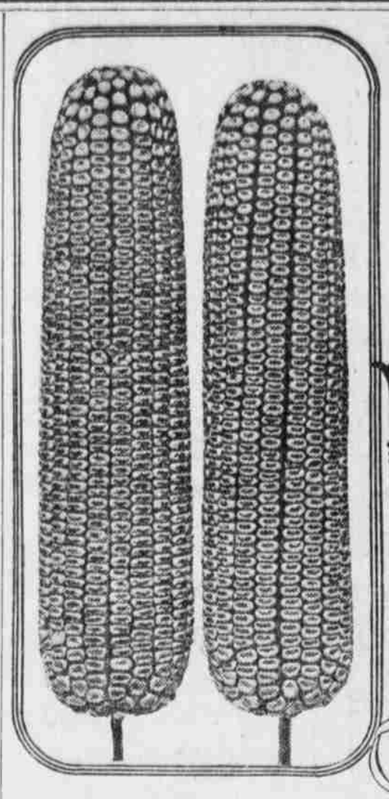


IMPROVING THE CORN CROP

by HORACE MARKLEY

CORN READY FOR THE HARVEST

IT IS surely an amazing fact that the corn crop of the states should average year after year only about 30 bushels to the acre. The acreage planted is increased by millions from year to year; vast areas of virgin territory are constantly being brought under cultivation; it is a matter of record that many farmers raise 100, 200, some as high as 300 bushels to the acre, yet the average for the entire crop is never increased.

Is it likely that there is anything wrong with the government figures? I do not think so. There is as much care given as is possible to insure accuracy, and I dare say that many farmers, even if they raise more than 30 bushels to the acre, will feel satisfied that the figures are correct from his knowledge of what the average yield is in his district.

The farms are tilled by a pretty good type of farmer, on the whole, hard working and intelligent. The best that we have been able to produce of the true American, and for the most part the best of the sturdy sons of the soil from many foreign lands. We have a national department of agriculture that has been the envy and the copy of the world, which is in a sense a farmers' university, and the sole aim and purpose of which has been, and is, to make better farmers. For a generation or more it has striven by study, experiment and printers' ink lavishly disseminated, to educate the farmer and bring him to a higher level as an efficient tiller of the soil. Through the work of its many professors it has presumably told the farmer much about seeds and soils and methods of cultivation, and of protection from insect pests, an infinite variety of details about the vital facts concerning his business, yet the result remains the same, so far as corn is concerned, year after year—30 bushels to the acre.

In almost every state in the Union there is now, and has long been, an agricultural experiment station, working in co-operation with the federal department of agriculture and hand in hand with the farmers of the state, to educate him. The stations are equipped with professors and experts, many of them of the highest authority in the land, vast tracts are under experimental cultivation, they have been planning, working, testing soils and seeds, fertilizers, to aid the farmer in the exercise of economy and the growing of better crops. The net results of their labors they are constantly disseminating by means of lectures, correspondence and bulletins, free, for all who would profit by such—yet the net result after all these years is an average of 30 bushels to the acre for corn.

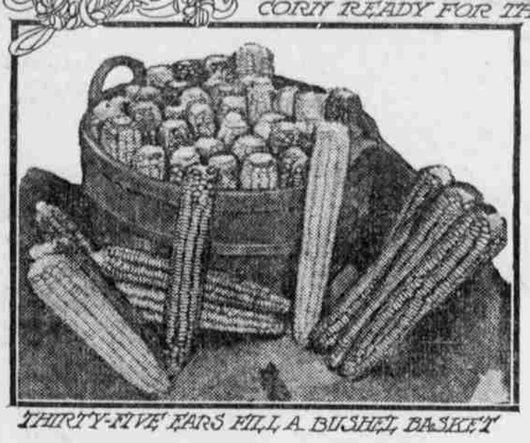
The agricultural colleges have gone even farther than this. In many instances they have not been content to work and lecture and print the results of their labors for the benefit of progressive farmers; they have been militant in their work, have instituted campaigns of education by sending out some of the professors on special trains, right in the heart of farming districts, and giving the farmer heart to heart talks and object lessons in better farming methods; telling him about soils, methods of cultivation, seed selection, inviting him freely to ask questions, to the end that he may become a more enthusiastic worker and raise better crops. Although this has been going on for years and beyond question many have profited by it, yet the average yield of corn the past year was just the same—30 bushels.

