GRANGE.

A Paper Read Before Pomona Grange at Orson by W. H. Bullock.

Corn culture, saving the seed, testing, etc.—Indian corn or maize is a native of America. It was not known to Europe, Asia or Africa before the discovery of America. When the white man came to this country he found the Indian using corn for this reason; it was called Indian corn and the best evidence at hand seems to 'point to Central America as the original home of Indian corn.

It was found in the mounds of the Mound Builders, a race of people who inhabited America prior to the Indians and in the Smithsonian Institute at Washington may be seen specimens of corn taken from the tombs of ancients. One specimen of corn was found twelve feet under ground in a jar buried in a grave with a mummy. Corn, like wheat and oats, belong to the grass family, is an annus but unlike most other grasses produces its grain on one or more shoots from the joints, on the side of the stalk.

There are six classes or races of corn: Pop corn, Sweet corn, Pod corn, Flower corn, Flint corn, and Dent corn. The pop corns are generally smaller than the fields corns, have many suckers and the kernels are small, hard and flinty. The characteristics of the Sweet corns are less starchy and more sugar than in other kinds, and it also remains in the "doughy or roasting ear," stage much longer, and the kernels are very much wrinkled when thoroughly matured or ripened. They are especially valuable for canning, boiling and roasting, and some of the varieties, like Stowell's Evergreen, are much used for fodder. Pod corn or husk corn is of no special value as a field crop, being grown merely as a curiosity. Each kernel is enclosed in a husk. Flower corn, the kernel is shaped like those of the first varieties, but unlike them, in that the entire kernel, except the germ, is made up of soft, starchy or flowery appearing material, and it has been frequently used to adulterate wheat flower. The flint varieties are smaller and earlier than the dent varieties and are grown in those sections or states north of what is known as the corn belt. The Dent corn, practically all of the corn produced in the great "Corn Belt" of the United States belong to this class. There are many varieties differing widely in color, size and time of maturity.

The increase in yield and extension of the acres planted in this strictly American crop have kept place with the rapid and wonderful growth of our country. Corn is king of the cereals and the most important crop of American agriculture. It is the back bone of farming in this country. Live stock of every kind are fed upon rations, into which it largely enters, both here and abroad, and it is claimed that it feeds more human beings than any other grain except rice. It grows in almost every section of America. There is no one best method suited to all sections or to the different soils of a section nor even to the different fields of the same farm. Frequently two very different methods may give equally good results. There are no fixed rules that may be followed blindly, for the growing of corn, any more than in other farm work. Have good ground, do the work on time and do it thoroughly, should be the motto.

It was but a few years ago that the farms of the corn belt were broken from the virgin soil, and that because they have been able to crop the ground continuously for the past, is no assurance that they may continue to do so with profit in the future. The fact is that the time is near at hand when we must give greater attention to the fertility of the soil, to the conserving and restoring of the elements of plant food or we shall soon be compelled to pay millions of dollars for these elements, in the form of commercial fertilizers. Fall plowing for corn. There seems to be a great diversity of opinion regarding the merits of fall and spring plowing, even in the same neighborhood, among the advantages of fall plowing are the following:

1. Having the ground already plowed in the spring, gives us time to better prepare the ground, and what is of equal importance to get our corn in on time.

2. A better prepared and a warmer seed bed and consequently a better stand of corn.

3. Less danger from insect enemies and especially in the case of sod ground.

4. Many weed seeds in the ground will germinate and will be killed by the fall freezes, especially in this true where the ground has been plowed early in the fall.

Some disadvantages of fall plowing are:

1. Occasional losses from blowing and washing on rolling ground.

2. Unless the land is harrowed early in the spring there is a loss of moisture and consequently firing of the corn during the latter part of July and August, especially in a dry season.

3. Spring plowing does not give as good an opportunity to spread manure during the fall and winter. The mistake is commonly made by leaving the fall plowed ground without cultivating until time to plant. The ground has become packed by snow and rain and should be harrowed as soon as possible. This will conserve the moisture and lessen the firing of corn in July and August, so common to fall plowing. Ground that is very rolling and likely to wash should not be plowed in the fall. We should bear in mind that one of the most serious losses of the corn crop every year is due to late planting. Experiments show that late planted corn seldom yields as much as that planted earlier and the quality is inferior. The ground becomes hard and out of condition, the weeds have drawn upon the moisture and available plant food, the crop comes to the dry spell in a more critical stage, the proportion of barren stalks is greater and it matures more slowly, contains more water and is much more likely to be caught by the frost. Every year thousands of farmers lose heavily from late planting, many of these are good farmers and are unexpectedly delayed with spring work by a combination of bad weather, scarcity of help, etc. Too deep planting is especially bad when the seed is weak, or the spring is cold and backward. There were several cases reported last spring here the seed from the same sack in different fields giving good stands in one and poor in the other. Investigation showed that the poor stand was due to deep planting. Corn is generally planted deeper than we suppose. The planter wheels frequently sink into the earth about two inches and the corn is covered another two inches, the planter tracks become filled in and the corn is about four inches deep.

