to unload, we place the fodder perfectly straight in tiers across the silo, and for the purpose of pressing closely, we arrange to place every other tier with its tops on the butts of the preceding tier. We generally have a man tread it down when put into the silo. As to the possible disadvantage of being heavy to handle, we reply that our experience has shown us no difficulty in handling it in this manner. The heat, to which it is exposed in the silo, makes the corn very much more pliable than when entirely green, or when it is first placed in the silo. For the same reason there is seldom any stalk so large that cattle will not eat it after its exposure to the heat of the silo. We weighted very little—just enough to protect the top.

As a further step towards simplification the Mirror mentions an instance of stacking very green cornstalks in open air; all kept in good condition except the outer foot of exposed surface. Whether or not the whole silage system is, by successive easy stages to be finally crowded out, remains to be seen.

Sober Data about Silage.

BY PROF J. W. SANBORN, COLUMBIA, MO., U.S.

It is flood tide of interest in ensilage in many parts of the West. Is anything like foam raised as it beats upon the shores of our bad practice; or is there only displayed the steady pressure of abiding forces? Millions of our farmers await sober data, and fear that there is still an effervescence of enthusiasm in the reports coming to them from those whose personal observations, loose though they be, are loudly proclaimed conclusive and final. Unfortunately, I have been regarded as an opponent of the silo, when in truth my only effort has been to hold it to the hard facts and confine its growth to its merits. Many of its swaddling claims have passed or are passing into an oblivion from which I do not care to raise them again into view. Entering upon the now of the question I will take two equal sections of land respectively in corn, either for fodder or for the ripened ear—one for ensilage and the other for the air-dried product. If conditions of fertility and culture are the same, evidently the yield by either system will be the same. More, it will be similar even though one be drilled for fodder for the silo and the other grown by the field system for corn. This, Prof. Geo. H. Cook, of New Jersey, who has done the most creditable work on the subject extant, showed in a conclusive field trial.

But it is said that the dry fodder of corn cannot be well preserved with the silo. An empty claim. Professor Cook found that his ensilage lost 18 lb dry matter of its food materials in the silo for every 17¼ lbs. lost by curing in stacks in the field, notwithstanding the field cured fodder stood nearly three months in the field—an unnecessary exposure. I allow mine in favorable weather to stand only a week, and can preserve it in unlimited quantities by stacking or houseing as I have done for years. Thus the claim that the silo enables us to grow and preserve an amount of food that we otherwise could not, thereby vastly increasing our available food, is absolutely groundless Here in the West, where we waste all or nearly all of our corn fodder, it has taken occasional root—because it is found that the silo adds the food thus preserved to the total food of the farm. This fact is due to the absolute ignorance of the ease with which the fodder can be preserved in the dry condition, or and so long as our farmers refuse to learn to save their fodder in the dry state, just so long will the silo be a great aid. Having now concluded that we can grow and preserve each of our two sections of corn or corn fodder in equal amounts, our next step is to ascertain the most economical system of gathering and preserving it. Professor Geo. H. Cook kept the account and found the field system cost $22.71 where the silo system cost $26 41. But had he not husked the corn, etc., the amount would have been much more favorable for the air-drying method. I calculate as follows for one acre of dried fodder corn yielding twenty tons green food: Cutting up and binding, $2.50; drawing, $3.50; total, $6. Professor Cook's cost of $26 for labor of harvesting a smaller crop may be and is too large, but it will not cost far below $1 a ton, or $20, to put an acre of green cut fodder corn under weights in a silo. The difference in the cost of the two systems in harvesting will buy in half of the West in hay, at $5 per ton, two-thirds the nutrition found in the ensilage.

We now come in our course of care of our two lots of corn fodder to the cost of protecting each. I saw in Kansas an iron roof, said to have cost $150, and stated to cover 100 tons of hay. The protection was perfect, save a slight loss on the sides. A separate building for ensilage, although made of wood, cannot be made for less than $900 to $1,000 on the cheap plan, that will cover an equal quantity of nutrition. The wooden silo is called cheap. At our Western prices for lumber of $18 per M, it will cost not less than $2.33 per ton of silo capacity, for it must be remembered that we must measure the space before settling if we are to get the cost of ensilage room per ton. This its friends forget to do, and make 40 lbs, instead of 30 lbs per cubic foot of space. On this basis we get the startling cost of silo room for an acre of fodder weighing twenty tons of $46.60. Land costing $25 requires $46 of silo room per acre. The interest and wear of such a silo will be at least 15 per cent, or $6 99 yearly, which will purchase here nearly 1½ tons of hay having as much nutrition as 6½ tons of ensilage. "Build them in one corner of the barn," says some one. This does not alter the proposition if you utilize a building that also cost. We rob Peter in Paul's interest. Besides, we are without the barns. Perhaps we would better build a barn in order to build a silo in one corner of it. No, a skeleton barn intended only for hay, as a silo is intended only for ensilage, will cost much less per pound of nutrition covered.

