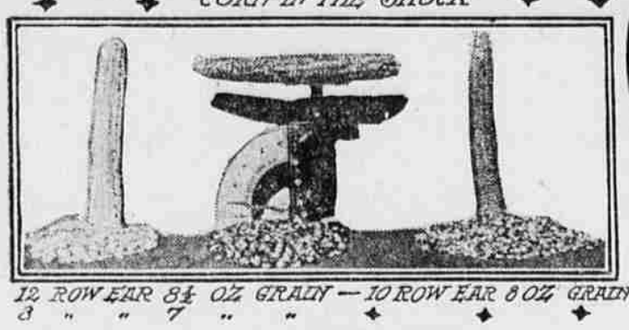
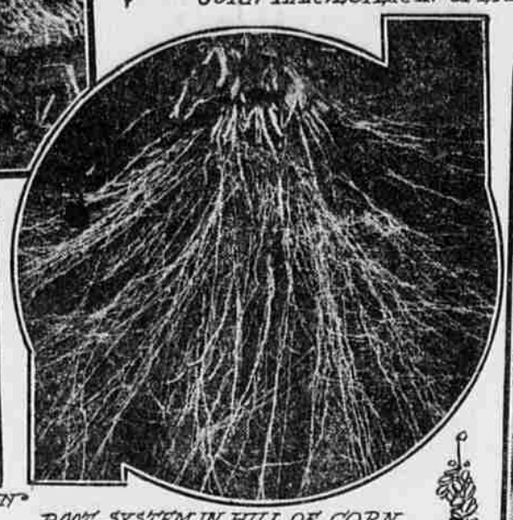
IMPROVING the CORN CROP

CORN HARVESTER IN OPERATION

CORN IN THE SHOCK



12 ROW EAR 8¼ OZ GRAIN — 10 ROW EAR 8 OZ GRAIN
8 " " 7 " "



ROOT SYSTEM IN HILL OF CORN

GOOD EARS ON EACH STALK AND THREE STALKS IN EACH HILL

35 EARS FILL A BUSHEL BASKET

By HORACE MARKLEY.

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 daresay 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 fairly 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 farmer's 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 printer's 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—thirty 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 and 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, and 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, and correspondence, and bulletins, free, for all who would avail of such—yet the net result after all these years is an average of 30 bushels to the acre for corn

The agriculturale colleges have gone even further than this. They have in many instances 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 them 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 for 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 farmers 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 slip-shod 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.

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 knew it and are proud of their skill, but these same farmers are hide-bound 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 the fertilizer, or the weather, nor 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 of 1908 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 those two ears and endeavor to raise a two-eared type. 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 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 near-by 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-seed ears 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 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 clearly 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 8½ 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 requisite 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 either 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.

Buckeye Notes

Sandusky, O. — H. E. Welsh of Oberlin was awarded a silver mounted vase by the Ohio-Michigan Photographers' association at Cedar Point for the best portrait submitted by a photographer in business not more than five years. The trophy was donated by Juan C. Abel of Cleveland. N. L. Brock of Asheville, N. C., received $200 in gold for the best portrait entered, and Newton Sayles of Chicago $50 in gold for the second best.

The pictures were entered in an art exhibit that featured the photographers' tenth annual convention.

Cincinnati, O. — Clara Bosken, divorced wife of Patrolman Peter Schalled, killed in a lonely residential district of this city, was formally charged with the murder. The formal charge followed a statement made by Miss Bosken while she was in a hysterical condition. She said: "I shot him! He made a fool of me for 10 years."

Springfield, O.—Scores of passengers were badly shaken up here when a Big Four passenger train on the Sandusky division crashed into a long string of empty passenger coaches just within the city limits.

Sandusky, O. — Barden Deyo, Castalia farmer, was found dead on the grave of his wife in the cemetery at Castalia. Mrs. Deyo died 10 years ago. Heart failure is supposed to have caused Deyo's death.

Massillon, O. — General J. S. Coxey's monthly paper, Coxey's Highway, devoted to the cause of good roads and the interests of Coxey's proposed referendum election on the question of a state bond issue of $100,000,000 to build paved highways in Ohio, suspended publication Friday, according to Editor Henry Vincent.

Sandusky, O. — The commission elected to draft a charter for city manager government has declared City Solicitor George C. Steinemann chairman, Conrad C. Bittner vice chairman, Dr. Chester B. Bliss secretary and Dr. George P. Maxwell treasurer.

Steubenville.—Sold by her husband for $1, Mrs. John Greer would not stay sold, she testified in court. Hubby was given a suspended sentence by Justice Henry Tawbs.

Wooster. — Newark and Middletown boosters worked hard for next year's convention of Ohio's rural letter carriers at the closing day of the convention here. Newark won.

