

Better Crops

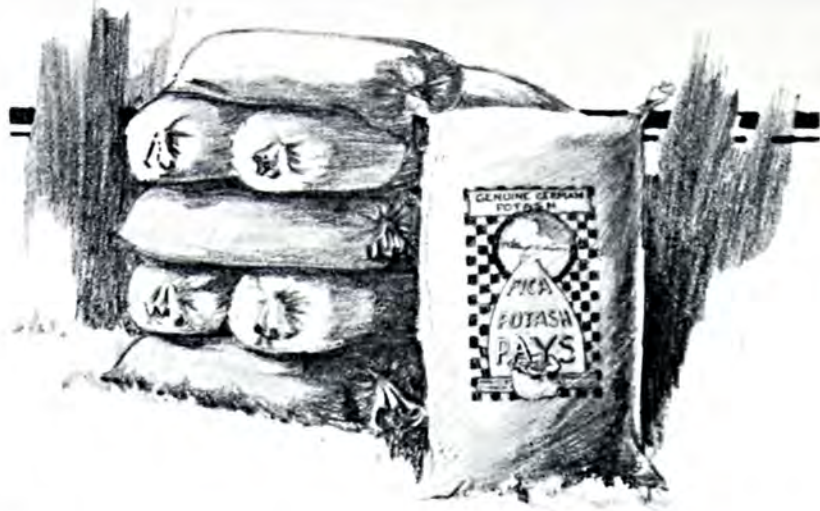
The Pocket Book of Agriculture

September 1924

10 Cents.



The County Agent and Cooperative Marketing by O. B. Messness--The Readjustment Period by A. B. Genung



How many bushels of wheat?

Did you ever figure out the additional profit you could make by raising 7 or 8 more bushels of wheat to the acre?

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Potash strengthens the stalk and prevents lodging of the grain under high winds and heavy rains. It makes wheat harder, plumper and the shrinkage will be less. It improves the grade—adding still more profit per acre.

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NOTE:—Since two of the figures in this advertisement, as it appeared in August BETTER CROPS were incorrect, we are repeating it in its correct form.

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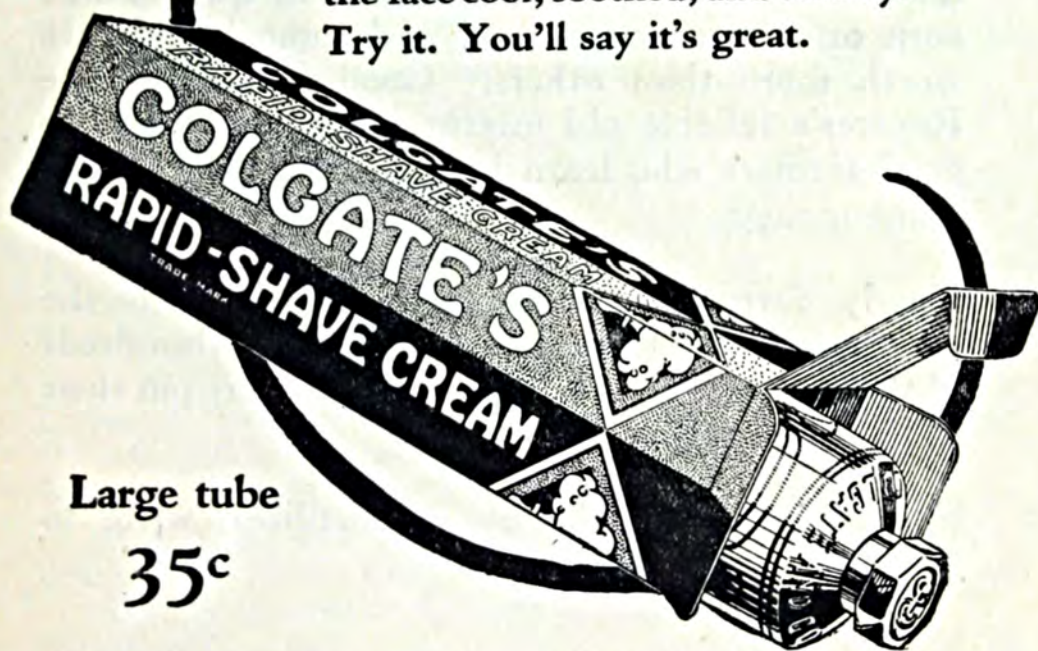
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The Pocket Book of Agriculture

VOLUME III

NUMBER ONE

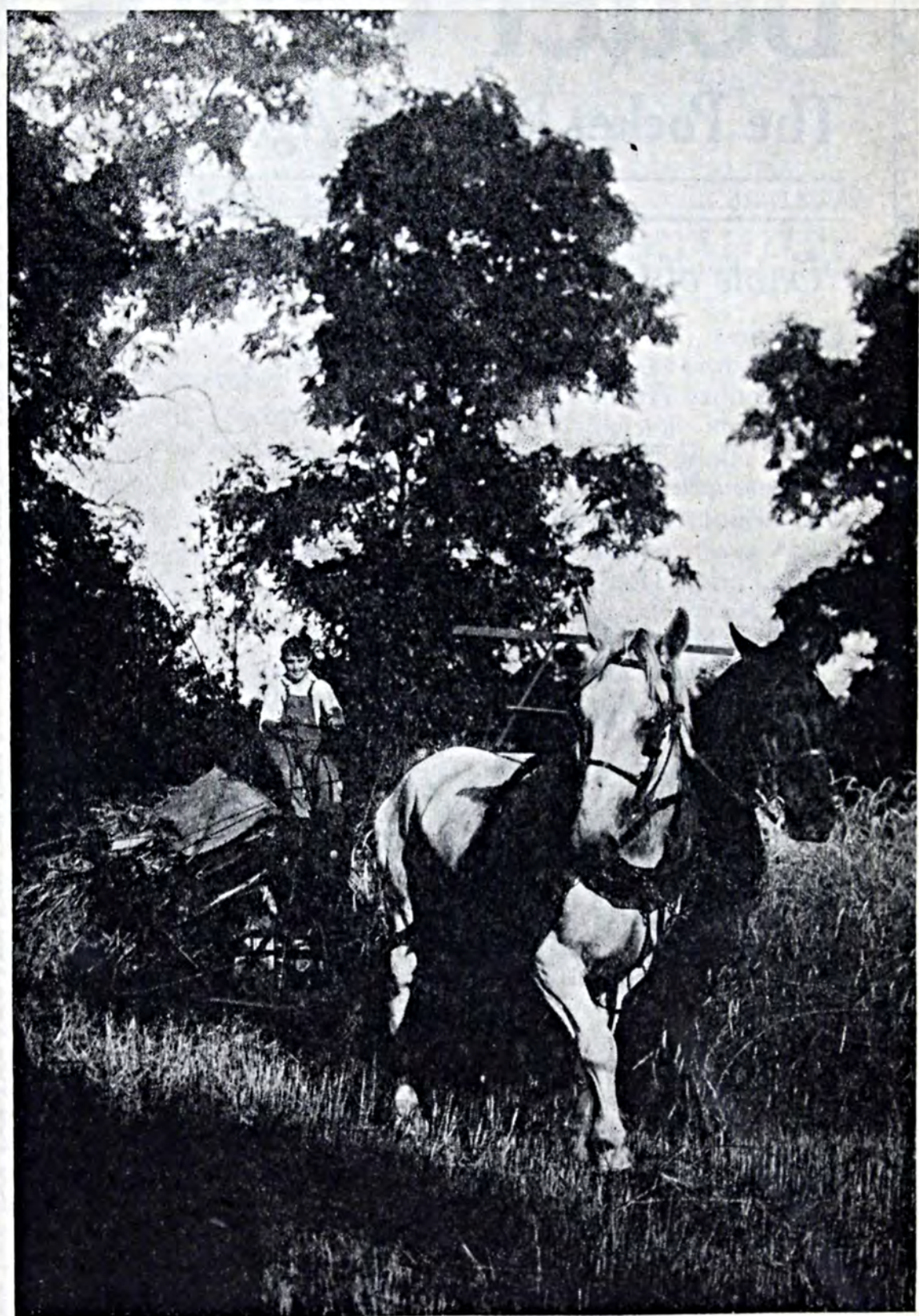
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VOL. III

NEW YORK, SEPTEMBER, 1924

No. 1

HAPPINESS

By *Jeff Mc Dermid*

MAN'S great search is for happiness.

But what is happiness? And would we recognize it if we found it in our grasp?

I am not sure that the world was intended for happiness. In fact, I believe that there is no such thing—it is all in the chase, just as there is no such thing as education, *per se*.

There is, I grant, a continual hunt for facts, for knowledge. We are all being educated every day—some against our wills. But education lies in the search, and happiness is found only in the chase.

Happiness is a coquette—always just around the corner, luring us on. But upon her face has no man ever gazed. No sane man has ever died, breathing, "I have been truly happy."

Happiness is a turn of mind—and as the mind is always turning, there can be no permanent happiness. We may catch fleeting glimpses of

it, but it slips from our grasp as we make the effort to catch it.

THERE are those who, faced by an inconvenience, turn it with a jest into rare convenience; who, perplexed for a moment at finding themselves in an unbearable position, laugh finally at their temporary misfortune and—turn to the right!

Others there are, (and I know a few of them, Hank!) that breed unhappiness as an empty tomato can breeds mosquitos. They are not

only themselves unhappy but they make others unhappy.

Everything they have is unfit, all their friends are envious devils, their lot in life is extremely sad, their merits unappreciated. There is always too much salt in the soup, and there are burrs in the cow's tail.

If happiness is a turn of mind, and I believe it is, then some folks are more to be pitied than censured, for in them lies no disposition to be pleased with what is pleasing.

Sometimes this spirit arises from a desire to be critical. Ofttimes from the assumption that the critic finger points to progress, but more often from the belief that to show disgust with things as they are, proves one's finer appreciation of things as they should be; sets up, as it were, the thought that one is accustomed to better surroundings, nicer people and much more ease and luxury.

THE first thing some people do, upon taking up new work, is to establish once and for all, their superiority over their fellow workers by criticizing everything their eyes fall upon.

Thus they hope to lead others to believe that they are used to better things and are only staying in the beastly place and doing the horrible work for some reason they care not to explain.

Their unhappiness is based on discontent. And soon this seed, sown through a desire to appear superior, develops into a habit—and all life becomes a sordid thing, a veritable hell upon earth in which no happiness is to be found and the search accordingly useless.

Discontent is, of course, the antithesis of happiness.

But, peculiarly enough, happiness does not lie in trying to be contented.

For full contentment is stagnation, and stifles happiness entire. Progress, and what meed of happi-

ness any of us is fit for, lies in a certain measure of "divine discontent"—the itch to do the thing a little better than before, to plod one more weary mile upon the way, to plant the staff a little higher up the hill.

Every man believes that his burdens and misfortunes are peculiarly unbearable.

I believe it was Socrates who said that if all the misfortunes of mankind were cast into a pile, and then equally distributed among all, those who now think themselves unhappy would prefer their present burdens to those which would fall to them by such an equal division.

Calamity comes to all. "Into each life some rain must fall."

Envy, pain and sorrow are with us always, and happiness being the absence of sorrow, pain and envy there can be no happiness.

But there can be the *search* for happiness, and in that search lies the nearest approximation to happiness of which man is capable.

Nearly everyone—excepting you—wants something he hasn't got.

And often that something is more money.

All my life I have been a seeker after something I haven't got. I have roved and turned, and walked, and struggled, and chased, and pirouetted after the will of the wisp. Sometimes it was more money. Often it was more satisfying companionship. Once it was better health, and like the "Acres of Diamonds," the health was found, not out in the dust-dry atmosphere of Arizona but on my own farm, painting the house!

Searching, hunting, seeking!

AND then one day I saw two cows.

It seems like sliding from the sublime to the ridiculous to say that two cows changed my philosophy of happiness, but as I am nothing if not truthful I will admit

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The

County Agent's Wife

By L. E. McDaniels

County Agent, Basin, Wyoming

Q This one is hard on unmarried County Agents, but you can't blame the author unless it be for failing to tell us how to pick a partner like his.

I DO not think we need to argue as to the necessity of a county agent being a married man with its minor question of being able to support two, etc., etc., in addition to the question of how much a man should have when he takes a partner. All thinking people know that any man either too young or too selfish to marry and make a home is not fit to be intrusted with the responsibilities of advising others on matters that are a basic part of his duties. The amount one has to begin with has no bearing on the matter since training and environment of the woman would make a pittance to one seem ample to another, yet both would be good partners once they were initiated into the work of community leadership.

In the case of my wife she was not only farm but ranch raised and in addition had special training as a nurse which made her invaluable to me in my work with the women of the county since we have no Home Demonstration worker or County Nurse.

IN my five years of work as county agent my wife has taken a keen interest in every phase of my work and has worked with the

specialists from the college in staging demonstrations until she became even more efficient than myself in many lines and as a result of this interest she has kept the county abreast of those which do have demonstration agents in such work as Hat making, Dress making, Poultry raising and all classes of club work. In fact, her efforts along the line of boys' and girls' club work have been recognized by the County Farm Bureau organization to the extent of electing her the County Club Project leader.

The reason for this honor is that each year of the four spent in this county she has personally trained the winning county champion girls' club team and for two years trained the state champion team and from the girls in her club there was selected the state champion girl in home making who was awarded the trip to Chicago last Fall.

She helped me to train the state champion poultry demonstration team and with her suggestions and personal work she has made it possible for me to win the sweepstakes at the State Fair for three years in succession for my county.

Owing to the fact that my county is larger than some of the Eastern states it is necessary for me to be

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Even President Coolidge took a few minutes out of his busy day to chat with these Hoosier visitors.

These Young Folks Amazed Washington

By F. M. Russell

U. S. Department of Agriculture

(Few things give me a greater thrill than the achievements of our farm boys and girls. These Indiana champions are typical of the great work being done by boys' and girls' club throughout the country.)

"I CONSIDER this one of my greatest pleasures," said Secretary of Agriculture Wallace as he stepped out of his office to greet a small band of boys' and girls' club winners from Indiana who were visiting Washington as a reward given state champions in competitive club work during the past year. "Let me congratulate you most heartily for what you have been able to accomplish and to assure you that I have a deep interest in the boys and girls who will have to be running things only a few years from now."

When this small group of modest Indiana farm youths recently came to the seat of our government, and their achievements became known after much questioning of their leaders, Washington got a genuine thrill, such as it has not enjoyed for many a day. And the least excited or disturbed were the young people themselves, no matter whether they were in conversation with President Coolidge or Secretary Wallace, or were being lauded by the scores who took this occasion to pay their respects to the great work being

done by the farm boys and girls of the United States in the thousands of worthwhile clubs.

State champions they were, this small band of Hoosier young people who were visiting Washington as a reward for the many hours they had spent on the farm in competition with hundreds of others. Yet it was difficult to find out just what they had done to warrant state championship honors, even in questioning their leaders. It was necessary to consult the records. One of the most gratifying by-products of club work seems to be a very profound sense of modesty, instilled by wise leadership and the very nature of the American farm youth. That the unassuming attitude of this particular group was not due to youthful embarrassment is vouched for in the admirable manner in which they conducted themselves as they were being introduced and congratulated by the President and other national leaders. Such actions speak well for the future of American agriculture.

THERE is only one way correctly and definitely to tell the

story of these state champions from Indiana. Their verified records speak for themselves.

Although it is difficult to know just where to start on the list, as they were all leaders in their own particular field honors perhaps should go to Robert Wilson of Muncie, not only because of what he has done but because of his age. He was but 12 years old. "The premier boy exhibitor of the United States" is what he has been rightfully called. He exhibited the Grand Champion Steer at the Indiana State Fair last summer and followed this up by winning Grand Championship stakes in the Junior Class at the International Livestock Exposition in Chicago, the country's leading livestock show.

Next in order should come the four young ladies in the party of champions. Sixteen year old Harriet McCutcheon of Inglesfield, who posed shaking hands with President Coolidge while a battery of cameras got busy, had a perfect right to the honor. Between April 14 and December 31, 1923, Harriet made 65 garments, valued at \$178, which took her a total of 378 hours.

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Secretary Wallace says he gets particular pride in having his picture taken with farm girls. He is shown with the four Indiana champions.

The County Agent and His Relation to COOPERATIVE

By O. B. Jesness

Chief, Section of Markets
Kentucky Experiment Station

THE county agent and other extension forces in many localities have been subjected to criticisms for the part they have or have not taken in the development of cooperative marketing enterprises among farmers. The county agent has been accused by some of meddling in other peoples' affairs and by others of being guilty of not doing anything to help the farmer with his marketing problems. The divergence of opinion on this question is shown by the fact that some agents have found themselves in the peculiar position of being charged with overstepping the limits of their field of work by one element in the county because of their interest in cooperative marketing and at the same time have been accused by others of a lukewarm attitude towards cooperative marketing. Can such an agent be blamed if he feels that he is between Mephistopheles and the deep blue?

Individuals whose business is adversely affected by organized marketing activities among farmers naturally regard such ventures with disapproval. A livestock buyer, for example, can not be expected to look with favor upon a shipping association which takes his business away from him. If the county agent has been called upon by his

farmers for information and assistance, the dealer may feel that the agent is at the bottom of it all.

ON the other side may be cooperative enthusiasts who think there are no limits to what the county agent should do in helping cooperative marketing enterprises and particularly in pushing their pet plan of organization. They likewise fail to see the relationship of the extension agencies to cooperative marketing in the true light. Such individuals need to appreciate that everyone does not think alike on such questions. There is frequent divergence of views among organization leaders and the rank and file of farmers with respect to certain plans of organization. The extension worker who is a public employee must hold himself aloof from petty partisanship in such matters if he is to retain the public's confidence. He must recognize the right of each individual to form his own conclusion and keep himself in such relationship that he can serve his people to the fullest extent possible in giving true information and sound advice. Leaders in cooperative marketing organizations in time will come to appreciate more and more

¶This subject raises problems that every extension worker has to face sooner or later. Mr. Jesness discusses them sympathetically and offers a sound solution.

MARKETING

the soundness of permitting the county agent to retain his true position as an educator and realize that in this capacity the agent will be of more permanent benefit to constructive development than if he assumed the role of a propagandist.

The extension worker himself has not always been blameless. An occasional agent becomes so over-imbued with an idea that he loses the right perspective of his job and lays himself open to criticism because of his activities. Some agents have chafed under what they have regarded as unwise and unnecessary restrictions. This may have been justified at times. Sometimes it has been caused by misunderstanding. Is there not reason to suspect that it may at times have been due to failure to see the field for educational work in cooperative marketing?

THE past fifteen years or so have been a pioneering stage in the agricultural extension movement. The field was new and experiment had to take the place of experience at many turns. Out of these years has come the outstanding fact that an extension agent is as much of a teacher as is the instructor who remains within the campus class

room. As a teacher it is his job to get others to think, to reason and to apply. It is not his job to perform personal services or do the thinking or arrive at decisions for his farmers.

This was plain in the field of production from the very first although even here there have been numerous instances where the line between service and teaching has been but faintly drawn. The agent who has demonstrated the pruning of fruit trees to a farmer only to have that man ask him when he could return and prune the remainder of his orchard, knows this to be a fact. In the field of marketing, it has frequently not been as easy for either the farmer or the agent to see the proper boundaries to extension work. As a result, some agents were led to render a commercial service for farmers in marketing of a nature which they would not have thought of doing in problems of production on the farms. These have been exceptional instances, however.

More and more we have come to see that the proper field of activity for extension forces is that of education, both in marketing and in production. If that is the case, what properly can be said to fall within the educational phase of marketing and cooperation? To handle farm

products for the farmer is one thing. To acquaint him with better methods of handling is another. The former is merely personal service; the latter is educational. If you go out and drive the manure spreader for a farmer you are doing him a service which helps him that much for the time being. If, instead, you teach him some principles and facts about soil fertility and its maintenance you have given him something that not only will serve him permanently but which also may make of him a teacher among his neighbors.

Just as the extension work aims to bring into use improved and more efficient production methods so it must bring better selling methods by teaching about the methods of marketing in use and how better methods may be adopted. There is this limiting factor at the present time, however, Cultural practices have been the object of research and study for a long period of time. Study of selling problems is of much more recent origin so that there is not yet as much material assembled nor as general understanding of marketing as of production. Moreover, many phases of marketing relate to the products after they have left the farmers' hands or require group action rather than individual attention. Another point

to consider is that the educational training of most agents has stressed the production side with but little attention given to the economic and selling side. As information is obtained about marketing, more material for teaching becomes available for the agent's use in building up his educational program in this field.

THE question might well be asked what need is there for an educational program in cooperative marketing and what should be embraced in such a project? Perhaps the suggestion that an educational program is needed in cooperative marketing at present may strike some as being a case of "carrying coals to New Castle." Let us see what the situation really is. The emphasis in marketing has been placed largely upon organization work. An organization formed has been a feather in a man's hat. This emphasis has aided in getting some agents into difficulty. Some have forgotten that cooperative marketing was a business undertaking and that it is preferable that a man make up his own mind as to whether or not he wants to go into business rather than to have some one else attempt to decide for him. Some have also

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County Agent C. F. Striplin of Madison County, Alabama, discussing cooperation with negro farmers.

What Potash Does for Crops

By George E. Stanley

(This article written by a student of the College of Agriculture, University of California gives an excellent account of the functions of potash in agriculture.)

EXTENSIVE research has shown conclusively that at least ten elements are absolutely essential to plant development. Of these ten, there are four which the plant may obtain, at least in part, from the air. Of the remaining six we find four which are needed in small amounts only and are seldom, if ever, found to be of a limiting nature to plant development. Of the other two we find potassium, the element with which we are here dealing, of the utmost importance to plant growth.

Potash no longer has "a function" in crop development. It now has "functions." There are potash functions which affect yield and others which affect quality of product or crop. All usually interact to the end that their omission is disastrous and their inclusion spells success. Let us now consider those which affect quality of the crop or product, or the condition of the land after the crop is removed.

FROM recent experiments carried out in France, it is concluded that crops on soil deficient in available potash cause an uneconomical use of other nutritive elements so that a small crop may absorb more of these constituents from a soil deficient in potash than a large crop

from a soil rich in potash. Thus we obtain waste and a small yield where potash is lacking; and an economical use and large yield where potash is present in sufficient amount for the crop.

Perhaps the potash function which is next in importance to that of the general conservation of soil ingredients is that of carbohydrate formation. From extensive experiments conducted by Hellriegel, Wilforth, and Hall of the Rothamstead Experiment Station, it seems conclusively proven that the process of photosynthesis in the leaf and the consequent storage of carbohydrates in grain and roots is largely regulated by the potash supply available to the plant. Bearing out these observations it is shown that potash increases the size and quality of cereal grains, while phosphoric acid and nitrogen have no appreciable effects. Tests at Rothamstead Station with mangel wurzels show that plants having identical environmental conditions with the exception of potash, and having as nearly identical leaf areas as possible vary considerably in carbohydrate formation depending on the presence or absence of potash. It was found that adding potash increased the amount of carbohydrates formed two and one-half times. It is, therefore, reasonable for us to expect

potash to play an important role in determining the success of a cereal, root, or other crop high in carbohydrates.

It is now also held that potassium performs valuable functions in the formation of proteins by plants, and that it aids cell and nuclear division.

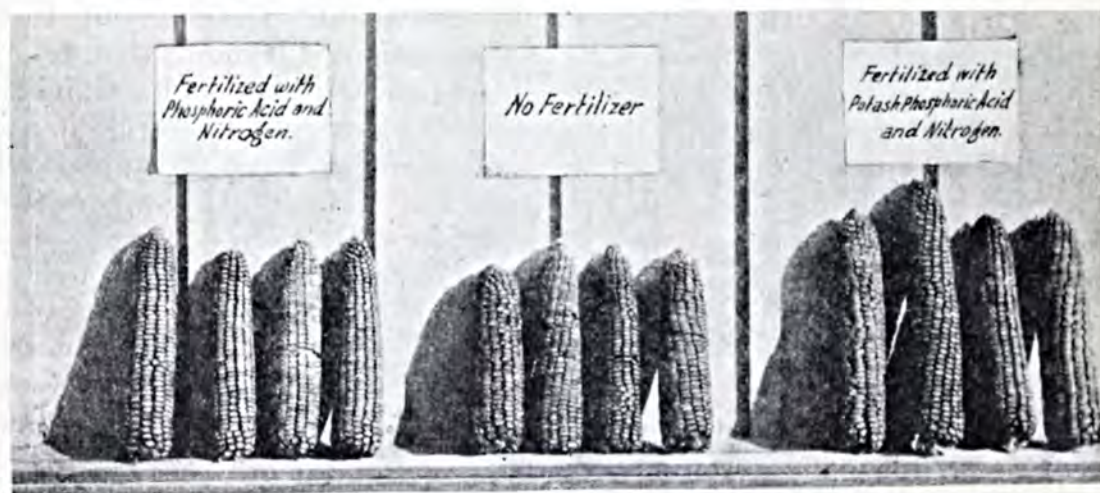
A fourth function of importance is that of strengthening the resistance of plants to diseases, frost and insect attacks. In farm practice instances sometimes occur where plant diseases become unusually severe, due to a lack of potash. The outstanding example of this is, perhaps, Cotton Rust. Professor Duggar, while connected with the Alabama Experiment Station, conducted experiments with cotton and repeatedly demonstrated that the rust could be prevented by obtaining the proper soil conditions through the application of potash. This general weakening due to potash deficiency is a common one with all sorts of plants. Pineapples are shown to have become so susceptible to frost in St. Lucie County, Florida, when not supplied with potash, that the entire industry in that section suffered serious financial reverses. The frost susceptibility is still greater if nitrogen is added. Many more similar cases could be given in detail. For

instance, various men find potato diseases, stem rusts of grasses, weak stems, lack of chlorophyll in leaves, and susceptibility to other general diseases, all directly traceable to a lack of potash. In this regard it may be well to quote Van Slyke, who says.—“In general, crops which do not receive their full supply of potassium are more liable to disease, and in this condition the resisting power is weakened still more if the plant receives large amounts of available nitrogen.”

UNQUESTIONABLY, then, the presence of an adequate supply of potash has much to do with the general tone and vigor of the plant. What effect does it have on the yield—that part with which our pocket-books are most intimately concerned?

In many cases experiments in recent years on soil of varying types have shown increases in yield all the way from two to five or six times, by the application of potash fertilizers only. These are surely too numerous to be cited here. To pick the outstanding examples would be unfair, so we briefly mention a few average experiments out of the great numbers.

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Mr. L. C. Reynolds experimented with corn on his brown clay loam soil in Shiawassee County, Michigan. By using potash, he increased his yield 39 bushels over the unfertilized plot and 24½ bushels over the plot where only nitrogen and phosphoric acid were used. Note the quality of the ears from the potash plot.

The Readjustment Period

By A. B. Genung

U. S. Department of Agriculture

Because he is constantly in touch with the latest information on agricultural conditions and because he has unusual ability to analyze the economic situation, every word that Mr. Genung writes is worth reading carefully.

YOU can put your finger on the exact hour of birth of this present-day readjustment period. It was 11 a. m., November 11, 1918.

On that cold, sour, fall morning the Armistice orders went down the three-hundred-mile battle line in France and the roar of guns died down as though some giant hand had wiped them from the earth.

Never a more abruptly dramatic event. Never one more far-reaching in its economic consequences. That morning changed the background of the world's daily work.

Not that this change was instantly felt everywhere. It was not fully felt in this country's factories and farms for a year and a half after the Armistice.

Nevertheless, when the war stopped, something else began, which is simply a way of repeating that the period we are going through is a post-war period. That is the first thing to keep straight in our thinking, the fact that these are abnormal times, the product of an even more abnormal time. Changes that the war years forced upon our economic community under the pressure of great emergency, peace

years must iron out in their more deliberate way. War always gears up the economic machine to higher speed. It flings national wealth prodigally into the maw of destruction; by the same token it spurs men to feverish production of more materials. Price relationships are upset but actual prices of basic necessities invariably soar to the point of stimulating production. Food and equipment for the army become vital. The thing is to get them. Consequences are something to be considered later.

But an upheaval in economic relationships always has consequences. There is always a "post-war period." The community always pays the piper when it goes through the process of reestablishing the normal balance in its industries and among its workers.

SO it has been this time. A gigantic war; a profound upheaval in world-wide currents of production and distribution; and now a long, slow, painful readjustment of those processes. We are right in the midst of this last. It is a world-

wide affair, not in any sense peculiar to the United States. The wheat grower in North Dakota will find other growers in Canada, Australia, India, Argentina, England, who can match his present story of trouble, item for item.

At the time of the Armistice, the United States was just getting into its real stride of production. Our factories and our farms had gone into action in dead earnest. Looking back upon it, one can not help but marvel at the pace to which a vast, unwieldy industry like agriculture had been keyed up. The cold statistics show an 18 per cent increase in crop production per agricultural worker between the years 1910 and 1920, almost a fifth increase in efficiency in the war period.

It was not alone high prices that did this, though they were an incentive. Overlay a strong economic motive with such waves of patriotism as swept this country and you get results. We got results.

The Armistice did not quite wind up war affairs, however. There remained the little matter of financial arrangements, the Victory Loan, etc. As soon as business had caught its breath, had caught the flood of emergency orders from Europe, had tasted the easy credit conditions, it set things going again with a flourish. In 1919 came the splendid orgy of speculation, of inflation, of skyrocketing prices, of insane assurance that the only direction values could ever take was upward.

IT was in 1919 that agriculture, like other industries, unconsciously laid the groundwork for subsequent readjustment. Farmers had every reason to expect that they, in common with other producers, would be called upon to supply war-torn Europe with basic necessities for some little time.

The price of wheat on United

States farms was 150 per cent above its pre-war level in the spring of 1919. We produced a tremendous wheat crop that year, the second largest on record. Still wheat prices held and even went higher.

In the spring of 1920 the average price at the farm was 170 to 180 per cent above pre-war. It is not exactly to be wondered at that the Wheat Belt was optimistic, that wheat land values surged upward.

Hog prices were around 140 per cent above pre-war in the spring of 1919. They had been nearly up there for a year and a half. Hog production increased.

Corn prices were also up around the same level. And the multitude of pigs to be fed carried corn prices still higher into the spring of 1920, even though hog prices naturally had begun to drop.

The price of cotton at the farm mounted all during 1919, until that fall it was 235 per cent above pre-war.

So on with other important products. Wool, potatoes, beef cattle, butter, eggs all went into the year 1920 at relatively high price levels, and with these great producing regions extending their resources to the limit, to meet the market.

THEN, like a thunder-clap came the price collapse of 1920. Europe and, in fact, most of the agricultural world had come forward with promise of abundant crops. In this country, inflation reached and passed a crest. There came "buyers' strikes," tightening interest rates, deflation. Down went the structure of prices—raw materials and farm products in particular falling first, hardest, and farthest. It was the most precipitate crash of prices in our history.

The autumn of 1920 found our great farming regions flat on their backs. Prices of cotton, potatoes, corn, wool, cattle, dropped to and

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Better Crops'
ART GALLERY
of the month



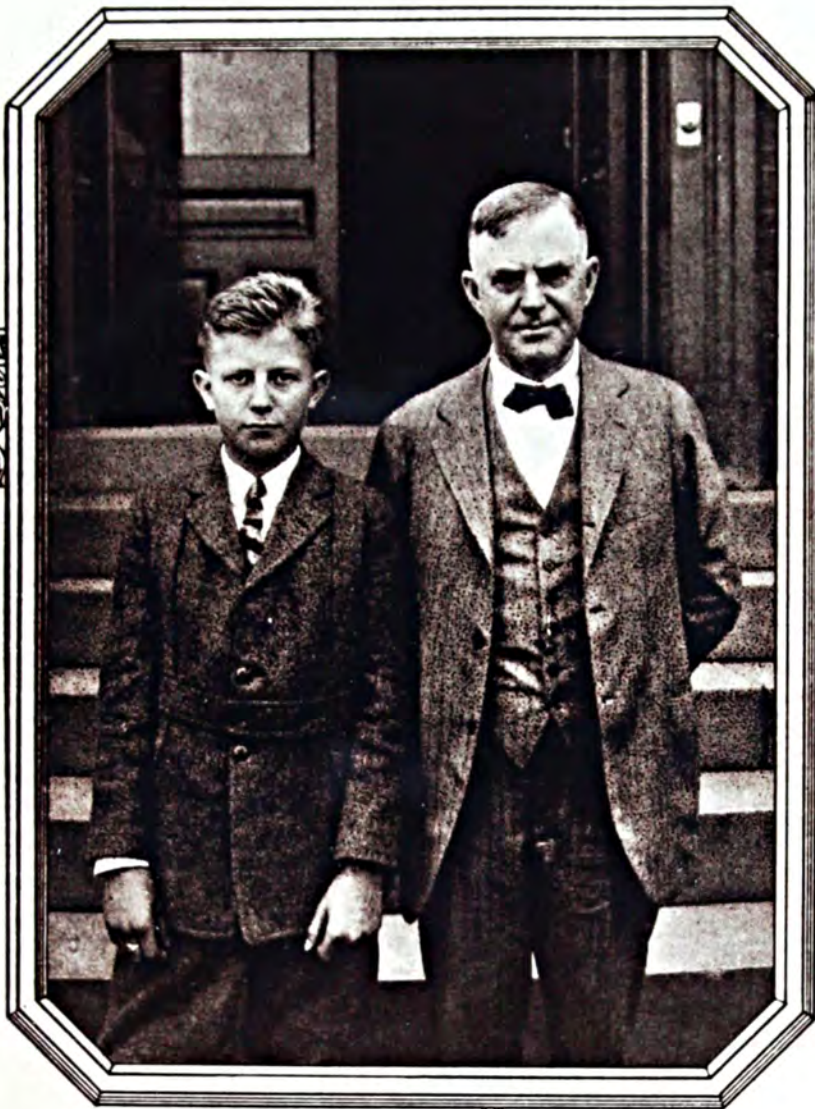
Although he is still a young man, Mr. A. B. Genung is rapidly earning recognition as one of the leading agricultural economists of the country. He is working in the Bureau of Agricultural Economics of the Department of Agriculture and is responsible for the Agricultural Blue Sheet, one of the Department's most popular publications.



No, gentle reader, this was not snapped in the sunny tropics. It shows a county agent inspecting a sugar cane crop in Crisp County, Georgia.



Putting the golden leaf in a tobacco barn in Alamance County, North Carolina.



Who is the prouder of these two? Secretary Wallace or Robert Wilson of Indiana, known as the "premier boy exhibitor in the United States". See the story on page 8 of this issue.



These are the 30 Indiana county agents whose recent trip to Washington is described on the opposite page. They are shown here with Secretary Wallace.



They inspect apparatus used in investigating road wear problems at Arlington Farm.



The fruit trees at Arlington lure them for a time.

30 County Agents Camp at U.S.D.A.

By C. E. Gapen

IT is probable that the thirty Hoosier county agents who made a pilgrimage to the Department of Agriculture at Washington this summer, have started something which will result in a good deal of wear on the east and west highways and, perhaps, on those running in other directions from Washington. Unlike the pilgrims of olden times, they did not come in footsore and weary, but housed in a comfortable "bellicose" bus they arrived fresh as the day they started, eager to load up on any new ideas they might encounter. They brought along their tents and beds and, for the first time in history, there was a busy camp right alongside the Secretary's office. Here they lived for several days while making trips to the various bureaus and to the Government farms at Beltsville, Md., and Arlington, Va.

The party was headed by W. V. Kell, Assistant County Agent Leader for Indiana. It was Mr. Kell's idea which resulted in one-third of the Hoosier county agents taking this epoch-making trip. All these men made the journey at their own expense, which is considerable of a tribute to their interest in the work of improving agriculture in their respective counties. They are now sure that the idea is a good one, for not only did they get acquainted with many people in the Department of Agriculture and learn a good deal from the experimental work which is being done in and near Washington, but they found

that the trip was a lesson on ways of conducting an educational tour.

THE trip in the big bus lasted about two weeks, a good part of one week being spent at Washington. Later they traveled to the famous agricultural section of Lancaster County, Pennsylvania, then to State College, Pennsylvania, and farms in the vicinity and later they visited the famous experimental farm at Wooster, Ohio.

Not all the time of the county agents was spent in heavy study of agricultural problems. Recreation was also on the program. In Washington they visited all the famous points of interest. On one evening they were entertained by the famous Marine Band in front of the Capitol. No wonder that many of these men have resolved to take this 2,000-mile trip again with their own cars and their families.

The party which filled the big bus was made up as follows: W. V. Kell, assistant county agent leader, Indiana Agricultural Extension Service; R. R. Mulvey, assistant in soils and crops, Indiana State Experiment Station; T. R. Johnston, in charge Purdue University News Bureau; and County Agents T. C. Craven, Morgan County; Harold Yarling, Pulaski County; A. L. Hodgson, Delaware; M. E. Cromer, Hancock; Warren O'Hara, Spencer; O. S. Williams, Johnson; R. W. McClain, Marion; C. U. Watson,
(turn to page 48)

The WAY TO BETTER PROFITS

By Robert Stewart

University of Nevada

(In this article Dean Stewart has struck the keynote of profitable agriculture. I particularly recommend it to your attention.)

THE quality of the soil is an important factor affecting the profits obtained by the farmer. The idea is quite prevalent that in crop production the point of diminishing returns has been reached, nationally speaking, at least. This means that in crop production a stage has been reached beyond which increased yields necessitate costs out of proportion to the possible income so that additional yields may cost more than the values of these yields and thus can be obtained only at the expense of farm profits.

The quality of the soil does have an important bearing on the farm profits. This is an axiomatic truth. The extent of this influence may be seen by the following data obtained from the several states by farm management surveys:

The effect of Crop Yields on the Labor Income

Crop Index	Labor Income
<i>Kentucky</i>	
90 or less	\$ 217
91-100	519
101-110	701
111-120	1,080
Over 120	1,103
<i>Oregon</i>	
91 or less	653
92-106	1,085
Over 107	1,596

Missouri

60 or less	105
61- 75	128
76- 90	473
91-110	601
111-130	857
Over 130	908

In Kentucky an increase of 30 per cent in crop yields or crop index brings about a 408 per cent increase in the labor income. In Oregon a 16 per cent increase in crop yields brings over 144 per cent increase in labor income. In Missouri an increase in crop yields of 70 per cent brings an increase in the labor income of almost 765 per cent. The importance of high quality of soil as indicated by greater crop yields *does have* a marked influence upon the farmer's returns as measured by the labor income. Assuredly, then, he should pay the most careful attention to soil quality as a very material factor affecting his income.

ANOTHER way of getting an insight into the effect of soil quality on the farm profits is to consider the effect of yields on the per bushel cost of producing the crops. Some instructive data on this point have been published from Texas.

Effect of Crop Yields Upon the Cost of Producing Corn

Yield	Cost per bus.
20 bushels.....	\$0.94
21-30.....	0.53
31 bushels or more.....	0.45

When the yield has been increased by 50 per cent the cost of producing the crop has decreased by over 50 per cent.

In industry, other than agriculture, the business manager is constantly striving to increase profits and he attempts to do this in two ways; (1) by reducing the cost of production, and (2) by merchandising the product in the most efficient way possible. It is quite evident from the data presented that the farmer can do likewise and increase his profits very materially by (1) reducing the cost of producing his crops, and (2) by merchandising his crop in a more efficient manner by the aid of his cooperative marketing association.

If it costs \$5.00 per acre to raise corn for the operation of plowing, harrowing, disking, and cultivation and five cents a bushel to harvest and market it, and nine cents a bushel to maintain the fertility of the soil and one-half per cent on the value of the land for taxes, then land which produces only twenty bushels of corn is worth only \$40.00 per acre with corn at 50 cents per bushel and interest at 5 per cent.

On this basis land that will

produce 40 bushels of corn is worth \$171.00 an acre; land that will produce 60 bushels is worth \$320.00 an acre; land that will produce 80 bushels is worth \$433.00 per acre and land that will produce 100 bushels is worth \$563.00 per acre.

That is, land which produces 80 bushels of corn per acre will pay \$5.00 per acre for raising the crop, \$4.00 for harvesting and marketing, \$7.20 for restoring the fertility of the soil, \$2.16 an acre for taxes and will pay 5 per cent interest on a valuation of \$433.00 an acre, with corn selling for only 50 cents per bushel!

The average yield of corn in the United States in 1922 was 28.2 bushels and the average farm price was 65.7 cents; the average acre value was therefore only \$18.55!

On the University of Illinois farm where a good system of crop rotation is practiced the 10 year average yield of corn is 56.6 bushels with an acre value based upon 1922 prices of \$36.18. On the same farm where a good rotation of

crops was practiced and ground limestone, and full fertilizer treatment applied the yield of corn was 78.3 bushels, with an acre value of \$51.46! Such land paid \$5.00 per acre for raising the crop, \$3.90 for harvesting and marketing, \$7.05 for additional soil fertility, \$3.20 an acre for taxes besides 5 per cent interest on a land valuation of \$640.00 per acre.

Or, looking at the problem from another point of view: a 320 acre
(turn to page 48)

*THE farmer who is content with average yield and average results will in good times make a little money and may usually "get by" with an indifferent living. In times of stress, such as prevailed during the agricultural depression of the past three years, he will be in a serious condition, or perhaps will fail and move to town. He is **always a liability** to the agricultural industry.*

REGISTERED PUREBRED LIVESTOCK ON FARMS.



The percentage of registered purebred livestock on farms is exceedingly small.
Livestock improvement is really just beginning.

Livestock Breeding

By D. S. Burch

Bureau of Animal Industry
U. S. Department of Agriculture

HEREDITY is a force—a tremendous force—constantly in operation. Like other natural forces it may go to waste, or it can be harnessed to do useful work. When the breeding of domestic animals is left to chance or is conducted with little thought, the power of heredity goes to waste. When, on the other hand, a livestock owner studies breeds, types, and pedigrees in terms of his requirements, and mates his animals accordingly, he puts heredity to useful work.

"I cannot imagine any business man taking chances with animals of mixed breeding," a breeder of Jersey cattle in New Hampshire remarked

in discussing the development of his herd. "While I have no doubt," he continued, "that there are plenty of grade cows that are as good as most good purebreds, the chances are very much in favor of the purebreds because they have been bred for many generations with improvement as a goal. To me this is a most important item for we cannot know how good an animal is until it has functioned. If it proves worthless after being properly raised, our time, labor, and investment are wasted."



The Author
Mr. D. S. Burch

The foregoing opinion, though sound, represents rather advanced views which all livestock owners probably are not ready to accept.



A purebred bull, scrub cow and grade calf. Note resemblance of calf to sire.
The use of purebred males quickly grades up the most inferior herd.

by Choice and Chance

¶The author of this article started the "Better Sires—Better Stock" campaign which now has 14,000 converts. You will find his description of the work unusually interesting.

Good grade cows certainly are valuable property, especially when the herd is sired by a first-class purebred bull. But the remark illustrates the use of heredity in a practical way. It shows the confidence which a successful breeder places in good blood as being more certain to produce desired results than mixed lineage.

THE animal population of the United States is well over 200 million head, numbering about twice as many as the number of persons. Naturally to obtain results in the improvement of this vast quantity of stock, a plan needs to be simple enough to appeal to a large proportion of livestock owners as well as being effective in accomplishing its purpose. The "Better-Sires—Better-Stock" plan, as it is

called, is merely a convenient means of getting stockmen, dairymen, and poultry raisers interested in animal breeding. It paves the way for other more specialized methods such as cow-testing associations, ton-litter contests, and the various other excellent forms of organizations of the more advanced kind.

Records of the U. S. Department of Agriculture show that in less than five years more than 14,000 livestock owners have tried the "Better-Sires — Better-Stock" plan, and reports indicate about 99 per cent satisfaction with results. A Texas farmer, whose chief goal is more efficient production, recently told of using his sixth registered bull for the improvement of his herd. "All males, including hogs, turkeys, and chickens are purebred 'stuff'," he added. Besides the better yields, he also reports that his improved

stock make about 25 per cent more efficient use of their feed from a financial standpoint. Here is the plan of the campaign in brief.

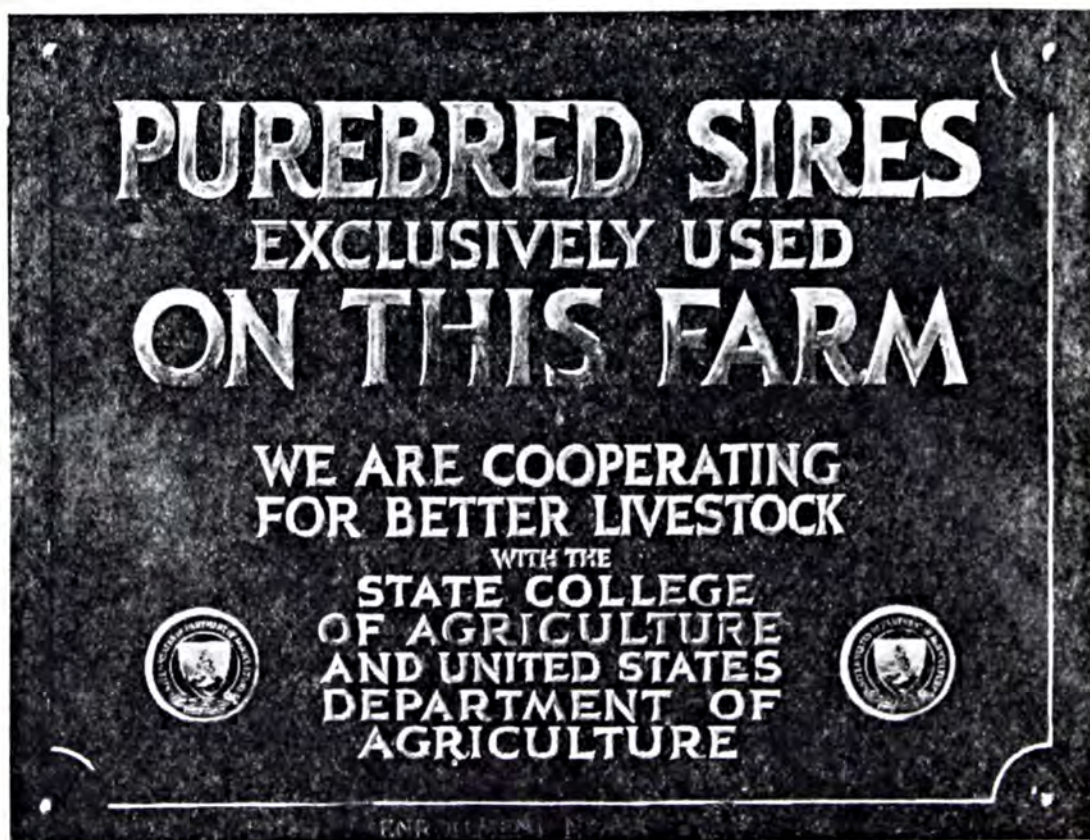
THE U. S. Department of Agriculture issues blanks called enrollment blanks. Anybody can get one by asking for it. County agents, however, obtain and distribute most of them. They give or mail the blanks to persons who own livestock and have shown interest in getting better returns. Sometimes an even greater incentive is the satisfaction of having good livestock on the place. Both motives often go together. The county agent then welcomes the opportunity to show every livestock owner why he should use purebred sires. For the time being, he is not concerned about the female stock. The emphasis is on the sires. And the plan includes all kinds from roosters to stallions. The farmer then either sees the county agent or the agent sees him. The county agent is itching to prove that good purebred sires are certain to better

the quality of the stock on any farm. He is ready to show, also, that improved stock is the best to raise, the best to sell and the best to breed from. Much of the evidence he has is from farmers in the same county or nearby localities. The Department of Agriculture at Washington and the various agricultural colleges furnish additional evidence if needed.

The enrollment blank calls for a list of the breeding stock a farmer keeps. It also requires his signature to a declaration that henceforth he will use purebred sires only in his breeding operations. There are definitions of purebred, crossbred, grade and scrub animals to prevent misunderstanding. If the farmer wants assistance in the breeding, feeding or care of his stock, he makes a note of that in a space on the blank provided for the purpose. He then returns the blank to the county agent—and that's all he has to do. But in actual practice, he does much more of his own accord.

Before going into that, however, let's see what happens to the blank.

(turn to page 47)



This sign is granted to purebred-sire users for display on their farms.

The Wishbone and Backbone

By Dr. Frank Crane

“SO many of us,” says Percy Johnston, president of the Chemical National Bank of New York, “get the wishbone where the backbone ought to be.” There are two elements to success. One is to want something hard enough. Many are deficient here. They have no dominant desire, no driving ambition, no healthy dissatisfaction. The other element, however, is more often lacking. It is to have sense enough to pay the price for what we want. In other words to do the things necessary in order to obtain what we want. ¶ There are, for instance, thousands of young people in the great cities who wish to be artists or musicians or writers, but probably only a few of them are doing every day the hard work necessary to obtain their desire. ¶ Everybody wants to be loved, for to have someone love you is a very comfortable and flattering feeling. But how few there are that day by day in every way are trying to render themselves lovable. And if there is anything that requires backbone as well as wishbone it is love. ¶ The country is full of soured, disappointed and cynical people who think the world is against them and the fates opposed to them, because they want something or other with all their heart and have a very prominent wishbone indeed. Their trouble is that they do not feel disposed to do the daily unremitting digging which intelligence shows is needed. ¶ We all need inspiration, ambition and ideals, but it will do no good for these favoring winds to blow unless we get to work and put up our sails. ¶ Somebody called genius the capacity for infinite toil. And that is perhaps the best test of genius. If you want to be a violinist to the extent that you are willing to practice day after day the most grilling exercises, that is one good proof that you have real ability. If you want to such an extent to get on in your business that you apply yourself unremittingly to it, study about it and never neglect it, that is one indication that your backbone is strong enough to balance your wishbone. Goethe drew a distinction between “tendency and talent.” The world is full of second-raters with tendencies more or less vigorous. But it is not so full of people who have real talent that has been developed by hard work.

Beware of Buckeye!

By Albert A. Hansen

Purdue University Agricultural Experiment Station

A YEAR ago, several acres of woodland were cleared on the John Sipe farm near Greenfield, Indiana. During the spring of 1924 cattle turned into the newly cleared land became exceedingly ill and the owner was sorely perplexed to ascertain the cause, since no trouble had previously been experienced in that particular woodlot. A veterinarian was consulted, the case was diagnosed as forage poisoning and an investigation revealed the presence of scores of sprouted buckeye stumps, practically all of which showed unmistakable evidence of having been heavily grazed.

The circumstances of buckeye poisoning on the Sipe farm are typical of numerous other cases that have been investigated in all parts of Indiana. Dr. N. W. Elsbury, the attending veterinarian in the Sipe case, stated that the outstanding symptom was the gingerly gait of the forelegs—"as though they were walking on eggs" as one farmer described it. This peculiarity has frequently been mentioned by Indiana farmers in connection with buckeye animals.

BOTH buckeye and horse chestnut, a closely related species, have been under deep suspicion for many years. Millsbaugh, a well known investigator of toxic plants, has described the symptoms in cattle, stating that buckeye causes inflammation of the mucous membrane of both the digestive and respiratory tracts, particularly of the rectum. The result is nausea

and colic while the action of the poisonous principle on the brain center causes cerebral confusion and stupefaction. To add to the sins of the buckeye tribe, cases of fatal poisoning in children from eating the nuts have been reported.

In the southern states, the ground meal of buckeye nuts has long been used to stupefy fish, a trick that was probably learned from the American Indian, who used both the nuts and the macerated bark of red buckeye as fish poison. It was probably much easier to gather the stupefied, floating fish than to wait patiently with hook and line, or whatever mechanical fishing device Indians used. The Alabama Agricultural Experiment Station checked up on the Indian method by macerating buckeye nuts in a sack and dragging it thru the water. A few minutes later the torpid fish came to the surface, floating on their sides and several died about a half hour later.

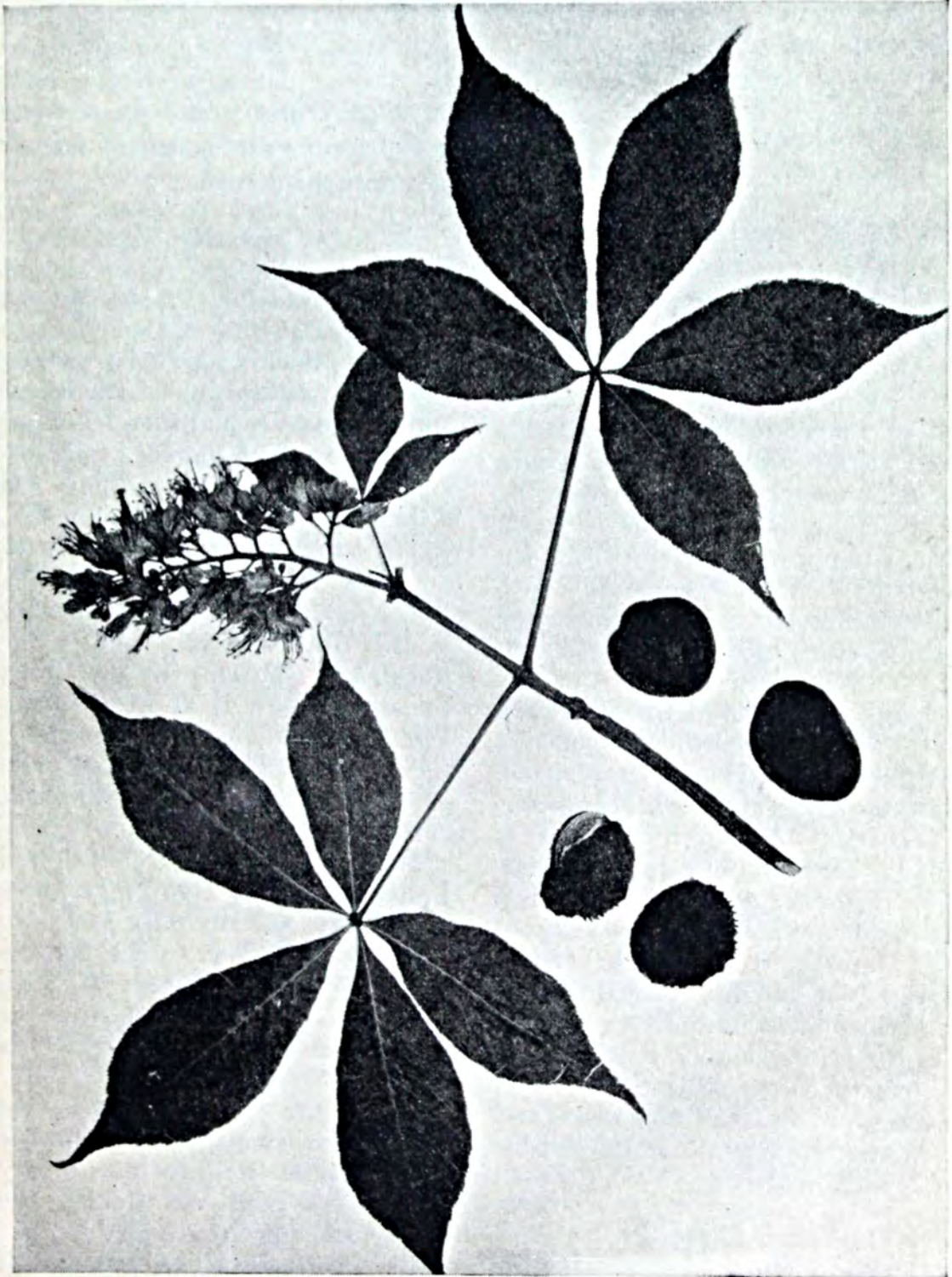
Incidentally, the Alabama folks also fed buckeye leaves and flowers to horses, cattle and hogs. One young bull was fed chopped buckeye leaves in mixed feed for several days and at the end of a week, the animal became highly nervous, the pupils dilated and motor paralysis developed. The Alabama experimenters, working with the red buckeye (which is closely related to our common northern species) concluded that the plant is distinctly toxic to cattle, but probably not very dangerous to horses or hogs.

It seems that both foliage and nuts are poisonous. Down in Crawford County in southern Indi-

ana, the farmers formerly hitched their horses in a buckeye grove near a picnic ground, but so many of the animals died from eating buckeye nuts that it is said the place had to be abandoned on this account. This is merely one of many similar yarns Hoosier farmers spin about buckeye poisoning and in view of the experimental evi-

dence, some credence must be placed in these strange tales.

JUDGING from field investigations and reports received, young cattle seem to be most susceptible. The greatest danger from buckeye poisoning appears to be from the
(turn to page 56)



The leaves, nuts and flowers of buckeye are all poisonous. Buckeye leaves are five-parted while the leaves of horse chestnut, which are also poisonous, are usually seven-parted.

Bringing Home the Bacon

By W. W. Bathlot

Taos, New Mexico

(Here is a reminiscence of a New Mexico farmer that is full of humor and not without a point.)

WHEN I walk down to the hog pen and view the sleek backs of my three fancy Poland China hogs, it brings to my mind a vivid incident that occurred to me a few years ago here in the Taos country. It also brings a feeling of relief as I view the work of our hustling County Agent, Mr. Knapp, who is gradually pushing the old style Mexican hog into the discard and implanting a good thrifty stock of hogs in its place.

Now, let it be known to my readers that the old time Mexican hog was a boiled-down pocket edition of the Arkansaw razorback, saw tooth hog, and the hazel splitter. He never sold by the pound as many hogs do, but by the year. For instance; a one year old hog brought one dollar; a two year old hog brought two dollars, and a three year old hog brought three dollars, and so on. Every year of its life would add a dollar to its value, the more years a hog could be kept on a diet of pine cones and mountain scenery the more valuable that hog became.

TODAY the Taos country is two hundred years behind any other known portion of the United States. Ten years ago it was four hundred

years behind the times. It was ten years ago that I started in to mix cow punching into the farming game. I tried raising a little wheat and a little corn, and then I jumped directly into high finance by investing in a reaper, one of those old fashioned Armstrong machines, where it took muscle combined with a wisp of straw to bind each bundle.

This reaper was a mighty novelty in this out-of-the-way-spot of the world, and you may be sure when the natives saw it at work in my field they were quick to throw away their sickles and pruning hooks and get in line with their bids for wheat cutting with the new whiz machine.

Now, outside of my Spanish and Indian neighbors, Tom Blake, three miles away, was my only American neighbor and Tom, with his ten acres of wheat mixed in with stumps and rocks, was quick to see where I came in as a real little "life saver."

Tom came over to see me. He was a persuasive scoundrel and the confab ended by my leaving my own wheat field and pulling the reaper over into Tom's field.

Well, with my labor, and that of the team, combined with a few minor mishaps, the job set me back about ten dollars I figured. In a

few days Tom appeared ready for a settlement. I was well pleased and held out the glad hand, for in those days a ten dollar bill looked as big as a two year old steer, but nothing fell therein. Instead, Tom's face took on a very melancholy hue and he backed away.

"Look here, Bill," says he, "I have no dinero, not a single peso to my name. Now, how would it suit you to take a hog? My wife has the finest sow in the State of New Mexico and it will find pigs in about two months. Further," he grasped me by the shirt sleeve and looked lovingly deep down into my eyes, "it is time you quit cow punchin' and rustlin' for good and settled down into the hog business. There's big money in hogs and it only takes half an eye to see that you are cut out for a hog raiser."

NOW, hogs were outside of my line of business, but as I had made a tentative venture into farming and then jumped into high finance by purchasing a reaper why not go further and enlarge my business and make money on a grand scale by entering the hog business?

Being a good natured and easy going hombre, Tom's flattery soon had me going. Where I formerly wanted money, I now wanted hogs. Half way afraid that Tom would back down and offer me the money, I closed the deal and accepted the sow in lieu of the wheat cutting.

I relied solely upon Tom's word. I had never seen the sow. Further than that I had no hog pen built into which to put a hog, so I told Tom to bring the sow over in a week or so, for by then I figured that I would be over my rush of work and be ready to put up a nice little pen wherein I could house the nucleus of my coming wealth.

Time rocked on. Thirty days or more had passed. Busy as usual, I had neglected to build the hog pen, but as Tom hadn't mentioned the

sow I decided there was plenty of time yet.

One day I had occasion to ride down into the breaks of the Canyon of the Rio Grande after some stray horses. Getting in late and as tired as a rabbit-running hound, I hung up my chaps, pulled off my perspiring socks and hit the hay.

Came a knock at the door. Tom's face appeared in the opening behind an arm upon which hung a lantern.

"In bed, Bill," came his voice. "Brought that sow; where can I put her?"

I started to get up, but Tom's soothing voice once again held me in thrall. "Don't, Bill! you're tired out. She's hefty but I can handle her all right."

I had just put up a square pen, ten feet each way, of peeled aspen poles. It was incomplete since it had no roof and it needed chinking and dobe. It was fully ten feet high and had a door in one side about four feet above the ground. I was building it for a storehouse for my corn.

Happening to think of this, I told Tom to put the sow in this building and close the door. On the morrow I would build a pen to accommodate her ladyship.

Tom's voice again broke the silence. "Say, Bill, I want to ask a favor of you. This is my wife's pet sow, and she thinks the world and all of it. She was almost heart broken and cried like a child when I took it away, but that debt must be paid if it takes the last hoof on the place." Here Tom's voice broke, "Now, promise me that you will be kind to her."

I promised, and Tom closed the door. I smoothed out the husk tick and sorted the nub-ends around so as to fit into the various hollows of my lanky form.

I began to study over the matter, and the longer I studied the meaner I felt. At last I reached over and nudged the wife.

"Say, Mary, It seems a dog-goned
(turn to page 42)

¶There are some interesting facts in this article for anyone who is interested in better grapes.

Potash on GRAPES

By L. O. Bonnett

California Experiment Station

SINCE the discovery of immense potash deposits in Germany, a considerable number of experiments have been made with potassic salts in relation to the growth of uncultivated and cultivated plants. The results of these experiments have been satisfactory in the majority of cases, and have manifested themselves by increased yields and a higher quality of the products of the soil. These two important factors of production are markedly influenced by potassic fertilizers, but the cause of this influence has been brought to light lately in experiments carried out in Southern France on the vine. It resides in the particularly healthful action of potash on the chlorophyll of plants.

To throw as much light as possible on the effects of potash on the vine, the soil was studied very carefully. A physical examination of the experimental soil was made, in which coarse and fine sand, clay and humus were determined in both soil and subsoil, and in the fine materials and total dirt. The limestone content of the coarse and fine sand was also analyzed. This physical analysis showed this ground somewhat heavy mechanically and of the type "calcareo-silico-clayey" in the soil, and "calcareo-clayey" in the subsoil. The chemical analysis of the fine dirt per Mil. gave the following results: (a) in the soil,

Nitrogen 1.04, Phosphoric acid 1.39, Potash 2.90. (b) in the subsoil, Nitrogen 0.53, Phosphoric acid 0.82, Potash 2.90. Chemically this soil is said to be medium rich in Nitrogen and Phosphoric acid, and rich in Potash. This last point is particularly interesting in this experiment.

The variety of grape under test is the Grand Noir, a heavy bearer, the grapes of which are sometimes low in quality. To make this factor of quality vary widely, the vines were pruned so as to make their production vary from a light to a very heavy crop. Two plots were so treated, one serving as a check and the other receiving per row of vines doses of sylvinit, a potash fertilizer varying from 3 to 16 ounces per vine.

The application of the fertilizer was made early in the Winter, and in a hole dug around each vine. A heavy rainfall diffused the fertilizer through the ground, as an analysis showed an even distribution of chlorin through the soil.

IN the month of July very interesting observations could be made in the plots. Those in which no potash was used, showed vines with a suffering foliage. The margin of leaves turned reddish with a tint of yellow, while the bunches of
(turn to page 42)

Experiment on Seedless Raisin Grapes, by F. C. Lewis, Fowler, Calif.



Plot No. 2. Fertilized with complete fertilizer including sulfate of potash.



Plot No. 3. Fertilized with incomplete fertilizer containing no potash.

Apple Storage

By W. R. Cole

Massachusetts Agricultural College

Number I

THE building cost complete was \$3,894.91. This cost was for the following items:

Lumber for frame, etc., 7,800 feet, (cut on farm).....	\$240.00
Lumber purchased, 11,986 feet	675.47
Windows, Doors, Insulation Material.....	123.28
Roofing, 34 squares.....	110.50
Cement, 376 bags.....	303.68
Tile drains.....	31.16
Miscellaneous material.....	249.94
Cartage of cement, etc.....	18.35
Carpenter and Mason labor....	1,698.45
Filling, team and men.....	94.08
Wiring, labor and material....	100.00
Excavating and Painting.....	250.00
	<hr/>
	\$3,894.91

These figures indicate a per bushel cost of \$0.55 on the rated capacity of 7,000 bushels.

The life of such a building may be conservatively estimated as twenty-five years. Allowing 6% interest, 1½% insurance, 1½% taxes, 5% depreciation and repairs, will give 14% or \$545.00 annual carrying charges. This indicates a total carrying cost of \$13,625.00 for twenty-five years.

Seven thousand bushels should pack out six thousand three hundred bushels (shrinkage 10%).

7,000 bushels at average harvest price (.82).....	\$5,740.00
6,300 bushels at average selling price (1.25).....	7,875.00
	<hr/>
Gain.....	\$2,135.00

Assuming ten capacity crops in twenty-five years will give a gain

of \$21,350 against a cost of ownership of \$13,625.

Number II

The cost was \$647.00 and is itemized below:

Labor, cleaning out cellar hole.....	\$100.00
Labor, Masonry.....	\$75.00
Supplies.....	50.00
	<hr/>
Lumber.....	\$247.00
Roofing Paper.....	60.00
Sundries.....	25.00
Carpenter Labor....	90.00
	<hr/>
	\$422.00
	<hr/>
	\$647.00

These figures indicate a per bushel cost of 18½ cents on the rated capacity of 3,500 bushels.

The life of such a cellar may be estimated at twenty-five years. Allowing 6% interest on capital invested, 1½% insurance, 1½% taxes, 5% depreciation and repairs will give 14% or \$91.00 annual carrying charges. This would indicate a total carrying charge of \$2,275.00 for twenty-five years.

Three thousand five hundred bushels should pack out 3,150 bushels (shrinkage 10%).

3,500 bushels — average harvest price (.82).....	\$2,870.00
3,150 bushels — average selling price (1.25).....	3,937.50
	<hr/>
Gain.....	\$1,067.50

Assuming a total of ten capacity crops in twenty-five years will give a gain of \$1,067.50 against a cost of ownership of \$2,275.



Apple Storage and Packing Room—Number I

This storage cellar and packing room was built in 1921 and was constructed by day labor and the regular farm help. It is 40f x 70f, 8f posted. The packing room is 40f x 12f and the storage room 40f x 56f with a capacity of 7,000 bushels.



Apple Storage and Packing Room—Number II

This storage is a renovated cellar hole which once had a house over it. It is about 26f x 52f in size and 7f high, and has a capacity of 3,500 bushels. The reconstruction work was done in the fall of 1920 and, so far as possible, the farm help was used in building it. Part of the lumber was home produced and charged into the cost at timber prices plus milling.



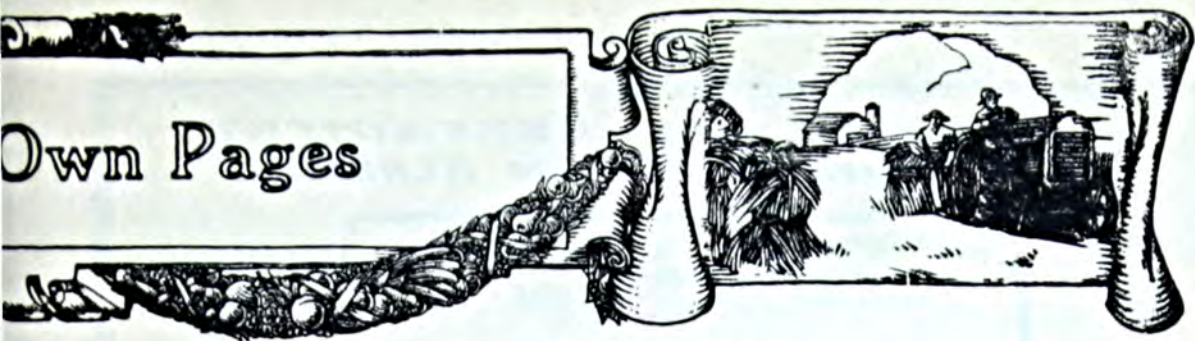
**POLITICS CANNOT
STOP PROGRESS**

Just as I was on the point of writing these pages I picked up the latest issue of "*The Breeders' Gazette*," — a paper for which I have the heartiest admiration and respect. On its editorial pages I found such a perfect expression of my own sentiments that I am going to reprint it and let it take the place of what I intended to say on the subject.

"*The Gazette* will not be drawn into partisan politics during the pending Presidential campaign. Among our readers are numbered supporters of each candidate, and they do not take this journal for suggestions as to how they should cast their votes next November. * * * * *

"We believe that we are headed now for better days in agricultural lines. We believe that the future of farming does not necessarily depend upon the success or failure of either one of the contestants for the Presidency. We have enjoyed prosperity at various times, and have also endured privations, under each of the leading political parties. We do not share in the thought that third-party success or complications this year in the Presidential battle would, or could, affect materially the recovery now in progress. In brief, we hold that the operation of unchanging economic laws is superior to any political mutation. It is only the professional politicians who would like to have us all believe that salvation lies only in their particular way. It is not so. All history proves that it is not.

"We recommend that farmers proceed, therefore, with their business operations quite regardless of who is or who is not to be chosen to occupy the White House for the ensuing four years. That is what we propose to do, and we are not worrying the least as to what the future has in store. We have suffered our full share during the great deflation now passing



and contemplate the days to come with serene confidence in the recuperative powers of this country and the common sense of its people.

“To the young and inexperienced in the exercise of their voting franchise we have just this word of admonition: remember always that the stump orator, the average spellbinder you will hear so often during the next two months, is vastly more interested in getting himself and his crowd into office than he is in the things he grows so excited about while denouncing the ‘opposition.’ He who brags too much of his own superior honesty or capacity, and especially of his sympathy for the ‘dear farmer,’ will commonly bear watching. That’s all.”

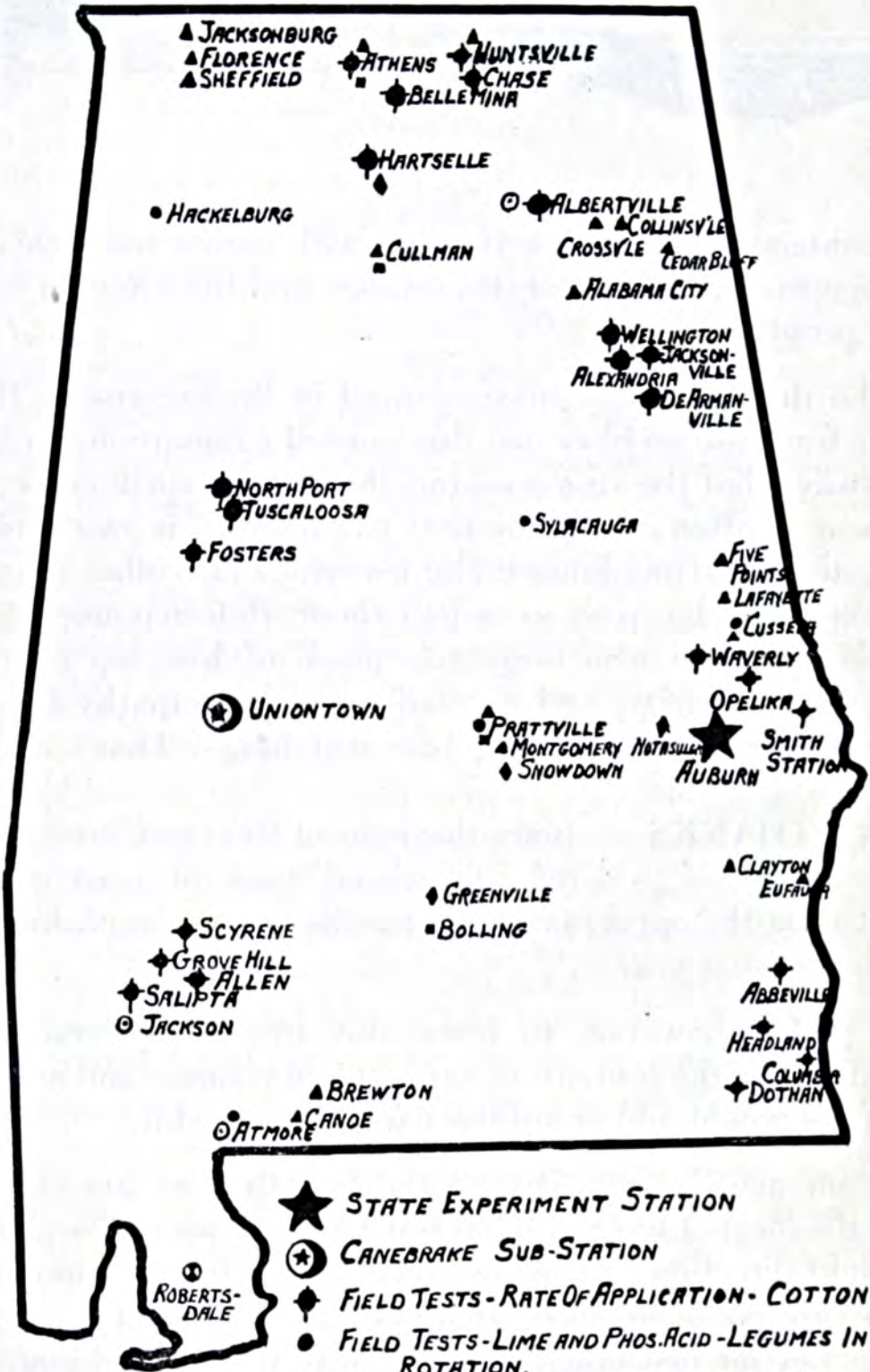
MANY THANKS Since this issue of **BETTER CROPS** starts off our second year of existence, I might seize the opportunity to appraise our accomplishments during the past year.

I prefer, however, to leave this to our readers. Our record is all in the contents of our first two volumes and nothing I can say would add or subtract from it one whit.

I am acutely conscious of the fact that we are still far from the ideals I have in mind but I believe we are headed in the right direction and with your continued interest and help, I am sure we shall make great progress during the coming year. Let me just take this occasion to thank all of you who have encouraged us by your contributions, your criticisms or your friendly interest,

Jeff M. Dermid

WHERE FERTILIZER EXPERIMENTS ARE CONDUCTED IN ALABAMA



- ★ STATE EXPERIMENT STATION
- ★ CANEBRAKE SUB-STATION
- ◆ FIELD TESTS - RATE OF APPLICATION - COTTON
- FIELD TESTS - LIME AND PHOS. ACID - LEGUMES IN ROTATION.
- ▲ FIELD TESTS - FERTILIZER MATERIALS WITH WINTER LEGUMES
- FIELD TESTS - SOURCES OF PHOSPHORUS WITH LEGUMES
- ◆ FIELD TESTS - FERTILIZER MATERIALS ON VARIETIES OF LEGUMES
- FIELD TESTS - FERTILIZER MATERIALS - COTTON AND CORN IN ROTATION
- FIELD TESTS - PECANS.

PREPARED BY DAVID D. LONG,
SOIL SPECIALIST,
SOIL IMPROVEMENT COMMITTEE,
SOUTHERN FERTILIZER ASSOCIATION.

(This is the seventh of the maps prepared by Mr. David D. Long of the Southern Soil Improvement Committee. The eighth and last will appear next month.)

ALABAMA

State Experiment Station — Auburn.

Kinds and quantities of fertilizers for cotton, corn and oats, singly and in rotation. Sources of nitrogen and phosphoric acid.

Canebrake Sub-Station — Uniontown.

Rates of application for cotton.

Field Tests — Huntsville (4), **Fosters**, **Wellington**, Tuscaloosa (5), Athens (3), **Hartselle** (3), **Scyrene Chase**, **Smith's Station**, **Columbia**, **Waverly**, **Dothan** (2), **Abbeville**, **Jacksonville**, **Grove Hill**, **Albertville** (3), **Salitpa**, **Headland** (2), **Allen**, **Opelika**, **Newville**, **Alexandria**, **Haleburg**, **Madison**, **DeArmanville** and **Belle Mina**.

(Numbers in parenthesis indicates number of tests conducted in the vicinity of the town.)

Tests on the rate of application of mixtures of acid phosphate, nitrate of soda and muriate of potash for cotton.

Field Tests—Albertville, Jackson and Atmore.

Mixtures of acid phosphate, nitrate of soda and muriate of potash for cotton and corn in rotation with oats and legumes.

Field Tests—Hackleburg, Cusseta, Sylacauga, Prattville and Atmore.

Rotation experiments with and without legumes—fertilizing legumes in the rotation—time of application of fertilizer materials to different crops in the rotation.

Field Tests — Eufaula, **Five Points**, **Lafayette**, **Collinsville**, **Montgomery**, **Florence**, **Alabama - City**, **Athens** (2), **Huntsville**, **Jacksonburg**, **Brewton** (2), **Sheffield**, **Prattville** (4), **Clayton**, **Crossville**, **Cedar Bluff**, **Cusseta**, **Canoe** and **Cullman**.

Phosphoric acid, potash and lime effects on legumes.

Field Tests—Cullman, Athens, Prattville and Bolling.

Sources of phosphorus for winter legumes.

Field Tests—Hartselle, Greenville, Snowdown and Notasulga.

Effects of different combination of lime, potash and phosphoric acid on varieties of medics and vetches.

Field Tests—Robertsdale.

Kind of complete fertilizers for pecans.



Managing the Soil

"Soil Management" by Firman E. Bear. Published by John Wiley & Sons, Inc., New York. Price

This book is one of the "Wiley Agricultural Series" edited by Dr. J. G. Lipman. It has been written for use in the required Soil course in Agricultural colleges for students who have some knowledge of Chemistry, Botany, Geology and Physics.

The book stresses the application of the above named sciences to soils only so far as they are of value in "planning constructive systems of soil management." Consequently, much of the soil physics and geological information contained in most soil text books has been condensed or omitted. The soil fertility facts are given much greater importance than are the other phases of the subject. Professor Bear's idea is that since the first or required course in soils touches a great number of students who will never take another soils course that it should be made as practical as possible. He believes that the more advanced ideas and purely scientific information should be presented in subsequent courses. This method is directly opposite the method that is being used in a number of institutions where the subject of soils is fast coming to be considered a separate science. Where this idea prevails the first course is designed to give students a thorough grounding in the subject as a whole with little attention being given to the practical applications. In this case the application of the principles obtained in this first course must

necessarily be given in following courses.

Some of the striking things about the book are: the clear concise style, the great number of tables (102 in all) used in proving points, and the arrangement. It is divided into five main parts as follows: A. Requirements of crops; B. Characteristics of soils; C. Utilizing soil resources; D. Conserving soil resources; and E. Supplementing soil resources. There are several chapters under each division. A short list of well selected references is given at the end of each chapter. These references are for the most part text books and bulletins which should be found even in the smaller agricultural libraries.

Part A. Requirements of Crops. Considers briefly those factors effecting the growth of crops, and the nitrogen, mineral, and water requirements.

