentials. The demand for farm products, in ordinary times, does not change much from year to year, and abundant facilities exist for obtaining information as to available supplies. It is more difficult to get farmers to act as the changing market situation requires.

SO FAR there are more cases in which farmers do not take advantage of the economic service put at their disposal by the Department of Agriculture than there are cases of the opposite kind. Nevertheless, they are learning. Potato growers seem to have profited by their costly

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# The Bad Guesses Of Critics

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B y E . W . H o w e

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**L**AST summer I was invited to attend a celebration in a rural neighborhood called Prairie View. A feature of the day was a dinner after the speaking. Every family had a specimen of its cookery on the table. Everything was well-cooked and wholesome, and the list included nearly everything used in the ordinary human family as food.

Therefore H. L. Mencken astonished me lately by declaring in a magazine that "to encounter a decent meal in an American family home of the middle-class, simple, sensibly chosen and completely cooked, becomes almost as startling as to meet a dollar rolling up hill."

All those represented at the Prairie View dinner were of the middle class. There is neither a very rich nor a very poor family in the neighborhood, but it has not a home where a decent meal is not only frequently, but almost regularly served. I have lived a long time, and dined in many different homes in the country, where I have always lived. I can almost count on the fingers of my two hands the bad meals offered me.

Mr. Mencken is a bachelor,

born and bred in a city. If he will visit me, I will point out a dozen country girls. If he will marry one of them (which he possibly might do, as he is young, good looking, and makes a comfortable living as editor of *The American Mercury*,) I will bet him that in a year he will confess he has all his life been ignorant of real women; that he will confess his remaining a bachelor, which he now regards as wisdom, was really stupidity.

I think every big-town man should marry in the country. Perhaps our most capable men are found in cities, where there are the biggest jobs, but in rural places are found the most womanly women. As a very general rule, when a man in the country develops unusual cleverness in baseball, prize fighting, literature, business, a scout soon finds him and offers promotion, but many of the finest women remain in country places all their lives, and are never heard of outside their own neighborhoods.

What have the women done to Mr. Mencken to cause him to become so critical? They have treated me so well I confess great admiration for them.



# Eliminating the Waste in Agriculture

By Dr. Robert Stewart

University of Nevada, Reno, Nevada

*(Have we a right to complain of the farmer's hard lot while we tolerate so much waste in agriculture? Dr. Stewart points out some of the worst cases and suggests some remedies.)*

SECRETARY HOOVER in 1921, while President of the American Engineers Council, appointed a commission of seventeen well-known engineers to make a survey of six basic industries in the United States and report upon the effects of the business depression upon industry with recommendations for changes as they saw them.

This commission found an astonishing waste in these industries. There was waste in labor, waste in raw material and waste in efficient management. There was an average of fifty per cent waste in raw material and industrial effort, much of which could be saved.

Much of the burden on the manufacture and labor came through seasonal operation and limited output. The distributors were carrying needlessly large stock, many items of which moved very slowly thus eating up the profits.

It has been estimated that ten billions of dollars could be saved in industry by standardization and simplification whereby much of this waste could be eliminated.

Recommendations along these

lines were made to the industries concerned and have been put into actual practice by many operators with very marked and gratifying success.

One manufacturer reported that "Simplification increased our sales twenty-five per cent, reduced our costs thirty per cent and gave us all-year-round production."

Bricks, slate, lumber, asbestos paper, millboard, building hardware and other commodities have been affected by concerted agreement of all groups for the reduction in number, varieties and size. In a word, these items entering into the construction of a building were standardized.

AGRICULTURE could profit very materially from a similar study and the adoption of similar methods for elimination of waste. Farm profits could very materially be increased by the elimination of waste on the farm and on the way to the consumer's table.

There are various ways in which economic waste occurs on the farm



which, if allowed in any other industry, would wreck that industry and which can easily be eliminated.

There is a marked waste in time and labor in the production of many crops. It takes about one hundred and twenty days of actual labor to produce a crop of wheat or barley. There are three hundred and sixty-five days in a year, fifty-two Sundays and three general holidays. The single crop wheat farm must therefore be idle about one hundred and ninety days out of the year. A similar condition prevails in the production of cotton and in many cases with rice and alfalfa. On some of the government reclamation projects many of the farmers are in distress. Yet ninety per cent of the entire area is in a single crop, alfalfa, and the farmer is idle three-fourths of his time.

John Fields, a practical farmer of Oklahoma, says in this connection: "Working four months of the year putting out and harvesting a crop of wheat, then sitting by the other eight months wondering how we will live, is not farming; it is merely wheatgrowing. The wheat grower must go to farming. Regular production, growing something every month in the year is the salvation of the wheat farmer. Even the government cannot save the one crop farmer."

A survey in 1920 in Kansas, the great wheat state of the Union, showed that there were 165,286 farms the average size of which was 274.8 acres. On 54,152 farms there were no milch cows, while on 74,330 farms there were no beef cattle! On 104,153 farms there were no beef cows two years old or older. 48,999 farmers bought all salt pork, bacon and ham. On 42,434 farms there were no sows or gilts for breeding purposes. On 28,600 farms there were no eggs or poultry produced for sale, while 41,611 farms were without gardens. These were the single crop wheat farms.

Cannot these farmers so organize their work, as the manufacturer has

done, to secure all the year round production and thus eliminate this element of waste in agriculture? This is one of the advantages of diversified farming.

**T**HE waste in agriculture from plant insect pests and diseases amounts to enormous sums each year, a large part of which could be controlled by the farmer.

In a single year the late blight of the potato caused an estimated loss of ten million dollars to the farmers of New York State alone and probably one hundred millions to the potato growers of the United States. This disease and this loss could easily be controlled by efficient spraying with Bordeaux mixture. There are twenty-two diseases and fifteen insect pests affecting the potato plant alone!

The loss from smut or bunt in wheat in some years is estimated to reach twenty-five million dollars annually. Yet this disease can be easily and effectively prevented by the simple copper carbonate dust treatment of wheat which has been proved to be one hundred per cent effective. The remedy is simple and easily applied.

Poisonous plants take an enormous toll every year from the livestock men. In the national forests alone it is estimated that 6,000 cattle and 16,000 sheep are annually killed from eating poisonous plants.

Yet the facts relative to the economic control and elimination of this waste are known and if adopted generally would result in a large saving to the stockmen who use the national forest for grazing.

Poisonous plants are more dangerous at certain times of the year than at other times. Care should be exercised in pasturing on known poisonous areas during these periods. Plants that are stunted or wilted are more apt to develop poisons than those which are vigorous. Overgrazing must there-

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# A Field that Needs Cultivation

By Nesnah A. Trebla

*(This is an important article.  
For further comment on it see  
"The Editor's Own Pages.")*

**R**ECENTLY while conversing with an editor of one of our leading national agricultural magazines, I asked why it was that articles by county agents were conspicuous by their absence in his publication. He replied that although there are over two thousand county agents in the United States, not a single acceptable manuscript had been received from one of them during the past year! Which seems very strange, since county agents are at the very fountainhead of new facts and new experiences in agriculture and one would expect them to be prolific contributors.

It is certainly true that scientists and extension workers possess a mass of good material that needs to be spread broadcast. And that is the main reason why the present scribe is trying to fulfill a recent request from our friend Jeff to write a few suggestions that may possibly help county agents, scientific workers and other readers of BETTER CROPS to put their ideas on paper so we may all have the benefit of their knowledge.

**L**ET us start at the beginning of every article—the introductory paragraph. How frequently do we weary our brains at the very outset by trying to read a tedious, formal

sort of opening that tempts us to turn the pages to a more refreshing start! Tell a story, ask a question—use any legitimate device to create initial interest. If the interest of the reader is aroused right off the bat, the story reaches first base before the opening paragraph is finished.

An important point that adds to the readability of any article is to bring the story down to the individual whenever possible. General statements and abstract principles are not always easily understood, but when brought down to the individual—ah! that's different. When a huge boulder imprisoned Floyd Collins in a narrow cave sixty feet below ground, his plight aroused the sympathy of the entire nation to an extent that devastating tornados, destructive fires, ruinous floods and other great disasters involving hundreds and even thousands of victims have never done. Why? Because the experience of the individual can readily be pictured in the mind's eye, while the plight of hundreds is beyond human comprehension.

All this is particularly true when writing for farmers. The individual farmer doesn't care a rap for glittering generalities—he likes to hear what the other fellow has done. Surely if some other farmer has



raised a hundred bushels of corn per acre or a ton litter in six months, he can do likewise. Bringing the story down to the individual adds a touch of human interest and human interest is what puts a story across.