We often watch the planter for a few rounds then pay slight attention to the depth of planting. The soil is mellower as we get away from the headland and consequently the corn is planted deeper than we supposed. On the other hand there is no more serious mistake than shallow planting in lumpy dry soil. The moisture is not sufficient for rapid germination, the seed soaks up slowly, comes up unevenly with a large per cent. of sickly plants. Cultivation should be level and frequent when the corn is small. It may be deep at first but it must be shallow later. Methods of course will vary greatly with local conditions, but there are some things of importance that are often overlooked. Many assume that there is nothing more to do after the corn is planted for two weeks or until it is up and large enough for the first cultivation. Where ground is left two weeks or longer it becomes packed and foul with weeds which take up the moisture and plant food and also make it different to work the corn. It is important that the corn should not become stunted when young as it never fully recovers, even under the most favorable conditions.

We should keep a good mellow lively tilth until the corn shades the ground. The time to kill weeds is before they come up and before they have deprived the corn of moisture and nourishment. Where it is possible to do so, it is a good plan to work the ground once before it comes up.

The preparation of the seed. For planting poor seed means a poor stand with missing hills and missing stalks; it also means wasted land and wasted labor. It is estimated that the average yield in the U. S. is less than twenty-five bushels per acre, yet there are hundreds and thousands of farmers who produce sixty, seventy, eighty, and even ninety bushels per acre. An instance is recorded where one man raised over seventy bushels per acre when a neighbor on an adjoining farm raised less than twenty, yet the land values were the same and the labor required to raise the twenty bushels was as great as to produce the seventy bushels. If one man can produce sixty and seventy bushels per acre, the other man can do it also and must do it if we are to achieve our agricultural possibilities.

In the corn belt it is customary to plant in hills 3½ feet apart each way, three kernels in each hill, thus making 3,553 hills to the acre or 10,668 stalks, if each kernel grows. If two stalks in each hill bore nothing but the other grows a small ear weighing only eight ounces (140) ears in the bushel, we would then have five bushels per acre or more than the average of the United States.

A good stand of corn and every stalk producing just a medium ear will give a yield, it is estimated, of from 50 to 80 bushels per acre. Then why are we not getting it? Because there are so many missing hills and one stalk hills, hills that are producing nothing or only half what they should and because there are many thousands of stalks that are barren, producing no ears. Poor seed is another serious drawback and is more responsible for a poor stand and the weak stalks than all other causes put together. Strong germination is necessary, it is quite generally supposed that if the seed sprouts in the spring it is all right, while much of it has often been so weakened that it will not grow, especially if the ground is cold or the seed planted too deep or if it it gives only a weak stalk.

The fact is that poor seed costs the United States many millions bushels of corn annually. Few people realize how great is the loss each each year and we cannot afford to be too careless with our seed corn. During the last three years, many thousands samples of seed corn have been sent to the experiment station in Ohio to be tested. These samples came from every section of the state and were made up in each case of 200 kernels taken from 100 ears, thus giving a representative of each man's seed. These samples were given a careful examination test. This large number of tests show that an average of 17 per cent. was dead, that is, either the stem or root sprouts or both failed to grow, and that an additional 19 per cent. was low in vitality and unfit to plant, leaving only 64 per cent. of good steed. If every person interested in growing corn could have seen the germination tests of these thousands of samples of corn, it would not be necessary to appeal to you for the testing of six kernels of corn from each ear intended for planting. **How to make the germination test.**—Use a box 4 or 5 inches deep and about 2 by 3 ft. in size, fill the box about half full of saw dust or moist earth, packed down firmly so that it will leave a smooth, even surface. In case saw dust is used, it should be placed in a sack, then placed in a tub of water for half an hour so that it will be thoroughly moistened before using.