Is it possible that the present type of farmer has reached the limit of his capacity to improve? It may be so. At any rate, besides all this there is an agricultural press, of vast proportions throughout the states, working to educate the farmer and keep him posted on everything that may be of help to him in his business. Many farmers take several such publications. Then again, the tools that are available to the farmer for his work are far superior to what they have been in the past, and are improved every year. Is it possible that the farmer is not as a class taking advantage of the best tools for his work?

What is the first thing to be done in the growing of better corn crops? I think, in seed selection. There is nothing startling or original in this, I admit; it is the doctrine that has long been preached, but I would simply add my testimony from the results of my experiments with the hope that it may lead others to try along the same lines. There is nothing difficult about it, there is certainly nothing costly; it amounts to simply a little more thorough and intelligent heart interest in one's labor.

To secure a corn that will yield tenfold what he has been accustomed to getting the farmer must breed for results. He has got to improve the corn in the same way that he would raise the standard of his stock or his flocks. And once he has secured a type of corn that shows increased productiveness, he must try to keep it pure, avoid inbreeding and maintain its stamina, with the same watchfulness and care that all breeding demands.

It does not require a scientific education to grow more and better corn, or better crops of any kind. It does require brains. One of the first things to be done is to get out of the slipshod ways of working. Corn, especially, is one of the most abused crops of the farm. Because it will grow and give some returns with a lot of neglect—it gets it.



THIRTY-FIVE EARS FILL A BUSHEL BASKET

In no one respect is the average farmer more careless than in his choice of seed, and this may be said to be the prime essential. The farmer is plowing, manuring, performing all the operations from planting time to harvest, year after year, and with some of these he takes considerable pride; for instance, I know farmers who are perfect plowmen; they know it and are proud of their skill, but these same farmers are hidebound in an old custom of throwing their corn in their crib just as it is husked, and when they want seed in the springtime they go to the crib and pick out sufficient likely ears from what are left to meet their needs, and let it go at that.

It is an enigma how a man can be so skilled as a workman in many respects, and yet absolutely inert to one of the most vital phases of securing perfection in that work. It needs no argument, for it has been demonstrated over and over again that the breeding of plants can be followed with as much certainty as to results as the breeding of animals. Then why not do it? The only added equipment which nine out of ten require is the exercise of more intelligent care and precision in some of the details.

It seems strange, but it is nevertheless a fact, that most farmers are aware of what may be done in plant breeding, and know the general principles, but they will not wake up to a practice of them in their own interests.

If we are to increase the corn yield we have got to get it in the breed. It is not in the soil, or fertilizer, or the weather, or in any other factor, important though each may be. The first essential is to breed up corn for points with the same care given to animals or fowls. Type, quality, stamina, productiveness, etc., must be known, must be sought for and improved with each season. It is not enough to pick out perfect ears or such as may be attractive at harvest time. It is necessary that one shall know the plant that produced the ear, and all the conditions of its growth and environment.

There are many mysteries to be solved in this question of seed selection with the view to breeding up a more productive type of corn. My own experiments in this direction will indicate some of the difficulties to be met with. In husking the corn in the fall I came across just one stalk containing two ears. It was the first I had ever met with, though upon inquiry I find that farmers do frequently come across such two-eared stalks, though they never pay any attention to them, but throw them in the crib with the others.

It occurred to me, however, that it would be well to plant from these two ears and endeavor to raise a two-eared crop. One ear was of good size and the other about two-thirds as big. Weighing them, the large one weighed 14 ounces and the small one 9½ ounces. The large ear was an average ear such as every stalk carried. Thus this particular plant gave 9½ ounces more than any other plant. This gain would mean almost a ton more to the acre if the corn could be bred to yield two ears. It would mean even more if the two ears could be made to attain a good size instead of one being large and one small, as in this case.

The corn was of a variety called yellow flint, obtained originally of a nearby farmer. From these two ears I selected 630 kernels, discarding the butts and tips. The field in which this was planted was fall plowed and dressed during the winter with a liberal application of a high quality of stable manure, as I keep such in a cement-bottomed pit. The two-eared seed was planted at one end of the main corn field. It should of course have had a separate plot, and it may be that the tendency to revert to one ear was due in part to its contiguity to the ordinary corn.