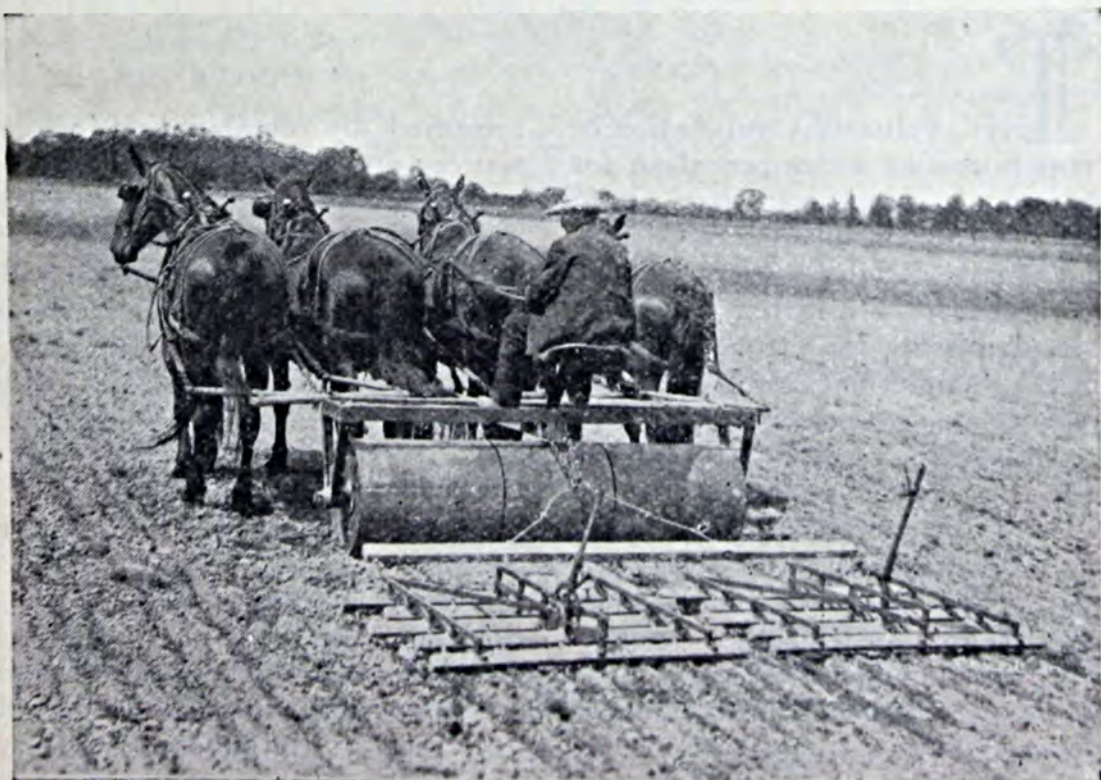
**A** FEW years ago I wrote what was perhaps a fairly good thesis on the relation of the legume tubercle to better farming and submitted it to an agricultural paper for publication, but this particular manuscript—chicken came home to roost accompanied by the familiar polite rejection slip that “implied no lack of merit.” I rewrote this story, centering the action around a farmer who used a new method of inoculation, told the why’s and wherefore’s, gave data on the results secured and was rewarded with that greatest phrase in English literature, “enclosed please find check.”

A little originality in style—away from the cut and dried formalities—also goes a long way in helping to make a point stick in the modern jaded-by-reading brain that reads

much and retains too little. I once heard a noted educator state that the average man remembers one-tenth of what he reads, three-tenths of what he sees and six-tenths of what he does. If this is true, writers should aim to present their thoughts in as interesting, original and striking a manner as possible in order to increase that one-tenth as much as practicable. Due to improved printing methods that permit greater rapidity and bulk, this is a reading age, but I doubt if we retain as much of what we read as did our forefathers.

Another point—the soul of good writing is brevity. Say what you mean in as few and simple words as practicable. But always bear in mind that the things that seem perfectly simple to you may be entirely foreign to your readers, so do not be afraid to tell the whole story. The six fundamentals of a good newspaper story are “who, why, when, where, what and how,” and these five w’s and an h may furnish a simple test for your own story.

*(turn to page 34)*



Good pictures that tell the story are an important part of any manuscript. Little explanation is needed to point out the saving in labor here illustrated.



*(We present here the winning answer of B. M. Drake to our second prize question. The excellence of the manuscripts submitted again made the work of judging difficult but we felt that Mr. Drake presented his argument most forcefully. We are also printing the answer submitted by Sam D. Preston because of its balance and sanity and we wish to give honorable mention to the answers submitted by I. N. Chapman and I. D. Boggs, and thank all those who participated.*

THE EDITORS.

# Should Farmers Organize to Improve their Economic Condition?

PRIZE-WINNING ARTICLE

By B. M. Drake

County Agent, Summerville, Ga.

THE value of combination or cooperation as a compensation for individual weakness has been familiar to most of us since we read the First Reader story of the dying father's illustration of it with sticks resisting the strongest effort in the bundle but readily broken when taken separately.

Combination of powers or resources becomes more effective and permanent through organization. This principle has been applied advantageously in civil, commercial and industrial life. Illustrations are not far to seek in the tendencies and accomplishments of modern banking, manufacture and labor.

The farmer's economic disadvantages are due largely to weaknesses that can be most readily

remedied by combination of resources and powers. Such are the great number and small size of individual businesses, and consequently highly developed individualism: general ignorance of methods of handling their marketing problems: preoccupation with details of production: the small volume produced by the individual: prevalent ignorance of standards of quality.

Organization should be able to do for the farmer's small business what the labor unions have done for the interests of the individual laborer to assure him a fair deal and due consideration of his claims in bargaining. It should also modify his individualism to fit his interest. It should enable him to employ expert service in marketing his product. It should provide suffi-



cient volume to pay for advertising and other overhead expenses. It should educate him in the proper preparation of his product for market by establishing and enforcing standards. And it should help him to forecast production and demand so that he may better adapt his own production to the demand.

These things may reasonably be expected of organized cooperation, not all at once nor equally in all kinds of farming, but gradually and to a worth while extent.

These things have been and are being done more or less successfully in many lines and many places. A few illustrations will serve to make this clear.

**I**N 1918 in Coweta county, Ga., a small swine marketing organization was started which provided facilities for grading and loading hogs. On the day of the first sale dressed hogs were sold on the local markets for 18 cents per pound (which price the protests of individual farmers had had no effect in raising.) One carload of hogs brought to the sale brought just under 20 cents on foot F.O.B. the car, and the price of dressed hogs on the local market rose to 23 cents. And since that time local prices have kept in line with general prices, due to the fact that the organization with its facilities for marketing can at any time dispose of a surplus or meet an unwarranted price decline, by holding a sale. The same thing has happened in many other counties, where through

organization farmers were able to get their product out of the local eddy into the main current of the supply and demand movement.

A familiar illustration of the educative value of a great marketing organization is that of the citrus fruit growers of California, which in addition to signal services in bargaining and distribution, has accomplished wonderful results in getting the product properly graded and packed. And this is only one of many that could be named that have profited their members and greatly improved their economic condition.

As yet these organizations have had little development along the line of adjusting production to demand but it is not unreasonable to expect them to render this service in the future.

Some farmer organizations have failed and no doubt others will do so, but that is aside from the question so long as it can not be shown that failures are necessary or disastrous. The number of successful organizations now existing refutes the first supposition. And it seems to be true that even the farmer's organizations that have failed to show a money profit or have failed to persist have had an educative value that made them worth while, and formed a foundation for better organizations that followed.

Although organization is not a panacea and there are still many problems to be solved yet theoretically it should, and practically it does, improve the farmer's economic condition and it would be very foolish for him to fail to use it.

## Farmers Should Organize—But?

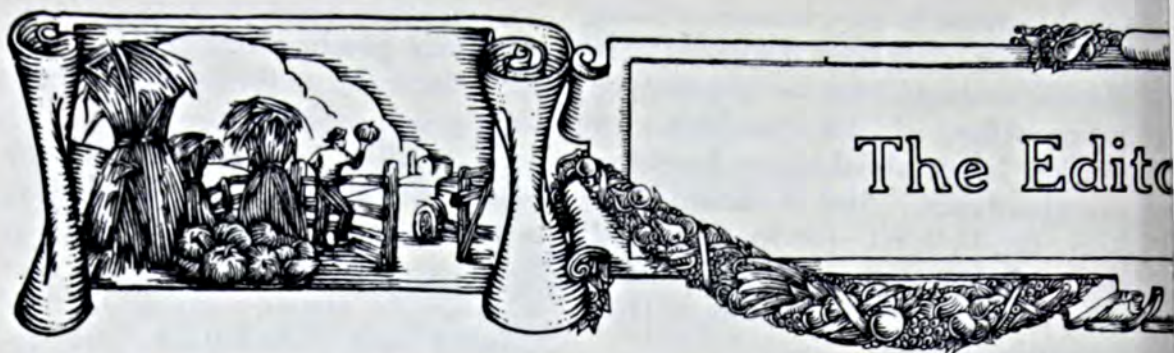
By Sam D. Preston

County Agent, Flint Hill, Va.

**S**HOULD farmers organize to improve their economic condition is just the question that has

revolved in my mind for some time. I have just about come to the con-  
(turn to page 31)





## BETTER CONTRIBUTIONS

I cannot refrain from calling particular attention to the article in this issue on "A Field That Needs Cultivation."

In looking back over two years work on BETTER CROPS I am most pleased at the fact that we have been able to serve as a medium for the exchange of experiences and experiments among extension and scientific workers.

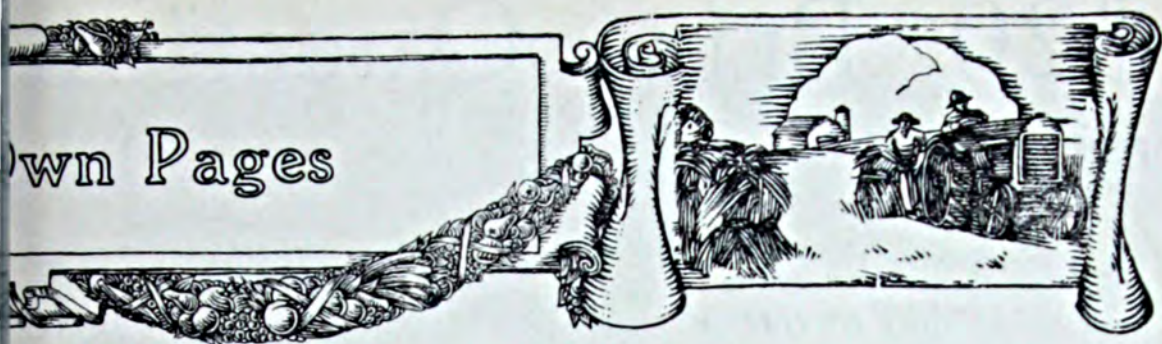
To a remarkable degree our readers have cooperated in sending in accounts of their work from which others could gather helpful information. Yet I feel we have barely scratched the surface so far.