P. J. Powers of Gibsonburg was re-elected president, Levi Hoy of Wauseon re-elected vice president, and T. J. Parker of Cambridge re-elected treasurer. R. A. Radcliffe of Kenton was elected secretary. D. E. Bowers of Creston was named delegate at large to the national convention. The carriers passed resolutions endorsing woman's suffrage and named a committee to work for better roads in Ohio. More than 500 delegates attended the convention.

Marietta. — Dr. J. W. Boebout of Dexter City, a few miles east of this place, probably will lose the sight of both eyes as a result of the explosion of a bottle of chloroform. Dr. Boebout was experimenting with the chemical when the explosion occurred, filling his face with broken glass, several of the pieces entering his eyes.

East Liverpool. — Ex-Chief E. J. Lamson of Garrettsville was elected president of the Ohio Firemen's association, succeeding George Knofflock of Mansfield, not a candidate for re-election. Other officers are: Vice president, Thomas Gough, Conneaut; S. P. Pond, De Graff; H. P. Morton, Columbus; William W. Ebb, East Liverpool; secretary, D. K. Moser, Warren; treasurer, George Kniseley, New Philadelphia. The 1914 convention will be held in Mansfield.

Steubenville. — Patrick Ward, policeman, hurled himself in front of a fast Wheeling & Lake Erie train, saving the life of Minnie Simko, 6. As the engine was almost upon the child Ward was seen flying across the tracks in front of it. He swept the child out of danger, missing death by only a fraction.

Shelby.—Carl L. Wilcox, brought here from Denver on a charge of embezzling $500 from the Wells Fargo Express Co., was committed to the county jail at Mansfield under $1,000 bond which his father and relatives at Zanesville refused to sign.

Fostoria. — John Hoffman, fifty-five, of Alvada, was cut in two by a Lake Erie & Western train. He was sitting on the Hocking Valley platform, with his head on his hands and his feet beside the rail. The steps of the smoking car knocked him under the wheels. He was a farmer.

Lorain.—About seven hundred members of Lorain County grange attended the annual outing at Glen's beach, this city, Thursday. Many were present from neighboring counties. A feature of the afternoon was the address of J. L. Taber on "Agricultural Progress and the Value of Farm Organization."

Lima, O. — Dr. C. A. Black, physician and Lima society man, was married to Miss Marguerite Thompson, a Lima society girl, at Put-in-Bay as he lay upon his sick bed. His brother, Dr. H. T. Black, lifted the younger man's head from his pillow as the marriage vows were plighted. The young physician then sank back to his bed and is in a critical condition. He was brought to this city.

Toledo, O. — One man was killed, another perhaps fatally injured and a boy also fatally hurt when a Pere Marquette passenger train struck them near Erie, Mich.

Still, a woman's vanity isn't in it with a man's conceit.

Mrs. Winslow's Soothing Syrup for Children teething, softens the gums, reduces inflammation, allays pain, cures wind colic. 25c a bottle.

Speech may sometimes be enigmatic, but silence keeps more people guessing.

Burning Question.

Knicker—Experience is the best teacher.

Bocker—Is she married?—New York Sun.

His Views.

"Do you eat the same kind of grub you feed the summer boarders?"

"I do," answered Farmer Whiffletree.

"A farmer's life is a hard one, ain't it?" responded the city man.

Knife Not Used.

"How did you happen to have Old Man Longwind on the program at your informal banquet?"

"Well, he wasn't on the program, but somebody who was on couldn't come, so the old guy was asked to fill in."

"What did he do?"

"Not a thing but arise and speak for forty minutes."

"Gee! Did he have his speech all cut and dried?"

"No—it was only dried!"—Cleveland Plain Dealer.

WOMAN TOOK FRIEND'S ADVICE

And Found Health in Lydia E. Pinkham's Vegetable Compound.

Windom, Kansas.—"I had a displacement which caused bladder trouble and I was so miserable I didn't know what to do. I suffered from bearing down pains, my eyes hurt me, I was nervous, dizzy and irregular and had female weakness. I spent money on doctors but got worse all the time.

"A friend told me about the Pinkham remedies and I took Lydia E. Pinkham's Vegetable Compound and was cured. I cannot praise your remedies enough for I know I never would have been well if I had not taken it."—Miss MARY A. HORNER, Route No. 2, Box 41, Windom, Kansas.

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This famous remedy, the medicinal ingredients of which are derived from native roots and herbs, has for nearly forty years proved to be a most valuable tonic and invigorator of the female organism. Women everywhere bear willing testimony to the wonderful virtue of Lydia E. Pinkham's Vegetable Compound.

If you want special advice write to Lydia E. Pinkham Medicine Co. (confidential) Lynn, Mass. Your letter will be opened, read and answered by a woman and held in strict confidence.

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SMALL PILL, SMALL DOSE, SMALL PRICE.

Genuine must bear Signature

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