Part B. Characteristics of soils. This part discusses very briefly the origin, classification, and chemical composition of soils. Here also are chapters dealing with some of the soil biological processes, physical properties of soils, soil water, soil air, and soil solution. This division considers all of these questions in 51 pages. Under the chapter heading Soil Solution the author mentions many of the causes of acid soils and the effect of lime. Alkali soils are also considered here as well as the effect of fertilizer salts on the soil solution.

Part C. Utilizing Soil Resources. Consists of four chapters: Drainage, Tillage, Organic Matter, and Crop

Rotation. The drainage question is discussed from the soil and crop viewpoint without touching on the engineering phases of the subject. The latest information concerning the depths of plowing, effect of cultivating, frequency of cultivation, etc., are brought out in the chapter on tillage. This chapter differs from similar chapters in many other text books in the limited description of tillage tools. The chapter dealing with crop rotations shows clearly the importance of growing crops in a rotation and the fallacy of depending entirely on crop rotations alone to maintain the fertility of the soil. The crop sequence in the rotation is considered as well as the effect of one crop on another.

Part D. Conserving Soil Resources. In the chapter entitled the "Conservation of Soil Nitrogen" the importance of both the symbiotic and non-symbiotic bacteria are discussed as well as the loss of nitrogen in drainage water. The "Mineral Economy in Soils" is another chapter heading. The chapter on "Limestone Economy in Soils" mentions many of the more recent lime problems. The different response of crops to lime as well as the importance of lime to the nitrogen question. The acid agricultural possibilities are discussed. The chapter "Soil Sanitation" again touches on some of the toxic questions in their relation to crops and soils. Some of the questions dealing with parasitic organisms and their control are also mentioned.

Part E. Supplementary Soil Resources. Under this heading those phases of soil management dealing with the application of lime and fertilizer are discussed. The sources and differences in effects on crops of the different calcium, nitrogen, phosphorus, and potash carriers are pointed out. The new Thiocyanate Soil Acidity test is explained. Truog's as well as Bauer's reasons why some plants are able to use raw rock phosphate to a better



A New Soil Book

Soil Management

By

FIRMAN E. BEAR

*Head of the Department of Soils
Ohio State University*

THIS volume presents the essential facts and principles involved in the planning of constructive systems of soil management, and in increasing the productive capacities of soils. The author assumes that the reader has had courses in Chemistry, Botany, Geology, and Physics, and, that he is familiar with the ordinary vocabularies of these sciences.

The subject-matter covers the following: Requirements of Crops, The Characteristics of Soils, Utilizing Soil Resources, Conserving Soil Resources, Liming Materials and Fertilizers.

268 pages. 6 x 9. 35 figures. 1 colored map, and a color chart for Thiocyanate Soil Acidity Test. Cloth, \$2.00.

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advantage than other plants, are explained. The effect of sulphur and rock phosphate when applied together is considered.

In the chapter "The Selection of Fertilizers" the importance of the climate factor is shown very clearly as well as many other factors including the economic phases. Here also is a list of the standard commercial fertilizer analysis adopted by the various sections of the country.

The last chapter in the book is entitled the Application of Fertilizers and brings out very clearly many of the latest ideas and questions in regard to time and application of fertilizers.

Those persons engaged in directing farm operations or in advising farmers will find this one of the most valuable reference books obtainable. The chapters dealing with lime and fertilizers are especially interesting since they sum up in few words the most recent practical information on these subjects.

AUSTIN L. PATRICK,
Penn State College.

Livestock Sanitation by Dr. W. H. Dalrymple, Louisiana State University. Published by The Gladney Press, Baton Rouge, La. Price \$2.00.

I consider that Dr. W. H. Dalrymple's popular little work, "Livestock Sanitation," has made its appearance at a most opportune time on a subject of ever increasing importance to the livestock interests of the country. Written in such popular language, the book is of value, not only to the farmer-stockman, but to those engaged in extension work who are endeavoring to aid the farmer, through intelligent sanitation, in the protection and better development of his farm animals. An intelligent study of the contents of this work will arm the extension people with facts regarding animal diseases and their prevention, and tend to eliminate many of the fallacies and supersti-

tions concerning them, which, unfortunately, many otherwise enlightened farmers still adhere to.

Realizing the value of the book, from the above points of view, the farm demonstration forces of Louisiana have already provided themselves with copies, and are very sanguine as to the results of its use in their daily routine of work among the farmers and stockowners of the State.

The book is clearly printed, appropriately illustrated, and handsomely bound, and the language is such that the average layman can easily understand it—*C. E. Woolman, District Agent, Louisiana Extension Service.*



Other Noteworthy Publications

Fifteen Years of Field Experiments with Manure, Fertilizers and Lime on Sassafras Silt Loam Soil by George L. Schuster, University of Delaware Agricultural Experiment Station, Bulletin, No. 137, June, 1914.

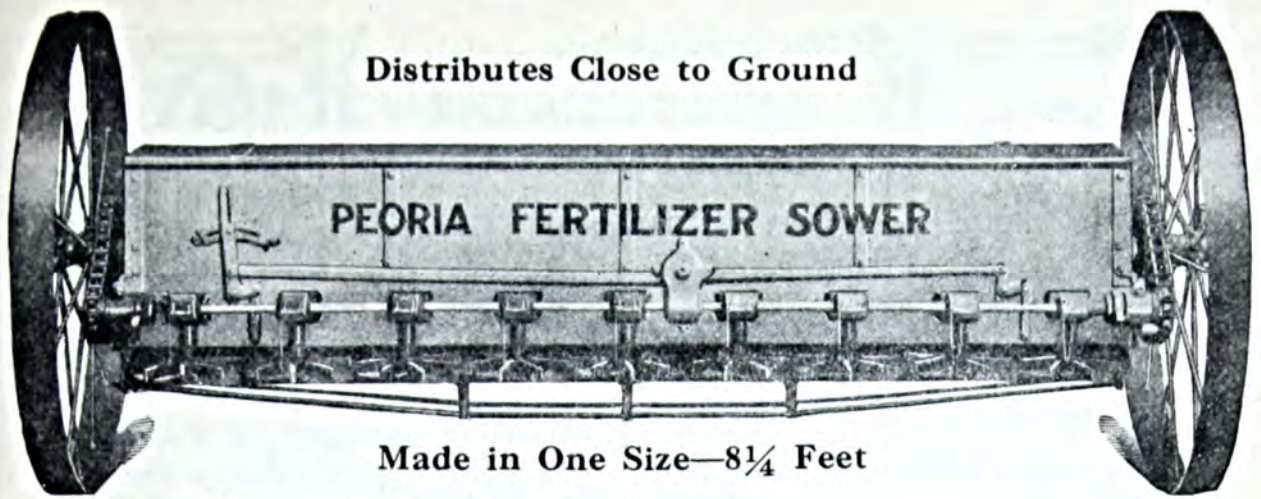
Mileposts on the Road to Market by H. L. Russell and K. L. Hatch annual report of the Extension Service, University of Wisconsin, Madison, Circular 167, January, 1924.

The Organization and Direction of Clothing Clubs by Harriet M. Phillips, Fairie Mallory and Margia Hough, University of Illinois Experiment Station, Urbana, Ill. Circular No. 280, April, 1924.

Care and Management of Baby Chicks by Willard C. Thompson and Norman R. Mehrhof, New Jersey Agricultural Experiment Stations, New Brunswick, N. J. March, 1924.

The Value of Mineral Supplements in Swine Feeding by John B. Rice, University of Illinois Agricultural College and Experiment Station, Urbana, Ill. Bulletin No. 250, May, 1924.

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The Greater Harvest Getter FERTILIZER SOWER

WILL successfully distribute Lime and Fertilizers in any quantity desired from 100 to 6,000 lbs. under all circumstances, damp or dry. No Clogging; Light Draft; for two ordinary horses. Other machines of equal capacity are heavy draft for four horses.

The use of fertilizer has become a necessity to modern agriculture. Farmers of the Eastern States have realized for years the profit to be made from the use of fertilizers, and now the Western farmer is rapidly learning to look upon fertilizer as an "investment" rather than an "expense."

The American farmer is learning that by taking everything from his soil and returning nothing, he is headed straight for agricultural bankruptcy, and that every dollar spent on good fertilization is better invested than a dollar in the savings bank.

But fertilizer, to be most efficient, must be mixed with brains. It must be properly applied.

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Farmers' Meetings

Your story in *BETTER CROPS*, entitled, "Have the Farmers Met to Death?" brings to my mind some experiences which I had the past winter in farmers' meetings. It seems that in the past a great many agents have depended on the extension specialist to put on the real stuff for them in their farmers' meetings, without much regard for local color. Now, do not understand me to say that I do not think the specialist has a place, for such is not the case but, if the agent in the county who in on the ground does not know what should be attempted, it is the height of folly to expect a man who just arrived or at least has not been on the ground more than 24 hours to know the real need of a community.

Let's get back to the story which is, as follows: In a community where local leadership is good, where men are trying to put their farms on a business basis we have every reason to expect that a meeting will be well attended. But here is what happened in one instance, due to some wrong ideas put out by people who had attended a meeting in the adjoining community.

In the community, (we'll call it Float,) a meeting was called by the local chairman and advertised by the county agent as well. In this meeting the agent, who in this case was none other than the writer, let the extension specialist loose as a free lance, to talk on any thing as he saw fit. Unfortunately it was flies. Most anything would have been better, but flies was the subject and so we had flies. One week later the

community adjoining, known as Mt. Hope arranged for a meeting which was advertised as a meeting at which the county agent would discuss the place of the Soy Bean in the crop rotation.

Was there a good number of farmers? I'll say there was. Some came to scoff but remained to talk Soys. One old farmer who did not believe in County Agents, tried to start off at a tangent and the crowd howled him down. The agent exhausted his subject and himself but the men were not through. Where could they get Soy bean seed? What, when, and a dozen other things had to be discussed. The meeting adjourned officially at eleven but it was twelve thirty when the crowd finally left.

A second meeting was held one month later. Double the number were present. I was anxious to find out why. The answer was, "You had the facts the other time and gave us what we wanted. Come back again when you want to and we'll be here strong." was what the men said and I know that such will be the case.

Have farmers met to death? I hardly think so, if those who meet with them have the real stuff to hand them when they get together. If it is hot air or stuff such as a county agent does not like to have poked at him, he might just as well stay at home. — *J. M. Goodwin, Effingham, Kansas.*

Bulletin Rack

The problem of a means of displaying State and Government bulletins in the County Agent's

office has long been a big problem. Many contrivances have been tried and suggested but all have their drawbacks.

The accompanying illustration shows bulletins displayed on a rack, 51 inches wide, 74 inches long, which rack holds 80 individual bulletins. It consists of ten cross bars, 8 inches from top to top, in which are driven, Number 16 finishing nails, placing $4\frac{1}{4}$ inches between nails from which the bulletin hangs, and 2 inches between bulletins.

The nails are set at an angle, so the bulletin hangs perpendicular to them while the lower edge of the bulletin rests on the heads of the next row of nails.

The holes were made in the bulletins with a two-eye punch which has a trade name of "Marvel" No. 63.

The cross bars are of hard wood 1 inch thick and 3 inches wide. These are nailed to three upright strips of the same material, 1 inch by $2\frac{1}{2}$ inches.

The wind does not interfere with these bulletins. They can easily be dusted off without disarranging them and there is no danger of piling one on top of another in examining the bulletins because they can be plainly seen without moving. To remove from the rack, it is simply necessary to hold up the upper row of bulletins while the one you want is lifted.

We found this a very satisfactory means of displaying bulletins and will gladly furnish anyone more detailed information. This rack was constructed and placed on the wall by a lumber company for \$3.50.
—T. C. Cravens, Martinsville, Ind.

They Hiked 70 Miles

Three boys ranging from 13 to 16 walked 70 miles to attend a Junior Agricultural Club Camp at Oneida, Clay County a few days ago. The writer visited the Pine Mountain Settlement School a few weeks ago for one afternoon and night, and made a short talk at breakfast describing a "Day at Camp," and it must have aroused the boys for in a little while we were asked if some of the boys could attend, and we were glad to welcome them into it.

They started on Friday, July 11th, and arrived at Oneida, Clay County, Sunday afternoon. They had walked most all the way bare-footed. Not a person charged them a bill on the way. These boys enrolled Monday evening with 115 other boys and girls from Clay

and Leslie Counties. The first evening it was learned that they were in the Camp and the method of getting there, and so the speaker called them up front, and commended them for their interest, determination and pluck. They made good records, two of them happened to be in my group, and so they won one silver dollar each. We believe the balance of power is in the hands of Rural Kentucky, and there is no better way of reaching them than through the Extension Force of the University, with its corps of County Agents, Specialists and Field Workers.

Miss Petit and her force of workers are doing a most wonderful work in developing a better citizenship in and about Pine Mountain.
—T. L. Britton, Hyden, Kentucky.



Potash on Grapes

(From page 28)

grapes were badly sunburnt after a hot windstorm. In the fertilized plots the foliage was of a healthy green color, and the bunches were not affected by the hot wind. Marks given to express the condition of health of the foliage were as follows: 5 to 3 in the plots with potash and 1.5 for the plots without potash.

The results on the crop were not less interesting than the above. They are contained in the following table:

Fertilized vines gave 5 to 10 pounds of grapes, all of which were of better quality than the best of check vines (See table.) In other words for the same quality of grapes the yield was almost trebled. As an average of all plots the potash fertilization has increased the production 60 per cent, with a slight increase in quality.

After the picking of the crop the foliage presented the same differences as those noted in July.

From these experiments, it results

Without Potash			With Potash		
No. of Buds	Yield Per Vine	Density of Juice	No. of Buds	Yield Per Vine	Density of Juice
	lbs.			lbs.	
4	3.3	1.053	4	5.0	1.068
8	3.2	1.057	8	6.1	1.064
12	4.2	1.055	12	9.4	1.058
16	6.4	1.047	16	8.5	1.059
32	11.8	1.040	32	9.7	1.052
40	7.7	1.047	40	9.2	1.059

Check vines produced according to their pruning from 3 to 11 pounds of grapes each. Those bearing heavily gave grapes low in sugar and high in acid, or of very poor quality. This was due to the presence of green and sunburnt berries in the bunches of grapes.

that potash gives high returns in soils which are considered rich in that element. It demonstrates that it is also an element of health for the chlorophyll of plants. This result naturally explains the remarkable effects of potash on the yield of vines and on the quality of their crop.



Bringing Home the Bacon

(From page 27)

shame to take that hog away from that poor woman, doesn't it?"

"Go to sleep, Old Man," spoke up Mary. "I believe Tom's story is all bunk, and his wife doesn't figure in the deal at all."

Well, that kind of eased my conscience, so to speak, and I was soon in the land of dreams.

NEXT morning I wormed into my clothes and stepped out on the porch. I happened to look over in

the direction of that ten foot high building of slick aspen logs, and there, perched right on the top log, was the darndest monstrosity that human eyes ever dwelt upon.

The thing was five feet long and a foot high. It was so thin that I could plainly see the glint of the morning sun shining through its hide and penetrating the long scraggly bristles on its sides. A mass of bristling red hair covered a long peaked head from which a snout protruded; both head and

snout seemed to take in half or more of the critter's body, in so much that it seemed to have the effect of being over balanced, and its hind feet seemed to stand in air above the top log.

I gazed in open mouth amaze. A grunt, and then I knew what it was. "Oh, Mary," I called, "come

I didn't finish for that caricature of Satan gave another grunt and a flying jump that carried it fully twenty feet away from the pen and, when it lit, it lit running.

I got her direction and then made a quick double shuffle for the stable and threw the saddle on Bess and grabbed my rope.

Now, Bess, in my estimation was the best little cow horse on the range, but when we got started I soon saw that she had her work cut out for her in advance. That sow was sure making it hell bent for home and mother. She may have been a pet, but she was some little sprinter with it.

One mile and she was going as strong as ever, while Bess seemed to be weakening a trifle. Bess, then started in to get her second wind and the pet starts in to weaken. At the end of the second mile I was closing in.

I came within roping distance and made a flying throw. True to aim the noose went over her head, but it didn't stay there. She slithered through it clear to her hind legs and there it closed down and held her fast. Bess steadied while I got down and hog tied that pet sow until she hardly had room for a squeal.

I hung that thing over the saddle horn and rode in home. I built a small pen out of logs, fastened the corners securely with wire and tied the roof down in the same manner.

Into it went that pet sow. Then I began to move the corn in her direction. I don't know how much I fed her, but I do know that she could gobble up the corn about as

fast as I could shuck and bring it in from the field.

At the end of two months I decided the task was as near complete as mortal man could make it. I had put all of ten pounds of flesh on that scraggley frame. From a thirty pound shoat I had built up a forty pound hog.

I found a market. I sold her to the local butcher. I received the magnificent price of four dollars for my wheat cutting job and the corn I had fed her, but I was thankful, that this ended the sow and at least a part of my troubles.

No, Tom never mentions it either in or out of my hearing. Sometimes a good joke is better left unsaid, especially when a heavy fist hangs ready to be galvanized into action. For peculiar reasons I do not mention it around here so that you can notice it any. My wife sometimes gets unruly and drags the carcass to the surface, and then I softly and tenderly make my way out of sight and hearing.

I am thankful, yes very thankful that the old breed of Mexican hogs is fast disappearing and that hogs are now selling by the pound instead of by the year.

As dull as I am I can see a vast difference between these three sleek Poland Chinas in the pen and Tom's wife's pet of ten years ago. I have also learned this bit of wisdom and I pass it over to my readers; if you must buy hogs by the year never pay ten dollars for a ten year old hog, but rather pay ten dollars for a yearling.



In next month's issue of BETTER CROPS, there will be an article by C. J. Brand, Consulting Specialist in Marketing of the U. S. Department of Agriculture. It deals with the consumers' cooperative movement and is full of meaty information. A number of other unusual features. Watch for them!

Only Sixty Dollars



A standard office typewriter that is portable

LOOK at this new Corona! Isn't it a beauty? The keyboard, as you can see is exactly like that of the big office typewriters—a great advantage if you or your stenographer is accustomed to using a big machine.

Corona Four is substantial and sturdy. You can tell that by looking at it. Built low for portability and for rigidity in operation, it is nevertheless *as wide as a big office typewriter, and of equal capacity.*

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Dear Jeff:

Below are the names and addresses of some people who might be interested in BETTER CROPS. I suggest you send them a complimentary copy of this issue. You may (may not) use my name.

My name

Name

P. O.

State

Name

P. O.

State

Name

P. O.

State

Name

P. O.

State

Name

P. O.

State

Tear this page out and mail it to me today.

Livestock Breeding

(From page 22)

The county agent looks it over carefully and makes sure the "red tape"—which really is very short—is all there, then he sends it along either to his State extension director or directly to Washington according to a plan previously agreed upon. The Federal and State offices see that the farmer gets all the information he asked for; that goes to him direct. He also gets a nicely lithographed barn sign "Purebred Sires Exclusively Used On This Farm," and a numbered certificate showing his participation in the nation-wide drive to put better livestock on American farms.

No exceptions are made regarding the policy of using purebred sires. Some persons using purebred males for only part of their stock have made application for enrollment, but such an illogical breeding system is not recognized. On the other hand, one farmer was enrolled who expressed his desire to participate in the campaign but would not personally sign the blank. "This man is all right," the county agent explained in reporting the circumstances, "but it is against his policy to sign anything. He is meeting all

the requirements and wishes to join the better-sires work." Believing that a man who was that conservative, and yet an earnest believer in good stock, would help in the campaign, the department enrolled him on the county agent's recommendation.

So much for the mechanical details of conducting the work which, because of its simplicity, runs with almost no friction and at negligible expense. In passing comment, I may add that the cost to the U. S. Department of Agriculture of conducting the better-sires campaign has averaged only about a thousand dollars a year or about the value of a high-class bull. The results are naturally the basis on which the reader will decide whether the work described is of any real interest or use to him.



In the next issue of BETTER CROPS Mr. Burch will tell about the results of the "Better-Sires — Better-Stock" campaign.



Mock trial of a scrub bull before a jury of farmers. The verdict was "Guilty."

The Way to Better Profits

(From page 19)

farm in the corn belt on which a good system of crop rotation was practiced, one-half being in corn each year, and where provision was made for full fertility treatment, the 160 acres in corn yielding the crop obtained at the Illinois Experiment Station, would pay for raising the crop, harvesting and marketing, maintenance of the soil fertility, taxes on the land and 5 per cent interest on the investment in land at \$300.00 per acre and besides furnish a labor income of \$2,929.60 for the farmer's supervision!

THE two big problems confronting the American farmer at the present time are (1) the reduction of the cost of production of his finished product whether it be wheat, corn, butter, milk, beef or mutton, and (2) the successful merchandising of his manufactured product. The solution of the second problem is a complicated one and must be solved by the united farmers working together as a group through cooperative marketing or otherwise. The solution of the first problem is more simple and must come largely if not entirely by individual effort on the part of the farmer himself. The successful farmer of today must produce better than the average of his community or the farmers in his type of farming. The farmer who is content with average yield and average results will in good times of high prices make a little money and may usually "get by" with an indifferent living. In times of stress such as prevailed during the agricultural depression of the past three years he will be in a serious condition or perhaps will fail and move to town. He is *always* a liability to the agricultural industry. His farm products, produced with-

out profit to himself, simply add to the sum total available for consumption and thus assist materially in reducing prices offered to producers in general. The industry would be better off without him.

The progressive farmer will not be content with the average yield of crops. He will produce *better crops*. He must do this by better methods of cultivation than the average receive, by the use of better seed than the average use, and above all, by paying more attention to the productive quality of his soil by the judicious use of lime, manure, and commercial plant food. The solution of the farmer's problem of today will be found largely in the production of larger yields per acre of high quality crops, produced at a low unit of cost, brought about largely by the use of better seed and more intelligent attention to soil fertility problems.



30 County Agents Camp at U.S.D.A.

(From page 17)

Lawrence; L. H. Barnes, Lake; H. H. Lett, Daviess; H. E. Ackerson, Carroll; H. D. Van Matre, Rush; L. E. Yeager, Ripley; E. L. Hawk, Scott; L. C. McIntosh, Benton; R. R. Fraser, White; H. D. Jackson, Shelby; W. F. Burbank, Allen; H. W. Schroeder, Grant; S. R. Miles, Bartholomew; G. R. Scott, Perry; J. L. Morrow, Dubois; J. R. Meeks, Parks; O. H. McNary, Putnam; O. B. Riggs, Vermillion; H. E. Abbott, Clay County. In addition the party was accompanied by R. E. Eckert, superintendent of schools of Dubois County; Vern Tapp, teacher, Johnson County; and James Wisby, agricultural student, Morgan County.

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International Agricultural Corp.
Cordele—
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Tupelo Fertilizer Factory

MISSOURI

St. Louis—
American Agricultural Chem. Co.
Armour Fertilizer Works
Swift & Company

NEW JERSEY

Bound Brook—
Nitrate Agencies Co.

NEW YORK

Buffalo—
American Agricultural Chem. Co.
International Agricultural Corp.
New York—
American Agricultural Chem. Co.
Armour Fert. Wks. (East. Hdqrs.)
International Agricultural Corp.
Mutual Fertilizer Co.
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Swift & Company
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North—
J. E. Culler Co.
Spartanburg—
American Agricultural Chem. Co.

TENNESSEE

Memphis—
Virginia-Carolina Chemical Co.
Nashville—
Armour Fertilizer Works
Read Phosphat Co.
Virginia-Carolina Chemical Co.

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The Readjustment Period

(From page 16)

below pre-war level. Then came grim realization of what a post-war period means. Things grew worse, if anything, during 1921. Of course readjustments in farming were inevitable.

The Cotton Belt met the situation with a drastic curtailment of production and with such shifts to corn, peanuts, sweet potatoes, tobacco and other crops as it could manage hurriedly. The boll weevil also stepped in and took such toll of the 1921 and 1922 cotton crops as to make a revived textile industry presently sit up and rub its eyes at the magic vanishing of surplus raw cotton stocks. So cotton prices went up again and the Cotton Belt edged its way west and northward seeking to escape the deadly weevil.

The Corn Belt was blessed with bumper yields of corn in 1920 and 1921. So by the fall of 1921 corn was literally cheap enough to burn. The logical thing was to carry over all the corn possible on the hoof, especially since hog prices had braced up somewhat by the spring of 1922. Consequently, the next chapter in the story was a crop of pigs that broke the records. Thus the great corn crops of 1921 and 1922 went squealing their way to market. Indeed, by last year the pigs-is-pigs business had reached such proportions as to bid 1923 corn prices sharply upward—a fictitious gain for the Corn Belt as a whole. The record marketings from last year's pig crops brought producers some \$13,000,000 less than the smaller runs of the previous year.

In a nutshell, the Corn Belt's readjustment has been a major production swing from corn to hogs. Its present position is one of fairly good balance between those two basic enterprises, but the tendency is to drift into another of those wide swings out of hogs and into corn.

The Wheat Belt caught the blow

quite accurately on its solar plexus. It cut down spring wheat and to some extent winter wheat, in favor of flax, corn, rye, oats, potatoes, legumes, grass, and such livestock enterprises as dairying, hogs, and sheep. There has been a good deal of talk in the north of "diversification," the meaning being in most cases less wheat and more corn, alfalfa, sweet clover, dairy cattle, and hogs. But while there is a slow and steady drift all the while away from the one-crop system, the actual extent of this diversification as a readjustment measure is over-emphasized. The real wheat men are equipped to grow wheat and the capital and changes necessary to revolutionize their farming can not be summoned over night. So the Wheat Belt has cut down some on its grain, increased its livestock and feed crops slightly, and for the rest has simply taken punishment as gamely as it might.

The Range Country of the Far West has had very definite developments in its two major lines, cattle and sheep. When the general crash in prices came in 1920, beef cattle prices went down to pre-war level, and there they have stayed ever since. The cattle industry simply went broke.

As an old Arizona stockman remarked, "General Sherman thought war was hell, but he should've tried raisin' cattle after a war."

Sheep and wool prices also dropped in the general smash, but at the end of 1921 wool prices began to recover. The fiber crops have been the only ones to feel a real revival in demand during the last four years. Lamb prices have also been helped by the great wave of urban prosperity and consequent demand for semi-luxury foods.

In so far as the Range Country has made a major readjustment in

production, therefore, it has been to cut down cattle and increase sheep.

The Pacific Coast is a fruit and diversified region, just as the Northern Atlantic Coast is a dairy and diversified region. Both these sections fared relatively better than the more specialized regions during the deflation period. The Pacific Coast is now feeling depressing effects on fruit prices, however, while the great market milk districts of the East are in difficulties over the surplus of milk. The readjustment in both areas has put greater emphasis on other enterprises already common to the region rather than on new ones—more poultry, butter, potatoes, and cash crops in the East, for example.

SUCH, in few words, is the story of the post-war shifts so far, on the farms. A period of violent rearrangement in price relationships, of drastic effort to so readjust production as to bring it again into some sort of line with relative prices.

Now the question is, what are the next steps in this readjustment business? What are the best things to do in the next year or two? More easily asked than answered.

Of course, nobody knows what the weather will be through this summer nor, therefore, how this year's crops will turn out. Barring crop failure or other unexpected development, the situation in respect to major lines of production will be in better all-around balance this fall than it has been in four years. Which may not be saying a great deal, but it is something. If we get as big a yield of corn as in the past four years, that crop will probably be fairly plentiful. The other feed grains have been planted in apparently about the right proportion to meet animal needs at fairly decent prices next winter. The main food money-crops, wheat, potatoes, vegetables, all promise to be in as good or better position,

from producers' standpoint, than they were last fall. The other great money-crops, cotton and tobacco, promise fairly good returns even though prices might be lower than last year. Hog production is gradually slowing down, which may be expected to bring hog prices back to better balance with corn. The dairy industry is retrenching somewhat on the milk end, which will help to balance up the expanding tendency in western butter territory. The beef cattle industry is slowly moving into more favorable position and the sheep situation will still be generally favorable to producers for another year or two. Poultry producers will either have to go a bit easy on raising chicks next spring or eggs will be really cheap.

All in all, the policy that seems to best suit the times is one of conservatism. Production of the things that are high priced—at present cotton and wool—may be expanded somewhat, but not too much. The products very low in price—just now hogs, cattle, wheat, eggs, should be slowed down somewhat, but not too much. It is a mistake to expect that violent shifts from one thing to another will beat the game. In fact, this very state of continuous and violent readjustment now constitutes the game. There is hardly any way of beating the game for farmers under present conditions. However, farmers here and there all over the United States, are breaking even; some men quite a little better than even.

In so far as any general basis seems to underlie the operations of these more successful men at present, it is this: they are sticking to a tried and tested system of farming, leaving out the frenzied effort to get into something new, are raising as much of their living as possible, and are everlastingly watching expenses. Conservatism is the good business these days—grow food for the family and feed for the animals; when a dollar is spent make it bring something of value in return, and

be sure the return is in sight not too many years ahead. Buy feed sparingly, buy fertilizer carefully, buy building materials not at all except for the most essential needs.

We must get it thoroughly in mind that agriculture is going through a different sort of period from the pre-war or war times. We rode up for 20 years with the balloon of rising prices, meanwhile expanding our economic chest and straining to view wider horizons of production. Now we are drifting down with a parachute of falling prices and the feat will be difficult enough even for those who do not thrash about violently in mid-air. Those Armistice orders that went down the battle line in France in November, 1918, switched the economic current abruptly and completely. Whereas the watchword for agriculture for years prior to that time had been *production*, the watchword since has been, and for some time to come will be, *economy*.



The County Agent's Wife

(From page 7)

away from the office a great deal and at such times the phone operator switches all calls to the house where it is a rare occasion that my wife cannot give the information called for and, if she cannot, she locates me and has me get in touch with the interested party.

One instance of the class of problems presented which would probably faze the average woman was when a lady some eight miles in the country called the office for advice as to a calf that had bloated on alfalfa and wanted me to bring the trochar out post haste and tap it. My wife told her I was away and suggested that the lady do the work herself as it was a simple matter. After much protestation that such a thing was absolutely impossible, etc., etc., the lady finally decided

she would try it if she was told how to do it and what to use.

After canvassing the knives she was told to take the potato paring knife and was instructed as to how deep to make the incision and promised that I would come out and see her as soon as I returned, the phone was hung up. The calf was saved and is now a valuable milk cow while the lady is convinced that she is a veterinarian and that if the wife could be kept in the county there would be no need for a county agent.

I am not making it strong enough when I say that fully half the questions asked by the people in regards to homemaking, club work, poultry, prices and varieties of seed for planting and their source of supply, schedule of meetings and the thousand and one things that are referred to a county agent are answered by her either by phone, personally or by letter.

In other words my work as a county agent would have been a practical failure without the constant assistance and advice of my unsalaried partner.

I hear some say,—“Yes, but she could do that since there was no family.” Yet there does happen to be a family of three of an age that needs close supervision—from 16 down—so there is another guess coming.

You say she receives no compensation then how and why does she take the time to do all this? Well as to “how” she does it I cannot say but I do know that it is never necessary to wait for a meal or feast on the “leftovers”—never necessary to coax or argue to secure her cooperation in anything that tends to the advancement of my work or of the interests of the people of my county and as to “Why” she does it—well, first of all, I believe she sees in the work an opportunity to serve others and in this way help make the world better and brighter and lastly because as my partner she knows she is helping me.



By the Readers of BETTER CROPS

Greater efficiency in crop production will benefit the farmer more than anything else. To this end the chief effort of the farmer should be:—

- a Greater yield per acre through the use of fertilizer.
- b The use of improved labor-saving machinery.
- c The use of well-bred, high yielding seed.—*C. A. Whittle, Agricultural Editor, Atlanta, Ga.*

Stop over-production of unprofitable crops.

Reduce cost of production of all crops by approved methods.

Refuse to accept political price-fixing panaceas which will only aggravate present conditions.

—*Richard Faxon, Chief Division of Plant Industry, Columbus, Ohio.*

- 1. Farming needs a *square deal* in finance. This never had it.
- 2. Cooperative marketing.
- 3. A Cooperative Consumers' Association to lessen the "spread" between the producer and the consumer.

—*W. H. Barton, County Agent, Rockingham, N. C.*

- 1. Increase yield per acre and farm less acres.
- 2. Buy and sell through co-ops.
- 3. The problems of the farmer

are mostly his own and should be treated as such.

- 3. The only way I can see a constructive program of agriculture can be worked out is by farmers, bankers, merchants and all getting together, to prevent throat cutting.—*W. Clayton Jester, County Agent, Oakland, Maryland.*

- 1. Too many poor (inefficient) farmers. Kill off a few—kick 'em out. Prevent their places being taken.
- 2. Better organized production. Cooperation must develop a lot yet.

Farmers must stand up against economic conditions like everyone else. No legislative panacea will do the trick. Abandon poor farms. Make good land produce more efficiently.—*John N. Fay, Middletown, Conn.*

Must be organized as industry. Local capital, well paid, skilled labor. All chance element eliminated as far as possible. All facilities for producing, curing, grading and in many cases manufacture produce graded Tobacco in Cuba. Sugar, Hemp, Rubber, Coffee, an example of what to do with our staple crop.—*H. M. Curran, Forrester, Raleigh, N. C.*

These Young Folks Amazed Washington

(From page 9)

The cost of making the garments was \$99, giving an estimated profit of \$78. It was her fourth year as a member of the sewing club.

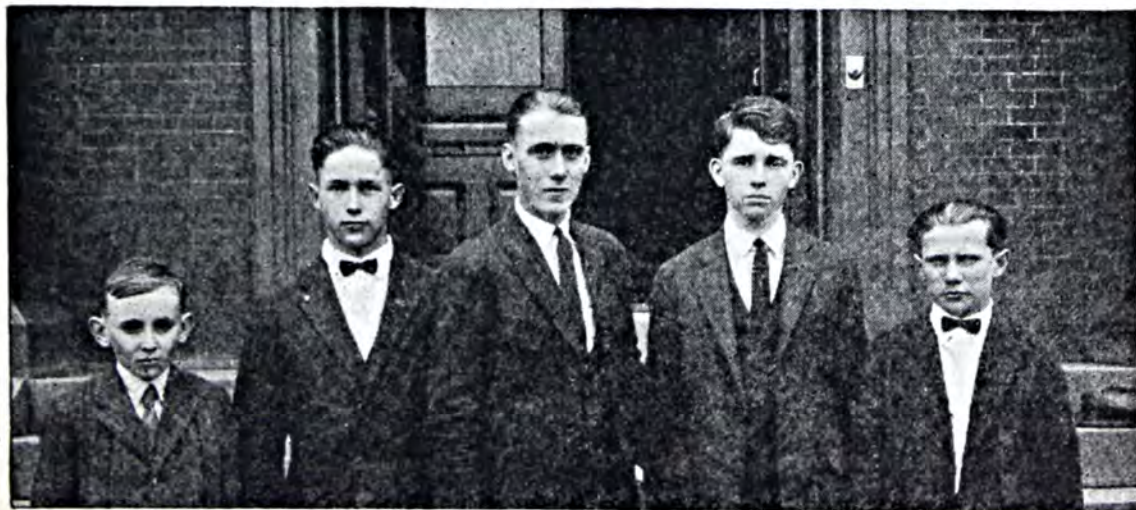
NO less commendable was the accomplishments of the three other girls. Thelma Reger, age 15 of Pendleton, was state homekeeping champion. She worked 1,071 hours in her home, canning, baking, preparing meals and school lunches, sewing, mending, and caring for the house, the yard and the poultry. This was all done between May 25 and December 31, and, if you care to do a little figuring, you will find that Thelma put in a total of 134 full working days of 8 hours each, or over 22 weeks. Here is a homemaker whom some Hoosier lad could well keep his eye on.

Mary Smith, age 17 of Burrows, state champion in the canning clubs, canned 305 quarts of eleven varieties of fruits, 366 quarts of six varieties of vegetables, 220 quarts of meats, 45 quarts of jelly and 28 quarts of butters, or a grand total of 964 quarts. It was her third year in this work. Thirteen year old Ester Edmondson of Clayton, designated the state baking club girl, baked 465 loaves of yeast bread

1,076 yeast rolls, 3,183 gems and biscuits, seven loaves of nut bread 98 pies, 39 cakes, 3,109 doughnuts and 379 cookies. Not bad vocations for girls during this day of the flapper. And there are thousands of other farm girls in all parts of the country whose lives are being directed along similar lines. So much for the girls.

Ten boys were winners in their respective sections in the corn and potato club work. Indiana is divided into five regions in these two contests and a winner is declared in each. It is interesting to note that in the case of corn, the state average is about 38 bushels to the acre while the average yield of the five winners who came to Washington was 105.6 bushels. Indiana's average production of potatoes is 85 bushels to the acre but these five winners produced 376.8 bushels. This augers well for the practical side of teaching the farm youth the advantage of improvement in seed, soil and cultivation.

Virgil Telfer of Brookston, 18 years of age, had a yield of 122.6 bushels of corn to the acre. He was followed by Henry Wing, winner in his section of the state with 115.8 bushels. Charles Nading of Hope was credited officially with 101.6



These five Indiana boys produced an average of 105.6 bushels to the acre, as compared with 36 bushels for the state

bushels of corn on his acre of land, just a fraction ahead of Maurice Lux of Shelbyville who grew 101 bushels. Youthful Elston Blythe, 12 years of age and living at Ft. Branch, was the smallest member of the party and he carried his record of 87 bushels of corn to the acre lightly.

THESSE United States would never go hungry for the lowly spud if the practices of the five Indiana winners were universally used. Earl Miller of Pennville, one of the sectional winners, produced a total of 418 bushels of potatoes on one acre. A yield of 368 bushels is credited to Clyde Van Auken of Angola, James Strahl of Greenfield produced 328 bushels to the acre, Jerry McCarty of Gosport dug 260 bushels from his acre, while the list is brought up by Olan Wheat of Mt. Vernon who produced 310 bushels.

Howard Merideth, age 15 of Monrovia, is another Indiana youth who made the trip and has an enviable record. He is a member of the Vocational Agriculture class at Martinsville, organized to buy nursery stock and sell fruit co-operatively. His club won \$265 at the Indiana State Fair last year and he led the list.



Health Work

Agricultural Extension Work is a success in proportion to the number of improved practices adopted and followed on the Farms and in the Farm Homes. There are a number of projects on this program, but none of them are proving more helpful than the work of the "Home Care of the Sick." There is some time, in the life of every farm family, a need for this work. We find that the leaders in the various communities are compelled to give assistance in case of emergency, and that this work must spread, even

if the parties who took the work are inclined to be indifferent.

We have recently held a number of Result Meetings throughout Southeast Missouri, all of which were well attended, and the reports showed that there was a real interest in the work. In most every instance some improved methods had been put into actual practice, which helped to keep the family in good health or make the recovery of the sick more rapid.

There is one meeting that was held out at a little country school in the southern part of Pemiscot County, which we want to mention. The program was arranged so that the leaders from the various communities, who had taken the work would put on demonstrations showing those present what they had learned. About 225 farm folks were there for the purpose of learning these lessons. A basket dinner was served at the noon hour, after which the program was continued. Such things as bandages, handling a patient, use of disinfectants, and the medicine chest, were given consideration.

One of the most important things was a demonstration of the use of the medicine chest. One of the ladies, Mrs. Wm. H. Franzman, had prepared and equipped a medicine chest to exhibit at this meeting. Some of the little things, such as reading the label three times, pouring the contents from the bottle from the opposite side of the label, arrangements and things like that were very helpful. Then it was recommended that this medicine chest contain Baking Soda, Alcohol, Tincture of Iodine, Hand Lotion, Boric Acid, Vaseline, Aromatic Spirits of Ammonia and Carron Oil. Also, it was suggested that equipment such as a Measuring Glass, Absorbent Cotton, Sterile Gauze, Adhesive Plaster, Bent Drinking Tube, and a Clinical Thermometer, should be kept in this Medicine Chest. — *County Agent M. D. Amburgey, Caruthersville, Mo.*



By Ted Butlar

BETTER CROPS' Washington Correspondent

CONTINUED reports coming to Washington give striking evidence that recent increases in the prices of most farm products were brought about for sound economic reasons and furnish conclusive proof that prices will rule high this fall and winter. Morale of farming districts has improved in a marked degree along with better prices, and farmers in all sections are taking a new lease on life.

Particular relief has been brought to wheat states. Prices have been higher than they have for four long years and the crop has been above average. A decrease of about 8,000,000 pigs in the spring crop in the Corn Belt has placed the swine industry on a normal basis and this condition is reflecting profitable prices. The lamb and wool situation is satisfactory to all concerned. Production of hay crops and small grains are reported good and prices have been ruling higher. One reliable report says that agricultural conditions have improved to the point of reflecting higher prices for farm land.

The only uncertain spot in the horizon is the corn crop. Farmers who have had corn to sell have been getting profitable prices, but this year's crop is not guaranteed due to poor weather and uncertain growing conditions. It is pointed out, however, that it does not take a great deal of satisfactory weather for corn to catch up, and although reports are discouraging from some

quarters only an early frost can cut the corn crop short. Financial condition of the Corn Belt states, discounting the uncertainty of the corn crop, has greatly improved due to higher prices of hogs and other products.

Establishment of a new Bureau of Dairying in the U. S. Department of Agriculture is meeting with universal approval. Dr. C. W. Larson, its new chief, says that plans for the future are quite largely a continuation of the work which has been going on for the past few years. It is his opinion that many of the fundamental problems of the dairy industry are yet to be solved and particular stress will be laid on research work. Approximately \$400,000 will be available to the new bureau for its first years' work.

Several million dollars are being wasted in wheat screenings, government experts report, after making a study of the situation in the spring wheat states. Screenings wasted last year could have been fed to more than 3,500,000 lambs and returned to farmers by way of increased weight of lambs more than \$8,500,000, it is stated. Nearly 12,000,000 bushels of screenings were produced last year. Screenings may be turned to valuable account by feeding them to livestock, says the U. S. D. A., and it has started out to see that farmers are thoroughly warned of this economic waste.

Things are still booming in the dairy industry. Milk production last year, according to recent figures, was seven billion pounds more than in 1922. Production is placed at 109,736,062,000 pounds as compared with 102,562,221,000 pounds in 1922. Another report says that the number of milk cows this year has increased 6 per cent over last year. That this increase is being absorbed by the consuming public is shown in another set of figures. Consumption of milk for household purposes reached 50,440,000,000 pounds last year as compared with 46,672,560,000 in 1922. Similar increases were shown in the amount of milk used in the manufacture of dairy products. The per capita consumption of butter increased a liberal half pound, and the American appetite for other products increased to a point of absorbing this heavy output.

It may not seem strange that the increase in cigarette smoking is making pronounced changes in the production of American tobacco. At least the U. S. D. A. says that the habit in this country coupled with a liberal demand from foreign countries is bringing cigarette tobacco to the fore. The combined acreage of the principal cigarette types, which are Burley and flue-cured tobacco, was 1,169,000 acres last year and a somewhat larger acreage has been noted this year.

During the past few years experts have said that flaxseed was a profitable crop for many farmers to consider. Despite a tremendous expansion in flaxseed acreage this year, the supply on the basis of average production per acre, will be still far short of consumption requirements. Last year the United States produced approximately 17,500,000 bushels of flaxseed, whereas average annual requirements during the past five years have been around 30,000,000 bushels. Many farmers are finding flaxseed a profitable addition to their rotation.

The Federal crop reporting service has just celebrated its sixty-first birthday. The service now has an army of more than 300,000 voluntary crop reporters whose regular reports on the condition of crops in their particular community make it possible to arrive at an average for the country. All the voluntary reporters work without pay and many of them have been in the service of the government more than a score of years. Leonidas Link of Rushville, Indiana, has been county crop reporter for the government for 54 years. Second place on the honor roll goes to W. T. Richardson of Clarksville, Tenn.

Speaking of crop reports, officials of the U. S. D. A. say that the air mail service is bringing tremendous advantages to agriculture and industry. A batch of California reports was recently received in Washington in less than two days, whereas formerly the reports were in transit nearly a week. According to Secretary Wallace use of the air mail service of the Post Office Department means not only a great saving in time, but a shortening of the period between the receipt of the reports and the date of their release in Washington.



Beware of Buckeye!

(From page 25)

sprouts, particularly on newly-cleared land and especially during the early spring before the grass has had a chance to develop. One of our good farmers, John R. Kirkham, of Blountsville, Indiana, reports excellent results in treating four buckeyed calves by administering epsom salts and keeping the sick animals out of the sprout-infested woods. This treatment is probably as good as any, but the main idea is to prevent cattle from having access to an abundance of buckeye and horse chestnut sprouts and nuts. An ounce of prevention may save a good many pounds of beef.

The County Agent and Cooperative Marketing

(From page 12)

forgotten that the real teacher must at all times seek to teach without bias, hewing to the line of facts.

Too often organization work is based on propaganda rather than on straightforward statements of reasonable possibilities. We lose sight of the fact that a cooperative marketing organization is merely a form of business enterprise which will stand or fall on performance. Most anything, no matter how good, can be oversold and since overselling is bad salesmanship it is something to be shunned. The pity is that where there is a real need for an organization it can be put across without resorting to reckless promising of results. A fair statement of possibilities beats overselling in the long run.

There is a wide difference between organization propaganda and real education. The former seeks to present cooperative marketing in a very favorable light in order to emphasize its possibilities—yes, unfortunately, at times to over-emphasize possibilities—and not to say much of limitations. Real education must be more conservative and present both limitations and possibilities. This does not mean that an educational program in this field will turn out to be a mill stone about the neck of cooperative marketing. To the contrary, it will be an invaluable aid in the building of permanent cooperative marketing structures.

How much information does the average man have about marketing? What does he think about marketing? Has he an appreciation of the services involved in marketing? Does he know about the costs involved in marketing or does he think of the marketing spread as being an unnecessary toll which some one is levying without giving a return? Does he understand marketing difficulties clearly or are

his ideas enmeshed in a hazy tangle of unnecessary middlemen, speculation, price-fixing, and the like? Does he recognize clearly that cooperative marketing associations in order to succeed must find their proper place in the marketing system? That cooperative marketing must perform real service and do so as effectively and economically as does private endeavor? Does he think and talk of distant organizations in glowing generalities or does he know what their strong and weak points are? Does he understand the fallacy of the oft repeated statement "That every one except the farmer fixes the price of his product?" Does he cling to the idea that the way out is to organize and fix prices on some arbitrary basis? Has he fully grasped the responsibility of membership in a cooperative marketing association so that he knows that it is up to him to do his share if the organization is to succeed? How well does he understand the requirements for success? In short, are there not many questions concerning which Mr. Average Man would welcome information? If so, is there not room for educational work in this field and is not this really the place for the extension service to come in?

TIME and again, pressure has been brought and will be brought upon the extension service to put its drive behind some particular plan or organization. Again and again the service has been charged with being out of sympathy with cooperative marketing because it is unwilling to pull some one else's irons out of the fire. What if the county agent should rush out on the road soliciting memberships and signatures in this and that organization, arguing, cajoling, promising, matching wits against wits? Could

he thereafter expect to be received as a fair minded teacher? Could he serve all his constituents regardless of their attitudes on these questions, or would he find that he had become simply an organizer and a promoter of a particular business enterprise and not a teacher and demonstrator of facts? Can he not better serve the farmer and do real constructive work by remaining within his proper sphere of activity?

THE real answers to all of these questions show that the extension worker has a place in the cooperative marketing field and that he can render a very valuable service by carrying on educational work in marketing in the same way as he is carrying on education relating to care of land and livestock, feeding of animals, maintenance of fertility, control of pests and the like. The limitations which exist are similar. The agent may talk about vaccination to control hog cholera. If he is wise, he does not promise perfect results. He tells what can reasonably be expected. He does not lead the farmer to expect that vaccination is going to double the weight of a hog. In the same way, if he knows that a cooperative marketing association can remedy certain marketing difficulties in the locality it would seem entirely proper for him to suggest this to his farmers for their consideration and to help them by giving them facts and telling them what cooperative marketing can reasonably be expected to do under existing conditions. He avoids the making of extravagant claims.

At times, an agent may find it necessary to discourage the use of certain feeds or fertilizers not because of any lack of quality, but because they do not happen to fit the particular conditions in hand. Similarly, there are times when he will discourage the consideration of cooperative organization for a cer-

tain situation because fairminded study of conditions has convinced him that the situation is not ripe for such a move. He will serve by so doing in that he may prevent failure with its subsequent discouragement to meritorious enterprises. Many a cooperative marketing undertaking for which there was a place has been held back because the people have been made wary by abortive attempts.

How can the county agent develop and carry out such a program? Certainly not by individual teaching. The real place is in community programs. In helping local groups work up programs and in encouraging earnest discussions at such meetings. A program in livestock feeding or soil building has a goal in view and has a road mapped out which leads to that goal. A similar project in marketing needs to have a goal in view and a charting of a route leading to that destination.

THE Extension Service in the State of Kentucky has made a beginning in the building up of such a program in marketing. A number of points have been suggested to the county agents for their consideration and they have been referred to bulletins and other sources of information where they may find material relating to that subject. Among the points included are: What marketing includes; What a cooperative marketing organization is; Why farmers organize for marketing; Early developments in cooperative marketing; The possibilities of cooperative marketing; The limitations of cooperative marketing; Essentials for success; Conditions favorable for cooperative marketing; Outstanding marketing organizations in different fields; Marketing contracts; Pooling; Financing; Relationship to economic laws; Importance of quality and grading; Market in-

formation; The individual member's part. This outline seeks to provide for the stimulation of constructive thought and for the dissemination of sound ideas which will be found useful in working out permanent marketing improvements. In such a program there is place for neither the agitator who wants us to believe that everything is wrong nor the man at the other extreme who refuses to see that anything is susceptible of improvement. Such a program if it is to get anywhere must be based on facts and must deal with facts. If "truth crushed to earth shall rise again," it behooves a man to try to be on the side of truth in all work of this character.

An educational program in cooperative marketing seems particularly apropos at this stage in view of the widespread interest in cooperative marketing. Remarkable progress in organizing has been made in late years. It is well to remember that the education problem has just been nicely started when organization has been completed. In fact, if over-promising

has been resorted to, the work of education may have been increased. Marketing organizations themselves are appreciating the importance of such work. However, the emphasis seems often to be placed on the problem of maintaining the morale more than on the dissemination of information. A certain amount of reference to accomplishments is necessary but there would seem to be room for more work in acquainting the members with problems encountered and limitations involved. If this is not started until the "rainy day" comes, its effect may be lost because the members then will not be in a mood to listen and heed.

After all, a marketing association is a business enterprise belonging to and serving its members. Since it is their organization they are entitled to the hard, cold facts at all times. If they have a proper understanding of marketing and cooperation they will know how to act properly under the different situations as they arise. The purpose of a constructive educational program is to bring this about.



County Agent W. J. Tiller of Chesterfield County, South Carolina, demonstrating winding dewberry plants to stakes on a 30-acre dewberry farm.



Test on Grapes by Frank G. Dorman, Fredonia, N. Y.

Plot No. 1
Yield: 1,792 lbs.

Plot No. 2
Complete Fertilizer
Yield: 2,432 lbs.

Plot No. 3
Incomplete Fertilizer
Yield: 2,016 lbs.

POTASH PAYS ON GRAPES

WHEN Mr. Dorman used sulfate of potash in a complete fertilizer, he got 224 additional lbs. of grapes for an expenditure of only \$2.75.

Potash not only increases yield. It improves the sugar content and makes for better shipping qualities. A good grape fertilizer should contain from 8 to 10 per cent of actual potash. It will pay you to insist on Genuine German Pica Brand Potash.



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What Potash Does for Crops

(From page 14)

In fertilizer tests conducted at a sugar experiment station in Georgia a marked gain followed the use of 90 pounds of potash per acre, and in addition the ratio of suckers to stalks from planted buds was decidedly in favor of the potash application. In this case sulfate of potassium was used and check plots were treated with sulphur, in the amount which would accompany a 90 pound application of potash, with no yield increase resulting. Clearly potash did the work.

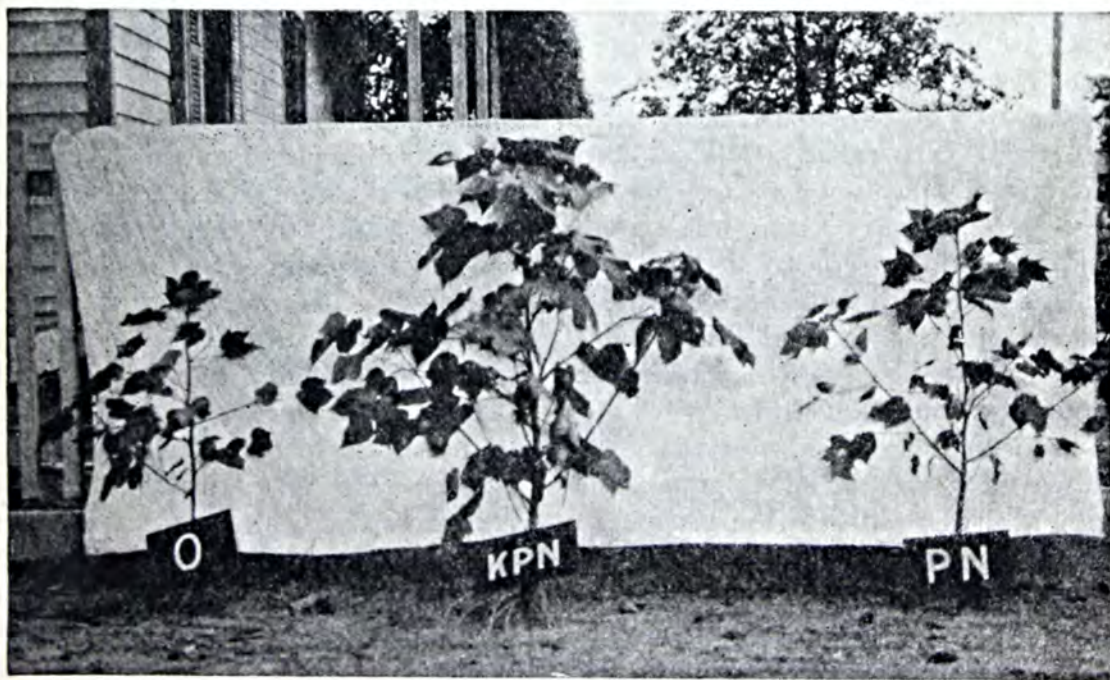
Rothamstead Experiment Station points out that various grasses suffer materially from the lack of potash, the stalks being weak and brittle and the plant failing to develop seed as well as showing many other evidences of decreased vigor and mal-nutrition. Similar work with mangel wurzels showed an increase from 12 tons to 28 tons directly due to potash. The quality of the larger yield was, in addition, far superior to that of the 12 ton lot, and the latter developed a leaf-spot

fungus not found on the treated lot.

Marsh soils or heavy, peaty soils are apt to be particularly deficient in potash. On such soils Illinois Experiment Station shows an invariable increase of from 3 to 5 fold in favor of potash.

POTASH is indispensable for oats, barley and other cereals; for potatoes, onions, sugar beets and similar plants; and, most surprising of all, to legumes. These plants—in themselves soil improvers—turn to potash for their support, or as expressed in U. S. D. A. Farmer's Bulletin No. 1250—"an application of potash often increases the crop greatly and thus enables the plant to gather more nitrogen. The potash again becomes available when the crop is turned under."

Then potash improves the soil, creates a safe basis for agricultural prosperity, increases yields, improves quality, and makes our agricultural plants more resistant to wind, frost and diseases.



In this experiment on the farm of William Watts, Wake County, North Carolina, the plant on the left had no fertilizer, the one on the right received only nitrogen and phosphoric acid, while the one in the center had a complete fertilizer including potash. The increase in yield due to potash alone was 300 lbs. per acre.

Happiness

(From page 6)

now and here that two cows, done in India Ink on Waterman board did the trick for me.

For they aroused my sense of humour.

Have you ever seen that famous cartoon of the two cows?

Two pastures, with a barbed wire fence between. And a cow in each pasture.

In the further pasture the cow is stretching her neck over the fence to eat the grass in the near pasture; and the cow on this side of the fence is risking her Holsteinian neck in a vain and fruitless endeavor to get at the seemingly succulent grass on t'other side!

I saw the cartoon and laughed.

The title was, if I remember correctly, "The Other Fellow's Pasture Always Looks Greener."

But I changed the title, using an editor's prerogative—and a blue pencil—to "There is No Real Happiness—Only the Search."

And to prove that unhappiness lies in wishing for what we cannot have and in hoping for things that will do us no good when we get them, Edison, the Electrical Wizard, when asked what he considered the zenith of happiness, replied "Why, living on a farm which is one's own, far from the hectic artificial conditions of the city—a farm where one gets directly from one's own soil what one needs to sustain life; with a garden in front and a healthy normal family to contribute those small domestic joys which relieve a man from business strain."

And this the man who has done more than any other to make the city alluring—in fact the very man who invented the "flame in the glass bottle" around which fly the human moths!

A woman who all of her life had lived upon such a farm as Edison describes, asked what she considered the highest happiness, burst out, "Why, to live in a town where

I could shop in a store that had more than one showcase!"

And there you are.

It proves my point.

Edison surfeited with the hectic, exasperating, flutterbudgetyness of the city; the woman starved for a glimpse of warmth and culture and rare merchandises. Both wanted what they could not have, and did not truly value what was theirs.

And both, I take it, were unhappy.

What, then, is the use of it all—if there is no happiness?

Of what can hope be fabricated if not of the thought that happiness is at least hovering near and may at any moment lovingly alight?

Ah, but you forget, my friend, that *most* of mankind believes that there *is* such a thing as happiness, and goes on continually in tireless search for it.

Only you and I know the truth!

And perhaps I am like my grandfather who, I remember, used every now and then to search frantically for his spectacles, only to find that all the time they were sitting on his forehead.



New Explosive for Farm and Road Work

One hundred million pounds of explosive, enough to load a freight train 40 miles long, is shortly to be made available to farmers for land clearing and to the States and Federal Government for road construction. This explosive, pyrotol, is to be distributed by the Bureau of Public Roads of the United States Department of Agriculture at the cost of preparation and shipment. This is a continuation of the work which has been carried on for the past three years whereby the vast supplies of explosives in the possession of the Government at the close of the World War are being made over to make them suitable for constructive purposes.

Pyrotol is composed largely of ground smokeless powder prepared

by a process perfected by George R. Boyd of the Bureau of Public Roads. It is peculiarly adapted for blasting stumps and for work of similar character. It can be used for all open-air work without causing headaches or other ill effects and will not stain the hands or clothing. It is a low-freezing explosive and can be used with good results in all ordinary temperatures. The cartridges are of the same size and shape as the ordinary dynamite cartridge. Each box contains 50 pounds, about 150 cartridges; and each cartridge is approximately equal in strength to a cartridge of 20 per cent dynamite. It is safe to handle providing that the ordinary care exercised in handling dynamite or other explosive is used. It is detonated by the No. 6 caps commonly used with commercial dynamites.

The laws under which these explosives are made available authorize distribution to the State highway commissions for use in road building, and to farmers for land clearing. There is no charge for the explosive itself, but the consumer has to pay the cost of preparation and the freight charges. These charges are different in various sections of the country, but, in general, the cost is about half the cost of an equivalent amount of commercial explosives. In each State, where there is sufficient interest in agricultural explosive, some State agency, usually the State agricultural college, takes the orders of the individual farmers, pools them into carload lots to decrease the freight charges and handles the details of the distribution. The Department of Agriculture can not accept orders for pyrotol except through such State agencies.

Shipping points for the explosive will be Repauno, N. J., Barksdale, Wis. and Du Pont, Wash.

It is probable that this pyrotol will be the last of the surplus war explosives to be distributed by the Department of Agriculture.

U. S. D. A. Press Service.

About Ourselves

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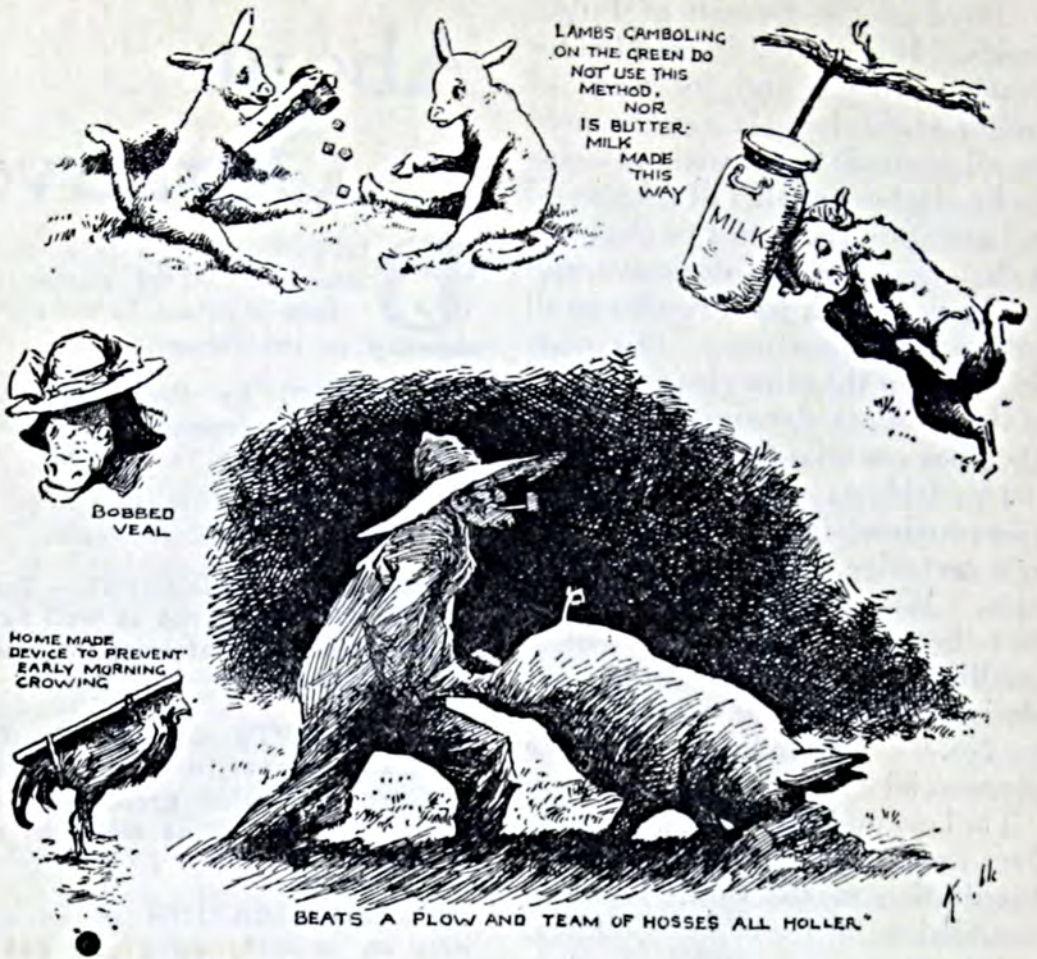
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—from Life

ON THE FARM

JOURNALISTIC PORTRAITS

The American Farmer as You Picture Him After Reading the Metropolitan Papers

He got enough for his old corn on the financial pages to switch from a Ford to a Lincoln. When he cashes in on his new crop in the market forecasts he will have to pack the money in his silo while the bank is enlarging its vault. In the editorials he wonders how he could

ever have imagined that the wheat pit might be manipulated against him. He smiles as he ships the ten-dollar hog in the article by the expert. He is the happy husbandman.

It is a pretty picture. If it were only a true one!—McC. H. in Life.

Over 100,000

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for Fords!

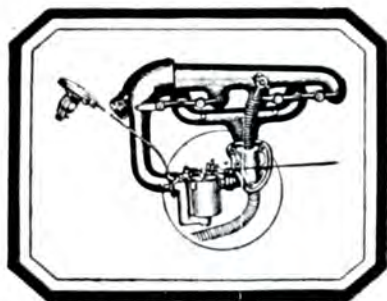
A Carburetor sales record never before equalled—and made possible only by the fact that the STROMBERG CARBURETOR and HOT SPOT for Fords delivers more mileage—more power—than any other Carburetor offered. It makes possible quicker get-away and much easier starting—four great essentials that every Ford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

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See your nearest dealer—if he doesn't carry the famous Stromberg Carburetor for Fords, write us direct for free literature and further information.

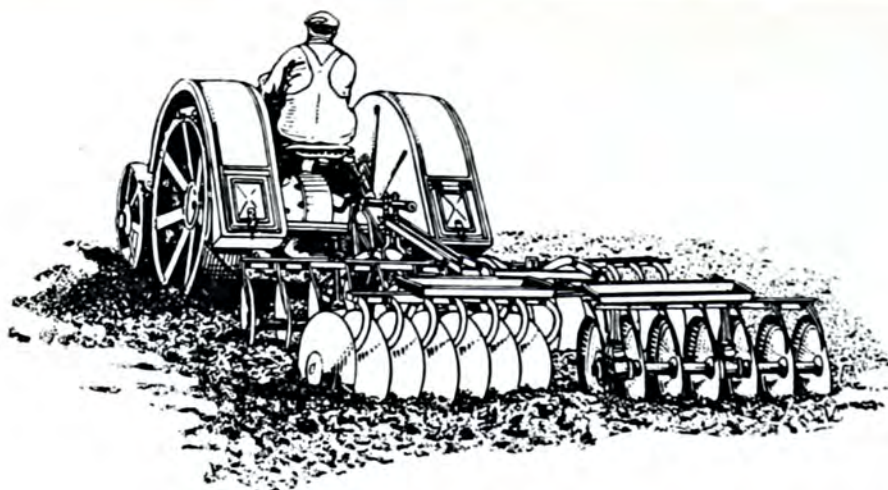
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THE FORDSON is the farmer's most modern and dependable source of power. The Oliver FDH disc harrow converts this power into better seed bed preparation, easily accomplished.

So simple in construction, so easy to operate the Oliver FDH disc harrow fulfills practical farm requirements. With a powerful quick-acting screw control both the front and rear gangs are angled in one easy operation. It is not necessary to dismount from the tractor—there is no loss of time.

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As for the work of the disc itself—we ask that you see it and compare it with your own idea of quality discing.

OLIVER CHILLED PLOW WORKS

Plowmakers for the World

South Bend, Indiana

Better Crops

The Pocket Book of Agriculture

October 1924

10 Cents



Unscrambling the Ology Omelet by F. J. Schneiderhan
The Cooperative Idea by C. J. Brand—Jeff McDermid



Experiment on Egg Plants, by J. D. Smith, Hillsborough County, Fla.

Getting your truck to market early—when prices are big

PRICES are always high early in the season, and the grower who hits the market first always gets the lion's share of the profit. Of course, you know that! But do you know, that by applying a well-balanced fertilizer to your soil, you can get an earlier crop—and a bigger yield per season?

Take, for example, the results obtained by J. D. Smith, of Hillsborough County, Florida. He used 1,000 pounds of fertilizer per acre, which analyzed 4% nitrogen, 6% available phosphoric acid, and 10% potash. The first picking brought

14 crates of egg plants which sold at a high price. But where potash was omitted from the fertilizer mixture, as well as where no fertilizer was used, there were no marketable egg plants at this picking.

Remember, every crop removes certain amounts of essential plant foods from your soil which must be replaced to maintain the fertility and to feed your crops. You'll find that Potash results in a heavier crop—and bigger profits. There's lots of good information in our booklet, "Truck Farming." Send for your free copy.



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VOLUME III

NUMBER TWO

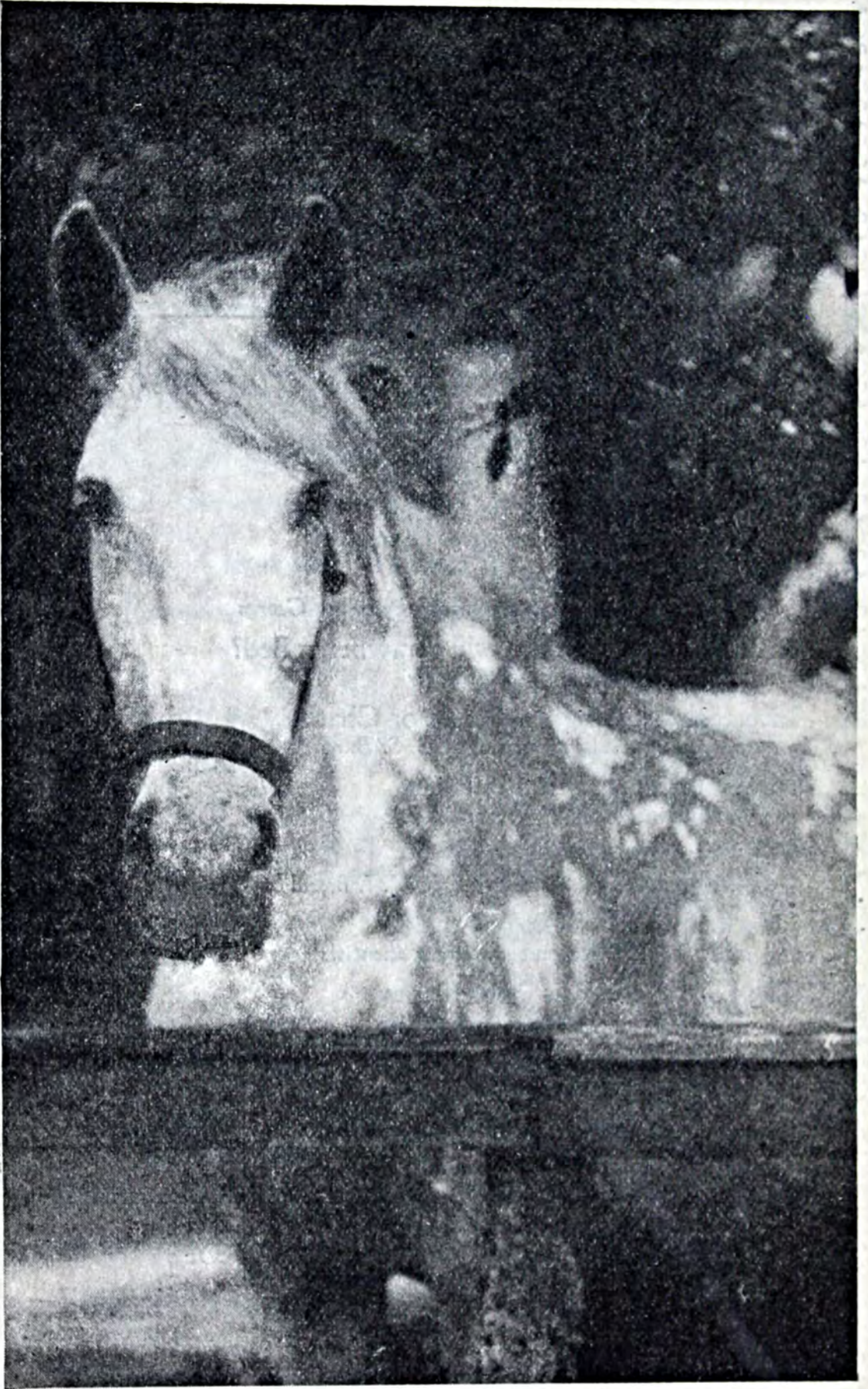
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Sunday



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VOL. III

NEW YORK, OCTOBER, 1924

No. 2

*¶ In which we bring out
some meaty points about*

MR. FARMER, Individualist

By *Jeff Mc Dermid*

ESSAYISTS state that one should always begin with a truism; and I submit this: Everything we have comes from the ground.

Glance about you. Check me up.

That lamp? The glass chimney is melted quartz; the bronze base a mixture of copper, tin and other alloys—born of earth. The wick? Woven from cotton, and cotton comes from the soil. The oil gushed forth from the same source. The match with which you light it is wood and sulphur, both products of the ground.

The cigar you are smoking?
From the soil.

The magazine you hold in your hand is printed on paper made from wood pulp which came from trees which came from the ground.

From the depths of coal mines came the coal from which was extracted the black pigmented ink you now read. All food originates certainly beneath our feet.

AND a new era is dawning on the world. We are beginning to see that the men who fell the trees, cultivate the earth, dig the soil, mine the iron ore and the copper, are useful men. We are beginning to believe in a creed that surpasses all other creeds: the creed of usefulness.

The men who supply the countless needs of civilization are beginning to receive their rewards.

And, as far back as we have any records of civilization, the cultivation of the soil has been the most useful, and most important industry in every civilized country.

Webster defines agriculture thus: "The science of cultivating the ground."

But that is not a sufficient definition, for agriculture is more than the tilling of earth. Agriculture is the art of coercing unwilling Nature to yield bountifully; and this coercion implies the application of brain and heart to mere handicraft—it tokens that study, experiment and full love for the work are required in addition to the physical tasks.

And here agriculture differs from the mining of coal, from the drilling for oil, or from forestry.

For the coal lies there awaiting the miner's pick, but the farmer must struggle to force the soil to yield a hundred bushels of corn and mix brains with the struggle. While forest trees will grow without man's aid, alfalfa will not; and if you dig in the right place oil will gush forth, but unless you know how you cannot raise clover.

AGRICULTURE is work, plus brains. Agriculture is the first science of Nature.

Farming is not alone an art—*it is a life!*

And there is a fact overlooked by theorists, sophists, pedagogs and politicians who meddle in agriculture, trying through statutes to improve the farmers' lot.

Farming is *a life*.

There is no eight hour day on a farm. Chanticleer is Nature's time clock, and weariness alone points the hour when work shall stop. The farmer works his life and lives his work. He is a being apart from the world, in a world of his own making.

All about him lie evidences of his own toil. He is monarch of all he surveys.

And because this is so, the farmer is an individualist. His likes and dislikes are pronounced, and he often mistrusts the intentions of other well-meaning folks.

NO two farms are alike.

Man is a product of heredity and environment. He is kin to that upon which he feeds and he mirrors his surroundings. Every farmer is cast in the mould of his own experiences. His problems have carved his understanding.

There is no "average" farmer. I have heard folks speak of him, but search has failed to reveal him to me.

In a city block there may live bankers and barbers, clerks and clerics, mechanics and manufacturers—their home lives differing only as their incomes vary.

The city man does not live with his work. The banker does not live in the bank, nor does the mechanic make up his bed under his lathe. The whistle blows, the bells ring, and they go to homes that are far from the scene of their labors.

Thus city men have similar tastes. They think alike, dress alike, act alike and respond to the same reasoning. They are mostly average.

I have heard it stated that farmers, full-grown, are hard to teach, and I can well believe this is so; for teachers are accustomed to addressing their arguments to average folks. There is no preparation made in our educational system for the ones below or above the average. No plan is conceived and outlined for developing the individualist.

Graduates are like Fords on the shipping platform—identified by number only.

POLITICIANS complain that they cannot deliver the farmer vote.

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Must County Agents Be Married?

By a Wyoming County Agent

(This is a snappy comeback to the article by County Agent L. E. McDaniels which was published on this page last month. The author offers an able defense of the unmarried extension worker.)

IT was with a great deal of interest that I read the article "The County Agent's Wife," by L. E. McDaniels in the September issue of BETTER CROPS.

It is not the purpose of this brief reply to this article to minimize the importance of the valuable work the County Agents' Wives are doing or to uphold the unmarried County Agent as a model of a successful Extension Worker.

County Agent McDaniels and his wife have made an enviable record and all credit to them both, for he, without her assistance, would not have been as efficient. Their case is not the average, however, as there are few County Agents' Wives who have the time, the public interest and the other needed qualities to complete a well rounded out Extension Agent's Program.

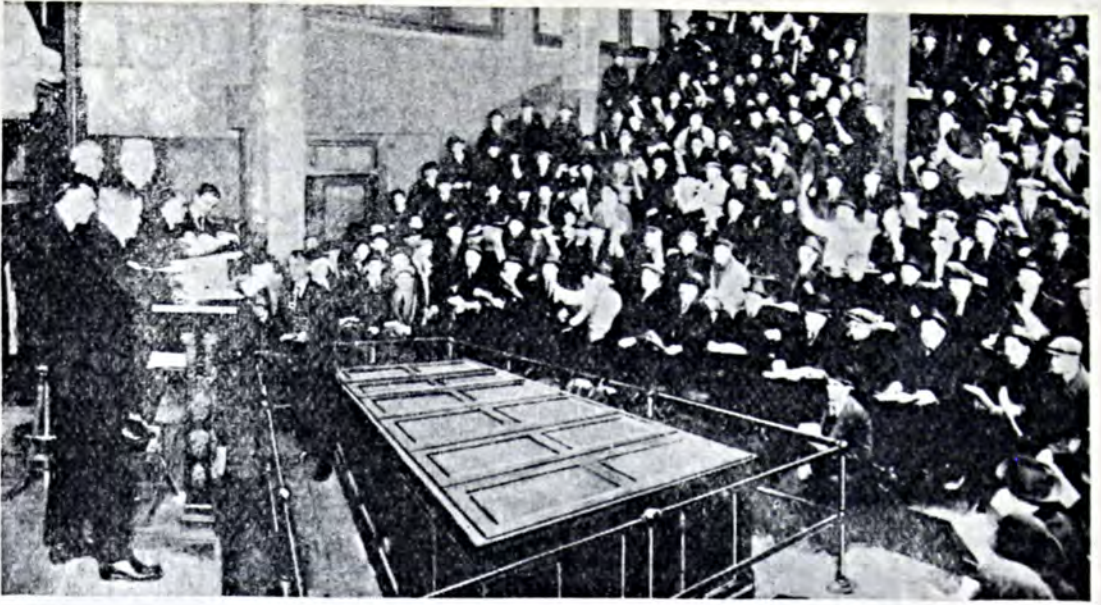
A sentence from Mr. McDaniels' story says, "All thinking people know that any man either too young or too selfish to marry and make a home is not fit to be entrusted with the responsibilities of advising others on matters that are a basic part of his duties." If this be true and the writer has the interest of the single Agent at heart why does he merely congratulate himself on his choice of a life partner and offer no suggestions on how the

unfortunate single Agents may select or be selected by capable, public spirited, cooperating women. This might cause some to wonder if only single men in Extension Work were selfish.

If the County Agent must be married to advise others on matters that are a basic part of his duties, surely the Nutrition Specialist should be a mother to advise proper feeding of the child, and the nurse must be one who has raised a family to know how to care for one. The great musician will need to be a manufacturer of musical instruments or he will not understand the instrument that he is playing, the typist a maker of typewriters and the chauffeur a manufacturer of automobiles in order that they be familiar with the instrument or machine that they are using.

IF the County Agent must be married to be qualified to advise, surely he must be a poultryman as he advises how to feed and care for poultry, he must be a livestock man as he advises on types of hogs, cattle, sheep, and horses, he must be a veterinarian in order to advise about animal diseases, he must be an entomologist to advise about

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An active scene at a New York fruit auction. The fruit is sold by catalogue, number corresponding with "lots" of commodities displayed on the pier below.

To the Highest Bidder

By Frank George

U. S. Department of Agriculture

"S**OLD!"** The auctioneer's hammer fell and another block of fruits changed hands.

Sales of American and foreign fruits at public fruit auctions in the United States now aggregate more than \$150,000,000 a year. Domestic citrus and deciduous fruits make up the bulk of these sales. Ten years ago the business was less than \$50,000,000 a year, and largely in foreign fruits.

Some marketing men predict as a result of this rapid growth that the auction system will eventually replace all other sales methods of marketing American farm products. In New York City more than 50 per cent of the annual carlot receipts of 50,000 cars of fruits and vegetables is now sold at auction. Other marketing men assert that the auction is another link in the

marketing chain and therefore cannot survive.

