large) and cultivate the rows, just as if the corn were up; then I cross it with my harrow, and you can get the start of the weeds. That is an excellent way where the ground is hard; I have followed it many years.

Mr. Gould.—That is an excellent way where you drill in your corn.

FODDER AND ENSILAGE CORN.

By JOHN GOULD, Portage County, Ohio.

Value of Fodder Corn.—This question of fodder corn has come up in a new form within the last three or four years. We are just beginning to realize the value of fodder corn. For the last three hundred years, I presume, we have been acting on the principle that all there was of the corn crop was the ear corn, and wasted largely the stalk. Whereas, if we had known better, we would have found that the stalk had almost, if not quite, an equal feeding value to the ear corn. Sixty millions of acres of corn are raised in the United States annually, and forty-five million head of horses and cattle eat up our meadow hay and our corn, whereas, if our corn fodder could have been saved it would have been ample, I think, to fully winter all our cattle. The silos have brought new revelations to us, and given us a value in fodder corn that we have never had before; at least, it has called our attention to it in a way that we have never had it called to us before, so that we have now begun to make a study of fodder corn, and what it may do for us in the way of giving us cheaper and better rations for our cattle. We are beginning to find out that the average farmer must devote about two or two-and-a-half acres of meadow land to it, to get the roughage to winter a cow or steer. If he will put in his fodder corn and take care of it, in the new ways, he will get the roughage on an acre that is ample to winter two or three head of cattle.

Its True Feeding Value.—This brings us to the question, how shall we get this crop, and get its full feeding value? In the past, we have failed to recognize that nearly, if not quite, sixty per cent. of the feeding value of corn is the gift of the sunshine and of the air, and in the past, when we have been sowing our fodder corn, we have attempted to get as much as possible in the way of seed upon the ground. Most of us have been sowing from two to four bushels of seed corn upon an acre, so as to make the corn thin and fine so the cattle shall easily feed from it. Later demonstrations with fodder corn have taught us this lesson: That we should not plant over eight to twelve quarts per acre, in the form of drills, the idea being to let the sunshine and air have free circulation into our rows of corn so it shall develop; so we plant the
corn very thinly and force its growth, and in this way get its feeding value. It has been demonstrated by the Massachusetts Experiment Station that corn sowed in the usual way, three bushels to the acre, has only about eleven per cent. of feeding value to the one hundred, but with our best field corn it runs above fifty per cent. feeding value, so we get approximately three times as much by planting thinly. Then, our later system of putting up corn fodder in silos, has demonstrated that we need to care for our fodder corn better, by letting it stand in the field and mature at the last part of the life of the corn. How shall we do this? By planting it earlier, so as to get a growth. Remember that one week of the first life of a corn plant is worth nearly three weeks at the close of its life, in adding to it maturity and growth. Another thing that we are finding out about our fodder corn is, that its intention in life is to grow grain, and just as we deprive it of that by crowding it, we are detracting from its value. So we want to plant early, so it shall get length of season and grow a good plant; we want to let it mature so as to get all its feeding value, and then we want to preserve it in some way so as to get all its value at the last. How we shall cultivate this corn, has been very well said by Mr. Sayer.

What Kinds to Plant.—Just what we shall plant for fodder corn is a problem that is under discussion to-day throughout the north,—whether we shall plant our best varieties of dent corn, acclimated to our localities, or whether we shall take the big Southern corn from the tide-waters of Virginia and get a larger weight to the acre, but whether more food, is a matter that we must demonstrate for ourselves. We must have a crop, anyway, and it has been demonstrated, during the terrible drouth of last year, that the Southern corn has wonderful vitality and makes an almost sure crop. I planted four varieties alongside of my ensilage corn. The ensilage corn was a magnificent crop, while the three other crops together would not more than average with the ensilage corn. Plant some kind of fodder corn; let us abandon feeding quite so much expensive hay, when we have a crop that will give us a big, abundant ration for our cattle cheaply, let the weather be what it may.

Discussion.

Mr. Chairman.—Tell us how to cut the corn and put it up and feed it dry.

Mr. Gould.—My plan of cutting for the last two years has been wholly with the reaper, which leaves it in gavels on the field. I wilt it about twenty-four hours, and then put it in the silo. Previous to that time it was my plan to wilt it and put it up in bundles, about twenty-five bundles in a shock. I put it up about sixty to seventy-five bundles, and make a roof over it.

Mr. Sayer.—Are there not facts to show that the Southern ensilage corn has more saccharine matter than our common field corn?

Mr. Gould.—I am not prepared to say exactly that, but I am prepared to say that the cattle will consume the Southern fodder corn when they will absolutely refuse to touch our field corn. During the past summer, I fed some to my dairy cows, right in the pasture, and, even there, it was almost impossible to find as much as a butt left over. This fodder corn should not be put up in two big a shock; it is very likely to mould unless it is wilted nicely.

Mr. Isler.—Do you cut your Southern corn with a reaper?

Mr. Gould.—Yes.

Mr. Isler.—If it grows as big as that
which I have, you would have pretty heavy work. I had some that grew seventeen feet high, and the stalks as large as that lamp; it may not grow so large in your part of the country.