Our fodder being now housed by the two systems, which feeds out the cheaper in labor? By ensilage we handle 400 odd pounds to secure the same amount of nutrition found in 100 pounds of hay, or some 300 pounds for the amount found in 100 pounds of dry corn fodder. The one is handled as spoon material, the other on the fork. Which is the cheaper? But, surely, now we have reached the tidal point favoring ensilage—its feeding value. Our acre in dry fodder corn is to fall far in the rear of the acre of ensilaged fodder corn. Professor Geo. H. Cook made a brilliant, practical, theoretical test of just this question, half of fodder corn was put in the silo and half was dried in the air, and for three years his cows failed to discover this "new truth"—that the value of a fodder is governed by the amount of water in it—likewise failed his chemistry. Professor Henry pursued the same plan with identical results. Professor Woll has just published a critical trial of the same order with the same result. Sir John B. Lawes's German experimenters fail to find green food more effective than the same food carefully dried. Three years with green food versus dried foods forced the same view upon me. Dr. E. Lewis Sturtevant shewed nothing better. There is no appeal from these critical experimenters, at least not from them to the careless guesses of the fresh enthusiasm of stock feeders. It would please me to marshal the figures of the above experimenters before the reader, but they are too many for any inclosure that the editor will be likely to assign me. I have not spoken for or against ensilage. It has its fair pros and cons, doubtless. I merely state what I believe to be the sober truth or data, and say: "Choose ye." But strip ensilage of its pretentiousness before choosing.

Time to Fell Trees.

The Hon. John D. Lyman, for many years an earnest student of woodland facts and phenomena, made, in a notable address reported by the Massachusetts Ploughman, the following statement of general value:—

"If you cut down a tree in the month of its growth, if you cut it right off at the butt and do not trim it, that tree will be seasoned in a few days. If you don't believe it go right home from this meeting and cut down a tree and if in two or three weeks you don't have seasoned wood my statement may be doubted. I do this when we cut oak timber, and leave the limbs on. When it is cut in June, we find it seasoned in December, when we go to take up the winter's firewood. We find that if it is cut when the sap is out of the wood it soon becomes sap rotten. If you cut beech, poplar or birch for rails or posts cut them in June or July and let them lie with their limbs on. You will have wood then that is not rotten. You will have fine poles out of the birches or poplars, for they will be seasoned."

A civil engineer writes to the Farmers' Review that he has verified the truth of the appended statement by thirty years of observation:—

"When the growth commenced in spring is completed there is a period of rest before the storage of nutrition in the roots begins. Between these two periods the timber of any deciduous tree cut off the stump, the sap will not ferment and worms will never get in the wood. It will season hard and the wood if oak will have a horny toughness and great durability. Wood cut during that period is mature, having completed its growth for the year. This period varies in length, being short in the North and longer in the South, and is varied again by the character of the season, if wet it is shorter and longer if dry. In the north it may be four to six weeks; in Southern Illinois from six to ten weeks, and one season of prolonged drouth I have known it to be twelve weeks.

"Timber cut from the stump in this period need not be worked up for a year and will take no harm lying in the woods. If railroad ties were cut from the stump at this time and worked out during the remainder of the year they would last from three to five times as long as those cut in winter, and yet I have seen specifications requiring them to be cut in winter, from a mistaken idea of improving their durability. A bent felloe manufacturer in New Jersey called my attention to this fact, and said that for sixteen years he had thus followed the practice of requiring in his contracts for timber that it be felled during a period of six weeks, from the 1st of August to the middle of September. Any time of the year they might cut up the logs."

Professor J. L. Budd says that the above is worthy to be printed in big gilt letters and hung up in the office of every think-