B**ACK** in 1827 a shipment of Malaga grapes was received at New York from Spain. A quick buyer could not be found, and because of the perishability of the product the grapes were sold at auction. The returns were so satisfactory that other auction sales of imported products were subsequently held, and by 1839 the system had become a regular marketing medium for foreign products, particularly foreign lemons. Lemons were coming into the country in large quantities and the auction method was utilized as a quick sales medium to prevent market gluts.

Sales of domestic fruits at auction

were held at irregular intervals, but it was not until 1885 that domestic products appeared in large quantities in the auction rooms. Florida oranges began to arrive at New York in larger supply than could be absorbed by regular trade channels, and the emergency of market gluts was met by the auction method. The development of the refrigerator car soon placed large quantities of California deciduous fruits on the eastern markets, and again the auction block was brought to the rescue.

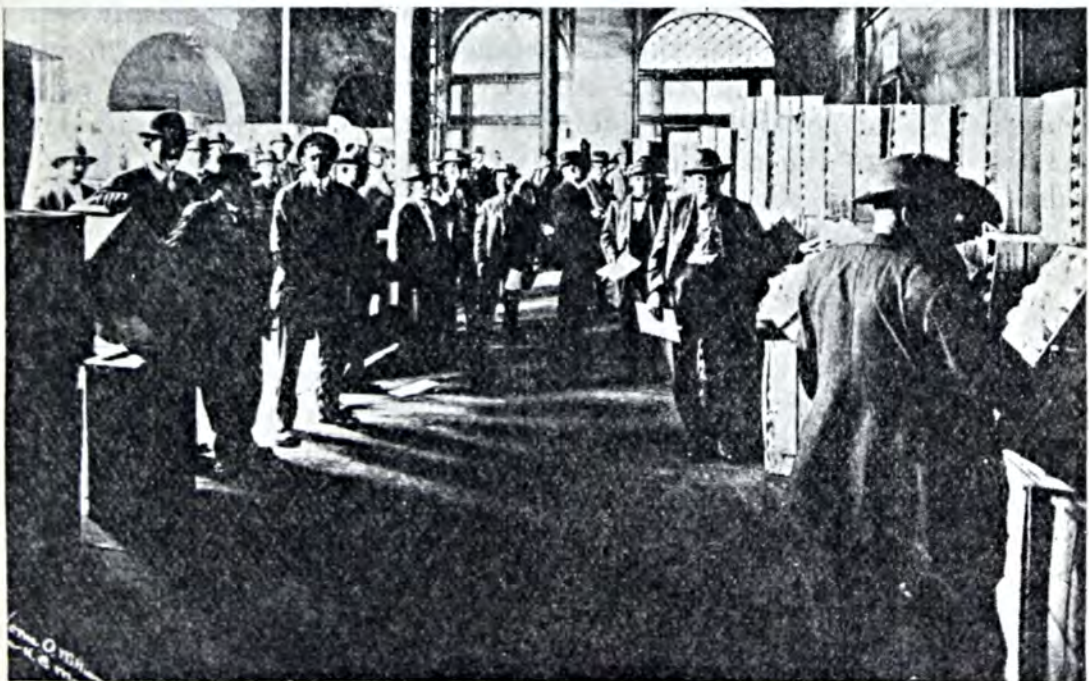
Auction rooms were established in other cities to dispose quickly the large quantities of domestic fruits appearing regularly on the markets. By 1912 the total volume of business handled by the auctions was \$42,000,000 and by 1917 it was \$65,000,000, an increase of more than 50 per cent in the five-year period. Then came the boom in cooperative marketing and by 1922 the auction business totaled \$148,000,000, an increase of more than 100 per cent in the second five-year period.

THERE are now 21 major auction companies in 14 leading American

cities. Eight of these companies are controlled by independent operators having no other connection with the fruit and vegetable trade, and 13 are controlled by trade interests. Four auction companies in New York alone handle more than 95 per cent of all California deciduous fruits marketed in the Metropolis, nearly 95 per cent of the California citrus fruits, approximately 85 per cent of all Florida fruits, more than 95 per cent of all foreign fruits, and 60 per cent of the arrivals of boxed apples. The total business done by these companies last year was more than \$65,000,000 and represented 45 per cent of all commodities marketed by the auction method in the United States.

Two auction companies in Boston do more than \$16,000,000 of annual business; sales through two companies in Philadelphia total nearly \$18,000,000 annually, and through two companies in Chicago around \$12,000,000. Other auction companies are located at Pittsburgh, St. Louis, Cleveland, Cincinnati, Baltimore, New Orleans, Detroit, Newark, Minneapolis and St. Paul. It is estimated that the 21 auction

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Prospective buyers inspecting samples of commodities to be sold at auction.



A typical strawberry patch showing possibilities of renovation. The rows are wide giving a good choice of plants to be saved as a foundation for the new bed.

Shall We Renovate the

By C. E. Baker

Purdue University, Agricultural Experiment Station

THERE is a wide difference in opinion among strawberry growers regarding the advisability of renovating old strawberry beds. Many growers prefer to plant new beds each spring, plowing under the old plantings as soon as the fruit is gathered. Many equally successful growers renovate the old bed and secure a crop the second season; others renovate annually for several years. It seldom pays to renovate a bed more than once however, and in many cases it is undoubtedly more profitable to make a new planting each year.

Under certain conditions it is a paying practice to renovate the old bed, and use it for the second season's crop. This is especially likely to be the case on high priced land. The determining factor in any case is the size of the crop secured. If a bed can be renovated

in such a manner as to come back with a second crop as large, or even nearly as large as could be secured from a new planting, the grower has a decided advantage, as it would take him another year to grow the new plants to the fruiting period. In other words he has secured two crops in three years from the same piece of land, where, if new land is used each year, only one crop is secured every two years from the same land. But as before mentioned the proper practice to follow must be determined wholly by local conditions. Both practices have stood the test of commercial usage and each type of procedure has its following of loyal adherents.

THOSE who wish to renovate their old strawberry beds may find the following suggestions of value.



After the excess plants have been removed. The narrow strip of plants left contains the mother plants for the new bed. Only young and vigorous plants should be used for this purpose.

Old Strawberry Bed?

Advice on successful renovation that means profits to strawberry growers.

A rather common preliminary practice in the renovation of an old bed is the mowing and burning over of the patch to destroy insects and their eggs, together with fungus disease spores. While this may often be done successfully by the experienced grower it is a dangerous practice for the amateur to follow and often results in serious injury to the patch.

The safest time to burn over the patch is soon after the fruit is harvested. The patch is first mowed and permitted to dry. It is well to go over the bed with a hay tedder to loosen up the mulch and leaves so that they will dry out better and burn more evenly. A windy day when the ground is as moist as possible should be chosen for burning over the bed.

A much safer method, though less efficient from the standpoint of

insect and disease control, is followed by growers in some sections, especially if the soil is dry. The strawberry leaves are cut and the leaves together with the mulch between the rows are raked from the field as soon as possible and burned or plowed under in other soil which is not to be used for growing strawberries.

The next step is to get rid of the excess plants and to prepare the soil for the new plants which are to be formed from the mother plants saved from the old bed. Growers have many different ways of accomplishing this. Perhaps the quickest and most satisfactory method is to plow under most of the old row, leaving a strip about six inches wide. This strip should be left at one side of the center of the original row. By so doing the younger and
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In our last issue Mr. Burch described the plan of the "Better-Sires—Better-Stock" campaign. In this concluding article he goes on to appraise the remarkable results that have been obtained.

Livestock Breeding

by Choice or Chance

PART TWO

By D. S. Burch

Bureau of Animal Industry,
U. S. Department of Agriculture

AS this article is being written a letter has just arrived from Wayland Rhoads, Field Agent in Animal Husbandry for Kentucky. He encloses a report from Gordon B. Nance, county agent for Oldham County in that State. That county has 248 farmers enrolled in the "Better-Sires—Better-Stock" campaign, which means of course that they are using purebred sires on all their herds and flocks. There are other farmers of course who are not enrolled, but the number mentioned is considerably greater than that in either of the counties on each side of Oldham County.

The report deals with the current returns which Oldham County farmers are getting for their livestock and livestock products. Using the average of the other two counties as a basis for comparison, the report shows a balance of \$128,968 a year as a premium received by Oldham County farmers, traceable to the use of purebred sires. The report was itemized for the different kinds of stock and contained all the steps leading up to the total mentioned. It is not a fortune, to be sure, but it is a tidy sum to come rolling in year after year and prob-

ably increasing as the stock improves still more. At my request, an expert statistician checked over the figures of the report and reported them to be O. K.

An equally interesting report was received some months ago from E. C. Grigsby, county agent of Pulaski County, Virginia, which has 589 livestock owners whose farms are on a purebred-sire basis under the better-sires plan. The report contained an itemized list of the breeding stock in the county on October 1, 1919, when the campaign was begun and again four years later.

"These figures," Mr. Grigsby pointed out, "show an increase in the four years of 135 purebred rams, 260 purebred ewes, 128 purebred boars, 72 purebred beef bulls, 123 purebred beef cows, 6 purebred dairy bulls and 28 purebred dairy cows. These increases range from 90 to 582 per cent and average 150 per cent. . . . While this county can not yet boast of being scrub free, there are now a number of sections containing several square miles each in which there are no scrub or grade bulls used, and these same sections are dotted with purebred

bulls of good quality. . . . Purebred calf, baby beef, purebred pig, fattening pig and standardbred poultry clubs have been conducted in the county since the beginning of the campaign. . . . I hope the above information will be of assistance to the Department in furthering this campaign in other sections of the country."

THE results briefly outlined in the two counties mentioned are typical of what can be expected anywhere. Heredity works just the same in all parts of the country, never takes a day off, shows no partiality for any kind of stock and is equally ready to serve the novice and the experienced breeder.

Thirty-five counties in eight different States now have the distinction of possessing 100 or more farmers using purebred-sires exclusively. The number is gradually increasing as shown by the "honor-roll" list issued quarterly by the Bureau of Animal Industry of the U. S. Department of Agriculture. The report containing the list gives other information also concerning the work. It shows that up to July 1, of this year a total of 14,369 livestock owners are purebred-sire users, and that they own more than

one and-a-half million head of breeding stock.

The thoughtful reader is likely to inquire about this time, "How many who start this work actually keep it up, and how many go back to the use of scrubs and grades?" It is a fair question and deserves a frank answer. Complete information on this subject is difficult to get, but the records show that out of the 14,369 livestock owners who took the forward step as progressive breeders, only one was a backslider. And he was an unwilling one. It happened this way.

All went well for a time after he "signed up." Then he moved to another State, which it will do no good to name because the livestock authorities there know the conditions and are trying to remedy them. The conditions he describes, moreover, apply to only a small portion of the State. "I have lived here now eight months," he writes, "and absolutely no effort is being made to rid the county of its scrub animals. This county seems to be back some 15 or 20 years with regard to its stock. A man may ride along the road for miles and seldom see anything but scrubs. A few ordinary cows may be noted but always sired by a scrub bull.

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USE PUREBRED SIRES AND CREATE A BETTER MARKET FOR YOUR FEED.

GOOD PUREBRED SIRES PRODUCE GROWTHY OFFSPRING.

Razorback Stock takes about 2 Years to Mature.



Purebred Hogs reach market size within 8 months, and good grades grow nearly that fast.



Scrubs Cost Less. - Fattening Rate. - Will-Bred stock is ready for market earlier than Scrubs and brings better Prices.

GROWTHY OFFSPRING MATURE EARLY.

MORE FEED GOES INTO MARKETABLE MEAT AND LESS INTO MERE MAINTENANCE.

Exhibit material pointing out the important influence which good breeding has on economy in feeding.

Alfalfa Creates Potash Hunger

By C. A. Whittle

¶The place of legumes in building soil fertility is well recognized, but to get the full value from them one should heed the warning of this article.

IT is now a well established fact that cotton planted after alfalfa suffers severely from rust. The results of experiment station tests and the universal experience of southern farmers fully confirm this.

Rust on cotton is a manifestation of potash hunger. In the experiments where cotton after alfalfa receives potash in the fertilizer, there is no rust while alongside where no potash is applied there is severe rust damage. The case is clear. It is potash hunger satisfied in one case and potash hunger unsatisfied in the other.

Not only is there need of potash after alfalfa but the need shows up in the form of rust after legumes such as cow peas, clover and soy beans turned under, and is most severe where lime has been applied. The lime doubtless promotes heavier yields of legumes which causes them to draw more heavily on the soils supply of available potash.

This potash deficiency is not confined to soils known to be low in potash content but it manifests itself very strikingly on the red clay soils of the Piedmont region of the south, known to be high in potash content. In fact, it is in the great Piedmont region of the southeast where the

most striking examples of potash hunger have shown up after legumes.

RUST on cotton of the Piedmont region under these conditions has upset a doctrine that has been preached for many years, that is, only organic matter incorporated in the Piedmont soils is necessary to unlock the large natural supply of potash.

The incorporated organic matter has not met expectations. To the contrary, the more the legumes are grown on the clay soils, the more the potash hunger shows up. Not that organic matter locks the native potash up tighter, but probably not enough potash is released to balance the increased supply of nitrogen and phosphoric acid which the soil is receiving.

THE writer recently went into some of the experimental data on this point and has consulted several farmers who have grown cotton after legumes turned under. Wherever potash has not been used, the yields were less than where it had

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The Cooperative Idea

PART THREE

By Charles J. Brand

Consulting Specialist in Marketing, U. S. Department of Agriculture

In our March and April issues, Mr. Brand discussed cooperation from the selling angle. In this article he treats it from the buying side. As this is a subject on which opinions vary considerably, we shall welcome expressions of other points of view from our readers.

SOME one has said that cooperation consists in putting yourself in such a frame of mind that other people can work with you. There is a lot of truth in this aphorism, but there is a lot more to cooperation than it expresses. Cooperation is affirmative and sometimes almost militant; it is not passive. You must not only be fit to work with but you must go out and work to get your neighbor to work with you, and then you must really work with him. Too many people talk about cooperation—too few work at it. It calls for the submergence of self and self-interest for the common good, and this is hard to do.

In speaking of marketing of farm products, I have often said that cooperation is not a religion but a way of doing business. It must produce practical business results if it is to live and thrive. However, that is not all there is to it. Cooperation has a deep social significance that will increase as America becomes more thickly populated and as the struggle for a livelihood becomes keener and keener. Hence, if the business results of cooperation are only equal to the usual form of

private enterprise, there will still be by-products of such great value that it should receive constant encouragement in order that it may exist efficiently side by side with our competitive system, each forcing the other to render society its fullest service.

IN the March number of BETTER CROPS I told most briefly the story of the Rochdale Pioneers, who constitute the successful forerunner of modern consumers' cooperative stores. That was in 1844, or 80 years ago. This represents only the span of a single lifetime for many people. In fact, my own mother, had she been born in Manchester instead of Switzerland, might almost remember the founding of the Rochdale Equitable Pioneers' Society.

The business volume figures for 1923 of the two great English cooperative selling organizations have recently become available. The English Cooperative Wholesale Society did a business totaling \$321,772,980 at par of exchange. The Cooperative Union in its last yearbook states that the consumers'

cooperative societies of Great Britain employ in their shops and their activities more than 128,000 employees.

Germany has long stood next to Great Britain in the development of consumers' cooperation. At the close of 1923 she had 2,594 consumers' organizations.

Norway, with 823 consumers' organizations, reported 436 of them as having a membership of about 110,000 and a business of over 133,000,000 kroner (the par value of the krone is 26.8c.).

Switzerland, with 519 societies in 1922, had over 363,000 members and did a business of nearly \$55,000,000.

Denmark has been making excellent strides in consumers' distributive activities, and in 1922 her cooperative stores sold between forty and fifty million dollars worth of consumers' wares.

IF I were asked to state in a sentence the great purpose of consumers' cooperative enterprises, I would say that it is to reduce the cost of food and of all other necessities of life and to relieve the consumer to the greatest possible extent from the payment of speculative profits.

We have developed producers' cooperation to an extent unheard of in other nations so far as the value of products marketed is concerned. The purpose of producers' cooperation in agriculture is to bring back to the grower the highest possible proportion of the consumers' dollar. The purpose of consumers' cooperation is to secure for the buyer the greatest possible value in goods for every dollar expended.

Of a total of 8,313 cooperative organizations noted by the Bureau of Agricultural Economics of the Department of Agriculture only 479 were cooperative stores. The first cooperative store or "buying club" of which I have found men-

tion was organized by a tailor in the City of Boston in 1844. By 1852 the Working Men's Protective Union, which was the outgrowth of this tailor's experiment, had 165 branches. In 1857 it had 350 branches, and did a business of about \$2,000,000.

In the meantime another similar organization had grown up with over a million dollars worth of business. With the outbreak of the Civil War and the accompanying rise of prices, all of these organizations failed. After the Civil War the Grange, or Patrons of Husbandry, organized a large number of cooperative stores, a few of which are still in successful operation. I am told that there is one in Susanville, Cal., that was established in the early 70's.

The membership of the Farmers' Union, particularly in many localities in the southern states, has organized cooperative stores a considerable number of which are in successful operation.

In the period around 1910 an organization known as the "Right Relationship League" came into existence in Minnesota with headquarters in Minneapolis. It organized and conducted a chain of cooperative stores in the State of Minnesota. For a period of five or six years a number of these stores were distinctly successful; thereafter, by reason of incompetent management, bad bookkeeping, unskillful buying and other factors the League, as such, failed although a number of individual stores are operating successfully to this day.

In 1920 the Cooperative League of America estimated that there were about 3,000 consumers' societies in the United States, with a total membership of over 500,000 and with a combined purchasing power of \$200,000,000 annually. These figures seem excessive in view of the fact that only 479 cooperative stores reported to the Department

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Better Crops'
ART GALLERY
of the month



This is James I. Hambleton who on October 1st, will assume charge of bee and honey investigations for the U. S. Department of Agriculture at the government apiary near Washington.



County Agent J. P. Quinerly, of Bishopville, South Carolina, is asking how this corn found its way into a field of velvet beans.



The lucky father of this wonderful boy is J. W. Willis, State Agent and Assistant Director of Agricultural Extension Work in Mississippi.



On the right is Mr. A. L. Tyler of Lawrence, Washington. He is supplementing his barnyard manure with superphosphate which is one of the missing elements in his particular soil. He verifies his results by check plots, one where only manure is used and one without any treatment.



Mr. Schneiderhan has some pointed and surprising things to say about research work. Read them and tell me what you think.

Unscrambling the OLOGY OMELET

By F. J. Schneiderhan

Virginia Experiment Station

ONCE upon a time a wise Oriental got up and told the world that "Mahomet must go to the mountain, the mountain will not come to Mahomet." We are going to leave it to our gentle readers for decision whether this cryptic remark, centuries old, is not a good theme for the small flock of words which we hope Jeff will release along his farflung editorial line.

I speak from a hide bound conviction in this article. I believe the thought that I wish to convey is thoroughly worth while or else I should not have ventured to release it to the critical readers of BETTER CROPS.

MOST of my readers, over thirty years of age, who have lived in a small town know that the old fashioned town druggist was the oracle who spoke wisely and with utter finality of things medical dental, herbal, obstetrical, etc. He was wise in the ways of teas, morphine and belladonna. It was he who advised the tidy housewives of the artistry of wall paper hanging, painting and how to create an oak grain on a plebeian pine board. He was an institution—a great

homogeneous bump of ready information—and his place in the sun was unchallenged until the specialists arrived, stole his thunder and went farther than ever he dared. The old tooth extraction by the string and door-knob method with its horrors and uncertainties was replaced by the modern tooth carver who extracts without pain to anything except the victim's pocket-book. A real advance over the stone age methods used by the druggist of our story. Today, we no longer see an intelligent man with one lone incisor at the front of his mouth.

The druggist-doctor was succeeded by the modern medico who recommends orange juice for the baby instead of the proverbial bacon rind of yesteryear, in spite of the fact that George Ade claims that many a renowned Congressman received much powerful nurture and contentment from the bacon rind in infancy.

The druggist-artist no longer advises credulous housewives about the color combination that would set their houses off in complete harmony with spireas, barberries, forsythias and lilacs in the foreground. The domestic science and

arts department at the high school with a cleancut, good looking girl, fresh from college, at the head, tells about color combinations and puts the business across with a bang. She speaks of balanced rations, vitamins and fireless cookery. Progress in the right direction? You bet.

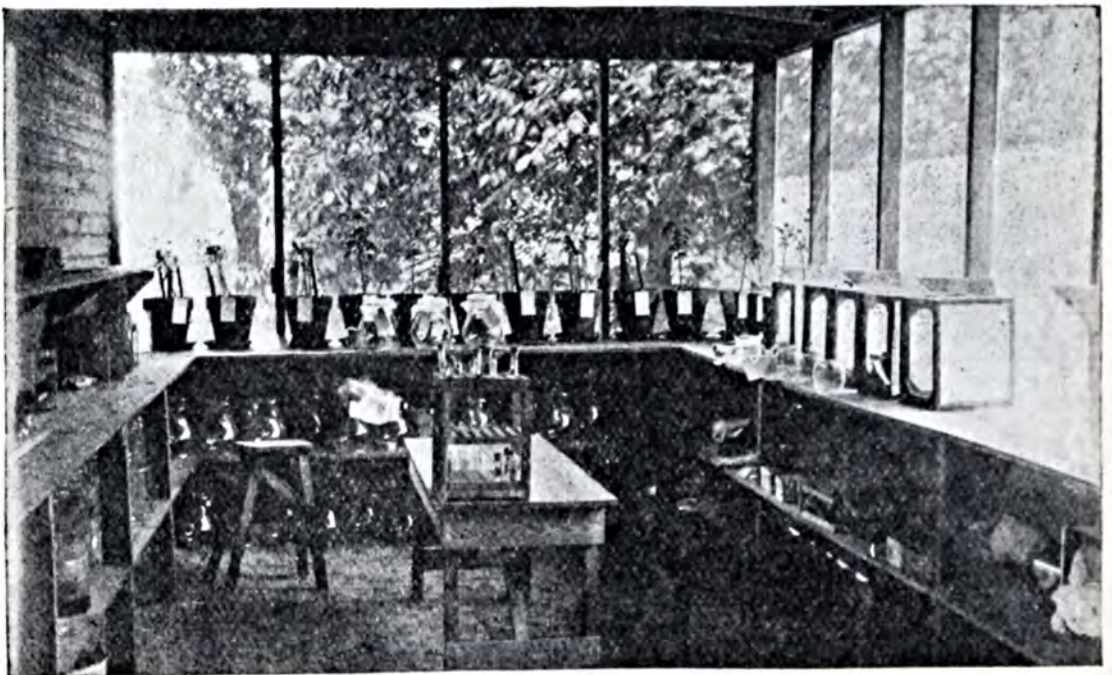
Today, the entire category of wise sayings and home remedies of our village druggist has been looted clean and instead of his omelet of wisdom picked up from almanacs, experience and a bit of formal education we have specialists. His omelet has been thoroughly unscrambled. William Jennings Bryan may doubt the word "evolution" but there you have it applied before your very eyes. It may have taken several million years to create a discontent for fancy aerial stunts on a grapevine on the part of primordial man in the good old anthropoidal days, but it was in the past generation that the complex druggist omelet (or to be "real modern"—the druggist omelet complex) was unscrambled. Specialization did it and will do more. The man who said that this is an

age of specialization uttered something that was a "Spittin' image" of Old Man Truth himself.

NOW what has all of this to do with Mahomet going to the mountain and unscrambling the ology omelet?

Admitting that specialization is the tendency of our times and that it usually results in general and specific advancement. Have the agricultural colleges and experiment stations kept up with this trend of things? We feel that in a large sense they have, but we also feel there is room for criticism in the arrangement and the performance of such "ologies" as Plant Pathology and Entomology in certain institutions of our country. Horticulture—one of the oldest and most popular outlets of agricultural information — was the department that mothered and is still mothering such lines of work as Entomology and Pathology of plants. These sciences are now so clearly defined and specialized that they should be divorced from Horticulture and, in-

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Insectary of the Winchester Field Laboratory, in which the most extensive life history investigation of codling moth in the United States are being made. Both laboratory and field conditions of all pests are considered.

The Power To Ignore

By Dr. Frank Crane

IT is going to be difficult to write this article and not be misunderstood. But then, when you come to think of it, only the thing most liable to misuse is of any use, nothing does much good except what may do much harm, and the only creature capable of going to heaven is the one capable of going to hell. So there you are. ¶The captious and tangential mind will say at once, looking up from this page, "Good Lord! here's a man advocating ignorance! He must belong to the Dark Ages. Does he not understand that this is the day of enlightenment, that knowledge is power, and that the sovereign cure-all for ills bodily, ills social, ills economic, political and religious, is Information? Would he have us shut up our Public Schools, Libraries and Correspondence Courses and lapse into barbarism? Pish! Also Tush and Bah!" ¶Still, nevertheless and notwithstanding, I am here to contend that what ails most of us is that we know too much, see too much, hear too much, smell too much and are altogether "careful and troubled about too many things," whereas but one thing is needful, or at most two or six things. What every reader of this wants, what every human being wants, is to work out a practical every-day way to be happy and to be efficient. We want joy, for without joy life is not worth while. And we want it right along, in the kitchen, in the bed-room and in the parlor, on the street and in the office, at work and at play. Confound your philosophical theories! We want to feel good! ¶And the point here to be made is that one of the great secrets of enjoying, twenty-four hours a day consists in cultivating the Art of Ignoring Things. "What you don't know won't hurt you," it is said, but the truth can be stated not negatively but positively: "Your happiness depends upon your power to Ignore." ¶Why, first of all, your Efficiency is measured by your power to Exclude, not by your power to Include. You develop capacity to do some one thing well by the adroitness with which you avoid doing, trying to do or thinking about, all other things. No man can be a student who can not concentrate on his book and close the door of his mind to all distractions. The cook is of no account unless she can be wholly shut up in cooking; if she is interested in what is going on in the parlor, and anxious to see the procession going by with a band in the street, and to know what her neighbors in the flat across the way are up to, she is very liable to burn the roast. ¶A person's power to do a thing well is just in proportion to his power to bar out all other things. This is the day of specialists.

The Last of the POISONOUS PLANTS

By Albert A. Hansen

Purdue University Agricultural Experiment Station

This is the ninth and concluding article in Prof. Hansen's series on poisonous plants. We shall hear from him again soon on some other interesting topics.

THE "Big Three" of the poisonous plants east of the Mississippi River are probably white snakeroot in woodland pastures, water hemlock in wet places and cocklebur sprouts almost anywhere. No attempt will be made to discuss the important stock-poisoning plants of the west—the best information available along this line can be secured by anyone sufficiently interested to address the United States Department of Agriculture.

In addition to the species that have already been considered in this series of articles, there are a number of miscellaneous poisonous plants that may prove troublesome from time to time. There is ergot, for instance—little black bodies that replace the seeds of bluegrass, rye and other species as a result of a sexual disease of the plants. In addition to causing a distinct disease of grazing animals known as ergotism, too free indulgence on ergots may cause abortion. We have had reports of ergotism on bluegrass pastures in southern Indi-

ana and ergot-abortion has been suspected in northern Indiana. Mowing the weeds in fence-rows is a simple method of destroying an important source of ergot infection.

THEN there is laurel poisoning in highland pastures in the east. The leaves of this plant are poisonous and may cause trouble among sheep, horses and cattle during the early spring when other forage is scarce. Again, there is nightshade, the leaves and unripe berries of which contain a poisonous principle held responsible for the loss of sheep in parts of Indiana. The heavy roots of common pokeroor have poisoned hogs in the Hoosier state and they are said to be fatally poisonous to human beings. Whether or not the tops are poisonous is a mooted question with us and we regard the plant with suspicion, even though the young shoots are relished by some for "greens."

Mention should be made of the eastern or dwarf larkspur, a hand-

some little spring-flowering plant with blue, spurred blossoms, buttercup-like leaves and tuberous roots. It grows in meadows and pastures and has poisoned cattle in Ohio, Virginia and Indiana. Mention of the buttercup-like leaves reminds me that eating too freely of the foliage of this plant may cause trouble among grazing animals since buttercup contain an acrid, blistering juice that may cause fatal convulsions.

A curious form of poisoning, fortunately rare, is caused by St. John's wort, common in eastern meadows and pastures. If you will examine the leaves of this plant you will probably note hundreds of tiny oil sacs near the surface. This oil may cause a skin disease that affects the white skin areas only. The oil evidently causes the white skin of cattle and sheep to become sensitive to the ultra-violet rays in sunlight, but the trouble is apparently overcome by the simple expedient of painting the white skin black.

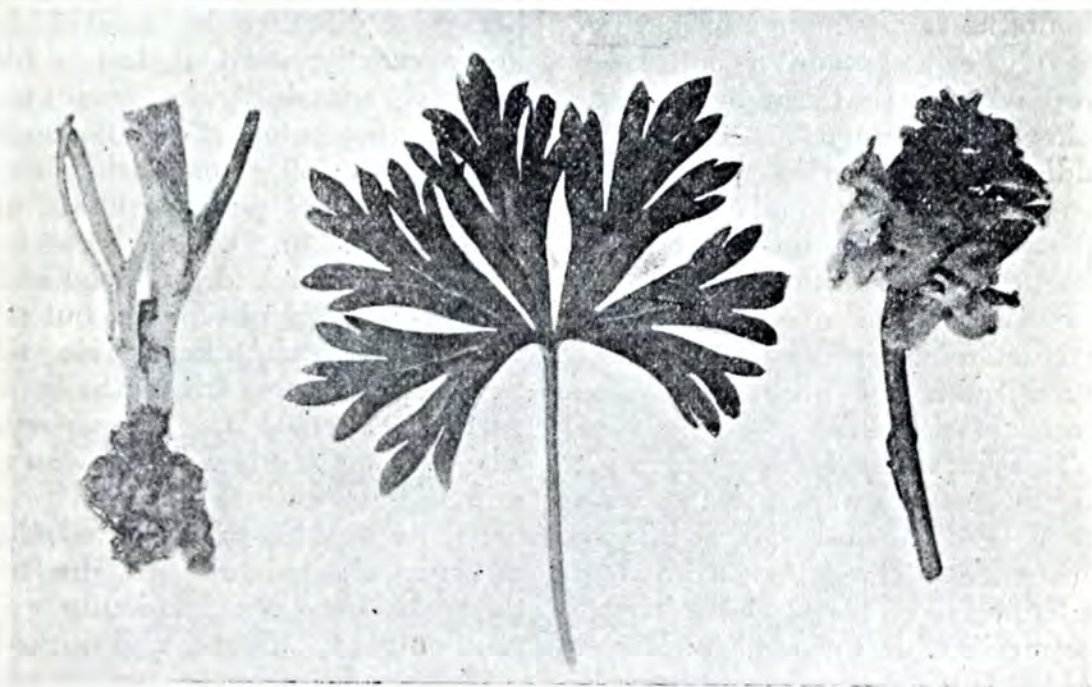
WE have had trouble among cattle in Indiana that was evidently

due to grazing freely on sneezeweed, a yellow-flowered perennial that abounds in wet places. Cattle, horses and sheep seem to develop a depraved appetite for this plant in much the same manner perhaps as the drug habit is contracted by the human animal. Sneezeweed poisoned stock seem to enjoy a state of super-intoxication that may prove fatal, although the Mississippi station reports that a pint of melted lard poured down the victim's throat will usually prove to be an effective remedy.

The strangest form of plant poisoning of which I have ever heard is due to redroot, a common bog plant along the eastern coast sometimes found growing abundantly in cranberry bogs. Curiously, this plant is dangerous to hogs only and the bones of poisoned animals turn pink in color!

The potato family contains a number of poisonous species. Strange as it may seem, if the skin of the common white potato is allowed to turn green in sunlight it may develop poisonous properties and death in horses has been recorded from eating potato tubers

(turn to page 34)



Dwarf larkspur, a relative of the dangerous western larkspur. The dwarf species is poisonous to cattle in Ohio, Virginia and Indiana.

Fertilizing

CUCUMBERS

By H. E. Young

How two growers made better profits by using proper fertilizers.

AVERAGE crop yields usually fail to show any great amount of net profit. If a farmer cannot secure yields above the average for his locality his balance at the end of the year is likely to be on the wrong side of the ledger. Average yields of most farm crops seldom pay more than the expense of production, and they do not always do that. The cost of producing a better-than-the-average crop need be but little higher than the cost of producing the average yield. In other words, it takes about the same amount of product to pay expenses on a cultivated crop, whether that crop be above or below the average. A very little additional expense in the way of proper fertilizing makes a vast difference in net profits at harvest time. Every additional bushel or pound produced over and above production cost, represents just that much more net profit when the crop is marketed.

This principle holds good with cucumbers the same as it does with other crops, and is strikingly illustrated in the experience of two Indiana farmers who have tested the merits of commercial fertilizers.

Mr. L. G. Furness, of Furnessville, Indiana, is farming for profit—not for health. He grows cucumbers because the crop makes him

money and he uses fertilizer because it pays in dollars and cents. Several years ago he arrived at this conclusion after making a simple test with fertilizers. Average yields did not satisfy him—the margin of profit was too small. If he could increase his yields by feeding his soil, it was a business proposition for him to do so. Accordingly, on a portion of his cucumber field he tried 500 pounds per acre of a complete fertilizer analyzing about 2 per cent nitrogen, 7 per cent available phosphoric acid, and 10 per cent potash, and since he wanted to know exactly what materials his fertilizer contained, he made his own mixture as follows:—70 pounds dried blood, 250 pounds acid phosphate, and 100 pounds sulfate of potash. To an equal area he applied 70 pounds dried blood and 250 pounds acid phosphate, but no potash. A check plot, receiving no fertilizer at all, was left on the same part of the field for comparison. The soil was sandy with clay subsoil. The seed bed was well prepared as was his practice and the crop was planted June 3rd, the fertilizer having been previously applied on May 27th and well worked into the soil. The season proved very unfavorable,—an early frost killing the vines after the 18th picking.



Typical vine on unfertilized plot.

Plot	Fertilizer per Acre	Yield per Acre in Bushels	Increase per Acre in Bushels	Increase for Potash Bushels	Value of Increase and Net Profit
1	None	369.5			
2	70 lbs. Dried Blood 250 lbs. Acid Phosphate 100 lbs. Sulfate of Potash	748.5	379.0	250	\$156.25 Potash Cost \$2.70 Net Profit \$153.55
3	70 lbs. Dried Blood 250 lbs. Acid Phosphate	498.5	129.0		

The detailed results from the use of the fertilizers are shown by the accompanying table. Yields were more than doubled by the application of a complete fertilizer. To be exact, the increase per acre on the plot receiving the complete fertilizer (10 per cent potash) was

379 bushels. Where potash was not included in the fertilizer the increase over the unfertilized plot was but 129 bushels. The increase of marketable cucumbers from the complete fertilizer plot was a little over 102 per cent, while that from
(turn to page 40)



Typical vine from plot receiving complete fertilizer.



WHAT WE STAND FOR

Our readers by this time know pretty well the aim and policy of BETTER CROPS. So far, I have not attempted to make a platform for BETTER CROPS. But, as a matter of record and to make it clear all around, I am summarizing here the things we stand for.

These policies are largely the result of our readers' suggestions. As you will see, the greatest emphasis is placed upon the business side of farming. We want to see farming made profitable. That is our first and foremost aim. We present here the policies which we believe will lead to that end.

The aspiration of the farmer, his wife and family, is to get out of the rut and drudgery of life; to have the comforts and some of the luxuries possessed by the dwellers in the cities, in addition to that freer and more wholesome life enjoyed by the man who lives on the land. Like every human being, he wants to raise his standard of living so that he may *live* more fully in every sense of the word. Economic independence is an indispensable means to this end.

If the farmer is to better his life, he must make money, and in order to make money he must put his business on a profit-paying basis. Until agriculture is a profitable enterprise, we are going to direct our energies toward making it one.

In the meantime, we shall not neglect the other aspects of farming. Educational and social topics will have their place in our page and, as always, our readers are welcome to express their views in our pages.

As editor, I shall endeavor to follow the policies outlined here and strive to view the problems of agriculture and of life with a cheerful outlook, an open mind and an understanding heart.

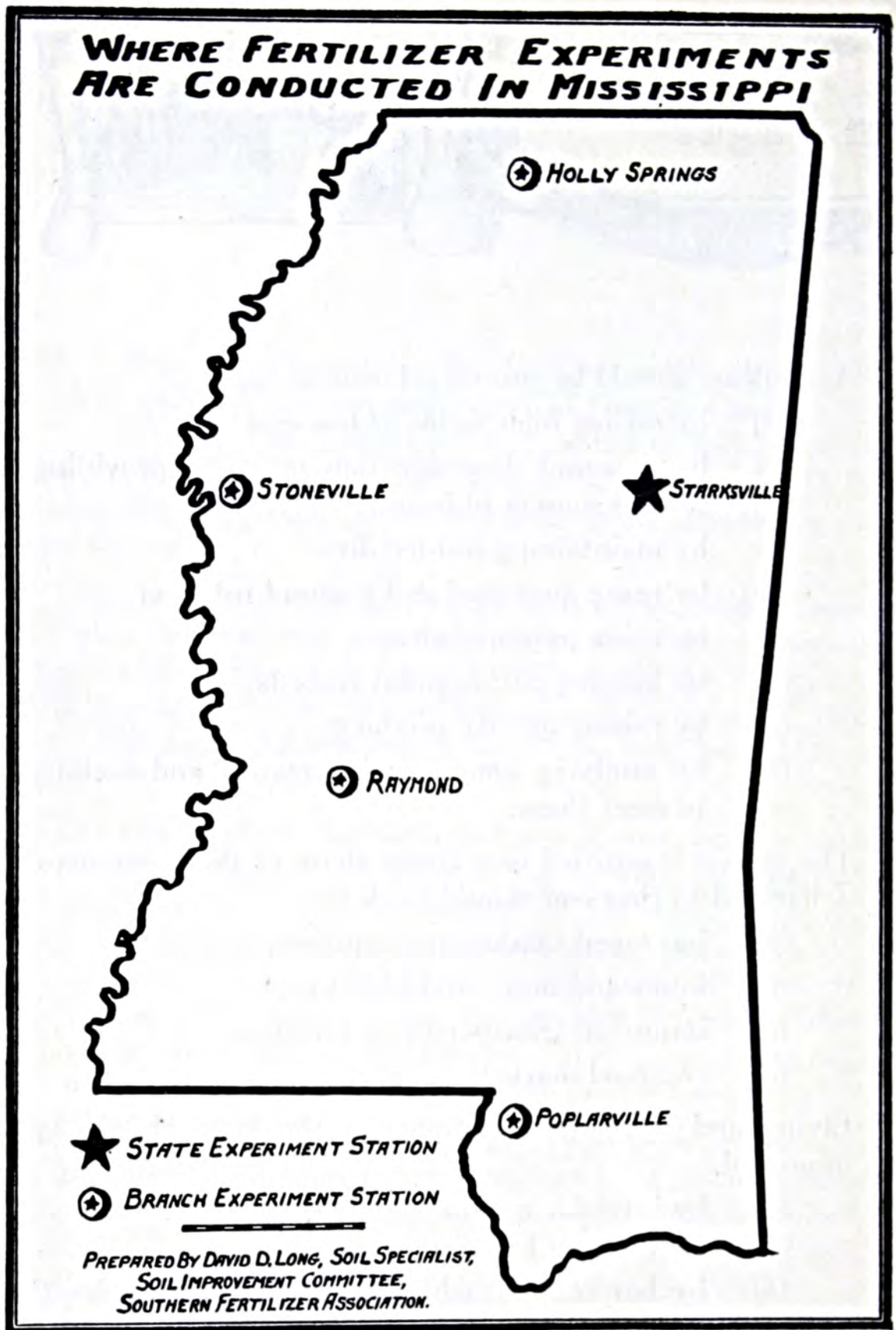


1. Agriculture should be put on a business basis
 - (a) by raising high yields at low cost
 - (b) by a sound diversification of crops providing several sources of income
 - (c) by maintaining soil fertility
 - (d) by using pure seed and a sound rotation
 - (e) by using purebred sires
 - (f) by keeping cost account records
 - (g) by raising quality products
 - (h) by studying consumers' demands and seeking to meet them.

2. The farmer is entitled to a larger share of the consumers' dollar and to that end should work for
 - (a) improved marketing conditions
 - (b) lower and more equitable taxes
 - (c) improved transportation facilities
 - (d) enlarged markets and more consumers.

3. Living and working conditions on the farm should be improved,
 - (a) by introducing more comforts and conveniences in the farm home
 - (b) by better rural education and enlarging boys' and girls' club work
 - (c) by developing local leadership
 - (d) by formulating and working out local programs.

Jeff M. Dermid



MISSISSIPPI

State Experiment Station—Starkville and Branch Experiment Stations—Holly Springs, Stoneville, Raymond* and Poplarville.

Kind and quantity of fertilizers for cotton and corn.
 Rotation and soil fertility tests.
 Source of materials.
 Time of application.

*At Raymond fertilizer experiments for truck crops are conducted.



By the Readers of BETTER CROPS

"BIG YIELDS PER UNIT, BE IT ALFALFA, CORN, BUTTER FAT, or PORK!!!

But do it efficiently; cut down costs.

1. Alfalfa everywhere and clover—the general farmer can't afford to lose his seedings nor can he buy hay.

2. Other crops to suit the type of farming, climate and soil; probably corn for grain and silage, and not too much wheat or oats at present.

3. Most men should have a cash crop. It may be wheat, beans, soy beans, sugar beets, or potatoes.

4. Good stock. Not the best but get rid of scrubs as fast as possible, sheep, cattle, hogs, poultry, and horses, and replace with efficient workers.

5. Work out a good rotation suited to your farm.

6. Conserve manure and use wisely.

7. Use commercial fertilizer according to soil and crop and not too sparingly.

8. Study possibilities of special markets which you may either supply or develop. Truck crops (a few) for a nearby city, selling milk to a summer resort, selling seed corn, oats or wheat.

9. Most farmers work enough but between winter and rainy days some lose at least three half days a week.

10. Get crops in on time. I believe that our average yields could be increased at least 20% if crops were planted on time instead of planting so late.

11. Plant only what you can and will take care of. Several Michigan farmers still have corn in the shock (May 21).

12. Don't dodge the dairy cow.

13. Use pencil and paper liberally at all seasons, mix in a few hours of hard thinking, and study your business.—*D. F. Rainey, Extension Specialist, Michigan Agricultural College.*

As the selling end of any business is the most important, I would suggest teaching marketing as it is now done and offer suggestions that might better conditions to all concerned. According to Government statistics the distribution costs of farm products are too high. The farmers are not realizing even cost at present in the bankrupt condition of agriculture. This can not go on for but a short time, until his credit will be shut off entirely.—*W. R. Sanguin, Manager Farmers Union, Herington, Kansas.*

Lower freight rates. Cooperative marketing. Cooperative buying of farm essentials. More efficient and scientific methods of production.—*H. E. Knowlton, Assoc. Prof. of Hort. W. V. Univ., Morgantown, W. Va.*

Greater production per acre and per man through more generous use of fertilizer, legumes, lime, crop rotation, etc., and through the use of better machinery. This will lower the cost of production per unit and take care of increasing demands and all this with less labor.—*C. P. Blackwell, Agronomist, Clemson College, S. C.*

Promote soil building. Practice safe farming by having more than one cash crop. Grow all feed

needed on the farm. Use purebred livestock and pure seed. Market own products cooperatively.—*W. F. Howell, County Agent, Lancaster, S. C.*

Produce, in so far as possible, upon every farm all the requirements of the family first. So handle the soil, crops and livestock that they will be more productive as the years go on. Plan for a continuing cash income, weekly if possible. Plan for a major cash income determined by local conditions and adaptability of the farmer and his farm to the environment.—*E. D. Smith, Dist. Ext. Agt. Collins, Colo.*

Our country needs just the thing that is facing us—"abandoning of farms and farming enterprises." This is the very course that must of necessity appear. Every cause has its corresponding effect, and it will take this to turn the current back to the farm. There is nothing wrong but a natural condition which must come in order to strengthen.—*T. L. Britton, County Agent, Hyden, Ky.*

What does agriculture need? For one thing agriculture needs a more intensive consideration of its problems. It needs a more open minded reception of proven facts, which are contrary to fixed opinion. To illustrate: if in North Carolina there is more profit in producing two pounds gain on a hog at a profit of two cents per pound than there is in producing one pound gain at three cents per pounds — agriculture should be ready to take advantage of that fact.—*W. W. Shay, Swine Extension, Raleigh, N. C.*

Familiarity with your soil type. Replace the plant food removed. Crop rotation. Cash crop. Livestock. Raise your feed. Farm bureau cooperation, especially with your neighbors. That is what I try to teach.—*Frank A. Stansfield, Teacher Agr., Lawrenceville, Ill.*

Quit arguing politics. If the same amount of diligence is used by the farmer in diversified farming, there is bound to be success.—*J. M. Axley, Wholesale Hay, Kansas City.*

A little less agitation to the effect that a farm is a poor investment—I have just bought a farm.—*R. B. Harvey, Assoc. Prof. College of Agri., University of Minnesota, St. Paul, Minn.*

Fewer loans. Less speculation. More Equitable Freight rates. A central distributing organization for all crops under Federal supervision based on the plan of the Citrus Fruit Exchange. More constructive planning on part of the farmer and less calamity howling and writing on part of those who pose as farm condition authorities in the farm publications and newspapers. In other words, "Less advice and a better price."—*L. E. McDaniels, County Agent, Basin, Wyo.*

Maybe you do not want politics discussed but as the result of a year spent in Europe, I should say that there is no hope for American agriculture until a satisfactory economic adjustment is made with Central Europe and Russia. This does not mean the League of Nations nor the Dawes' Plan, and I do not believe that any such adjustment will be made before 1928, and in the meantime American agriculture must go slow and suffer many inconveniences and disasters.—*B. F. Lutman, Prof. Plant Pathology, U. of Vt., Burlington, Vermont.*

Eliminate the one crop and one line of stock program. Grow better stock, it requires less feed and there is always a market for good stock. Some poultry and a few dairy cows with the major crops or livestock furnishes a steady income for the steady expense. Grow the feeds that the stock needs, and FEED THEM.—*J. L. Shields, County Agriculturist, Walsenburg, Colo.*



Dr. Spillman's New Book

"Farm Management" by W. J. Spillman. Published by Orange Judd Publishing Company, New York. Price \$3.00 postpaid.

Dr. Spillman has developed two ideas in his book on farm management.

The first is that of size of farm and its relation to the business. In "The Problem of Capital in Farming," Chapter I, the relation of capital invested in the business to income possibilities is shown; the conclusion is drawn that a man with a small amount of capital should rent rather than own because income increases with size of farm, and a man with a small amount of capital cannot own a large farm. Since interest rates are the same for loans on small and large farms the premium due to the efficiency of the large farm unit accrues to the operator who is owner of the limited capital.

In Chapters XIV, XV and XVI it is shown why the larger farm unit is ordinarily more efficient than the smaller unit. The investments in buildings, fences, implements, and machinery are less per acre or per producing unit on the larger farms. Also man labor, and work horses, are used more efficiently on the large than on the small farms.

The three following chapters,—XVII, XVIII and XIX—discuss the results of farm surveys of the New England and the corn belt states. The prevailing farming types as indicated by these surveys are reviewed and tables are presented showing the various factors

of the businesses of farms with small and with large incomes.

The second idea relates to the selection of the farm enterprises or sources of income. Around this idea he develops most of his discussion. The factors limiting the size of enterprises presented in Chapter II are, competition with other products, competition with other producing areas, "demand for the product" and the physical factors of soil and climate. The guide to the quantity of a commodity to produce is price. Price fails as an infallible guide, according to Dr. Spillman, because of yearly variations in crop acreages and yields. He states, "It will probably never be possible to adjust production to demand so accurately that there shall be a proper balance between them (commodities produced) under all conditions." It is further pointed out that in so far as such balance is possible it will come from a proper system of cooperative marketing. This remedy—cooperative marketing—depends for its success upon, first, a knowledge of market conditions, and secondly, upon the organization of producers "into compact organizations whose officers can guide them (cooperators) both in production and marketing."

The inference to be drawn from this is that the farmer individually can do little to effectively adjust his production to price changes, but it must come through cooperative effort both in production and in marketing. It is doubtful

whether Dr. Spillman would admit such conclusions. He would certainly concede that there are opportunities for individual farm operators to take advantage of these so-called production cycles for their own personal gain.

The next 220 pages, Chapters III to XIII inclusive, devoted to a discussion of the farming types in the various sections of the United States is the field in which the author is perfectly at home. From a farm organization and management standpoint, however, it is doubtful that the material justifies the space. The individual farmer must determine what and how much of the various enterprises he will produce. This is impossible without a presentation not only of the relation of size or "magnitude of the business" to net income, but also of the quality and the diversity of the farm business to income—both of which have not been sufficiently developed in this book to show their relation to a more efficient farm organization.

Probably the most important single factor in the study of the farm organization is the proper labor utilization. This subject is given special presentation in Chapter XX. The author shows a method of utilizing farm labor more effectively by determining the seasonal requirements of each crop and livestock enterprise; then dovetailing the proper amounts of certain of the enterprises adaptable to the region so as to obtain a larger amount of productive labor with the same man power.

The tenancy discussion, Chapter XXI, is introduced by showing the trend toward tenant farming. Types of tenure and various forms of share leases are mentioned and figures are presented showing typical share distribution of costs and returns.

In the discussion of the law of diminishing returns the terms "diminishing increment" and "diminishing net returns" are de-

finied. After presenting the results of experiments indicating the difference between the two concepts a mathematical formula for each is developed. The term "diminishing increment" refers to the decreasing rate of increase either in crop yields or livestock weights as a result of continued application of equal quantities of some cause factor as fertilizer, irrigating water or feed. The term "diminishing net returns" expresses the same law in monetary terms. It includes all cost items, and for this reason the cause factor may be one of several, such as land, labor, or capital invested.

Products must be sold before profits can be determined, but the subject of marketing is of such scope as to require separate treatment. For this reason it is doubtful if the discussion of marketing "services" contained in the last chapter adds anything to the text on "farm management."

The book can be used to advantage as a text on types of farming. As a book on farm Organization and Management it lacks both subject matter material, and definite correlation showing how the individual goes about it to so organize his farm as to increase his net returns.

P. E. McNALL,
Wisconsin Experiment Station.



Noteworthy Bulletins

Home Canning by W. V. Cruess and A. W. Christie, University of California Agricultural Experiment Station. Circular 276.

Marketing Cabbage by A. E. Cance and George B. Fiske, U. S. Department of Agriculture. Department Bulletin No. 1242.

Blackberry Growing by G. M. Darrow, U. S. Department of Agriculture. Farmers' Bulletin No. 1399.

The Cooperative Idea

(From page 14)

and that 415 of these did a business of about \$30,000,000.

It is to be said that there has been distinct progress since 1920, and that each year sees new cooperative stores come into existence and old ones strengthening their position and increasing their efficiency.

In comparison, Great Britain, with a population of about 45,000,000 compared to our 112,000,000, showed a registration of 1,428 distributive trading societies with over 4,470,000 members.

The fundamental difference between the two nations largely explains this relative under-development of cooperative stores in the United States. Great Britain is a great beehive of industry, with a large body of population dependent upon foreign sources for its supplies of food, clothing, and numerous other essentials.

In this atmosphere and under such economic surroundings the consumer's greatest avenue of progress, in so far as purchase of goods is concerned, lies in saving on the purchase price. We have been great exporters. Now we are approaching the time when the balance between agriculture and industry will naturally result in a great acceleration in the development of consumers' cooperation.

Miners and certain industrial workers and farmers have thus far taken the greatest interest in cooperative stores. Some tie-point or community of interest other than the mere saving of money seems to be necessary in order to bring consumers' groups closely enough together to encourage successful enterprises.

The development of privately owned chain stores located in country towns affords a keen and difficult competition for cooperative stores. Such chains have a buying power that creates difficult competi-

tion. They usually also have experienced and deeply interested management because of a heavy financial investment. Already there is developing a movement toward the creation of cooperative chain stores.

In Kentucky, for instance, the Farmers' Union has fostered the development of a chain of eight stores in the region around Maysville, with a central warehouse located at Maysville. Recently it was announced that a similar chain would be developed in the counties around Louisville, with the central warehouse at Louisville. These chains are operated on the plan of having the district warehouse do the buying for the individual stores, with a further plan that the two warehouses will join and make all of the purchases in common.

THERE again it is the old story of close buying, efficient management, low cost per dollar of sales for doing business, loyalty of membership represented by doing as nearly as possible to 100 per cent of its buying at its own store, and the attraction of a large volume of non-membership business, that make success or failure in the cooperative store.

There are many other factors, particularly the character of the local competition, whether it can afford, by methods difficult for a cooperative to meet, to carry on under-cost or close-margin selling, whether there is an excessive number of stores competing in similar or identical lines, and especially whether the enterprise is conducted in a community where educational work along cooperative lines has been carried to the point where a genuine cooperative spirit has been generally developed that must be considered.

It is customary to make the conditions of membership so lenient that there is little motive for remaining a non-member. The most successful stores in my observation sell practically at the going prices in the ordinary privately owned and conducted stores, distributing their profits at the close of the year through patronage dividends based on the amount of business done by the customer.

The English cooperative stores usually pay their non-member patrons only one-half the rate of dividend that the members receive. This in itself is an important argument for joining the cooperative societies.

In the future, assuming a gradual increase in the number of cooperative stores in America and good management, their success will depend upon federation for securing low prices, greater buying power through quantity buying, and suitable methods of accounting control to promote the greatest possible efficiency.



Renovating the Strawberry Bed

(From page 9)

more vigorous plants are left and this is the greatest secret in successful renovation.

The plow should be set so that the strip is left a little wider at the bottom than at the top, in order to save the roots of the plants to be left. The soil should be worked down and pulled back against the portion of the row to be saved as quickly as possible. This is very important as the narrow strip of soil dries out quickly and once the roots are dry the plants are likely to be injured.

Some growers go one step farther. After the plants so left have begun to grow well they hoe out some of the plants leaving them about two feet apart. This gives another opportunity to remove some of the

older or weaker plants and gives the new plants all the more chance to develop properly.

Runners from the mother plants left are used to build the new row as in the case of an original planting.

In the home garden this work may be accomplished equally successfully with a hoe and rake, leaving the mother plants about two feet apart in the row. By pulverizing the soil between the plants thoroughly, the new plants have good growing conditions.

To start the old plants into vegetative growth and to promote the formation of runners, some form of fertilization is advisable as soon as the bed is renovated. An application of 10 to 15 tons of well rotted manure, cultivated into the patch is a good practice. In most cases, however, commercial fertilizers must be depended upon. The proportions and amounts necessary will of course, vary with the soil type and the degree of fertility. It should be borne in mind that strawberries feed heavily on phosphorus and potassium. On soils of average fertility, comparatively little nitrogen is necessary. If nitrogen is present in too large quantities an excessive vegetative growth is produced with a consequent reduction in fruitfulness.



THE INCORPORATED STATES

"We allus feel like we was losin' money when we hear a p'litical orator say, 'Our government is a gigantic business enterprise, an' you an' me and all o' us are partners an' stockholders in it.'"

—Abe Martin, in *Indianapolis News*.



Among the special treats waiting for you in the November issue of BETTER CROPS we will just mention an article by A. B. Genung with the hopeful title, "The Turn of the Road," and one by C. E. Gapen on "Ton Littlers." There'll be lots of surprises, too.



By Ted Butlar

BETTER CROPS' Washington Correspondent

Announcement comes from national headquarters in Chicago that E. B. Reid has been named temporary Washington representative of the American Farm Bureau Federation to take the place of Gray Silver who has resigned to devote all of his time to the presidency of the cooperative concern which will take over the five large grain companies and terminal elevators. "Ed," as he is familiarly known to the agricultural fraternity in Washington, is well fitted for his new job. For several years he has been assistant to Silver and during the greater part of his life has been intimately tied up with agricultural interests, both as a representative of farmer's organizations and in the field of farm journalism.

County agents and others will be happy to know that A. B. Genung, compiler of the blue sheet, "The Agricultural Situation" and a frequent contributor to BETTER CROPS, may not be lost entirely to the U. S. D. A. "A. B." tendered his resignation effective October 1, to take up advanced studies and economic work at Cornell University but government officials, recognizing his value, have about persuaded him to continue putting out the "sheet" which has become so popular in the field for its concise and complete manner of giving the "low down" on the agricultural situation from month to month. In the last issue of his publication Genung reported that the rise in grain prices, aided by a fall in prices of non-agricultural com-

modities, brought the general index of purchasing power of farm products up from 79 in June to 83 in July, the highest point in 47 months. Complete evidence that the condition of the farmer is definitely on the upgrade, is this.

That farmers, particularly fruit and vegetable growers, are showing keen interest in Federal inspection of farm products is shown in the statement that during the fiscal year closing June 30th, there was an increase of 50 per cent over the preceding year. Federal food products inspectors handled 127,354 cars of produce at shipping points and 29,283 cars at receiving points, compared with 72,466 cars at shipping points and 28,169 cars at receiving points during the year before. Shipping point inspection service, according to Secretary of Agriculture Wallace who has given personal attention to its development, has been revolutionary in its results. "These," says Secretary Wallace, "include a greater realization by growers of the true meaning of standardization; improvement in the quality of offerings by growers' associations; creation of a new and acceptable basis for pooling products; facilities whereby purchasers can order goods safely without first seeing them; and improved methods of handling." By means of the Federal inspection service a grower can have his products inspected before they are reshipped. The certificates issued are prima facie evidence in the courts of the United States as to the grade and quality of

products. It removes "sight and unseen" buying and pays a farmer for actual quality in his products.

Southern states are showing the keenest interest in cooperative marketing of farm products, recent reports disclose. The large volume of business handled by the recently organized tobacco, cotton, and rice associations is given as the reason for the condition. Cooperative organizations in the seven west north central states handled 45 per cent of the total in 1915, whereas they now handle only 30 percent. The three Pacific coast states, where the cooperative effort has been intense, handled 24 per cent of the total in 1915 but dropped to 19 per cent in 1923. These decreases are absorbed by southern states where the cooperative start was slow but has been greatly stimulated in recent years.

Some idea of the wide scope of extension activities can be seen in compilations recently made by Extension Service, U. S. D. A., to the effect that farmers and extension workers held over 245,000 demonstration meetings during the fiscal year of 1923. These demonstrations covered everything from corn culture to child feeding and the attendance, according to best estimates, was more than 5,298,000.

Most of the talk about the feeding value of sawdust is buncombe, says the Bureau of Dairying, U. S. D. A. Hydrolized sawdust is unpalatable, contains but little nutriment, and can be fed only in small quantities. The maximum value that apparently can be given to sawdust as feed for livestock is 14.5 per cent of that of corn meal. New industries are continually being launched and with every one of them there are certain by-products produced which must be used in some way. The Bureau of Dairying has kept in advance of these new industries by making feeding tests of the numerous by-products. Although sawdust has been thrown into the discard many by-products

have been found of value. Fish meal, which is made from the waste in the canning of sardines, has been found to be worth pound for pound 20 to 25 per cent more than prime cotton-seed meal, although not so palatable. Peanut feed and potato silage have been experimented with and possess certain qualifications as feed.



The Last of the Poisonous Plants

(From page 21)

that have greened after being exposed to direct sunlight. It seems the part of wisdom to keep hungry grazing animals away from potato foliage, green potato parings, green tubers and old sprouted potatoes.

Among plants recently discovered to be poisonous is the star-of-Bethlehem or star flower, a common weed in Maryland, Virginia and in the Ohio River Valley. The bulbs are poisonous to sheep and cattle. In Clark County, Indiana, a number of cows became seriously ill after eating star-flower bulbs that had been uprooted by hogs.

The afore-mentioned poisonous plants are all of comparatively minor importance, but one never knows when knowledge concerning them may be of practical value. If anything new develops from our field work and feeding experiments here at Purdue that may be of value to readers of BETTER CROPS you may expect to hear from us again.



Possession

A young five-year-old friend of ours who had been permitted to play with a neighbor's dog recently acquired a canine animal of her own. "Now," she announced with satisfaction, "I have a dog of my own—and not just a step-dog!"—*New York Herald-Tribune.*

Genuine German Potash Salts

can be secured from any of the following distributors:

ALABAMA

Birmingham—
Grasselli Chemical Co.
F. S. Royster Guano Co.
Virginia-Carolina Chemical Co.
Montgomery—
American Agricultural Chem. Co.
Armour Fertilizer Works
Capital Fertilizer Co.
International Agricultural Corp.
F. S. Royster Guano Co.
Virginia-Carolina Chemical Co.
Spartanburg—
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ARKANSAS

Little Rock—
Arkansas Fertilizer Co.

CALIFORNIA

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Sun Fertilizer Co.
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Los Angeles—
Agricultural Chemical Works
American Agricultural Chem. Co.
Hauser Packing Co.
Mutual Orange Distributors
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Gulf Fertilizer Co.
Clearwater—
Gulf Fertilizer Co.
Daytona—
Cornelius Christiancy Co.
Eustis—
Gulf Fertilizer Co.
Fernandina—
Nitrate Agencies Co.
Frostproof—
Gulf Fertilizer Co.
Jacksonville—
American Agricultural Chem. Co.
Armour Fertilizer Works
International Agricultural Corp.
Nitrate Agencies Co.

E. O. Painter Fertilizer Co.
Virginia-Carolina Chemical Co.
Wilson Toomer Fertilizer Co.
Lake Hamilton—
Gulf Fertilizer Co.
Orlando—
Gulf Fertilizer Co.
Sanford—
Chase & Company
Tampa—
Gulf Fertilizer Co.
Terra Ceia—
Gulf Fertilizer Co.
Winter Haven—
Gulf Fertilizer Co.

GEORGIA

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F. S. Royster Guano Co.
Pelham—
Pelham Phosphate Co.
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Mutual Fertilizer Co.
Read Phosphate Co.
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Savannah Guano Co.
Southern Fertilizer Co.
Swift & Company
Virginia-Carolina Chemical Co.
Toccoa—
Swift & Company
Valdosta—
Georgia Fertilizer & Oil Co.
Vidalia—
Vidalia Chemical Co.

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Darling & Company
Swift & Company

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St. Clair County—
Swift & Company

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Swift & Company
Indianapolis—
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Read Phosphate Co.

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Louisville—
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Federal Chemical Co.

LOUISIANA

New Orleans—
Armour Fertilizer Works
Nitrate Agencies Co.
Swift & Company
Shreveport—
Swift & Company
Virginia-Carolina Chemical Co.

MAINE

Houlton—
International Agricultural Corp.
Presque Isle—
Armour Fertilizer Works

MARYLAND

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Armour Fertilizer Works
Baugh & Sons Co.
Griffith & Boyd Co.
Miller Fertilizer Co.
Nitrate Agencies Co.
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F. S. Royster Guano Co.
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Virginia-Carolina Chemical Co.
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Meridian—
Meridian Fertilizer Factory
Tupelo—
Tupelo Fertilizer Factory

MISSOURI

St. Louis—
American Agricultural Chem. Co.
Armour Fertilizer Works
Swift & Company

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Bound Brook—
Nitrate Agencies Co.

NEW YORK

Buffalo—
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International Agricultural Corp.
New York—
American Agricultural Chem. Co.
Armour Fert. Wks. (East. Hdqrs.)
International Agricultural Corp.
Mutual Fertilizer Co.
National Aniline & Chemical Co.
Nitrate Agencies Co.
Virginia-Carolina Chemical Co.
Zaldo & Martines Exchange Co.

NORTH CAROLINA

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International Agricultural Corp.
F. S. Royster Guano Co.
Swift & Company
Henderson—
American Agricultural Chem. Co.
Lillington—
Farmers Cotton Oil Co.
Harnett Oil & Fertilizer Co.
New Bern—
G. Ober & Sons Co.
Tarboro—
F. S. Royster Guano Co.
Washington—
Bragaw Fertilizer Co.
Pamlico Chemical Co.
Wilmington—
Acme Manufacturing Co.
Nitrate Agencies Co.
Swift & Company
Virginia-Carolina Chemical Co.
Wilson—
Farmers Cotton Oil Co.
Winston-Salem—
Virginia-Carolina Chemical Co.

OHIO

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Armour Fertilizer Works
International Agricultural Corp.
Virginia-Carolina Chemical Co.
Cleveland—
Swift & Company
Columbus—
Smith Agricultural Chemical Co.
Dayton—
Wuichet Fertilizer Co.
Sandusky—
Armour Fertilizer Works
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Portland—
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Pittsburgh Provision & Packing
Co.
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Anderson Phosphate & Oil Co.
Charleston—
American Agricultural Chem. Co.
Etiwan Fertilizer Co.
Maybank Fertilizer Co.
Planters Fert. & Phosphate Co.
Read Phosphate Co.
Virginia-Carolina Chemical Co.
Chester—
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Columbia—
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Darlington Guano Co.
F. S. Royster Guano Co.
Swift & Company
Virginia-Carolina Chemical Co.
Greenwood—
T. M. Miller Co.
North—
J. E. Culler Co.
Spartanburg—
American Agricultural Chem. Co.
F. S. Royster Guano Co.

TENNESSEE

Memphis—
Virginia-Carolina Chemical Co.
Nashville—
Armour Fertilizer Works
Read Phosphat Co.
Virginia-Carolina Chemical Co.

VIRGINIA

Alexandria—
American Agricultural Chem. Co.
Danville—
G. Ober & Sons Co.
Lynchburg—
Pocahontas Guano Co.
Norfolk—
American Agricultural Chem. Co.
Baugh & Sons Co.
Farmers Guano Co.
International Agricultural Corp.
Chas. W. Priddy & Co., Inc.
Robertson Chemical Co.
F. S. Royster Guano Co.
Swift & Company
Virginia-Carolina Chemical Co.
Portsmouth—
G. Ober & Sons Co.

Richmond—
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Hamilton—
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Ingersoll—
National Fertilizers, Ltd.
Toronto—
Swift & Company
Wilson, Patterson & Gifford
West Toronto—
Gunns, Ltd.
National Fertilizers, Ltd.
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The Potash Importing Corporation of America

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San Francisco

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Citizens' National Bank Bldg.
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A Special Offer —free to you

To assist county agents, agricultural teachers, extension workers and other industrial agencies, we are glad to send a copy of any of the following booklets that might be helpful in your work:

Principles of Profitable Farming
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 Sugar Beet Culture
 Fertilizing Peaches
 Fertilizing Strawberries
 Muck Lands
 Better Tobacco
 Better Cotton

These booklets were written by experts and contain valuable information on the proper and profitable use of fertilizers. Upon receipt of your request, we will mail you a copy of each booklet requested. If, after looking them over, you want more for distribution among the people you are working with, we shall endeavor to send them as long as our supply lasts.

We have still a few sets of potash specimens also for free, educational distribution. A set consists of 1 bottle 6¼ in. high containing various forms of crude potash, and 5 bottles each 4¾ in. high containing a refined potash salt. A set of these will be sent free post-paid upon request.

Address Dept. B. C.



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*Importers of
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 564 Market St., Citizen's Nat'l Bank Bldg.
 San Francisco Baltimore

To the Highest Bidder

(From page 7)

companies serve 47 per cent of the urban population in cities of 8,000 inhabitants and over; 58 per cent in cities of 25,000 and over, and 80 per cent in cities of 100,000 and over.

Approximately 80 per cent of auction commodities come from the large organized fruit growers. These organizations have found the auction sales method profitable, regardless of cost, as it makes possible the concentration and rapid sale of fruit at a single point. More than 90 per cent of the buying trade from street peddler to wholesaler assemble at the sales and there is keen competition for the products. The fruit is sold the same day it arrives and the account is settled immediately. The auction company guarantees payment by the purchaser.

IT has been found that only what is known as an "auction commodity" can be successfully sold at auction. Such a commodity is defined as a standardized product known by label and brand, which arrives regularly on the market in large supply, and of which from 15 to 25 per cent of the supply entering the terminal market is sold at auction. Any specialized commodity grown in a limited territory and for which there is nation-wide demand supplied entirely by sale at auction is also regarded as an "auction commodity." Experience has demonstrated that the auction system cannot be successfully utilized by the small, individual grower whose product is ungraded, not standardized, and unknown.

Individual shippers or groups of growers who have an auction commodity either maintain at the auction center a branch office or employ what is known as an "auction receiver." These repre-

sentatives arrange matters of sale by auction, attend the sales, and complete financial transactions. The cost of maintaining a branch office for this purpose runs around 1 per cent of the selling price of the commodity; an additional 2 per cent is charged by the auction company, making the total cost 3 per cent. Terminal charges ranging from one-third of 1 per cent to 1½ per cent are paid by the buyer. An "auction receiver" employed on a commission basis charges 5 per cent of the selling price, out of which he pays the auction company charges and other incidental expenses.

The concensus of opinion is that on a rising market the auction room is a profitable sales medium, but that on a declining market the commission sales method brings higher returns, depending on the sales ability of the shipper's representative. The main consideration regardless of price return, influencing large organizations to use the auction is that it is a quick sales medium. These organizations must dispose of their products rapidly to prevent market gluts.

The usual method followed by the auction in handling products is first to inform the trade through paid advertising of the commodities offered. Printed catalogs are prepared, and each prospective bidder has an opportunity to inspect sample products in a special display room. At a designated hour the buyers assemble at the auction room and the products are sold as listed in the catalog to the highest bidder. Delivery of the products is made immediately following the sale, and accounts rendered, buyers being allowed 10 to 15 days credit on domestic commodities. At the conclusion of the sale a second catalog is prepared, indicating the prices realized for the various lots

of goods, thus providing the sales representative with an official statement of prices.

The auction companies attribute increased sales in recent years largely to the development of cooperative marketing in the United States. These organizations prefer the systematic marketing of farm products to the more or less

haphazard methods of selling small lots direct to commission merchants, and as cooperative organizations become more numerous it is predicted that the volume of auction sales will steadily increase. The auction companies are also making a careful study of the entire marketing problem to discover new products that may be successfully sold at auction.



Fertilizing Cucumbers

(From page 23)

the incomplete fertilizer plot was less than 35 per cent. Potash increased the yield 250 bushels per acre which at factory prices, represented a gain of \$156.25 per acre on the crop marketed. The cost of the potash was \$2.70 including freight, leaving Mr. Furness a net profit from its use of \$153.55—certainly a good return from so small an investment.

Results very similar to the above were obtained by Rogers & Kilburn, of Jasonville, Indiana, who are growing profitable crops of cucumbers on a sandy loam soil. The secret of their excellent success lies

and table tell the story about as well as it can be told. The ground on which this experiment was made was divided into tenth-acre plots. Dried blood, acid phosphate and sulfate of potash were used on one plot, while on another the potash was left out of the mixture, the two other materials remaining the same. One plot receiving no fertilizer application was kept as a check on the results of those fertilized. Unfavorable weather conditions cut short the yield of all plots. The total pickings on an acre basis up to and including August 16th are given in the following table.

Plot	Fertilizer per Acre	Yield per Acre in Bushels	Increase per Acre in Bushels	Crop Value \$1.00 per Bushel	Profits from Fertilizer	Gain from Potash
1	None	1		\$1.00		
2	65 lbs. Dried Blood 250 lbs. Acid Phosphate 100 lbs. Sulfate of Potash	54.2	53.2	\$54.20	\$53.20	\$10.80
3	65 lbs. Dried Blood 250 lbs. Acid Phosphate	43.4	42.4	\$43.40	\$42.40	

in the judicious use of a complete fertilizer with a high per cent of potash. Without fertilization the crop was practically a failure. Results of their first test of fertilizers for cucumbers clearly demonstrate the practicability of the use of a good fertilizing mixture.

The accompanying photographs

The vines on the fertilized plots came into bearing two weeks earlier than the vines on the unfertilized plot making a striking difference in the market value of the crop. The gain from the use of the fertilizers was \$53.20 and \$42.40 per acre, respectively, the gain from the use of potash was \$10.80 per acre.

Unscrambling the Ology Omelet

(From page 18)

stead of being a phase of the latter (an arrangement found in some of the southern institutions), they should be separated, clothed with responsibility and given the right of self determination. They should cooperate with horticulture but not be entangled administratively with it. That is only one phase of the unscrambling of the ologies which we are pleased to note has progressed very far. We hope it will be complete some day. We shall probably be accused of heresy by some of the scientific fraternity for what we shall now remark. Ten years of experience in various corners of the United States lead us to believe that the farmers and orchardists have been generously fed up on a ration of generalizations which no longer fills the bill. These have come naturally from the colleges and the experiment stations, both state and federal. Admitting that the farmer has a far better source of information today than he has ever had before, he nevertheless has need today of more definite, accurate and applicable information, particularly in the highly specialized lines of agriculture such as fruit raising and truck gardening.

A cross section of the county agents of the country will show that they are not specialists but men of general agricultural training. They depend upon headquarters for expert advice. They are not supposed to do research work in the field. Theirs is typically an extension function. We are behind the county agent with both barrels because he has a tough assignment, and we realize that Solomon with all his wisdom could not possibly answer half the questions fired at a county agent in the course of one week. But the county agents and field demonstrators need more direct backing

by the technical men who are supposed to be the specialists. There has been too much scientific research in plant pathology and entomology at headquarters followed up by promiscuous recommendations to sections where the facts do not in any way apply. Speaking of the apple raising game I say with utter conviction that the orchardists of the country need advice based on local research and not the kind cooked up from a distant section where conditions are different. We believe thoroughly in the institution known as the substation, where experimentation in entomology, pathology and fertilizing is carried on.

Recent investigations of the behavior of certain insect and fungus pests of apples indicate that within individual states the differences in topography, elevation and latitude cause differences in the time of emergence and the rate of development of these pests. For instance, it was found that at Crozet, Va., the emergence of the codling moth is approximately four or five days earlier than at Winchester which is only 142 miles northwest of Crozet. It is apparent that identical dates cannot be set for the application of the codling moth spray for both of these places. A variation of a few days too early or too late destroys the effectiveness of most every spray in the calendar. Due to the work of substations in Virginia, it was found necessary to subdivide the State into three distinct districts and make distinct spray recommendations for each district. The same situation undoubtedly exists in many other states.

The experiences of the writer at one of the largest apple producing and distributing points in the world have convinced him of the utter need of advice to the growers based



Learn the truth about Fertilizer

Commercial fertilizer is not magic. It is no substitute for work, or for farming brains. It will not make a successful farmer out of a shiftless, ignorant failure. Fertilizer varies in quality like corn or tobacco or cotton, and some brands are worth more than others. Good fertilizers, like Royster's reliable old mixtures, are a godsend to good farmers who learn how to best use them to make money

Nearly forty years experience enters into the making of the Royster mixtures, and hundreds of thousands of the country's best farmers pin their faith to this famous old brand.

For advice about the use of fertilizer, write to Farm Service Department.

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Field Tested Fertilizers

on facts observed and research conducted on the spot where such advice is needed. In a single county like Frederick County, Virginia, where the normal apple production is over a million barrels, it is apparent that one erroneous spray recommendation might entail the loss of thousands of dollars. We need a larger number of technically trained men to do work right out where things happen, where the important pests occur and where the growers can have the advantage of immediate service instead of writing in to the state experiment station. There has been too much swivel chair research in our experiment stations. A demobilization of part of the staffs of these stations to points where things happen in the bug and fungus realm seems imperative. The pathologist must go to Winchester or Hood River or Yakima, because Winchester, Hood River and Yakima will not come to the pathologist or any other species of "ologist."

Furthermore, scientific facts need not be incubated for several years and then presented in such technical language that the angels of heaven must have sardonic grins. Some of our so-called scientific brethren need to shake the mothballs out of their style and speak understandable English. An investigator should know a fact when he sees it and proves it. When our microscope tells us that the ascospores of apple scab are flying in the month of May and threaten to cause a severe epidemic of the worst apple disease in the land, we do sit down to review the literature on the subject or incubate the big idea, but on the other hand, we put into operation the well greased machinery of broadcasting the information to a thousand or more apple growers and urge them to apply summer strength of lime sulfur immediately if not sooner. Headquarters is informed by wire and soon the whole state knows what has transpired. That is the way one "ology," unscrambled from

the great mother bosom of horticulture and subdivided into several field laboratories and substations, reacts to the situation where immediate help is imperative.

This, Oh Jeff, is the burden of our effort. We are opposed to combining different "ologies" in some related department at our agricultural colleges and experiment stations. The "ologies" must be unscrambled, given self determination with responsibility and left to ride. Headquarters research on sharply localized problems must stop. Scientific research in agriculture must undergo more localization and the results applied within limits that can easily be determined. Long range scientific generalizations couched in terribly technical language must be substituted with closeup advice with a kick in it and in the language of the daily newspaper. The scientist, in specific instances, must leave his swivel chair at headquarters and go far afield where the farmers and orchardists need the benefit of his technical training. This long range research with insect pests and fungus diseases has resulted in too much bull and not enough bullseyes, Referring back to our initial theme; "Mahomet must go to the mountain; the mountain will not come to Mahomet."



Milking Time, A. D. 1953

"Everything ready for milking?"

"I think so, boss."

"Cows been scalded?"

"Thoroughly."

"Have they been fumigated with formaldehyde?"

"Utterly."

"Have the milkers been boiled?"

"Of course."

"Have the milk pails been scrubbed with bichloride of mercury?"

"Every pail."

"Then set the barn on fire, put on rubber gloves, and do the milking."

—*Butterfat Magazine for Aug., 1924.*

Good News

for every man
who shaves himself

Colgate's Rapid-Shave Cream
puts an end to shaving discomforts.

It softens the beard *at the base*
—where the razor's work is done,
and it leaves the face soothed and
velvety.

Be sure to get a tube today,
and notice the *big difference* it
makes for the better.



Large Tube
35c

Cut out and mail this coupon for a FREE trial tube containing cream
enough for 12 easier shaves than you have ever had.

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Department 356
199 Fulton Street, New York.

Please send me the free trial tube of Colgate's Rapid-Shave Cream
for easier shaving.

Name.....

Address.....

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Livestock Breeding by Choice or Chance

(From page 11)

I consider these conditions deplorable. I am not financially able to own my own sire at the present time, but I would like to be able to patronize purebred bulls. Yours for better stock."

While the case just mentioned is the only one known, other evidence shows that there is little likelihood of the number being large. On the contrary, the average purebred-sire user, reports show, influences about 13 other persons to improve their stock. Such a result more than outweighs any possible backsliding. The indirect effect of this kind of work also is probably greater than results which can be put down on paper. Yet, in conclusion, it may be of interest to know what livestock owners themselves think of the purebred-sire idea and how they conduct their breeding operations when they begin to look into the matter seriously.

They say that in twelve different ways purebreds surpass common stock.

The average superiority based on utility is 40.4 per cent.

They acquire five times as many purebred females as they have purebred sires.

About four-fifths of purebred-sire users sell surplus purebreds as breeding stock.

They report 99.1 per cent satisfaction with the offspring of purebred sires.

About 98 per cent of purebred sires obtained prove satisfactory.

The average increase in financial returns from the use of purebred sires is 48 per cent.

Inferior breeding is the predominant cause of runty livestock.

Heredity is an important element in an animal's ability to grow rapidly and to reach the desired size.

Purebreds make about 40 per cent better returns on feed used than common stock.