The 630 kernels made 210 hills. Fourteen failed to come up, probably being eaten by worms or mice. The germination showed very strong vitality. However, of the 616 stalks, all from the two-eared seed, only 136 stalks produced a double ear. About one-fifth.

Another interesting point, showing clearly the tendency to reversion to remote ancestors, is found in the fact that while the two-ear seed were of 12 rows about 75 per cent of the yield was of one eight-rowed cobs. Although this variety of flint corn will show frequent ears of 12 and 14 rows, it may be considered properly an eight-rowed type of corn. Thus we see that after throwing the sport of a two-eared stalk, there is not sufficient stamina in all the seeds to reproduce like the parent. The corn reverted not only to the one-eared but to the eight-rowed type.

This is one of the mysteries that will have to be solved, no doubt, before a highly productive two-eared type of corn can be raised with the qualities of the parent so fixed that it can be relied upon to maintain a big average yield. It may be due to a weakness of inbreeding.

Some of the ears weighed over a pound each, making over two pounds to the stalk. If this could be averaged for an entire corn field it would yield over ten tons to the acre.

Such may seem an exaggeration or an impossibility, but it is so only in comparison with what we have been accustomed to. Even if by judicious selection of two-eared seed each year still the type could not be fixed so as to produce even yields of the maximum amount, yet if it gave an increase of 20 per cent, as it did in my experiment, the return would be a big one for what is involved. It does not imply added cost in the production, but only a greater care and interest in one's work.

Another thing to be kept in mind in breeding up a type of corn for higher productiveness is that the number of kernels to the ear and their size has an important bearing on the yield of grain.

A corn expert once figured out that if the productiveness of corn could be increased by only one kernel to each ear, on the entire crop it would mean a gain of 50 tons of grain! Even though the figures be not absolute, there is no gainsaying that the increase of yield would be a very big amount in the aggregate. The point is made very clear in the accompanying photographs, which show eight, ten and twelve-rowed ears of corn. Each ear was exactly the same in weight, being 11 ounces each. The eight-rowed ear gave seven ounces of grain, and had a cob weighing four ounces; the ten-rowed ear weighed up eight ounces of grain and had a three-ounce cob; the twelve-rowed ear gave eight and one-half ounces of grain. A difference of an ounce and a half to the ear of actual grain is an appreciable gain worth striving for. But that does not mean that such is the limit of the gain to be obtained. It would be quite within reason to obtain tenfold that increase.

The chief requisites to substantial progress in the growing of a more productive corn must be the skill and judgment of the worker. The first essential is no doubt seed selection, but this does not merely mean the picking out of the best looking ears at harvest time or in the husking. It is necessary that the grower shall watch the corn from the first start of the seed and through the growing.

Vigor, productiveness and early ripening should be noted, not merely in the mind, but in a book, and the stalks should be marked so that they can be identified at any time. My method is to snip out little bits of tin; punch a hole through them at one side and put a bit of thin wire through and twist this loosely about the stalk when marking it. On the tin I scratch a number with a sharp awl. There is not likely to occur any accident that can destroy this tag or erase the figures.

A LEARNER.

"Is your new cook willing to learn?" asked the visitor.

"Yes," replied the weary housewife. "She has already learned to embroider, and I think if she stays a few months longer she will know how to play the piano."

SIGNIFICANT.

"Don't say you don't believe in signs any more. There's Marie gone to Europe, and now she can't get back."

"What have signs to do with that?"

"Well, she would insist on traveling there in a maroon suit."

OUT AND OUT.

Bill—How long was the jury out?
Jill—Just two hours.
"And how did you come out?"
"Just forty dollars."

BADGES TELL OF WAR DEATHS

One Has Been Received in This Country From France—They Are on Varicolored Silk.

Families of soldiers killed on European battlefields have adopted a novel device to notify relatives and friends of their death. It is in the form of a silken badge, which is at once a death announcement and a plea for prayers for the repose of the souls of soldier dead.

One of the badges was received in this city by Harry Jacques, 2806 North Sixth street, a brother-in-law of a former Philadelphian, who fell in the fighting in France, says the Philadelphia North American.

The badge is seven inches long and two inches wide, fringed at both ends and made in varicolored silks.