The greatest difficulty I have encountered is the form in which contributions are submitted. County agents and other extension people as well as research workers are kept pretty constantly occupied. They spend so much time in *doing* that they have little left to analyze and report on what they are doing. There is even less opportunity to study and perfect their means of expression. The result is that I receive scores of manuscripts that contain good ideas so badly expressed that I cannot use them. Even some of the articles I have printed could be greatly improved by a careful revision.

I am naturally eager to raise our editorial standards,—to make our contributions more interesting and useful. In writing recently to one of our contributors I complimented him on the excellent way in which his material was submitted and I suggested that he might give the benefit of his experience to our readers.

He has courteously consented to do so and, under the pen name of "Nesnah Trebla," has set forth some of the more important principles that underlie the preparation of good manuscripts.





To many this may seem like an elementary subject but I know from experience that it is much needed by the majority of our readers.

It is a curious fallacy, entertained by many, that so long as you tell the truth nothing more is needed. Far from it, brother! You must not only tell the truth—you must make the truth *attractive*. You can talk yourself black in the face and still make no impression if you do not know how to talk in terms that your audience understands and to present your ideas in a persuasive and interesting form.

Dean Davenport once said "Of all occupations, farming is the richest in facts and the poorest in comprehension." That is well worth meditating on. Why should the quacks and fakirs have a monopoly of persuasiveness? Why shouldn't the art of interesting and convincing people be used in the service of truth?

Having said my say, I will repeat my invitation to our readers to contribute articles or items appropriate to our purpose. Every manuscript we receive is read carefully and sympathetically. If it is not suitable and stamps are enclosed, we will return it and I usually try to explain to the author our reasons for not accepting it. If it is accepted, you will be notified within a reasonable length of time and payment made upon publication. There is an opportunity for everybody to say something in our pages if they will observe some of the advice offered in Mr. Trebla's article.

Jeff Mc Dermid



# \$20 Prize Question

**T**HIS month you will find the prize-winning answer to the second of our prize questions on page 22. Here is the next question for you to answer:

*How Can County Agent Work be Made More Effective and Valuable?*

This is the fourth of five questions which are being asked monthly in our pages. The best answer will receive a prize of \$20.00. There are no restrictions except on length. Answer it any way you like. We want a clear and convincing presentation of why you believe as you do on this subject. Just make your argument brief and to the point.

**Answers to this question must not exceed 800 words. They must be mailed before midnight September 6th.** The winning answer will be published in our October issue. The Judges will be the editors of BETTER CROPS. In the event of a tie, the full amount of the prize will be awarded to both contestants. The judges reserve the right to withhold the award in the event that none of the answers is deemed worthy of publication in BETTER CROPS. BETTER CROPS reserves the right to publish any manuscript submitted in this contest at the regular rate of one cent a word. No manuscripts will be returned.

**Send your answer before September 6th to**

**JEFF McDERMID**

*Better Crops Publishing Corp.*

10 BRIDGE STREET

NEW YORK CITY





*Showing relative yield of cotton with potash fertilizer (right) and without (left) on farm of J. B. Baker near Tolar, Texas.*

# Fertilizers for Texas Cotton

*By Worth Brewer*

**T**EXAS cotton planters are realizing that they cannot turn to new land when the soil they have cultivated for a few years loses its virgin strength, as they could a generation ago when land and labor were cheap. They have learned the value of irrigation, proper drainage,

and seed selection, but within the last few years the progressive element have become convinced from experiments that the most direct method of getting the most from old land or land hitherto considered unsuitable is by potash fertilization.



*A check strip of cotton on farm of J. B. Baker.*



The cotton-growing area of Texas has been steadily extended west and north, where a few years ago it was thought to be too sandy. Besides this part of the state was believed to be suitable only for grain on account of the short season and colder climate. Last year the lower plains country, south of the famous "Panhandle," produced the best crops of cotton in the state.

As for the sandy land, the experiments of J. B. Baker on his farm about 25 miles southwest of Fort Worth, indicate what can and will be done to make cotton raising profitable on this type of soil. Mr. Baker fertilized alternate rows of

cotton with a commercial fertilizer containing 50% acid phosphate, 30% potash, and 20% nitrate of soda.\* This was used at the rate of 200 pounds per acre. The rows in the check strip were of equal length and all conditions of cultivation the same. An unfertilized row in the center of the patch yielded three pounds while the fertilized row next to it yielded twenty-one pounds. The same proportion was maintained on the entire strip, convincing Mr. Baker that poor land is expensive.

\*EDITOR'S NOTE:—Assuming the potash to be derived from muriate of potash this would mean a 3-8-15 (NPK) formula.



## Why I Am Planting Nut Trees

(From page 9)

I have asked the nut experts of the United States Department of Agriculture as to their opinion of the best nuts to plant, and they, too, think that the heart nut ought to be a winner. This year, 1925, I am making a commercial planting of nuts, and it will consist largely of heart nut trees.

My list of nuts does not end here, however, for I have three varieties of pecans. These are the northern varieties developed in Indiana and Illinois. They are grafted trees. They, too, have withstood the cold temperatures mentioned, and were unharmed. They have grown excellently. These trees do not bear as early as the English walnuts. They have blossomed twice. This spring I think they will bear. It is the habit of these trees to bloom a few years before bearing.

My hard-shelled almonds bore at three years of age. These are Ridenhowers. They are not to be recommended for commercial purposes, but are good enough to plant if one has a desire, as we have, to

grow on our own grounds everything we want that will grow there. These are purely for home consumption.

Two varieties of European filberts have done excellently. When they were just ready to bear I had to dig them up and move them. That set them back. But there is no question that they will bear soon and generously.

Purely to gratify a whim to make my nut plantings complete, I also have set out the beechnut. But it would be tedious work getting a "mess" of beechnuts.

Chestnuts, I said, had existed on our place. In fact, we had a whole woods full of them. Also, I had some Sober Paragon grafts started on native suckers. But the blight got them all. Now I have a Chinese chestnut and a Parry chestnut, the latter having been obtained from Mr. E. B. Riehl of Godfrey, Ill., who has been working with chestnuts for years and who says that this particular variety shows high resistance to the blight. The



Chinese tree is believed to be almost blight proof. If these fail, I shall try again.

**A**LTOGETHER, I now have eleven varieties of nuts, and the number of our trees totals several scores. These trees were all set out, in the beginning, purely for the novelty of the thing and to provide a home nut supply. At the same time I started my fruit orchard. I have several hundred fruit trees. I had several hundred more. But I tried to raise them on the "easiest way" plan and it didn't work. When too many of them succumbed, I adopted the "hard work" plan of orcharding, and in consequence we now have a mighty fine little orchard, that is coming nicely into bearing.

But all this time my nut trees have been coming on with practically no care whatever. I wish now that I had really cared for one of them, merely that I might know what it would have done with proper attention. You see, fruit trees having so long been cared for by man, have largely lost their power of self protection. Nuts, on the other hand, having always had to rustle for themselves, have developed to a high degree that power. So nut tree culture is altogether in the farmer's favor.

The question is. Can he find a market for his nuts if he raises them? And here is where the surprise comes. Commercially, nuts offer probably a better prospect than almost any other crop one can mention. To be prosperous as a wheat grower, the farmers have to sell hundreds of millions of bushels of wheat abroad. Let the foreign market fall off, as it has in recent years, and see what happens to the

wheat raiser. The apple producer must market millions of bushels of fruit in other lands. Every new apple producer has to face stiff competition when his trees come into bearing.

But what about the nut situation? Stop, look, and listen. We consume annually in America something like \$150,000,000 to \$200,000,000 worth of nuts. The demand is growing by leaps and bounds. And we *produce fewer than half of these nuts at home.* We have to import half of all the nuts we eat. Here is a market that does not have to be jimmied open. Here is a market crying out like *Oliver Twist* for more. There isn't any question

that any farmer who has nuts can sell them. And what is more, he can sell them right at home, at retail, and get all the profits.

That is why I am setting out nut trees this spring instead of apples. I have a nice apple trade established but I have to meet great competition. If I had nuts, as I shall soon have, I could sell them right and left. For I know for a certainty that my home-grown English walnuts

are as fine as any English walnuts in the market. My black walnuts will class in the same way. And the heart nuts will sell themselves.



The author, L. E. Theiss

**I** AM not planting nut trees as an experiment or because I have read that it is a good thing to do. I've tried it and proved it. *I know* that I can raise good nuts. I am doing it now. And I know that I can sell all I can raise.