Success with purebred stock in one kind of farm animals leads to

the use of purebreds in other kinds.

In competent hands, purebreds give sufficient additional returns to more than justify their greater cost and the extra care which they ordinarily receive.

Added to what county agents and owners think of livestock improvement and the importance of using purebred sires to attain that goal, it is rather satisfying to have the active support of many substantial organizations. Federal and State Governments are back of this important work. The agricultural press has been a long-time champion of it. Bankers, at one time somewhat dubious about purebred stock as an investment, have accepted it as part of their platform. Progressive railroad companies have put on demonstration trains to do "missionary" work. And the breed associations are devoting more and more attention to improving the quality of purebreds and getting them into the hands of practical farmers who are interested most in the utility side of the question.

Finally, the legal profession in many communities is aiding splendidly in helping farm organizations put on scrub-sire mock trials where juries of farmers may hear the evidence on both sides and render a verdict that often decides the future of the livestock industry for miles around. The Department of Agriculture has distributed more than 500 outlines for conducting such trials, and all verdicts reported thus far have been "Guilty" with the recommendation to replace scrub-sires with purebreds of good type.

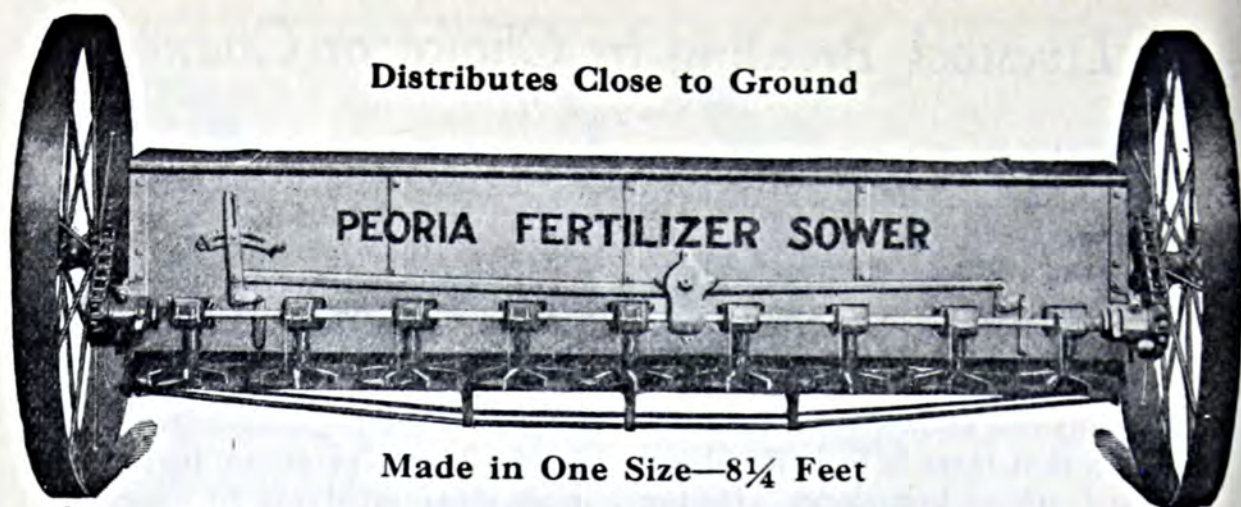


Alfalfa Creates Potash Hunger

(From page 12)

been used and the reduction in yield was universally ascribed to rust. The rust was particularly noticeable after alfalfa.

Distributes Close to Ground



Made in One Size—8¼ Feet

The Greater Harvest Getter FERTILIZER SOWER

WILL successfully distribute Lime and Fertilizers in any quantity desired from 100 to 6,000 lbs. under all circumstances, damp or dry. No Clogging; Light Draft; for two ordinary horses. Other machines of equal capacity are heavy draft for four horses.

The use of fertilizer has become a necessity to modern agriculture. Farmers of the Eastern States have realized for years the profit to be made from the use of fertilizers, and now the Western farmer is rapidly learning to look upon fertilizer as an "investment" rather than an "expense."

The American farmer is learning that by taking everything from his soil and returning nothing, he is headed straight for agricultural bankruptcy, and that every dollar spent on good fertilization is better invested than a dollar in the savings bank.

But fertilizer, to be most efficient, must be mixed with brains. It must be properly applied.

For many fields and many crops, a broadcast distributor offers the best solution of the problem of how to make the application.

There is no distributor on the market that can equal the New Peoria. It took years of actual experimenting in the field to finally produce this high-grade distributor. It bears little resemblance to the makeshift box-wheels-and-axle contrivances commonly found on the market.

We also manufacture Fertilizer Drills in all sizes.

For Catalog and Prices Address

Peoria Drill and Feeder Co.

Peoria, Illinois, U. S. A.

We find that farmers claim that kainit is more effective in suppressing rust than other forms of potash. Experiment station authorities say that while this is true all forms of potash are effective in suppressing rust of cotton.

ONE reason assigned for the potash hunger showing up particularly where alfalfa was grown a few years, is that this legume is a heavy feeder on potash and its deep and extensive root system takes up much of the available supply in the soil. While exhausting the readily available potash it is accumulating through plant debris of shattered leaves and of sloughing roots considerable organic matter containing a high percentage of nitrogen. Acid phosphate is applied liberally to alfalfa and rather freely to cotton. Consequently the nitrogen and phosphorous supply is increased and the potash decreased. The greater supply of other elements accentuates the hunger of crops for the decreased potash.

This experience of cotton growers in the Piedmont region of the south-east emphasizes the fact that potash belonging to the soil is not necessarily potash for the plant. The clays seem to have a hammer lock and toe hold combined on their own potash, releasing it very parsimoniously and refusing to shake down even when baited with organic matter and assailed by bacteria, fungi and other denizens of the underworld released in its midst by the organic matter; nor does carbonic acid or any other acid seem to make much impression on the "gooey" colloids of clay by way of dissociating the potash from its clinging and affectionate surroundings.

Therefore, feed potash liberally to cotton on the Piedmont soils as well as to cotton on the coastal plain soils, and the more legumes are grown the more potash will be required.

About Ourselves

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**BETTER CROPS
PUBLISHING CORP.**
81 Fulton Street New York

Mr. Farmer, Individualist

(From page 4)

Some say there is no such commodity—and I do not believe there is.

Politicians are not usually men of brains. They are shepherds. They herd the masses. They are keen to find the bell-wether and guide him toward their desires, confident that his flock will follow.

All men look alike to politicians. Each man has one vote.

The politician's raw stock is the average man—the masses. And, sometimes, familiarity with his raw material induces the politician to refer to men as "them asses" instead of "the masses."

And farmers, because they are individualists, puzzle the poor politicians.

Farming is the backbone of the country's welfare. And when this backbone softens to the consistency of boiled macaroni, economists, demagogues, sophists and politicians "view with alarm."

That the farmer's reward should be on a parity with the service he renders is a sound proposition, and one to which all thinking men subscribe. But the methods to be used in coming at a state of affairs in which the farmer will be permanently prosperous are a matter of debate.

Many varieties of effort are on foot. Panaceas are passed preliminarily about, that the agriculturist may taste and discover whether or not these are the needed tonics.

And always, as during an epidemic the sick and well are inoculated with the same virus, the aim is to devise remedies that will fit all farmers. The dose is laboratory-fabricated for the average farmer, when there is no average farmer.

Farming is a life. A farmer is an individualist. He cannot be herded, and examined in the mass. He

must be picked up carefully between the thumb and forefinger and scrutinized, analyzed, studied and prescribed for individually. His meat is his neighbor's poison.

No universal political or economic panacea will permit us to dodge this vital issue.

So we get the proposition: until there comes a general understanding of the individualism of the farmer, all organized effort to aid him win the rewards rightfully his must fail.

And I submit this: that if each farmer were taught how to make money on *his* farm, all farmers would then be making money! And thus the problem would be solved!



Must County Agents Be Married?

(From page 5)

insect life, he must be a horticulturist to advise about horticulture, a chemist to know the soil needs and on and on. This, indeed, would be an ideal much to be desired but one short lifetime is insufficient to prepare a man in all of these lines and the County Agent, where his knowledge is lacking, must, it seems to me, act as a clearing house, secure the information asked for, from experience, from books, from others, or in other ways and distribute it in a plain, impressive way as completely as possible.

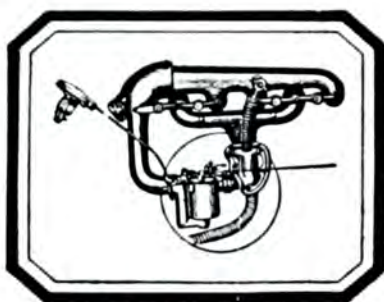
As for the boys' and girls' clubs and special lines of work which are sometimes far removed from the County Agent, is it not his problem to obtain the cooperation of individuals or groups of individuals who are in closer touch with the problems of the country people and are perhaps better capable of "putting over" the work program if it is properly organized?

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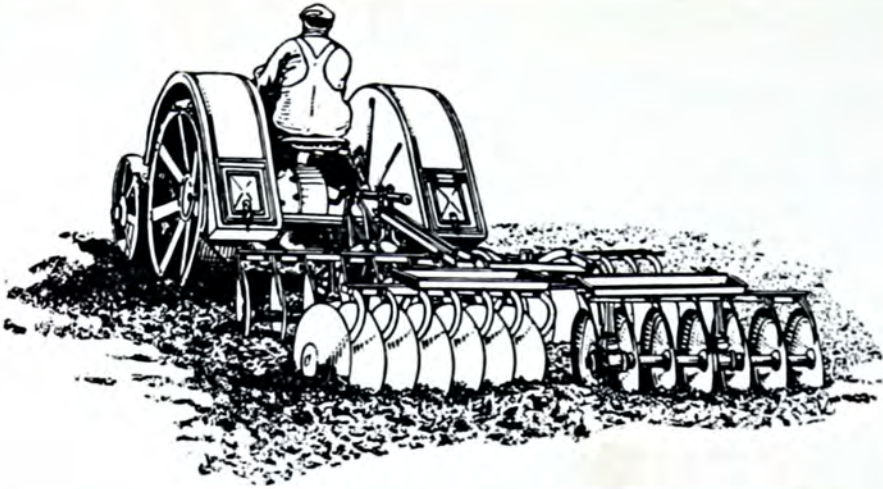
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South Bend, Indiana

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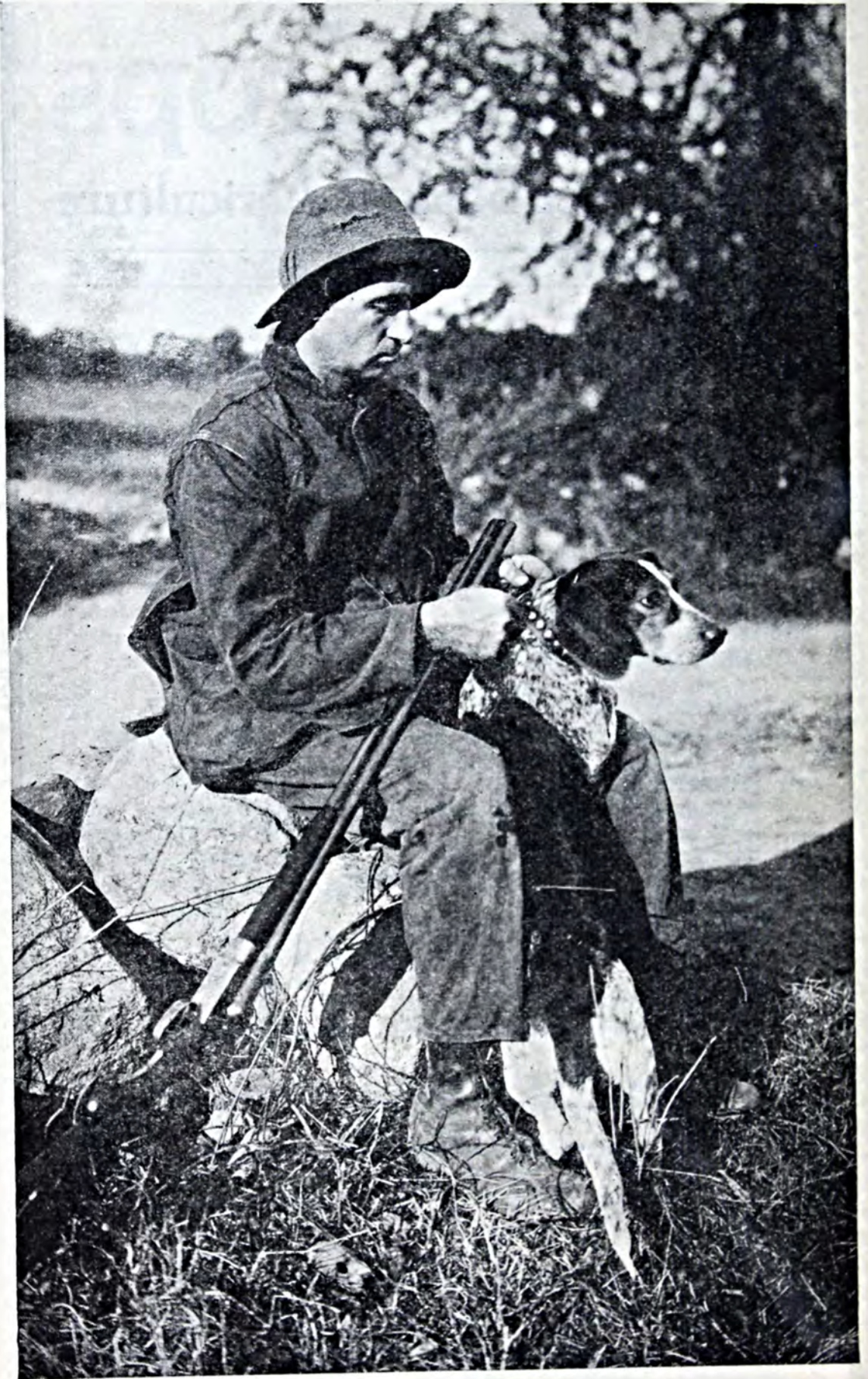
The Pocket Book of Agriculture

November 1924

10 Cents.



A Turn in the Road by A. B. Genung—Ton Litters by C. E. Gapen—A Tobacco-Chewing Germ by F. D. Fromme



November



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No. 3

Is agriculture lagging behind other industries to the point where

COMPARISONS are ODIIOUS?

asks

Jeff Mc Dermid

WILLIAM SHAKESPEARE, Cervantes, Dr. John Donne and John Fortescue agree on one thing: that comparisons are odious.

And because these four able writers make the assertion, many, unable or unwilling to think for themselves, believe it to be true—and thus hesitate to make comparisons that might be helpful.

But all comparisons are not odious. Some are, I admit. But, odious or sweet-smelling, the making of comparisons is a fruitful enterprise.

I ONCE knew a man, insufferable egotist, who had just succeeded in walking from Chicago to New York.

Because of his infernal egotism he prated of this marvellous feat until all his friends agreed that, as a modern, well-oiled bore, he had no equal.

There was only one way to dam him up (his friends had damned him up and down) and I proceeded to follow that course: to compare his feat to those of other, older men who

had walked ten, twelve and fifteen times *across the country*.

I looked up the records of Edgar Weston, Walker-Emeritus, and confronted the egotistic Chicago-New Yorker with Weston's jaunt-mileage.

I found that a little French girl, thirteen, had walked from Bordeaux to Constantinople and back, earning her food along the way chanting little French peasant songs.

I discovered that *hundreds* had walked from Chicago to New York.

I gave it to him hard. I made his little thousand-mile walk look like a Sunday afternoon amble through the park.

And he quickly shut up—the comparison forced him to do one of two things; either hang up a real record about which he might have the *right* to cackle, or be forever silent.

SO comparisons are odious only to those who suffer by the comparison, or those to whom a comparison teaches no lesson.

And this matter of comparisons is important, for it affects everybody, everything—all things are but relative. White is white by comparison with black.

John Henry Foster, owner of The Fair, Biggsville's largest department store, is a success—until his income tax appears publicly printed under that of Henry Ford's. Then how Foster's success shrinks!

All comparisons are not odious—some are eye-openers. And if we can but juggle and jiggle our minds into the properly receptive attitude, comparisons may be very helpful—they set up marks at which we may shoot, thus improving our aims.

Agriculture has often been the victim of inane and useless comparisons.

But to compare agriculture broad-mindedly and fairly with other industries is not necessarily an odious business. Instead, the process may awaken some dormant

impulses and arouse lethargic opportunities—much to our benefit.

YESTERDAY three men were killed, and twenty went crazy, breathing "loony gas." What is it? A new "ethyl" product, a chemical compound which, when added to gasoline, permits the gasoline to be used in high-compression automobile motors.

The General Motors Corporation, having built the high-compression motors, found them good—with one exception. The motors "pinged." That is, they compressed the gas so completely that when the spark plug exploded the cylinder-charge, a detonation, or "ping" occurred; very annoying when multiplied in a racing six-, eight-, or twelve-cylinder car.

So the General Motors, gentle reader, combined, joined hands and got together with another exponent of Big Business—Standard Oil—forming a \$5,000,000 corporation to investigate the possibilities of developing a new gasoline which would not "ping!"

And "Ethyl" something or other is the name of the new compound which the chemists of the new \$5,000,000 corporation have perfected, and in the perfecting of which several workmen went "loony" from inhaling the laboratory fumes.

Gasoline comes from the ground. So does clover.

Does it occur to you that on this one experiment Big Business invested more millions than agriculture has yet appropriated to develop facts about clover? That General Motors and Standard Oil, Twins of Dollardom, are more vitally interested in *their* future than agriculture is in *its own progress*?

ALL about us we see evidences of superior development and acute foresight and watchfulness. We see
(turn to page 47)

How I PLAN My WORK

By R. A. Langenbacher

County Agent, St. Charles, Missouri

A good plan is half the battle. You will find some useful ideas in this account of Mr. Langenbacher's work.

AFTER having spent five years in county agent work I have found that there are many ways to really increase the value of the work in the county. In general, it is first necessary to have each community in the county organized with a definite program of work and a goal toward which they set their mark.

I have found that we are able to get many times more the amount of work accomplished in a community that has a definite aim in view than we can in a community where there is no such organization. Proper publicity of the work being carried on in the various communities, giving the names of the farmers and their wives who act as committeemen and in that way help to put over the program, as well as material that will attract their attention when visiting the county agent's office are two very important means of getting the work before the people in general.

We have in St. Charles County eight organized communities, each of them having a definite program of work that is so outlined as to give them something to think of during the entire year. From our projects selected by our county project committee, these communities

select the projects that they wish to work on for the coming year.

DURING 1923, our work in the county covered general organization, animal husbandry, dairy husbandry, field crops, home economics, horticulture, marketing, poultry, and soils. Each of these projects is headed by a county chairman selected at the regular annual meeting because of his or her special fitness to lead with the work.

We then go into a community that seems to be ready to take up a definite program and have them select three or four of their best leaders who, in turn, meet with the agent and work out a tentative program for the coming year. This committee also endeavors to select leaders for each project who are especially fitted to take charge of that work.

A mass meeting of the entire community is then called and the program with the goal set is presented to them for their approval or amendments. After the program has been adopted to the satisfaction of all the people of the community the matter of leaders is

(turn to page 45)



The first ton litter in Indiana (1923), where 12 pigs raised by Charlie Phillips, of Rush County, weighed 2,190 pounds at six months.

TON LITTERS

By C. E. Gapen

U. S. Department of Agriculture

Here is a lively account of how the movement for better crops of pigs got under way.

THE brood sow is a pork factory. Her raw materials are the feeds produced on the farm and the farmer is the foreman. She is specially designed and constructed to turn out annually, according to her capacity, a certain number of potential pork producers, the number depending on how good a factory she was made to be by inherited characteristics and development, and on the ability of the farmer-foreman. Her output must be of sufficient quantity to lower the overhead cost. Quantity production of pigs in the litter is a mark of her efficiency and value, just as quantity production is the mark of efficiency in Mr. Ford's flivver factory. The more four-cylinder runabouts the old sow

assembles and turns out each season for the foreman to bring to market perfection, the less the cost of production and the greater the profits per factory.

Three years ago James R. Wiley, swine specialist of Purdue University, saw that there were a lot of pork factories in his State being run on a half-efficient basis and that the farm factory owners and managers were suffering the loss of possible profits. Specific data collected from 52 farms in Indiana showed him that where less than five weanling pigs were raised per litter it required an average of 277 pounds of feed for each pig raised, the cost of feed being \$2.78. On farms where seven or more pigs were raised per litter, it took only 138

pounds of feed that cost \$1.38 on the average to produce a weanling pig two months old. These figures included all feed fed to the brood sow and the herd boar from the time the sows were bred in the fall until the pigs were weaned in the spring—a six months' period—as well as the feed fed to the pigs. To this amount of feed was added the feed fed from weaning time until the hogs were marketed in order to determine the cost of a hundred pounds of gain. On farms where less than five hogs were marketed per litter it took 517 pounds of feed to produce a hundred pounds of gain at a cost of \$5.43. On the farms where an average of seven or more hogs were marketed to the litter it took only 348 pounds of feed at a cost of \$3.90 per hundred pounds of pork produced.

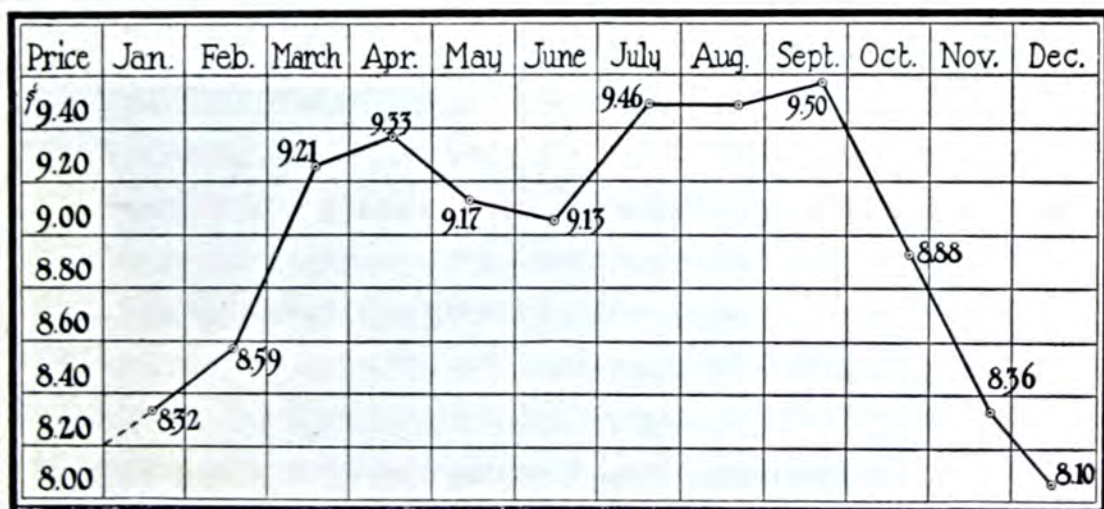
Armed with this information the swine specialist instructed his lieutenants to organize what has since become famous as the "Hoosier Ton-Litter Club." The membership was made up of 555 Indiana swine raisers who had confidence in their ability as first-class hogmen and some sporting blood in their

veins. The importance of the size of the litter raised and marketed was to be emphasized in this contest for a little gold medal. The object was the production of a ton-litter at the age of six months. It was obvious from the figures quoted above that large litters raised were produced at a lower cost per pig and that large litters were to be desired.

Then why the six months' clause? Take a look at the graph of the Chicago hog market which Wiley prepared. It shows that on the average for the last twenty years hog prices on this market have been the highest of the year in the months of July, August and September. Pushing an early spring litter to make it weigh a ton when six months old means that it will go onto the late summer market when prices are the highest.

Those figures and arguments were convincing and the race was on. Of the 555 members of the Hoosier Ton-Litter Club who started in the race the first year 33 crossed the finish line and produced 36 ton litters. The second year, in 1923, there were 854 members enrolled

What do market prices show about selling hogs at different times of the year? The table below, which shows the average monthly prices of all hogs on the Chicago market for the past twenty years, answers the question.



On the average July, August and September have been the highest months of the year, with November, December and January the lowest months. The average drop in hog prices from September to December for the last twenty years has been \$1.40 per hundred. From the market standpoint over a period of years, it looks like a good business proposition to push the early spring pigs along rapidly and get them on the late summer market.

and 58 of them produced 61 ton litters. This year there are 567 members in the race.

SOME significant facts can be drawn from the complete results of the two years' contest in Indiana. But before we take an inventory of these facts let us have a look at some of the ton litters that have been produced. It has not been the thought underneath all of this contest to develop only one ton litter in a herd at the expense of all others, but to bring as many as possible to the ton mark or at least a good weight. Perhaps this is best seen in the work of H. H. Munns of Montgomery County, Indiana, in 1922, the first year of ton litter work. Mr. Munns had 14 sows which he had selected for performance, all of them coming from big litters. The 14 sows farrowed 137 pigs. Clean farrowing quarters and good care on his part enabled the 14 sows to raise 113 pigs, an average of 8 to the sow. He fed these litters out and produced two ton litters weighing 2,460 and 2,000 pounds, a third litter that lacked but 10 pounds of a ton, and secured an average weight for the 14 litters at six months of 1,660 pounds.

From weaning time until the hogs were six months old they were fed corn and tankage on clover

pasture. It required an average of a little more than six bushels of corn and 13 pounds of tankage for each hundred pounds of gain made by the hogs during this period at a total feed cost of \$4.00 per hundred pounds of gain. The hogs sold for \$9.55 per hundred, leaving a margin over the feed cost of \$5.55.

The heaviest litter yet produced in Indiana was raised by Chester Meal of Rush County in the second year of the work in the State, 1923. The 13 pigs in the litter weighed on the 180th day 3,210 pounds. This county also claims the first ton litter of the year. Ivan Hayhurst of Lake County raised a litter of eight pigs last year that passed the ton mark at six months of age with a margin to go. This litter is the heaviest eight pig litter yet recorded in Indiana weighing 2,153 pounds or 269 each. This remarkable litter was given space at the International Livestock Exposition last December and was shown as the State Champion Ton-Litter of eight pigs.

COUNTY AGENT D. D. BALL of Bush County gives the following condensed summary of one of the ton litters raised in his county which he says is typical of the rest and shows how well the factors of breeding, management, and feeding were
(turn to page 39)



This litter of 13 pigs, raised by Chester Meal, of Rush County, Indiana, weighed 3,210 pounds at six months (1923).

Better Cabbage Yields

By H. E. Young

(This crop has great profit possibilities if correctly cultivated.)

AS a commercial crop, cabbage occupies a very prominent place on land devoted to truck production. It is more than a garden crop. It is a crop which can easily be adapted to general farm conditions, and one which offers many advantages where good market conditions prevail. To the farmer seeking a profitable cash crop cabbage merits serious consideration. While not a crop to be extensively undertaken by the farmer inexperienced in the trucking business, it may be made to return very satisfactory results especially when entered into intelligently and in a limited way.

Farmers experienced in the commercial production of cabbage hold to it as a regular market crop, and realize splendid profits, considering the amount of land involved in its production. Methods in cabbage

production vary more or less in different sections, but as far as soil fertility is concerned, the general proposition is much the same, in that maximum crops can only be produced on soils which are well supplied with available plant food elements. Herein lies the fundamental secret of profitable cabbage production. With good soil properly enriched the first and primary problem is solved. Without this requisite, maximum profits are impossible no matter how perfect may be the cultural methods. The plants can not live, develop and mature to best advantage unless the soil contains the needed plant food elements and in a form easily available to their use.

This is where successful growers of cabbage have scored their initial success. They have given due consideration to soil fertility and provided suitable conditions for



This is the plat in which Mr. Heckal used no fertilizer.

their full and proper maturity. With this need accomplished the degree of success as a commercial proposition rests mainly upon intelligent tillage. Seasonal conditions will, of course, be a factor in final results, as will also the market situation, but a good crop yield must first be assured if satisfactory profits are to be gained. Such assurance begins, and in a great majority of cases may also be said to end, with the amount of available fertility in the soil.

IN dealing with the question of fertility the experience of successful farmers who are producing similar crops at a profit is most valuable. This is as true with cabbage as with other crops. Growers will find valuable suggestions in the operations of Mr. Anton Heckal, of Appleton, Wisconsin, an experienced producer of this crop.

The soil on Mr. Heckal's farm is a black sandy loam, with clay subsoil. The average local yield of cabbage in a favorable season is about 20 tons per acre. Mr. Heckal desired to grow better than average crops. He decided to find a way to do it, and naturally he began by questioning the soil as to its fertility. A field which had grown alfalfa, followed by sweet corn, was selected for the test. The soil was well pre-

pared to one part of the field a commercial fertilizer containing 150 pounds of dried blood, 500 pounds of 14-per cent acid phosphate, and 212 pounds of sulfate of potash per acre was applied. On another portion 150 pounds of dried blood and 500 pounds of acid phosphate, without any potash, were applied, while a third was left without any fertilizer treatment. The crop was planted about June 9, the fertilizer having been applied about ten days previous. The early part of the season proved very favorable to the crop, but on account of unfavorable weather later the crop suffered somewhat.

At harvest the land which received no treatment produced 18.7 tons of cabbage per acre. Where the complete fertilizer mixture, containing nitrogen, phosphorus and potash, was used the yield was 27.4 tons per acre, or an increase of 8.7 tons over the unfertilized. Where the incomplete mixture, containing nitrogen and phosphorus, but no potash, was applied the yield was 24.4 tons per acre.

IT will be noted that the use of the complete fertilizer, containing potash, not only produced an increased yield over the unfertilized crop but it also gave better results
(turn to page 30)



These are cabbages on the plat where Mr. Heckal used a complete fertilizer.

A Tobacco-Chewing Germ

By F. D. Fromme

Virginia Agricultural Experiment Station

You will like this article because the author, in addition to being an expert on the subject, has a lively sense of humor.

⁶⁶ **Y**OU experts calls it Wildfire, but we calls it Hellfire; it shore does play H... with a tobacco crop." This was the unanimous verdict of the tobacco farmers of Virginia in 1920, as expressed by one of them. The wildfire disease was present in that year on nearly every farm and many crops of tobacco were ruined. The total loss for the state was 22 million pounds of tobacco valued at 24 cents per pound. A five million dollar fire on the farm is some fire.

The "expert" had told the farmer that wildfire is a germ disease fully as virulent as hog cholera or smallpox, but the farmer didn't believe in germs. He allowed that wildfire was caused by the guano or by wet weather. The "expert's" comeback was: that fertilizer and rain-

fall are pinch hitters; that the disease can't score unless the germs are there. Fertilizer jazzes the wildfire germs as well as the tobacco and rain spreads them around in the field. You can play a mean joke on the wildfire germs by laying-off with the fertilizer and praying for dry weather—there won't be any tobacco crop for them to live on

AFTER the disaster of 1920, the farmers were ready to try anything once and so they gave the germ theory a chance—with mental reservations. The next year they lost only a little tobacco and some of the reservations. And the good work has continued—the fire hasn't burned up a crop in Virginia for three years.



Wildfire spots on a tobacco leaf. The spots are circular and are surrounded by a halo.



Blackfire spots on a tobacco leaf. The spots are angular and have no sharp halo as in wildfire.

The writer is using the term "wildfire" in the sense that the farmer uses it—when he does. There are really two closely related diseases, wildfire and blackfire, both caused by germs with the tobacco habit. Blackfire is the major disease in Virginia; wildfire is only a lieutenant. The former has caused 80 per cent of our losses which the farmer lumps under wildfire. Either disease is capable of ruining a tobacco field between drinks.

Descriptions of symptoms and life-history stuff make dry reading. Most of us want the prescription without the trimmings—so I will say it with pictures and as few words as possible.

Neither disease is a thing of beauty except perhaps in the eyes of the Plant Doctor, who would have to work for a living if there were no diseases. Blackfire spots are angular, except on heavy, dark tobacco where they are rounded. They are dark-brown or tan in color and almost black in the early stage. Wildfire spots are round with a tan center and a yellow or pale-green halo. They look somewhat like the moon with a ring around it—only smaller.

BOTH diseases occur in the plantbed and are carried to the field

on the transplants. If the plantbed is clean there is little danger of loss in the field. A clean plantbed is ninety-nine per cent of the secret of control. There are probably a hundred different ways by which the germs may reach the plantbed. The important ones and the methods of preventing them are:

The seed: Get seed from clean plants and from clean pods. Cover the flower stalks with paper bags. To remove the seed clip the ends of the pods so that you get as little chaff as possible. The germs are in the chaff. If you are not certain that the seed is clean soak it for 15 minutes in 1 to 1,000 bichloride of mercury (poison), wash in water, and seed at once. Or dry the seed and store in a clean bag in a clean place. The treatment will not injure seed that is to be sprouted in the plantbed, but seed that is to be sprouted in punk or cloth before sowing will be injured and should not be treated with bichloride.

The plantbed. An old plantbed even though burned may contain the germs. Make the bed on new soil or sterilize with steam. Use new canvas or boil the old one thoroughly. Use new poles. If sash and frames from an old bed are used clean and wash them with a solution of formaldehyde.

(turn to page 41)

Because Mr. Genung has the rare ability of looking facts squarely in the face his surveys of the agricultural situation are worth careful study. Here he notes some hopeful changes that bring promise of better times.

A Turn in the Road

By A. B. Genung

SAM JACKSON came down the steps of the bank, the end of a new check book sticking out of the pocket of his jumper. This was in a wheat town in Kansas.

"Well, Sam, how does it feel to have money once more?"

"Why, it's a right human feeling while it lasts—which is about as long as a cake of ice in a hot wind. I've enjoyed a bank balance now for 72 hours, which I guess is about the limit.

"Makes me think of a little rhyme I used to know when I was a kid: 'Solomon Grundy, born on Monday, christened on Tuesday, married on Wednesday' and so on to a seven-day finish.

"That's me. Last Monday I deposited my elevator checks, forty-eight-hundred-odd dollars. That same day I paid my notes at the bank. Tuesday I made the mortgage payment that was due last March together with interest and interest on the interest. Yesterday I drove over to Sawtelle and paid Jimmy Calkins for a couple of binders and a harness and some other truck that's been owin' him for two years. Jimmy said he'd kind of got attached to my note and hated to see it go, but I reckon he'll find some use for the money even though he's pretty well heeled. Well, that's the way it goes. Life this week is just about one darn liquidation after

another. This check book is almost brand new but its gettin' thinner than a February jack rabbit."

Sam patted the breast pocket of his jumper.

"But I'm not kickin' any, you bet. Go to bed every night with my mind one notch easier. Haven't been so near to beatin' the game in five years. Fact is, I've got a little money left here in the bank and a little grain yet to sell. Pretty good year for this country, eh?"

"Going to buy yourself a new car?"

"Well, I got to do something. My old flivver's plumb reached a state of anarchy—every nut for himself. I believe the cheapest thing for me to do is to get another car. Don't hardly feel as though I can afford a new car; been thinkin' that when I can get over to Hutchinson I'll see if I can't pick up a good second-hand Ford or maybe a Dodge or something like that. Hot ain't it?"

SUCH is the sentiment of the Wheat Belt. This season has injected a ray of light into the four-year-old darkness. A 15-bushel crop and dollar wheat once more—not overwhelming wealth, to be sure, but some tangible income. A chance to pay off the most pressing debts;

to buy a little much-needed equipment and a few new clothes for the family that is still washing and patching its 1919 models.

There will probably be something over 600,000,000 bushels of wheat sold from this last crop. Quite a lot of it has moved at about a 25 cent higher price than last year. Some of the crop will not sell for that much above last year, though a little has brought even more. It is probably within the bounds of reason to say that the crop should bring growers \$200,000,000 more than last year, which is quite a sizeable addition though hardly up to some of the wild newspaper talk of a few weeks ago.

Probably two-thirds of that new money has gone to settle debts. A little of such capital has drifted back into the great eastern money reservoir, merely helping the same to its present state of overflow. But the vast bulk of it is flowing through the local and regional banks, thawing out the frozen assets, replenishing the country's vital reserves, a current of warm, new blood circulating through the local financial system.

Some of those settled debts represent reserves built up again by the individual farmer. The overdue payment made on mortgage principal, the notes paid off for equipment and stock still in hand mean some farmer that much ahead.

Then there is, too, a considerable amount of new buying. Seventy-five million dollars of additional spending on the part of one group of producers means some little increase in its worldly possessions. Farm machinery, buildings, fences, and automobiles are run down, out of repair, worn out. The whole farm plant has become seriously in need of rejuvenation.

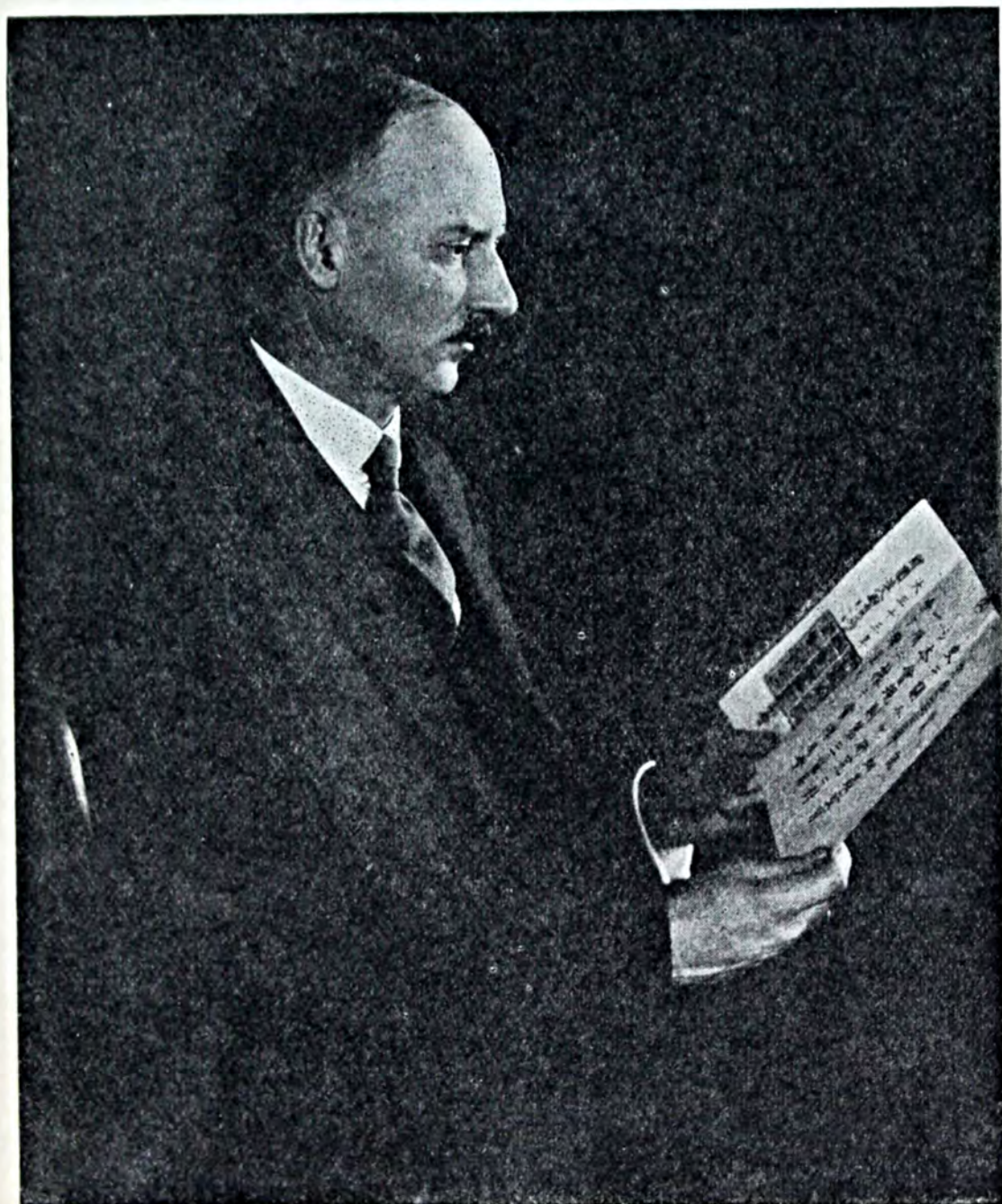
ONE hears quite a little comment among city journalists and others on the number of automobiles being bought by the wheat country. The common tenor of

these remarks is by way of emphasizing the farmer's prosperity; not infrequently the comment has an ironic edge. Farmers are, indeed, buying automobiles, for their cars bought five years ago or more are badly worn. What they are buying however, is the cheap car, either new cars of the Ford class or used cars at about those prices.

The urban community is still a long way from understanding the status of the automobile on the farm. It still looks upon the farmer's car as a luxury—his one great luxury. That is about as near the truth as that the trolley car is the city man's luxury. The truth is that the automobile has replaced the road horses of this country. The small car of today costs no more than a good horse, wagon and harness. It has bridged the universal gap between farm and town and done it with an actual, measurable gain in productivity per agricultural worker. The automobile has cut down one of the biggest factors of overhead in agricultural production, the time necessarily spent on the road. It has done this so marvelously in the West where distances are great that it is today almost as essential as the grain binder. If automobiles were wiped off American farms tomorrow the country would not be a surplus producer for three years. It is time to tune out a lot of this talk about the farmer being a continuous joy-rider. If the farmers are able to replenish some of their vital transportation equipment this fall it is not only a hopeful but a mighty sensible sign. And the writer does not run a garage, either.

THE Wheat Belt is not the only region that will be able to use its check book this fall. East of it lies the great Corn Belt where dollar corn means something on the Christmas tree. True, the corn crop outlook couldn't be very much worse
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Better Crops' ART GALLERY *of the month*



Dr. B. H. Ransom, Chief of the Zoological Division, Bureau of Animal Industry, U. S. Department of Agriculture, was recently honored by a Japanese medical society, The Seamen's and Tropical Diseases Research Association of Kobe, for his work in developing a knowledge of the roundworm of humans and of swine. Dr. Ransom developed the system of swine sanitation, sometimes known as the "McLean County system," which is now being used extensively in several of the corn belt States to protect young pigs from infestation by these worms which annually cause great loss to the swine industry.



These pictures contributed by County Agent L. F. WAINSCOTT of Caldwell County, Mo., tell an interesting story.

See caption below.



When the Mormons stopped near Far West in Caldwell County, Mo., several cabins were built using lime rock in the construction of big fire places. Differences arising between the natives and Mormons resulted in these cabins being burned and only the lime and ashes remained. The above pictures were taken after forty years of intensive cropping on and near the site of one of these cabins. The field on the left is now sowed to alfalfa and where the lime residue remains luxuriant growth of dark alfalfa is present. Only a few feet away where no lime is found, the alfalfa is short and pale in color as shown in the picture on the right.



Here the usual roles are reversed. A farmer of Sumter County, South Carolina, is showing County Agent James M. Eleazer how he grows 1,300 pounds of cotton to the acre.

Sleuthing for Red in the Soil

By H. W. Warner

Iowa State College of Agriculture

Science has devised ways of catching this menace to profitable agriculture.

THE spectre that follows in the wake of agriculture is not ashy gray—it is red. Not the kind that throws bombs, burns churches and confiscates wealth, but rather the red that stalks the farmers plow leaving in its wake eroded hillsides, abandoned farms and deserted villages. I mean soil acidity—the “red” in the land.

It is strangely coincidental that the tendency of soil acidity is in fact a “red,” fomenting disorganization, revolution and destruction of the generally proven and most highly desirable systems of soil maintenance. Equally strange is the fact that the detectives that hunt out and make known the “red” in the soil make their revelation in red colors.

The importance of searching out and bringing to light this disturbing force in the land—soil acidity—is better understood and appreciated when it is known that fully three-fourths of the soil in the eastern half of the United States is acid.

OVER the great majority of this acid-soil area lack of lime in the soil is the limiting factor in the growing of the principal soil building crops such as clover, sweet clover and

alfalfa. In places it is more than a limiting factor—it is the “red” power that has overthrown profitable agriculture.

“The seriousness of the situation is apparent,” quoting an Ohio State University publication “when we consider the fact that during the last 40 years an area of land in Ohio equal to six average counties has become too sour to be farmed profitably in competition with newer lands farther west, and has passed from the improved to the unimproved column in the report of the federal census.”

Some of the older agricultural regions are experiencing even more serious consequences while others are feeling the ever-increasing pressure in a way that leaves no question as to what the problem will be eventually.

Soil acidity and its effects have been under observation and study for many years and the theories advanced in explanation are of many hues and shapes. From the point of view of the man on the land the practical and important question is not whether acidity is due to the presence of something injurious or to the absence of something beneficial in the soil. His interest lies in the problems of knowing what soils are acid, to what extent, and

what to do to combat this clover-killing aftermath of agriculture.

FIRST of all, an acid soil is known by the company it keeps—or does not keep. This is particularly true of the company it refuses to keep for on soils of high acidity alfalfa and certain clovers are not tolerated. Instead the glad-hand goes out to such outcasts as sheep-sorrel, corn spurry and horse-tails. Again, the "red" traits of soil acidity give outward expression in a reddish cast occasionally noted on fields having a heavy growth of sorrel.

But failures of leguminous crops are not always due to acidity nor does sheep sorrel often take possession of sour fields. The condition of crop growth is an indication—not a proof—of need of liming and its limitation must be recognized.

Chemical tests are the most dependable means of ferreting out soil acidity and coupled with crop growth indications are the real detectors of "red" in the soil.

There are a number of chemical tests of varying degrees of accuracy, convenience and simplicity. One test shows only whether a soil is "sweet or sour;" another measures lime requirement almost to the

pound. One test requires only a glass test-tube and a bottle of chemical; another is made by use of delicate and complicated electrical equipment.

There is a certain fascination in making a chemical test and an element of speculation as to what it will reveal. This may account for the fact that in a great many communities one will find farmers who have tested their fields with litmus paper and who admit that they made the tests "just to see if the paper would get red." The litmus paper test is an easy and inexpensive one and its use for many years has resulted in farmers associating the "red" color of the paper with soil sourness.

THE litmus test is of only limited value since it does not tell whether a soil needs one or two, or more, tons of limestone. Because of the need of more accurate information the Truog, Veitch and other tests have replaced the litmus paper method. Of particular interest and of more recent development is the "Thiocyanate" test proposed a few years ago by Professor Comber of the Rothamsted, England, experi-
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"Yes she's sour," was the verdict of this test by an Iowa county agent, and the farmer whose soil was being tested had the limestone ready to battle with the "red" in his field.

• Fire •

By Dr. Frank Crane



WE have often noticed children dancing, and yelling, and otherwise making merriment about a fire in the open. These bonfires are called "Fire of Joy" by the French. They go back probably the farthest in our ancestry as the first pleasure of man was the discovery of fire. It was this which was celebrated by the Greeks in the legend of Prometheus, who was alleged to have stolen fire from the gods and given it to man, and was punished for it. (This legend contains the idea that somewhere in the time past man made what was probably the greatest discovery in the world which was the discovery of fire. They probably got it first from volcanic clefts and naturally regarded it superstitiously as being some kind of a gift of the gods which elevated the race of men above that of the animals. No animal makes fire. A fire is the thing that all animals are afraid of. It represents that device of mankind by which man demonstrated his superiority over the beast. (Our earliest parents, probably after shivering all their lifetimes in caves, rejoiced in the prophet who brought them fire. This discovery enabled them to control climate, to exist indeed in climates that were unfavorable for them and otherwise unsuitable for human life. (A curious German has drawn the origin of the Christian religion from the making of fire. The sun, he declared, as the source of all power upon earth was the type of the Universal Father. Wood was the Virgin, wind was the Holy Spirit which, blowing upon the wood fanned the wood into flame, and fire, being the product of burning wood, was the Only Begotten Son of the Father, the Savior of Mankind. The earliest emblem of the Christian religion was the cross, which was made by laying two sticks of wood across each other to form a fire. This explanation is curious to say the least and goes back to the beginnings of mankind. Most inventions are new ways to make fire and are valuable as being representative of man's dominion over the earth and its products. In children dancing around the open fire, therefore, we see an illustration of mankind rejoicing over that invention which represents his dominion over the earth.



This cotton was supplied with nitrogen and phosphoric acid only, Compare it with the opposite picture.

Helping COTTON

By C. A. Whittle

AN experiment station has been located at Poplarville, Mississippi, to solve problems related to the Coastal Plain soils, soils that predominate in the lower part of that state.

Though it has long been an established fact that most Coastal Plain soils require all three elements of a complete fertilizer, there were prominent people who thought that Coastal Plain soils of Mississippi were different.

Visual evidence of the difference between cotton receiving fertilizer containing potash and one containing no potash is given in the illustration.

Observe in one picture that the plants are large, green and thrifty looking. Compare this with the small, defoliated cotton stalks in

the other picture. Potash accounts for the difference.

By the way, the gentleman in the picture is Prof. E. B. Ferris, Director of the experiment station at Poplarville.

TO be more specific about the fertilizer used on each plant: The plot showing small, naked stalks received no potash, but it had an application of 440 pounds of acid phosphate, 100 pounds of nitrate of soda and 90 pounds of sulfate of ammonia per acre.

The better cotton received the same amount and kind of fertilizer plus 240 pounds of kainit. Therefore, the improvement in the appearance of one plot over the other is due to potash.



On this plat was used a complete fertilizer containing nitrogen, phosphoric acid and potash.

to SUCCESS

What happened when potash was left out of a Mississippi fertilizer.

But how about the yield of the two plots? Where only nitrogen and phosphoric acid was applied the yield was 684 pounds of seed cotton per acre, but where the fertilizer containing nitrogen, phosphoric acid and potash was used the yield was 1,080 pounds of seed cotton. Here is a gain of 396 pounds of seed cotton due to the presence of potash in the fertilizer. Seed cotton at present prices means that the 240 pounds of kainit applied brought an increase worth approximately \$37.00. The 240 pounds of kainit probably costs the Mississippi farmer around \$1.75. Therefore, with an outlay of \$1.75 the returns under the conditions of the experiment are over 2,000%.

One could not, however, say with certainty how much any one

element of plant food is worth by the difference between the yield where it is used compared with the yield where it is not used. For instance, if 240 pounds of kainit alone had been used on unfertilized land, one could not expect to get the 396 pounds of seed cotton increase. It takes all three plant foods together. Each does better when the other two are present to help it.

Some of the increase that has been credited to potash may be due to the fact that the potash raised the limiting factor and let phosphoric acid or nitrogen do more toward increasing yields. One can not, in fact, estimate the actual value of any one element in a fertilizer because of their interdependence and interaction.

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H. B. Derrick coaching his dairy judging team which won first at the State Fair this Fall.

DEPENDABLE

By F. M. Russell

U. S. Department of Agriculture

EVERY person in Kent and Harford counties, Maryland, in any manner associated with the business of farming, is getting mighty good returns on the investment in county agents, the "Dependable Derricks." H. B. Derrick holds out in Kent county while B. B. Derrick does his county agenting in Harford county, just across the Chesapeake bay. Incidentally, it should be stated that there is no family connection between these two.

Both men have made impressive strides in 4H club work and they have an enthusiastic group of farm youngsters back of them on every project they undertake. It is the idea of this article to sketch briefly what these men have done to instil the proper ideas into the minds of farm boys and girls and to enumerate a few high lights.

For the past few years the

Harford county Derrick has been nailing "and Son" on farm signs. He is not only making farm life attractive for its logical successors, but he is so training boys that the elders show a decided willingness to extend the firm name and take in an experienced partner. Some of the youths have gone beyond this and have established a business of their own. In a recent survey it was found that 90 young farmers in Harford county, none over 20 years of age, were worth \$1,000 or more in farm holdings and actual cash, not taking into account a goodly amount in the form of experience and practical knowledge.

Derrick and his Harford county farm boys have wiped the boards in this country and have won the coveted cup offered in London for the best work of juvenile dairy livestock judges. After winning first



B. B. Derrick putting a group of farm boys and girls through their paces in judging cattle.

DERRICKS

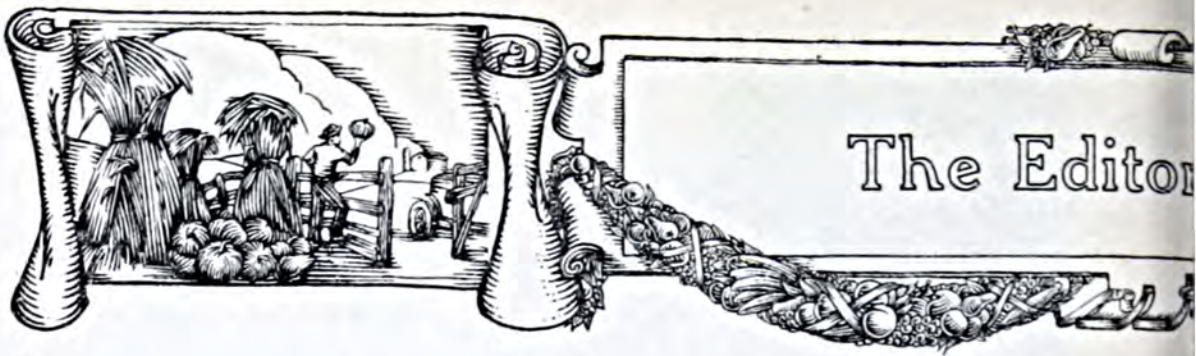
☞ Maryland has two of them—square-shooting county agents they are.

honors at the Maryland state fair in 1922, the three Harford county judges went to the National Dairy Show in St. Paul and again were returned victors in competition with teams from all sections of the country. The United States accepted with particular pride the work of these same three boys when they later went to London and defeated the pick of the British Isles and received an International trophy for their excellence.

Today, Derrick is watching some of his boys shake the dust of club days from their feet and get into the business of solving some of the intricate problems connected with agriculture. One of the best examples in Harford county of the second stage of club work has to do with the accomplishments of Edgar Palmer of Perryman, Maryland. After passing the preliminary tests

of club activities, young Palmer in 1923 took his well bred and well cared for heifer to the National Dairy Show at Syracuse and was awarded first place and grand championship. Today, he owns one of the best foundation herds of Holstein cattle and Berkshire hogs as are to be found in the state and could cash in for a neat sum. He has the further distinction of introducing purebred livestock into a section of the state long noted for its sweet corn and truck products. He is blazing the way for more and better livestock.

JUST across the bay in Kent county equally creditable showings are being made in club work under the directorship of H. B. Derrick. At the state fair this year his team
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PROSPERITY HAS ITS DANGERS

Some of you have thought Mr. Genung's articles in our previous issues took too gloomy a view of the agricultural situation. I suspect that's because none of us like to face the truth when it's unpleasant.

At any rate, you will be glad to read his article in this issue and see that he notes several hopeful and cheering signs on the horizon.

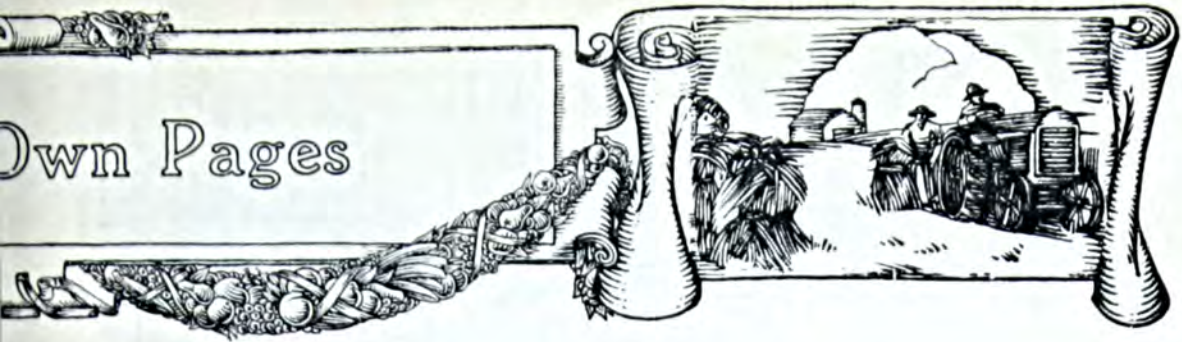
It does look as if this was going to be a better year than we have had since the post war inflation period. As I explained in these pages last month, BETTER CROPS is devoted to the cause of profitable agriculture. Nobody rejoices more heartily to see farmers making money than yours to a cinder, but I would just like to say this: let's not be fooled again.

It's a great temptation when prices are on the up curve to emphasize quantity production regardless of expense or efficiency. If we get to doing that again it won't be long before the curve drops and sends us back to the conditions from which we are just recovering.

The recent depression taught us economy. It taught us the need of efficiency and business-like methods. It taught us how to make a dollar work. Those lessons were taught by bitter necessity. Now that better times are in sight, we need more than ever to remember and practice them.

TWO MEN I like a cheerful man, but I detest a self-satisfied one. A man of my acquaintance, who frequently boasts that nothing ever worries him, has a son in college. The father was complaining about him to me a little while ago. "Education is all right," he said, "but I don't like the way it's affecting Arthur. He used to be content with the farm and with our ways, but now that he's been studying so much he wants to change everything. Always hankering to experiment some way or other. Education has just unsettled him. Filled his head full of crazy notions so that he'll never be content to run the farm like we have."

I couldn't offer him much sympathy. I remembered how he had fought every new idea that came into his county. Purebred livestock, soil fertility, cost account records, farmers'



organizations, the county agent—all of them were “silly, new fangled notions” until he was forced to accept them by the example of his neighbors. Because he and his family work like slaves, they have just about been able to hold their own these past few years.

Arthur is working his way through college, but his father grumbles because he thinks Arthur should be helping on the farm.

I can't foretell how Arthur will succeed when he starts farming on his own. Maybe he'll prosper. Maybe not. His father is quite satisfied with himself and his condition. He has lost the desire to grow and I think of him as a dead limb on the tree. Arthur will never be wholly satisfied no matter what his success. So I expect he will always be flourishing and fruitful.

HENRY C. WALLACE Just as we go to press, the news comes of the sudden death of Henry C. Wallace, Secretary of the Department of Agriculture. Although I am generally suspicious of people who hold political office, I always had great confidence in Henry C. Wallace. Farming was in his blood. He was peculiarly fitted for his job.

Sometimes I did not agree with his policies, but always I respected him as a sincere, honest and courageous man. He was not showy nor sensational. He administered his department in a quiet, efficient manner and left the shouting to others. He worked whole-heartedly for what he believed were the best interests of agriculture and he kept the Department of Agriculture on a high plane of usefulness and progress.

Best of all, he had a fine upstanding character and a warm, kindly personality that won him friends on every side. It will be a hard task to find another man who can inspire the confidence and respect which were universally accorded to Henry C. Wallace.

Jeff M. Dermid



Steady Cropping Cuts Corn Yield

By S. D. Flora

IN Kansas, like every other great corn State, forty years of raising corn without returning sufficient plant food to the soil has resulted in a slow but sure decrease in yield. The accompanying diagram was prepared by computing the 10-year average yield of corn per acre from Government figures for every year since the seventies and the drop in the line, despite improved methods of cultivation and seed selection, is something to hold the attention of every corn grower.

Back in 1880, when the rich, virgin prairies were being broken the 10-year average corn yield was 34.3 bushels to the acre. Ten years later it dropped to a trifle more than 27 bushels, 20 years later to a little over 21 bushels and 40 years later to less than 16 bushels

as a result of continued soil robbing.

Practically all parts of the State show the same story. Brown County, in the eastern section, where the big yields are usually obtained, dropped from an average of 41 bushels per acre in 1884 to 26 bushels in recent years. Jewell County, in another corn raising section half way across the State, has dropped from a 10-year average of 37 bushels to 16 bushels in the same time, while Norton County, in the western third, dropped from 28 to 11 bushels an acre in that period. Agricultural College experts say corn is a heavy feeder and soil exhaustion soon follows from removing too much plant food without returning enough by fertilizer and crop rotation.



By the Readers of BETTER CROPS

Less exploitation of cheap marginal land and expensive irrigation, drainage, and clearing projects by the large corporations. Increased production on the already available lands by the use of better seed stock; more thorough cultural methods and a better knowledge of the soil and its needs. Improvement in our distribution and a little less overhead on what the farmer buys in the form of less expensive advertising schemes.—*A. L. McMahon, Instructor, Montana State College, Bozeman, Mont.*

Greater efforts should be made to reduce the cost of production per unit in order to increase the margin between production cost and selling price. Too much dependence is being placed on efforts of organizations and on legislatures to increase selling price of farm products and not enough on a selection for production of those crops most likely to give returns, combined with a study of ways and means to reduce production costs.—*M. F. Barrus, Extension Work in Plant Diseases, Ithaca, N. Y.*

The thing which the grower of canning fruit in this state is most in need of is government inspection of fruit sent to the canneries. As it is now, the contract for the purchase of the fruit is binding only on the grower; when a cannery does not wish any more fruit they can, and do, turn down fruit that they have bought on account of some *fancied* defect; and the grower takes the loss.—*Lloyd Austin, Assistant in Pomology, University Farm, Davis, Calif.*

A comprehensive program for bringing about an intelligent understanding of the economic problems of farmers.—*W. R. Camp, Professor University of California, Berkeley, Calif.*

Eliminate in so far as possible the breeding places of injurious insect pests of tree and plant life. Exclusion is many times cheaper and more effective than control work. Reforestation of our idle lands will help matters along wonderfully; likewise financially.—*H. L. McIntyre, Supervisor Gipsy Moth Control, Conservation Commission, Albany, N. Y.*

Plant less acres. Grow more legume crops. Build up the soil. Diversify crops. Grow and keep more dairy cows. Keep more and better poultry, and keep them better. Give more attention to home improvements, inside and out; plant shade trees, make walks, paint houses, make lawns, water system and lights in home. General home improvement instead of the *craze* for money.—*J. R. Sams, County Agent, Columbus, Polk County, N. C.*

Education we owe much to, but educate that we may do more and better work instead of less and away from work as is becoming the common practice.—*C. R. Quick, Dairy Farmer, North Canton, Conn.*

Form a *National* Junior Federation of young folks. Teach 'em real cooperation. Then 20 years from now we will have no "agricultural problems."—*John F. Case, Farmer-Editor, Wright City, Mo.*

In this section farmers are having no trouble producing the goods. Getting adequate values for the product to show a profit seems to be the trouble. Cooperative marketing looks like the remedy to me.—*F. M. Johnson, Farmer, Waldoboro, Maine.*

Rural organization, a means for systematic study of problems affecting agriculture and social uplift. Boys' and girls' club work, a potent factor in bringing about a better agriculture and a more intelligent citizenship.—*C. L. Beason, County Agent, Bryan, Brazos County, Texas.*

Preach optimism. Teach building up the soil by use of legumes, manure and crop rotation. Preach cooperation until the farmers can cooperate in marketing, conserving labor, etc.—*C. L. Howard, County Agent, Lancel, Kansas.*

For cotton states. Take King Cotton from his throne which he has occupied so long. This is being accomplished slowly by Mr. Boll Weevil. Diversify more. Get more pure bred dairy cattle in each county. Produce more hay, preferably legumes. Organize pure seed associations in each community and county. The day has come when seedsmen use little discretion in the selling of their seeds and for this reason I think we should grow pure seeds at home and eliminate the problem of buying seed from seedsmen.—*C. C. Kemp, County Agent, Homer, Georgia.*

Do all of the fall plowing you can. Sow crimson clover on thin land and turn it under. Stay on the farm more and leave the automobile in the garage. Don't spend a dollar's worth of gas going twenty miles for a plow point that will cost fifty cents. Raise all the cattle and sheep possible. Do more work on the farm and less grumbling. Be around at feeding time, pay your

hired help regularly and make them earn it. Reduce the tariff.—*C. B. Williams, State Game Warden, State Capitol, Nashville, Tenn.*

Produce home supplies as far as economical. Make cash crop surplus. Keep a sufficient number of live stock to utilize all feed crops that can be economically produced. Ship or sell only the best products of the farm. Grade, pack and sell cooperatively, cooperative production is as essential as cooperative selling.—*E. W. Gaither, Dist. Agt. Agr. Extension, Wilmington, N. C.*

Kill the tariff on everything.—*R. Freeman, County Agent, St. Paul, Minn.*

Increase the acre yields by more and better fertilization and protection from insect pests.—*R. H. Benton, Jr., County Agent, Winnsboro, La.*

Continued effort by the Agricultural Extension Forces to increase efficiency in producing farm crops. Realization on the part of the National Farm Bureau Federation that if such a farmer body is to function effectively as a national representation of farmer interest, it must proceed much as a national Chamber of Commerce. Understanding teaching, and carrying out methods of marketing all major farm products in an orderly manner, instead of dumping into the custody of speculators who are able to finance their ventures from prestige gained by past successful speculations.—*J. Ross Lintner, County Agent, Leesburg, Va.*

Produce all food and feed used on farm. Economical production. Universal use of *best seed* available. A system of farming that will utilize labor every work day in the year, rain or shine. Cooperative buying and selling.—*O. F. McCrary, District Agent, Farm Demonstration Work, Raleigh, N. C.*



By Ted Butlar

BETTER CROPS' Washington Correspondent

As American agriculture settles down for its annual winter breathing spell with the most comfortable feeling it has enjoyed for a wearisome four years, unofficial estimates state that the gross income from agricultural production this year will exceed that of last year by approximately \$500,000,000. There is bona fide evidence on every hand that the farmer goes into winter quarters in a greatly improved financial condition. This does not mean, however, that the need for further improvement has passed. It will take more than one good year of profits to get agriculture back on a completely satisfactory basis.

An agricultural census of the world is being planned for 1930 and will be promoted by the International Institute of Agriculture at Rome, says Asher Hobson, American delegate to the Institute, who has been in Washington conferring with government officials. The idea back of the census is to place the agricultural statistics of all countries on a comparable basis for the intelligent interpretation of wool and fiber production and needs, Hobson states. A total of seventy-one countries now have membership in the Institute, he reports, and the statistical work has been built up to a point where it reports currently on 70 per cent of the world wheat crop exclusive of Russia.

A further foot-and-mouth disease scare was thrown into the livestock industry since the last issue of BETTER CROPS by reports that it was found in districts near Houston,

Texas. The forces of the state and federal governments were thrown into the campaign immediately and recent reports made by Dr. J. C. Mohler, chief of the federal forces, state that it has been brought under control. The outbreak was confined to five herds. Similar satisfactory reports come from California, the scene of the first outbreak since 1914. As a final precaution in suppressing the outbreak on the Pacific coast federal officials found it necessary to exterminate the deer on two ranges of the Stanislaus National Forest in California.

Further brightness to the domestic cotton situation is evidenced by reports that European demand will be stimulated by several factors. After surveying the field carefully, officials of the U. S. D. A. state that world supplies of cotton have been short for several years and prices have been correspondingly high. There is little doubt, these officials say, but that supplies of cotton goods in consumers' hands are relatively low and favorable employment and industrial conditions in many European countries are barometers of a healthy demand for cotton.

Even though farmers were not as quick to grasp hold of radio as urban inhabitants a survey among county agents just completed shows that during the past year the number of receiving sets on farms has increased from 145,000 to 370,000. An average of 130 farmers in every county own sets and are classed as en-

thusiastic "listeners-in." The development of radio work in the U. S. D. A. has been keeping pace with interest in the field until today it is possible for any farmer to pick up a variety of information about market prices and other information on his business by making a few slight adjustments on whatever kind of a set he may own.

When the Bureau of Public Roads got through checking up the number of registered vehicles as of July 1, it found that exactly 15,552,077 were credited to the United States. This represents an increase of 2,549,650 or 20 per cent over the registration of July 1, 1923. There is now one motor vehicle for each 6.6 persons, which places this country far ahead of the rest of the world when it comes to motor transportation. The greatest number of motor vehicles in proportion to population was found in the Pacific Coast states where every 3.4 persons own one. New York leads with 1,233,362, closely followed by California with 1,184,015.

And speaking of automobiles and motor transportation, this same government bureau has found that motorists of the country pay in the form of gasoline taxes and registration fees an average of only a quarter of a cent a mile. That is what the fees paid in a year amount to when divided by 6,000 which is believed to be the average motorist's annual mileage. Most of this money collected is put right back into better roads. During the past year, 81 per cent of the motor vehicle license revenues and 58 per cent of the gasoline taxes were turned over to state highway departments for road construction while counties got a good share of the remainder for road purposes.

Chris L. Christensen, who traces back to soil where cooperation among farmers enjoyed its inception, has been placed in charge of the division of agricultural cooperation of the U. S. D. A. Already he has completed plans for

extensive expansion of his work in order that the federal government might be in shape to ably assist as it can the many new cooperative organization springing up daily. This development is the culmination of ten years work by the government and is in response to a widespread demand from the cooperatives.



Better Cabbage Yields

(From page 10)

than did the incomplete mixture. The application of potash made a difference of 3 tons per acre in the total crop yield.

Under normal market conditions, these increased yields represent a very nice profit over and above the cost of the fertilizers. With average prices for cabbage, say between \$8 and \$10 per ton, the crop values show very satisfactory results. An increased yield of 8.7 tons per acre, due to the complete fertilizer application, means a gain from \$69 to \$87, in the value of the crop produced. This amount paid the cost of the fertilizer several times over. The value of the crop increase, due to the use of 212 pounds of sulfate of potash, was from \$24 to \$30 per acre.

The beneficial results from the fertilizer in the improvement of the quality of the cabbage was also very noticeable, the heads on the complete fertilizer soil weighing from 7 to 10 pounds each. On the land where no potash was applied the cabbages were very uneven, with a larger percentage of small heads. From a market standpoint, this difference would result in greatly decreased returns.



When you have finished with this copy of BETTER CROPS, pass it on to your neighbor. Tell him what you liked in it and whisper in his ear that for the paltry sum of \$1 a year he can have a copy each month all to himself. A letter to Jeff will do the trick.

Dependable Derricks

(From page 23)

of young dairy experts took high honors and the Maryland team under his tutelage won fourth at the National Dairy Show recently held at Milwaukee.

Several Kent county boys have won state and national prominence for their accomplishments. It is difficult to pick out the most noteworthy cases, but there really is something remarkable about the Sutton boys living on a farm near Chestertown, Maryland. Two of the boys, Stanley, age 19, and Martin, 17, already have won their spurs while the other three, Albert, 16, Frank, 14, and Clarence, 11, are just coming on, so to speak. Both Stanley and Martin were on the Kent county dairy judging team this fall that won high place in the state, while the latter was on the state team that brought distinction to Maryland at the National Dairy Show by taking fourth in a lively field.

Last spring when the farmers around Chestertown were looking the field over for someone to take charge of their centralized tomato plant bed they selected young Stanley Sutton. Responsibility for the success of the tomato industry of 32 farmers was thrust on youthful shoulders but it rested there lightly. And the fact that the season was the worst in 30 years for the production of tomato plants did not worry Stanley. When the plants were ready for distribution and transplanting he sold 400,000 of them to contracting farmers at \$1.50 a thousand, gave them complete satisfaction and pocketed a neat profit.

One of the first things Stanley did after getting his acre plant bed in shape was to apply 20 tons of manure and 1,500 pounds of 2-8-5 fertilizer. Then on top went 700 pounds of tankage and two tons of leaf mold for the proper mulching.

His plants were so successful that he had to turn down orders for over 100,000 from farmers who had been caught short-handed as a result of the poor season. Needless to say, farmers around Chestertown are breathing easier now that Stanley has agreed to undertake this important project again next year. The State Vegetable Growers' Association has asked him to discuss his work at its winter meeting.

Last year the Sutton boys raised some of the best seed corn in the state and farmers were glad to pay \$3.50 a bushel for all they had. Both of them have taken entries to the National Dairy Show and have been in the money. Today they are slowly but surely working themselves into the purebred business with the highest type of livestock.

It really seems unfair to the Derricks and to the scores of young farm folks under them to point out a few isolated cases of club work in an attempt to prove exactly what is going on in Kent and Harford counties. These two counties are full of club successes. Today the Derricks have a number of boys emerging from club work after several years experience, and they are finding themselves ideally fitted to take their place in the operations of the home place or to start up their own business.

A 4H club is a splendid vehicle for the establishment of more efficient methods of farming. The Derricks again have proven this.



An egg marketing association that has met with surprising success. It's in Connecticut and it has an unusual story connected with it. Paul Mehl, Marketing Specialist at the Connecticut Agricultural College, tells the story of it in the December issue of BETTER CROPS.

Corn Responds to Potash

On soils deficient in available potash, the response to potash fertilization is more marked on corn than on any other general farm crop. In the Middlewestern States wheat and corn are the general crops most commonly fertilized, and a comparison of the response of these two crops to potash fertilizers can be made in a considerable number of experiments.

For this comparison, 29 experiments in Ohio, Illinois and Missouri were selected in all of which the effect of potash has been definite and in some cases very pronounced. In all of these experiments both corn and wheat are grown in rotation and the effect of potash can be measured in addition to phosphate alone. The following experiments are included in the summary of results given:—

In Ohio:—Wooster, Strongsville, Germantown, Carpenter, Findlay, Miami Co., Clermont Co., Hamilton Co., and Mahoning Co.

In Illinois:—Cutler, Odin, Dubois, Ewing, Oblong, Toledo, Enfield, Lebanon, West Salem, and Raleigh.

In Missouri:—Bowling Green, Carthage, Fulton, Hurland, Laclede, Lamar, Salem, St. James, Unionville, and Vandalia.

In these experiments the average results on corn and wheat from potash in addition to phosphate in the fertilizer have been as follows:—

In all but four of these 29 experiments, potash gave a larger increase on corn than on wheat, and in these four experiments the effect of potash on corn was distinctly beneficial. No experiments were included in which manure was used as a basic treatment. In fact, the use of manure on corn in several of the Indiana experiments made it impossible to use the results in this comparison even though the soils show a definite response to potash. The excellent results that have almost universally been obtained with manure on corn are undoubtedly due, in many instances, to the relatively large amount of potash that it contains, and the practice of applying manure and acid phosphate on corn and complete fertilizer on wheat is, therefore, sound. But it is safe to say that not more than one-third of the corn acreage can be properly manured and evidently more consideration should be given to the potash content of the fertilizer on the other two-thirds of the corn acreage on soils that have shown a definite response to potash.

Mention should be made of the fact that in most of the Ohio and in all of the Missouri experiments relatively small quantities of potash were applied while in the Illinois experiments heavier applications were made.—*Soil Improvement Committee.*

Experiments		Increase for Potash	
State and Number	Average Duration (Years)	Corn Bus.	Wheat Bus.
OHIO —(9 experiments).....	12.9	4.9	1.5
ILLINOIS —(10 experiments).....	9.3	9.3	4.3
MISSOURI—(10 experiments).....	9.0	4.9	1.5
AVERAGE—(29 experiments).....	10.3	6.5	2.4

Helping Cotton to Success

(From page 21)

But it is certainly true, that the addition of the 240 pounds of kainit to the fertilizers at Poplarville brought about a condition whereby the plants were able to increase their yield nearly 60 per cent.

The conclusion is clear enough that the Coastal Plain soils of Mississippi respond to potash, and potash pays well under cotton, when associated with phosphoric acid and nitrogenous fertilizers. In a word, it is a three-element fertilizer that is needed for cotton on Mississippi Coastal Plain soils rather than a two-element fertilizer, as some have contended.

Reverting to the appearance of the two plots, why is the cotton that has received no potash devoid of leaves while the other is well covered with foliage? Rust is the cause of the leaves shedding. Rust on cotton is a manifestation of potash hunger, as is evidenced by the fact that potash always prevents rust if applied in sufficient quantity.

A plant denuded of its leaves is like a factory that has been dismantled. The leaves are the plant's factory for the production of its

fruit. When the leaves are destroyed, as in case of rust, fruit production ceases. The cotton plants in this case ran short on potash; rust set in before the plants had time to set a full crop; the leaves shed and the formation of fruit stopped. In other words, the cotton plant staged a potash strike and quit work at a very critical time when the output should have been at its height.

During a drouthy period rust seems to show up worst. This year there was a severe drouth, hence much rust. Wherever potash was used in abundance the cotton stalks kept green and busy manufacturing fruit despite the scant moisture. Where the potash supply was short there was rust to destroy the leaves quite generally over the south, and even where rust did not show up seriously a scarcity of potash slowed down production and the bolls formed during the latter part of the season did not fill out as well as where available potash was present in abundance. Potash, therefore, is no small factor in helping cotton to overcome the vicissitudes of drouth.

The argument for complete fertil-



On the left the cotton received nitrogen, phosphoric acid and potash. On the right no fertilizer was used.

izers on the Mississippi Coastal Plain soils will probably be more conclusive if one compares the plot receiving complete fertilizers with a plot receiving no fertilizer at all.

The illustration given reveals a striking difference between the rows receiving complete fertilizer on the left and the rows receiving no fertilizer on the right. The yield of the unfertilized plot on the right turned out to be 288 pounds of seed cotton to the acre, while the yield on the fertilized plot on the left turned out to be 1,176 pounds of seed cotton per acre.

The Coastal Plain soils of Mississippi are like the Coastal Plain soils of regions further east, also of Louisiana, Arkansas and East Texas. Farmers who have been fertilizing with only nitrogen and phosphoric acid will find in these experiments at Poplarville, Mississippi, evidence of a better paying method, and it is apparent that they will make no mistake if they apply fertilizers containing potash.



Sleuthing for Red in the Soil

(From page 18)

ment station. This method has been commercially named "Richor-poor" and "The Improved Comber" and has been quite extensively used.

The equipment necessary for making the test consists of a glass test-tube and "a saturated solution of Potassium Thiocyanate in alcohol, ether or acetone."

Here are the directions:

Fill test-tube one-fourth full of dry soil. Add Thiocyanate solution to make half full and shake for 30 seconds. Let stand until soil settles. Read the results.

If the liquid above the soil is colorless the soil is not acid. But if the liquid is red it portends evil to the alfalfa or clover seeding of

the not distant future. For "red" means acid, as with the litmus test.

One Iowa druggist saw the possibilities in this simple test and prepared the solution as a service for his farm trade. There is no reason why interested farmers cannot take a bottle of this chemical and three or four test-tubes and know just how every field on the farm tests.

The directions for making the test call for "dry" soil for the reason that the presence of too much moisture interferes with the development of the red color. This is a serious handicap to field use during certain seasons of the year.

TO meet this difficulty, Dr. P. E. Emerson, of the Iowa Experiment Station, suggests using another solution to overcome or lessen the effect of the moisture. This is "a saturated solution of ammonium molybdate in ether." The use of this mixture before adding the thiocyanate gives as good a color development with moist soils as with dry ones. If the soil is very wet the difficulty will be only partially overcome, however.

"For moist soils add 10 to 20 drops of a saturated solution of neutral ammonium molybdate in ether," writes Dr. Emerson. "Then use the Thiocyanate solution made as follows: 9 parts acetone and 1 part ether saturated with Potassium thiocyanate. Many druggists handle these chemicals or can get them readily. They can easily make up these solutions for county agents, agricultural teachers, farmers or others interested in testing soils."

Nor is this the final word in soil tests. Within the last few months Professor Spurway, of the Michigan Experiment Station, has brought forth the "Soiltex" method in which shades of yellow, blue and green tell the story of "red" in the soil.

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St. Louis—
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Armour Fertilizer Works
Swift & Company

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Bound Brook—
Nitrate Agencies Co.