Mr. Gould.—It grew on the average twelve feet high. My neighbor and I cut it between us, by using a sweep-rake reaper. Of course, you want to make an extension to your reaper—put cleats on, so they will run out two feet more. I have had no trouble, and it is a great deal cheaper than any other way. You can cut in two hours what it will take two days to cut by hand.

Mr. Wise.—Can you cut in windy weather?

Mr. Gould.—It will tangle more, of course.

Pres. W. I. Chamberlain.—I have no doubt there is more saccharine matter in the Southern corn than in ours, but the principal point in this matter is that it is absolutely impossible for any of our varieties of Northern corn to raise the amount of fodder per acre that the Southern corn will. There is twice the leaf growth on the Southern corn that there is on ours; then there is twice the stalk growth. But with us, in Iowa, it is simply impossible to cut it with a reaper. I am not a betting man, but I have $100 for anybody who will do satisfactory work, with any reaper yet made, in our Southern ensilage corn. The main trouble with us out there is, that we have winds, and we have them strong, and they tangle the corn so that it is simply impossible for any reaper to handle it. I should like to see a reaper that would handle stalks seven inches in circumference, even if it is not tangled. In spite of the fact that it is a temperance State, it gets the tangle-foot once in a while.

Mr. Gates.—How am I to know whether I have got the right seed or not?

Mr. Gould.—You will have to depend on the reliability of your dealer, just as you do when you buy anything else, not knowing where it is produced. There are several different kinds advertised, but I understand it is all substantially from the same locality. The B. & W. is the brand of the firm who first handled it, and there may be other corn from the same locality but sold under different names. It is sufficient for you to find out, as near as may be, that it is the tide-water corn from Virginia, and not a white corn from Kansas or Missouri, sold under the name of the B. & W. corn. There are agents who can be depended on to sell you the right thing.

The Chairman.—What is the sheep-tooth corn?

Mr. Gould.—I don’t know, unless it is a brand that the Southern corn is sold under; it may be the same thing.

Mr. Gates.—Now, some, in advertising, say that the sheep-tooth will bear more leaf.

Mr. Gould.—It can’t bear more than the Southern.

Mr. Palmer.—Last spring, I bought the Burrell & Whitman, and paid two dollars a bushel for it, and I got some from Chicago for one dollar, and I couldn’t see any difference. The man who handled the B. & W. corn visited my home, and he couldn’t see any difference. All there is about the ensilage corn, in my opinion, is: It is Southern corn, and it don’t make any difference whether we buy it under the name of B. & W. corn, or under any other name.

Mr. Gould.—We had a lot from Georgia that was not ensilage corn at all.

Mr. J. M. Smith.—I received, last summer, what purported to be a report from a Professor of Agriculture in New Hampshire, in regard to the different varieties of corn, and the tests they have been making there with corn and ensil-
EXPERIENCE WITH FODDER CORN AND THE SILO.

By HIRAM SMITH, Sheboygan County, Wis.

Third Paper.

Important Discoveries.—I am called up here to talk about the silo. An empty silo is no better than an empty pocket book. Therefore, I will go back a little to the commencement, to find out what we want to raise to put into the silo. A few years ago, some enterprising men found out that the large Southern sweet corn contained more feeding value and was the best fodder plant to grow that had been discovered; that it was actually producing more to the acre than

the same growth in New Hampshire that it would in Wisconsin or Iowa?

Mr. Smith.—I only judge from the growth it did make.

Mr. Gould.—I want to speak a word about that New Hampshire experiment. The B. & W. corn was planted at the time the little Yankee corn was, and at the time the silos were filled the Yankee corn was quite mature, while the B. & W. corn was just nicely tasseled out. If the B. & W. corn had had the growth and maturity of the next thirty days, I think the results would have been the other way. The New Hampshire climate did not give it time to put in its full maturity, and it was putting the fully matured Yankee corn against the half matured B. & W. corn. We have found that the common dent corn was perhaps three or four weeks ahead of the ensilage corn.

Mr. Jones.—I have no doubt this B. & W. corn is all right if you want to use it in the silo, but here in this country I believe that the smaller kind of dent corn is the safest for the general farmer.

age, and for feeding. The Southern ensilage corn, in that case, yielded twenty-five tons per acre. Varieties of our common flint corn yielded fifteen tons per acre. A chemical analysis of the two varieties showed that the common New Hampshire corn was just about equal in feeding value to the ensilage corn per acre; that is, the fifteen tons of the flint corn were just about equal to the twenty-five tons of the Southern ensilage corn. The tests in feeding were practically the same, so that the final conclusion from that test was, that they were handling ten tons of ensilage corn for nothing. Now, if further experiments shall show that those results are correct, it is a great advantage for us people in the far North, where the ensilage corn will do its best, that we can substitute our flint varieties for it.

Mr. Adams.—Was that B. & W. corn planted thick or thin, and was it properly matured or not before it was cut?

Mr. Smith.—I don’t know about that, the report did not state those facts.

Mr. Hoard.—Do you think, Mr. Smith, that B. & W. corn would make