There are lots of other advantages about nuts. They come late, so that the apples can be picked and the corn cut before the nuts are harvested. Farmers needn't worry



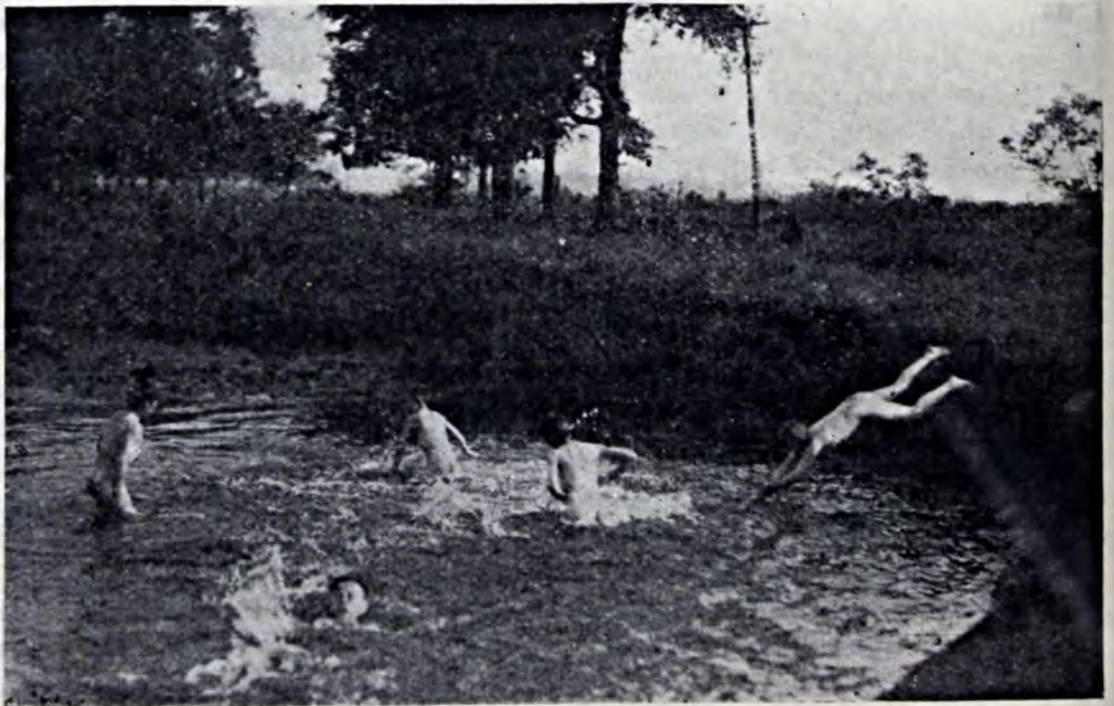
if they do drop. They won't bruise like apples. And finally, the kids can attend to the whole crop, after school hours.

Of course, if one had a big orchard of them, that would be different. But I wouldn't advise any farmer outside of a specialized nut-growing district to plant a whole orchard of them. The thing for the farmer to do is to put a few nut trees about his home, as ornamentals, and along his lanes, and in other places where they won't conflict with the usual agricultural processes. Take care of them for two or three years. A minute's hoeing once in a while and five cents' worth of nitrate of soda a year will bring them on thriftily. When they are properly rooted, in two or three years, they will begin to jump skyward and the farmer won't need to bother with them if he doesn't want to do so. In a few years' time, the owners will be picking gold dollars from them.

Every farmer would be more prosperous if he had more of these

side products. Think what it would mean to the average farmer if he could go out each autumn and pick up one hundred dollars under his nut trees—one hundred dollars that he did practically nothing to earn except to pick it up. That's what I expect to do some of these days, and that is what any farmer can do who will buy a few grafted nut trees of selected varieties, of the sort of nuts that grow best in his locality. That means primarily shagbarks for New England, black walnuts for the central part of the land, pecans for the South, and English walnuts for the Pacific Coast.

As for me, I'm going to try them all. But that is merely to gratify my desire to know something about nuts. Commercial success I expect to achieve through specializing in a few sorts that do best with me. When one has had a successful start thrust upon him, it would be too bad if he did not go on and in addition achieve a little success.



*The ole' swimmin' hole*



## Farmers Should Organize—But?

(From page 23)

clusion that the answer is yes, and no. This affirmative and negative answer to a single question is arrived at by close observation of various conditions that have come to my notice during the past few years as extension worker. At the present time, the County Agricultural Advisory Council, Marketing Specialists and myself, as county agent, are asking ourselves this very question with reference to our county.

**I**N DETAIL, some of the questions that have come to our attention in this connection are: Do the people of Rappahannock county know enough about organization work to really stick together? Is there a proper spirit of cooperation among the farmers, and if they have these prerequisites, do they want to go to the trouble of organizing?

Will the economic improvement warrant the additional energy and cost? Are the farmers themselves interested enough to take hold and make the organization a success, or will it be up to the county agent to hold the organization together?

Will an organization in this county prove more successful than one attempted in a neighboring county? Is it best to organize with a few and take a chance on others being converted and pulling the organization through, or should the farmers be gradually educated up to the point where they really want an organization before attempting it? And lastly, with reference to marketing organizations, the question is, is it better to do some educational work along the lines of quality production before the organization is perfected, or should this be done after the organization is working.

I have in mind a farmers' organ-

ization that has improved the economic condition of the county from \$30,000 to \$50,000 dollars annually, and I also have in mind one that has not done the county any good and has been a constant thorn in the flesh of the county agent who has spent a great deal of energy in trying to make something of it. In addition to the energy that he wasted it has been detrimental to his progress because the conscientious objectors to agricultural extension work have taken a great deal of pride in pointing to that one thing as an outstanding failure of his.

**I**F TIME is taken to educate the farmers up to the proper attitude of cooperation I believe that organizations will prove beneficial economically and otherwise. There is danger in haste, and I am firmly convinced that one of the poorest ways to organize is to let a professional come into the county and make a fiery speech and close with a general signing on the dotted line. The professional always pictures the bright side of an organization and never intimates that there can possibly be a ruffle in the tide of prosperity that is bound to follow.

I have a general understanding with every specialist in organization work that comes into my county that he is to put as much emphasis on the points that will lead to failure as those that make for success.

We have just perfected the first organization in my county. We have talked about it for the past two years. There was no professional organizer, it just grew out of the discussions at the Agricultural Advisory Council meetings and the farmers themselves did the job. The county agent does not feel that



he is responsible for the success or failure of it, but he does feel confident that it will be a success.

Now in conclusion, I wish it clearly understood that I am not a pessimist, but I do believe in the old adage that "haste makes waste," of energy, and does more

harm than good oftentimes in trying to improve the economic condition of the farmer. I am sure that farmers should organize to improve their economic condition, but organization should not be attempted until the farmer himself is made to feel as I do about it.



## *Eliminating the Waste in Agriculture*

*(From page 19)*

fore be guarded against. Various simple precautions of this sort will eliminate a large part of the waste from animals dying from certain poisonous plants.

**T**HERE are many other ways in which waste occurs in the production of farm products and which should be eliminated. There is waste in farming poor land. Some of this, such as hill land, should not be farmed at all but should be allowed to go back into sod or forest.

The economic merchandizing of the crop produced is of course very important, but it is valueless to rave about our system of marketing if the crop is produced at such a high cost of production as to prohibit a profit at any possible market price.

There is a tremendous amount of waste in the marketing of farm products. It is the common practice to place all the blame for our present inefficient marketing system on the middlemen, but a large part of the blame really should be placed on the farmer himself who has the power to eliminate much of this waste.

The shipment of farm products in car lots would save much waste and is more efficient. The rates on car lots are less than on smaller quantities. Car lots also move with quicker dispatch; they go straight through to their destination while less than car lots have to be trans-

ferred frequently several times which results in loss of time and increases the possibility of injury and deterioration.

Individual farmers frequently do not have sufficient quantity to make car lots of a given farm commodity, hence the necessity of cooperating with their neighbors and pooling their resources so as to make car lots, resulting in saving of freight and prevention of waste.

**I**N MANY farm communities it is difficult to obtain any quantity of a given uniform farm product because of the great number of varieties grown. The price is consequently reduced a few cents per bushel or pound and the farmer is the loser thereby, and there is economic waste due to lack of standardization.

In some sections some good work has been done to eliminate this waste. The Kansas Station in 1906 developed a strain of Turkey Red wheat known as Kanred wheat which was well adapted to Kansas conditions. In 1923 it is estimated that 45,000,000 bushels of this variety were produced in Kansas alone. Undoubtedly within a few years this will be the principal or only variety grown in Kansas. This is standardization.

In the shipment of potatoes it is still the practice in many sections of the country to ship all sorts, sizes and conditions of potatoes together. Large, fine potatoes are mixed with



small, gnarly and bruised ones. The result is that the price is lowered to the producer since such shipments must of necessity be sorted at the shipping terminal and properly graded before they can be sold to the consumer. The producer is out not only the weight of the discarded potatoes but also the freight on the shipment and the cost of labor of sorting. This is all economic waste.

There is also waste in the storage of potatoes varying from four per cent to twenty-five per cent. A small amount of the waste is inevitably due to slow loss of moisture from the potato and consumption of the organic matter of the potato in a normal life process. Much of this waste, however, could be easily prevented by care in the prevention of mechanical injury during harvesting and by proper methods of storage.

In the shipment of many farm crops there is large economic waste due to improper containers or wrong loading in the car. With potatoes, for example, due to improper loading there is frequently loss due to overheating in the spring and summer and from freezing in the winter. By proper precautions these losses may largely be overcome.

There is also a large loss due to breakage of containers due either to the use of wrong kind of containers or to the wrong method of packing them in the freight car. Such losses should be studied and overcome.

There is a really enormous economic waste due to deterioration in quality and decay in shipments. This is particularly true of perishable vegetables or fruits such as potatoes, lettuce, melons, apples, etc. Such losses are frequently due to congestion at freight terminals. Methods must be devised to overcome such congestion and to eliminate this waste in the marketing of farm products.

There is a tremendous waste in

agriculture from farming land that is badly in need of drainage. Land which is water logged or heavily charged with alkali produces poor crops at a high cost of production. Yet large areas of land under irrigation are heavily impregnated with alkali and badly in need of drainage. In humid regions there are vast areas of land which are so badly water-logged that only poor yields are possible at a high cost of production.

Soil erosion is another important waste in agriculture which could easily be prevented. It is estimated that over ten million acres of agricultural land have been ruined by wrong systems of farming from soil erosion alone. Land which is depleted in organic matter is readily lost by erosion. Land which is cultivated and plowed in a wrong manner is subject to erosion, especially if it is sloping land on a hillside. Thousands of acres of land in the northeastern part of the United States are being used for cropping land which should never have been used for any other purpose than sod or trees. It should now be allowed to revert to its native state and would produce trees and pasture more economically than cultivated crops.