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International Agricultural Corp.
New York—
American Agricultural Chem. Co.
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International Agricultural Corp.
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National Aniline & Chemical Co.
Nitrate Agencies Co.
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Ton Litters

(From page 8)

brought out by the project. This was a litter of 12 raised by Wilbur Gray and weighed at six months 2,140 pounds. His account follows:

"Breeding: Both sire and dam were purebreds. The dam and granddam possessed excellent production records. This litter was the third from the dam and in her three litters she farrowed a total of 38 pigs, saving 34 of them. The granddam of the litter had a record of 66 pigs farrowed in six litters. The power to produce and save a good number of pigs was characteristic of the whole herd of 18 sows which saved a total of 138 pigs ready for market. In the spring of 1922 the herd of 14 sows on this farm saved 110 pigs to market age.

"Management: The breeding herd and the litters on this farm were handled according to the best methods, including special attention to exercise and sanitation. After breeding the sows were allowed free range and fed in a manner to induce the taking of exercise, and after the litters came special pains were taken to get the pigs to exercise. At farrowing time close attention was given to the care of the sows and pigs with the view of saving every pig farrowed. A stove in the

farrowing house insured against loss from cold weather and a box near the stove received the pigs as they were born. They were ear marked and their teeth nipped before being put back with the sow after she had completed farrowing. Before placing the sows in the house it was thoroughly cleaned with hot lye water and disinfected, and then cleaned frequently during the time it was occupied by the sows and litters. Permanent lots surrounding the farrowing house were plowed and sowed to a grass crop twice a year as a sanitation measure as well as a means of furnishing pasture.

"Feeding: At breeding time the sows and herd boar were fed ground oats and corn, tankage and bluegrass pasture. The first month of the gestation period the sows got ear corn and bluegrass pasture, to which tankage was added at the beginning of the second month. This ration was continued until about a week before farrowing time when the tankage was dropped and the sows fed on ground oats and corn. After farrowing the sows got a light feed of ground oats for the first five or six days, after which a little corn was added. Tankage was added to the ration when the pigs were about ten days or two



Working for a gold medal in a ton litter club.

weeks old and this ration was continued until the pigs were weaned. After weaning the litter received ground oats and corn, tankage and milk. The grain was self-fed. This ration was continued until the last 38 days of the feeding test when they were fed ground wheat and corn, soaked shelled corn, and milk.

"The litter was farrowed on February 3 and officially weighed at 180 days of age on August 4. Weights of the litter at different periods were: June 28, 1,284 pounds; July 5, 1,434 pounds; July 12, 1,580 pounds; July 19, 1,716 pounds; July 26, 1,942 pounds; and August 4, 2,140 pounds."

IT is evident that certain things are needed to produce ton litters. The factory must be built right. Every ton litter produced in Indiana in the two years past—97 altogether—has been sired by a purebred boar. Eighty-six of the 97 sows have been purebreds, six were high grades and five were mixed breeding. Another outstanding fact about these sows that produced ton litters is that they themselves came from large litters and produced and raised large litters in turn. Records of 78 of these ton litter dams showed that they came from litters that averaged more than 10 pigs. Only one of them came from a litter of less than 10 pigs, but she was one of eight.

These same 78 ton litter dams have farrowed and raised 267 litters during their period of service totaling 2,760 pigs, or an average of a little more than 10 pigs to the litter. Better still they raised 2,392 of the pigs that were farrowed, an average of almost nine pigs to the litter.

Indiana farmers are convinced of three fundamentals of pork production which they have learned from their experience in the ton litter contest. They have seen that the proper selection of breeding hogs will add materially to the reproductive capacity of the sows kept for

breeding use; that it pays to put forth every effort to increase the size of the litter raised to weaning time; and that clean, sanitary quarters, lots and pasture will go a long way toward reducing the losses from disease and parasites.

ALTHOUGH Indiana must be credited with being the mother of the ton litter idea, other States saw the wonderful possibilities in using this project to develop pork production and rapidly appropriated the idea with various modifications to fit their own particular conditions. Illinois entered into the idea for the first time last year and finished with a record of 87 ton litters. Ohio finished with 39 ton litters, Texas with 28, Wisconsin with 17, Michigan with 16 and the State of Washington with five.

The ton litter idea in Wisconsin was conducted on a slightly different basis in so far as the time of making the awards was concerned. A sliding scale was adopted in order to allow all litters of different ages to qualify at the time of the final round-up at the State Fair. A litter of six months of age to qualify was required to weigh a ton; but at the time of the round up the weights were evened up by making the qualifying weight $21\frac{1}{2}$ pounds more for each day over six months or by subtracting 20 pounds for each day under that age.

Richard Groth & Son of Ixonia, Wisconsin, won the State ton litter round-up contest staged during fair week, winning by a big margin and beating their nearest competitor by 548 pounds. This litter of 14 pigs weighed at six months of age 3,175 pounds. When shown at the fair they were 231 days old, and their actual weight on the day of the contest was 4,570 pounds. According to the sliding scale adopted in the State contest to make all litters equal in weight for age this litter would have needed to weigh only 3,097 pounds to qualify for the

show. They beat that weight by 1,473 pounds.

FOR the grand sweepstakes record in total poundage per litter at six months the Corn Belt gives way to the Lone Star State. Texas produced the heaviest litter yet recorded, a litter of 12 which weighed 3,898½ pounds at six months. Vic Hill of Waco was the man who did the trick. Fourteen pigs were farrowed in the litter. One was born dead and one was a runt. Since the sow had only 12 teats the runt was killed.

Mr. Hill kept a careful record of the cost of producing this litter including the feed fed to the sow from the time she was bred, the service fee of the boar which was \$5, and the feed fed to the litter to six months of age. The total cost of the litter up until weaning time was \$20.95. The feed fed to the pigs amounted to \$205.39, a total cost of \$226.34. The total cost divided by the weight gives a cost of \$5.83 per hundred pounds. The pigs were worth at six months of age \$9.50 a hundred.

In the seven or eight States engaged last year in the ton litter work there were perhaps hundreds of records made with litters of various sizes and under varied conditions worthy of note and where records have been made with a number of litters in the same herd under ordinary farm conditions the work has been extremely valuable in the lessons it has taught. If the same effort and knowledge is applied to every litter in the herd that has been given to the few of special favor, pork production will have advanced a great way as a profitable enterprise. After all that is the object of the ton litter work. As Wiley of Indiana has put it. "The Hoosier Ton Litter is the show window of the factory in which pork is produced economically and profitably. The show window—

ton litters—attracts. Folks hear about it, come in and learn how it was done."



A Tobacco Chewing Germ

(From page 12)

Manure and tobacco refuse. Use no manure or tobacco stalks on the plantbed. Manure may carry the germs and tobacco refuse from a diseased crop will certainly do so. Use mineral fertilizers only.

Chewing and smoking tobacco. If you chew tobacco, don't spit in the plantbed and don't let your tenant or helper do it. If you smoke, don't fill your pipe near the bed. These precautions apply especially to home cured tobacco. Manufactured tobacco has usually aged long enough before use to be safe from the standpoint of wildfire.

Animals. The human animal is probably the most prolific carrier of wildfire. He strips tobacco and works the plantbed on the same day, and the germs get a free ride from the barn to the bed. He helps his neighbors at transplanting time and they help him in return. If wildfire is in one of the plantbeds it's pretty sure to get into the other. When you trade labor make sure you are not trading infection.

Examine the plants before setting the field. Look for spots like those shown in the pictures. If either disease is present don't use the plants unless you can't borrow, buy or steal other plants from a clean bed.

Rotate the tobacco land. If this is not feasible, plow the tobacco stubble immediately after harvest. If the stubble is turned under so there is no growth of suckers the wildfire germs cannot overwinter in the soil.

The farmers of Virginia have gotten results with the program outlined above. It costs practically nothing except a little forethought and care.

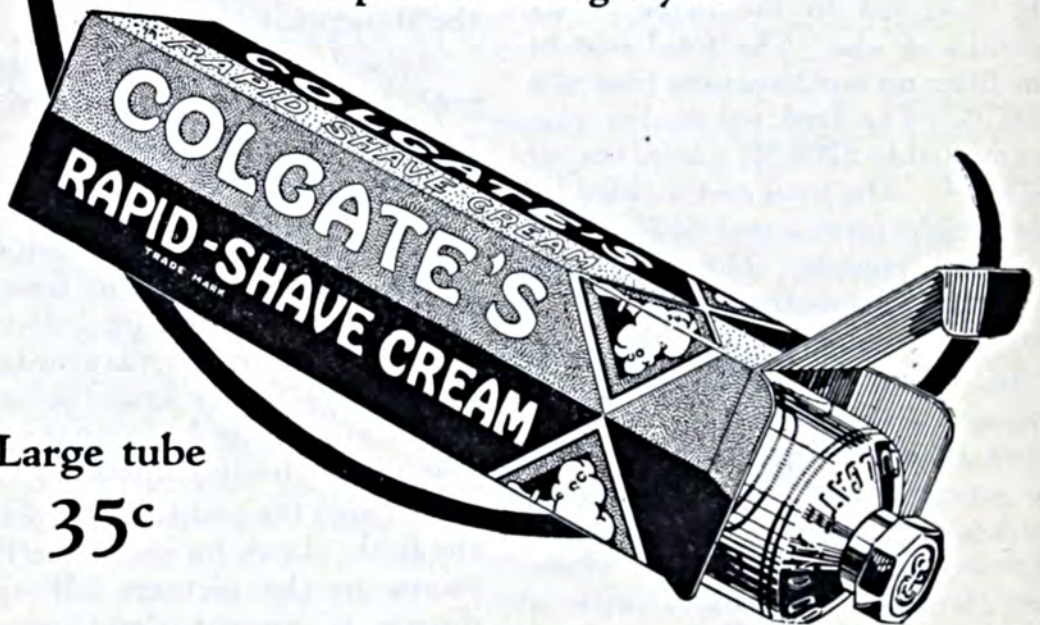
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A Turn in the Road

(From page 14)

but the combined income from corn and the small grains will be a respectable crop item. In addition, and what is most important, the Corn Belt's great money product—hogs—is now definitely on the way up. The cycle of hog prices is the most nearly predictable movement of its kind. Prices of hogs have already forsworn their bankruptcy level of the last year and a half. Before another September they are going to materially higher levels, unless history is an utterly faithless guide. This all means, in a nutshell, that 1924 sees the biggest income in the Corn Belt in five years, and that the stage is at least set for a decent play in 1925.

That is not to say, however, that this great Upper-Mississippi-Valley territory is back riding the crest of prosperity. Such is not the case. The Corn Belt has been way down in the depths for nearly four years and now it sees a returning gleam of daylight. That is the situation—not good times, as the region has known them in years gone by, but markedly better times than for four years.

The Corn Belt has worked painfully but skillfully out from under a calamitous combination of general price collapse and grain surplus, both befalling in 1920 and both precipitated by circumstances beyond the control of producers. Dame Nature brought forth whopping yields of corn three straight seasons, regardless. The acreage was reduced somewhat but it is not possible to make violent shifts overnight in the acreage of a basic crop, around which is built the entire farming system of a region. So there was a lot of corn.

The inevitable and logical result was a lot of hogs. The only possible way of carrying along the vast store of grain and working it off at all was by doing so on the hoof. They

raised and fed two tremendous crops of pigs and so worked up the corn, but the price of hogs sagged to profane depths.

This has been one of the most distressing chapters in Corn Belt history. But now it looks, for the first time, fairly like a closed chapter. The corn surplus is a thing of the past. The hog surplus is a passing thing. The stage is set for higher-priced hogs. All of which is in favor of increasing rather than decreasing income in the Central States. Farmers sell corn to each other, and high-priced corn maybe a liability to the livestock feeder. But hogs are sold out of the agricultural community and the years when they are high priced are usually years of increased total farm income, even though there are always fewer hogs to sell.

So things are looking up in the Corn Belt in spite of the present poor crop of corn. There is a noticeably better feeling everywhere and it is manifested not only in trade but in a gradual stiffening up in land values. A year ago you could hardly sell a farm though it would produce everything from alfalfa to petroleum and was priced lower than the Salton Sea. The only farms changing hands were those going back into the well-known hands of the mortgagee. But now farms are selling; no boisterous movement as yet, but they are selling, and with a little actual cash once more a feature in the transactions.

DOWN in the South there is prospect of a rather larger and better distributed income than last year. Texas and North Carolina had splendid crops of cotton last season and made money accordingly. It is not too much to say that one year ago this time Texas

stood out as the most prosperous agricultural State in the country.

This year, however, conditions have been somewhat reversed. Texas and much of Louisiana and Oklahoma have suffered from prolonged drought, while the territory east of the River has fared better. The latter has not been seriously hurt by the weevil, yet has had enough rain to bring out the worth of the fertilizer it used. The western cotton country does not use fertilizer. Rice and truck crops will also produce good average income this season; rice growers are feeling cheerful, in fact. The southern fruit crop, like tobacco, was too bountiful to maintain good prices but the total gross income from both runs into respectable figures.

The South is already in strong position again with respect to its volume of indebtedness and this year will mark its greatest cash purchasing power for new goods in five years. Cotton production has for two years approached a remarkable economic adjustment. The supply is just about large enough to meet the world's needs at a fair price and at the same time the price does not work a hardship on consumers. It is not often that so profitable a balance is struck between supply and demand in the staple crops and if cotton producers know when they are well off they will take some note of the foregoing fact.

The Far West, unfortunately, does not appear likely to increase its income over last season. Better grain prices have been more or less offset by poorer crop in the Oregon and Palouse country. The wool and lamb crops were larger than last year but prices thereof have not been quite as strong. The Coast has been hurt by drought, by frosts, and by the foot-and-mouth disease.

In the range country, the cattle situation remains an enigma. From the Rio Grande to Canada, the mountain country is strewn with financial wrecks that once were big

cattle men. Inquire almost anywhere through that territory about well-known operators and the answer is one word, "busted." There has been considerable liquidation of young stock as well as cows, and it seems reasonable that the cattle surplus will cease to exist by and by. There is evidence of growing optimism among cattle men and even some quiet stocking up on the part of long-headed operators who still have financial resources. But there is much confusion of opinion over the cattle situation. Men look for the tide to turn but the big unanswered question is when.

ALL in all, however, farmers will have more money to spend this fall than they have had since 1919. Probably upwards of a billion dollars more than last year, and even more than that in terms of relative purchasing power because the disparity in price between farm products and other commodities has narrowed down somewhat.

But, as usual, there is a sober note running through this glad symphony. Men accustomed to facing the music will hardly overlook this minor strain since it really supplies the key-note for the whole piece. The point is that improvement in prices of the major food crops has been primarily due to a freak of the weather rather than to basic adjustments in acreage. Not very often does it happen that we get a bumper yield of wheat, while a few miles north Canada has almost a crop failure. Not very often do we increase the corn acreage as we did last spring and still see the weather knock off a half-billion bushels or more. In agriculture, man proposes but the weather disposes.

Farmers who fought their way through the 70's and the 90's know that they are fighting through another readjustment period. They do not look upon 1924 as the end of the battle; but to many it is a

desperately needed victory, a chance to dig in, consolidate their gains, and get ready for the rest of the fight. There is no question about the final outcome. Ten years hence will see farmers in the strongest position of a generation. Meanwhile, blessed are the thrifty for they shall inherit the earth.



How I Plan My Work

(From page 5)

taken up and those selected by the work committee take charge of the various projects. Sometime slight changes in the personnel suggested will be made but finally the community selects a committeeman to take charge of each project. This same process is gone through in each of the communities organized in the county. These various community leaders have as their county chairman a man or woman selected at the annual county meeting to act as such.

TO illustrate, in St. Charles County we have in charge of our home economics work in the county Miss Isabel Hillenkamp as county chairman of home economics. In Augusta Community Mrs. I. M. McCormick is local committeeman, in O'Fallon Community Miss Suzie Keithly is local committeeman, and so on with each community organized. At certain times during the year Miss Hillenkamp will call a meeting of all the community committeemen to discuss achievements up to that date and plan for the successful completion of the goals they have set. Some of the old organized communities may set as a goal the holding of one millinery class, one garment-making school and as much more as they feel they can accomplish during the year. Other communities that are new at the work may not set so

much work as their goal. Sometime during the year each one of the county chairmen calls their community chairmen in for a conference with the view of bettering conditions relative to their special project in the county.

We have fifteen county leaders and 74 community leaders working in eight organized communities as heretofore stated. We have a chart in the office showing this plan of organization with the goal set by the various communities in such a way that it is self-explanatory to anyone who calls.

As various committeemen complete their project and report to this office or as the various communities hold the meetings on achievement programs we give this careful publicity through our local papers and through the press channels. In this way we not only give credit to those who have cooperated, but we interest other people and unorganized communities in planning work for themselves.

According to P. H. Ross, former county agent leader in Missouri and just recently elected director of extension in Arizona, St. Charles County has accomplished the most good work of any county in the state. Carefully organized communities with leaders having a definite piece of work to do during the year and with no leader overburdened have made it possible to claim this record. As the years pass and these leaders who have done definite work in the county retire to allow others to take up the work, our list of leaders in the county will increase and the time will soon come when all the people of the community will have had experience in helping work out the program of work. This will give us a county filled with leaders, whereas at the present time our corps of leaders is somewhat limited.

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The use of fertilizer has become a necessity to modern agriculture. Farmers of the Eastern States have realized for years the profit to be made from the use of fertilizers, and now the Western farmer is rapidly learning to look upon fertilizer as an "investment" rather than an "expense."

The American farmer is learning that by taking everything from his soil and returning nothing, he is headed straight for agricultural bankruptcy, and that every dollar spent on good fertilization is better invested than a dollar in the savings bank.

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For many fields and many crops, a broadcast distributor offers the best solution of the problem of how to make the application.

There is no distributor on the market that can equal the New Peoria. It took years of actual experimenting in the field to finally produce this high-grade distributor. It bears little resemblance to the makeshift box-wheels-and-axle contrivances commonly found on the market.

We also manufacture Fertilizer Drills in all sizes.

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Are Comparisons Odious?

(From page 4)

electric companies discarding millions of dollars worth of steam engines for the new, more efficient steam turbines.

Scientists in Paris, working on the atom, report that in a single glass of ordinary water lies enough atomic energy to propel all the vessels of the world for an aeon.

A Zeppelin successfully and safely sails 5,500 miles in eighty hours. A monstrous vehicular tube is driven under the Hudson River, linking New York and New Jersey, Siamese-twin fashion, with an artery of steel.

A new process for making gas cuts costs in four. A new celluloid paint can be sprayed on in one-tenth the time it takes to varnish a piano.

In insulin, doctors have found a cure for diabetes, and promise that cancer a few years from now will be but only a memory.

SINCE the laying away of the grain cradle and since the birth of the reaper, agricultural inventiveness seems to have lost its fecundity. True, the tractor helps. And Eli Whitney was of some assistance. But what has been done in the last ten or twenty years to compare with the advances made in other professions and businesses?

Lucky Strike cigarettes are rolled, packed, packaged and shipped by audacious, cunning machines with intricate steel fingers. But we still pick cotton by hand.

We husk corn, squat fashion like a squaw, while overhead a pilotless aeroplane, governed by radio, heeds the command of a distant mechanic who presses buttons.

Many farmers still continue to raise fifteen bushels of wheat an acre, while by scientific time-motion study, more Buicks are turned out with less men and half the energy.

We half wittedly dump our wheat on the market at ebb, and

About Ourselves

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

PUBLISHED by the Better Crops Publishing Corporation, 81 Fulton St., N. Y. C.

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

CHANGE IN ADDRESS — Readers should always give old as well as new address and allow at least three weeks for the change.

MANUSCRIPTS should be brief and preferably typewritten. They will be returned only when proper postage is enclosed. Payment is made on publication.

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.

ADVERTISING RATES may be secured upon application.

ADVERTISING — BETTER CROPS accepts only such advertisements as it has investigated and believes to be thoroughly honest. Readers are requested to say "I saw your ad in BETTER CROPS" when ordering.

INFORMATION SERVICE — We are glad to supply all the information obtainable regarding agricultural supplies or equipment to any reader who will address the Editor, stating his problems and furnishing necessary details. Your name will not be disclosed unless you desire it. There is no charge for this service.

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PUBLISHING CORP.**
81 Fulton Street New York

suffer severe deflation of the wallet. But a chewing gum king, student of psychology, pays a personal income tax of a million and a half dollars, wrung from the pockets of those who need more bread but buy gum. By gum! He knows marketing *and he controls his own distribution!*

WE fight amongst ourselves while capitalists gather around the festive board at the Bankers Club, plan new coups, and contentedly and amusedly gurgle at their own acumen.

Agricultural sons go to the city to learn to be chauffeurs, and farm daughters want to go in the mov'ies. Perhaps "there's a reason." "Surely such unpopularity must be deserved."

Comparisons are odious only when we compare and learn no lesson—and even *then* they are odious only as *any* time wasting is odious. We read, shrug our shoulders, bite off another chaw of Piper Heidsick and—turn on the radio!

And that's *that!*



Lack of Potash and Rust of Soy Beans

By C. A. Whittle

WHEN the outer edges of the newer leaves on the soy bean plant turn yellow the soy bean is showing signs of potash hunger or rust. This yellowing spreads over the leaf. Soon the yellow spots turn brown and disintegration sets up leaving holes where the leaf was attacked or perhaps the whole leaf is destroyed. This the farmer knows is rust. On some soil types that have not been properly fertilized the damage is quite serious.

Dr. F. A. Wolf, plant pathologist

of North Carolina Experiment Station, recently issued a statement concerning the serious losses to soy beans in that state due to rust which he characterizes as the result of a lack of sufficient potash.

That potash prevents rust of soy beans, Dr. Wolf says has been clearly demonstrated. He refers to farmers in that state who grow early Irish potatoes and after the potatoes are harvested follow with a crop of soy beans. Where 300 to 400 pounds of kainit per acre are applied at the time of seeding the soy beans they have been able to prevent rust and mature a full crop of seed. Where potash is not applied in such cases there has been considerable rust damage.

When it is considered that the fertilizer used under the early potatoes contained a comparatively high percentage of potash and was used in liberal amounts, evidently leaving no small residue of plant food for the use of soy beans, it seems apparent that rust is not to be kept down on soy beans without a liberal use of potash.

The manifestation of rust is more pronounced where there has been no preceding application of fertilizer. Beans grown on unfertilized land compared with land receiving an application of potash give the most striking evidence of the benefit of potash, according to Dr. Wolf.

North Carolina is the source of much of the soy bean seed planted throughout the country and whatever affords protection from rust helps develop the largest yield of desirable seed and is of much importance to the North Carolina grower.

But what is true of potash hunger in North Carolina is manifesting itself quite generally, especially on gray and sandy soils where there is very generally a lack of potash. On any land, however, that shows rust there is the indisputable evidence of the need of potash.

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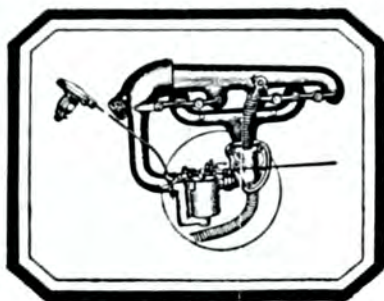
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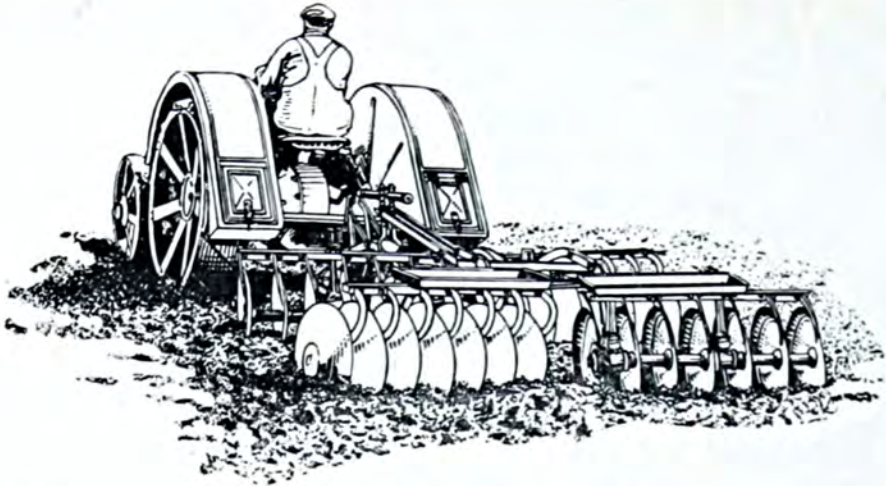


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December 1924

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See page 22 for announcement of Prize Essay Contest



No breakfast tomorrow

TRY IT! Get up early in the morning, sling a sharp axe to your belt, then go outdoors to chop down a tree. Try to work until noon without any breakfast—not even a cup of coffee. You'll soon quit.

Of course, no man can work well on an empty stomach. It is against the laws of Nature. And soil is like Man; when properly nourished, it is a good producer. When allowed to hunger, it produces scant returns. Being a farmer, you know this. But —

Do you know how much plant-food your crops removed from your soil last season? And do you know whether the fertilizer you intend using is just exactly what your soil needs to maintain its fertility?

Some crops remove as much potash as nitrogen and phosphoric acid combined, and a fertilizer analyzing a high percentage of potash is essential.

Some soils contain plenty of potash. With constant cultivation, however, the available supply will eventually be exhausted. On most soil types, the yield will be larger and the quality of the crops better if the fertilizer contains plenty of potash.

Make a simple test on your own soil this season. Fertilize a section of each of your crops with a mixture containing a high percentage of Genuine German Potash, then notice the improvement in your crops.

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The Pocket Book of Agriculture

VOLUME III

NUMBER FOUR

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Bringing Home the Christmas Tree



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VOL. III

NEW YORK, DECEMBER, 1924

No. 4

*In which Jeff tells
why he is going*

BACK to the LAND

By *Jeff Mc Dermid*

BACK to the soil!

Back to the cows and horses, the chickens and the growing green things. Back to the trees, the broad blue sky, the shining hills and purple shadows; back to the golden acres and the drowsy hum of the bees.

And back, also, to the mud of the barnyard, the water frozen in the trough, the cow with colic and the egg-marauding weasel; the swinging lantern at night and the snow drifting in around the windows and under the door in the winter; the broken fence, the leaky roof, and the celery that freezes and spoils.

If "an agriculturist is a person who makes his money in the city and spends it in the country, and a farmer is a man who makes his money on the soil and spends it in

town,"—then I am going to be a farmer-agriculturist; for I am going to make and spend money in both places!

For I've bought "a quarter-

section of Paradise,"—and I am going back to the land. I am "fed up" on paving bricks and cash registers—I long for Long Island.

There are farms on Long Island.

I merely state this for the benefit of those who may have the erroneous impression that this genial strip of the United States is given o'er entirely to bootleggers, beaches, bagnios, and — Brooklyn.

Long Island is 120 miles long and 35 miles wide. Along its northern shore are real, rolling, rocky hills, overlooking the Sound. At the south are rich, verdant, low-lying stretches; the center lies under primeval forests, and the whole island is pie-scalloped 'round with golden, sandy beaches.

Its historic acres, rich in Revolutionary lore, feed the hungry hordes of the Metropolis. There are more truck gardens on Long Island than there are Fords in Iowa. Here, then, is the cauliflower center of the world, the home of the Long Island duckling, the mealy Long Island potato—and the famous phrase, "nothing less than a case!"

The sun strikes Long Island before it reaches New York City, which is well; for if the sun were forced to rise first on Manhattan it would lose each morning much of its natural freshness, its warmth, buoyancy and life-giving beams—all of which would be disastrous to the rest of the United States.

New York gives nervous prostration; Long Island joyous animation.

Song and fable have long told of the joy of the immigrant at the first sight of the United States. And always the Statue of Liberty is cited as the first land sighted. This is merely poetic license; for immigrants first see the long, lean, beckoning finger of Montauk Point at the tip of Long Island, as their ships slide along the southern shore, up into New York harbor where Liberty waves them a bronzy, official welcome.

There are prosperous farmers on Long Island, who till its rich acres, follow the teachings of the scientific men at Farmingdale, read the bulletins, work, study, think—and raise Better Crops.

So, Long Island welcomes Jeff McDermid; and Jeff goes gladly back to the joyous soil.

ROTATION of crops fertilizes, renews, revivifies and strengthens the soil. And the rotation of men must hold a warm place in Nature's heart. As the cocklebur is caught on the cow's tail and carried to distant fields, and as the winged maple seed is borne along on the breeze, so men follow their fancies and drift on the winds of dissatisfaction to distant—and greener—fields.

I got my farm from a man who had made enough and wanted to retire and live in the great city. I wanted to get out of the great city and live again on a farm.

He thought he was tired, when I believe that he only needed a vacation. A person who retires has a label on his gripsack marked, "To the Bughouse." After a short rest from the accustomed tasks of a lifetime, fear, misery, sickness and disease soon follow.

We must get our pleasures from our work; our rest, not from a cessation, but from a periodic change in work. Most people struggling toward divorce need only a temporary surcease, a vacation; for "familiarity breeds contempt," and "absence makes the heart grow fonder."

And so the city man needs, not to quit the city entirely, but to plant himself at intervals on Nature's copious breast, lift his hands to the sky—and watch things grow.

The country is the philosopher's storehouse of thought-food; it is his garden and library. The works of God are better subjects for con-

(turn to page 46)

The

County Agent's Widow

(After hearing from married and bachelor county agents on the subject of wives, it seems only fair to let one of them speak for herself. This contribution came from a Montana woman who prefers to remain anonymous. It ought to start some of you thinking.)

HAVING read the viewpoints of the married county agent and the bachelor county agent, it seemed to me that the discussion would be incomplete without a word from the county agent's widow, sometimes erroneously called his wife.

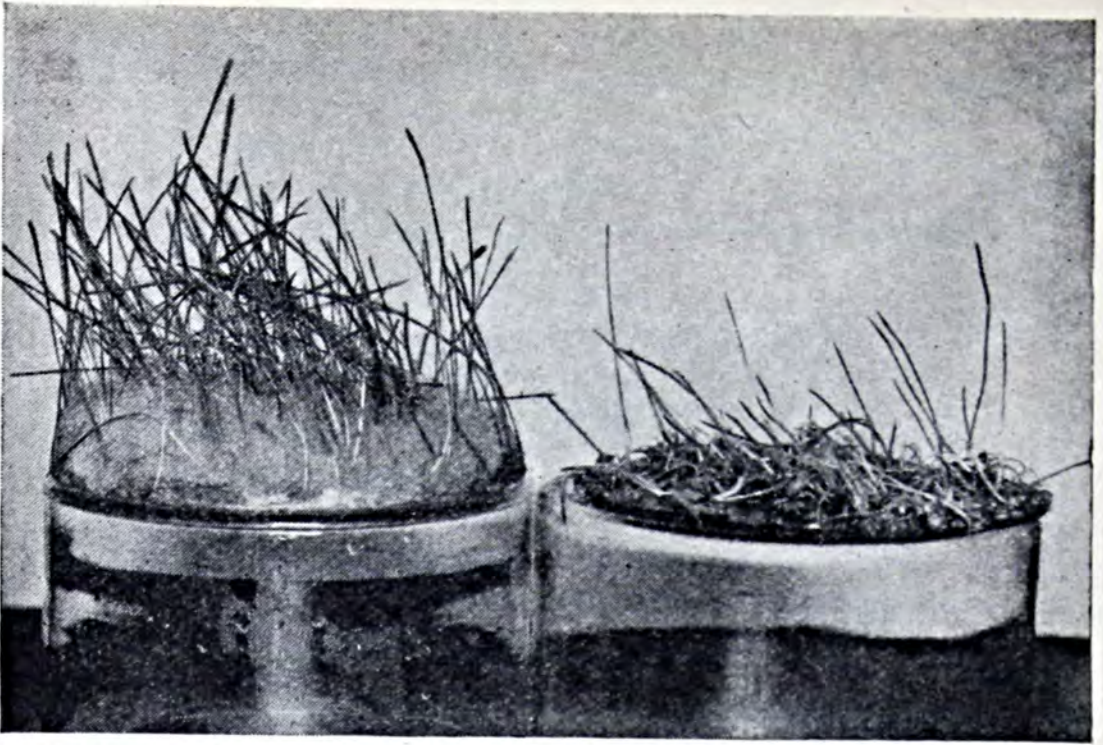
Unfortunately, all county agents have not married home demonstration agents who are willing to keep on with the work for which they have trained. In my opinion these lady county agents would make the most sympathetic and helpful, the really ideal wives for these men who do not belong to their families but to the counties which they serve.

Then there is another class of county agent wives who are born or adopted Main Streeters. They can not make the efficient coworkers just mentioned but are happy and satisfied to whirl in the small town society and fairly live from one bridge party to the next.

But there are some county agent wives who have been entirely removed from their element and the things that make life worth while for them. Their plight is not due to choice but rather unfortunate circumstances, since college graduates do not have the map of the United States laid before them with instructions to choose location but must often take the undesirable in order to get bread and butter. In this last class are found the wives who soon feel that they are widowed.

When one considers that a county agent is expected to be a machine of perpetual motion to serve in all capacities from veterinarian in the hog cholera emergency to auctioneer at the rustic basket social; whose hours number from nine to twenty-one a day, a day beginning any time between 4 A. M. and 9 A. M. Sundays and holidays alike; who is continually haunted by some farmer's problem so that if he accidentally happens to spend an evening at home he is too busy or tired to go any place or even be good company for the lonely wife; I should say the unmarried county agent is indeed unselfish not to have asked someone to share a home of which he could not be a part.

I do not doubt that many a good wife who has sacrificed the regular and reasonable hours of another profession, the good music and good plays that form so large a part of some lives, greater financial gain at less cost, and even good health itself, will agree that the bachelor county agent is to be doubly commended, for doing a valuable and wonderful work in his field and for going it alone unless the fates happily sent him a wife from one of the first two classes. An uprooted and transplanted wife of the last named class inevitably becomes one of the wan, weary, worried widows who sadly wonder during the long hours of waiting if their future is indeed past.



The wheat seed at the right of the picture was treated with a fraudulent proprietary concoction. The result is plain. The jar at the left holds seed that was not treated.

Let the Buyer Beware!

By Frank George

U. S. Department of Agriculture

⁶⁶ **S**TEP right this way, gentlemen! We have here a preparation that will rid your apple and peach trees of every insect pest and fungous disease known to entomologists. One sniff of this remedy will paralyze the daily cattle tick. The boll weevil sprayed with this poison will curl up like a leaf in a furnace. Round worms, mites,—in fact every parasite found in animal life—”

It is estimated that American farmers spend more than forty million dollars annually for insecticides and fungicides with which to combat insect pests and fungous diseases. Probably most of these preparations do the work claimed for them, but each year there is a new crop of insecticides and fungi-

cides on the market some of which are found to be either too weak or too strong for effective use, or which are clearly fake concoctions that not only do not rout the pests or cure the disease, but which are sometimes distinctly injurious to plant and animal life.

THERE recently appeared on the market a concoction that when mixed with chicken feed and taken internally by Biddy was held out to be a sure cure for chicken lice and mites. Send one dollar, and your chicken troubles will be at an end, the advertising read. It was explained that the poison taken internally would be exuded through the pores of Biddy's skin and thus

the pests would be destroyed. Thousands of dollars were slied from the pockets of farmers who did not know that chickens have no pores.

Another case was that of a so-called tree expert who promised to rid orchard trees of every conceivable insect and fungous disease. His remedy was to place a pellet containing potassium cyanide in a small hole cut in the trunk of the tree. The pellet would later dissolve, be taken up by the tree sap and the poison projected to the furthestmost limbs and leaves. The insects would bite into a leaf and presto! they were dead.

Numerous agents operated throughout the States treating trees at so much per treat. A few months after the treatment the trees developed cankers that practically ruined them as fruit bearers. Analysis of the poison showed that the drug was too powerful for the tree to take into its system.

When calcium arsenate was advocated six years ago for use against the boll weevil, many manufacturers who did not know how to make the arsenical began to ship heavy quantities into the South. In most cases either the poison was too weak to kill the weevils, or so strong that it destroyed the cotton. Calcium arsenate of the proper strength properly applied is an effective combatant of the boll weevil but because of the disappointing results obtained from a large quantity of the product then on the market, calcium arsenate came into disrepute.

A long campaign by the Federal

Department of Agriculture operating under the authority of the Insecticide and Fungicide Act was necessary to compel erring manufacturers to produce calcium arsenate of standard strength, with the result that most of the product now sold can be used with satisfactory results. During the past year or so shipments of the arsenical have come from abroad, and many seizures of improper preparations have had to be made at Galveston and other ports of entry.



This is what happened to a tree treated with a remedy alleged "to kill all insect pests and cure all diseases." The preparation not only killed the bugs but the tree as well.

YEARS ago, nostrum fakirs found easy money in the pockets of countrymen gullible enough to believe that their watery preparations would cure every human ailment from arteriosclerosis to housemaid's knee. The Federal Food and Drug Act corrected much of the abuse, but even now it is possible to find many patent medicines for which much is claimed but which show poor performance. The same situation prevails with regard to

insecticides and fungicides, and the Federal Insecticide and Fungicide Board is striving valiantly to combat the evil.

The Board has eight field inspectors who go about the country sampling insecticides and fungicides found on the shelves of dealers and wholesalers. These samples are submitted to Washington headquarters where they are later analyzed. If a preparation does not come up to label specifications, the manufacturer is informed of the fact and urged either to bring his product up to the label or reword

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Some

RESULTS with

By George L. Schuster

Agronomist, Delaware Experiment Station

FIFTEEN years investigations with fertilizers on corn, soy beans, wheat and mixed hay have been completed at the Delaware Experiment Station. These crops were grown in a rotation of (1) corn followed by a cover crop of rye and vetch, (2) soy beans, (3) wheat and (4) hay (clover and timothy). The soil upon which this experiment was conducted is classed as a sassafras silt loam. It consists of a brown to slightly yellowish brown friable silt loam, underlain at about 8 to 12 inches by a yellow to reddish yellow silty clay loam. The table on the opposite page gives the average results.

The corn, soy beans and wheat were fertilized. The hay crop was not fertilized. Nitrate of soda was applied on the corn and wheat at the rate of 125 lbs. per acre wherever it was used and at the rate of 100 lbs. on the soy beans. Acid phosphate was applied to all the crops at the rate of 250 lbs. per acre. Muriate of potash was applied to the corn and soy beans at the rate of 75 lbs. per acre and on the wheat at the rate of 120 lbs. per acre. Basic slag was applied at the rate of 225 lbs. to all the crops, i. e., corn, soy beans and wheat. Rock phosphate was applied at the rate of 375 lbs. per acre to the same

crops. The corn and wheat received 5 tons of manure per crop per acre and the soy beans received 2½ tons per acre.

Nitrate of soda has had very little effect upon the yield of general farm crops such as are grown in this rotation. It is to be remembered, however, that in the crop rotation used in this investigation there appear in the four years, three different leguminous crops, viz., vetch, soy beans, red clover. Their growth probably removes nitrates from the list of limiting factors. However, it will be noted later that additional nitrates are necessary for maximum yields.

Acid phosphate has produced very little more than nitrate of soda. There has been a slight gain on the soy beans, wheat and hay and a loss on corn when compared to the yields received from nitrate of soda applications. Muriate of potash has given a decided increase on corn, soy beans and wheat, but not so much on hay when compared with either the nitrate of soda or the acid phosphate applications.

The combination of nitrate of soda and acid phosphate has not given as high yields on corn as has muriate of potash alone;

FERTILIZERS

in Delaware

☞ Last summer the Delaware Experiment Station published two notable bulletins on fertilizer experiments which they had conducted. Mr. Shuster, who was in charge of this work, has consented to summarize it for the benefit of our readers.

neither has it been any better on soy beans than potash. It has, however, increased the yield slightly on wheat and hay over yields from muriate of potash treatment. The combination of acid phosphate and muriate of potash has produced the greatest yields of any two fertilizer materials used in the investigations. Applications of these materials have about doubled the yields in all the crops. Applications of nitrate of soda and muriate of potash have not produced the yields that the acid phosphate-potash combination has.

Combinations of basic slag and

muriate of potash have been almost equal to the acid phosphate-potash combination. The yields have not been so great from the rock phosphate-potash treatment. Where nitrate of soda has been added to the best combination of two materials i. e., acid phosphate and muriate of potash thus making about a 4½-8-12 mixture, the yields on all crops have been more than doubled when compared with the yields from the untreated plots.

THE lack of potash seems to be
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Treatments	Corn, Bushel Per Acre, Average 1908-1923	Soy Beans, Bushel Per Acre, Average 1916-1923	Wheat, Bushel Per Acre, Average 1908-1923*	Hay, Pounds Per Acre, Average 1908-1923
No Treatment	42.9	12.8	10.4	2288
Nitrate of Soda	44.1	14.1	12.7	2578
Acid Phosphate	43.1	15.4	15.8	2592
Muriate of Potash	54.8	16.8	16.3	2478
Nitrate of Soda }	48.9	16.9	20.5	2697
Acid Phosphate }				
Acid Phosphate }	70.5	23.2	22.7	4005
Muriate of Potash }				
Nitrate of Soda }	67.1	22.6	20.5	3650
Muriate of Potash }				
Nitrate of Soda }	76.5	27.0	28.9	4418
Acid Phosphate }				
Muriate of Potash }	70.0	22.8	24.9	3987
Basic Slag }				
Muriate of Potash }	60.1	22.5	17.8	3604
Rock Phosphate }				
Muriate of Potash }	77.0	25.6	23.0	5019
Manure				

*Yields for 1915, 1917 and 1919 missing.

Pruning

RASPBERRIES *and*

By C. E. Baker

Purdue University Agricultural Experiment Station

THE pruning of fruit bearing plants has from early times been considered by many people to be a mysterious practice, closely allied to the black arts indulged in by witches and sorcerers. To those outside the profession of fruit raising it is often difficult to understand how the removal of a branch or twig here and there can cause such a transformation in both type of growth and degree of fruitfulness of an individual plant.

The pruning of raspberries and blackberries is among the most mystifying and yet among the simplest operations with which the small fruit grower is concerned.

To intelligently prune any plant, the first prerequisite is a thorough understanding of its habit of growth and the manner in which it bears its fruit. Briefly, let us examine the raspberry and blackberry with this in mind.

New, succulent canes grow from the crown of the plant during the early part of the season. If these are permitted to continue their natural growth they become from three to ten feet high, depending

upon the fertility of the soil or the amount of moisture present. Usually such canes do not form many lateral branches the first year. The next spring short lateral shoots are formed on which the fruit is borne. After the fruit is matured the entire cane gradually dies, a new cane having grown from the crown again in the spring, to take its place.

Pruning consists of three operations:

1. Heading Back the Young Canes.—As mentioned above, if the new canes that grow in the spring are permitted to continue their growth, they become very large. Such canes are not best constituted to bear a good crop of fruit the next year as they have too much bearing surface, resulting in a large number of

small, worthless berries.

To overcome this tendency, blackberry and black raspberry canes are usually headed back, but red raspberries are permitted to grow unchecked as they make a weaker growth and do not respond well to summer pinching back. Heading back consists of pinching the growing point out of the cane as soon



A raspberry bush showing the lateral shoot growth induced by pinching out the growing tips when the canes were 2 ft. high.

BLACKBERRIES

☞ *Short and snappy
but full of meat.*

as it has reached the desired height. The height at which growth is checked differs with the different growers. From eighteen inches to two feet is usually the recommended height. The patch should be gone over frequently during the growing season and the tips pinched out of canes that have reached this height. This is a better practice than cutting the canes back to the desired height after they have been allowed to grow taller. Blackberries are usually headed slightly higher than raspberries.

The object of this heading back is to check the upward growth and cause the canes to throw out lateral branches, keeping the plant low and stocky. Such a plant needs no artificial sup-

port. From the buds along these lateral branches come short shoots the following spring, which bear the fruit for that season.

2. *Spring Pruning.*—Before growth starts in the spring the weak and superfluous canes are removed entirely from the patch and the lateral branches on the canes left are shortened back. Only

three or at the most four canes should be left per hill. On these the lateral branches should be shortened back to secure the correct amount of fruit bearing wood. If these laterals are left too long more fruit will be set than can be matured, hence a poor crop of dry, hard berries. If they are cut too short the crop will be needlessly reduced.



A well formed blackberry bush after spring pruning. This form of pruning holds the bushes within bounds and causes them to produce more high quality fruit.

Some varieties grow stronger than others and consequently can carry a greater number of buds. Ordinarily the correct length varies from 6 to 12 inches with about 8 to 10 inches as the average for all varieties.

3. *Removing the Old Canes After Harvest.*—As soon as the fruit is gathered the old fruited-out canes should be removed by cutting them off as near the ground as possible.

This practice permits the new canes to have plenty of room to grow and it also is a good precaution as a sanitary measure, helping to reduce the prevalence of insects and diseases that might be further spread were the old canes left until fall or spring.

These brief directions, together
(turn to page 40)

This

Egg Marketing has met with

By Paul Mehl

TO provide a permanent outlet for their eggs at reasonable prices not only for the present, but in the future, is the principal reason why poultry producers in the three eastern counties of Connecticut started the Eastern Connecticut Poultry Producers, Incorporated.

The business has been well managed from the start. My reasons for saying so are: First, the Association's members are, with few exceptions, satisfied with the prices they have received and the manner in which the business has been conducted. At the last annual meeting not one person made a complaint, which is an unusual record among farmers' organizations. Second, by the end of the first year the membership had increased fifty per cent without any campaign being conducted, indicating that the association was giving members better results than some non-members could obtain themselves. Third, the Association has accumulated a splendid surplus which can be used for advertising or other legitimate purposes when necessary. Fourth, the handling costs have been kept within reasonable bounds. Fifth, the demand for the Association's product has been constantly growing larger. Eighty per cent or more of the eggs in the top grade are now sold in cartons under the Association's

brand name which shows that consumers are in increasing numbers demanding the "New England Maid" eggs. The lower grades of eggs are sold only in cases.

VARIOUS factors have contributed to making the organization a success. There is no particular one which alone can be given the credit. One has to name a combination of them, the failure of any one of which might have spelled bankruptcy. The combination is made up of volume of business, adequate finances and efficient management. Others may be grouped under these three heads.

The Association started with a volume of business which permitted it to employ a full time candler and thereby made possible the keeping of candling expense within reasonable bounds. Employing men on a part time basis is seldom, if ever, satisfactory. Then members have been very fortunate in not having only a good sales manager but also in having on the Board of Directors men who have had experience in other lines of business as well as that of poultry raising. Because of the varied experience they are in a better position to understand the problems that the manager has to meet from day to day, than if their experience were

Association Success

Mr. Mehl is a specialist on the subject of marketing and he here gives a brilliant analysis of sound marketing principles as demonstrated by a successful organization.

along one line, that of poultry production.

The board of directors consists of seven directors. Of these one is a banker, another a manufacturer of proprietary medicine, a third was engaged at one time in the textile industry, two were employed in mechanical lines and another by one of the large insurance companies. The sixth was at one time, I believe, engaged in the retail grocery business, leaving but one of the directors who was a farmer all of his life. The directors and the salesman have worked together in a spirit of harmony. This was because they realize what a salesman has to contend with when building up a business.

From their experience in directing the affairs of the organization the directors have developed policies which have crystallized and have really become axioms. These they try to inculcate into the members so that they not only understand them but approve them as being "good business." Here are a few of them.

FIRST, it is far better to educate a producer before he becomes a member than after he has joined.

The Association does not accept everyone who files an application for membership. The directors have always felt that a man who

joins without clearly understanding the true aims of the organization or who joins because the Association may pay a little more than some competitor will not be the type who will ride the storm with you. The person who realizes what the organization is endeavoring to accomplish and so believes in it that "price appeal" is but a secondary motive for joining will stay with the organization through stormy as well as calm seas. He knows that, in any other business, competition has to be met; that the law of supply operates, and that the building up of a sound business requires time as well as a supply of products and capital.

Before any producer can become a member he must be recommended by the director who lives in his district. After his application is filed his qualifications are discussed. If he is a careless producer, he is apt to furnish a poor product and as the organization is interested in handling only eggs of the highest quality, his application will be voted down. On the contrary, if he is an efficient farmer who is interested in producing goods of the highest grade and understands thoroughly what the Association is trying to do, he is welcomed. By selecting members less friction is apt to occur in the future because of a lack of knowledge as to what is efficient mer-

chandising. Those who produce the best product and know the aims of the organization are usually the persons who give the least trouble. If you educate a man before he joins he will be a better member when he has been granted admission. By selecting your member you also are selecting the kind of product you will handle.

SECOND. Quality control is of greater importance than quantity control as far as eggs are concerned.

A high grade egg is always easier to sell than a low grade product especially when the market is glutted. This principle is constantly emphasized. The grading of the producers' eggs drives it home and is one of the best means of bringing about an improvement.

A business can be built up more rapidly with a good product than with one that is inferior. Give a manager a high grade product as well as a high class member and another milestone is passed on the road to success.

THIRD. Sell your best product under your own brand name as far as it is possible to do so.

This will result in building up a business for yourself as well as your distributors. Retailers at first will resist the idea of handling eggs in your cartons but when consumers demand eggs in your carton, the resistance will break down and dealers will be glad to handle your goods. Retailers are always interested in selling goods for which there is a demand, but you have to create it. This requires time and money.

FOURTH. It takes time to build up a sound business. Farmers as a rule are too impatient.

They expect results at once. The time factor is not always given

due consideration by them. Not many consumers rush to a store the first day an association's eggs are on the market and insist on getting your product. Some do, but the mass have to be educated to see that you have something better to offer than they have ever before obtained. The housewife is convinced only through the use of your product that it is advisable for her to insist on obtaining the Association's brand of goods. Her goodwill is not created in a day. Sometimes it takes several months or years, especially when you are looking for premium prices.

It takes time to educate a retailer that it is more profitable for him to handle your branded product than that which he can buy from various farmers or competing jobbers.

Building up a carton business is the ideal way but it is more expensive to build up than when eggs are sold in cases as many cartons have to be given away at first in order to get dealers to handle your product in cartons, but when once established the dividends received justify the expense incurred. Because it is costly to establish a carton trade producers get discouraged and quit, but to the credit of the members of the Eastern Connecticut Poultry Producers it can be said that they have been willing to pay the price, and wait with patience for results. They have become so interested in building up an outlet for their eggs that at their last annual meeting they authorized the directors to spend four hundred dollars to finance a campaign to advertise the association's eggs.

FIFTH. "Shopping eggs" is poor merchandising.

This principle is difficult for members and non-members to learn. Producers are always comparing prices. The tendency is to give the product to him, who, today

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Better Crops' ART GALLERY *of the month*



Something new in bread. L. H. Bailey of the Bureau of Chemistry, U. S. D. A., has made a new sort of brown bread by substituting cocoa for 8 to 10 per cent of the flour. The recipe calls for as much sugar as cocoa to kill the bitter taste and no extra shortening.



The new Secretary of Agriculture, Howard M. Gore, taking the oath of office in the presence of four directors of the Department; W. G. Campbell, C. W. Warburton, F. D. Ball and Mr. Marvin.



The Mississippi Live Stock Judging Team which won highest honors at the Southeastern Fair, Atlanta, Ga., in judging all classes of live stock. Reading from left to right are: top row, H. H. Leveck, C. H. Ward, E. A. Martin; bottom row, H. T. Heeves (high man) and H. E. Robin.

Reflections on Timely Topics

By Charles H. MacDowell

President, Armour Fertilizer Company

This article forms the introduction to the 1925 edition of Armour's Almanac. It is presented to the readers of BETTER CROPS by special permission.

EARLY frosts take large toll from the farmer, even in the cotton belt, especially in late spring seasons when planting is delayed. A good top crop of cotton represents the difference between a fair crop and a good one. In the corn belt a late frost insures good, hard seed corn; an early freeze produces soft, immature grain, much of which, if sold, must be artificially dried. An Illinois farmer friend once remarked feelingly, "If one wants hard money one must grow hard corn." The tendency in the corn belt is steadily toward later maturity and greater frost risk.

Why is corn belt soil producing later maturities than formerly? It is an old saying that "the speed of the fleet is the speed of the slowest boat." Corn belt soil is naturally low in its phosphoric acid and potash content. Many years of cropping has further depleted the supply of these minerals. It is an established fact that available phosphoric acid promotes early root growth and hastens seed development and maturity. Potash promotes cell development, aids nutrition, and gives firm stalk and seed

qualities. Liberal application of these plant skeleton and cell-forming minerals will, in partnership with the large nitrogen content of black soils, not only hasten crop maturity two to three weeks, but will also produce better quality corn. With many crops where there is no frost danger, early maturity spells the difference between profit and loss. A control of crop maturity in farming is of great importance. Farmers have it within their power to force early growth and materially hasten healthy maturity, if they will hitch science to their plows. We foresee a large use of mineral fertilizers in the corn belt.



CATTLE gather their own food when pasturing. The quantity and quality of grass grown on the acre decides how many head can be fed from the acre. European farmers fertilize pasture lands heavily and maintain from two to three head to the acre. No crop responds more readily to soil treatment and fertilization than grass. No field crop

requires less labor to handle than grass. Grass is grass—"Pigs is pigs." Grass can be of good variety and be well nourished, or it can be scrub stock plagued by weeds and deficient in feeding value. Well-fed, good variety grass will make more beef, more and better milk, butter and cheese, than runty grass; and its larger acre production will reduce interest and tax charges on land value. This is especially true on most dairy farm lands where a heavy return of manures has tended to upset plant food ratios. Mineral fertilizers in partnership with manure work for profits.



MOTHER darns while she sits and plans her work ahead. What is father doing while mother mends? Sitting and thinking, or just sitting? Is he considering how the farm can be put on a fuller time basis by a more general diversification? Is he studying and "listening in" on better farming methods? Is he moody and "darning" the "other fellow," or is he half asleep and just sitting?



PRODUCTION is based on compensation. Profits encourage production and increase savings and bank accounts. Liquid capital is "stored energy" available for developing new facilities for wealth production. No profits—no savings, no new capital for farm or town use. Capital investment is based on a fair chance for profitable returns. The farmer is a capitalist and fundamentally interested in the accumulation and protection of capital. Excessive taxes retard the accumulation of liquid capital from savings, and increase production, transportation and living costs. National, state and local taxes bear heavily on the farmer. National taxes are being reduced, state and local taxes are increasing. Professor

Ely of the University of Wisconsin declares that "taxes on farm lands steadily are approximating the annual value of farm lands," and believes that "in a relatively short period, if the movement continues unchecked, taxes will absorb all farm land values, the farmers' land will be confiscated by the states, and farmers will become virtual tenants of the state." This is something for the farm owner not only to think about but to get busy about. This would be government ownership with a vengeance. The same trend applies to industry and transportation. It is being hastened by the rapid increase in expensive government bossing bureaus.



AS Mark Twain puts it, "We can't all make a living by taking in each other's washing." Somebody must saw the wood.



IF the town folk are not fully-informed on farm conditions, pleasures and ills, it is because they haven't a radio. We often wonder if the farmer is as well acquainted with normal city problems and doings.



What do I consider the nearest approximation to happiness of which the present human nature is capable? Why living on a farm which is one's own, far from the hectic, artificial conditions of the city—a farm where one gets directly from one's own soil what one needs to sustain life, with a garden in front and a healthy normal family to contribute those small domestic joys which relieve a man from business strain.

—Thomas A. Edison.

The Sin of Asking Too Much

B y E . W . H o w e



WHY have we been unable to find the fountain of perpetual youth? A consumption cure? A cancer cure? Why have our ablest men been unable to solve perpetual motion? There is no objection to the accomplishment of these purposes. The men who work at them are good men, with high ambitions. Their purpose is to assist their fellows. Men fail in these ambitions for the same reason they fail in attempts to give us all plenty of money by manufacturing it from paper. World democracy fails for the same reason that the fountain of perpetual youth has never been discovered. Universal love is as an impractical a dream as perpetual motion. Why do we arrest, as a palpable fraud, the man who advertises a consumption cure, and cheer the man who advocates an equally ridiculous cure in sociology? It may be that millions do not buy consumption cures because we do not permit them to be advertised. If that is the case, why do we permit social nostrums to be advertised? They not only have free run of the mails, but the newspapers are full of free notices for them. The suggestions of those with big views for humanity seem to be as extravagant and lacking in substantial thought as the suggestions of men whose brains are fired with alcohol. The man who wishes to carry the torch of civilization to the uttermost bounds of the earth seems to be as unreliable as the man who, barely able to stand up from intoxication, moves boldly against the police station with a view of whipping everybody in sight. In a town I am familiar with, the only reformer who is really accomplishing anything worth while is a business man whose propaganda consists entirely of advertisements in the papers announcing meat at lower prices. And he is meeting with considerable success: last Saturday night I went into his shop, and it was a sight: hundreds of people buying, and dozens of busy clerks waiting on them. His shop is the talk of the town. The secretary of the commercial club never heard of this man until people were offered pot roasts at fifteen cents others had been getting twenty cents for. No committee has collected a fund to aid this man; no newspaper has boomed him except at regular rates, on the advertising pages. His name is Baker. "Hon." should be attached to it and the title taken from some statesman who has not reduced prices, or accomplished anything else worth while.

Getting the Most out of CLOVER

By John Voorhees

Practical advice on raising this crop successfully.

RED CLOVER, and the many varieties of it, is so common that it is often not accorded the care it deserves; and yet, there is no crop which responds more readily to good treatment. It is a remarkable crop for soil improvement and very valuable from the feeder's point of view, and it undoubtedly warrants good treatment and attention. In Europe, it is said to have done more for agriculture than any other general farm crop, including potatoes.

Soils upon which clover may be grown include practically all types, excluding, perhaps, very light sandy soils which seem to dry out too rapidly. Soils for clover, however, should be well drained, and still more important, they should be of such a character as to enable them to hold large quantities of moisture and retain it uniformly throughout the growing season. Climatic conditions seem to affect it considerably. Humidity and moderate temperatures are favorable to the rapid growth of this plant. Too high a temperature seems to be injurious.

It is the general practice to grow red clover for a single year in a rotation, but it is often used for other purposes in other ways such as cover crops and for green manures. The time and method of

seeding depend to a large extent upon the rotation and purpose of growth. It is, without doubt, best to prepare the seed bed especially for it and seed it alone, or with other grasses and clovers. If this is done, the seed bed should be thoroughly pulverized and the seed sown at a depth of one or one and one-half inches about six weeks before the first killing frost. In localities having liberal rainfalls and moderate temperatures it may be sown at almost any season. It is important in seeding to drill both ways to insure uniform seeding, and avoid strips and triangles without seed-places for weeds to grow. In all cases, it should be remembered that the seed is small and that the soil should be firmed after seeding to pack the earth around the seed and thus insure prompt germination.

THERE are many systems of crop rotations in which it is very much more convenient to sow with some other crop; for instance, in grain (wheat or rye) in spring, because this practice saves labor. Sowing with oats and barley, or in wheat in spring gives good results, because these crops act as a nurse crop, but when these methods are used, it is often the case that the

clover receives little or no attention, and this is true, especially in the matter of fertilization which is vitally important. If attention is accorded either crop it is usually the one which brings in the first profit, whereas the clover which follows is generally the more important crop.

Humus in a soil for clover is important, not so much because it adds a little plant food, but because it tends to maintain a uniform amount of moisture throughout the growing season. For this reason barn-yard manure is good but it is not a well-balanced plant food. Clover, like all legumes, secures nitrogen from the air, provided the necessary bacteria are present in the soil which is quite universally the case, because practically all soils now under the plow have at one time or another grown clover. Hence, the mineral elements of plant food, phosphoric acid and potash, and lime, become the important factors in fertilization. Lime should be used in abundance because clover not only uses considerable calcium as a food, but it will not grow in sour soils. In order that clover be made to thrive and grow successfully the other two minerals should be present in the

soil in abundance, and the more important of these two elements of plant food is potash, as may be readily noted where clover is grown after potatoes heavily fertilized with goods high in potash. The accompanying photograph taken upon the farm of L. W. Hubbell, Francisville, Indiana, shows very clearly the advantage of fertilizing the clover crop with potash. In this experiment illustrated by the photograph fertilizer was applied to corn in the spring of one year. The following year clover was sown with oats as a nurse crop. In the case of each crop the yields showed an increase where fertilizer was used, and the advantage of heavy potash fertilization is especially strikingly shown where the fertilizer was sown in the rows in the corn two years before the picture was secured.

STILL more striking are the results of an experiment upon the farm of Edward Hutchins, Fennville, Michigan, located in one of Michigan's most prominent fruit sections. In orcharding it is essential that plant food be supplied

(turn to page 34)



Clover stand on field where fertilizer was drilled in with corn preceding the oat crop just taken off. The excellent stand of clover in the drill rows was due to the residual effect of the fertilizer.



ANNOUNCING a

Open to Everyone

SUBJECTS

The Importance of Raising High Yields at Low Cost
Why We Should Diversify Crops
The Value of Maintaining Soil Fertility
How Cost Account Records Help the Farmer

CONDITIONS of the CONTEST

Who is Eligible? Any person connected in any way with the practice of agriculture may enter this contest. Manuscript must not exceed 800 words. Articles should be preferably typewritten on one side of white paper, but there will be no prejudice against articles not so written.

Contest Ending. The contest is open now. It closes midnight Saturday, January 17th. Manuscripts bearing a postmark later than this time will not be eligible.

Basis of Award. The basis of award will be on the excellence of presentation of facts. In the event of a tie, the full amount of the prize will be awarded to both contestants. One prize of \$20 will be awarded to the best essay in each group. The judges reserve the right to withhold the award in the

event that none of the articles submitted is deemed worthy of publication in BETTER CROPS.

Judges. The judges of the contest are the editors, Jeff McDermid and Basil H. Pillard.

Method of Payment. As the contest closes January 17, the awards will be announced in our February issue and checks mailed to the winners on February 1st, 1925.

Right to Publish. The BETTER CROPS CORPORATION reserves the right to publish any manuscript submitted in this contest. Any manuscript so published outside of the prize winners will be paid for at the regular rate of one cent a word. No manuscripts submitted will be returned.



PRIZE CONTEST

Four Prizes of \$20 each

IN our October issue we outlined our editorial program which was compiled from suggestions by our readers.

Beginning next February we shall run each month a short article showing *why* the various planks in our platform are there. We give on the opposite page four of the sixteen planks that were in that platform. If results warrant it, we will continue right through the entire sixteen.

You are to select the one that most appeals to you and write a short letter, not more than 800 words long, telling why this plank should be in our platform. The best method is to tell the story of some farmer you know who has made money this way. You are not confined to one contribution. If you like, you may write an article on each subject. Only be sure to submit them separately.

For the best article received on each one of these topics, BETTER CROPS will award a prize of \$20. This makes four prizes of \$20 each open to you.

The object of your letter should be to tell from your experience and observation how agriculture can be put on a more profitable basis by any one of these methods that you select to write about. If possible, tell your own experience or the story of some one you know who succeeded in this way.

Choose the subject you know the most about. Give the facts wherever you can. Be brief and to the point. Start in at once so that you can submit your article promptly.

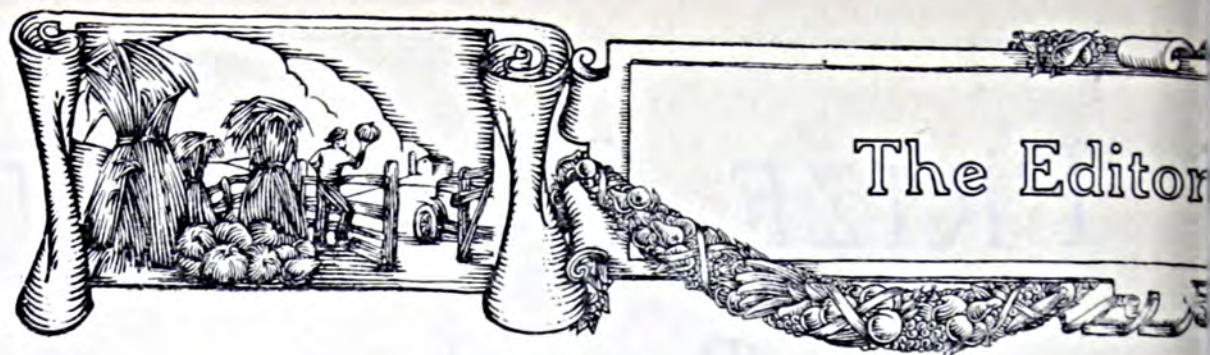
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461 EIGHTH AVENUE

NEW YORK, N. Y.



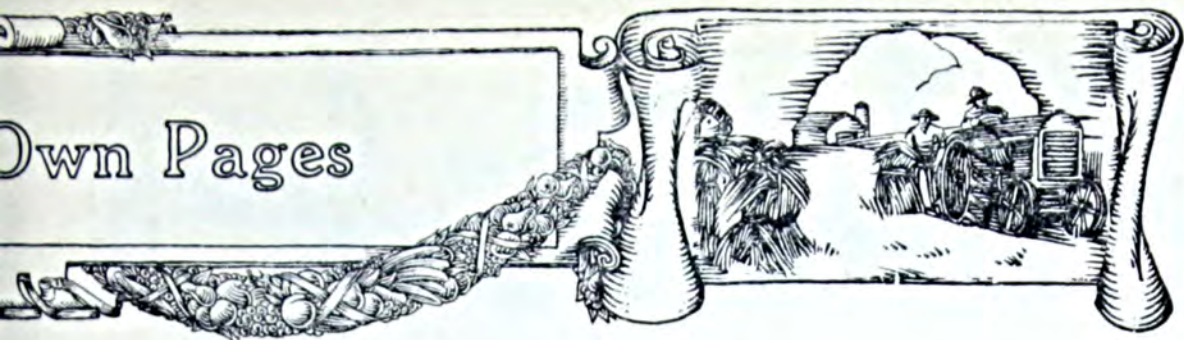
WELCOME ED HOWE! Everyone who hates bunk and insincerity and who admires honesty and candor will enjoy Ed Howe's articles which begin in this issue of **BETTER CROPS**. I count it good fortune to be able to print them.

Ed Howe is a nationally known figure and he has become one solely on his own merits. He is a Kansan, a farmer, and an editor and writer. When he ran the *Atchison Globe*, he did such a good job that it became known all over the country. Now he lives at Potato Hill Farm near Atchison and publishes a paper known as "*E. W. Howe's Monthly*" which he writes from beginning to end. He has published several books, one of which, "The Story of a Country Town," is a real American classic.

I disagree with a good many of his opinions and perhaps you will too. One of the reasons I like him is because he challenges so many of my pet ideas. Opposition, when it is honest and outspoken (as Ed Howe's opinions always are), is valuable and useful.

Whether you agree with Ed Howe's philosophy or not, I know you are going to enjoy his articles. He has a fine sense of humor, a great fund of common sense and an original and distinctly American outlook on life. Welcome to our pages, Ed Howe!

SHARPEN YOUR PENCIL On another page of this issue, we are announcing an unusual sort of prize contest. The topics are not particularly new or original. They are subjects which have been



talked and written about a good deal. What we need now are some facts.

If you know of any farmer who has successfully carried out any of these practices, you ought to write up his story and submit it. Example teaches better than theory. I hope this contest will bring out many instances of farmers who have profited by putting into practice sound business principles. They deserve recognition and you should help to see they get it. So get out the old Corona or the fountain pen or even the pencil and let us hear what's been done in your corner of the world.

PERSONAL I have been thinking a long time to see if there wasn't some new way I could wish you readers of **BETTER CROPS** a merry Christmas. But I decided the value of the greeting doesn't lie in the words you use so much as in the spirit that prompts them. So I shall use the old expressions and trust to you to divine the warmth and sincerity behind them.

For the interest and understanding and assistance you have given **BETTER CROPS** and its editor, I am deeply grateful. Not many editors are favored with such sympathetic readers. I cannot shake your hand and give you my greeting in person, but I do wish you, each and everyone, from the bottom of my heart a joyful Christmas.

Jeff M. Dermid



"The ploughman homeward plods his weary way"
Thomas Gray (1716-1771)



[The following communication is an able presentation of the fertilizer manufacturer's viewpoint on a much discussed subject. I should be glad to have some other angles presented.—Jeff.]

Co-operative Buying

Dear Jeff:—

The tendency to cooperative farmer buying of fertilizers is open to criticism from one standpoint—it induces the buying of fertilizers on a strictly price basis. The manufacturer who secures the order knows that he will never get it again except on the same basis, so there is always the temptation to cut every corner to reduce the price to a minimum. Perhaps a dollar or more per ton can be saved by a slight increase in the percentage of mineral ammonia and a corresponding reduction in organic, by using a little more sulfate and a little less nitrate, and where a definite percentage of organic ammonia is specified from two or three sources to use more of the cheaper sources.

Cooperative buying purely on a price basis will never be a success, and it will be abandoned eventually by every one who tries it for the reason that poor fertilizer produces a fair crop only with the most favorable weather conditions.

With favorable weather conditions the best fertilizer shows up to the best advantage—it is in these years that you are able to note such comparisons as 50 barrels of potatoes in one field and 100 barrels in another.

There is some truth in the statement of an old potato farmer to me

that "the best fertilizer with the most unfavorable weather conditions will save me from actual loss and in the good years enable me to lay by enough to make me prosperous," and that man has given me an order many a time without any question of price. He is always insistent on quality, specifying the materials that he wants, the amount of plant food and the mechanical condition of the mixture, and the last time that he gave me an order after he had signed it, he said, "Oh, by the way, what are you charging me this time?" And that man pays cash, and the confidence he has in us urges us to give him the very best fertilizer that we can make, and we would rather lose a dollar per ton than make an extra dollar on his business.

The effort to buy purely on a price basis urges the manufacturer who accepts such business to supply the cheapest possible mixture. If he gives way to the temptation to substitute cheaper materials he does more than injure the crop that is to be grown with the fertilizer, and the injury to his own reputation is nothing compared to the harm that he is doing the fertilizer industry.

So far as human nature is concerned the fertilizer industry has no greater percentage of high class men than any other line of human endeavor—perhaps we like to think that our industry appeals to men with idealistic propensities, but we must admit that we have others whose sole thought is for profit, who will wreck the industry if need be for their own selfish gain.

When the cooperative buyer finds that he is *not* getting results from

the cheap mixture he may not stop to analyze the reason why, or to realize that he *is* getting exactly what he is paying for—cheap fertilizer—but he condemns the whole fertilizer industry and resorts to home mixing.

If home mixing were as easy as it looks and if the results in the field from home mixed fertilizers compared favorably with factory mixed goods of the best quality, then all the highly paid research workers, the laboratories, the manufacturing problems that have been solved have all been a waste of time and money. Surely, if there were no real virtue in properly mixed fertilizers, the men who have preceded us in this great industry would have devoted their time and money to developing a fertilizer

material business, and it would have been much simpler for them, less possibility of loss, less expense, less capital employed and greater net profits.

Every mother feels that her children may have to run the gamut of infantile diseases—the sooner 'tis over the better, and every wise fertilizer manufacturer knows that every generation of fertilizer users will take a course in cooperative buying, home mixing and use raw fertilizer materials as soil amendments, and finally having gained a costly experience get back again to normal—the use of well balanced rations of mixed fertilizers.

(Sgd.) CORNELIUS CHRISTIANCY,
Southern Fertilizer and Chemical Co.
Daytona, Florida.

What Club Work Has Meant to Me

By Lonnie J. Strickland

Being an active club member for the past three years I am often asked the question, "What has club work meant to me?" It is almost impossible to answer this question as it covers such a wide scope in the educational field for boys and girls. Words cannot express how it has opened my eyes to higher education, ideals and other problems of agricultural development. My parents have unconsciously absorbed much of this knowledge. For I can remember but a few years back, when my father, grandfather and others sat under the old shade tree talking about hollow horn, hollow tail and cutting up horse hair for grubs. They would talk about the guinea cow that gave one gallon of milk a day, each one had his own individual stock of hogs which he bragged on such as the Big Bone Guinea and the Black Essex mixed, and their opinions were hard to change. Had it not been for club work I would have reared in the same environment.

Club work will establish better comradeship between parents and

children, build and strengthen character. It will teach care and handling of animals under all conditions. Club work gives the farm boy or girl an opportunity to develop himself more fully on the problems of the farm. Teaches judging, selection and grading, and insures a future generation of wide awake farmers. One can plainly see that more and more boys and girls are becoming interested in club work. This year in my home county they have an enrollment of 200 boys and girls in the various clubs. When I joined there was an enrollment of 30. Today these club boys are expressing their desire for a college education. They know good live stock. It has been introduced through club work. Club work has encouraged me to finish my high school education that I may be eligible to enter college this fall, which I am determined to do if possible. In fact club work has given me a goal for which to work. It is doing the same for many others. I hope that every boy and girl in Georgia will become an active club member.



By the Readers of BETTER CROPS

Warehousing and storage methods and systems for all staple and seasonal crops. Broadening the scope of the local or State Agricultural agencies, and not putting so much of the research, educational, marketing, or extension activities under the charge of the larger U. S. Department. Let the U. S. Department function more as a clearing house for the localized work. — *F. H. Smith, Chemist, Griffin, Ga.*

Standardization of community. Flocks, herds and products, sound cooperative marketing. Boy's and girl's club work. Men and women's extension work.—*W. F. Coddington, County Agent, Le Mars, Ga.*

Cut down production 10% per year until Europe gets back to normal and then increase according to export demand. Regulate this through Farm Bureaus and Cooperation Associations.—*J. F. Brown, Local Manager, Buffalo, N.Y.*

1. Organize; 2. standardize; 3. advertise; 4. merchandize. Production and marketing from the standpoint of agriculture are equally important. Farm crops must be fed to the market not dumped. Middlemen rendering no necessary service must be eliminated. Producer must have a hand in determining retail prices.—*Wm. Obson, Farmer and Secretary Green County Farm Bureau, Monroe, Wis.*

Better livestock with legumes and pastures. Better provision for winter feed for the livestock raised. Better farm organization based on local community clubs dealing first

and foremost with local problems. In order for the farmer to work out his problems and make a success, he must do it himself and a paternal government is bringing ruin on him and the whole country. Regulation of all business is bad for the farm as it hurts the market by strangling business. The farmer must work his own way out, but, not be asked to foot the bill for all this government expense and politics.—*Evan W. Hall, County Agent, Spearfish, South Dakota.*

Have those working somebody else's land with somebody else's teams and tools and money—go into some other work.—*W. C. Vail, County Agent, Spring Hill, Ala.*

Too much food of medium and low grade is being produced and not enough of the high grades. In case of some products, for instance milk and wheat, there is too much of all grades. Let the cooperative organizations give their attention to grading and producing high quality. Let the farm boys come to the city and be carpenters, masons, plumbers, mechanics and dentists.—*Frank E. Rice, Asst. Professor, Cornell University, Ithaca, New York.*

Cut out a lot of useless crying, chatter and political bunk about the serious condition of agriculture and the down-trodden farmer, and seriously use your mental and whatever powers you may possess to cheapen production and marketing costs; and elevate agricultural life to the plane on which it belongs.—*C. M. Weirauch, Farmer, Ft. Pierre, S. D.*

Education as to nation and world needs. Information on nation and world plantings by months. Investigation of world's need and buying power. Publication of real facts, gathered by honest men, and published by honest publishers. Action by an intelligent and active cooperative farm folk. Teaching business principles.—*R. N. Miller, Pullman, Wash.*

Depends on what part of the country one is in as to the program that should be followed. A sociological survey would lay the foundation for an all round constructive program.—*F. J. Brook, Department Agr., Tallahassee, Fla.*

1. Promote scientific marketing.
2. Encourage shipping point inspection of fruits and vegetables.
3. Establish by-product factories at stated intervals to care for surplus products in seasons of plenty.
4. Reduce the cost of production by proper care of tools and machinery.
5. Keep only purebred stock and poultry.
6. Boost your farm bureaus and agricultural colleges.
7. Support quarantine measure designed to keep out foreign pests.
8. Stick to the old ship; the protective tariff.
9. Farm blocs — like fire — can be good servants but bad masters. If abused they strike at the nation. Paternalism will kill states rights and the nation.—*B. A. Reynolds, late editor Cal. Dept. of Agriculture, Sacramento, Calif.*

1. Either give the farmer an increased price by McNary-Hangen bill or repeal protective tariff.
2. Encourage small unit farms and diversification.
3. Teach soil preservation through rotating crops and fertilizing before the virgin strength is depleted.
4. Build up the home ideal, possible only upon a well balanced and intelligently operated farm.—*Halvor L. Halvorsen, Farmer and Attorney, Minot, North Dakota.*

A sound cooperative plan where-

by the producers are enabled to completely handle their products, and place them into the hands of the consumer, ready for consumption. To do this it will be necessary to affiliate with all other branches of labor.—*W. R. Parker, Land Specialist, Oak Harbor, Wash.*

Prosperity in farming depends on the land to be farmed and a man's ability to finance the growing of the crop and second on getting labor to cultivate the crop. The greatest trouble now is that *all legislation is directed to helping the farmer after he has grown his crop.* He should have help to grow it and at a low rate of interest. The Government should form a corporation that would have that in view. If the farmer could get a low rate like other business, he would work out in a few years and the help would not be needed longer. As long as the present interest rate exists, he will never get out. Furnish him with instruments to do the work and he will use them.—*W. T. Ramsey, Farmer, Osuala, Ark.*

For the state of Kansas, I would suggest diversified farming, the soil is depleted and needs rotation and fertilization, either commercial fertilizer or farm manure. Yours for better crops. — *Wm. Koopman, Farmer, Great Bend, Kansas.*

Reduce the tariff so the farmer can buy on the same market he sells, i. e., the world market. Then produce efficiently the crop or crops which have a market close to where it is produced. Less "kid glove" methods with the farmer by the agricultural press and agricultural extension workers. The farmer alone is responsible for his predicament. No one knows less about their business than the average farmer. Saddest of all he does not know how little he knows about his business, and a lot of us just hate to break the bad news to him.—*Judson S. Williams, Agricultural Agent, Kenosha County, Wisc.*



By Ted Butlar

BETTER CROPS' Washington Correspondent

Some time around January 1, the Agricultural Conference, called by President Coolidge to look into the entire agricultural industry with hopes of making definite recommendations to place it on a more substantial basis, will meet again in Washington after a month's recess. In compliance with the request of the President, members of the Conference met in Washington on November 17th and were informed by the Chief Executive that they were not limited in the scope of their investigations, and that every Department stood ready to assist in any possible manner.

The Conference got down to business immediately. It called upon several branches of the Federal Government for a digest of information on specific subjects coming under the scope of the investigation. It was specifically stated by Robert D. Carey, Chairman of the Conference, the scope of the work was such that it would be impossible for the Conference to complete its work before Congress convened in December, but that certain recommendations would be made by that time.

Before recessing, on November 19, the Conference had progressed sufficiently far in its work to state that immediate attention would be given to cooperative marketing as it probably is the most important subject now being discussed in the agricultural field. Equal importance was placed by the Conference on the emergency in the cattle industry, and early recommendations

will be made looking to stabilizing this branch of American agriculture.

The six weeks' recess was called in order that the different branches of the Government might compile the information asked for. These reports, when ready, are being sent to members of the Conference and are receiving their immediate attention. It is thought that all of these reports will be digested by January 1 so that the Conference can assemble again in the Capital.