Take a piece of white cloth about the size of the box, rule it off checker fashion one and one-half inches each way, number the checks, 1, 2, 3, etc., and place it on the sawdust in the box and tack it on the box in the corners and edges sufficiently to hold it to its place. Lay out the ears of corn to be tested side by side on the floor in rows, and drive two nails at the ends of the rows to hold the ears in place, remove one kernel from near the butt, another from the middle and a third from the tip of the ear; turn the ear over and remove three kernels from the opposite side in like manner, making six kernels in all, thus securing a representative sample from the entire ear Place the six kernels at the end of the ear from which they were taken. Use care that the kernels do not become mixed with the kernels from the ear next to it. After the kernels are removed, boards may be laid over the rows of corn to keep the ears in place until the germination is known. Place the kernels from ear of corn No. 1 in square No. 1 of the germination box, from ear No. 2 in square No. 2 and so on with the kernels from all of the ears; then place over this a cloth considerably larger than the box, cover with about two inches of moist sand, dirt or sawdust and keep in a warm place. In about eight or nine days, when the stem sprouts from the most vigorous kernels are about two or three inches long, the covering should be removed, care should be taken not to displace the kernels. (A cloth spread over the kernels before the covering is put on will prevent the kernels from sticking to the upper cover). Now take a thorough study of the six kernels in each square in the germination box and carefully note those which either failed to grow or are weak, showing low vitality. Do not fail to throw out all such as these. If the condition are unfavorable, they will fail to grow, or growing will produce only weak stalks, and bearing nothing or only small inferior ears. But this does not, by any means, measure the damage done by these inferior stalks. They produce millions of grains of pollen to drift over the field to fertilize the silks of ears on vigorous stalks, thus continuing their worthlessness from generation to generation. If six kernels from every ear intended for planting on every farm in the United States were tested in a germination box and all the weak ones discarded it would add millions of bushels to the crop of the United States annually. There is no one thing that costs so little and would add so much to the profits of the farmer. There is no good reason why every ear should not be tested. **Harvesting and storing seed corn.** In every ear of corn intended for planting next spring was harvested this fall, not later than the middle of October, and hung up in the attic where it could dry thoroughly before the bitter cold freezes of November or December, millions of dollars would be added to the value of the next year's corn crop. While there are many who exercise great care in the harvesting and storing of the seed corn, yet we must all agree that the majority have become extremely careless, often depending upon occasional good care found throughout the entire husking season for seed, and in thousands of cases the seed for planting in the spring, is simply selected from the crib. There must be a tremendous waking up to the importance of the better care of seed corn, especially in the corn states.

We have Arbor Day and it is all right. Would it not also be well to have a Corn Harvest Day? A day when every one should begin the harvesting and storing of his seed for the following spring.

The people of the United States at the beginning of the twentieth century are just waking us to the fact that King Corn has recently taken possession of the country. In 1906 it represented a value of $1,120,000,000 or more than the combined values of cotton and wheat. In the center of the corn belt, the value of corn exceeds that of all crops combined. Last year (1908) the corn crop was estimated at 2,600,000,000 bushels. No other crop exerts so great an influence over the destines of the enterprise of man. It is a new crop, only a few years from the hands of the Indians, when a few hills were planted and the entire crop ground in a cup; and it is but yesterday that our fathers planted the corn crop with a hoe and cared for it with the same, aided by a one-horse cultivator. Now and then during the year a half bushel or so was shelled and ground at the water mill for family use. The balance of the crop went to the chickens, pigs and horses. No one can realize what a mighty change has taken place, who has not seen the hoe give way to the hand planter and in turn to the check rower, the five and six acre to the eighty and one hundred acre fields, the little hand full of hominy and meal by the miller to the multitude of different products now shipped daily from our factories by train loads to every country of the globe.

What becomes of the corn crop? It is estimated that 75 per cent. is consumed on the farm. Fifteen per cent. is used for manufacturing purposes and ten per cent. is exported. There is no other plant from which so many products are made. More than 150 products being made from the stalk, cob and grain. The following are among some of the more important: Several kinds of corn flower or meal, starches, sugars, candies, syrups, alcohol, whiskies, oils, salad dressing, rubber, hominy, brewer's grists, cellulose, dextrine, paste, mucilage, beer, germ oil cake, gluten feed, paper, pipes, etc.

I was startled some time ago when I read of L. B. Clore of Johnson county, Ind., who won the grand championship prize of $1,000 in gold and $1,000 trophy for the best 10-ear exhibit of corn at the national corn exposition at Omaha, Dec. 9, 1908; also of I. S. Long, of Lebanon county, Pa., who has been breeding corn for vitality and quantity, and who has won the World's record corn-crop of yield. The result is that he produced 130 bushels an acre on 73 acres, and more than 140 bushels an acre on 17 acres. Think of Mr. Long's achievement, 12,000 bushels of corn from ninety acres of land. At the same time, just remember that no farm in the west has ever done so well, even on soil black with humus and rich with plant food, the accumulation of years.