Finally, land which has been deprived of its plant food by unwise use should be built up by a definite planned system of soil improvement by the proper use of limestone, manure, legumes and commercial plant foods.



*This issue completes the fourth volume of BETTER CROPS. Any readers who are desirous of having their copies bound or who would like to purchase any of the bound volumes of the magazine from I. to IV. are requested to communicate with M. E. Hidden, 10 Bridge Street. The entire issue of May 1925 has been exhausted and can only be supplied in bound volumes.*



## A Field That Needs Cultivation

(From page 21)

The first step in the preparation of a manuscript is the selection of a subject, and no subject should be considered that does not convey valuable information. In this connection, things that are *new*, *successful* and *timely* furnish the best material. Perhaps fifty per cent of agricultural journalism is devoted to stories of successful individuals, because here lies both inspiration and human interest. Then there is the element of timeliness. Why send the editor a story on the new copper carbonate treatment for preventing stinking smut after the seed has all been sown? After a manuscript is submitted, perhaps two months will elapse before it breaks into print, so be prepared and think ahead. The triplet *new*, *successful* and *timely* should ever be in the mind of the agricultural writer.

Space does not permit a discussion of the mechanical features of manuscript preparation. Among the most important points are double spacing, neatness, and the avoiding of long paragraphs, big words and involved sentences. A single spaced messy manuscript causes the editor to see blue without the use of a pencil, while long paragraphs have a tendency to throw a mental scare into the reader. Educated folks in

general and scientists in particular are frequently tempted to parade their knowledge by the use of big words. Don't do it. Speak the simple language of everyday conversation, use apt comparisons and appropriate stories and the great majority of your readers will understand and applaud.

The value of good pictures can hardly be over-emphasized. In this connection, illustrations that tell a story are most desirable—pictures that merely embellish have little use in agricultural publications. During the long busy season many a farmer reads his journals and magazines by merely glancing at the pictures and studying the captions.

It has been said that scientific writing is at least a decade behind experimental work. Certain it is that extension workers can greatly add to their efficiency by the more liberal use of the public press. Newspapers and magazines present a fallow field to many county agents that will yield rich returns when properly cultivated. It is hoped that the few suggestions offered in the small space here allotted will be of assistance in preparing the seed bed that will mean better stories and better crops.



### Western Washington Recommendations

THE high analysis movement in fertilizers has taken hold on the Pacific Coast. The Western Wash-

ington Experiment Station has given it a considerable boost by publishing a guide for fertilizer users in



its Bi-Monthly Bulletin of Jan., 1925.

This station has done better than the eastern states in reducing the number of formulas to three high grade analysis which, they believe,

are adequate for all needs in Western Washington at the present.

The recommendations as presented in their Bi-Monthly Bulletin of January, 1925, are given below!

FORMULAS:            4-8-8            6-8-6            2-10-10

*Raw Materials: Sulfate of Potash, Superphosphate (16%), Nitrate of Soda*

## GUIDE FOR USE OF COMMERCIAL FERTILIZERS

CROP	FERTILIZER TREATMENT	
GRAIN CROPS (Wheat, Oats, Barley, Rye, Vetch, Peas)	SUPERPHOSPHATE Apply 250 lbs. per acre. Broad- cast on top of fall grain or disc in after plowing for spring grain.	SULFATE OF POTASH On Muck Land 300 lbs. per acre. Broadcast and harrow in before seeding grain.
PASTURES AND HAY MEADOWS	Apply 250 lbs. per acre. Broad- cast as top dressing in fall on old pastures—in spring on hay meadows.	SULFATE OF POTASH On Muck Land 200 lbs. per acre. Broadcast as top dressing in spring.
POTATOES	COMPLETE FERTILIZER 4-8-8 Analysis 800 lbs. per acre. Broadcast and disc into soil immediately before planting.	SULFATE OF POTASH On Muck Land Sulfate of Potash alone has given satisfactory results. 400 lbs. per acre. Broadcast and har- row in immediately before plant- ing.
GARDEN CROPS (Leafy) (Celery, Asparagus, Spinach, Lettuce, Cabbage, etc., and Lawns.)	6-8-6 Analysis 400 lbs. per acre. Broadcast before planting and 400 lbs. along rows after growth is well started. Total 800 lbs. per acre. For Lawn broadcast 5 lbs. per square rod in spring.	NITRATE OF SODA For early lawn clippings broad- cast 1½ lbs. per square rod early in March. Follow six weeks later with the complete fertilizer.
SILAGE CORN	SUPERPHOSPHATE Apply 300 lbs. per acre. Broad- cast on plowing and disc into soil before seeding.	
MANGELS	Mangels respond to manure much more than to commercial fertilizers. 800 lbs. per acre of 4-8-8 analysis, on bottom soils will be most likely to return a profit. Broadcast and harrow in before seeding.	
SMALL FRUITS (Strawberries, Rasp- berries, Blackber- ries, etc.)	COMPLETE FERTILIZER 2-10-10 Analysis 500-800 lbs. per acre according to condition of field. Broad- cast after spring plowing along rows. Harrow into soil. For strawberries scatter between plants and along rows.	
GARDEN CROPS (Roots and Green Fruits, Beets, Car- rots, Parsnips, Corn, Peas, Beans)	COMPLETE FERTILIZER 2-10-10 analysis (for muck soils) 400 lbs. per acre. Broadcast before planting and 400 lbs. along rows after growth is well started. Total 800 lbs. per acre.	
ORCHARD FRUITS (Apples, Cherries, Pears.)	NITRATE OF SODA 1 lb. per tree (very young trees.) 3 lbs. per tree (young trees.) 5 lbs. per tree (mature trees.)	



## Satsumas Flourish on the Gulf Coast

(From page 7)

that where much potash had been applied to the Satsuma trees, the cold did not hurt them nearly so much as where little had been applied. It was also noticeable that those Satsuma groves which had received heavy fertilization withstood the cold much more successfully than those that had been fertilized rather sparingly.

For bearing trees, give 12 to 20 pounds per tree for the first application and 8 to 12 for the second. It is usually scattered broadcast in a circle around the tree and cultivated in. An 8-4-6 is recommended by leading growers. Some use 8-4-8, however.

One grower in South Mississippi with whom we talked finds it advisable to discontinue cultivation between July 15 and August 1, after which time the Mexican clover, which is a weed in that section, is allowed to grow up. It produces an

excellent cover crop and although it is not a legume, it produces a sufficient amount of organic matter to make it quite well worth while. It reseeds itself readily, and is therefore very valuable as a cover crop.

Heavy pruning is not advisable, yet some is necessary in order to give the tree the proper shape. The low headed tree is very desirable and usually they are so headed as to have the growth right down close to the ground. These low heads not only put the fruit near the ground so that it can be easily picked, but also protect the tree somewhat from cold weather.

**L**IKE any other fruit, the Satsuma orange has certain insect and disease enemies to contend with. The scab is probably the most common disease. Of the insects, the aphids, white fly, mites,



Hauling Satsuma oranges from orchard to packing house in Mobile County, Alabama



spiders, thrips and scale insects are usually on the job. To control the scab, the 3-3-50 Bordeaux is the standard preparation used. To control scale, white fly, sucking insects, etc., the 1% oil emulsion is used. For mites and red spider, lime sulphur solution, 1 to 60 is used in the summer. For thrips and aphids, nicotine sulfate at the rate of  $\frac{1}{2}$  pint to 50 gallons of water plus  $\frac{3}{4}$  gallon lime sulphur or two or three pounds of soap is used.

The regular spray schedule calls for an application of the Bordeaux when the trees are in full bloom, or about 10 days later. This is for the scab and any other fungous diseases that may be present. Early in June when the fruit is about the size of a marble, 1% oil emulsion is applied for white fly, scale, or sucking insects. Where the infestation is heavy, a second spraying with the same material is given in July. Some time between September 1 and December 1 another application of 1% oil emulsion is given. If this application is not given until after the dormant period, which usually comes on in late November, the oil emulsion is increased to  $1\frac{1}{2}$  to 2%. If mites and red spiders become numerous during the hot dry weather of summer, especially in June, an application of 1 to 60 of the lime sulphur is given. It is not advisable to apply this when the temperature is above 90 degrees. These pests seldom ever give any trouble during rainy weather. It is during the hot dry weather that they get in their work.

The nicotine sulfate is applied to control thrips and aphids usually about the time the trees are in full bloom. Of course this may be mixed along with the other spray materials that are being applied at that time. A rule the growers follow is when 25 or more of the thrips are found to a blossom, spraying is required to protect the young fruit from scarring. Another thing that the careful grower does

is to quit spraying during the middle of the day when the weather is very hot and dry.

Wherever the white fly is abundant in the fall just before picking time, many growers spray with oil emulsion a couple of weeks before picking is started. This helps to loosen up the sooty mold that the white fly causes and makes it much easier to clean up the fruit and give it that bright yellow appearance that makes the Satsuma so attractive.

**S**ATSUMAS are not put on the market by the careful grower until the fruit is thoroughly clean, properly graded, wrapped in paper, and packed in a neat, attractive box. They are usually shipped in what is known as half boxes or straps.

The cold spell in January, 1924 taught the growers many things, one of which is the absolute necessity of so handling the trees that they go into the winter in a strong, vigorous condition. This can only be brought about by thorough cultivation, thorough spraying, and heavy fertilization. To allow the trees to become weakened from disease, insect attacks, lack of plant food or other cause is to put them in such condition that they are more susceptible to cold injury than they would be otherwise.

The leading growers tell us that there is no longer any question but that a high percentage of potash in the commercial fertilizer is essential. Not only does it give the fruit the right color and carrying qualities, but it causes the wood to harden up and go into the winter in the best possible condition to withstand any cold weather that may come along. That heavy fertilization, particularly a high percentage of potash, does put the trees in better condition to withstand cold, is not a theory, but a well known fact to these growers.