Although the Conference will give immediate attention to the subject of cooperation in hopes of making definite recommendations to the short session of Congress and to the emergency in the cattle industry, it has already started an investigation into several other phases. Among other things, the Conference has asked for information on the Government's structure on finance as it relates to agriculture, particularly from the Federal Farm Loan Board, the Federal Reserve Board, and the War Finance Corporation. A close study will be made of Government statistics. Information has been requested on all phases of the tariff as it relates to agriculture.

The whole structure of transportation, involving highways, water transportation, freight rates and freight service as it relates to the farmer, will come under the eye of the Conference in order that definite action might be recommended on this important subject. The present powers of the Federal Government, with respect to quarantine

regulations for the protection of different branches of agriculture, will be considered. Foreign competition of American agricultural products and the main obstacles now standing in the way of further increase in the exports of American farm products will be gone into thoroughly by this Committee.

These are only a few of the subjects to be covered by the Conference. Although the definite results which might be expected from this effort are still problematical, official Washington views with favor the straightforward and practical manner in which the Committee has initiated its work.

Other members of the Conference besides Chairman Carey are as follows: O. E. Bradfute, President of the American Farm Bureau Federation; L. J. Taber, Master of the National Grange; Ralph P. Merritt, President of the Sun-Maid Raisin Growers; R. W. Thatcher, Director of the New York Experiment Station; W. C. Coffey, Dean of the College of Agriculture and Director of the Experiment Station, University of Minnesota; Fred. H. Bixby, President of the American National Livestock Association; Wm. M. Jardine, President of the Kansas State Agricultural College, and C. S. Barrett, Chairman of the National Board of Farm Organizations.

Agricultural interests in all parts of the country have expressed keen satisfaction over the selection of Howard M. Gore to fill out the unexpired term of the late Secretary of Agriculture, Henry C. Wallace. During his entire lifetime, Mr. Gore has been intimately associated with livestock farming and during the past year has filled the position of Assistant Secretary. He was elected Governor of West Virginia at the last election and will assume his new responsibilities on March 4.

Prospects are that the gross income from agricultural production in the United States for the crop year 1924 may reach \$12,000,000,-

000, according to the annual report of the Secretary of Agriculture which was prepared under the direction of the late Secretary Wallace and released on December 8th. This amount is \$500,000,000 above the 1923 agricultural income and over \$2,500,000,000 more than the 1922 income. The report goes on to say that while further recovery is required to bring agriculture back to its pre-war level, it is in the best position it has held since 1920. Prices of many crops are at the highest point in four years, and costs of production have declined somewhat from the high point of the depression period.

It is of particular interest to note that this increased wealth to agriculture has been brought about with an actual decrease in acreage. The total acreage in all crops in 1924 is estimated to have been about 370,000,000 acres. This was a decline of about 3,000,000 acres from the area planted in 1923, and a decline of 6,000,000 acres from the 1919 area. The past year's harvest was the finest in five years. Though not the greatest in volume of products, it was the best balanced and represented the best income.



County Agents

Since BETTER CROPS circulates largely among county agents and extension workers we are glad to offer our columns as a medium for the exchange of experiences and ideas. Our department, "News from the County Agents" is open to informal expressions of opinion and particularly to short items of a practical nature drawn from your experience or observation.

Keep in mind that brevity is desirable and that we like to be interesting and entertaining as well as instructive. All material of this kind published will be paid for at our regular rates.



Iowa Extension Workers' Conference

By a Visitor, T. C. CRAVENS
President, Indiana County Agents' Association

Who are agricultural Extension Workers? In Iowa the force consists of the heads of the Farm Bureaus and Womans' organization in each county, the County Agricultural Agents, Home Demonstration Agents and the specialists of the Agricultural Extension force of Ames.

All these folks gathered at Ames, Iowa, October 14th to 18th to take part in and listen in on the program arranged by the very able leaders, Director Bliss and Assistant Director Murl McDonald.

The first day was given over to a general visit of the Agricultural College with able guides to acquaint the visitor with the excellent work that is being carried on there.

Time was provided each day for special individual conferences with the specialists in the different departments.

Director Bliss gave a fine presentation of the Farm Bureau and Extension Program for the State, at the opening of the main program October 15th, laying out in an able way the job that is before the worker who must carry out the program into every byway of the state.

The speakers for the following session were selected to bring out the methods of carrying out the program to best advantage.

The whole conference was builded around the methods of realization of the goal of the State program—

A Healthy and Contented Family on every Iowa Farm.

It is impossible in this brief space to discuss many of the good things that were presented during the three big days of the Iowa conference.

Dr. L. H. Bailey, former Dean and Director of Agriculture, Cornell University and Chairman of Roosevelt County Life Commission, who is considered the great prophet of Agriculture, said many volumes in a few words. Dr. Bailey feels that there is a long and perilous trail ahead of the pilots of educational work for the rural people. He feels, as do all extension workers, that the evolution is slow, but that wonders can be accomplished by getting along as best we can with the older generation and train the young farm folk in the ways of leadership.

Mr. Lucius Wilson, Director of the General Organization Company, of Chicago, brought out very forcefully the fallacy of farmers trying to maintain a Farm Bureau on one dollar or even five dollar membership. He shows that most organizations figured on using \$1.00 per member to pay a trouble chaser to keep all little difficulties ironed out before they become mountainous.

The most outstanding fact of the whole conference was the way the Farm Bureau and Farm Women attendants of the conference listened in on the talks and took part in the discussion.

It was my good fortune to attend the Iowa meeting because the Indiana County Agents' Association have launched and are carrying out a campaign this year to get acquainted with what is going on in other states. It was in execution of this plan that I was sent to Ames,

M. E. Cromer to Ohio State, N. I. Clunie, to Kentucky, and H. E. Ackerson to Illinois Workers conferences.

We do not believe that the pasture is greener across the state but that the exchange of ideas will bring us pay for our trouble.



Getting the Most out of Clover

(From page 21)

liberally, and in order to obtain the most efficient use of plant food humus is quite necessary. Mr. Hutchins wanted humus in his orchard soil, and the photograph shows how he got the needed humus, but at the same time the crop of pears more than paid the cost of fertilizer, so that aside from returning a profit on the fruit trees, there is considerable addition of nitrogen

attention to the clover crop, more especially in regard to fertilization. Clover should not be grown without adequate plant food. Under present market conditions a formula containing 2% to 3% ammonia, 8% to 10% phosphoric acid and 5% to 7% potash applied at the rate of 500 to 1,000 pounds per acre according to local conditions should give the best results. Sulfate of



The orchard of Edward Hutchins, Fennville, Michigan. On the left no fertilizer was used; on the right a complete fertilizer.

and humus to the soil resulting from the excellent stand of clover thus secured.

The experiences of these men only goes to show how important it is to give proper care and at-

potash is used in this mixture, even though it costs a little more, because it produces a hay containing a higher percentage of nitrogen-free-extract indicating a hay of higher feeding value.

Genuine German Potash Salts

can be secured from any of the following distributors:

ALABAMA

Birmingham—
Grasselli Chemical Co.
F. S. Royster Guano Co.
Virginia-Carolina Chemical Co.
Montgomery—
American Agricultural Chem. Co.
Armour Fertilizer Works
Capital Fertilizer Co.
International Agricultural Corp.
F. S. Royster Guano Co.
Virginia-Carolina Chemical Co.
Spartanburg—
F. S. Royster Guano Co.

ARKANSAS

Little Rock—
Arkansas Fertilizer Co.

CALIFORNIA

Azusa—
Geo. W. Fuhr
Covina—
Sun Fertilizer Co.
Glendora—
Frahm & Manning
Los Angeles—
Agricultural Chemical Works
American Agricultural Chem. Co.
California Dressed Beef Co.
Hauser Packing Co.
Pacific Bone, Coal & Fert. Co.
Pacific Guano & Fertilizer Co.
Southern California Fertilizer Co.
Spreckles Bros. Comm. Co.
Western Meat Co.
San Francisco—
California Fertilizer Works
Growers' Fertilizer Co.
Meyer Wilson & Co.
Pacific Bone, Coal & Fert. Co.
Pacific Guano & Fertilizer Co.
Potash Importing Corporation
Western Meat Co.

CONNECTICUT

Bridgeport—
Berkshire Fertilizer Co.
Hartford—
Olds & Whipple, Inc.
Middletown—
Rogers & Hubbard Co.
New Haven—
American Agricultural Chem. Co.

FLORIDA

Bradentown—
Gulf Fertilizer Co.
Clearwater—
Gulf Fertilizer Co.
Daytona—
Cornelius Christiancy Co.
Eustis—
Gulf Fertilizer Co.
Fernandina—
Nitrate Agencies Co.
Frostproof—
Gulf Fertilizer Co.
Jacksonville—
American Agricultural Chem. Co.
Armour Fertilizer Works
International Agricultural Corp.
Nitrate Agencies Co.

E. O. Painter Fertilizer Co.
Virginia-Carolina Chemical Co.
Wilson Toomer Fertilizer Co.
Lake Hamilton—
Gulf Fertilizer Co.
Orlando—
Gulf Fertilizer Co.
Sanford—
Chase & Company
Tampa—
Gulf Fertilizer Co.
Terra Ceia—
Gulf Fertilizer Co.
Winter Haven—
Gulf Fertilizer Co.

GEORGIA

Albany—
Armour Fertilizer Works
Swift & Company
Virginia-Carolina Chemical Co.
Athens—
Empire State Chemical Co.
Georgia Phosphate Co.
Hodgson Cotton Co.
Atlanta—
A. D. Adair & McCarthy Bros.
Co.
American Agricultural Chem. Co.
Armour Fert. Wks. (So. Hdqrs.)
International Agricultural Corp.
F. S. Royster Guano Co.
Swift & Company
Virginia-Carolina Chemical Co.
Augusta—
Southern State Phosphate & Fer-
tilizer Co.
Virginia-Carolina Chemical Co.
Baxley—
R. L. Lewis Co.
Columbus—
International Agricultural Corp
Cordele—
Read Phosphate Co.
La Grange—
Swift & Company
Macon—
F. S. Royster Guano Co.
Pelham—
Pelham Phosphate Co.
Savannah—
American Agricultural Chem. Co.
G. Ober & Sons Co.
Mutual Fertilizer Co.
Read Phosphate Co.
Reliance Fertilizer Co.
Savannah Guano Co.
Southern Fertilizer Co.
Swift & Company
Virginia-Carolina Chemical Co.
Toccoa—
Swift & Company
Valdosta—
Georgia Fertilizer & Oil Co.
Vidalia—
Vidalia Chemical Co.

ILLINOIS

Chicago—
Armour Fertilizer Works
Darling & Company
Swift & Company

National Stock Yards,
St. Clair County—
Swift & Company

INDIANA

Hammond—
Swift & Company
Indianapolis—
Rauh & Sons Fertilizer Co.
Smith Agricultural Co.
New Albany—
Calumet Fertilizer Co.
Read Phosphate Co.

KENTUCKY

Louisville—
Armour Fertilizer Works
Federal Chemical Co.

LOUISIANA

New Orleans—
Armour Fertilizer Works
Nitrate Agencies Co.
Swift & Company
Shreveport—
Swift & Company
Virginia-Carolina Chemical Co.

MAINE

Houlton—
International Agricultural Corp.
Presque Isle—
Armour Fertilizer Works

MARYLAND

Baltimore—
American Agricultural Chem. Co.
Armour Fertilizer Works
Baugh & Sons Co.
Griffith & Boyd Co.
Miller Fertilizer Co.
Nitrate Agencies Co.
G. Ober & Sons Co.
Piedmont Mt. Airy Guano Co.
F. S. Royster Guano Co.
Swift & Company
Virginia-Carolina Chemical Co.
Salisbury—
W. B. Tilghman Company, Inc.

MASSACHUSETTS

Boston—
American Agricultural Chem. Co.
The Lowell Fertilizer Co.

MICHIGAN

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MISSISSIPPI

Jackson—
Virginia-Carolina Chemical Co.
Meridian—
Meridian Fertilizer Factory
Tupelo—
Tupelo Fertilizer Factory

MISSOURI

St. Louis—
American Agricultural Chem. Co.
Armour Fertilizer Works
Swift & Company

NEW JERSEY

Bound Brook—
Nitrate Agencies Co.

NEW YORK

Buffalo—
American Agricultural Chem. Co.
International Agricultural Corp.
New York—
American Agricultural Chem. Co.
Armour Fert. Wks. (East. Hdqrs.)
International Agricultural Corp.
Mutual Fertilizer Co.
National Aniline & Chemical Co.
Nitrate Agencies Co.
Virginia-Carolina Chemical Co.
Zaldo & Martines Exchange Co.

NORTH CAROLINA

Charlotte—
International Agricultural Corp.
F. S. Royster Guano Co.
Greensboro—
Swift & Company
Henderson—
American Agricultural Chem. Co.
Lillington—
Farmers Cotton Oil Co.
Harnett Oil & Fertilizer Co.
New Bern—
G. Ober & Sons Co.
Tarboro—
F. S. Royster Guano Co.
Washington—
Bragaw Fertilizer Co.
Pamlico Chemical Co.
Wilmington—
Acme Manufacturing Co.
Nitrate Agencies Co.
Swift & Company
Virginia-Carolina Chemical Co.
Wilson—
Farmers Cotton Oil Co.
Winston-Salem—
Virginia-Carolina Chemical Co.

OHIO

Cincinnati—
American Agricultural Chem. Co.
Armour Fertilizer Works
International Agricultural Corp.
Virginia-Carolina Chemical Co.
Cleveland—
Swift & Company
Columbus—
Smith Agricultural Chemical Co.
Dayton—
Wuichet Fertilizer Co.
Sandusky—
Armour Fertilizer Works
Toledo—
F. S. Royster Guano Co.

OREGON

No. Portland—
Swift & Co.
Portland—
Portland Seed Co.

PENNSYLVANIA

Philadelphia—
Baugh & Son
I. P. Thomas & Son
Tunnel & Company
Pittsburgh—
Pittsburgh Provision & Packing
Co.
Reading—
Keystone Bone Fertilizer Co.

Wadsworth—
Ohio Match Co.
York—
York Chemical Works

SOUTH CAROLINA

Anderson—
Anderson Phosphate & Oil Co.
Charleston—
American Agricultural Chem. Co.
Etiwan Fertilizer Co.
Maybank Fertilizer Co.
Planters Fert. & Phosphate Co.
Read Phosphate Co.
Virginia-Carolina Chemical Co.
Chester—
Swift & Company
Columbia—
American Agricultural Chem. Co.
Armour Fertilizer Works
Darlington Guano Co.
F. S. Royster Guano Co.
Swift & Company
Virginia-Carolina Chemical Co.
Greenwood—
T. M. Miller Co.
North—
J. E. Culler Co.
Spartanburg—
American Agricultural Chem. Co.
F. S. Royster Guano Co.

TENNESSEE

Memphis—
Virginia-Carolina Chemical Co.
Nashville—
Armour Fertilizer Works
Read Phosphat Co.
Virginia-Carolina Chemical Co.

UTAH

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Inland Fertilizer Co.
(also ship to Colorado and Idaho)

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American Agricultural Chem. Co.
Danville—
G. Ober & Sons Co.
Lynchburg—
Pocahontas Guano Co.
Norfolk—
American Agricultural Chem. Co.
Baugh & Sons Co.
Farmers Guano Co.
International Agricultural Corp.
Chas. W. Priddy & Co., Inc.
Robertson Chemical Co.
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Virginia-Carolina Chemical Co.

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Chatham—
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To assist county agents, agricultural teachers, extension workers and other industrial agencies, we are glad to send a copy of any of the following booklets that might be helpful in your work:

Principles of Profitable Farming
 The Bushels That Made Me Money (Wheat)
 Sugar Beet Culture
 Fertilizing Peaches
 Fertilizing Strawberries
 Muck Lands
 Better Tobacco
 Better Cotton

These booklets were written by experts and contain valuable information on the proper and profitable use of fertilizers. Upon receipt of your request, we will mail you a copy of each booklet requested. If, after looking them over, you want more for distribution among the people you are working with, we shall endeavor to send them as long as our supply lasts.

We have still a few maps showing the location of the county agents in the United States. A copy of this will be sent free postpaid, upon request.

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Let the Buyer Beware

(From page 7)

his label to fit the product. Refusal to follow the Board's suggestions results in prosecution in a Federal Court, the law providing for a \$200 fine for a first offense and seizure of the goods. The Board has jurisdiction only where the goods are manufactured in one State and sold in another.

In one case a Bordeaux mixture label stated that the preparation was "for blights, rots, scabs, blotches, etc." It was found that the product would not be of service against "all" blights, rots, scabs and blotches and the "etc.," might mean anything. The manufacturer was instructed to insert the word "some" or "certain" before the word "blights" and to eliminate the "etc.," as being too comprehensive.

Another manufacturer of a Bordeaux mixture who offered his remedy against "blights and fungous diseases" was informed that the preparation would not correct fire blight of apple and pear, and that it was not a good remedy for all fungous diseases. It was found also that if used on peach foliage the concoction would seriously injure

the foliage. Bordeaux mixture if used on apple, should be used only for late summer applications to control bitter rot or apple blotch.

A manufacturer who said that his concentrated lime sulphur would "kill larvae of insects, sucking insects, and control fungous diseases," was informed that it would not kill "all" sucking insects and would not control "all" fungous diseases. The maker of "a creosote dip for lice, ticks, scabs, mange and skin diseases of sheep, cattle, horses, pigs, dogs and chickens" was told that his statement was too comprehensive as the remedy would not effectively control cattle tick, follicular mange, and certain parasites and skin diseases.

And so on down the list of insect and fungous remedies. The Federal Board regards itself as an educational body rather than as a prosecuting agency, and in view that misrepresentation of products is more often due to ignorance than to malicious intent to defraud, the manufacturers are given ample opportunity to conform with the Board's recommendations. The manufacturers in most cases have



Government scientists of the Insecticide Board testing the ingredients of insecticides and fungicides.

willingly done so, and of the many thousands of investigations by the Board, only 900 prosecutions have had to be instituted on account of wilful refusal to conform with the Federal law. Less than half a dozen of these cases have been lost by the Board.

Many of the complaints of individual purchasers are found to be due not to the fault of the product but to the fact that the purchasers do not read the labels. "Read the Label" is the Board's caution to buyers. Most farmers have at least a general idea of the ingredients required and a careful reading of the label will indicate whether the curative powers claimed for a preparation are reasonable.

Everybody Welcome

Have you contributed to our forum on "What Agriculture Needs?" Each month under this heading we are publishing suggestions and ideas received from our readers. Everyone is welcome to speak his mind on this subject. The contributions published to date under this heading have afforded a remarkable cross section view of what is in the minds of agriculturists all over the country.

We want to make this as representative as possible. If you haven't sent in your contribution, this is a good time to do so. It will be published at the earliest opportunity.



Pruning Raspberries and Blackberries

(From page 11)

with a little personal study of the plants as they grow under different conditions, should aid any one in becoming proficient in the pruning of these fruits

There is no mystery or cunning involved. It is simply a commonsense way by which to aid nature in her task of satisfying the needs of man.



The ultimate object—a well pruned blackberry bush carrying its maximum capacity of large high class fruit.

Results with Fertilizers

(From page 9)

the limiting factor in crop production. When the potash has been supplied, phosphoric acid seems to be the next element needed for maximum crop production. The yields may be increased still further by the addition of nitrate of soda. However, nitrate of soda or acid phosphate used alone or in combination do not materially increase the yields. This condition might be likened to a condition where the capacity of the factory has been increased without sufficient raw materials for manufacture. The factory is large enough, but it is limited in its production by not having sufficient raw materials. In the case of this fertilizer experiment there seems to be plenty of nitrates and phosphoric acid, but their utilization is limited by the absence of potash. Where the potash has been supplied, the nitrate and phosphoric acid may be added and greater production gained. Acid phosphate seems to be the best phosphoric acid carrier used in connection with muriate of potash; basic slag is second and rock phosphate third.

Barnyard manure compares very favorably with the complete fertilizer of a $4\frac{1}{2}$ -8-12 mixture used here. The yields can be kept up by either system as is evidenced by these results. Barnyard manure is not, however, a well balanced fertilizer and the addition of acid phosphate to it would probably give slightly higher returns than the manure alone.

The busy farmer likes a recommendation that is suitable for as many of the different crops he produces as is possible. The advantages of this is that it is easy to remember and simplifies buying. If the farmer is able to buy one mixture that will be suitable for all his field crops such as corn, wheat and soy beans he can prob-

ably get it at a more reasonable price than if he buys two or three different mixtures. He does not necessarily have to put the same amount of this mixture on all crops. That can be varied to suit conditions.

Where the soil conditions are similar to that reported here and the crops are the same, moderate applications of potash should give a marked increase in crop yields. If one wishes to make still further investment in fertilizers, greater yields may be had by applications of acid phosphate and muriate of potash or by the use of a complete fertilizer.

The farmer is interested in producing a uniformly high yield year after year if the business is to prove profitable. He wants to follow such practices as will develop a steady income for a period of years. Periods of low production and over production must be avoided as much as possible. The correct use of fertilizers will help do this. A study of the annual yield of wheat in this experiment will illustrate the point.

The annual yields for the entire period range from 3.7 bushels to 16.3 bushels per acre on the untreated plots, a spread of 12.6 bushels or 341 per cent. During the same period the yields from the plots treated with acid phosphate and muriate of potash range from 13 bushels to 37.4 bushels, a spread of 24.4 bushels or 188 per cent. The yields from the plots receiving a complete fertilizer range from 16.7 bushels to 42.7 bushels, a spread of 26 bushels or 156 percent.

It is, therefore, to be noted that the correct use of fertilizers not only increases the yields during the favorable seasons but also helps keep the yields up during unfavorable seasons, thus making more uniform returns at all times.



Wheat in rotation. fertilizer 250 pounds of acid phosphate and 120 pounds muriate of potash per acre. Average annual yield for 13 years 22.7 bushels per acre. Delaware Experiment Station.



Hay following above wheat crop no fertilizer applied direct. For fertilizer applied to wheat year before see above. Average annual yield for 15 years 4005 pounds per acre. Delaware Experiment Station.



Wheat in rotation without any fertilizer treatment. Average annual yield for 13 years, 10.4 bushels per acre. Delaware Experiment Station.



Hay following above wheat crop without any fertilizer. Average annual yield for 15 years 2288 pounds per acre. Delaware Experiment Station.

Egg Marketing Association a Success

(From page 14)

bids the highest, giving little thought as to whether or not the highest bidder will be with you tomorrow.

During the periods of scarcity some dealers will pay premiums in order to get a supply to take care of their trade. The premium may be even so great that it leaves them no profit when the eggs are sold to their customers.

They pay excellent prices but if you give them your entire product you are for a few cents disrupting your whole business. Taking care of your regular trade at reasonable prices is more profitable and only by doing so can a sound, profitable business be built up. Better be sure of a regular trade than jump from one dealer to another or one market to another. So many farmers are "shoppers" that it is no wonder they

never have a permanent outlet for their product. Yet it is a big task to get them to see that "shopping" does not pay as far as eggs are concerned.

SSIXTH. If any large proportion of the membership complains about the way the eggs are graded or the prices paid, get them together at once and talk matters over.

During the first year a considerable number of members complained about the strictness with which eggs were being graded. The directors immediately investigated the matter. A trip was made to headquarters. Unexpectedly the candler found them checking the eggs he had graded with the result that the candler was vindicated. Enough eggs were examined to



Directors and sales manager of the Eastern Connecticut Poultry Producers, Inc. Left to right: A. E. Anthony; John Z. Labelle; F. L. Kanahan (vice-president); E. Newton Searles (president); A. H. Benton (secty-treasurer); Chas. F. Brenn and E. J. Locke (sales manager).

prove that what was needed was not the firing of the candler but the educating of the producer. A grading school was held at one of the directors' farms. The candler was brought from Providence for a day, and did the grading before the members who were present. It may be interesting to know that practically every member was present. That day the members were taught what constituted good grading and no serious complaints have come to the attention of the directors since then. Clearing up misunderstandings produces harmony between members and the management.

SEVENTH. Employing a sales-manager who has been educated in the school of business is more profitable than employing some one who will get his education at the association's expense.

The Eastern Connecticut Poultry Producers, Incorporated has been very fortunate in securing a sales-manager who has ability and who has proved himself efficient.

EIGHTH. It pays to have men with varied business experience on the board of directors.

Knowing how various businesses are conducted, they are in a favorable position to work out sound policies for solving the problems that an organization will have facing it. Men engaged in other lines like banking and manufacturing look at problems from an angle that the directors are and should be interested in receiving. The directors of this particular association like to have men in other lines of business speak to the members at the annual meeting. At the last one the advertising manager of the Fuller Brush Company of Hartford, Connecticut, gave them an interesting lecture in which he told them what he would do if he were to work out

advertising policies for the Eastern Connecticut Poultry Producers, Incorporated.

Marketing eggs is a business and therefore to be a success, any organization engaged in it must be operated on a business-like basis. Because it is cooperative in nature, it is highly important that the membership be educated as to what is good business practice.

I think it can be said without fear of contradiction that the association has the goodwill of competitors because nothing is done to antagonize them. There is continual harping by farmers on the excessive profits of middlemen. The policy of the association has been to sell eggs and let the other dealers look after their own affairs. The directors have taken the attitude that those dealers who are not now friends of the association may someday be its best customers. Make them feel welcome at all times and thereby keep their good will. Someday they may need eggs badly and will give you a small order which may lead to larger sales.

NOW a few words as to how the Eastern Connecticut Poultry Producers' came into existence.

At a Farm Bureau meeting held in Brooklyn, Connecticut, during the winter of 1923 a number of the poultrymen decided that something should be done so as to improve marketing conditions so that the poultrymen would not have to worry every spring as to where to find buyers or outlets for their product. A committee of poultrymen was selected and letters were sent to the larger producers asking them whether or not they were interested in starting a cooperative egg marketing association. The replies were more favorable than anticipated and an organization committee was selected.

The organization committee drew up by-laws and adopted a three

year marketing agreement with a one year withdrawal clause. After incorporating, stock was sold at twenty-five dollars per share. The response was very good. Thirty-one poultrymen representing nearly twenty-one thousand birds signed the marketing contract and paid cash for a share of stock. The committee felt that those who were vitally interested would be able to get the cash somewhere if they did not have it themselves at the time.

Arrangements were made with the Providence Farmers' Exchange of Providence, Rhode Island, for the handling of eggs through their exchange. The Exchange is the sole distributor. It sells the eggs directly to retail stores and handles about two hundred cases per week on an average.

The eggs are shipped to Providence by truck or express, or by whichever means of transportation the individual member selects. At headquarters the product is graded according to the grades established by the Board of Directors. The grading is done by candlers employed by the Association. Those eggs which come within the top grade are placed in cartons, and are sold under the "New England Maid" trade mark, of the association. All cartons are sealed by the candler and consumers are requested not to accept any eggs where the seal on the carton has been broken. This prevents possible substitution.

The various grades are pooled and a member is paid each week according to the quantity he has in each grade.

What has been done by this association has interested other poultrymen to such an extent that early in September the Connecticut Poultry Producers, Incorporated, was launched. The Eastern Connecticut Poultry Producers, Incorporated membership live entirely in New London, Windham and Tolland Counties. The new organization will cover the remaining

counties of the state and sell the products of its members within the borders of Connecticut as far as it is possible to do so. The eastern organization demonstrated what could be done and the other is going to attempt to accomplish similar results.



Back to the Land

(From page 4)

temptation than the works of man. There are more ideas in a tree than in a brick.

Man is essentially a land animal. And ninety per cent. of the diseases and sicknesses to which human flesh is heir find their opportunity in the lowered vitality that comes from insufficient sunshine, fresh air, and back-bending labor.

Health is dug out of the soil; not swigged from bottles.

NOT long ago life on a farm was a grueling grind of ceaseless labor.

And the hardest job was lifting the mortgage. One of my earliest recollections is that of the sheriff visiting a neighboring farm and attaching the only horse in lieu of defaulted mortgage interest.

The lot of the farmer's wife was hard. She fed the harvest hands, milked the cows, went to the well or the creek for water, got up early to kindle the fire in the kitchen stove with corncobs brought from the barn,—and raised chickens for her pin money. For recreation she dug post-holes! And when she wanted to go to the city for a yard of black satin, all the horses were usually busy, or the roads were impassable.

The farmer's wife never "retired" in the evening. She "threw herself" into bed as soon as the last task was over.

But all of this is now changed.

The automobile has shrunk the miles and annihilated distance.

Good roads bring the town next door. The radio filters in music and other entertainment from the ether. Books are plentiful, magazines are cheap—and there is time to read and enjoy.

Electric lights, running water, white-tiled baths and kitchen comforts; vacuum cleaners, percolators and ampicos place a slice of the city on many farms—without the smoke the noise, the dirt, the hustle and the vice.

The tide has turned!

Life on the farm now approaches the ideal; and the city man's hunger for the soil can not much longer be held in check. There will shortly be an exodus from the bricks and smokestacks to the trees and haystacks.

Nature's rotation program begins in earnest.

And the result will be Better Crops of men, of boys, of girls, of citizens, and of thoughts.

AND who can describe the peace, the tranquility, the delight, in the soft, balmy air among hills and in the shaded green cathedral of the woods?

How the beauty sinks deep into the pavement-tortured city dweller; how the eternal freshness soothes jaded nerves and smooths the worried, wrinkled brow.

The gentle influence of Nature's kindly face, her boundless generosity, shames the niggardly, narrow, brick-lined street and mocks the stinginess of the tortuous alley. Her placidity and, in fact, her implacability, puts a question to the silly rush of the city that it cannot answer. "Why all this hustle," she seems to say. "Why fuss and fume? Out here we await the seasons with interest, but never strain nor worry that the season may be slow in coming. What comes, comes; and there's an end to it!"

Her gentle breeze helps us weave new garlands of thought, calms

About Ourselves

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

PUBLISHED by the Better Crops Publishing Corporation, 81 Fulton St., N. Y. C.

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

CHANGE IN ADDRESS — Readers should always give old as well as new address and allow at least three weeks for the change.

MANUSCRIPTS should be brief and preferably typewritten. They will be returned only when proper postage is enclosed. Payment is made on publication.

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.

ADVERTISING RATES may be secured upon application.

ADVERTISING — BETTER CROPS accepts only such advertisements as it has investigated and believes to be thoroughly honest. Readers are requested to say "I saw your ad in BETTER CROPS" when ordering.

INFORMATION SERVICE — We are glad to supply all the information obtainable regarding agricultural supplies or equipment to any reader who will address the Editor, stating his problems and furnishing necessary details. Your name will not be disclosed unless you desire it. There is no charge for this service.

**BETTER CROPS
PUBLISHING CORP.**

81 Fulton Street New York

pride and softly erases pomp and manufactured magnificence.

The only man who does not appreciate life in the country is the man who has always lived on a farm, or the city man upon whom the asphalt and tungsten-bulb have taken such a firm grasp that his soul is gradually atrophying and love of beauty is cut from his cosmic content.

To all others the country—the farm—has an eternal lure.

I am going back to the land; and I say to all "Go thou and do likewise!"



Teamwork to Boost C. T. A. in Wisconsin By F. J. Holt

"Start it in Wisconsin first" is the slogan now being used in the Badger state when initiating new movements in the agricultural field.

When the county agents and the extension specialists recently gathered at the Wisconsin College of Agriculture for their annual winter conference the latest movement was launched. At this meeting the State Manufacturers' Association came forward with a plan to increase interest in cow testing associations and also the number of them. This organization proposes to pay the cow testing association dues for one farmer in each county for a period of two years. And in return they ask this dairyman to enter every cow in his herd on test; and at the end of the year to remove all the cows which have not been profit makers.

He must do something else. But it's easy.

This particular dairyman, whose testing costs are paid in advance by the manufacturers, will turn over his production record to the local county agent to be used for publicity purposes. The latter will then have an experimental record

fresh from his own community which should be of invaluable aid in talking cow testing associations.

To drive home the economic importance of cow testing associations to the rank and file of the Wisconsin farmer is the aim of the Manufacturers' Association, according to Jerry P. Riordan, its agriculturist.

"Too many farmers test their herds for one year," Riordan, who is a prominent Holstein breeder, pointed out, "and then they drop the work before they have bounced the boarders. The association is the only organization that lays before the farmer every month a complete record of his business machinery. But he must understand and appreciate the value of these to make the proper use of them. Big business men pay thousands of dollars for an analysis of their business which is not as complete as a cow testing association report. The dairymen must look at the work in this light."

Today, Wisconsin has 169 cow testing associations, more than any other state in the Union. At the present time the dairy officials at the college of agriculture have set a goal of 175 before the year is over. Without a doubt, this new plan is going to help them reach their goal in short order and to go far beyond it during the coming year.



Jack Dempsey is havin' his nose remounted fer his weddin', an' we wonder if his betrothed is goin' t' be like other girls an' let her teeth go till after she's married.

Nobuddy ever talks very much about th' survival of th' fittest till they've purty thoroughly survived.

Miss Tawney Apple has a cousin who's a kiss timer in a movin' picture studio.

What's worse'n havin' some one hand us a clippin' t' read an' then stickin' around till we read it?

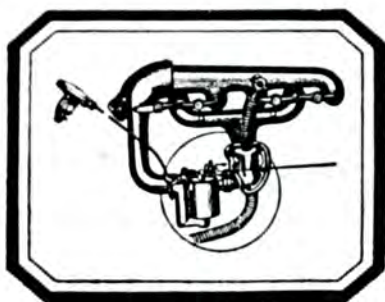
—From *Kin Hubbard's 1924 Book, "Fifty-Two Weeks of Abe Martin."*

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The New Oliver Plow for the Fordson

FORDSON plowing was a step in the elimination of plowing drudgery. In the new Oliver No. 7-A plow you will find another important forward move in better plowing easily accomplished.

You will find the Oliver No. 7-A different—so simple in construction, so easy to operate. Notice the handy controls which permit all adjustments from the tractor seat. A quick acting, powerful screw adjusts plowing depth and will raise the bottoms completely out of the ground with the outfit moving or standing. A convenient trip rod, rather than a trip rope, operates the power lift.

Note the short, sturdy, well balanced construction. A short plow—yet with the great clearance so essential when working in corn stalks and high weeds. The wheels carry the weight of the plow, making light draft and even depth furrows. The hitch can be rigid or flexible to suit varied soil conditions.

As for the work of the plow itself—we ask you to see it and compare it with your own idea of quality plowing.

OLIVER CHILLED PLOW WORKS

Plowmakers for the World

South Bend, Indiana

Better Crops

The Pocket Book of Agriculture

January 1925

10 Cents



What About the Consumer? by Frank George—Articles by C. E. Baker—C. T. Gregory—M. J. Heppner—Ed Howe



The extra ounce—

DASHING to the tape, wearied runners lag behind, while the man with the extra ounce of energy leaps ahead.

You've probably watched that extra ounce of energy come into play, not only in the field meet, but also in the productiveness of your own soil.

When soil is rich and well balanced in plant foods, it leaps ahead in production and nets you bigger profits.

For example, in Illinois there is a striking proof of what the extra ounce of plant food energy will do. For fifteen years official experiments were conducted at Odin Field on the typical gray silt loam of southern Illinois. The rotation was corn, wheat and a legume. To one plot was applied phosphoric acid, lime and crop residues. To another all

these plus 100 lbs. of sulfate of potash.

The fifteen years' annual average yield of two crops: corn and wheat on the plot where potash was added showed an increase in corn of 17.8 bushels per acre and in wheat of 3.3 bushels per acre over the plot where no potash was used. The cash value of this increase at current market prices is \$22.25 or an average increase of \$11.13 per acre each year.

On this basis \$3 worth of potash per acre gave a profit of \$8.13 per acre over the no-potash plot.

As this case illustrates, potash is oftentimes the plant food that gives the soil the extra ounce of energy necessary for real profit. Specify Genuine German Potash in the fertilizer for your next crop. *It pays!*



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The Pocket Book of Agriculture

VOLUME III

NUMBER FIVE

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VOL. III

NEW YORK, JANUARY, 1925

No. 5

Jeff poses a startling question and tries to find the answer.

IS HONESTY POSSIBLE?

By *Jeff Mc Dermid*

CENTURIES ago an old Greek Philosopher, Diogenes, used to prowl around the streets of Athens at night with a lantern in his hand. "What's the big idea?" the Athenian cops would ask him. "I'm looking for an honest man," said Diogenes and continued his search.

There is no record that he ever found a man who answered to his specifications. That may be because he was a cynic, the kind of a man who knows the price of everything but the value of nothing.

But there are times when I feel a strong sympathy for Diogenes. Men give a lot of lip-service to the ideal of Honesty, but when it comes time to give a real demon-

stration of it, they ask to be excused.

Here is a man who promises to do certain things which he has no intention of performing. Here is

another who lies for fear he will lose his job. Here is another who must always exaggerate facts just for the sheer pleasure of making his hearers gape.

The acid test of reality eventually exposes their shams. Lies, deceit, concealment, falsehood and deception at every hand! The worm of doubt begins to gnaw. Like Diogenes, I ask "Where is a really honest man?"

Such questions are best answered by examining one's own self. The flaws we detect in others are oft-times reflections of our own. Unlike Diogenes, I will start the search by questioning myself. Perhaps I can find some explanation under my own scalp.

SO I ask myself, "Am I always honest?"

Naturally my impulse is to answer "Yes." Every man wants to think well of himself. I am no exception.

But I am on the trail of honesty. The first essential, then, is to be honest with myself. So I must answer "No."

Last week a man asked me to do him a service. It meant a lot to him. I wanted to please him. I consented.

But, in my heart of hearts, I disagreed with him. The thing seemed impracticable and unworkable. It hung threateningly over my head. I tried to shift it to other people. I neglected it. Finally, in a kind of desperation, I performed it in a hasty, perfunctory fashion. I knew it wouldn't succeed. It didn't.

No one can accuse me of dishonesty. I did what I agreed to do. But, being honest with myself, I know that I should have gone to the man, explained my objections, and, if he persisted, declined to undertake the work. My excuse is that I had a good motive—I wanted to please him and help him. I was afraid of wounding

his feelings by being strictly honest with him.

THE first and greatest enemy of honesty is fear. If you collected all the untruths that are told in the world and the *reason* for them, fear, I am sure, would predominate. Fear of losing one's job, fear of making an enemy, fear of what people will say. And, once we get the habit of giving in to fear, how easy to justify it. After all, that only makes us like the majority of mankind.

What we call deliberate dishonesty, I think, is rare. Occasionally people do get tempted or driven to the point where they commit a consciously dishonest act. But there is something honest about this kind of dishonesty. At least the man *knows* he is being dishonest. He is honest enough to recognize that fact, whatever motives he may plead for it.

The real danger is from the people who are capable of only a semi-dishonesty. They tell only the things that reflect to their credit. They pass over such facts as might injure them. Yes, I know you'll say it's human nature to do that. We're all guilty on that count. But the virtue of honesty lies in telling the truth when you least want to.

THEN there is the dishonesty that springs from an over-luxuriant imagination. Most people of this type have creative temperaments that are out of control. I have known some delightful liars of this class—men who could take a few bare facts and exaggerate them into an amazing epic. Every man wants to be a hero to himself. When he has to face the grim facts of life, he gilds them over with his imagination and basks in their reflection.

You remember that fish you
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How I Use

Demonstration Teams

to Promote Projects

By Stewart Leaming

County Agent, Richmond, Miss.

“Of all occupations,” said Dean Davenport, “farming is richest in facts and poorest in comprehension.” Here is the story of a county agent who has found a successful method of getting the facts across to the farmers.

ONE of the problems that I have always had, as an Extension Agent, is to get really worthwhile material before groups of people. I have been somewhat disappointed at times when, after a cooperator has carried on an especially valuable piece of work, a meeting has been called and properly advertised and I have invited a specialist out to a meeting, to find a comparatively small group of people interested enough to drop their work and attend the meeting.

I remember especially one night last spring, when we had gone to a good deal of trouble to present a certain project in the best way we knew how, we found that a free medicine show had the crowd and our attendance was nil. This has not been an isolated case in my county nor, I understand, throughout the country.

Unless it can be brought to the person who needs it, the best piece of extension work has a very limited value.

We are not alone in this problem. During the summer months ministers often speak to empty benches while the summer resorts are thronged with pleasure seekers. A high class musical may draw a

small audience while the movie show may be packed.

We have the problem not only of developing valuable work but getting it before the people cheaply and effectively.

IT was Mr. J. W. Burch, Animal Husbandry Specialist of the University of Missouri, who first called my attention to the possibilities of club demonstration teams. Previously, I had looked upon the development of a good team from the standpoint that the boys or girls were learning something which would be valuable to themselves when they had, in later life, occasion to appear before the public. When Mr. Burch came back from the War Eagle Camp at Sioux City he called my attention to the fact that the greatest value of the demonstration team was not, perhaps, in the training of the members themselves but as a means of teaching adults worthwhile practices which should be adopted in the neighborhood in which they live.

“A little child shall lead them.” A successful demonstration staged by the club members is couched in

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How About *the* Consumer?

By Frank George

U. S. Department of Agriculture

QThe consumer complains about the high price of farm produce. Can the farmers help him to get it cheaper?

EACH person in New York City eats on the average about two apples a week. He eats about two oranges a week. There are literally hundreds of thousands of people in this great metropolis who do not know the taste of grapefruit, to whom a bunch of grapes is a holiday rarity, and who wouldn't know a honeydew melon if they saw one. They use lemons to "cut a cold," and regard peaches, pears and other fruits as luxuries.

WHY?

The simple truth is that the cost of these things is considered too high to be included in the average daily diet. The average New Yorker, Chicagoan, Philadelphian, *et al*, is a middle-class fellow like the rest of us. He feels that he can't afford to eat any quantity of apples and oranges at 5 to 10 cents a piece, grape fruit at 15 cents, grapes at 30 cents a pound. And you can't blame him very much.

Various studies of food costs bring out the fact that it sometimes costs two and three times as much to distribute the products as it does to produce them. Statistics are produced to show where the money goes,—that the retailer, for example, works on such and such a margin, the jobber, wholesaler, railroad and

producer each on a certain margin. On the other hand, statistics are adduced to show that each of these agencies is making little, if any, money.

"Service" of various sorts, demanded by everyone along the line takes a big slice out of the consumer's dollar. The wages and rents of everybody have gone up. Transportation costs more. Great use is made of credit. Long hauls require special precautions against spoilage. And so on.

A recent study of the distribution of Northwestern fancy winesap apples in New York City, made by the Federal Department of Agriculture, showed that the retailer operates on a margin of 37.4 cents out of every consumer dollar; that the jobber's margin is 9.8 cents; the wholesaler's margin 7.8 cents; transportation 16 cents; the shipping organization gets 5.4 cents, and the grower 23.6 cents. All these margins, are gross margins from which must be deducted all operating costs before any profit is shown.

The retailers were individually owned grocery stores which extend credit and delivery service to their customers. The average retail price was \$5 a box. The retailer paid



Grading and an attractive pack go far towards increasing consumption.

\$3.13 a box to the jobber, thus giving the retailer an operating margin of \$1.87 a box. Out of this margin is paid the costs of store maintenance, credit and delivery, wrapping, loss, shrinkage, and any profit. The retailer pays transportation cost from the jobber's place of business to the retailer's store, clerk hire, delivery service, credit including losses from bad debts, loss and shrinkage in quantity or quality of apples, and rent or its equivalent in case the building is owned by the retailers.

The jobber paid \$2.64 a box for the fruit, and deducting this from the price of \$3.13 to the retailer, he had a margin of 49 cents a box. This margin is for maintenance of store and delivery facilities, credit expense, loss and shrinkage. The cost of transportation to the jobbing centers by the jobber's own trucks or by public trucks varies from 6 to 11 cents a box according to distance from the wholesale market.

The wholesaler's margin was found to be 39 cents a box, out of which he pays any additional freight charges for extra service such as demurrage or storage in transit; cold storage charges, un-

loading and handling expenses, charges for delivery to jobber's trucks, maintenance or rental of place of business, credit, loss and shrinkage.

The survey showed that 55 cents out of every dollar paid by the consumer was for distributing the fruit after it had landed in the terminal market. Another 16 cents went for bringing the fruit from the Pacific Coast. Thus, 71 cents out of every dollar the consumer paid was for distribution, entirely apart from the cost of production, grading and packing. This is the result of a complex marketing system in which the demand for service is greater today than ever before in history.

Numerous public and private educational institutions are doing a good work in their studies of food distribution and margins. But now that we have the facts, what's to be done about the situation? Are we certain that there are too many middlemen? If so, who shall say that this jobber or that wholesaler shall go out of business? Or that such and such a practice must stop? These things can't be legislated out of existence. The very fact that

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Making CABBAGE PAY

By T. Denise

Sound methods of fertilization mean profits for the cabbage growers.

THE possibilities of a large income from a small acreage are probably greater in the raising of cabbage than any of our well known garden or truck crops. Of course, as with all other crops, the market is subject to extreme fluctuations, and there are times when the price drops to an unprofitable point for the producers. This is a hazard that has to be taken, however, in the production of any crop and the chances of extreme depressions in the cabbage market are not greater than with other crops. On the other hand, there is probably less danger of loss by low prices in the production of cabbage than with other crops, because of the fact that the yield of cabbage per acre can be raised to an almost unbelievable point, thus overcoming to some extent the evil effect of low prices. For this reason it has gained great popularity with gardeners possessing only a few acres as well as with farmers who have large estates and raise it only as a side issue. In a few localities the growing of cabbage in large quantities has been taken up and large acreages are devoted to cabbage every year by the growers in such communities. In such instances the industry becomes much specialized, and usually the most advanced ideas as to fertilization and general production are in practice. As a

truck crop cabbage responds readily to the most intensive treatment, and its yield will be in proportion to the care and attention given the crop in the matter of preparing the soil and supplying proper cultivation and fertilizers.

We present here very briefly some of the points which are most important in the successful handling of this crop.

CABBAGE will flourish on most any of the usual types of soil. Of course, methods of production must be modified to suit the soil conditions. Large crops are grown on the comparatively light sandy types of soil as well as on the heaviest clays. When grown on the sandy or light loamy types, particular care must be taken to building up the humus supply and practically all the plant food has to be furnished artificially. On the clayey types the humus supply is equally important, but these soils are naturally more fertile than the sandy or loamy soils. Where cabbage is grown on a clayey soil, particular care must be given to the matter of cultivation. Frequent cultivation is necessary to preserve moisture and good tilth, but it must be remembered that clay soils can not be worked to advantage when too wet. If this is attempted,

puddling will follow and the soil will be in an unfriable condition for the rest of the season. If cultivation is attempted on a clay soil that is too dry, it will simply leave it a mass of lumps which will interfere with tillage for the rest of the season. The matter of the proper time to cultivate is one of judgment on the part of the grower. Every farmer knows the peculiarities of his own soil, and his past experience will tell him when cultivation can be safely undertaken.

Frequent, thorough cultivation is very essential in growing cabbage, especially in the early portion of the season. It preserves moisture, promotes a reaction of the soil and is conducive to the easy assimilation of plant food by the crop.

THE most successful cabbage growers use large quantities of manure. Manure is applied mainly for two reasons—to supply humus and plant food and to increase the water holding capacity of the soil. Any crop which uses such tremendous quantities of plant food, must of necessity require great quantities of water for its proper development, and this is true of cabbage. The amount of manure applied will depend largely upon the type of the soil and its condition at the time of application. On the average sandy or clay type of soil heavy amounts of manure, say 10 or 20 tons, may be applied with the assurance that the benefits will be somewhat in proportion to the application.

On the muck or slough soils, where cabbage growing has probably reached its most successful stage, it would, of course, be unwise to apply manure. In this case the soil is practically all organic matter, and the water holding capacity can not be improved on.

While the manure applied to the cabbage crop furnishes a large

quantity of plant food, which is mostly nitrogenous, its principal function is to increase the humus supply and thus the water holding capacity of the soil in question.

The most profitable crops are grown by using the commercial forms of plant food, and the reason for this is clearly evident.

It is known that a yield of 30 tons per acre, which is not unusual, will remove from the soil 270 lbs. of Potash, 70 lbs. of Phosphoric Acid and 200 lbs. of Nitrogen. To gain some idea of what an enormous quantity of plant food this is, let us compare it with a 35 bushel wheat crop which removes 31 lbs. Potash, 24 lbs. Phosphoric Acid and 59 lbs. Nitrogen. We see that it takes from the soil about 9 times as much Potash, $2\frac{1}{2}$ times as much Phosphoric Acid and more than $3\frac{1}{2}$ times as much Nitrogen.

This shows what a heavy drain would be made on the soil by several crops of cabbage in comparison with the other farm crops. In the face of these facts it might seem an almost impossible feat to maintain the fertility of the soil and at the same time grow many crops of cabbage. It may be easily accomplished, however, and the fertility not only maintained but increased. It is simply a matter of knowing how.

Aside from the fact that cabbage is a particularly heavy feeder, we must bear in mind that its root system is not, by any means, extensive. It does not range widely through the soil for its food as does corn or some of the other grain crops. Compared with other farm crops, the root system of the cabbage plant is small and this is an added argument for the use of concentrated fertilizer.

By using commercial fertilizers we are not only enabled to regulate the amount needed according to our knowledge of the former productiveness of the soil, but we can furnish the necessary material in a readily available form. We can



Stand of cabbage on unfertilized plat of Maas experiment.

furnish it at the place where it is required, in the amounts that are right, and at the time when the crop most needs it.

The logic of using commercial forms of plant food, we believe, is plain. We now come to the consideration of *what* plant food to use. In this we are guided by three main considerations. The amount of plant food removed by the crop as shown by the above quotation of a chemical analysis; the present fertility of the soil based on past experience, and upon the amount of manure applied, and finally by the experience of other growers. The latter is probably the most reliable

means of determining what to use

To show that the recommendations are sound and that the use of the proper fertilizers is profitable under actual test, we submit the experience of two men in different parts of the country who are now using fertilizers on cabbage with much success.

A few years ago Mr. Thos. Burkhardt of Meadowlands, Minnesota, became interested in fertilizers and the following season carried on the simple experiment here described. He says "There is only one way to determine the true value of a fertilizer. That is, by actually using it

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Stand of cabbage on plat where 1,000 lbs. of a 4-8-10 fertilizer was applied in Maas experiment.

Shall We Dust the Apple Orchard?

By C. E. Baker

Purdue University Agricultural Experiment Station

(The relative merits of spraying and dusting as determined by experiments.)

DURING the past twenty-five years the possibilities of dusting as a substitute for liquid spraying have been intermittently brought to the attention of the fruit growers. During the first decade of this period, powdered copper compounds were used as fungicides and paris green was used as the insecticide. This period resulted in nothing of value and for several years dusting was practically unheard of. With the successful advent of liquid lime sulfur as a fungicidal spray, the possibilities of finely ground flowers of sulfur applied as a dust, again aroused interest in the subject of dusting. About this time, also, powdered arsenate of lead was supplanting the paste form and this, combined with the sulfur dust, seemed to make a rather complete combination for both insects and diseases.

During the period 1910-1918 sulfur-lead dusts were used in different combinations and with varying degrees of success. Favorable results were reported from New York, but less favorable results followed their use in West Virginia and Illinois.

TO determine the possibilities of dusting under Indiana conditions,

experiments were begun in 1918 in a Ben Davis orchard, near Peru, Indiana. A block of 144 trees was divided into two plots of 72 trees each, one block being dusted and the other sprayed with liquid sprays. Another group of nine trees at the end of the block was left as checks and received no treatment of either kind.

Apple scab was the only serious disease present at the time the work was begun. The Ben Davis variety is very susceptible to scab and one on which it is very difficult to control the disease. Codling Moth and Curculio were the most abundant insects.

The liquid spray used was lime sulfur applied at the dilution of one gallon of 32° Baume concentrate to 40 gallons of water and one pound of arsenate of lead to 50 gallons. The dust used was a sulfur-lead mixture in the proportion of 90 pounds of sulfur to 10 pounds of lead.

Five years' results from these investigations show that under our conditions liquid lime sulfur controlled apple scab more successfully than did the sulfur-lead dust. In years of very light scab infection, the dust was about equally as effective as the liquid spray as a control measure. The value of controlling apple scab is manifest in

two ways. First, the protection of the fruit from the blemishes caused by the disease, with the consequent decrease in the amount of marketable fruit. Second, the protection against defoliation of the fruit spurs by the disease (which also grows upon the leaves causing them to drop) which tends toward a reduction in the size and yield of fruit.

The fruit from the sprayed plot was consistently larger than the fruit from the dusted plot, although there was no difference in the size and general vigor of the trees in the two plots, with the mentioned exception of greater scab defoliation on the dusted plot. The difference in size of fruit is probably due to this condition, and is not a direct effect of the use of dust. Consequently, while sulfur dust may give satisfactory control of apple scab under some conditions, it apparently is not dependable as a control measure.

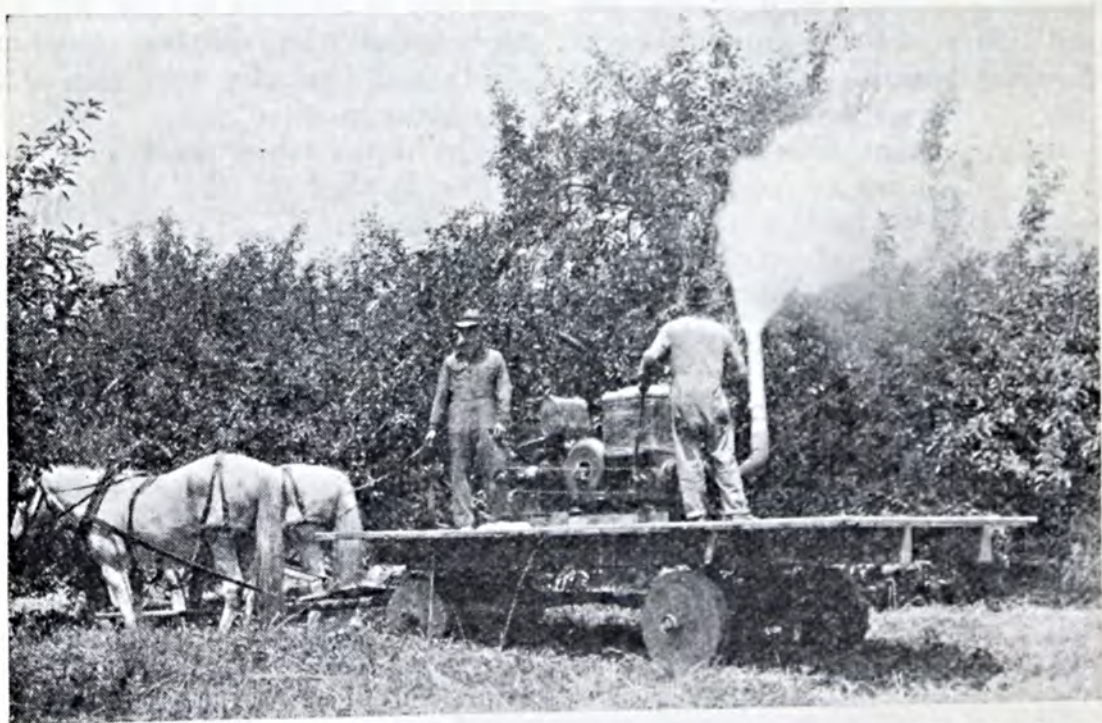
CONSIDERED from the standpoint of insect control, the dust compares very favorably with the

liquid spray. During the first two years dusting gave slightly better control than spraying, and during the last three years spraying was more successful.

One of the advantages of dust under the conditions of these investigations was the fine finish of the dusted fruit. At times limesulfur causes rather severe injury in the form of russetting of the fruit and burning of the foliage. This type of injury sometimes persists even after the addition of more lime. No russetting or other form of spray injury appeared upon the dusted fruit, and the apples that were free from insect and disease injury were smooth and clean.

The results of these investigations indicate the value of dusting under Indiana conditions as a supplementary control measure. As yet, dust cannot be substituted for all liquid sprays. This is evident from the fact that so far no dust has been developed to control scale. The rather poor showing of the dust in comparison with liquid sprays as a fungicide is also against its use. Although the only serious disease

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The type of dusting outfit used in these experiments. This makes a light load to haul through the orchard and does not require special trucks as it can be easily removed from wagon bed.

Breeding Plants to Resist Insect and Fungous Attacks

By M. J. Heppner

Division of Pomology, University of California

*How the red-spider was outwitted
in some almond tree experiments.*

FRUIT growers, as well as all other tillers of the soil, have many troubles to contend with, but the question is often raised whether or not some of these troubles cannot be removed or nearly entirely so by the application of science to our already general knowledge of fruit and crop growing.

For instance, one of the greatest problems confronting orchardists and other crop growers is the successful control of insect pests, and the successful prevention of destructive fungous diseases. Each year millions of dollars are expended in keeping crop and tree plants free from the devastations caused by these insects and fungi. Many of our commercial fruits and crops have been developed by controlled breeding methods. The question is now raised, cannot fruits and other crops be bred so as to be free from insect and fungous attacks, at least to a certain degree? Of course this cannot be done in one year's time or in two.

In any breeding work long periods of time are required before completion of the undertaking. And in many cases, yes, most of them, negative results are obtained. However, positive results may be the reward for the years of labor expended, as has been the case time

after time. By everlasting working we can accomplish things that at first seem almost impossible.

Take travel, for example. How many people believed ten years ago that some day it would be possible to travel across the continent in as short a period of time as the airplane has done it? And how many people dreamed that airplanes would be making a circle of the globe in as short a period of time as was recently done? Not many. Getting back to our topic, is it possible to develop types and strains of agricultural products that are immune or nearly so against insect and fungi ravages? It is the writer's opinion that such can be done and he offers the following as an example.

ONE of the most serious pests affecting California orchards is the red-spider. This is a very small pest and owing to its large numbers and small size is often very difficult to control. By sucking the sap from the leaves the tree is unable to function properly with the result that the tree's vigor is greatly reduced and the crops are materially lowered. In dry years, as the present one has been, the spider makes good headway as far as

damage is concerned, in view of the fact that the roots are unable to take up sufficient water to replace that removed by the spiders.

Although there are specific recommendations for the control of this pest, the orchardist is not always successful in warding off a spider attack. This pest is becoming of greater and greater importance each year and no doubt growers wish a tidal wave or something of that nature would hit the spider and wipe it from the face of the earth. Is it possible to develop fruits that are immune against spider attack? Let us read on a little further and see what has happened.

AT the present time the Division of Pomology of the University of California is carrying on a very extensive almond breeding experiment. There are well over one thousand trees in the experiment, most of which have borne at least one or more crops. Each tree was developed from seeds secured by hand pollination work, with the result that the exact parentage of each tree is known. Some of the many crosses made are as follows:—

Ne Plus Ultra	x Harriott
Ne Plus Ultra	x Drake
Nonpareil	x Peerless
California Paper Shell	x IXL
IXL	x Ne Plus Ultra
Drake	x Languedoc
Drake	x Peerless
Reams	x Texas
Languedoc	x Drake
Nonpareil	x Drake [Shell
Reams	x California Paper

These include most of the commercial varieties grown in California. The object in undertaking the experiment was to try and produce a nut of good quality, productive, and blooming late enough to escape the late spring frosts. Frost is one of the most limiting factors in successful almond production in view of the fact that the almond blooms earlier than all other deciduous fruits. It appears as though nature with its weather

peculiarities and the red-spider work hand in hand. If nature spares the almond blossoms and allows the trees a chance to produce nuts, the spider generally comes along and does its damage by causing the leaves to fall. No leaves means no nuts so the grower must get busy and endeavor to prevent the spider from exacting its damage.

During 1922 some of the trees came into bearing for the first time. Observations throughout the summer showed that the trees developed from the Reams x California Paper Shell cross had characteristics not exhibited by any of the other trees. They had good nuts, were very productive and seemed to be able to withstand the attack of the red-spider. By the middle of the summer nearly all other trees had lost their leaves, thanks to the red-spider. But these particular trees would not give up. They stood out like a Rock of Gibraltar with their dark green leaves and splendid crop. Spiders were on the trees but this did not seem to worry the trees any.

IN order to check up this apparent red-spider resistance, the trees were carefully watched during the following summer (1923). And lo! the spider tried its best all during that time, but it was unable to affect these trees. Again, all other trees had their leaves on the ground long before natural shedding time, but this was not true with the promising trees. During 1923 another heavy crop was taken from these trees.

In view of the fact that the past winter and spring were very dry, it was believed that the trees would have to lay their cards on the table and give in to the spider. The soil was depleted of its water early in the growing season, and it was expected that not a leaf would remain on any of the trees due to the

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Better Crops'
ART GALLERY
of the month

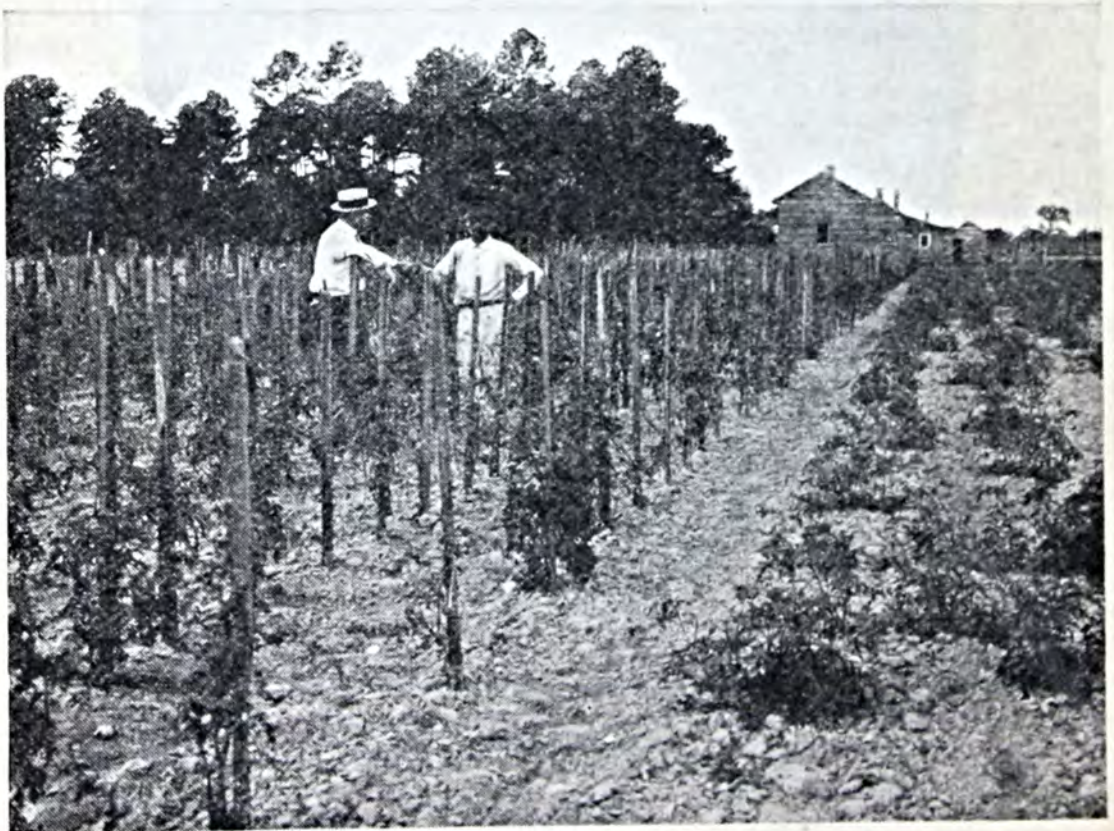


Dr. S. O. Fladness, who on November 1 took up his duties as Agricultural Commissioner to Mexico with headquarters at the U. S. Consulate, Mexico City. He was formerly in the Bureau of Animal Industry, U. S. D. A.



Wise Byrnes, in charge of Gardens and Greenhouses for the U. S. Department of Agriculture, examining seed pods of an amaryllis, a plant which Mr. Byrnes and his father, lately retired after 22 years of service with the department, have done much in developing, especially in creating new colors. Mr. Byrnes hopes to be able to produce a fragrant amaryllis.

A pyramid of prairie dogs which shows the result of a campaign carried on in the locality of the West by the Biological Survey of the Department of Agriculture in co-operation with local people. In some sections the prairie dog is a very destructive pest and poison must be used to save the crop.



County Agent, W. G. Middlebrooks of Bibb County, Georgia, visiting a farmer's demonstration field of staked and unstaked tomatoes.

Record Yield from 35-Year Old Orchard

By John A. Crawford

Massachusetts Agricultural College

How to get the most out of fruit orchards is still a debated question. These experiments indicate that fertilizers of the right sort will increase the yield of apples.

A 35-YEAR old orchard of the Massachusetts Agricultural College in Amherst, Mass. has this year borne its record crop, 336.2 barrels from 60 trees. Dr. J. K. Shaw, the pomologist who devised the nursery stock identification system, and who had charge of this experiment in the past four years, considers the 1924 crop a highly satisfactory yield.

Originally this block of trees was a potash experiment, set out by the late Dr. C. A. Goessmann in 1890. At that time potash was considered among plant foods as the chief determinant of the size of fruit crops. High potash fertilizers were used for many years. The five plots, each containing three Rhode Island Greening, Roxbury Russet, Baldwin, and Gravenstein trees, were treated with the following per acre dressings in their first three decades; plot one got 10 tons of manure; plot two got 2,000 pounds of wood ashes; plot three, a check plot, got nothing; plot four, 600 pounds of ground bone and 200 of muriate of potash; and plot five had 600 pounds of ground bone and 400 of low grade sulphate of potash.

The orchard lies on the blustery side of a high hill over which the sun shone only after it had been up for an hour or two hours. The trees were 30 by 40 feet apart on an acre and one half of ground. The soil was only fair, being a medium loam of moderate fertility, and it put a premium on good soil management.

It has been variously treated. From 1889 to 1893 it was intercropped. From 1894 to 1902 it was in sod and the grass was removed. Between 1902 and 1910 it had a sod mulch but from 1911 to 1920 it was strip-cultivated.

The trunk growth during this period was high, and in a sense made possible the record yield of the past season. As is now fairly well known, potash has little to do with the size of an apple crop.

NEARLY a decade ago, horticulturalists first put forward their support of nitrogen as an orchard feeder and after some trials, this old experiment orchard was fertilized on a different system. In 1921 and in following years, it has received the following per acre

doses; plot one, four tons of manure; plot two, 1,000 pounds of wood ashes and 300 pounds of nitrate of soda; plot three, as before, nothing, plot four, 100 pounds of muriate of potash, 150 of acid phosphate and 300 pounds of nitrate of soda; plot five, 100 pounds of sulfate of potash, 150 of acid phosphate and 300 of nitrate of soda. It has been strip-cultivated and cover-cropped.

The consequences of this treatment appear in the following tables on the set of fruit spurs and on the

year leave no doubt as to the wisdom of fertilizing a bearing orchard when planted on New England soils. Not only was their bulk small, but they resembled the far pasture product known as the Lord's little apples.

The plot yields for 1924 were as follows: plot one, 98.1 barrels; plot two, 65.8 barrels; plot three only 22 barrels; plot four, 65.4 barrels; and plot five 86.2 barrels.

Dr. Shaw further notes that the Baldwins have yielded their best

Average per cent of Spur Set Per Plot in 1923 and 1924

	R. I. G.		Rox. R.		Bald.		Grav.	
	1923	1924	1923	1924	1923	1924	1923	1924
Plot 1..	67	44	52	39	77	78	88	61
Plot 2..	78	53	86	48	90	57	86	31
Plot 3..	44	25	27	37	88	66		33
Plot 4..	83	26	48	26	62	50	78	40
Plot 5..	76	31	60	49	93	86	73	47

Note the consistently higher percentage in plots one and five.

Average per cent of Bloom Per Plot in 1923 and 1924

	R. I. G.		Rox. R.		Bald.		Grav.	
	1923	1924	1923	1924	1923	1924	1923	1924
Plot 1..	60	83	65	77	40	28	25	85
Plot 2..	60	70	72	60	45	13	13	80
Plot 3..	17	37	20	43	6	6	1	77
Plot 4..	57	47	65	55	7	22	42	80
Plot 5..	58	67	65	60	8	40	8	80

average per cent of bloom during 1923 and 1924.

THE yields from plots one and five in the past three years have consistently argued for treatments like those used on them. The niggardly results from plot three which yielded only 22 of the 336 barrels of the whole orchard last

from the commercial fertilizers and the Greenings, Russets and Gravensteins from manure. Of the two fertilizer combinations with which the Baldwins were treated, the mixture containing the sulfate of potash was more productive than that with the muriate of potash. This distinction between forms of potash may not, however, apply generally.

The Pig and the Professor

B y E . W . H o w e



HERETOFORE I have never read an article on diet that did not make me uncomfortable. All writers on this subject tell us we must do certain things we cannot do, and call us pigs for neglecting them. But Thomas B. Osborne, connected with the Connecticut Agricultural Experiment Station, who has been referred to by a famous living chemist as one of the first authorities in the world on the subject of proteins and their different effects upon the animal organism, appears with a crumb of comfort. He says men are endowed with instincts which guide them so well that, under normal conditions of life, "they escape the many dangers that until recently they were unconscious of." ¶It is comforting to believe that I have natural instincts which lead me, careless man though I am, somewhere near the best and easiest way. ¶Even pigs have this valuable and natural intuition. Is it too much to hope that men have? The pig knows how to protect itself against dangers arising from indiscretions in eating, not only as to quality, but as to the proportion of the various food constituents. This is shown by Evvard's experiments. He allowed pigs to feed themselves at will from corn, meat-meal, oil meal, salts and the like, from separate hoppers. During early growth, when new tissues were being made rapidly, these pigs ate much larger proportions of protein than when growth became slower. Later, when smaller amounts of corn were eaten, the protein deficiency thus caused was met by an increase in the amount of meat-meal eaten. Under these conditions of self diet feeding, the pigs grew faster than any previously recorded which had been fed on mixtures made for them by the combined talent of agricultural experts, trained both in science of nutrition and in the practice of the art of feeding. Of all professors, those connected with scientific and agricultural colleges are most sensible and practical; they now teach that the best ration for pigs is the ration selected by the pigs themselves when free to follow their natural instincts. And I wish the dietary experts would permit me to do the same thing. ¶I thank Professor Osborne for his agreeable doctrine. If you are careful to eat slowly, and not too much, you are probably doing all that can be done to reach old age comfortably. ¶Does instinct also guide us in matters other than diet? Does it cause us to do the best we can in religion, sociology, democracy, politics, etc.? I hope so; I hope I have wise instincts I can neither sell, trade nor give away.

The Cedar Tree and the Apple

Make Poor Neighbors

By C. T. Gregory

Purdue University Agricultural Experiment Station

Another fine article on an interesting subject from an old friend.

VIRGINIA has a law that declares the cedar trees to be a public nuisance or something of the sort. At any rate, folks there can be compelled by law to cut down cedar trees. In certain cases I expect this is a blessing, but in Indiana our orchardists get along rather successfully without such a law. The way some of them have of removing cedars, I believe, is unique in plant disease control. And if it is not unique, at least it is a good hunch well worth consideration by others.

A few years ago R. H. Simpson, of Vincennes, Indiana, became alarmed for the safety of the trees in his apple orchard. His neighbor had a fine stand of cedar trees and Mr. Simpson knew that his apples would not stand much chance against the rust disease with cedars so close by, a very serious situation

for Simpson, but he handled it easily and effectively. He went to his neighbor, explained the situation and persuaded him to sell the cedar trees. This accomplished, Mr. Simpson immediately had all the offending cedars cut down. This was rather expensive, but it paid. We have records of orchardists who lost from \$500 to \$1,000 because of the presence of a few cedar trees.

Another effective and cheaper means of killing these undesirable cedar trees is with a plant poison, sodium arsenite. Cut notches in the trunk near the ground and pour about a tablespoonful of the pure liquid sodium

arsenite into each wound, a simple treatment, but astonishing in its results. One man said about the treatment, "It's like dynamite."

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A cedar apple—one-half the apple rust disease and the dispensable half.

Making the FARM Pay

By L. C. Reynolds

*(A dairyman's views
on soil improvement.)*

MAKING the farm pay is a stupendous problem with every individual farmer, one upon which to an immeasurable degree depends his happiness and prosperity. When farming ceases to return a fair profit on capital invested on time and labor required to operate the business, farmers sell their land and move into town or lease their farms to renters, in either case, the profits from the soil gradually lessen until depleted and rundown farms are common in every locality and state in the nation.

Farming is so diversified in this country that it is impossible to point out in detail how to make farming in all its varied branches most profitable other than to lay down a few general principles which directly influence soil cultivation. The kind of farming that is profitable in one section of the country might prove the reverse elsewhere, consequently necessitating more or less personal study and familiarity with local conditions. However, soil conditions throughout the Middle West are much the same and a general method of soil improvement will in a large measure apply to general farm conditions.

There are a large number of vital factors entering into the problem of making the farm pay that cannot be treated at this time;

therefore, I want to speak here in a specific way of soil improvement, as the soil is the farmer's resource and the basis upon which his prosperity inestimably depends. More failures to make the farm pay can be traced directly to improper soil management than to any other source. Farmers are too common in every locality who have, in their eager desire to become prosperous, cropped their soil to the point of unprofitableness and now find themselves unable to make the farm pay.

The initial factor of making the farm pay is to maintain the soil in proper balance, or in other words, to keep the plant food ingredients in the soil in their right relation to promote maximum production. On my farm, which is in many respects identical with thousands of other farms, I find that maintaining the vegetable matter in the soil is a vital essential in the growing of profitable crops. As I follow dairying as a specialty, I have a large quantity of stable manure to go back upon the land that materially assists in restoring organic matter to the soil. However, I know that stockless farming can be made profitable and the vegetable matter maintained in the soil through the growing and

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The author of this article—the third County Agent in Wyoming.

In the Old Days

By Allyn H. Tedmon

County Agent, Littleton, Colo.

If you want some measure of how County Agents work has developed in ten years, read these delightful reminiscences of one of the pioneers in the field.

COUNTY AGENTS, in the West at least, are generally young men, often right out of College. These young men, and older ones just starting in, little realize the way the work was done ten years ago.

County Agent work had its start in Colorado more than ten years ago. W. H. Lauck, the original and only "Bill" Lauck of El Paso County, Colorado, was, if I recall correctly, the first one. Then came D. C. Bascom and H. H. Simpson, in Logan and Boulder Counties, respectively. In Wyoming, the first man was A. L. Campbell, who started out on a motor bike at Lander in Fremont County,

and H. E. McCartney held sway at Sheridan, in Sheridan County.

The third man to brave the wilds in Wyoming was myself, and I shall never forget the statement of Director A. E. Bowman, the night that he talked the job over with me. He said, "Now, imagine the worst looking place you can, and then when you get there you will find it worse than that." I went on the job taking both Big Horn and Washakie Counties. My headquarters were at Basin, in Big Horn County, and it was just about an even hundred miles from there to the No Wood store, down about half way across Washakie County.

Back in 1914, "Bill" Lauck,

State Leader Frear of Colorado, and myself, made the trip to the conference at Chicago. I hardly knew at the time what a County Agent was supposed to do, and after sitting around for a number of days, I found out that very few of those present had anything but a hazy notion.

IF I have ever had any success as a County Agent, I owe the most of it to dear old "Bill" Lauck. He sat up by the hour and told me of his experiences. He told me of one time, when he had not been on the job long and when people still thought that he was the prize grafter, of taking with him one of the most skeptical of his board of County Commissioners. This man, on the first blush, had thought a County Agent would be a fine thing for the farmers. However, when he noticed that all Lauck did was to drive and herd that Ford of his over the county roads, he changed his mind. Lauck, if he was nothing else, was a student of human nature. "Bill" Lauck could sell anything to any body I believe, for he sold County Agent work to that man, and this is how he did it.

Early one morning he called for the gentleman to go with him on a

day's work. They left early for Lauck never let grass grow under his feet. A speedometer was of no use on Lauck's car, because he insisted on twisting off the drive chain. He drove too fast for one of the kind of that day and age.

Well, County Agent Lauck and his doubting Thomas spent the day sailing from one dry farm to another. Here "Bill" would leave a sack of seed corn. There he would climb down, and jerking out a wrench, would show some Chicago street car conductor how to adjust a plow. Next place he would leave a book or two from his original traveling library. Next place he did something else, until at last it was about to be dark and they were miles from home.

The man sat mum during the whole day. He said little, but his brains and eyes were very busy. At last along in the evening, Lauck drove up to the man's house and bade him goodnight. The man, in a dazed way, climbed out of the Ford and being hungry and tired from the days whirl stood a moment, and then manfully told Lauck that he was for him. And he was too, and so were all the rest, for in all the years that "Old Bill" Lauck spent in El Paso County, he was

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"Old Henry" bogged down in December.



The Editor's

WELL, WHAT ABOUT THE CONSUMER?

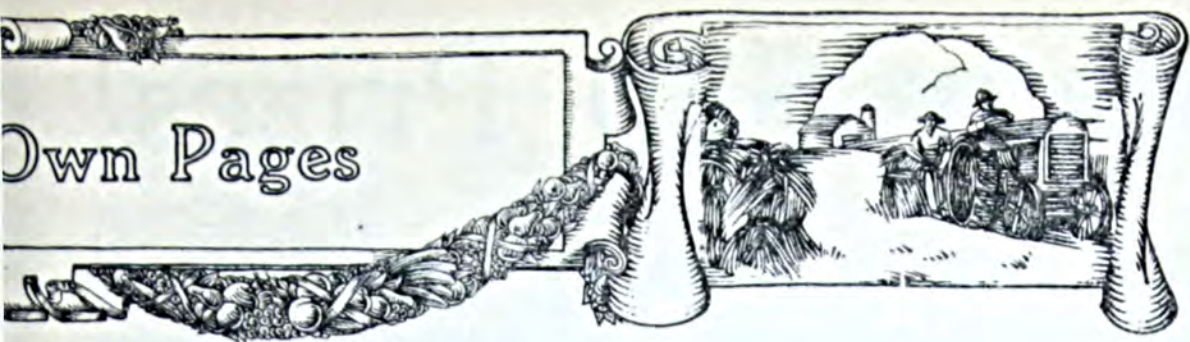
In this issue of **BETTER CROPS** is an article by Frank George which asks a timely and pertinent question "What About the Consumer?" Ten or fifteen years ago that would have sounded like a joke. Farm produce ordinarily passed through so many hands before reaching the consumer that the farmer had little concern with the consumer.

Developments of the past ten years have been forcing the farmer and his ultimate customer closer together. One point that is being forcibly driven home, particularly to cooperative marketing associations, is that the consumer deserves a good deal of attention.

For several years past, while living in and around New York City, I have been observing things from the consumers' side of the fence. I haven't yet got over my indignation at the prices I have to pay for fruits and many vegetables. To pay ten cents a piece for apples when any farmer would give me a dozen for that price seems to me to indicate that something is rotten somewhere.

At first, I used to blame it on the fruit dealers here in New York—the wholesalers, jobbers and retailers. When you consider, for example, that a Georgia peach grower receives from 53 cents to \$1.28 for 24 quarts of peaches while the consumer pays \$7.50 for the same amount of peaches, you can't help wondering where the six or seven dollars difference goes. When you learn that \$4.75 of that \$7.50 goes for city distribution charge and waste, you begin to wonder why.