The selection of seed corn by the farmer from his own crop is generally accomplished in one of three ways:

First. By picking out the seed after the corn has been cribbed.

Second. By selecting the best ears while gathering.

Third. By going into the field before harvesting time and selecting the most desirable ears.

Of these three ways, the latter is the best, because a better selection can be made, when the entire plant, as well as the ear can be considered.

W. H. BULLOCK.

THE GRANGE MASTER.

Characteristics Required to Make a Successful Officer.

The master of a grange should feel the responsibility of his position. While he should not think he is the whole grange, yet he will certainly be held responsible for decline in interest or in membership, and if so the rule of fair play should entitle him to credit if the grange is successful.

First.—Although the grange is a school, it cannot be governed by fixed rules. It has been my experience that it is not always best to call to order at a stated time, but to be governed by the number present, and at the same time do not delay the meeting too long so as to tire those present.

Second—The master should be reasonably familiar with parliamentary rules.

Third.—He should be prompt and fair with his decisions and courteous to all.

Fourth.—Owing to the prominent part which he is of necessity compelled to take in all meetings he should be quick to think and act and also very brief so as to avoid the possibility of becoming tiresome.

Fifth.—In conferring the degrees the master should use all the means at his command to make the ceremony of interest to those who are already members, for in some instances members have been known to stay away when the degrees are given. He should make himself perfectly familiar with the unwritten work that he may be able to impress it on the minds of the candidates in a clear and interesting manner.

Sixth.—I wish to make this particularly clear. The master should consider himself the host for the evening and make all feel at home and that he is pleased to see them present. This can be done by taking pains to speak to all either before grange or at some of the intermissions and especially to those who are new members or not regular in attendance.

Seventh.—The master should carry out as far as possible in his daily life the noble teachings of our Order as laid down in the ritual that the influence of the grange may be felt for the good of the community. By increasing the influence of the Order we will induce others to join with us in the spirit of fraternity which is spreading over the entire state and the United States as well.

A MODEL GRANGE.

Turner Grange, Maine, Has 450 Members and Owns its Hall.

Turner grange was organized June 6, 1874, and has reached a membership of nearly 450. This grange is located in the fine farming town of Turner, noted for its excellent farms, thrifty farmers and Turner creamery, which sells over $380,000 worth of dairy products annually, and it is said to be the second largest creamery in New England.

The membership of Turner grange is composed solely of the families of this thrifty farming section, and the average attendance is over 160 annually. This large attendance enables the grange to hold interesting meetings at all times of the year. One peculiarity is the fact that no evening meetings are held, all being held in the day-time.

At 10 o'clock on the first and third Saturdays of every month the members assemble and the business commences. At the noon recess a dinner is served. At the close of the afternoon meeting the labors of the day are completed, and all get home in time for the evening chores.

This grange owns the hall in which the meetings are held, which is a commodious structure, containing the lodge room, dining room and kitchen completely equipped for serving large numbers and a library with over 700 carefully selected volumes. The latter is installed in a very attractive library room, nicely carpeted and containing reading facilities. A librarian is in charge during each meeting, and books are taken and returned by members. Over $100 is annually expended in purchasing new books.

A State Master on Good Roads.

State Master Creasy of Pennsylvania at a meeting at Selinsgrove, Snyder county, said that the "good roads" built by the highway department were "miserable and expensive failures. During the years of its existence no definite plan has been established except a religiously carried out method of squandering money. There is too much mahogany desk business about building the so called state roads. Every time a strip of such highway is to be made or repaired an office attache from Harrisburg is sent to the scene. Generally he looks wise, and that is all. Although not cognizant of locally peculiarities of the roadbed, he disregards the suggestion of the ruralties. The unsatisfactory upkeep of many of these thoroughfares is a striking evidence of the employees' own ignorance."

ROCKEFELLER'S VIEWS FIRST HAND.

It is interesting to know the views of Mr. John D. Rockefeller on the subject of money-making. These views have not reached us second-hand, but are from his written word, reproduced in facsimile of his handwriting on the front cover of the World's Work. Says Mr. Rockefeller, in bold red ink: "I know of nothing more despicable and pathetic than a man who devotes all the waking hours of the day to making money for the money's sake." Coming from such a source, this statement is interesting—if true.