## Controlling Farm Production

(From page 16)

experience in 1921 and 1922. When the department's early forecast is for a large late crop, sections like the Carolinas, Virginia, and New Jersey, which produce early potatoes, now realize the advantage of rushing their crop to market so as to avoid competing with the growers in the late producing states like Maine, New York, and Michigan. On the other hand, when a short late crop is forecast the growers of the early varieties, or at least the more intelligent among them, hold their potatoes for better prices or even augment the supply by delayed harvesting. Potato growers are also beginning to adjust their planting in harmony with information as to stocks still on hand. Some farmers analyzed correctly the short potato crop of 1919, from information supplied by the department. These men, instead of disposing of their crop in October when the price was only 20 cents a bushel above that of the previous year, held their potatoes for spring delivery and were rewarded by a price of about \$2.22 a bushel.

Many hog producers are acquiring skill in adjusting their production in the light of market forecasts. Twice a year the department makes a "pig survey," which indicates the probable number of hogs that will be marketed the following season. It publishes the results of these surveys along with an analysis of price tendencies, based on the production prospects and on other influences affecting hog prices. Price forecasts made in this way have been remarkably accurate. In June, 1922, a pig survey showed that farmers were planning to breed an increase of 49 per cent in the number of sows for fall litters. Warnings were sent out that such an increase would mean extremely low prices for hogs. Actually the pig crop increased only about 25 per cent.

Apparently the Government's warnings had a measure of the desired effect. Elimination of the "hog cycle," with its disastrous fluctuations in prices and production, is not yet in sight. The current extreme underproduction of hogs, which was forecast more than a year ago, is sufficient proof of that assertion. Yet hog producers are becoming more receptive to the idea that their operations should be based on market tendencies rather than on past hog prices.

**A**DDITIONAL signs that American agriculture is moving toward orderly production were furnished by the crop history of 1924. Each spring and fall the department issues "intention to plant" reports. These reports are not a forecast of the acreage that will actually be planted. They are merely an indication of what farmers have in mind to plant at the time they are interrogated by the department's representatives. The intention to plant reports are issued along with general surveys of crop and market conditions, in which specific opinions are given in the case of some crops as to whether production should be increased or decreased.

Farmers in 1924 intimated an intention to reduce their spring wheat acreage about 14 per cent below that of 1923. An official wheat situation report indicated that the price prospects for the 1924 wheat crop were not unfavorable. Actual planting of spring wheat, as reported in July, showed that the acreage was reduced only about 10 per cent. Intentions to plant oats in the spring of 1924 indicated a contemplated increase in acreage of seven per cent. The department warned farmers that the outlook was for a reduced foreign demand, and



the actual increase in oats acreage was less than two per cent. It was indicated that farmers expected to have about the same tobacco acreage as in 1923. Accordingly, the department issued a warning that prevailing prices might not be maintained, and particularly advised against large increases in tobacco acreage that were contemplated in Georgia. When the tobacco planting season was over, it turned out that the acreage had declined nearly eight per cent from that of the previous year. A warning was issued that a contemplated increase of 19 per cent in the peanut acreage might have had results. Actually the peanut acreage increased only 7.5 per cent.

While it would be perhaps unwarranted to say that acreage changes thus made were responses to the department's warnings or recommendations, they were too numerous to be the result of mere coincidence. There are many signs, moreover, that farmers are recognizing the folly of letting past crop prices determine their future production. They have done so, heretofore, not because high or low prices were expected to perpetuate themselves, but because price trend forecasting was not on any kind of a reliable basis. Even now, of course, the economists and statisticians of the Government do not venture specific predictions as to the course of future prices. Hog price forecasting is more nearly on a scientific basis than forecasting in the case of any other farm product, but even in the case of hog prices the forecasts are confined to a prediction of main trends.

One of the most striking illustrations of long-time forecasting of production prospects is given in the case of citrus fruits. The citrus fruit industry is faced with an exceedingly difficult problem of readjustment. It is declared by the department that production of all citrus fruits increased from 20,000,000 boxes in 1909 to around

40,000,000 boxes in 1923. If young nonbearing groves are given sufficient care and old trees continue to produce at their present rate, there will be a production of 70,000,000 boxes by 1930. Oranges show the greatest prospect of increase. More than 7,000,000 orange trees were planted in Florida from 1919 to 1924. There are large new acreages of grapefruit in both Florida and Texas. Already the heavy production of the citrus fruit industry has had its natural effect in the shape of greatly reduced prices. It is also pointed out that while our population in 1930 will probably not be more than 10 per cent greater than it is at present, citrus fruit production will be 50 per cent greater. Citrus fruit growers are therefore faced with an urgent need for a much enlarged foreign market. Here is a forecast of manifest practical significance to every one interested in citrus fruits.

Incidentally, it is worth noting that the fruit industry provided an illustration last year that orderly marketing is of limited value without orderly production. Exceptional difficulties were met in marketing the large Georgia peach crop. A possible movement of around 15,000 cars was indicated, with a simultaneous movement of more than 17,000 cars of California cantaloupes and 10,000 cars of southern watermelons. With the assistance of the Department of Agriculture, the Georgia peaches were marketed in the most orderly way possible. So as to avoid glutting large markets, a survey was made of the needs of small ones. As a result, smaller markets were utilized much more than in former years. Shipments of Georgia peaches to New York, for example, were much smaller than in 1921, when the total supply was lighter. In general, the movement to western markets was heavier than that to eastern markets smaller. Yet this skillful and broad distribution did not prevent a serious price depres-



# About Ourselves

**B**ETTER CROPS is a monthly magazine edited primarily for those who act in an advisory capacity to the farmer.

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sion; although it probably obtained a better average price for the peaches than they would have otherwise brought.

As the term is used by the Department of Agriculture, orderly production is production reasonably well adjusted to market needs. It is very different from organized limitation of production. Farmers can probably never be got deliberately to hold their output below the quantity for which there is a profitable market. There is a prospect, however, that they can be persuaded from going beyond that point, when they know where it lies. This can often be determined with approximate accuracy.

**C**ONTROL of production for the purpose of bringing about a proper adjustment of supply to demand does not call for the concerted action of all farmers. It can be achieved progressively by individual action. Farmers who adopt the new technique before its use becomes widespread will net special profits. They will benefit by having much of a certain crop to sell when its price is high and less to sell when its price is low. Each farmer who prospers in this way, however, will set a fashion in production for his neighborhood, so that in time many other farmers will be adjusting their farm enterprises wisely without knowing why. As more and more farmers learn the advantage of adjusting their production with an eye to market trends, the practice will not yield the special profits that the shrewder farmers can now make by being right when their neighbors are wrong. But agriculture as a whole will benefit from the elimination of extreme price fluctuations. It will be on the way to orderly production.



## The County Agent's Business Partner

(From page 11)

got the work of the County Livestock Shipping Association on its feet. In one County where it seemed best for the Service Manager to give his first attention to the County Shipping Association, the business increased nearly three times over what it had been the corresponding month the preceding year.

**I**T IS the job of the County Service Manager to make the existing cooperative work more efficient. He does not pretend to substitute for men already at work. Rather he unites and correlates the efforts of those men.

As an example of this, the work of the shipping associations may again be used. We will again use Seneca although the plan there is only typical of that followed in counties where there is a considerable amount of livestock to be handled. At each shipping point there is a sub-manager working under the direction and in cooperation with the County Service Manager. Each sub-manager keeps the Service Manager informed as to the stock that is ready for market and also

with regard to the desires of the owner to ship. Very often it happens that there is only a part of a car listed at each station. In such a case Vance, the County Service Manager, is able to pool the shipments from two or more of the stations. The well improved roads in Ohio make it very easy to truck the stock that might ordinarily be shipped from one station to another in order to make up a car. Before the days of the County Service Manager, each local manager worked independently of the others and often would not be able to list enough stock to make up a full car for several days or even weeks. By the new plan, whenever a man wants to ship, he very rarely if ever, has any delay in getting his stock off at the time he wants to sell.

A plan of selling direct to packers is developing. Vance said that more than half the stock from his county is sold without going through the hands of a commission firm. This saves immensely in fees for selling and in yardage and feed. Once when the writer dropped into the office occupied by Vance and Schmidt, the office girl handed Vance a notation she had made to



A general view of the stock yards and co-op. warehouse at Kenton, Ohio.



the effect that a certain sheep feeder had phoned that he desired to sell several cars of sheep early the following week. Vance made but little comment, but the next morning when the writer started to the country to see that same sheep feeder, Vance said, "Please tell him that I will have a buyer from the central market out to see his sheep next Monday morning." Vance had got in touch with the central market and had made this arrangement immediately upon having learned that the feeder was ready to sell.

Needless to say, the feeder was more than pleased with the prospect of selling direct. He said, "We get a service through the County Service Manager that is worth a great deal of money. He does things for us that we could not put over as individuals or that a local livestock shipping association could not accomplish. He represents practically all the farmers of the county and any big buyer will listen to him." A cattle feeder nearby said, "By having the County Service Manager on the job, I secured 75 cents per hundred more for my cattle than would have been possible."

**D**OWN in Pickaway County where the farming business inclines more to dairying, a county unit of a district association called the Scotia Valley Cooperative Milk Producers' Association began operation in June and the Service Manager was shortly afterward employed to start work September 1st. The new County Service Manager, Harry J. Briggs, was equal to the occasion and immediately began to render service to this new organization. He was named as manager of the cream station, but spent little time at that. He left the details of handling the milk and cream to the man employed as tester. Then Briggs went to the country visiting the producers. He laid out routes,

built them up, signed new members and did whatever seemed necessary to make a successful working organization. The volume of business done by this new cooperative is growing because of the personal work that Briggs is doing and because of the excellent showing that is being made because of the assistance he gives as general manager of the association.