I have not sufficient evidence to defend or attack methods of distribution in New York City. My own impression is that they are far from ideal, and that prices are set with the idea of small turnover at large profit, whereas the whole



trend of distribution is towards large turnover at small profit. The point I want to make is that the grower has a measure of control over retail prices and that it is time he began thinking about exercising it.

A large part of the cost of distribution of farm products is due to their fluctuations as regards quality and supply. Ungraded fruit, variable quality, alternating glut and scarcity force fruit jobbers and retailers to take great risks. As a matter of sound business protection they must charge prices that will enable them to take these risks.

Marketing associations, as Mr. George shows in the case of the cranberry growers, have it in their power to decrease these risks and so lower the cost of distribution.

Every successful marketing association with which I am acquainted has done three things. It has standardized quality by careful grading. It has insured constant and dependable supply as far as possible and it has, by advertising and sales efforts, created consumer demand and consumer good will.

If a marketing organization does these things in a businesslike fashion, it is bound to exert a great control over retail prices. It can cut distribution costs and risks of handling farm produce to a minimum and it can and should see that these economies are passed on to the consumer in the shape of lower prices.

I believe that New York City alone would absorb three or four times as much farm produce as it does today if it were available at low prices. It is up to farmers' marketing associations to make their produce available to this great potential market at reasonable prices.

Jeff M. Dermid

Four \$20 Prizes!

FOR the best article received on each of the following subjects, BETTER CROPS will award a prize of \$20.

Read the conditions of the contest and then get busy on your story. The time is short but you have plenty of time to write an article that may win a prize.

SUBJECTS

The Importance of Raising High Yields at Low Cost

Why We Should Diversify Crops

The Value of Maintaining Soil Fertility

How Cost Account Records Help the Farmer

CONDITIONS of the CONTEST

Who is Eligible?—Any person connected in any way with the practice of agriculture may enter this contest. Manuscript must not exceed 800 words. Articles should be preferably typewritten on one side of white paper, but there will be no prejudice against articles not so written.

Contest Ending—The contest is open now.

It closes midnight Saturday, January 17th. Manuscripts bearing a postmark later than this time will not be eligible.

Basis of Award.—The basis of award will be on the excellence of presentation of facts. In

the event of a tie, the full amount of the prize will be awarded to both contestants. One prize of \$20 will be awarded to the best essay in each group. The judges reserve the right to withhold the award in the event that none of the articles submitted is deemed worthy of publication in BETTER CROPS.

Judges.—The judges of the contest are the editors, Jeff McDermid and Basil H. Pillard.

Method of Payment.—As the contest closes January 17, the awards will be announced in our February issue and checks mailed to the winners on February 1st, 1925.

Right to Publish.—The BETTER CROPS CORPORATION reserves the right to publish any manuscript submitted in this contest. Any manuscript so published outside of the prize winners will be paid for at the regular rate of one cent a word. No manuscripts submitted will be returned.

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By the Readers of BETTER CROPS

BETTER CROPS is a very welcome visitor in this office. "What Agriculture Needs" is to me an invitation. While neither new or original with me, it needs constant hammering away to get it generally recognized. That is "More business in farming." Marginal farms and farmers hang on when a similarly situated store or factory would go bankrupt, for a farmer seems to be able to exist without profit. Yet these marginal fellows are all that keep agriculture from showing a profit. Business methods applied to farming would help them to get into more profitable fields of endeavor and clear the way for a prosperous agriculture. Too few farmers keep records adequate to serve as a basis of management, and such accounts must precede real prosperity. Nine out of ten business ventures fail to become permanently successful institutions, the tenth has a system of books that not only record transactions but serve as a rudder into more prosperous waters. Farm bookkeeping is not complicated, but getting it accomplished is difficult. An intelligent farm management record on every farm would do more than all the laws that could be passed. All agriculture needs is common sense business methods.—*C. W. Mason, County Agent, Wheeling, W. Va.*

First: Use agricultural colleges to the limit. Educate by community. Organize by community. Organize by commodities. Federate by counties, states, districts, nationally. Federate by com-

modities the same way. Cooperate with all organizations, farmers and people in other occupations and with consumers. Harmonize all. Antagonize none if possible. Control production. Grade, standardize and market intelligently, storing surpluses. Market generally through cooperative agencies. Sell according to consumptive demands, fixing a price in keeping with costs and the law of supply and demand. *Last:* Use the agricultural college to the limit.—*E. J. Leonard, Fort Morgan, Colo.*

Here are my suggestions for a constructive program for agriculture. A postcard would not do. It seems to me that we should adopt a definite system of well balanced farming, which would include those crops which over a series of years would return us a maximum profit and maintain soil fertility. For this section it would mean the adoption of a crop rotation system balanced by a system of handling our livestock, which would consume practically all of the crops produced. For this section it would mean corn and wheat, oats and clover, with either dairy cattle or high grade beef cattle supplemented with some real good poultry. This kind of proposition if followed would get away from depression, maintain fertility, and would return those things which make farm life satisfactory.—*V. B. Sheldon, County Extension Agent, Maysville, Mo.*

More Acres of Legumes for Soil Improvement.—*O. B. Riggs, County Agent, Newport, Ind.*

We think you are wrong when you say, "There is something wrong with agriculture." It is industry which is out of balance and the proper adjustment of the prices of articles which farmers must buy will go farthest in bringing the proper solution. Three things which we believe agriculture can do for its own benefit are: 1st. The collection and distribution of information which will prevent an over production of any particular crop, e.g., hogs and wheat at the present time. 2nd. Diversification so as to have production meet local demands, e.g., Indiana annually imports large quantities of potatoes which should be grown in Indiana, as the Indiana price is considerably higher due to freight and handling charges necessary to importation. Our own county buys several car loads of potatoes annually. For the past three years we have been pushing potato production, until at the present time our potato crop slightly exceeds our demand. Another example from our own county — we never produce sufficient legume hay to properly feed our dairy cattle. We are pushing wheat acreage down and soybean acreage up until at the present time we believe we have sufficient soybean acreage to properly feed our dairy cattle. These two changes in Harrison County have meant a change of several thousand acres, and will provide for home production and consumption of large volumes which have been going through the markets at a loss to the farmer, as he has been selling wheat and buying hay and potatoes. 3rd. A system of orderly marketing, which will prevent dumping by feeding the supply to the markets as the demand is shown, and will provide for the pooling of orders for supplies for farmers so that they may be purchased under favorable market conditions and delivered to the farmer as he demands them.—*N. I. Clunie, Corydon, Indiana.*

Greater creative industry for the middle west. Greater economy in farm production. Greater economy in marketing. Cutting down "lost motion" everywhere. — *Sam M. Jordan, Lecturer, Board of Agriculture, Columbia, Mo.*

Reduce the number of farmers. Let the remaining farmers cultivate less acres but more intensely. Then their return per man and per acre will be greater. This would make prices higher. A greater income and less expense for what the farmer has to have on the farm. — *J. A. Salmons, Farmer Jonesboro, Ark.*

First, Better livestock, such as improving dairy cattle, quicker growing swine, etc. Second, Pure seed, increasing production by certified seed. Third, 20th Century farm management, complete reconstruction of farm program of work on an up-to-date business basis. Fourth, Elimination of all slack between consumer and producers, cooperative marketing and other agencies. Fifth, Full use of all agricultural institutions and their information.—*W. S. Hill, real estate, formerly County Agent, Fort Collins, Colo.*

Pure bred horses, hogs and cattle. Pure bred seeds of all kinds and selection of varieties best suited to location. Terracing all land subject to erosion and the building up of the fertility of soil by raising legumes. Specialize of crop you like best but don't confine your crop to one or two items. Do variety farming.—*G. W. Thompson, farmer and stockman, Batesville, Arkansas.*

More economical production and marketing. A yearly program of work for the farmer instead of seven months. More diversified farming. Improving soil fertility by rotating crops and adding fertilizer.—*L. C. McIntosh, Co. Ag. Agt., Fowler, Indiana.*



By Ted Butler

BETTER CROPS' Washington Correspondent

Congress has given little or no attention to possible agricultural legislation thus far during the short winter session. Several leaders early indicated that Congress would take no action on farm measures until the Agricultural Conference appointed by President Coolidge had made its preliminary report and recommendations. Under the chairmanship of Robert D. Carey of Wyoming, the Conference reconvened in Washington on January 5, and immediately announced that a recommendation looking to relief of the cattle industry could be expected. It was further stated that the Conference would have something to say on cooperative marketing and other matters for the consideration of Congress before it adjourned on March 4.

Agricultural Washington has been quite disturbed over the outbreak of a serious poultry disease in New York which resulted in an embargo being placed on all shipments from the Middle West. No sooner had these reports been received and confirmed in Washington than Congress passed an emergency measure appropriating \$100,000 to combat the situation. Dr. J. R. Mohler, chief of the Federal Bureau of Animal Industry, the man who so successfully led the forces against the late outbreak of foot-and-mouth disease in California and Texas, immediately got his machine in running order and laid down plans which today have the appearance of putting the poultry

industry in a normal condition without delay.

A piece of work carried on by the Federal government which rarely gets before the public has to do with the animal hunters employed by the Biological Survey. In a recent report covering the past four years it is stated that a total of 2,542 wolves, 695 mountain lions, 11,625 bobcats and lynxes, 497 bears, and about 380,000 coyotes have been destroyed in the campaigns to eradicate predatory animals. This represents a direct gross saving to livestock raisers of not less than \$23,000,000, say government officials. Who said that these United States had passed the stage where the wild frontier was no longer in existence? Wild animals continue to be a serious economic factor in many western states.

A recent survey by the U. S. Department of Agriculture shows that 70 per cent of all cooperative cheese factories in this country are in the state of Wisconsin. Furthermore, 60 per cent of farmers belonging to such enterprises and 70 per cent of the business handled in 1923 are credited to this state. Wisconsin is far in the lead in cooperative cheese making and rightfully should be for it is looked upon as the leading dairy state. The oldest living organization from which the government received reports is the Cayadutta Cheese Factory at Fonda, New York, established in 1863, when cheese was selling for about 13 cents a pound.

Speaking of cooperative marketing, Chris L. Christensen, who recently was selected to head up this work in the U. S. D. A., has just returned to Washington from a three months' trip over the country and again hits some of the high points dealing with success or failure of such enterprises. "The success of cooperative marketing depends more than anything else upon efficient management and a thorough understanding on the part of the membership as to the possibilities and limitations of cooperative marketing," says Christensen in succinctly summarizing up his investigation. He declares that cooperative organizations are beginning to realize more than ever before that production and marketing are inseparable, and that very often the solution of a marketing problem may be found to originate in production practices.

Some idea of the difficulty encountered by the 1924 corn crop and resulting higher prices, can be seen in official statements that less than half of the crop in the corn belt states reached maturity before the first killing frost. Usually about 91 per cent of the crop reaches maturity at this time compared with 48 per cent the past season. Only 23 per cent of the crop was reported as fit for seed, but this is more than enough for that purpose. This condition was laid to a wet spring and summer rather than to frosts.

As can well be expected consumers generally know less about differences in cuts and quality of meat than of any other commodity. This old belief again has been brought forward and proved by officials of the government who have completed a nation-wide survey of the retail meat business. Most of the housewives interviewed were able to mention only two or three steaks which they could recognize if cut, and the average number of roasts which they could name was less than two.

The meat survey was highly illuminating. Of the average consumer dollar received by the retailer it was found that the meat costs 78.6 cents, the retailer's expenses were 19.7 cents and the profit but 1.7 cents. More than 60 per cent of the people surveyed bought their meat from shops which were within a radius of less than three blocks from their homes. Only 25 per cent were in the habit of going five blocks from their homes.



Breeding Plants to Resist Attacks

(From page 14)

drought and subsequent spider attack. It has been a splendid summer for the spider. The trees in the orchard dropped out of the race one after another. But—the unforeseen happened. The spider resistant trees failed to shed their leaves although they were under the most trying conditions. Splendid crops have also been produced despite the fact that a late frost destroyed the blossoms on nearly all other trees in the block. What does all this signify? Three years' observations seem to show conclusively that these trees are highly resistant to red-spider attack. They have received treatment similar to that given all other trees and as yet have not faltered.

This leads one to the belief that through breeding channels trees have been developed which are highly immune against a very severe orchard pest. It seems to follow that what was thought impossible is really possible. It opens up a new field of endeavor. Can we develop trees and other plants which are immune against pest and fungous attack? This question, the writer thinks, can be answered in the affirmative as the above experiment seemed to show.

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These booklets were written by experts and contain valuable information on the proper and profitable use of fertilizers. Upon receipt of your request, we will mail you a copy of each booklet requested. If, after looking them over, you want more for distribution among the people you are working with, we shall endeavor to send them as long as our supply lasts.

We have still a few maps showing the location of the county agents in the United States. A copy of this will be sent free postpaid, upon request.

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How About the Consumer?

(From page 7)

they continue to exist indicates a demand for them.

But, whereas, Governmental agencies have not the power to say what shall be the precise method of distributing food and how many people, and who, shall be engaged in the business, the producers themselves can exert a great influence in seeing that their products are handled in the best manner to conserve the interest of themselves and of consumers. It is obviously to the advantage of growers to make it possible for their products to be placed in the hands of the consumers at the lowest possible cost.

A case in point where this policy is followed is that of the cranberry growers. These growers early learned the importance of price in affecting the consumption of their product. They found by experience that their best interest requires the trade of the great bulk of the consuming public, which is made up of laborers and farmers, and that a retail price above 25 cents a pound cuts off this class of consumption.

The 1921 cranberry crop, for example, was short and the demand for berries good. If the association had distributed its supply during the normal selling period, the demand for berries would have caused the price to advance early in the season to a level that would have cut off a large class of people whose trade is valuable during a season of normal production. To avoid this, the association kept pushing its berries on the market in order to satisfy the demand, at rates that would permit a retail price of 25 cents or less.

"Here is a concrete instance," declares Asher Hobson, who is now the American representative to the International Institute of Agriculture at Rome, and who made the cranberry marketing study, "of a

cooperative association throwing its supply upon the market to discourage unduly high prices. This action was in keeping with the best interests of the association as demonstrated by past experience. It was in line with a long-time sales policy designed to retain the volume of custom necessary to the disposal of a normal crop."

Mr. Hobson's study showed that in 1920 with a crop slightly below normal and in the face of rapidly falling prices on practically all other commodities, the cranberry market advanced throughout the selling season. The grower received 54 cents of the consumer's dollar for growing and packing the fruit, the association got 3½ cents, advertising cost 1½ cents, transportation 7.4 cents, jobbers and other wholesalers 11.2 cents, and the retailer 22.4 cents.

A few of the outstanding accomplishments of the cranberry growers are summed up by Mr. Hobson as follows:

1. A reputation for quality has been built up by establishing and maintaining uniform grades and packs.

2. Marketing risks have been distributed equally among all members of the association by means of pooling systems. High and low-priced orders, losses and gains through market fluctuations, and the risks of transportation, are equally divided. Pools are, in effect, a form of market insurance.

3. An advertising fund sufficient to bring the berries forcefully to the attention of the consuming public has been created by means of a small assessment per barrel. Through advertising, consumption has been increased to an extent sufficient to care for increased production. Advertising has played an important part in the achievements of the cranberry growers.

4. "Glutted" and "famine" markets have been eliminated by coordinating distribution from the three producing districts, and as a result market prices have been stabilized. Cranberry prices did not rise during the war in proportion to other prices. On the other hand, cranberry prices did not fall during the selling season of 1920-21, when prices of practically all farm products, as well as other commodities, declined rapidly. This stabilization of the market, together with the establishment of uniform methods of dealing with the wholesale and retail trade, has built up a good-will relationship with the trade to a degree which could not have been reached by the growers individually.

5. The goal of cooperative marketing of perishable food products is to obtain the highest average price which will move the entire supply year after year. To this end, the adjustment of demand forces to the supply of any given year requires a close study of ever-changing conditions affecting the

price of the product. By cooperation the cranberry growers are in a position to employ specialized business men capable of advising them regarding supply and demand forces and their probable effect upon price and market conditions. Thus the growers put themselves in a position to gauge the factors which influence the sale of their product and are better prepared to take advantage of market conditions as they find them. Individually the growers were unable to do this.

6. The wide fluctuation in yields from year to year shows that the exchange has little or no control over the volume produced. Hence, its energies are necessarily turned toward economies in marketing and stimulation of consumption. These are matters over which the growers, acting as individuals, can have but little control.

7. The cost of marketing cranberries has been reduced until it is believed to be one of the lowest, if not the lowest, among the fruits. In 1920 the grower received 54 per cent of the consumer's dollar.



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Shall We Dust the Apple Orchard?

(From page 12)

encountered in this series of investigations was apple scab, other tests of dusting materials indicate their inferiority in the control of apple blotch. Other serious diseases such as bitter rot apparently do not respond to dusting as a control measure.

While dusting cannot be substituted for liquid spraying, it may serve a very important purpose in an emergency due to the rapid manner in which it may be applied. Dusting may also prove a time saver during the later summer applications made principally for the control of codling moths. In large orchards, a duster may come to be considered a necessity to meet emergencies caused by break downs of spray machinery or unfavorable weather conditions during the spraying season.

As these investigations were conducted during the period of inflated prices the comparative cost figures are of little value for present

conditions. Certain relations between comparative costs do exist, however, and these are interesting as such.

The greatest item of expense with dusting was the cost of materials. About 95% of the total cost was for material and 5% for labor. With spraying 70% to 75% was the cost of materials and 25% to 30% was the labor cost. Due to this relation the cost of dusting increased very rapidly with the amount of materials used.

During the season of 1922, when prices were very near their present level, it cost 9 cents per tree per application for spraying and 14 cents for dusting. In previous years the relative cost of dusting had been much greater, due to the higher costs of dusting materials. Everything considered, dusting proved to be more expensive than spraying. In these tests for the above year, 5.2 gallons of spray were used per tree, per application,



Typical apples from the check plot. Note the serious scab and insect injury.

and 2.4 pounds of dust. This is considered to be about the minimum amount of materials for trees of this size.

Although the dusting of apples does not as yet appear to be a satisfactory method of protection against insect and disease enemies, the future of dusting is an open book. It is impossible to predict what the ultimate results will be. New dusts are being placed upon the market and the older materials are being improved. Some of the newer dusts are again returning to copper or mixtures of copper and lime in a very finely divided form which may possibly prove to be a more satisfactory fungicide than sulfur dust. The perfection of a more successful nicotine dust for use against aphids has also broadened their field of usefulness another step. The fruit growers are watching this development with a great deal of interest, and some are already venturing into the field in an experimental way. It is mainly by these trials and their results that the ultimate success or failure of dusting will be determined.

NOTE:—*Purdue Agricultural Experiment Station, Bulletin No. 283, gives the complete results of these investigations.*



The Cedar Tree and the Apple

(From page 20)

There is only one precaution in using this poison. It has a salty taste and animals are quite liable to lick it. A few licks, and they are done for, so be careful when using it in pastures.

Is all this worry about cedar trees "much ado about nothing?" Far from it, since many orchardists know from sad experience that cedars harbor a necessary half of the apple rust disease. It is a

common sight in the Spring to see cedar trees literally brown with slimy, stringy clumps, hanging from the young twigs. These slimy fingers protruding from the cedar apples are of a most peculiar nature. They consist solely in the gelatinous stalks of spores which cover the surface of the fingers. Technically they are known as telial horns.

The palisade of spores covering these horns in turn produce a multitude of other tinier spores or sporidia, which are shot into the air. The winds carry these sporidia for a long distance and woe betide the apple tree that happens to be in their path. Not long ago, in July, a farmer took me to his home to see an apple in his yard. He claimed that he had never been able to get good fruit from it. At that time the leaves on one side were yellow and were rapidly falling from the tree. Each yellow leaf was a mass of small, orange-yellow spots, whose lower surface looked like a porcupine's back. Each of these spots was a rust postule and the spines were only the clusters of tiny, yellow tubes which contain another kind of spore. A tree without leaves is worthless, when it comes to producing apples. Moreover, the fruit that is produced will be distorted and spotted with the rust postules.

SOMEHOW, during the ages of evolution, this rust on apples has developed the habit of attacking cedar trees, and now the apple rust is helpless without the cedar. And so these spores on the apple must be blown to some neighboring cedar tree, where they will produce "cedar apples." We have but to take advantage of this little eccentricity to control apple rust. Destroy the cedar and apple rust disappears. So Simpson knew what he was about when he purchased the cedar trees that he might destroy them.

In the Old Days

(From page 23)

a leader, and the people believed in him. He was the ideal. He did what he saw to do and did it well. During the big snow of 1914 and 1915, he went out on snow shoes, and carried food and clothing to the suffering dry farmers. Arriving at a farm at the sad time of a death, he took charge. He provided flowers from his own pocket, he read and gave the funeral service. "Bill" Lauck was a Bible reader, he was and is a Bible student; he was, I say, an ideal County Agent. He gave service and he received thanks.

Another man whom I shall always have the kindest of thoughts toward is A. C. Cooley, the ex-Director of New Mexico. One evening he told me something I have never forgotten. It happened that at that moment I was being considered for a job in New Mexico. Director Cooley said to me: "Now if you come to New Mexico, I want you to remember that your politics and your religion are Agriculture." How many of the present day County Agents ever have any better advice given them? It was good then, and it was true then, and it is the same today. That bit of advice followed will keep a County Agent out of a heap of trouble.

When I stumbled off the train at Worland, Wyoming, all by my lonesome, I had to get from behind the box car to see the town. I made my way to the hotel, the Dorman House, run by "Lucky" Dorman, whom I afterward learned to know quite well. The first meeting I attended as a County Agent was at the little old school house at Coulter, a siding south of Worland. A newly-found friend, Dr. Green, took me out in his car, for as yet I did not own one. After a few days spent at Worland, I went on to Basin, where my head-

quarters were to be. The first man I met after getting settled at the old Markham House, was Lou Blaksley, the then County Clerk of Big Horn County. A finer man no person ever met, and a better, dearer friend no man ever made. Gradually I began to meet more and more people. The bleak, dreary bad lands had a great fascination for me. Being born and bred in Colorado I loved the West. As long as I live, never will the memories of those long, lonely drives forsake me; in the heat of summer, clouds of red, brown, white and grey dust, hanging in ever descending and moving billows; in the beautiful cool of the northern fall. In springtime, when every wet spot was a boghole, and every boghole a death trap to "Old Henry," my 1914 Ford. In winter with the snow lying in bleak drifts, and the cold winds, howling and moaning around the ghostlike buttes. The roads in those days were what Sherman said war was. If I could only recall the roads, the memory would be a nightmare. I have been stuck for hours, in sand, mud and just stuck. I have walked for miles to get a horse or a team of them to pull me out.

I well remember one afternoon when I started to reach a certain man's ranch. He had told me how to get there and I was doing my best to follow his directions. At last I found myself down near the Big Horn river, miles from nowhere. Driving a car was just as new to me then as was County Agent work. I had a lot to learn. I came to a steep hill and Old Henry failed to make it and I had to back down. I saw a nice level place to one side and, thinking I would get a better start from it, I turned onto it. Lo and behold, it was the most bottomless pit of sand. The wheels whizzed around, and settled

down. At last, I didn't know what to do. I took it all apart and put it together again, and yet it wouldn't pull out. Completely played out, I felt like touching a match to it, for, of all hopeless things in the world, a stuck Ford is the champion. At last I started out for help. I didn't have any idea how far I had to go, but off down the road I went. At last, after quite a walk, I spied some old ranch buildings. Coming to them, I immediately saw they were deserted. Hope fell. However just to hear my own voice, I yelled out, "Hello," as I passed the barn. As from a grave, came back a voice, "Hello!" Was it an echo? Was it a really truly ghost? For the moment I didn't know but presently, as a young man appeared, I knew it was neither. I told him of my trouble, and he, being of the kind that lived in that county, dragged out an old mare with a piece of a harness on. Back to the car we went and after a lot of pulling, and cussing, and pushing, we got it into the road again. He almost refused the only dollar I had with me. And this was only one occasion that I was stuck.

One winter we held a week's short course at Lovell, Wyoming. The weather was bitter cold and it kept someone busy poking coal into the stove, to keep all from freezing. Never will I forget the crowds that came to those meetings. Mr. A. E. Chamberlain, then of the *Dakota Farmer*, was with me, helping me out. He could do anything, and would do anything to help. We had stock judging scheduled for 1 A. M. It was so cold I was somewhat fearful for Mr. Chamberlain, he being a man then of no tender years. However, he was a true blue sport and, after purchasing some overshoes, we sallied forth and the stock judging was put on. Many such meetings were held. At one place, Shell, we held the meetings in a corral. Speaking of Shell recalls my first visit to that district. A big spring rain had

made the roads impassable to cars. The mail was being hauled by wagon and team. I had planned on going to Shell for sometime and, when that time came, the mud also came. However, I took my saddle which I had with me, and loading myself into the mail stage spent a day getting to Shell. Next morning I rustled around and got me a saddle horse. Off up Trapper Creek I went.

I came to one place where a number of men were working a bunch of cattle. They were branding some calves and the work was all old stuff to me. I rode up and, knowing the custom of the West, kept my mouth shut and looked on. Gradually a conversation opened up and after a while I crawled over the fence and jumped in and helped them in their work. They didn't ask me who I was and I didn't tell them. Having spent some time there I rode off up the creek, leaving them guessing. So I visited several ranches during the few days I spent in the district, and when I at last left very few had found out who I was or what I wanted. However, each and every one knew that I knew the game they played, and I had really made a number of acquaintances, who later became very good friends. It was quite a while before those men found out who I was, I had slipped up on their blind side, as "Old Bill" Lauck used to say.

IN those days we used to go out and do everything and anything. Gracious, I have done almost everything, it seems, when I think back over the days. We used to go out and help vaccinate calves by the hundreds. In fact, some of the boys did it by the thousands. There being no "Horse Doctor" in my county for quite awhile I acted in that capacity, and my several year's study of Veterinary Medicine stood me in good stead. Some of

the stories that could be told would seem queer, to say the least, now a days. We dehorned cattle, ringed dairy bulls, and helped build silos. I *mean* build too. Mix concrete, put up forms, pour concrete and all. There wasn't any standing back yelling orders in those days. There wasn't any community chairman to blame. You were it, and we got the job done too, is what I mean.

We put on coyote killing campaigns in the sheep country. We put on grasshopper campaigns in the farming country. We helped hunt up lost stock and published, in my county at least, a little sheet we called *The Farmers' Exchange*, and many thousands of dollars worth of stuff changed hands through that medium. We shipped in dairy cattle, and to the memory of Eph Burton, who at that time was Dairy Extension Specialist, Wyoming owes a great debt. His work will live, and it is to be greatly regretted that such a mind could not have had a stronger body to have carried it through the paths of life.

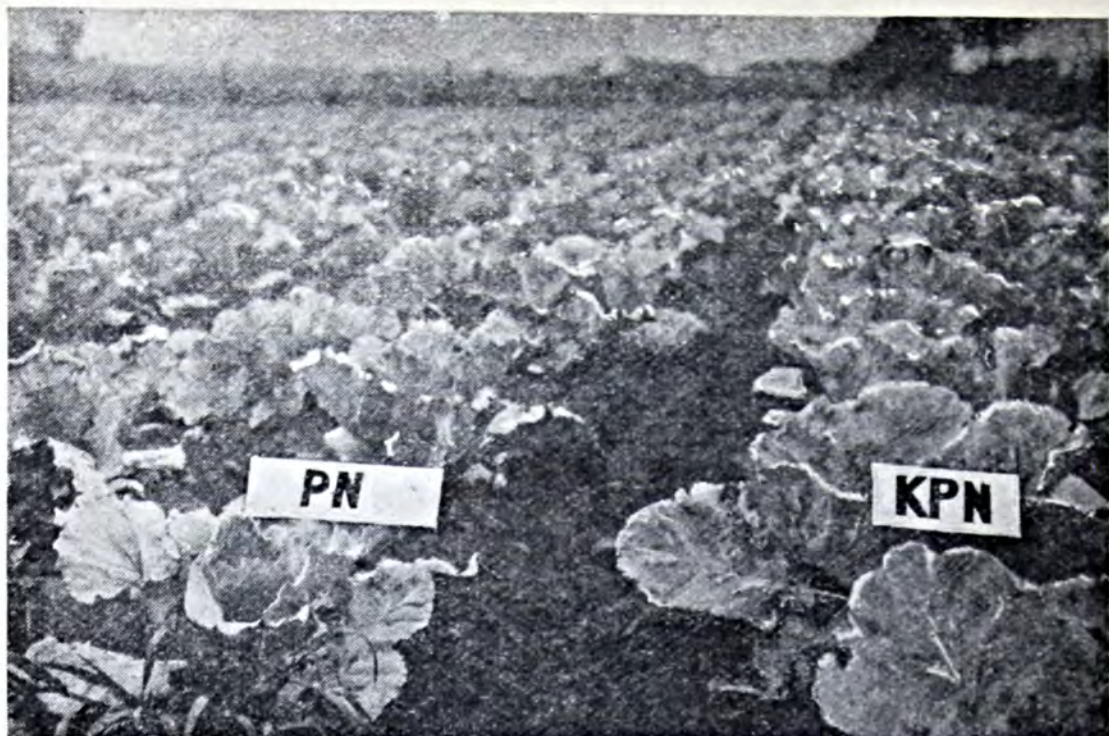
And shall the work of Ivan Hobson stand. The club work, founded by him, was most successful. As his reward, he was called to Washington, D. C., to help direct such work, nationally. And our county fair, and its secretary Colonel W. H. May. It was a real fair too, and when Colonel May and yours truly took it in hand it was a big juicy lemon. As I look back over the work of the past, I cannot help but feel that the present day methods are not entirely right. We certainly got results then, where we do not get them now. We knew the people then, where we do not know them now. Organizations are good, and in some states, no doubt, solve the problem, yet out here in the west a County Agent must still work with his people if he is to get very far.

Such work as we used to do, as

"Bill" Lauck used to do, takes the very life out of a fellow. It was work, real work, and no man could stand it many years. Early and late, night and day.

I RECALL holding a series of two weeks poultry meetings. All alone, using a lantern, and stopping at ranches for the nights. Each place they would sit up until nearly morning. Next day it was drive to the next stop, and make a bunch of visits on the way. The last night will long linger. The school house was on the border of Wyoming and Montana. Possibly two dozen people came. After the pictures and the lecture, came the dance. My goodness, I played the organ, danced and howled until nearly morning, and when I pried open one eye next morning, to take a look at the sun, I felt as though I was an even hundred years old.

But those days are gone. And the work has progressed to a point now where we don't have to explain to every single person we meet just what a County Agent is and what he is for. Some very funny things happened then. Some very sad things happened and some very serious things took place. From a physical standpoint, the work is not as hard now as then. However, I can't even imagine what kind of a physical giant I might have been had I not put in so many 24 hour days in the days gone by. Progress and time go hand in hand. When we old timers are trying to warm a marble slab, the then County Agents will be doing things, and doing those things in ways that we never thought of, or possibly thought impossible. County Agent work is a work that now has a past, as well as a future, and I am really glad to have worked in the pioneer days when the foundations upon which the work rests were laid.



What Profit do you make on **CABBAGES?**

FIGURE it up. Put a fair money value on your labor; your risk; your land and the general wear and tear of your equipment—then see if you are making all you should be making on your cabbage crops. The chances are, you should be making more—

Irrespective of location—whether in the East, West, North or South—the success of your crop is measured to a large extent by the fertility of the soil. If nitrogen, phosphoric acid and potash are not available in the needed quantities, your profits are bound to suffer. Improve your soil—

One fertilizer mixture might bring big results while another will not, even though their costs are nearly the same. On a clay loam soil in New

York State, Mr. J. M. Doran of Rush County, used a mixture of 2% nitrogen, 8% phosphoric acid and 8% potash and made a net gain of \$50.10 per acre over the acre which he fertilized with a 2-8-0 mixture. This experiment proved to Mr. Doran that his soil was hungry for potash, and when potash was applied, the profits jumped.

Try a fertilizer containing plenty of potash on your cabbage crop this coming season. Remember, cabbages are heavy potash feeders. Potash aids in strengthening the plants and makes them more resistant to the attacks of insects and disease. And besides, a complete mixture containing potash costs only a little more than the incomplete mixtures.



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Making Cabbage Pay

(From page 10)

and comparing results with those secured on a similar plat of ground which is not fertilized.

"I wanted first hand information and this I obtained by fertilizing a portion of my crop, leaving an equal portion unfertilized and at harvest checked the yield upon the scales. There is no guess work about such a proposition; the actual results on your own farm tell the whole story, and tell it in such a way that you know you have the truth."

The results obtained by Mr. Burkhardt appear the more remarkable, when it is remembered that Meadowlands, Minnesota, is north of the 47° latitude, in other words, north of Duluth. The growing season is extremely short, and scarcely a month passes without frosts. The soil on Mr. Burkhardt's farm is a type of muck soil, known as Muskeg. It is mostly organic matter, being composed of rotted and partially rotted vegetation. This extends to a depth of two or three feet, when we strike a subsoil of heavy sticky clay. It is sometimes difficult to secure good drainage on this type of soil. It has the appearance of being very fertile and productive, which how-

ever is hardly true as shown in the following table.

Mr. Burkhardt divided a portion of his field up into 4 quarter acre plats. Leaving one plat as a check, he applied a complete fertilizer to second plat at the rate of 1,000 lbs. of a 2-7-10. In other words, a ton of this mixture would contain 40 lbs. of actual available Nitrogen, 140 lbs. of available Phosphoric Acid and 200 lbs. of available Potash. To another plat he applied a like mixture, with the exception that it contained no Potash. On plat 4, Potash only was applied at the rate of 200 lbs. per acre. The results are shown graphically in the table below.

SHIOCTON is credited with being the largest shipping station of Holland and Danish cabbage in the state of Wisconsin. Many large warehouses are situated there, and many thousands of tons are stored annually. The surrounding country is low and the soil is mostly what is known as muck, and in many respects it is ideal for the growing of cabbage. Mr. G. H. L., one of the leading buyers at Shiocton, has for years urged the farmers to use

Table Showing Results Obtained by Mr. Thos. Burkhardt

	Yield of Cabbage per acre in lbs.	Increase due to Fertilizer in lbs.	Increase due to Potash in lbs.
No Fertilizer.....	12,000 (8,000 lbs. marketable) (4,000 lbs. culls)
1,000 lbs.—2-7-0..... (No Potash)	23,340 (All marketable) (No culls)	12,340
1,000 lbs.—2-7-10.....	40,200 (All marketable) (No culls)	28,200	15,860
200 lbs. Sulfate of Potash	24,360 (All marketable) (No culls)	12,360	12,360

Potash in some form to increase their yields. Mr. L., having made a study of the matter, knew that the soil surrounding Shiocton contained a very small quantity of Potash. Muck soils are notoriously lacking in this element and those around Shiocton were no exception. He also knew that of all the crops grown upon the farm, few are more heavy Potash feeders than cabbage. Therefore Mr. L.'s advice was sound and timely but, as usual, the farmers were reluctant to try anything new. They were getting a fair yield of 6 to 10 tons per acre and could not be expected to try new methods except in the face of actual failure.

Therefore, when the opportunity presented itself, Mr. L. was very glad to have his friend, Professor Maas of the Public School, carry on an actual demonstration to illustrate the benefits derived from the intelligent use of commercial fertilizers. Professor Maas had found it profitable to plant a few acres to cabbage in connection with his school work and was, therefore, admirably situated to carry such a demonstration.

He divided a portion of his field into 4 quarter acre plats. Leaving two as checks, he applied a complete fertilizer to one and to the other only Nitrogen and Phosphoric Acid. The result is shown in the following table.

WHAT conclusions are to be drawn from these tests? What is the lesson for the average gardener or truck grower?

It is simply this: Study your crop and study your soil. Determine the needs of your crop. Estimate the possible resources of your soil. If there is a discrepancy—and there is quite sure to be one—it is the business of the grower to make up deficiencies of his soil by applications of manure and fertilizers.

We have not yet touched upon the most important consideration in these calculations—the gain in dollars and cents from the intelligent use of Potash.

At Meadowlands the expenditure of \$14.40 for a complete fertilizer containing 10% Potash produced an increase of 16 tons of marketable cabbage per acre. Figuring cabbage at a low rate of \$10.00 per ton, we have from this investment a profit of \$145.60. 200 lbs. Sulfate of Potash costing \$5.60 yields an increase of 8 tons per acre. At the same rate the profit from this investment is \$74.40. The test shows, however, in this case that the soil is deficient in all the elements of fertility and it is, therefore, most profitable to supply a complete fertilizer. Some idea of the effect of the fertilizer applied by Mr. Maas may be

	Yield, Per Acre in Tons	Value at \$15 Per Ton	Increase Over Unfertilized in Tons	Value at \$15 Per Ton
No Fertilizer.....	7	105.00
1,000 lbs.—4-8-10.....	12	180.00	6	90.00
1,000 lbs.—4-8-0.....	9.6	144.00	3.6	54.00
No Fertilizer.....	5	75.00
Average O Plats.....	6	90.00

obtained by examination of the pictures on page 10. The yield was not only practically doubled, but the size and quality of the heads were much improved. In this instance there was also a noticeable absence of blight in the plot receiving the Potash. The other portions of the field were badly blighted, the ground being about covered with the yellow leaves which had dropped off. From a financial standpoint Prof. Maas' experiment was even more successful.

The important point about these tests is the fact that while an application of Nitrogen and Phosphoric Acid increased the yield by 3.6 tons, while the addition of Potash to the mixture raised this increase to 6 tons. In other words, the use of \$5.60 worth of Potash increases the value of the crop \$24.00.

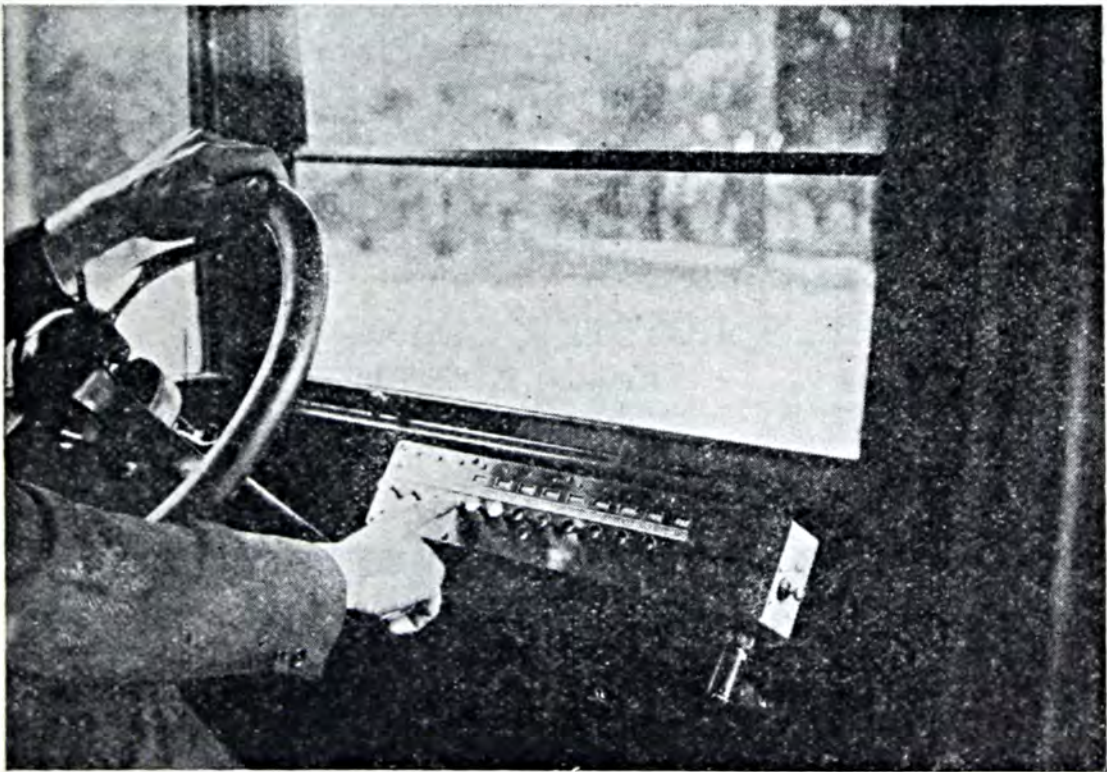
As shown at the beginning of this paper, the cabbage crop normally removes a large amount of Potash from the soil. The crop requires it for its proper develop-

ment and maximum yields cannot be produced without it.

THIS is the lesson taught in the experiments described above and these facts should not be lost and will not be lost on the wide awake grower.

There are crops which require excessive amounts of Nitrogen to obtain best results, others that require large amounts of Phosphoric Acid. The above experiments plainly indicate that while cabbage requires relatively large quantities of Nitrogen and Phosphoric Acid, Potash is the controlling element, and the most important consideration in fertilizing, this crop. The best yield of cabbage cannot be grown without abundant supply of Potash.

The experiments cited here show that Potash not only helps to produce the largest crops of cabbages, but from a financial point of view applications of Potash yield the greatest profit.



This is a crop meter used by a reporter for the U. S. Crop Reporting Board. It consists of 12 separate meters, one for each crop, and is operated by the speedometer. At the end of a run, each meter shows the total number of feet of each crop passed.



Learn the truth about Fertilizer

Commercial fertilizer is not magic. It is no substitute for work, or for farming brains. It will not make a successful farmer out of a shiftless, ignorant failure. Fertilizer varies in quality like corn or tobacco or cotton, and some brands are worth more than others. Good fertilizers, like Royster's reliable old mixtures, are a godsend to good farmers who learn how to best use them to make money

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ROYSTER

Field Tested Fertilizers

Making the Farm Pay

(From page 21)

plowing under of green crops, such as clover, soy beans and vetch. I endeavor on my farm to plow under in my crop rotation a heavy clover sod which materially improves the physical and mechanical condition of my land.

VEGETABLE matter or humus element of the soil is of inestimable importance in crop production because of its influence upon the mineral plant food ingredient defused throughout the soil. It has been my experience and observation that most of the soil throughout the Middle West is deficient in mineral plant food elements. I know from a thorough study of my own soil problems that despite the fact that I return a large quantity of stable manure back to the land, follow a four year crop rotation, my soil is deficient in mineral elements. For more than fifteen years I have been using quick-acting fertilizer on my soil and I know that I am annually increasing my crop production. I use a fertilizer containing a liberal percent of acid phosphate and potash. For the past three years I have been gradually increasing the potash element in the fertilizer and I believe I am getting very profitable results. The mineral plant food elements are the most difficult to restore to the soil as both green and stable manures are deficient in these elements. There is practically but one economic means of restoring mineral elements to the soil and that is through buying high analysis quick acting fertilizers in which the potash content has been brought up to a more adequate degree than in former years.

To make the farm pay, the farmer himself must make a thorough study of his soil. While

other factors, such as marketing of farm crops and cooperative buying and selling will materially assist in making the farm pay, the problem of soil production is fundamentally the first to demand consideration. Observation teaches that when soil production declines to a low level the profit earning capacity of the farm is impaired and sooner or later the owner moves to town or sells his holding. I am a thorough believer in livestock methods of maintaining soil fertility, as I believe that livestock husbandry affords the most practical and economic means of maintaining soil production. With abundance of humus or vegetable matter in the soil the livestock farmer is sure of profitable returns from money invested in quick-acting fertilizer.



Jeffisms

Sometimes it looks to me as if a tax was a penalty imposed on a man who makes money and is honest enough to admit it. The more he makes and the more honest he is about admitting it the more he gets penalized.



There are three rocks on which many a friendship has been wrecked. If you want to avoid giving offense, you must steer clear of discussions on religion, sex or politics.



Letting people get your goat is really paying them a big compliment. Indifference is the most powerful weapon to use against your enemies.

(turn to page 48)

How I Use Demonstration Teams

(From page 5)

simple terms and presented in an accurate, simple way. When speaking naturally, there is no trace of "High Brow" in the work of the boys and girls. Abstractions are forgotten and theories give way to proven fact.

OUR pig club boys had developed a demonstration on Hog Sanitation. It was at Mr. Burch's suggestion that these boys attended our hog feeding and hog sanitation demonstration meetings and gave their demonstration. It was very evident that their work had an appeal not found in the work of adult speakers. The points were made vividly and concisely. Their youth and enthusiasm inspired enthusiasm in the hearers. The fact that boys could do all that was necessary for success sounded better and more practical than the statement that the United States Government had been able to do certain things.

After this I found it very easy to arrange for the boys to appear before large gatherings where it would have been difficult to arrange for an extension worker to speak. The boys' work had a lightening effect upon the programs of picnics and other large gatherings instead of a heavy effect produced by a scientific presentation by an adult which would have to be balanced up on a program. Several gatherings used demonstration teams to add pep to the programs and at the same time I noticed that the lesson was driven home.

THE potato boys in addition to their work before farmer gatherings did us a very fine service by appearing before the Richmond Rotary Club and giving their

demonstration. I must confess, from the way that the Farm Bureau started out in our county, that it has been very hard to quell suspicions of the business men that the Extension work is not, unlike some preceding organizations, working at cross purposes with legitimate business operations. The boys' work was most enthusiastically received by the business men. They were sold on club work and extension work by the boys and, should occasion arise, I am sure that we could count on their support.

This team also did a very valuable piece of work in connection with the schools. I was invited to speak before our county teachers' meeting on Club work and preceded my remarks by a demonstration by the boys. The enthusiasm was spontaneous and I find that the school organization is now very friendly toward the extension work and willing to help wherever possible.

A more general development of demonstration teams is bringing the communities of the county closer together and building up a spirit of rivalry to excel in extension work.

A greater use of demonstration teams in extension work means simpler and more easily understood demonstrations, the reaching of more people with worthwhile practices and more genuine and spontaneous enthusiasm for extension programs.



In the next issue of BETTER CROPS our old friend, Albert Hansen, will have one of his interesting articles as person plants. It is entitled "SOMETHING TO BE ON YOUR GUARD AGAINST."

Is Honesty Possible?

(From page 4)

bragged about, that deer you shot. Come now, just how big were they really? And the things you did and saw during the war! Did they happen just as you describe them? Well, we won't blame you too severely. It may be dishonest, but it hurts no one and generally deceives no one. It is akin to the inspiration of the artist. Only beware that you don't carry this kind of imagination into the practical affairs of life. It won't do to imagine you are a millionaire unless you have the mazuma to back it up. Use your imagination all you like, but don't mistake it for fact.

WHAT, then, is honesty? Philosophers and sages have debated the question for centuries without ever coming to a final satisfactory definition. Honesty is hard to define but not difficult to detect.

Whenever I have occasion to suspect a man's honesty, I ask myself "What would be the result if he said exactly the reverse?" If such a course would cost him his job, his money or his prestige, then I have the right to doubt his disinterestedness and his honesty.

Honesty is *really* honesty when you are most strongly tempted to be dishonest. To say "The sun will rise tomorrow" is perhaps honest, but no one would deem you an honest man on the basis of such simple statements of facts. When you can stand up bravely and say "Yes, I made that mistake. Mine is the responsibility," and take the consequences, then you have shaken hands with honesty.

Courage to banish fear; consideration to conquer selfishness, and humility to subdue pride. For each motive of dishonesty there

About Ourselves

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is a counteracting quality which we can develop.

“**H**ONESTY is the best policy.” That is one of the maxims we wrote in our copy books when I went to school. I used to think it meant that honesty paid the best in material goods. Often enough it does, to be sure. But if we thought of it only from that angle, there are many times when dishonesty would have the greater advantage.

The real reward of honesty is self-respect. However difficult it may be to define honesty in the abstract, each of us knows in his heart what honesty means for himself. Follow that standard unflinchingly and you will keep inviolate the greatest possession you have—your honor.

Jeffisms—Continued

A man may be known by the company he keeps but he can certainly be judged by the enemies he makes, you can fool your friends sometimes but your enemies never. All the world over the liar is the enemy of the honest man, the stupid of the wise, the coward of the brave. Pick your enemies carefully, and out in the world, where they go about trying to revile you, they will on the contrary proclaim your merits.



Courtesy simply means acting on the assumption that other people's motives are as honorable as your own.

To Obtain Better Crops

Be on the job continually;

Endeavor to improve **QUALITY** rather than **QUANTITY**;

Thoroughly prepare your soil before planting;

Take pleasure in prosecuting your work;

Exchange ideas with your successful neighbors;

Rotate your crops intelligently and systematically.

Cooperatively market your products;

Raise crops which the market demands;

Only “certified” seed should be planted;

Plan your work a full year in advance;

Subscribe for **BETTER CROPS**, then read it.

Contributed by

L. A. Seymour,

Austin, Tex.

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Stromberg Carburetors and Hot Spots Sold

for Fords!

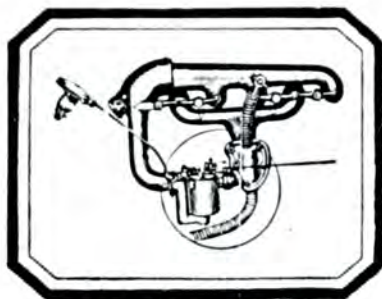
A Carburetor sales record never before equalled—and made possible only by the fact that the STROMBERG CARBURETOR and HOT SPOT for Fords delivers more mileage—more power—than any other Carburetor offered. It makes possible quicker get-away and much easier starting—four great essentials that every Ford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

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FORDSON plowing was a step in the elimination of plowing drudgery. In the new Oliver No. 7-A plow you will find another important forward move in better plowing easily accomplished.

You will find the Oliver No. 7-A different—so simple in construction, so easy to operate. Notice the handy controls which permit all adjustments from the tractor seat. A quick acting, powerful screw adjusts plowing depth and will raise the bottoms completely out of the ground with the outfit moving or standing. A convenient trip rod, rather than a trip rope, operates the power lift.

Note the short, sturdy, well balanced construction. A short plow—yet with the great clearance so essential when working in corn stalks and high weeds. The wheels carry the weight of the plow, making light draft and even depth furrows. The hitch can be rigid or flexible to suit varied soil conditions.

As for the work of the plow itself—we ask you to see it and compare it with your own idea of quality plowing.

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Plowmakers for the World

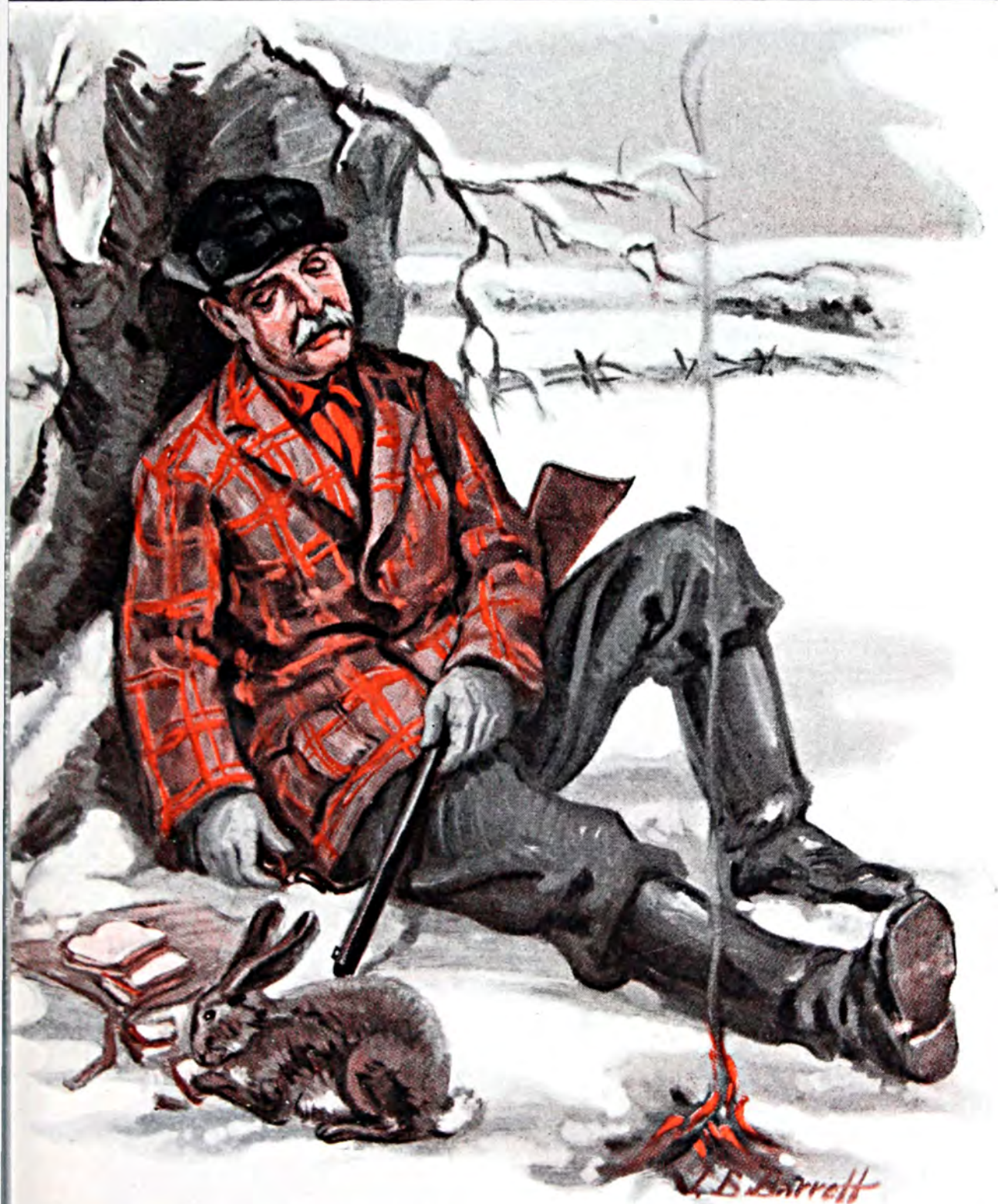
South Bend, Indiana

Better Crops

The Pocket Book of Agriculture

February 1925

10 Cents



ize essay awards—Articles by G. L. Schuster—Albert
ansen—Robert Stewart—E. G. Nourse—E. W. Howe



Your Aim—Profits

YOUR business is the raising of crops. That means you are raising crops to *make money*.

Whether you make money depends upon two things—

1. How good a price you can get for your crop.
2. How efficiently you can produce.

Price is a factor over which you, as an individual, have little control. Efficient production, however, is up to you.

Are you producing high yield of good quality at low cost.

Does it cost you 90c or \$1.65 per bushel to raise wheat? Do you grow potatoes at a cost of \$1.13

per bushel like Mr. Shutt of Garrett, Ind., or at a cost of 36c per bushel like his son John?

Efficient production of any crop involves a number of sound practices. One of them is the use of a plentiful supply of potash in your fertilizer.

In ordering your supply of fertilizer for this season ask your dealer to give you a mixture containing plenty of Genuine German Potash.

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Better Crops

The Pocket Book of Agriculture

VOLUME III

NUMBER SIX

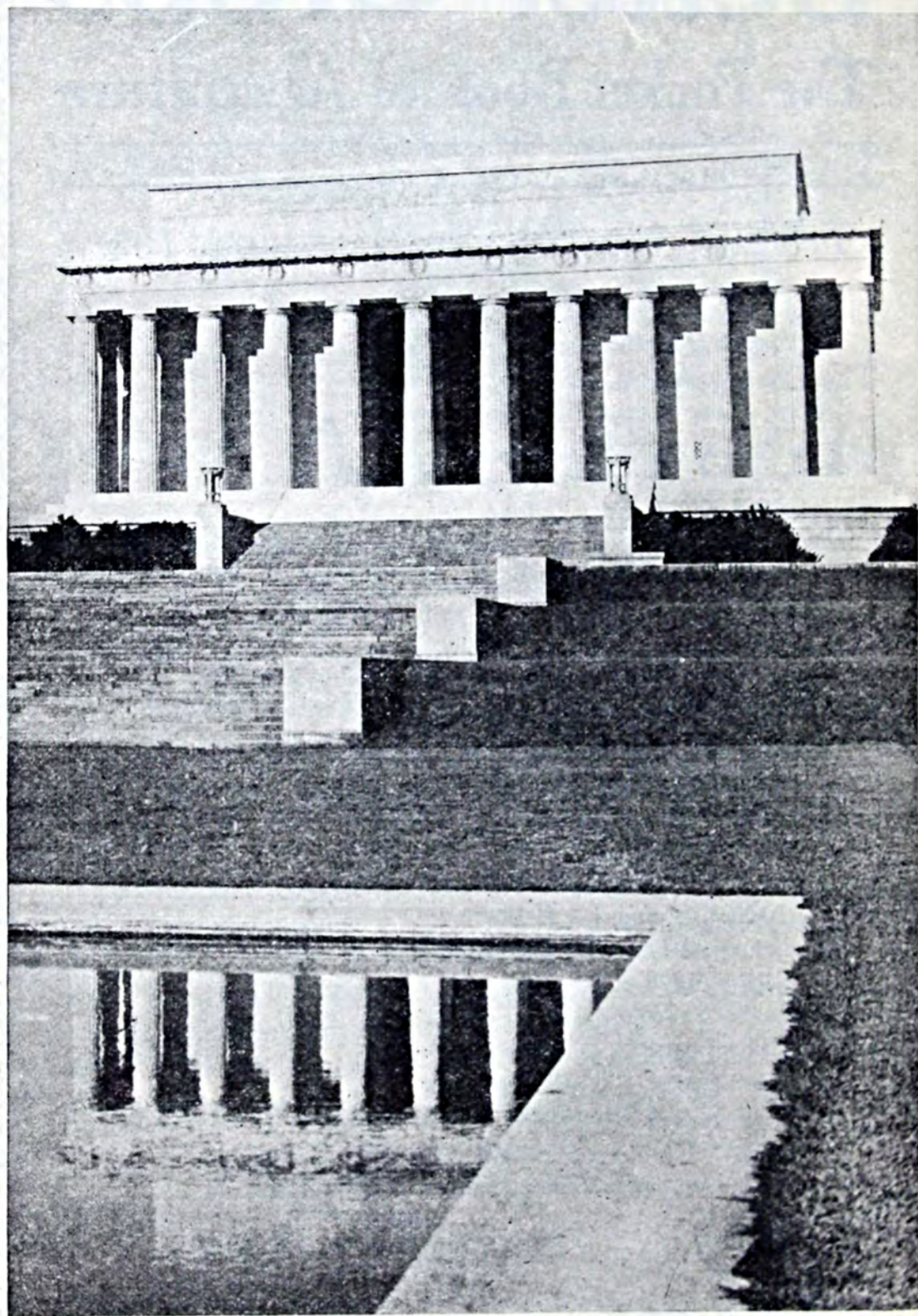
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VOL. III

NEW YORK, FEBRUARY, 1925

No. 6

*In which Jeff tells
how we are hopelessly*

LINKED to the PAST

By *Jeff Mc Dermid*

A BRINDLE CALF, gender and breed unknown, wandered idly through the woods, nibbling at succulent shoots.

Three hundred busy years have passed!

The woods have been cut down, and the land upon which they stood forms the heart of Boston's downtown section.

The path formed by the aimless calf is now a busy thoroughfare—crooked as an angleworm with the cramps. When I go to Boston without my map and get lost I curse the calf, for I have to ask a policeman where I am and how to get where I am not but where I want to be.

Thus is Boston linked to the past, and are my footsteps led, beyond my will, to follow a winding, crazy street that bewilders and befogs and leaves me to the tender mercies of a Boston Cop.

The calf's path became a road, the road a highway, the highway a street, and the street a main thoroughfare—to change it now would necessitate millions.

I ADMIT in many cases we are incapable of revolting against custom, and that often our whole process of living is so bound to the centuries gone before that each of us is doomed to walk the street marked out by some ancient calf whose master neglected to teach it to walk chalk.

Let us take a simple example. On the outside of each sleeve of a man's coat, at the cuff, are three or four buttons. There are no button-holes into which these buttons fit. They are the most useless sartorial decoration with which man is afflicted. The tailor wasn't asked to sew them on—he just did it. Ask him why, and he will tell you "We *always* put them on!"

Surely a wise answer!

But here, legend says, is the reason—Napoleon, master warrior-strategist, and ardent and inflexible lover of neatness and orderliness in his men, discovered something one day and quickly put an end to it. He found that his troops were using their sleeves for the purposes usually dedicated to handkerchiefs. He was disgusted. "Sew on three sharp-cut steel buttons on each sleeve—then let 'em wipe," he exclaimed!

So there you are.

The three buttons on your coat prove how hopelessly tailors are linked to the past. That these buttons are there is not important. The slight cost is inconsequential; it aids the poor starving button-makers, so what's the diff!

What we need is someone to

yank us out of our accustomed rut which we have worn so deep that our eyes can no longer see over the edge.

BUT let us take another example.

In the early years of the nineteenth century, when George Stephenson conceived the unique idea of a steam buggy that would run on rails, he forged the first link in a chain that binds our railroads to his memory and costs us billions of dollars every year.

His idea was sound, as time has proved. And he did the best he could, which is all any man can do. Peace to his soul.

But when he laid down the first wooden rails, he put them just $56\frac{1}{2}$ inches apart—the width between the wheels of the ordinary wagon—and saddled us with a burden we can now cast off only at the cost of billions of dollars.

Charles Carroll, who broke ground in 1828, for a railroad from Baltimore westward, forged the second link. His rails were $56\frac{1}{2}$ inches apart. "Stephenson had done it, why should we change?"

And so today *all* rails, except the "narrow gauge" short lines are $56\frac{1}{2}$ inches apart. All freight cars, locomotives, Pullmans and passenger cars are built to fit. Tunnels, bridges, round-houses, terminals and signal systems are constructed to accommodate $56\frac{1}{2}$ -inch rails.

The chain is forged; and perhaps in the whole system of the world to come no change dare be made. The cost of altering staggers the imagination.

Yet, engineers claim, were the rails $66\frac{1}{2}$ inches apart, twenty-five per cent more freight could be pulled by the same unit of coal, oil or electric fuel. By widening the cars, and thus bringing the load closer to the locomotive, loss due to friction would be greatly

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The County Agent's FAMILY

By E. Bruce Brunson

County Agent, St. Francis, Kansas

In the lively discussion that has been going on in BETTER CROPS on the subject of the county agent's wife, we seem to have overlooked one important angle which Mr. Brunson presents here very forcefully

IT seems to be human nature for humans (including county agents) to go to extremes. We read of the county agent who works from 4:00 A. M. to 12:00 P. M. We read of the county agent's wife who knows as much as a home demonstration agent and who spends a good deal of time at the phone answering questions on how long to leave the beans in the pressure cooker, etc. We read of the county agent's widow who has to seek her entertainment alone at bridge parties, etc. We have read too of the county agent's wife who is his office assistant. All of these, however, are more or less extreme.

But what of the county agent's children and his home? The county agent and his wife should have as their ideal a home. There is no greater calling than that of motherhood. The county agent's wife who keeps a good home and keeps the children in good health should not be expected to be an office assistant, nor fill the place of a home demonstration agent: she need not be tied to her home in such a way that she never gets out in friendly intercourse with her neighbors; she need not be so

ignorant that she cannot answer some questions for farmer's wives; and she need not live alone in the sense of being a widow. Let us build up for the county agent and his family an ideal which will permit his family as well as himself to live natural, normal lives.

Any man who has had a college education (as practically all county agents have) and is in good health should make a living for his family without expecting his wife to do more than a wife and mother should. It is fine to have a wife who is capable of being a home demonstration agent, of taking shorthand, keeping records, etc. But isn't it a finer thing to have a fine home and fine healthy children? It takes a real home demonstration agent to keep a good home with healthy growing children, to provide proper environment for the development of the children's minds and bodies, to take the proper interest in the schools the children are attending as well as to practice up-to-date methods in the selection and preparation of foods. These duties and opportunities need not interfere with the county agent's
(turn to page 40)

"GOVERNMENT

INSPECTED"

By Frank George

U. S. Department of Agriculture

(This new service promises to have far-reaching effects. You should know how it works, so read along—

"**W**HAT in Sam Hill do you mean by paying us fifty cents under the market?"

For reply the Secretary of the peach growers' organization produced a file of Government certificates. They showed that the peaches were not No. 1 but No. 2, and that the price returned to the members was in line with the lower grade.

The evidence was indisputable. The products had been officially inspected when loaded into the cars. What threatened to be a break in the organization was averted, and the growers went away resolved to produce a crop of higher quality.

Growers, shippers, railroad officials and buyers are loud in their praise of this new Federal-State shipping point inspection service. They say that it is making possible economies in the marketing of fruits and vegetables, and is having a far-reaching effect through inducing the production and marketing of standardized products. Better trade relationships are also resulting from mutual dependence upon inspection by a disinterested, official agency.

The service has been in operation less than three years, but its

phenomenal growth stamps it as one of the really important recent contributions to modern agricultural marketing. More than 130,000 cars of produce were inspected at shipping points under the service during the past fiscal year as compared with 72,000 cars the preceding year. Inspection is available in 35 States under cooperative agreements between the States and the Federal Department of Agriculture.

Numerous letters in the files of the Department at Washington show that growers find the service of value as a check against prices paid by local shippers. The inspection certificate held by the shipper shows the actual condition and quality of the product, and a check-up on market prices for that grade of product quickly reveals whether the price is in line with the market.

Shippers prefer the new service to private inspection, because official inspection costs no more than the maintenance of a private inspection force, and it has the additional advantage of the Government-State certificate. The certificate is a virtual guarantee of the quality and condition of the products at shipping point, and is documentary



Potatoes lead in Federal inspections in terminal markets, nearly 7,000 carloads having been inspected last year.

evidence in any subsequent claims against the railroads for damage in transit.

The railroads are keen for shipping point inspection, because it provides unbiased evidence of the condition of the products at shipping point, and responsibility for damage may be promptly and properly ascertained. They see in the service a chance for reducing the cost of investigation bureaus in tracing claims, and a more efficient use of rolling stock through keeping inferior quality products out of the channels of trade.

Buyers in the central markets want shipping point inspection, because it guarantees the condition of the products. Many buyers in placing orders are demanding "Government certificate attached to bill of lading," and are advertising the products in the trade journals as Government inspected.

A PROMINENT fruit grower of Virginia, who recently returned

from abroad where he visited the leading apple markets, declared that foreign buyers are demanding Government inspection because they have found that "Federal-State inspected apples can be relied upon to be of uniform quality and condition," which means higher prices in as much as non-inspected shipments are subject to a discount on account of wide range in quality.

The Food Products Inspection Service, which provided for Federal inspection of fruits and vegetables in receiving markets, was established in 1917 under Congressional authority. This service was the outcome of general dissatisfaction among producers over the uncertainties of consignment shipments. Without specific evidence of the quality and condition of the products, producers were compelled to accept the say-so of receivers as to the condition of arrivals.

Increasing use has been made of the inspection service in terminal
(turn to page 39)

SWEET CLOVER

By R. J. Silcott

Soils and Crop Specialist, Missouri College of Agriculture

SWEET CLOVER, once legislated against as a noxious weed, has now established itself as a valuable agricultural crop in almost every state in the Union. It is rapidly finding its place on Missouri farms as a pasture, hay and green manure crop. The value of the crop for increasing the fertility and improving the physical condition of the soil is shown by the experience of a Bates County farmer.

Mr. J. F. Kern had a 40-acre field on his farm that had been cropped continuously to corn for a good many years. The soil had become hard and puddled, difficult to farm, and the yield reduced to thirty or forty bushels to the acre. During the spring of 1922, Mr. Kern seeded this field to sweet clover using a light seeding of barley as a nurse-crop. A good crop of barley was harvested. The sweet clover was

then pastured during the remaining part of the summer. By the first of June, 1923, the sweet clover was from six to eight feet high. Three horses hitched to a single section harrow with a man riding were used to drag it down. This enormous amount of green vegetation was then plowed under. The ground was thoroughly worked down and the field planted to corn. Mr. Kern harvested seventy-five bushels of corn to the acre from the field and greatly improved the fertility and physical condition of his land.

Sweet clover has no equal as a soil builder. Its extensive root system, its ability to take nitrogen from the air, its rapid and abundant growth and the rapidity with which this vegetation material decays when plowed under are characteristics of this valuable crop. As a hay and pasture crop, sweet clover



1924 spring seeding of sweet clover ready to be cut for hay on field near Verno, Missouri. This field is very sandy, low in fertility and badly eroded.



Sweet clover grown on this farm of Mr. J. F. Kern, Butler, Missouri. This crop was turned under in June, 1923, and planted to corn. Mr. Kern harvested 75 bushels of corn to the acre from this 40-acre field.

has an important place on any farm where livestock is kept. The crop, if cut when about two feet high, will make a hay of excellent quality with a feeding value very nearly the same as that of alfalfa. Sweet clover makes excellent pasture for cows, sheep, hogs and horses. Hogs should be ringed before being turned on sweet clover as they are very fond of the roots and may possibly destroy the stand by rooting. Sweet clover will not bloat cattle as is common with other clovers and alfalfa.

White sweet clover has a wide adaptation to different soil conditions. It exhibits a marked fondness for soils rich in lime, for rocky situations where little soil is available, for gravelly moraines and for localities where the hard compact subsoil is exposed. The crop is equally well adapted to rich soils and responds readily to applications of phosphate and manure. Many acres in the middle west of little or no agricultural value may be turned into valuable grazing land with the aid of this important legume crop. In securing a stand on rough, wooded or stony lands that are untillable the seed may be

sowed broadcast during the late fall or winter. The seed will be worked into the ground by alternate freezing and thawing of the ground or washed under by rains. In very sandy soils sweet clover is often drilled into the thin native sod by using a disk drill, as any other preparation of the seed bed would make it too loose. The most successful practice in seeding sweet clover is accomplished by sowing the seed during the winter, in January, February or March, when the ground is honeycombed with frost. Sowing on wheat or on the bare ground, as is commonly practiced with red clover, is the prevailing Missouri practice. It has also been successfully seeded with oats, or sowed alone, in well prepared fields, in April or May. If sowed at this time the seed should be lightly covered. It can also be grown successfully, if seeded at the end of the summer, during August or September, as is done with alfalfa.

Sweet clover should be seeded at the rate of twenty pounds of good quality scarified seed per acre. It is necessary that the seed be inoculated with its bacteria to insure

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A New for the AGRICULTURAL

By Paul W. Chapman

Georgia State Board for Vocational Education

IN less than four years there is going to be an alarming shortage of agricultural college graduates in this country!

Figures from the principal state agricultural colleges show that the enrollment has consistently been growing smaller for the past four years, while the number of young men and women preparing for the other professional and industrial occupations has grown apace.

This will mean that in the next few years it will be difficult to secure men and women who are well qualified to fill the *professional* agricultural jobs that require technical preparation. Agricultural colleges are going to experience difficulty in holding the members of their staff; experiment stations will have a hard time finding scientists; there will be more counties wanting agents than there are men available; and if all the men graduated in the next two years went into high school teaching work there would not be enough men available to fill the Smith-Hughes jobs that can be financed from funds already available.

This condition was brought about by the period of agricultural de-

pression through which we have just passed. In many instances the funds for a college course could not be secured by the farm boys of the country; and in others, both the boys and their parents saw no future on the farm, or in any work connected with it.

It is unfortunate that so many people failed to recognize that this was but a temporary condition!

THE business of farming is as solid as the rock of Gibraltar. It will go on forever, and during the life of boys now in college, our population will become half again as large as at present—and they must be fed and clothed.

Aside from the possibilities of making money by directly applying an agricultural college education to the business of being a dirt farmer, there are almost an unlimited number of salaried jobs open to the agricultural college graduate. Many parents, and a large number of farm boys know nothing about these opportunities.

They should be informed! In other words, the agricultural colleges of the country to get back to

Field

¶In the establishment of Camp Williams, Georgia is blazing a new trail which may lead to rich rewards.

COLLEGE

their former enrollment as soon as possible, as well as to provide for the *vocational guidance* of the farm boys and girls of this country, should see to it that the opportunities for congenial and profitable employment along agricultural lines is made clear to the youth of the states they are trying to serve.

There is no way as effective, in attaining this end, as to provide a plan for bringing the farm boys and girls to the college.

GEORGIA has done this in a rather unique way by the establishment of a permanent camp for the farm boys and girls of the state on the campus of the State College of Agriculture at Athens.

The camp is designed primarily for the use of the club boys and girls during the summer months, but it will also be used as a dormitory by a few students, it will at all times be open to visiting delegations of farmers, county agents and school boys.

The main building was erected at a cost of about \$30,000. It was made possible through the donation of philanthropic citizens of the

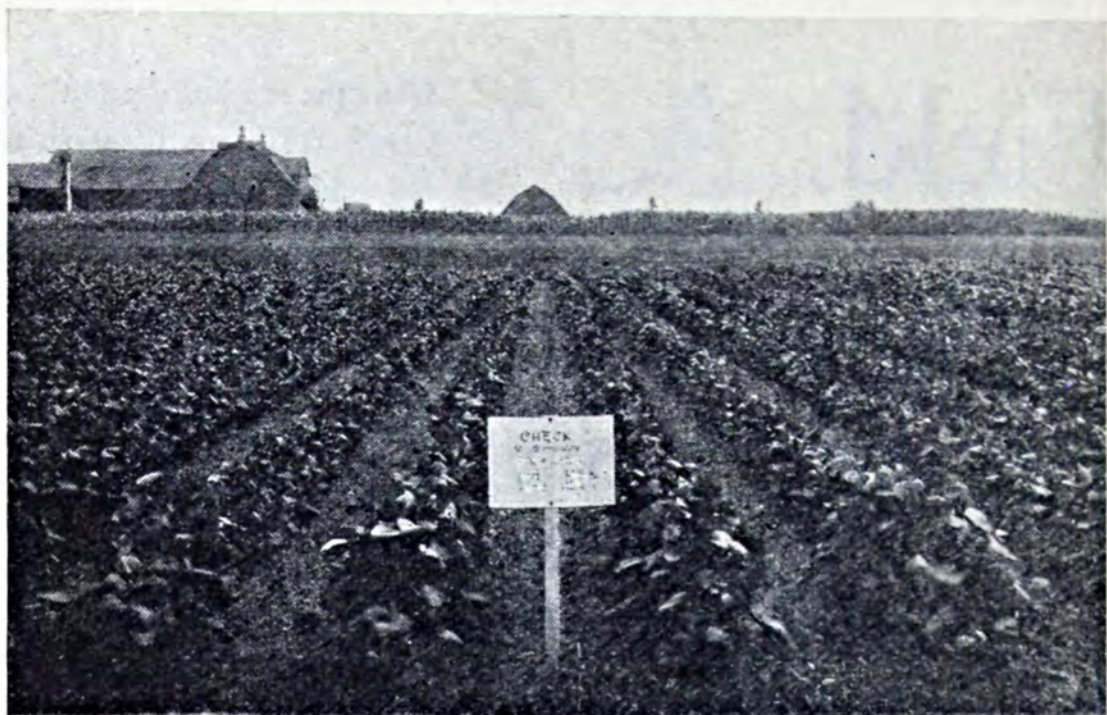
state. The first donation of \$5,000 was made by J. J. Wilkins, a prominent banker of Athens, and the camp bears in his honor the name of "Camp Wilkins." The cots and equipment were paid for by the county and home demonstration agents of the state, each one taking the responsibility for raising at least fifty dollars. A lake costing \$4,000 is one of the attractive features of the camp, and it will be of interest to know that the name of the lake is "Kirota," which is a combination of the words Kiwanis and Rotary in honor of these civic clubs.

Two hundred and fifty boys, or girls, can be accommodated at one time. During July the camp was open to girls and in August to the boys.

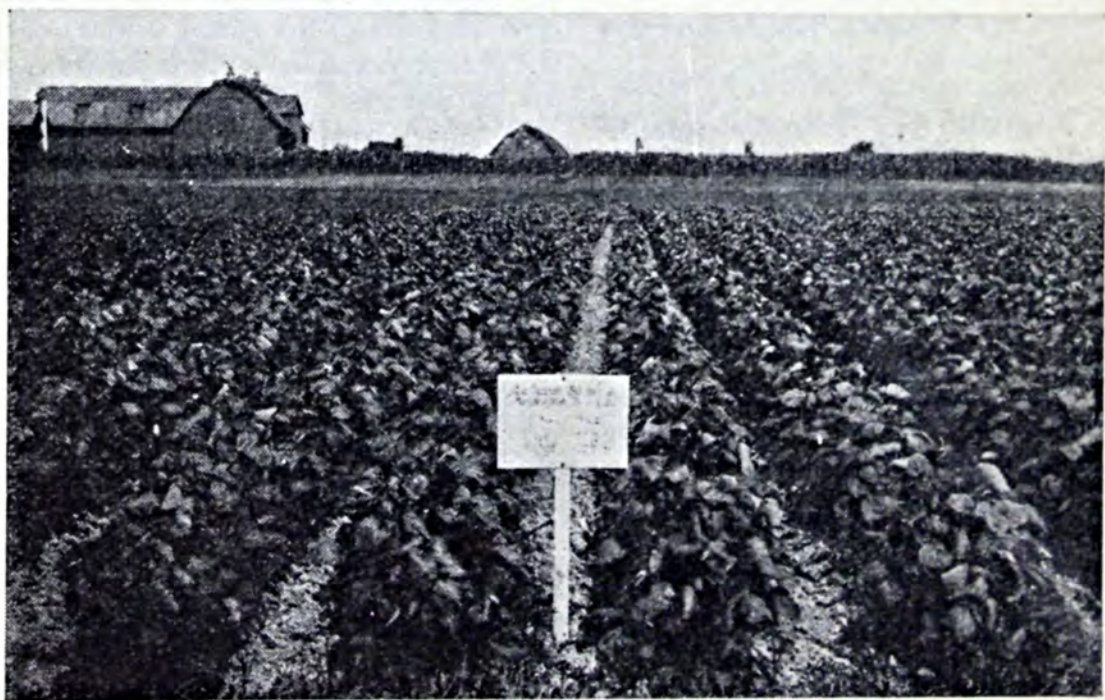
In all about 2,000 boys and girls enjoyed an outing at this summer resort where they had the advantage of all the physical equipment of the college, and the active interest and cooperation of the entire staff of instructors.

Each group spent a week in camp, arriving on Monday morning and breaking camp Saturday at noon.

(turn to page 41)



Soy beans in rotation without any fertilizer treatment. Average annual yield for 8 years, 12.8 bu. Net returns \$35.80 per acre. Delaware Experiment Station.



Soy beans in rotation, fertilizer 250 lbs. acid phosphate and 75 lbs. of muriate of potash per acre. Average annual yield for 8 years., 23.9 bu. Net returns \$61.00 per acre. Delaware Experiment Station.

FERTILIZERS

for Quality and Profit

By George L. Schuster

Agronomist, Delaware Experiment Station

(In our December issue, Mr. Schuster gave a summary of fifteen years' experiment in Delaware. Here he points out how quality and profit are affected by fertilizers.)

IN the December, 1924, issue of BETTER CROPS the writer discussed some results with fertilizers in Delaware on corn, soy beans, wheat and hay, in which the following general conclusions were given: (1) that the lack of potash seems to be the first limiting factor in crop production, (2) when potash has been supplied, phosphoric acid seems to be the next element needed for maximum crop production, (3) the yields may be increased still further by the addition of nitrate of soda, (4) barn yard manure compares very favorably with the use of all three fertilizer elements, (5) the correct use of fertilizers not only increases crop yields but makes for more uniform yields in all seasons.