James Doherty, the dead man, was a resident of this city until last July, when he left for England with his wife and six children. When the war began he enlisted in the Irish Guards. The badge was the first notice that his relatives in this city had received of his death on the battlefield of Mons.

Doherty, according to his brother-in-law, fought all through the Boer war, serving there for three years and four months and never getting so much as a scratch.

Hold School for One Family.

It's not every family that can have a school all of its own, but the family of August Bambach of Oakland, Cal., is an exceptional one, and he is entitled to a school of his own, if anyone is.

The Lone Tree school, one of the old log school houses of the wheat days, has been closed for some years for lack of pupils. Bambach moved into that particular district and brought along his wife and 11 children. Eight of them are of school age, and the directors immediately began to get busy in their search for a teacher. They found one and opened the school for the benefit of the Bambach family.

HOME TOWN HELPS

MAKING WAR ON BILLBOARD

American Civic Association Regards It as Objectionable Form of Advertising.

From its very institution, the American Civic association has devoted itself to the protection of the public against three great nuisances—smoke, poles and wires, and billboards. At the annual convention of the association in Washington one of the important subjects discussed was billboards, with a principal address, entitled "The Passing of the Signboard," by Jesse Lee Bennett of Baltimore in which he recounted the steps that had been taken for the legal control of the billboard in all parts of the United States.

Concerning the sentiment against the billboard, Mr. Bennett said: "The feeling against the signboard has become nation-wide and in the past few years the agitation of civic organizations has been so successful as to awaken resentment against it so widespread that, from coast to coast and in almost every state and city, there are now, or have been, vigorous movements seeking the abolition or regulation of these unnecessary and disfiguring objects.

"There has been much agitation, and from it there has been distilled one thing—the recognition of the fact that what is called the signboard problem is a question more complex than the mere removal of the signs. The signboard has been found to be inextricably intertwined with two questions of even greater importance—The awakening of civic sentiment and the recognition by legislators and judges of the validity of arguments based upon esthetic considerations."

Commenting on what ought to be the attitude of the law and the courts toward the billboard, he added:

"It would take our psychologist but a few minutes to show that it is not a question of ear, or nose, or eye, but a question of the brain and of the very consciousness that is life itself. No law should permit any man to intrude or force himself or his business into another man's consciousness to the extent that outdoor advertising has come to permit, an intrusion immeasurably increased by the fact that it is impossible to avoid seeing signboards."

SERVED A DOUBLE PURPOSE

Scheme of New York Man Improved Appearance of Garden and Protected Birds.

Bird lovers often find it a most difficult problem to devise means to prevent neighborhood cats from frightening away their feathered pets and robbing the nests of their young. A New York man who makes his garden an aviary, and who at the same time is not a hater of cats, planted climbing-rose vines about the base of the poles supporting his bird houses. While these added greatly to the appearance of the garden, they also served very efficiently in keeping cats from crawling up the posts. The birds, understanding their security, were no longer frightened from their nests.—Popular Mechanics.

Combination of Property Owners.

A general maintenance tax of two mills per square foot, which amounts to $4 per year on a lot 20 by 100 feet, besides the regular city tax, must be paid by lot owners in a section of Philadelphia. This special assessment is for the upkeep of the property, and is applied towards the cost of garbage collection, snow cleaning, lighting, maintaining the park and sewerage system, replanting trees and shrubbery, cleaning vacant lots, and repairing streets and sidewalks. The fund is administered by a company and assures the lot owner that all repairs in streets and sidewalks will be promptly made when needed, and will not be subject to the idiosyncrasies of private ownership or the slow methods of municipal departments.

Paint Your Residence.

If your residence needs painting or repairing now is the time to have the work done. In the first place you will get the labor much cheaper and in the next place you will aid those who need work. If it is true that we are bordering on prosperous times it will not be many months until labor will cost much more than now, so there is a double saving—the house will be saved injury and the owner dollars. It will pay you to look into this matter.—Abilene(Tex.) Reporter.

To Clean Copper.

Copper articles that have become discolored can be made to look new again by rubbing them with lemon dipped in salt and afterward rinsing in clear hot water and polishing with a soft cloth.

Miniature Cattle.

The smallest cows in the world are found in the Samoan islands. The average weight does not exceed 150 pounds, while the bulls weigh about 200 pounds. They are about the size of a Merino sheep.