Ohio is a great sheep state. The wool produced by the thousands of farm flocks is largely pooled. Ohio had a wool pool before it had County Service Managers, but there is a big improvement in the handling of the pooling in the counties since the Service Manager came on the job. Formerly it was, too often, a case of "everybody's business being nobody's business." Now it is the business of the County Service Manager and he either does the work himself or sees that it is done. Likewise with tobacco in the great tobacco section of the state or with whatever crop that is to be marketed, the County Service Manager is looked upon as the man to put it over.

The farmers of Ohio are interested in buying as well as in selling. Many find it profitable to use commercial fertilizer. Many of them find it pays to keep a sufficient amount of dairy cattle or other livestock than can be fed from grain produced on the farm. Practically every farmer buys clover or alfalfa seed or grass seed of some kind.

Cooperative buying and shipping enables larger quantities of fertilizer or feed to be purchased and this often makes it possible to ship in car lots, thus securing a lower freight rate and a better price. Perhaps the biggest and best service is the inspection that is secured in the purchase of seeds. The Ohio farmers who secured their clover seed through their organization did not suffer from foreign seed and the consequent winter killing or low yield which were experienced by many others.



It is in the distribution of feeds and fertilizers and seeds that the County Service Manager makes the greatest use of the farmers' elevators. For all such shipments the elevator is made the local distributor and is allowed a fair rate of commission for the work and the service of handling the products. Frequently it happens that an elevator can use but a part of a car of some one product. By having the County Service Manager on the job the situation is made known to him and he is usually able to find other elevators or other distributing agencies that will use enough of that same product to complete the car.

THE County Service Manager is the county representative of the "Ohio Service Bureau Company." This organization is an offshoot of the Ohio Farm Bureau. Its aim is to purchase and handle several lines of products that the farmer most needs and to secure them for him at a minimum price. The principal duties of this organization are to handle fertilizer, feed, coal, seed, salt, twine, fence posts and to sell grain. Very naturally "The Ohio Service Bureau Company" handles these products in large quantities and is able to get the best. Many farmers whom the writer interviewed stated that the feature of this service they most appreciated was the fact that they are enabled to get a better grade of feed and fertilizer than ever before.

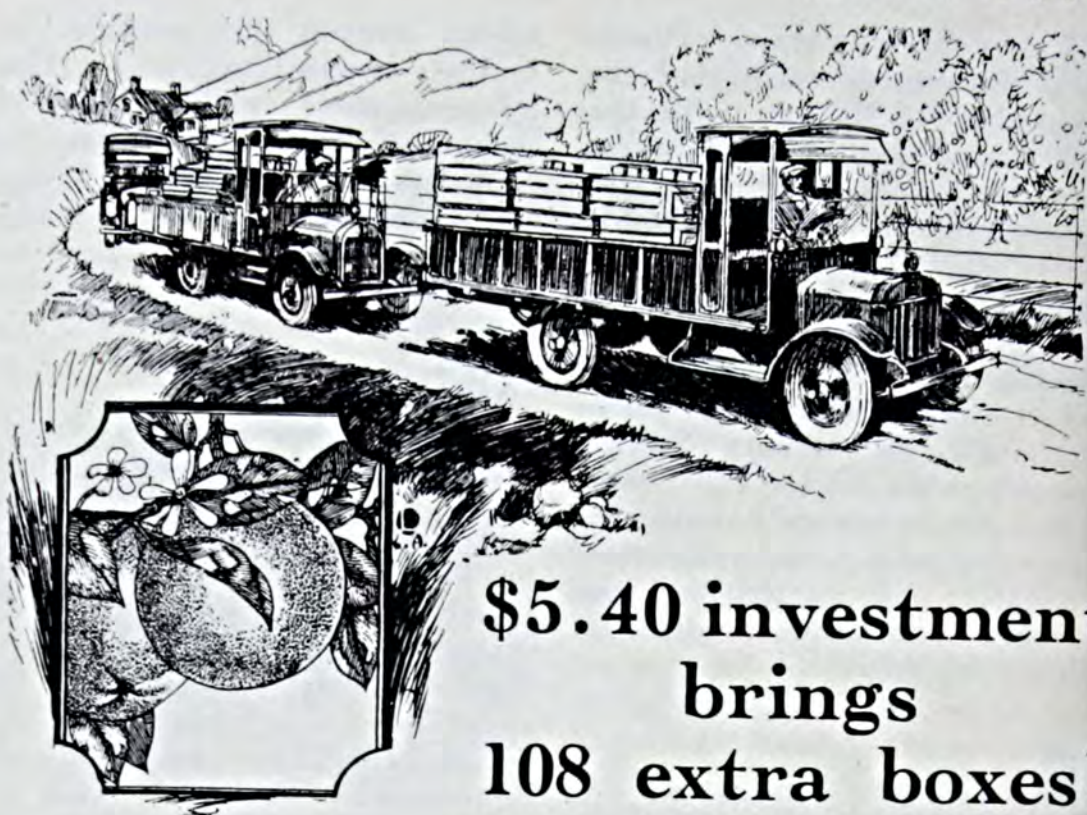
How is the County Service Manager paid? Is his salary and mileage to be drawn from the Farm Bureau treasury which in practically every instance is more than over-worked handling other projects? The answer is simple and practical. His work is concerned with financial transactions and his salary is put on a commission basis. The Farm Bureau usually guarantees that the Service Manager shall not receive less than a stipulated minimum

salary. Should the amount of business handled fail to net this minimum the Farm Bureau would make up the deficit. However, the work has developed so splendidly that the minimum salary is usually on hand from the commissions long before the end of the year.

WHO is qualified to be a County Service Manager? No exact set of qualifications have been worked out and probably never will be. The one requirement a man must meet is to be able to "Put over the Job." Naturally to be a successful County Service Manager a man must be enthusiastic over cooperation, else he cannot build up cooperation and do cooperative work. He must be able to enthuse and instruct and inspire others to work, for he cannot do all the work by his own efforts. He must be a man of keen business sense and must know and appreciate the value and necessity of records. He must know the farming game. He must be bigger than his job. He must be a worker, not an agitator or a fighter.

What of the future of the County Service Manager? His work is the natural result of the growth of cooperative work amongst farmers, and it would seem that farmers are growing more and more into a spirit of practical cooperation. The most encouraging factor is that farmers and the officers of the farm organizations are heartily pleased. Farmers invariably say, "We are getting a service we have long needed." Farm Bureau officers say, "Our members are well satisfied, for the County Service Manager renders them a service that is worth money to every one of them that makes use of him." In the minds of Ohio people the County Service Manager has more than made good. It will not be surprising if in time it may come to pass that "wherever there is a County Agent, there will also be a County Service Manager."





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**T**HERE'S only one solid and sound way of testing the value of any fertilizer, and that is, by applying it on your own grove, then comparing the yield with that of an unfertilized section. That's just what H. C. Carr of Porterville, California, did!

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received 1000 lbs. of a 2-8-0 mixture; the crop totalled 756 boxes. The third acre was fertilized with the same mixture as above, but with 9% sulfate of potash added; *The Crop Jumped to 864 Boxes!*

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## Weeds Everlasting

(From page 5)

worthy examples of this are ragweed, pigweed, black mustard, and common plantain.

In preparation for this experiment Dr. Beal made up 20 lots of seeds, each lot containing 50 freshly grown seeds from 20 different kinds of plants. One of these was white clover, the balance being the following common weeds: pigweed, ragweed, black mustard, chess or "cheat," shepherd's purse, fireweed, spotted spurge, pepper grass, corn cockle, Mayweed, mallow, wild primrose, common plantain, water pepper, purslane or "pursley," curled or "curley" dock, yellow fox-tail, chickweed, and mullen. Each lot of seeds was well mixed with a pint of sand, which had been secured from three feet below the surface of the ground on land that had never been plowed, and placed in a wide-mouthed pint bottle. These bottles were then buried in a row on a sandy knoll on the college campus. They were buried 20 inches below the surface of the ground and placed with the uncorked mouths slanting downward so as to prevent the accumulation of water about the seed.

It was Dr. Beal's plan to have one set of seeds dug up and tested for germination at the end of each five year period. Thus it will be seen that the 20 lots of seed will carry the experiment through a period of 100 years. Dr. Beal personally conducted six of these germination tests, which carried the experiment through its thirtieth year. The thirty-fifth and fortieth year tests were made under the direction of Dr. E. A. Bessey who succeeded Dr. Beal as Professor of Botany at the college.

**A**T THE end of the twentieth year of the experiment the writer had the good fortune to be a student

under Dr. Beal and was thus afforded an opportunity to watch the development of the germination test made at that time. In this test the seeds of 10 different weeds grew and produced vigorous plants. In his discussion relative to this and previous tests Dr. Beal remarked:

"From the results of these tests so far it looks as though many kinds of weeds are like the poor, 'we will have them with us always'."

From a practical standpoint these tests are of vital importance to the man behind the plow since he is the one who constantly has to wrestle with the problems concerning weed control. Let us look into some of the results thus far secured.

At the end of the first five year period, when the first test was made, 10 of the 20 different kinds of seed germinated, nine kinds germinated at the second test, 12 at the third, 10 at the fourth and fifth, seven at the sixth, five at the seventh, and eight at the eighth. It is worthy of note that the seed of a greater number of kinds germinated in the eighth test than in either the sixth or seventh. In commenting on this fact Mr. Darlington says:

"The tests fall due in the fall \* \* \* \*. The last test, however, was made in the spring of 1920, because the test had been delayed until the ground had frozen so hard as to make it impossible to dig up a bottle. The rather unusual results of the last test, however, have suggested that the wintering-over due to this delay has been rather fortunate than otherwise."