An increase in crop production is always desirable provided it can be done economically. The question of monetary returns from the use of fertilizers on field crops is always foremost in the mind of the grower. However, it is necessary to exercise caution in drawing conclusions on such a basis, because the value of a dollar is not always the same. Its value fluctuates, whereas the pound used in measuring crop yields is the same at all times.

In calculating the net returns reported in Table I. of this article the following values were used: nitrate of soda \$60.00 ton, acid phosphate \$16.00, rock phosphate \$7.00, muriate of potash \$48.00, basic slag \$15.00, manure \$1.85, cover crop \$1.54 per acre; corn 75c. bu.; wheat \$1.25, soy beans \$2.50, fodder, wheat straw and bean straw \$10.00 ton, and hay \$18.00. The term "net returns" as used here means that sum which remains after the cost of the fertilizers, manure, cover crops, cost of applying and interest on additional investment has been deducted from the selling price of the crops produced. There remain items of variable cost to be deducted by the producer such as freight, hauling charges, and additional expense of harvesting, storing, insuring and marketing the increased crop.

Table I. shows that there is a return of \$27.14 per acre where no fertilizers are used. Where nitrate of soda has been applied there is a loss. Where acid phosphate has been applied there has been a gain of \$4.33 per acre remaining after all costs have been deducted. There

(turn to page 42)

A New Wrinkle in Growing Alfalfa

By Vance W. McCray

MOFFIT BROTHERS, Mechanicsville, Cedar County, Iowa, are bang up farmers. They are always trying out new ideas on their 800 acre farm which is devoted to livestock.

They believe in alfalfa and have discovered a new way of seeding it. Instead of sowing it by itself and losing the use of the ground for one year they limed their twenty acre field of corn which was to be put in the silo. The silo was tested by County Agent Obye and limed heavy enough to correct the acidity. At the time of the last cultivation when the corn was a little more than knee high they took a grass seeder and seeded the field to alfalfa. A narrow one horse harrow that would go between the corn rows was used

for covering the seed. In a short time the alfalfa was growing between the corn rows. It made a rapid growth and was well along at silo filling time.

The corn was cut with a corn binder when the ground was dry and hauled off to be made into silage. After the corn was removed the alfalfa made a rapid growth and was well along when winter set in. After the field was frozen solid a railroad iron was dragged across the field to cut off the corn stubble. This left the field perfectly smooth.

The next spring the alfalfa made a rapid growth and was cut three times for hay yielding four and a half tons to the acre. By the latter

(turn to page 41)



Knee deep in Alfalfa. Hereford cattle on the Moffit brothers farm Cedar County, Iowa. This alfalfa field was a corn field last year. This year it produced 4½ tons alfalfa to the acre.

Better Crops'
ART GALLERY
of the month



Dr. Andrew M. Soule, President of Georgia State College of Agriculture, the man who conceived the idea of building a permanent camp on the college farm for the farm boys and girls of the state of Georgia and the man who put it over without the state's appropriating one cent to help the cause. See Paul Chapman's article on page 10 of this issue.



Some prominent Middle Westerners. Left to right:—J. D. Hull, new president, Indiana Corn Growers' Ass'n; Sidney Anderson, Congressman from Minnesota; W. L. Harding, former Governor of Iowa; E. C. Elliot, President of Purdue University; W. D. Littlejohn, retiring President of Indiana Corn Growers; G. I. Christie, Director Purdue Experiment Station and for many years Secretary of the Indiana Corn Growers.



Ex-Gov. Robert D. Carey of Wyoming, head of the President's Agricultural Conference and mentioned as a probable successor to the place of Secretary of Agriculture.

Increasing

Sugar Beet Yields

¶The striking facts on which this article is based are worth the study of every one interested in profitable agriculture. This article is reprinted from Facts About Sugar.

THE December number of the *Continental Sugar Beet Grower*, the monthly magazine issued by the Continental Sugar Company, contains some interesting data as to the results obtained from the use of fertilizer on sugar beets under ordinary field conditions and also gives the company's recommendation as to the best fertilizer mixture to use on beets under conditions obtaining in its territory.

During the past season the company conducted seven fertilizer demonstration plots in different locations in northwestern Ohio and southern Michigan. Each plot consisted of approximately five acres, one-half of which was treated with commercial fertilizer prepared according to a formula worked out by the company's experts, while the other half of each plot received no fertilizer. The purpose of the test was to determine whether the application of fertilizer was financially profitable, and how much the additional net return, if any, amounted to per acre and as a return on the cash investment.

With this object in view the cultivation of the plots was placed in charge of practical farmers, who were instructed to give them only the same amount of care and attention ordinarily bestowed on their fields of sugar beets. The two

halves of each plot received identical cultivation, the labor employed in blocking, thinning, hoeing, and harvesting consisting of ordinary field workers. There was no expert care or supervision beyond that applying to all the beets grown for the company.

The seed was sown in rows 22 inches apart and the beets were thinned to 12 inches apart in the row. Fifteen pounds of seed were sown to the acre and all the fields were harvested 160 days after sowing.

Gains from Fertilization

The fertilizer used consisted of a 2.43-10-12 combination of sodium nitrate, phosphate rock, and potash. It was applied broadcast at the rate of 450 pounds to the acre and was worked into the soil before seeding with an additional application of 100 pounds per acre of nitrate of soda after the beets were blocked and thinned. The total cost of the fertilizer was \$12.50 per acre.

The average yield of beets on the seven fertilized plots was 3.87 tons per acre higher than the average of the non-fertilized fields. The following table gives the cash value of the increased yield and the net profit after deducting the cost of the fertilizer with beets selling at various prices from \$6 to \$10 per ton:

Value of beets per ton	Cash value per acre of increased yield	Net profit per acre from fertilizer
\$6.00	\$23.22	\$10.72
6.50	25.15	12.65
7.00	27.09	14.59
7.50	29.02	16.52
8.00	30.96	18.46
8.50	32.89	20.39
9.00	34.83	22.33
9.50	36.76	24.26
10.00	38.70	26.20

With beets paid for at \$8 per ton, which may be regarded as a fair average price, the gross return to the grower from the use of fertilizer was \$30.96 per acre and the increase in his net profit was \$18.46. The following table shows the gross return and the percentage of profit on each dollar invested in fertilizer with the same range of prices for beets:

Value of beets per ton	Gross return per dollar invested	Interest on investment, per cent
\$6.00	\$1.85	85
6.50	2.01	101
7.00	2.16	116
7.50	2.32	132
8.00	2.47	147
8.50	2.63	163
9.00	2.78	178
9.50	2.94	194
10.00	3.09	209

With beets selling at \$8 per ton the grower received \$2.47 for every dollar expended for fertilizer, or a profit of 147 per cent on the investment.

Potash Proportion High

The formula adopted for the fertilizer employed in these tests was unusual in that it called for a very high proportion of potash—12 per cent. In ordinary commercial mixtures potash seldom runs higher than 3 to 5 per cent. The

proportion of the various ingredients was arrived at as the result of soil analyses and tests made by representatives of the sugar company, who reached the conclusion that a high proportion of potash was required in Ohio and Michigan to produce good crops of sugar beets. This conclusion appears to be fully justified by the results obtained. Another noteworthy feature of the method employed was the use of nitrate of soda after the young beets had been blocked and thinned, which is approved by the agricultural department of the company as it gives the plants a good start at a critical period of their growth.

As a result of numerous tests conducted by the sugar company at its experimental farm, using various combinations of fertilizing elements, the company recommends to its growers for the coming season the use of the same mixture employed on the field experimental plots as above described. On this point the following statement is made:

"Several fertilizer mixtures were compounded in the company's agricultural laboratory and were thoroughly tested at the company's experimental farm. In order that the various mixtures might be tested under different soil conditions, each of the aforesaid mixtures was used on experimental plots conducted by the company in various sections of northwestern Ohio and southern Michigan.

"While it is true that each of the mixtures gave favorable results, it was found that the mixture having the formula 2.43-10-12, in which the nitrogen was derived from sodium nitrate exclusively and the phosphoric acid was derived from Florida phosphate rock, gave the best results under all conditions. Therefore the Continental Sugar Company recommends this formula to all sugar beet growers who intend to produce sugar beets for the company during the coming year."

The Relation of SULFUR to Soil Fertility

*Effects of Sulfur Under
Humid Conditions*

By Robert Stewart

University of Nevada

SULFUR is one of the ten essential elements of plant food. Sulfur bearing materials have been used as fertilizers for long periods of time, but usually incidentally as carriers of other well recognized elements of plant food such as phosphoric acid, potash and ammonia. Sulfur bearing materials such as gypsum have also been used primarily for their sulfur content occasionally during the past one hundred and fifty years, in fact, ever since Franklin tried it out on his farm in Pennsylvania, and Washington used it without success on his estate at Mt. Vernon.

Until quite recently, soil investigators have believed the demands of the plant for sulfur were so small that the limited supply in the soil was fully sufficient for the plant's requirements and that sulfur, like iron, need not be given any special consideration.

The sulfur question, in connection with soil fertility, has in recent years again arisen for consideration due to a number of causes.

One result of the late war was the development of a number of new

sulfur deposits, and, of course, at its close a new market had to be developed for the products of these mines.

More recent work also has clearly demonstrated that the sulfur requirement of plants is very materially higher than was formerly thought to be the case. The requirements of most plants for sulfur is comparable with the plant's requirements for phosphorus and in fact, in some plants the sulfur requirements actually exceed the requirement for phosphorus.

For example, a hundred bushel crop of corn requires twenty-three pounds of phosphorus and seventeen pounds of sulfur; a fifty bushel crop of wheat requires sixteen pounds of phosphorus and eleven pounds of sulfur, while an eight ton crop of alfalfa hay requires thirty-six pounds of phosphorus and forty-five pounds of sulfur!

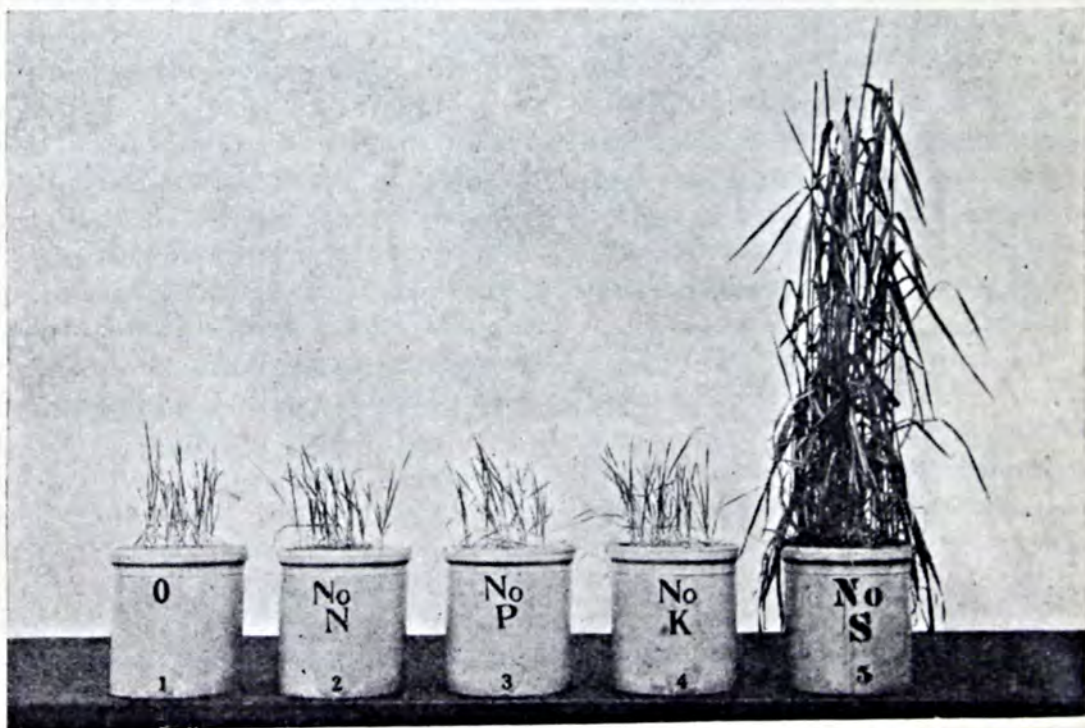
Sulfur differs from phosphorus in several important particulars. It occurs in the soil in a form soluble in water, or in an organic combination which is slowly changed into a soluble condition,

and hence may be readily lost in the drainage water. Sulfur, as sulfur dioxide, is a normal constituent of the atmosphere, and is constantly being added to the air whenever organic matter is burned. The burning of wood, coal and oil and the operation of smelters constantly replenish the sulfur content of the air. Sulfur, in the form of sulfur dioxide, is constantly being added to the soil by rainfall and direct absorption from the atmosphere. Sulfur is not required by the growing animal for bone production, while phosphorus is so required and removed from the feed. Sulfur occurs in large amounts in hay, straw, stover, etc., and consequently finds its way into the farm manure. Farm manure, therefore, contains slightly more sulfur than phosphorus.

The amount of sulfur lost in the drainage water is, of course, variable and depends on various conditions such as the soil treatment and system of cropping practiced. This is well illustrated by the data from Rothamsted where the loss of sulfur in the drainage water varies from twenty to eighty pounds per

acre per year depending upon the soil treatment. Various European investigators report an even wider variation, some reporting a loss of only six pounds while others report a loss of two hundred and seventy pounds per acre per year.

THE most satisfactory data in this country upon this question is that reported from Cornell Experiment Station by Lyon and Bizzell. They report that, where manure was applied and a rotation of crops including clover was practiced, the loss of sulfur was 31.5 pounds. When the same treatment was applied and clover eliminated from the rotation, the loss of sulfur in the drainage water was 31.5 pounds; that is, clover did not cause a decrease in the loss of available sulfur in spite of its supposed heavy demands for sulfur. Apparently an excess of sulfur was present and available. When caustic lime was applied, the loss of sulfur was increased by ten pounds. Allowing for the amount of sulfur added in the manure, the
(turn to page 35)



This shows the effect of the absence of various elements in pot culture work (sand cultures) as compared with the absence of sulfur. Grain is not formed when sulfur is absent.

Where Wisdom Comes From

By E. W. Howe



ENJAMIN FRANKLIN has been called the greatest type and example of the citizen known in modern history, yet he had no early advantages, and lived as a kind of orphan, runaway or castaway in two hemispheres. His principles were extremely simple. (He did not claim perfection; he only tried to avoid mistakes as frequently as possible. He acknowledges that in his youth he was careless in paying a man he owed money; he admits some deception; he confesses to certain tabooed transactions with women, but experience proved the folly of these things, and he gradually quit them. In his many activities, Franklin was even called a thief, which has happened to many another decent man, but his accuser was a paid attorney who has been pronounced one of the world's greatest scoundrels. Others also criticized Franklin, because of envy, and their descendants have kept the quarrel alive to this day, but history writes him down as one of the world's notables. (As great a man as Lincoln or Washington, many think, yet his principles of life are stated in a line: In his journey through life he had a desire to be as little as possible either an incompetent, a fool, an idler or a rogue. He always gave his private business sufficient attention to make it prosperous, but did not neglect his duty in public affairs; he took an interest in street lighting and paving, in libraries, in fire departments, in social life, in home guards, in schools, etc., and was so modest and efficient in all these respects that he became an ambassador to look after his country's affairs abroad. And he became noted in science, and one of the world's best-educated men, although he almost never went to school. (He is credited with great wisdom. Where did he get it? You may find the answer in his books. In "Poor Richard" he wrote: "I am conscious that not one-tenth of my wisdom is my own; it is rather the gleanings I have made of the sense of all ages and nations." This source of wisdom is available to all of us; the best and oldest philosophers have quoted each other, and their final conclusions have trickled down through the ages until they have reached those with whom we associate; the best thought of the ancients has become a part of the common talk of people everywhere today. (The humblest may find encouragement and instruction in the life of Benjamin Franklin, and adopt his rule of life with profit. Franklin had all the weaknesses you have, but kept them down. You may do it; and rest assured that this effort will pay you better than any other in which you can engage.

Something to Be on Your Guard Against

By *Albert A. Hansen*

Purdue University Agricultural Experiment Station

“The series of articles on poison plants by Prof. Hansen was one of the most popular we have run. You’ll be glad to hear from him again along the same lines.”

LAST month Henry Schroeder, a farmer of Lamar, Indiana, brought several bushels of potatoes out of storage and found that they were covered with young sprouts. The little green sprouts were wiped off by hand and cast out the kitchen window to help fatten the poultry. A few hours later a number of the birds became ill and eighteen died.

Unsuspecting of the potato sprouts, the same thing happened a short time later, and this time twelve chickens died after partaking of the dangerous little green sprouts. Experiments and experience have demonstrated that potato parings, wilted tops and the sprouts contain a poisonous principle (called *solanin*) that may prove fatal to livestock, particularly when the parings or sprouts are green. Animals have died after eating potatoes that had greened following exposure to sunlight after having lain on the ground subsequent to digging. Old sprouted potatoes, it has been demonstrated, are

poisonous to horses, even after boiling. When a cow that died as a result of eating liberally of potato parings was posted, the liver was found to be enlarged and the intestines showed hemorrhages. Ordinary white potatoes contain a mild poison to which, however, few folks are susceptible; most of the toxic principle is probably boiled out, since the water in which potatoes have been boiled is said to be slightly poisonous. Two members of a Vandalia, Illinois, family died last fall after eating greened potatoes. The cases were diagnosed as potato poisoning by attending physicians.

The common potato belongs to a group of plants that includes a number of toxic species. There is bull nettle, for instance, the fruits of which contain the dangerous alkaloid *solanin*. Recently a number of sheep died mysteriously on an Indiana farm and the autopsy of Dr. O. H. Nelson, a veterinarian of Advance, Indiana, revealed that the stomachs contained large quan-

tities of bull nettle berries and that the intestines were badly inflamed.

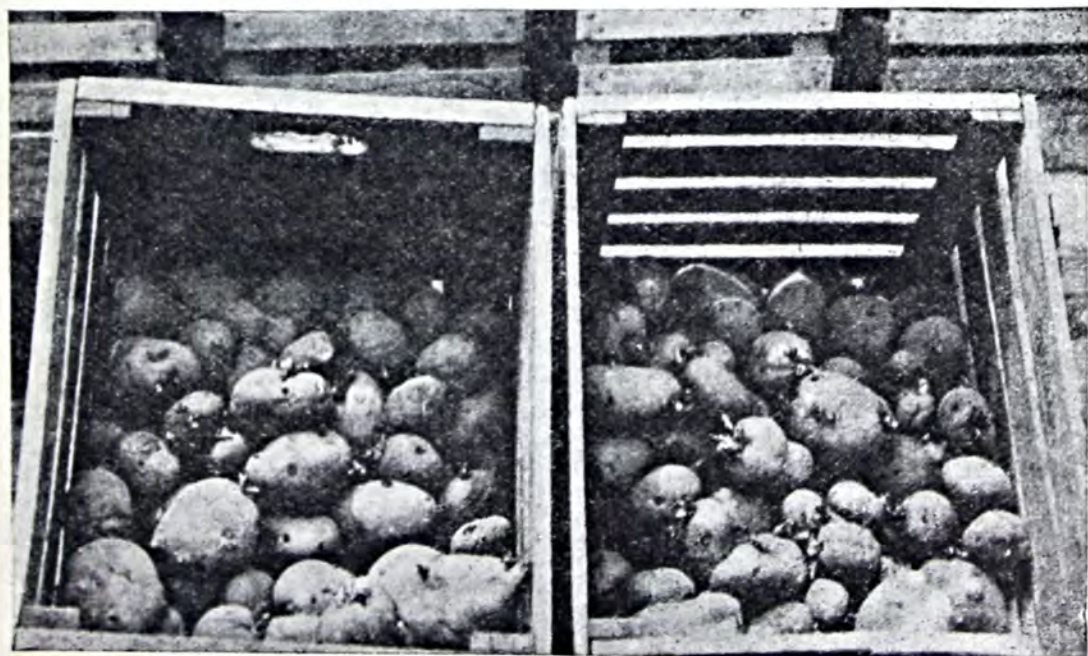
THE experience of Henry Schroeder illustrates a type of poisoning that is unusual, but that may occur on any farm and against which we should be warned. How many of us know, for instance, that the trimmings from a privet hedge are fatally poisonous to stock? The only thing to do after trimming a privet hedge on the farm is to rake up and burn the cuttings. Another common ornamental that is poisonous is the castor bean plant, frequently found near dwellings. Down in Greene County, Indiana, a calf died after eating the tops of this species. I also recall the case of a student at the old Central Manual Training High School in Philadelphia, who ate three castor beans that were used for demonstration purposes in the botanical laboratory. He was away from school for exactly three days and almost died, since castor beans contain a dangerous toxic principle.

It may be news to most folks to learn that the bulbs of narcissus, jonquils and daffodils contain a toxic principle called *narcissine*

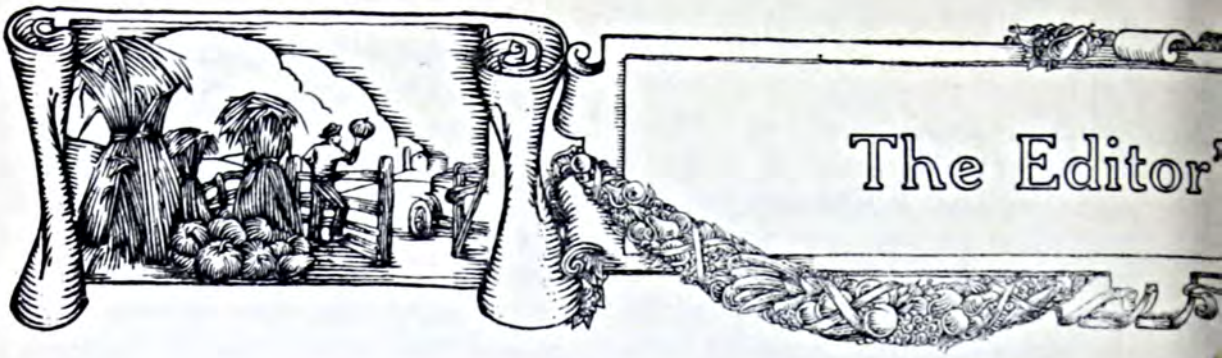
that has caused considerable suffering to folks when eaten in soups and stews where they had been included by mistake for onions. A recent case has been reported in which a single narcissus bulb was used by mistake in preparing a stew that was partaken of by five people. Even before the meal was ended the five diners were seized with severe spasms of vomiting and trembling. Since the quantity eaten was small, the victims all recovered. In view of the dangerous character of these common flower bulbs, it is part of wisdom to store them in places where there is no likelihood of confusion with onions. Cases of narcissus poisoning in cattle, goats and pigs have also been recorded. The bulbs cause convulsions and intense inflammation of the digestive tract.

A form of poisoning that is not well understood, but that seems to be fairly widespread, is caused by alsike clover and is evidenced by the formation of sores in the mouths and on the legs and bodies of white spotted horses and mules and white hogs. When alsike clover is pastured, it is well to keep on the lookout for the tell-tale sores. The

(turn to page 44)



Green sprouted potatoes, the cause of the loss of 30 chickens on one Indiana farm.



The Editor

A SIGNIFICANT REPORT

The Agricultural Conference on Agricultural Legislation has made its report to the President. The personnel of this Conference and the importance that has been attached to its work give this report more than ordinary significance.

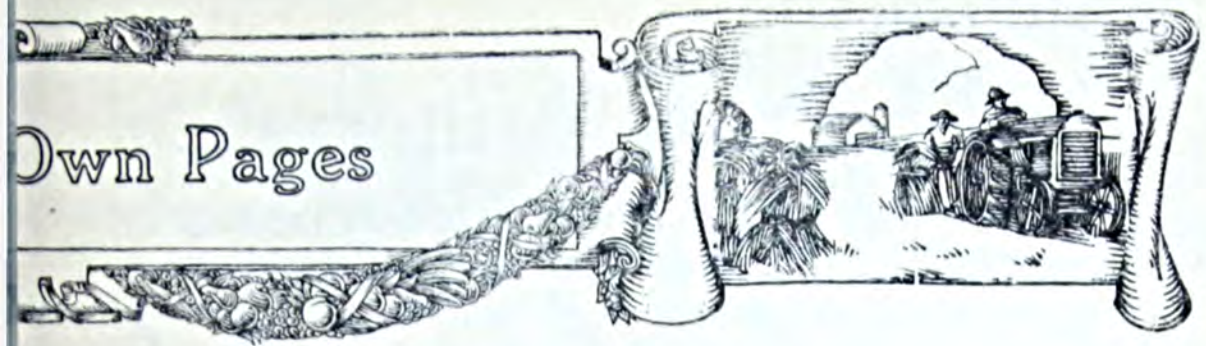
In reading over this report I was impressed by the restraint and good sense which characterize most of it. The Conference has wisely recognized that a minimum of governmental interference and domination will permit the soundest development and, in general, their recommendations look to assisting and fostering farmer projects rather than attempting to impose any set solution of agricultural problems upon the farmer.

There will doubtless be vigorous protests in some quarters because the Conference has come out so openly in favor of cooperative marketing and is recommending government cooperation and assistance for marketing associations.

If the government were to attempt to force farmers into marketing associations or to dictate the organization and policies of these associations, I should feel some cause for alarm, but nothing of the kind is contemplated in the measures recommended by the Conference. The point of these measures is that, if farm marketing organizations want advice or information from government agencies, it will be given them, which seems entirely proper and sensible.

The amendment to the Agricultural Credits Act, the recommendations regarding freight rate legislation, unappropriated public domain, increased appropriations for state experiment stations, and other minor recommendations will meet with general approval.

Own Pages



Opinions will differ regarding the recommendations for an increased tariff on agricultural products. The Conference believes this can be done "without the necessity of dislocating the present adjustment involved between the wage scale of the country and the cost of living," but it fails to go into particulars. The general argument seems to be that since industry receives high tariff protection, agriculture should as well.

I have always hoped that the day would come when the tariff would be considered for what it is—an economic question to be settled by trained men on the basis of ascertained fact. It is still considered a kind of political football which everyone has a right to kick, so one can hardly blame the farmers if they want to get in their whacks at it.

I am somewhat disappointed to note that the Conference's recommendations call for the creation of two new boards. Considering the hundreds—nay thousands—of bureaus with which we are already burdened, the creation of more, however desirable they may seem, can hardly be accounted a blessing.

Some day it may be that a Commission will recommend the abolition of a few boards and bureaus, and then we shall know that the millenium is at hand.

Let us be grateful to the Conference at any rate for its temperance and conservatism. They have stuck to sound principles in the main and have given evidence of a real desire to help agriculture.

Jeff M. Dermid

Announcing

The Prize Winners!

THE prize essay contest which ended on January 17th was one of the most successful we have conducted in number of manuscripts received and in quality. The judges, Mr. B. H. Pillard and myself, had a busy time reading over each manuscript carefully and then weighing the merits of the various contestants on each subject.

After due consideration, we decided that the following people submitted the best manuscripts on the respective subjects:

*The Importance of Raising High Yields
at Low Cost*

Ford S. Prince, County Agent, Xenia, Ohio.

Why We Should Diversify Crops

Paul Tabor, Associate Professor of Farm Crops, State College of Agriculture, Athens, Ga.

The Value of Maintaining Soil Fertility

Harold M. Vaughn, County Agent, Manistee, Mich.

How Cost Account Records Help the Farmer

R. W. Wallace, County Agent, Chillicothe, Ohio.

A check for \$20 has been mailed to each of the prize winners. Mr. Prince's article appears on the opposite page. The others will appear in succeeding months. We hope also to publish some of the manuscripts that, while falling short of the prize, were yet of high merit and interest.

To all who contributed material I want to extend our heartiest thanks. We expect to start another such contest shortly and hope you will try again.

Yours to a cinder,

Jeff



Raising High Yields at Low Cost

By Ford S. Prince

County Agent, Xenia, Ohio

AFTER the world war and after the urge for big crops was over and farm prices were skidding toward the bottom, a good many farmers seemed to hold a grudge toward anyone else who had ever sponsored increased crop yields. The period of low prices has lasted long enough to cause farmers to do a lot of thinking and some figuring, and many of these same complaining men are swinging back into line upon a program of high acre yields because studies in production costs have proved conclusively that high yields and low costs are always inseparable companions.

Since January 1st, 1920, twenty farmers in Greene County, Ohio, have been keeping cost accounts under the supervision of a trained accountant from the Ohio State University. A glance at the yearly summaries of these men on the cost of producing different crops and livestock is enough to convince even the most skeptical that if the farmer is to make money he must secure good yields.

A striking example is to be found in the costs of 1922 when one man had two fields in wheat. The

yields were 27.3 and 13.1 bushels per acre respectively, the total acre costs 25.83 and 25.61 which meant a cost per bushel of 95c. and \$1.80. for growing wheat on the same farm. A further analysis of the individual costs of different operations showed that all factors figured about the same except the charge for fertilizer which was \$1.60 more per acre on the high yielding field. Available plant food enabled this grower to market one field of wheat at a profit, while a lack of it on the other proved to be so serious a factor as to cause a loss.

A summary of the 1924 wheat costs in this same group shows that on farms where the yield was over twenty bushels per acre the cost of production was 70c. per bushel, while the cost on those farms securing only twenty bushels or less was 89c. These figures might be further multiplied for corn, oats and other crops to prove the same general principle.

Nor is it necessary to stop with crops when substantiating the point. A high yield of pigs per brood sow is just as essential in economical pork production. On these same

farms in 1921, the men who averaged 9.5 pigs raised from each litter grew them for market at a cost of \$5.74 per hundred pounds while those averaging but 4.6 pigs paid for the lower number at a cost of \$10.51 per hundred pounds.

On eleven poultry farms keeping receipt and expense records in the county during 1924, the five better flocks averaged 132 eggs per hen and paid their owners an average labor income of \$2.85 per bird, while on the six poorer farms the average hen laid but 86 eggs paying her owner but 18c. for the time spent upon her.

The important thing in producing high yields is to know how to do it economically, bringing into play a nice balance between man labor and the other factors essential for producing crops and stock. For crops these factors are, briefly, a supply of available plant food, acclimated seed of a high yielding variety, good drainage, a well prepared seed bed and proper tillage.

Feeding a balanced ration is one of the main factors in getting good yields from livestock. It is the extra feed over that necessary to maintain an animal which pays the profit, whether it be fed to a hen, a dairy cow, a hog or a steer. Fresh air, exercise and warm, sanitary quarters are all necessary for profitable animal production. Care of the brood sow at farrowing time usually spells profits in the hog business.

Each farmer will have to figure out for himself what his limiting factors are and remedy them in order to get the sort of yields which mean low costs. Competition in farming is becoming more and more keen. Constantly increasing yields per man will necessitate working on narrower margins. Slovenly production will eliminate many farmers who cannot keep pace with improved conditions to make room for the live, wide-awake man who looks upon farming as a business and the farm as a home rather than a place to eke out an existence.

Farmers with this viewpoint who are now growing good yields and marketing crops and stock above cost, are building homes and equipping them and making our rural communities the best places on earth in which to live.



Economy in Buying Fertilizers

Five million dollars will probably be spent by New Jersey farmers for commercial fertilizers during the year 1925, according to Prof. A. W. Blair, soil chemist of the New Jersey Agricultural Experiment Station.

"At a time like this when the odds seem against the farmers in so many ways," suggests Professor Blair, "it is well worth while for him to consider carefully his investment in fertilizers in order that the money may be wisely spent. Will this five million dollars buy the most plant food possible, or will it go for just 'fertilizers?'"

"Ten tons of a 5-8-6 mixture will carry 3,800 pounds of plant food; ten tons of a 3-8-3 will carry 2,800 pounds of plant food, but the freight and handling charges on the latter will be just as much as on the former, which carries 1,000 pounds more of plant food.

"There are truckers and potato growers who could well afford to use a still higher-grade fertilizer, a 6-8-7 for example. Ten tons of this will give 4,200 pounds of plant food as against 2,800 in ten tons of a 3-8-3.

"But why confine the high-grade fertilizer to truck and potatoes? For corn 250 pounds of the 6-8-7 would be quite as effective as 500 pounds of the 3-8-3, and from the standpoint of freight and handling much more economical.

"In purchasing fertilizers for 1925, it will pay to cut to the minimum the cost of freight and handling, and increase to the maximum the money that goes into actual plant food."—*Hudson Observer*.



The Agricultural Situation

The Agricultural Situation, by G. F. Warren and F. A. Pearson, New York. John Wiley and Sons, Inc., 1924. Pp. xvi—306.

Those who remember Professor Warren's *Bulletin 999*, issued by the United States Department of Agriculture some two years ago, and who have followed his subsequent articles and addresses will find this volume covering familiar ground. It brings together all these scattered materials between the covers of a single book, supplementing it with additional data and discussion. Out of a total of about 300 pages, well over a hundred are given over to tables (150 in number), and charts (106 in number). Many of these are referred to only indirectly or not at all in the text, but they represent a large amount of computation, chiefly of index numbers from the original data, and thus make accessible a wealth of material to any student who wishes to study further into the problem.

In general plan, the book consists of three introductory chapters presenting a general statement of the nature and causes of the depression, followed by four chapters on "Effects of Deflation on Agriculture and Industry," "Taxes," "Debts" and "Freight Rates." From Chapter VIII to Chapter XX, inclusive, there follows a detailed recital of what has been taking place, stated first in general terms; then contrasting trends of retail, wholesale and farm prices; followed by special discussions of regional phases

of the problem, and of the particular situation with reference to all the principal and many of the minor agricultural products. Thereafter, we resume the thread of Chapters V, VI and VII with a chapter on "Farm Wages" (XXI) and "Value of Farm Land" (XXII). The last six chapters in the book may be regarded as another group dealing with measures of farm conditions, the analogy of other agricultural depressions, the effects of the present period of maladjustment, the probable future course of prices, and methods of adjusting to or remedying present difficulties.

The general thesis of the book is stated promptly in the opening sentence, which says: "The outstanding cause of the agricultural depression is the low price of farm products compared with taxes on farm lands, payments of interest, wages and prices of things that farmers buy," this low price being ascribed primarily to "deflation." To be sure, other causes are touched upon as being contributory to the general result, but they are dismissed at the end of Chapter III with the following observation: "While each of these factors as well as others have contributed to the agricultural depression, none of them could have brought on a severe depression. The primary cause of the agricultural depression was financial inflation followed by rapid deflation." This general position is reiterated either directly or indirectly throughout the book, wherein "deflation" is made the

goat for the economic sorrows and sufferings which have been the farmer's lot since 1920.

In view of the fact that so much weight is caused to rest upon this explanation, it seems somewhat unfortunate that the term was not more carefully defined and some single definition of it more rigidly adhered to. In many places, it seems to mean just what it so commonly is made to mean in the language of the street, namely, the decline of prices, with inflation meaning a marked or widespread advance of prices. This would seem to be the only sense in which it could be made to fit in the statement (page 273). "The populist movement of the last century was the farmer's expression of his opinion of prolonged deflation." Does it also fit the sentence (page 17)? "If the price level is too high, it results in all the objectionable features of inflation"

It is clear in many places that the authors mean more than rising and falling prices in using this term to explain the agricultural situation. On page 250 they say explicitly "Inflation and deflation are a money question. Expansion and contraction of the currency produce violent fluctuations in prices of articles bought and sold by farmers and become a subject of intense controversy." Elsewhere in the book this money phase of the question is related both to the production and international transfer of gold, the size of our "stocks of money," and the action of banks in extending or limiting their loans and discounts. Back of this all, however, looms the sinister figure of the Federal Reserve Board which, through its discount policy, is represented as having had chief responsibility for the depression in agriculture.

From the point of view of the reviewer, the chief disappointment of the book is in the failure of the authors to explain precisely how such a discount policy operates as a

prime factor in the activities of the business world, and how, if interest rates are in fact the significant motive force in business, the same discount policy which oppressed the farmer in 1920-21 ushered in an era of prosperity to other industries and trade. One might ask also why the subsequent lowering of the discount rate has not done more to rehabilitate agriculture or whether this is indeed the cause of the present price of wheat. The matter is not rendered any more clear by the fact that when the authors, in Chapter XXV, turn to examine "Probable Future Prices," they limit themselves to a discussion of the future of our gold supply. Following this same thought, one might be inclined to query further the sense in which, according to Warren and Pearson, we are still in a period of deflation, since, in their closing chapter, they urge the "discontinuance of deflation" as the first of their remedies for the agricultural depression. In this section they say: "The agricultural depression is primarily due to two factors: first, the disparity between farm prices and prices of things that farmers buy; second, the disparity between farm prices and payments of taxes, interest and debts. The first of these might be corrected either by raising the prices of things farmers sell, or by lowering prices of things they buy. The second can only be corrected by raising the prices received by farmers, because public and private debts remain fixed in dollars, regardless of prices." This seems to harp back to the use of deflation in the sense of low prices and to give us as a remedy the raising of agricultural prices. While everybody doubtless would agree that such an advance of agricultural prices would solve the farmer's problem, the means by which it is to be effected is left in obscurity.

This book is a treasure house of information for those who would study the present agricultural situa-

tion. While the authors have not furnished a key to open this treasure house, both the data assembled and the discussion with which it is accompanied offer a profitable field of labor for any student seriously interested in understanding the difficult situation of our agriculture and the processes by which it can be bettered.

E. G. NOURSE,
Institute of Economics.
Washington, D. C.



What Agriculture Needs

By BETTER CROPS Readers

More backbone, less wishbone, fewer automobiles, tractors, and trucks. Better farm help. Better care of farm stock and farm machinery. Less credit. Localization of crops. Economy actually applied. Use of County agent till it hurts (the Agent).—*Charles O. Bird, Farmer, Member K. S. F. B. Board, Atwood, Kansas.*

Equality of rights with other industries — especially those industries inter-related to agriculture. If the manufacturer has protection then the farmer is also entitled to protection. If American labor is protected then our products ought also to have a similar protection. Agriculture must work out basic principle for farmers and stick to them until obtained.—*Frank Zentmice, Farmer, Oakland, Iowa.*

Grow all the feed and food crops needed on the farm if possible. Keep 100 good hens per farm, one to three brood sows, keep the number of productive dairy cows that can be pastured, fed and handled to best advantage on the farm. Spend surplus time, energy and land on cotton as a truly cash (not credit) crop.—*L. A. Higgins, Extension Worker, A. and M. College, Mississippi.*

(turn to page 34)

JUST PUBLISHED!

The Agricultural Situation

*Economic Effects of
Fluctuating Prices*

By G. F. WARREN, Ph.D.
and F. A. PEARSON, Ph.D.

*Professors of Agricultural Economics,
New York State College of Agri-
culture, Cornell University*

THIS most timely book gives a general and constructive analysis of the causes, extent, possible duration and effects of the agricultural depression. Prepared by two well-known authorities, it discusses, without bias, the factors that influence price relationships between agriculture and individual products. It includes relationships between agriculture and industry.

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Using Agricultural Magazines

By Joe M. Goodman

County Agent,
Effingham, Kansas

One of the good sources of obtaining timely information is through the many agricultural magazines which come to the county agent's office from time to time. Too often this source is entirely overlooked. I first hit upon this method by tabulating each article I could find that I thought I might use in carrying on my dairy work in Atchison County. That has been more than a year ago. Now I have a regular file for Agricultural magazines. The magazines filed are *Hoard's Dairyman*, *Successful Farming*, *BETTER CROPS*, *Breeders' Gazette*, *Farm Life*, and one or more others. It is not always necessary to file all of the numbers of a journal as sometimes nothing appears which will fit in one's territory. However, each number is carefully looked over by me and all articles that may be used are checked.

The farm magazine is then turned over to the stenographers, who tabulates the articles on 4 x 6 cards which are filed alphabetically. Contrary to all past rules they are not then forgotten. Hardly a day goes by that these are not used. For instance, John Jones comes to the office and wants to know something about contagious abortion. The clerk refers to the file of tabulated subjects and finds under the head-

ing the subject, "Abortion in Cattle," this card states further that this subject is discussed on page 148 *Hoard's Dairyman* of August 29, 1924.

Possibly the Agent wants to get up a talk or a news article on a cooperative creamery or how he may help one that is struggling for existence. He again asks his clerk to see what subjects may be tabulated under this head and finds the subject, "We pulled our Creamery out of the Rut," *Farm and Fireside*, 10/24, page 8. This being a monthly publication, the month, year and page appear only.

Perhaps the agent is laying plans for a soil testing campaign. He finds some good material taken from the little magazine, *BETTER CROPS* of the October issue, which tells him just how to proceed with the testing for soil acidity.

These are only three subjects we have used, but the files contain a large number of interesting subjects which we used for immediate references.



North Dakota Boys and Girls Achievement Institute

By R. C. Newcomer
County Agent, Mandan, N. D.

The North Dakota Boys and Girls Achievement Institute is an annual meeting of boys and girls club members who have achieved success in their chosen projects, throughout the state, during the past year.

It was my good fortune to attend the Fifteenth Annual Institute held at the Agricultural College during the week of December 15 to 20, and act as chaperon for six boys and girls from my own (Morton) County, who had successfully completed their year of organized club work, and because of their meritorious endeavors were chosen to represent their various clubs, and likewise receive the reward of a trip.

Two hundred and twenty-two boys and girls from twenty-five different counties of the state were present; all wide awake youngsters who had accomplished something outstanding, and all eager and desirous of learning something from the splendid program arranged for them by the State Club Leader, H. E. Rilling, and other Extension officials.

The first day was given over to a general inspection of the Agricultural College, and explanations were given in regard to the work carried on there. It was also the "get acquainted" day. Robina Wylder, President of The Boys and Girls Club Institute organization, and a club member herself, conducted all regular meetings, with more ease and executive acumen, than many older people often possess.

The talk by Dr. Coulter, President of The North Dakota Agricultural College, in which he displayed a map on North Dakota, showing that the state lies just half way between the equator and North Pole, made a striking impression on the whole delegation. A rather novel organization of the entire delegation into a Circus, was perfected by Prof. Arvold of the College. It was a real circus consisting of everything from monkeys to pink lemonade. Movies, plays, basketball games and the like all had their part in the entertainment. Much instructive work was given also in cooking demonstrations, table service, sewing work for the girls; and poultry judging, corn and

grain judging for the boys. A club paper, *The Flicker Tales* was edited daily by the members of the institute.

The various civic organizations of Fargo joined in giving a banquet to the Club members and the Chaperons, as well as a large number of the members of Extension Division. The Institute president, Miss Wylder, acted as toastmistress, and various club members responded with extemporaneous talks, with surprising ability.

The outstanding feature of the whole session was the obvious enthusiasm for junior Club Work. When one thinks of those two hundred and twenty-two boys and girls returning to their homes in different parts of the state, imbued with the experiences and inspirations of such a week of endeavor, one cannot help but feel that the young farm folks are being trained for future leadership, and that Junior Club work is playing a fundamental and important part, in a demonstrative and practical way, in North Dakota.



What Agriculture Needs

(From page 31)

Economical, cooperative production, followed with cooperative marketing of every farm commodity. (The latter will possibly precede the former.) The marketing contract should contain a clause regulating production, in such a manner that any surplus, created, loss to be born by individuals causing it.—*Waldo E. Steinberger, Farmer, Urbana, Ohio.*

Less crops destroyed by insects. The Chinch bug gets too much of the farmers corn. The Hessian fly too much of his wheat. The potato bug too many potatoes and Coddling moth too many apples. A constructive protective measure must be taken for every insect pest.—*E. G. Kelly, Entomologist Manhattan, Kansas.*

Sulfur and Soil Fertility

(From page 20)

net loss of sulfur in the drainage water was 16.0 when a rotation of crops including a legume was grown, and this loss was further increased to 25.5 pounds where burnt lime was included in the treatment. This loss is in addition to completely meeting the requirements of the crops grown and must represent an annual excess of usable material. Two questions are perfectly justified at this point and require careful and serious consideration. Must this loss of sulfur from the soil be replaced by the addition to the soil of sulfur bearing materials? Why add more soluble sulfur, which only increases the amount lost in the drainage, when there is already an excess of available sulfur in the soil which the plant refuses to utilize?

Another element of plant food, nitrogen, is likewise lost in the drainage water in large quantities under certain conditions. These conditions have been studied by Babcock with lysimeters at the Geneva Experiment Station. His work extended over a period of several years, and he found that the loss of nitrogen from the soil kept in sod was less than one pound per acre per year. The loss of nitrogen from the soil, which was cultivated but not cropped, varied from 132 pounds to 234 pounds per acre per year. That is, under a system of cropping, the essential plant food element, nitrogen, was practically entirely removed from the drainage water due to the demands of the growing crop. Therefore, in a native condition, the loss of nitrogen is reduced materially since the soil constantly grows a crop, and the actual loss is in part taken care of by fixation of atmospheric nitrogen by various agencies.

The work of Lyon and Bizzell at Cornell, on the other hand, shows quite conclusively that sulfur is not so reduced in the drainage water

by cropping. Hence the sulfur in the drainage water must represent the excess of usable material. Their results show conclusively that the amount of sulfur in the drainage water is five or six times as great as is the amount removed by the crops. Moreover, if sulfur is lost from the soil in such large quantities as some investigators would have us believe and there is no compensation as in the case of sulfur, cultivated soil should very soon be actually devoid of sulfur. The soils of Kentucky, for example, having an average sulfur content of 438 pounds, should be completely deprived of sulfur in ten or fifteen years unless sulfur is constantly being added in appreciable quantities from some source. In addition, we should always remember that sulfur must be constantly lost from virgin soil as well as cultivated soil since the Cornell data show conclusively that cropping does not reduce the sulfur lost in the drainage water.

The atmosphere contains a variable quantity of sulfur as sulfur dioxide, and although small in quantity, it is of tremendous significance in this connection. The amount of sulfur dioxide is quite appreciable near smelters or large cities, and cases have frequently been reported of damage being done to vegetation and household fabric by the production of sulfuric acid by the oxidation of sulfur dioxide in the air. Undoubtedly the amount of sulfur dioxide in the air is less in the open country than near large cities. But whenever coal, oil or wood is burnt, the sulfur in a large measure escapes into the air and the supply of sulfur in the air is thus constantly being replenished. It is removed by rainfall and thus added to the soil supply. The amount so added is very appreciable and fully

sufficient for the food requirements of plants, and accounts for the loss in the drainage water.

SOME important results have been obtained at the University of Illinois on this phase of the question during the past seven years. In 1912 a rain gauge was established on the roof of the Agricultural Building. The rain water was collected and measured and monthly samples were analyzed for sulfur and various forms of nitrogen. The results obtained are very significant. The amount of sulfur varies from month to month and from year to year. As an average of the seven years, 45.1 pounds of sulfur are annually brought down in the rainfall and added to the soil at the average rate of 3.8 pounds per month. During the growing period for corn from May to September, 18 pounds of sulfur are added.

In 1915, the Hopkins' Soil Bins were constructed to study certain special problems in soil fertility. These bins are located on the Urbana North Farm under actual field conditions. Three years' results on the rain water collected are available from this source. As an average of the three years, 40.6 pounds of sulfur are annually added to the soil in monthly installments of 3.4 pounds. During the growing period for corn, from May to September, 16.4 pounds of sulfur are added to the soil under actual field conditions.

FROM the data presented, it is quite evident that the sulfur supply of the soil is automatically replenished from the atmosphere, and that the relation of sulfur to soil fertility is not in any sense similar to that of phosphorus. For example, to produce a hundred bushel crop of corn requires 17 pounds of phosphorus and 9 pounds of sulfur for the grain alone. The phosphorus must come either from the soil or

applied materials and there is no other possible source; on the other hand, the results obtained at the Hopkins' Soil Bins, under actual field conditions, indicate that an average of 16.4 pounds of sulfur are added to the soil during the growing season for corn, from May to September, and this sulfur is added in monthly installments, of 3.4 pounds. We would be very fortunate, indeed, if our phosphorus, nitrogen, potash and limestone problems could be so easily solved. From these results, it is surely evident that under humid conditions sulfur need never be added to the soil as a plant food.

Fortunately also, sulfur bearing materials have been used as fertilizers for a long time, but largely incidentally with other materials. Gypsum, it is true, has been occasionally used as a fertilizer in an indefinite way by many farmers with various results. It has been used in an experimental way by the Pennsylvania and Ohio experiment stations.

The data obtained at the Pennsylvania station is wholly negative and shows no benefit at all from the use of gypsum. Plots 13 and 33 received an application of 320 pounds of land plaster, gypsum, applied in alternate years. The 35-year average yield, where gypsum was used were, corn 36.1 bushels, oats 31.3 bushels, wheat 13.4 bushels, hay 2,378 pounds. while the average yield of the untreated plots were, corn 37.2 bushels, oats 31.6 bushels, wheat 13.4 bushels and hay 2,460 pounds.

The results from the Ohio station are more favorable. The 18-year yield of crops obtained at Ohio, where barnyard manure was used were, corn 56.11 bushels, wheat 21.37 bushels, and hay 3,668 pounds. When the manure was reinforced with 320 pounds of gypsum, the yields were 61.05 bushels of corn, 24.30 bushels of wheat and 3,897 pounds of hay. The 320 pounds of gypsum had

actually increased the yield of crops as follows: corn 4.94 bushels, wheat 2.93 bushels and hay 229 pounds. When, however, the manure was reinforced with rock phosphate the yield of corn was increased by 8.96 bushels, wheat by 4.33 bushels and hay 893 pounds, while acid phosphate which contains both "available" phosphorus and gypsum has produced an increased yield of corn 925 bushels, wheat 5.44 bushels and hay 887 pounds. The gypsum in the acid phosphate has apparently little if any effect. There is no evidence from this reliable experimental data to warrant the use of gypsum as a source of sulfur for ordinary crop production.

We must conclude that under humid conditions the sulfur problem, in relation to soil fertility, is not in any sense similar to the phosphorus problem, but rather has a relation to soil fertility similar to that of carbon.



NEXT MONTH'S BETTER CROPS

Keep your eye peeled for the next issue of BETTER CROPS! It will contain some unusually interesting and helpful articles. Among the features we are planning are an article on the boll weevil by C. E. Gapen, of the U. S. Department of Agriculture, "Raspberry Anthracnose and its Control" by C. E. Baker of the Purdue Experiment Station and an article on the Laredo soybean by H. C. Appleton of the Georgia State College of Agriculture, Another of our prize editorials, "Why We Should Diversify Crops," by Paul Tabor will appear in this issue.

About Ourselves

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

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G. A. Campbell of Hardin County, Ky., raised 600 lbs. of Burley tobacco per acre without fertilizer, 1,260 lbs. per acre when he used 1,000 lbs. of a 3-8-0 mixture, and 1,500 lbs. of tobacco per acre when he used 1,000 lbs. of a 3-8-10 mixture.

In Ware County, Ga., Fred Cribbs got only 160 lbs. of Bright Flue-cured per acre without fertilizer; 1,000 lbs. of 6-4-0 mixture brought his yield up to 480 lbs. per acre. And when he used 1,000 lbs. of a 6-4-10 mixture, he got his best yield of 890 lbs. per acre. Thus, \$6.00 worth of sulfate of potash increased his net income \$76.00 per acre.

And in Steuben County, N.Y., Mr. C. E. Bailey, raising wrapper tobacco, increased his net income \$55.40 per acre by using \$7.80 worth of sulfate of potash in 1,300 lbs. of a 4-6-10 mixture.

Sulfate of potash improves flavor and burning quality in tobacco; when needed to prevent sand drown on light sandy soils, specify sulfate of potash magnesia.



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"Government Inspected"

(From page 7)

markets by receivers, railroads and shippers, but it was seen that more effective work could be done by making inspections at shipping points. The Northwest apple shippers urged their Congressional representatives to provide such service so as to give them a better basis for making loss and damage claims in cross-country shipments, and the new service went into effect July 1, 1922.

The Federal Department of Agriculture was seriously handicapped at first because no appropriations had been provided for carrying on the new work. Each State was then asked to cooperate, the funds collected for inspections to pay the salaries of inspectors and other necessary expenses. Twenty-four States came into the service the first year, and supervisors were appointed by the Federal Department to train inspectors.

The inspectors are employed by the State and licensed by the Federal Department, inspections being made for shippers, dealers, railroads and other factors interested in specific transactions. A small charge is made for inspection, joint Federal-State certifi-

cates being issued attesting the quality and condition of the products.

THE number of inspections at shipping points, the first year, was over twice as many as had ever been inspected in terminal markets in one year. Of the 72,644 cars inspected, only 34 certificates were reversed on reinspection in the terminal markets. During the past year the number of certificates reversed averaged one in every 2,000 cars inspected.

Federal and State extension agencies for years have been extolling the advantages of standardization of farm products. According to F. G. Robb, Government official in charge of the Federal end of the service, "more progress can be made in securing the adoption of recognized standards at shipping point through inspection in a single season than can be accomplished in a number of years by any other means. Supervising inspectors have reported marked changes in grading practices in every section where shipping point inspection has been used."



Heavy inspections of peaches this year are expected to establish a new record for shipping point inspection.

Federal grades have been worked out for 38 fruits and vegetables, some or all of which are now in use in 36 States. Many States have established the Federal grades as State grades, thus providing for standardization on the same basis in both interstate and intrastate shipments. These grades have been arrived at by the most comprehensive study ever made of each product over its whole geographical range. The grades must fit the product actually grown and also reflect the elements which determine market value.

ANOTHER outstanding result of the new inspection service is the keeping of inferior products on the farms and shipping only the high quality products to market. This has

effected economies in marketing. It has been well demonstrated that, especially in years of large crops, the low grade products frequently do not return the cost of transportation and handling and are a depressing influence on the price of the high grade products.

The organized cooperatives learned long ago that to increase consumption a standardized product of high quality must be placed on the market. Officials of the Department feel that similar results can be secured with fresh fruits and vegetables generally. A marked improvement in the quality of fresh fruits and vegetables on the market has been noted this year with consequently higher prices, and it is considered that a continuance of this policy will result in far-reaching benefits all along the line from producer to consumer.



The County Agent's Family

(From page 5)

wife taking an active part in community and church life, in taking an active interest in the work of her husband and in meeting with farmers' wives and attending meetings.

We have never envied the man and his wife who have no particular home. They may live in a "house" to be sure. They may get a light breakfast at the *house*; then go to the office or to the store for the morning. If there are children they are left at home with "grandma" or even in some cases to play alone and to fill in their time as best they may. At noon they may go to the restaurant; then back to the office, and so on. They may be making lots of money. But are they making a *Home*?

WE, as county agents, should all be willing to work hard, holding

evening meetings twenty-five miles from home when occasion arises, help the man with cholera hogs on Sunday if necessary, and the like. But things like that don't happen every evening in the week nor every Sunday in the year. No executive board is going to expect their county agent to work twenty-one hours in a day throughout the year. There may be occasions, of course when such a thing is necessary, but that is far from normal.

We hold no brief against the county agent's wife who is the agent's office assistant or who is filling the place of a home demonstration agent or who may feel herself a widow; neither do we envy the bachelor county agent. But we do feel like pointing to an ideal that has not been suggested in any of the previous articles on this subject. That ideal is the county agent's *Family*.

A New Field for the Agricultural College

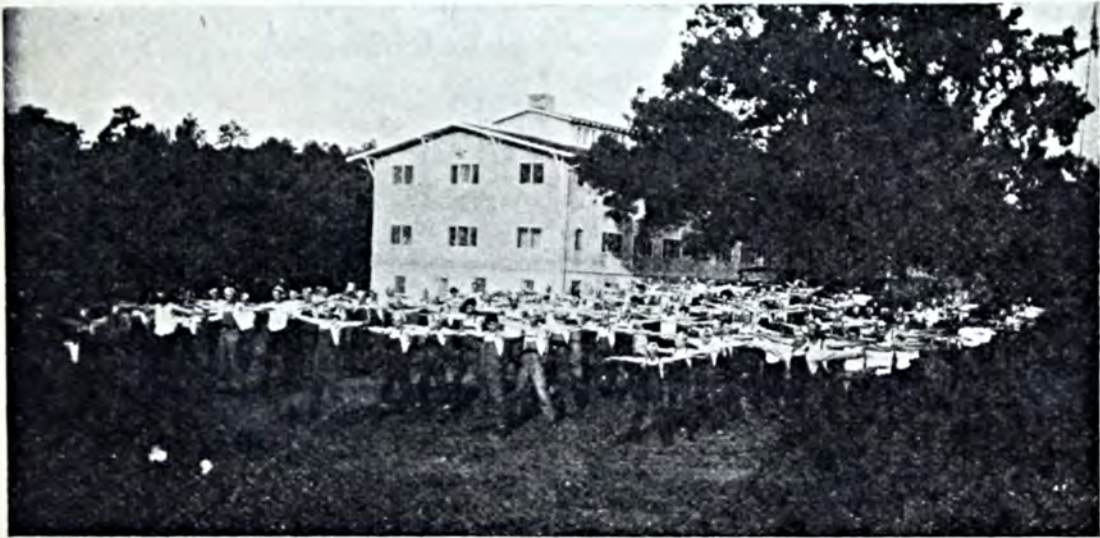
(From page 11)

Most of the boys and girls were selected for the trip by their county agent, because they had won some honors in connection with their club work, and for these boys and girls all the expenses were paid. However, any other might come for the week by paying seven dollars, which covered all expenses—and this could be paid in staple articles of food.

Cooks and attendants were employed, and the county agents were in charge of the boys. The mornings were given over to study; the afternoons to swimming and games; and the nights to picture shows and entertainment. During the week an opportunity was given for the boys to inspect the college, including the nine hundred acres in the

college farm and experimental plots. They met the instructors at the college, they got to know something of the nature of a college course in agriculture, and what is of greater importance they got a broad vision of their own possibilities.

In years to come, thousands of boys and girls will be entertained at this camp, and those who come will include the leaders of the future in agriculture and home economics at least for the State of Georgia. And many a boy from a poor farm will in later life be able to look back on his first trip to "Camp Wilkins" as the time when he was first fired with the ambition to make ample preparation for a life's work in some phase of the business of agriculture.



Setting-up exercises at Camp Williams every morning at 6.15, just after flag raising.

A New Wrinkle in Growing Alfalfa

(From page 14)

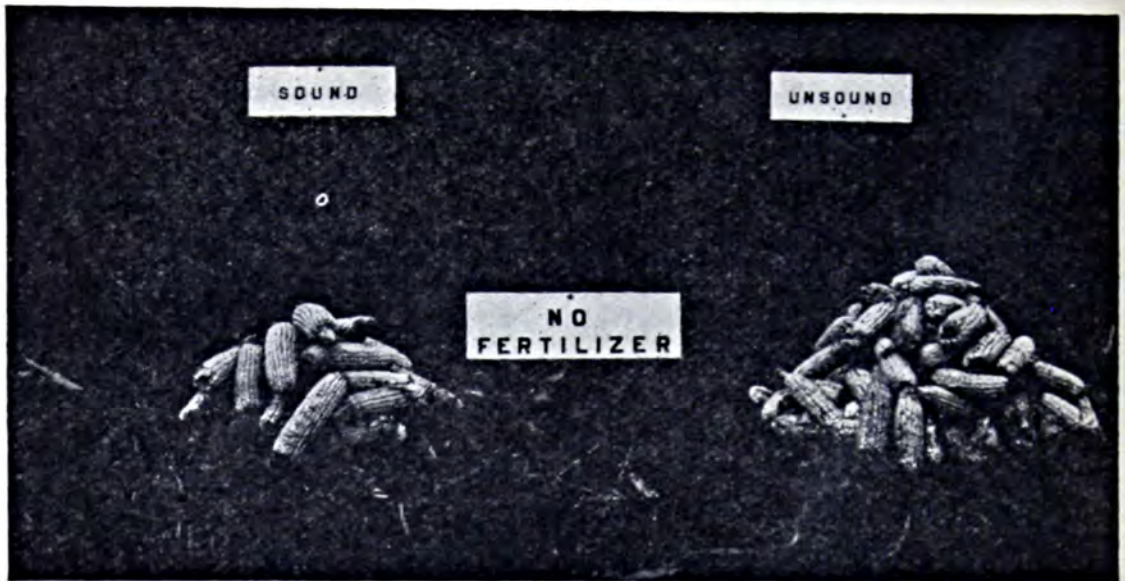
part of October the alfalfa was knee high and excellent for pasturing although it was not pastured heavily as Mr. Moffit said he liked to have a heavy stand to protect it during the winter.

The Moffit boys raise pure bred Hereford cattle and this year sold a carload of bulls to a ranchman in

Colorado. They feed out several carloads of hogs every year which they raise on the farm. They find a cross between the Tamworth and Duroc to be ideal for feeding and the type that tops the market. They say alfalfa is the ideal forage for the corn belt, both for pasture and hay.

Fertilizers for Quality and Profit

(From page 13)



Corn in rotation without any fertilizer treatment. Average annual yield for 8 years. 37.8 bushels per acre, 60.8 per cent of which was sound and 3,478 lbs. of fodder. Net returns \$44.24 per acre. Delaware Experiment Station.

is a gain of \$8.68 per acre where muriate of potash has been applied. Where two fertilizer materials are applied the greatest gain comes from the acid phosphate—potash combination. The gain in this instance is \$23.25 per acre. When nitrate of soda is added to the above combination the gain is \$29.29. This indicates that when nitrate is used in combination with the other elements it is profitable, but it is

not profitable when used alone. The profits are about the same from the use of manure as from a complete fertilizer.

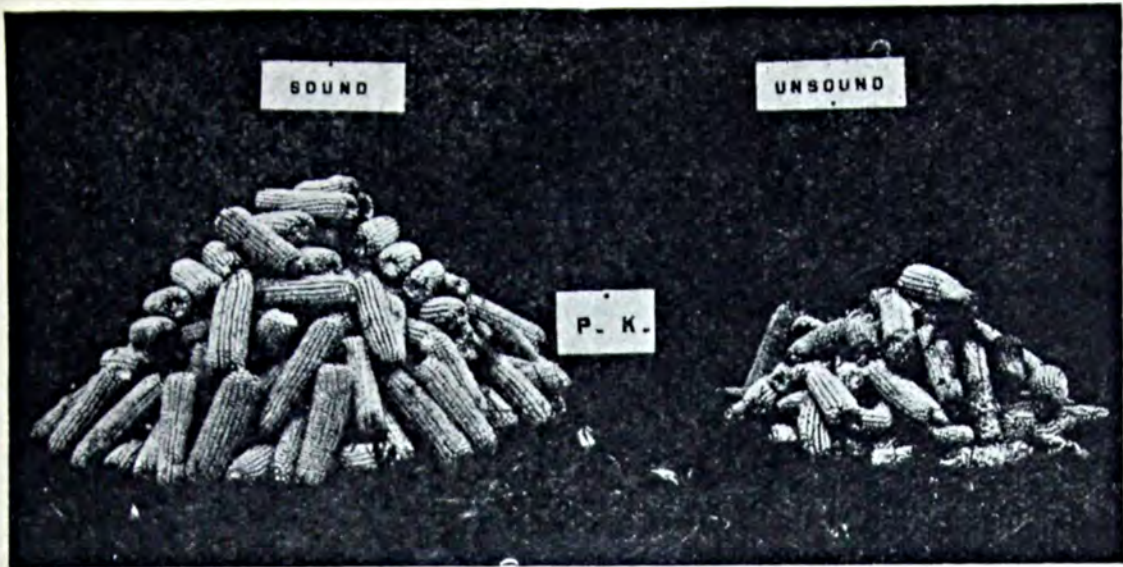
THE average farm value of the crops involved has been used as a basis of computing returns. No recognition has been taken of the fact that certain of the fertilizers applied produced better quality

TABLE I.

Average annual net returns per acre from various fertilizer and manurial treatments in a rotation of corn, soy beans, wheat and hay for eight years.

(1916-23 inc.)

Treatments	Average Annual Net Returns Per Acre
None.....	\$27.14
Nitrate of Soda.....	26.26
Acid Phosphate.....	31.47
Muriate of Potash.....	35.82
Nitrate of Soda.....	34.04
Acid Phosphate.....	
Acid Phosphate.....	50.39
Muriate of Potash.....	
Nitrate of Soda.....	45.99
Muriate of Potash.....	
Nitrate of Soda.....	56.43
Acid Phosphate.....	
Muriate of Potash.....	49.10
Basic Slag.....	
Muriate of Potash.....	46.61
Rock Phosphate.....	
Muriate of Potash.....	53.56
Manure.....	



Corn in rotation, fertilizer 250 lbs. of acid phosphate and 75 lbs. of muriate of potash per acre. Average annual yield for 8 years. 69.4 bushels per acre, 86.9 per cent of which was sound and 5,437 lbs. of fodder. Net returns \$73.42 per acre. Delaware Experiment Station.

grain than others. Table II. gives information as to quality of wheat, corn and soy beans produced from the various treatments. Muriate of potash produced the highest test weight per bushel on wheat, and the largest percentage of sound corn and mature soy beans of the single materials applied. The acid phosphate — potash combination was the best combination of two materials. The addition of the acid phosphate improved the quality of grain over that where

potash alone was used. The addition of nitrate of soda to the acid phosphate - potash combination made some improvement in the quality but was not very marked.

The spread in variation in the quality of the wheat grown without fertilizer and with various fertilizer treatments is quite pronounced. The test weight per bushel of the wheat grown on the untreated plots ranged from 42 lbs. to 59 lbs. Wheat that tests 42 lbs. grades "sample," the lowest grade.

TABLE II.

Effect of fertilizers and manure upon the quality of wheat, corn and soy beans.

Treatments	Wheat Test wt. per Bushel	Percentage of Sound Corn	Percentage of Mature Soy Beans
None	51.6	60.8	96.1
Nitrate of Soda	52.5	64.9	95.7
Acid Phosphate	55.9	63.9	94.7
Muriate of Potash	56.7	73.2	99.6
Nitrate of Soda	55.1	65.4	95.3
Acid Phosphate	58.0	86.9	99.4
Acid Phosphate			
Muriate of Potash	55.7	82.7	98.9
Nitrate of Soda	58.8	89.1	99.1
Muriate of Potash			
Muriate of Potash			
Basic Slag	57.6	84.8	99.7
Muriate of Potash			
Rock Phosphate	55.3	77.9	98.8
Muriate of Potash			
Manure	56.1	86.9	98.1

Wheat that tests 59 lbs. will grade No. 2, if it is otherwise clean. The test weight on the plots receiving acid phosphate and muriate of potash ranged from 54 lbs. to 60.5 lbs. Wheat testing 54 lbs. will grade No. 4 and wheat testing 60.5 lbs. will grade No. 1 if it is clean and bright. The test weight on the plots receiving nitrate of soda in addition to the acid phosphate and muriate of potash ranged from 57 lbs. to 61 lbs. Wheat testing 57 lbs. will grade No. 3 while wheat testing 61 lbs. will grade No. 1 if the samples are otherwise clean and bright.

The difference in price between the different grades of wheat is about three cents per bushel. That is to say that if No. 1 wheat is worth \$1.25 per bushel, No. 2 will be \$1.22; No. 3, \$1.19; No. 4, \$1.16; and No. 5, \$1.13. Sample grade is the lowest grade and is worth only what it can be sold for as feed, and that depends upon the demand of the market. Perhaps it will be worth 60c. a bushel when No. 1 wheat is worth \$1.25.

Applying these values to the results, the wheat testing 42 lbs. on the untreated plots will be worth 60c., the wheat testing 59 lbs. will be worth \$1.22 per bushel a spread in possible value of 63c. or 103% on the unfertilized wheat. Wheat testing 54 lbs. will be worth \$1.16 and wheat testing 60.5 lbs. will be worth \$1.25 per bushel, a spread in possible value of 9c. or 8% on wheat receiving acid phosphate and muriate of potash. Wheat testing 57 lbs. will be worth \$1.19 and wheat testing 61 lbs. will be worth \$1.25, a spread in possible value of 6c. or 5% on wheat receiving nitrate of soda in addition to acid phosphate and muriate of potash. A similar lesson may be drawn from the corn and soy beans. However, it is sufficient to say that the efficient use of fertilizers produces a better quality of grain as well as a more uniform quality.

Something to Guard Against

(From page 23)

animals should be put on other feed as soon as signs of trouble are noted.

A TYPE of poisoning against which we would like to warn all extension workers to be on the lookout during sunny spring days is caused by young cocklebur sprouts. To illustrate, allow me to cite an experience along this line. Last Spring, Jesse Carlson, a farmer of Attica, Indiana, lost six young pigs in a mysterious manner. He brought the dead pigs to Purdue, located but a few miles away, and when they were posted cocklebur sprouts in the cotyledon or two-leaf stage were found in the stomachs. An examination of the pasture where the animals had been grazing revealed the presence of an abundance of cocklebur sprouts, many of which had been nipped. A quantity of the burs were collected and brought back to Purdue, where they were planted in a small enclosure and all other weeds were hoed out.

When the tiny sprouts began to show above-ground on our little cocklebur farm, an eighty-pound hog was put in the enclosure and deprived of other feed. Next morning the hog was dead, and a post mortem examination revealed the tell-tale sprouts in the stomach as well as other internal evidence of cocklebur poisoning. Another victim was placed in the enclosure and within twenty-four hours it keeled over and died. We believe cocklebur sprout poisoning is an important proposition where hogs are raised, particularly when overflow land or ground soaked by heavy spring rains begins to dry, for it is then that the sprouts appear in dangerous quantities.



Learn the truth about Fertilizer

Commercial fertilizer is not magic. It is no substitute for work, or for farming brains. It will not make a successful farmer out of a shiftless, ignorant failure. Fertilizer varies in quality like corn or tobacco or cotton, and some brands are worth more than others. Good fertilizers, like Royster's reliable old mixtures, are a godsend to good farmers who learn how to best use them to make money

Nearly forty years experience enters into the making of the Royster mixtures, and hundreds of thousands of the country's best farmers pin their faith to this famous old brand.

For advice about the use of fertilizer, write to Farm Service Department.

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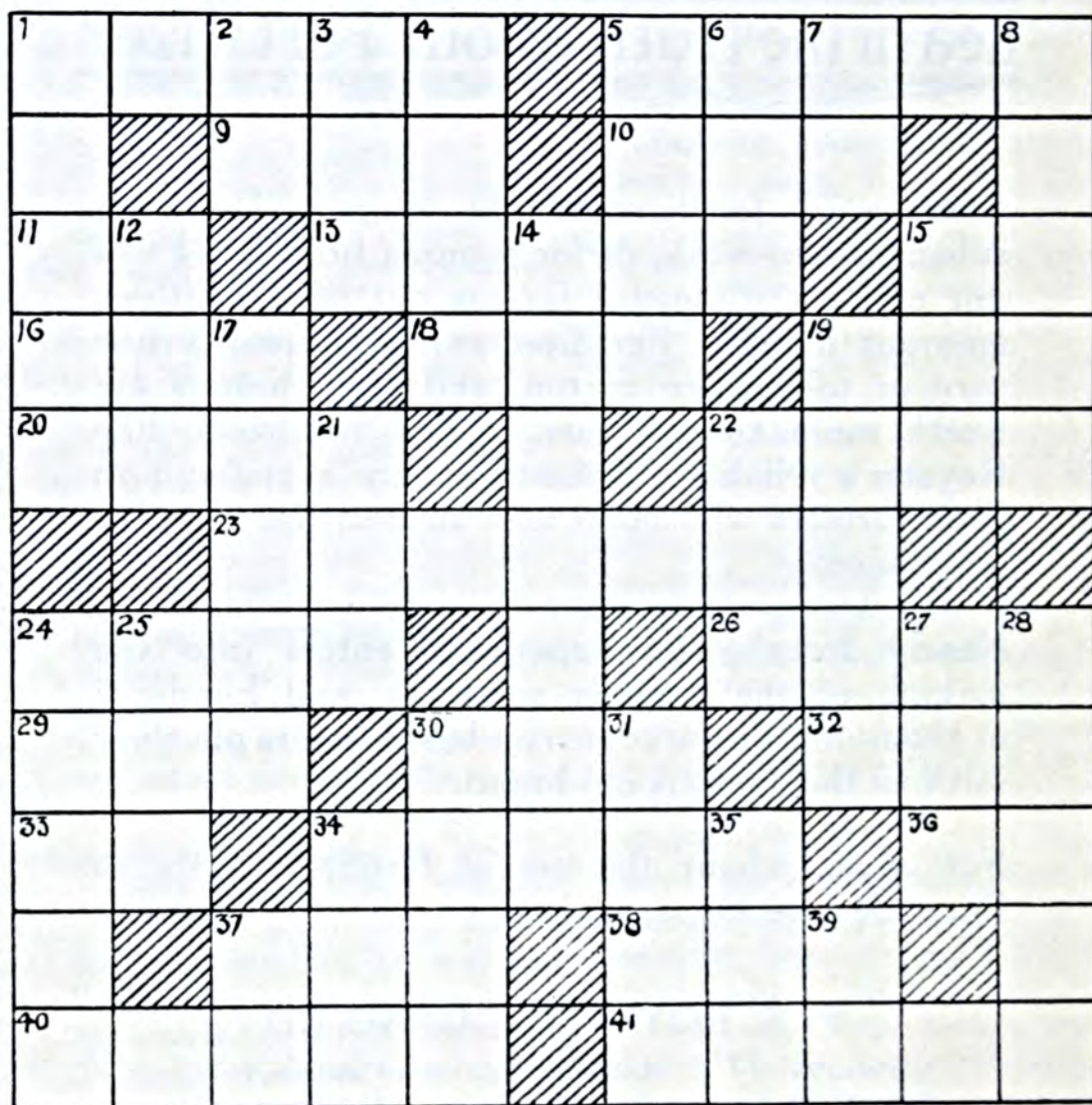
ROYSTER

Field Tested Fertilizers

A Good Beginning

By S. L. Kahn

This is a good design and the definitions are accurate and, for the most part easy, though you may have to consult your dictionary for one or two.



HORIZONTAL

- | | |
|--------------------------------------|----------------------|
| 1. a decree. | 18. faucet. |
| 5. title of rajah's wife. | 19. hurry (poet.) |
| 9. auditory organ. | 20. Paradise. |
| 10. residue. | 22. Xmas (old Eng.). |
| 11. prefix meaning apart, away from. | 23. kind of harp. |
| 13. rules, typical examples. | 24. a model. |
| 15. The capitol reserve (abbr.) | 26. importunes. |
| 16. a vessel. | 29. rested. |
| | 30. a wind. |

HORIZONTAL—Continued

- | | |
|--------------------------------|----------------------------------|
| 32. Asian ox. | 37. Friar's title. |
| 33. part of the verb to be. | 38. Scotch headdress. |
| 34. a musical wind instrument. | 40. an edible gastropod mollusk. |
| 36. Southern State (abbr.) | 41. a minute reproductive body. |

VERTICAL

- | | |
|--------------------------------|--|
| 1. to follow. | 21. born. |
| 2. that is (abbr.) | 22. catch suddenly. |
| 3. container. | 24. Emperors. |
| 4. horse's gait. | 25. variety of sweet potatoes. |
| 5. an inclined way. | 27. to choke with nausea. |
| 6. equine quadruped. | 28. denizen of the deep, a ray. |
| 7. New Eng. State (abbr.) | 30. of the mouth. |
| 8. to outdo. | 31. takes nourishment. |
| 12. shrew mouse. | 34. a term in non - Euclidean
Geometry. |
| 14. balustrade. | 35. short sleep. |
| 15. cease to exist. | 37. note of scale. |
| 17. left high and dry by tide. | 39. Southern State (abbr.) |
| 19. sweet sirup. | |



Are You a Cross Word Addict?

Some of our readers have submitted cross word puzzles to us for publication, so we are printing one of them this month to see how you like the idea.

If you want this department continued, write and tell me so. Better still, send me your solution of this month's puzzle by Feb. 22nd, and next month I will print the names of all who have solved it correctly together with the correct solution.

Designs for cross word puzzles will be welcome, especially on agricultural subjects. They should have not over one-sixth of the spaces black and as few unkeyed letters and abbreviations as possible. Puzzles accepted for publication will be paid for at the rate of \$5 each. Try your hand at this and send me the results.

Linked to the Past

(From page 4)

reduced and desirable traction increased.

Too late! We are linked to the past.

WHEN Henry Ford, Haynes, or whoever the world is willing to acclaim as the genius who first conceived the thought that a spring buggy could be made to navigate without disturbing Dobbins' peaceful slumber, when this genius took his secondhand carriage and installed an engine in it, he put it *under the seat*.

Of course, why not?

Later he moved it out in front, put a hood over it and the deed was done!

Every automobile since has copied the stunt. And you and I do not have to be engineers to see how foolish they all are—how hopelessly *they* are linked to the latter days of the 1890's.

The delicate radiator in front where it gets smashed every time two flivvers dispute the right of way. The motor as far from the rear axle as it can possibly be placed, unless it were hung out in front of the car, as Southern niggers hang corn before balky mules! The motor connected to the rear axle with a long drive shaft that makes owners swear and accessory dealers rich. The weight of the car handily placed in front where it hits the thank'-e-mam's first, and no weight on the back to lend traction and prevent skidding.

Of course, if you and I had never seen an automobile and were given a motor and chassis, we would put the motor *over* the rear axle, and parallel to it. The radiator we would probably incorporate as part of the top of our sedan—up where it is cool, and where it could not get smashed unless an eagle drop-

ped a frozen herring on it. And we would sit in front where we could see the road clearly and inhale the refreshing breezes uncontaminated with gas fumes, and talk without competing with a laboring motor. But it would look odd now. People are accustomed to the present design. Too late.

I COULD go on indefinitely drawing this word-picture—this canvas which portrays how men, sheeplike, leap the fences because a forgotten leader picked the spot. But all around you are better examples than the ones I have given—examples of processes that are linked to the past—processes which are pregnant with opportunities for all of us.

Dare to sever the links of the past in a constructive way; cultivate the wisdom and grit to "try something new"—and you invite success to your door.

Are you linked to the past? Wait! Think a few moments. What progress have you definitely planned for tomorrow—next week—next year?



Sweet Clover

(From page 9)

its proper growth. Inoculating material can be secured from commercial sources or by taking three or four hundred pounds of dirt from fields growing alfalfa or sweet clover and scattering it over each acre. Sweet clover does best when planted on a firm seed bed with just sufficient dirt to cover the seed. Do not attempt to grow sweet clover on soil that is sour.

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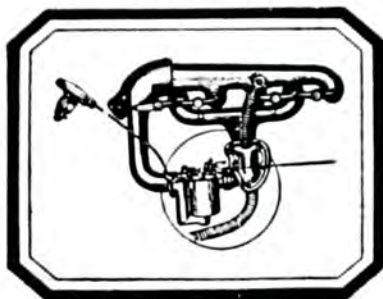
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The Harrow for the Fordson

THE FORDSON is the farmers most modern and dependable source of power. The Oliver FDH disc harrow converts this power into better seed bed preparation, easily accomplished.

So simple in construction, so easy to operate the Oliver FDH disc harrow fulfills practical farm requirements. With a powerful quick-acting screw control both the front and rear gangs are angled in one easy operation. It is not necessary to dismount from the tractor—there is no loss of time.

Extreme simplicity of construction is made possible by improved design. All of the gangs are independent in action giving the flexibility necessary for proper discing.

The Oliver method of hitching the draw bars is very advantageous. There is a natural downward pull on the cutting edges of the discs, which are pulled into the ground rather than pushed in by extra weight.

As for the work of the disc itself—we ask that you see it and compare it with your own idea of quality discing.

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