The eight kinds of seed which germinated in the fortieth year test are pigweed, ragweed, black mustard, pepper grass, wild primrose, common plantain, purslane, and curled dock. In this test 68 per cent of the pigweed, 38 per cent of wild primrose, 18 per cent of both the black mustard and curled dock,



and 10 per cent of the common plantin germinated. This is a pretty good record for seed that has been buried in the ground for forty years and furnishes proof that should convince the most skeptical that weeds come from weed seed only and are not in any manner of means the result of "spontaneous" production or mysterious plant transformation.

The seed of pepper grass alone germinated in each of the eight tests, though that of pigweed, black mustard, wild primrose, and curled dock each failed in only one of the eight tests.

Ragweed failed in every test but the last. This failure to germinate in any of the earlier tests is hardly in keeping with the unsavory reputation for persistency which this weed enjoys, but the fact that it came through in the last test is ample proof of its ability to stick around until conditions favorable for its germination are brought about.

Chickweed germinated in six consecutive tests then failed in the last two.

Purslane and yellow foxtail each germinated in five of the eight tests, the former failing in the first, sixth, and seventh, and the latter in the fourth, seventh, and eighth.

Mullin seed was very irregular, germinating in the first, third, fourth, and seventh tests.

Mallow, shepherd's purse, and plantin each germinated in two tests only.

The seed of chess, corn cockle, fireweed, spotted spurge, and white clover failed to germinate in any of the tests.

**W**HILE this experiment has not run one-half its allotted time a number of highly interesting facts have been brought out by the eight tests extending over a period of forty years. It is obvious that many of our common weeds cannot be entirely eradicated by clean cultivation where once the soil has

been filled with their seed. Whenever a crop of mature pigweed, ragweed, black mustard, plantin, or curled dock is plowed under we may look for each successive plowing of the land to bring a new supply of seed under conditions favorable to germination. This means that the farmer can hope for no respite in his battle with weeds. Constant vigilance, however, will reduce the number of weeds to a minimum and make the proverbial hard row a little easier of hoeing.

Apparently many kinds of weeds are inclined to be rather notional in their reproductive habits, and their seed germinate only under the most favorable conditions. Examples of this class are the ragweed, plantin, and shepherd's purse which, in these tests at least, have appeared to dilly dally along and germinate only as the spirit moved.

The seed of chess, corn cockle, fireweed, and spotted spurge apparently lose their viability under five years since none of them germinated in any of the tests. It is possible, however, that some of these may suddenly come through in some of the future tests as did ragweed in the last.

From exceptional results obtained in the fortieth year test it appears that the spring is a more favorable time than the fall for running the germination tests, or that with some kinds of weed seed a freezing is necessary to bring about maximum germination.

It will be interesting to see what the future germination tests will bring forth. From results to date it is quite apparent that weeds are with us to stay, and that the most thorough cultivation is no panacea for the weed evil. Knowledge of this fact should not lead to discouragement nor bring about any laxity of effort on the part of the farmer, for the fewer weeds he permits to mature seed the greater success will both he and future generations have in mitigating weed damage.



## Laziness

(From page 4)

The ladder of success is crowded except at the top.

But alert folks find that during hot weather competition on the paths to progress slackens; and the rungs on the ladder of success lose their crowded look. The roads to the beaches swarm with seekers after relief; but the benches in the library are empty, the shelves beckon with the fingers of millions of volumes, saying, "Come, learn while the others play."

I know a salesman who, because he is willing to pay the price, picks his prettiest plums on rainy days, when other salesmen give up—and play pool.

I know a merchant who pulls his biggest coups in August when other merchants are away on vacations, and sellers stand in the doorways of their factories, tongues hanging out of their mouths for orders.

I know a promoter who always starts his biggest ventures of the year in July, and completes the job in August, the month when other bond salesman lay off with the excuse that "everybody is away in August."

When others are less strenuously exerting themselves is the time the wise ones step in and intrench themselves. Napoleon advanced, and was over the brow of the hill at dawn, when his opponents were just stretching out of sound sleep.

Summer weather brings the tropics to the entire country—and with tropical heat and humidity comes the tropical laziness that steals ambition, deadens the sparkle of the eye and puts plans on the shelf of put-off.

The man who has trained himself to sustain himself under opposition, who fights outside interference, who loves a foot-ball game because of the "shove" behind it, is often the first one to accept his soul's argument

that it is too hot to work. Beads of perspiration soften his spine and wilt down his resolution.

He can fight the world, but cannot resist his own temptations. He is case-hardened on the outside, but made of powdered grape-nuts inside. His skin is as tough as a rhinoceros hide from rubbing up against the world but his guts get goose-flesh at the thought of carrying on through August.

Edison, at three score and ten, is vitally interested in conducting his experiments on through the hot weather, right through the humid days and sticky nights. From his cot, placed near his bench, and upon which he occasionally rests, he urges his associates on to greater endeavors and refuses to talk about the weather.

Newspapers come out every day in August. No magazine suspends for the summer. The gas-works goes on releasing the soul of coal; the central station pours out the juice and business goes merrily on.

\* \* \*

**L**AZINESS is a pawn. You can "put it over the counter" and Life will loan you plenty of time on it, but the time is soon frittered away, and for the accommodation Life demands a lion's share of your opportunities and hope for success.

Success is only for the active man.

Failure lies around the corner waiting in ambush to throw asafetida in the hair of the lazy man.

All life is a fight—a daily struggle against Nature—against our own desires.

And man's greatest struggle of all is against his own ingrained, inherited laziness—a laziness which some half-baked scientist awhile back used to prove that man was



never intended to work, claiming that if the Great One had meant man to labor he would have equipped him only with ambition and left laziness from his makeup.

From such half-baked theories Heaven protect us! The same scientist would undoubtedly use the pains of child-birth to prove that women were not intended to reproduce, and weeds in the garden to prove that man was never ordained to supply himself with food.

**A**LL SUCCESS is hedged about with difficulties.

If anything were too easy, there would be no satisfaction in attaining it. When a college education can be secured by strapping headpieces to your ears while you sleep, it will be no honor nor glory to be an educated man. Only the struggle to get it gives a thing its value.

Saunders Norvell, who in his philosophy is occasionally right, but more often wrong, once said that all good executives are lazy, and that they were good executives *because* they were lazy. He liked his Sales Managers fat and lazy so that they would remain seated in their swivel chairs and *plan* instead of "popping about like flies on a hot stove."

But Sank, in putting his theories into practice, has seen lean and lank salesmen who went "popping about" sniping orders outstrip his fat ones who merely sat and looked wise.

**T**O MISTAKE laziness and slowness for thoughtfulness and carefulness is easy. To see a man with his feet on the window sill and his eyes on the ceiling is often to say, in a hushed whisper, "Still waters run deep; I wonder what giant plan he is hatching out now!" when actually the subject is merely asleep with his

eyes open, enjoying a tranquilly lazy hour.

And the near-thinker who loosed the near-thought that "all labor-saving inventions have come from the brains of men, who, too lazy to work, invented machines to do their jobs" should think one more masterpiece of a similar nature and I will recommend his bust for the Hall of Shame.

No invention ever came from a lazy man, for lazy men have lazy brains. An active brain-cell is never discovered in a lazy body.

Labor-saving inventions have always come from the minds of active men who realized that the rest of the world was lazy and would pay a fat price for a machine that would eliminate effort on their part—that for two dollars would save two moves of their lazy carcasses!

Life is short! Time is fleeting!

He who quits is out of step with the Zeitgeist—the spirit of the times is stick, study, succeed.


Let not the heat of the day concern you, but the heat of your ambition. If you sweat from the heat, sweat also from effort and when the two mix a formula is found that outdistances anything ever dreamed of by the alchemists of old in their palmiest days.

Fight laziness twelve months in the year, fourteen hundred and forty minutes each day; but redouble your efforts when tropical days begin to melt down your resolutions.

When you feel a fit of laziness sweeping over you, *spring to your feet* even if you only stand there getting your "dander up!" Swing your arms, cuss softly, walk back and forth and steel yourself to the effort that is required. Then get busy.

When the sun is hot, and others are putting off until a cooler time the things they should do today, is the time when we, if we are willing to pay the price of the effort, can eagerly advance a notch or two in our plans.





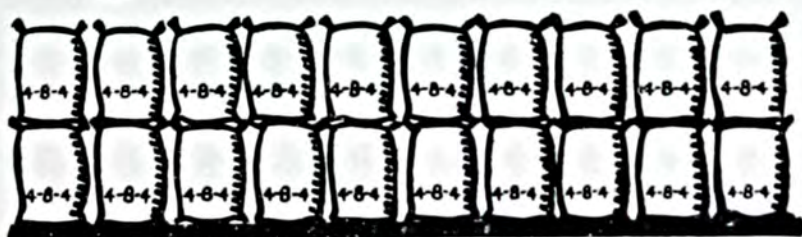
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## TWO HOURS WORK WHILE THE CLOCK TICKS ONE

### With the Oliver No. 37 Two-Row Cultivator

**C**ULTIVATING days are usually the busiest of the whole farm year. On most farms the capacity of man and team power is taxed the limit in order to keep ahead of the weeds, which grow like magic.

It is during this busy season—a time when there are so many things to do that you will appreciate most the advantages of being able to do two hours' work while the clock ticks one.

Cultivating two rows in the same time that is ordinarily required for one, or sixteen acres in one day instead of eight, results in a decided saving in time and labor required to handle the crop.

The ability to get over the crop quickly, especially after rains, keeping down the weeds and conserving the much-needed moisture means a great difference in the quantity and quality of the yield. Then, too, there is more time for harvesting and the other important farm work.

These advantages all serve to increase profits for the year and warrant owning a two-row cultivator purely from a business basis.



OLIVER CHILLED PLOW WORKS

South Bend, Indiana



