

AGRICULTURE AT THE UNIVERSITY OF TENNESSEE.

In the re-organization of the University of Tennessee, the Agricultural Department receive a goodly share of attention as it is prepared to make this in the future, a power for good among the farmers of the State.

The instruction in agriculture is to be thoroughly practical, as well as scientific. The classes are given lectures every week, and in addition to this are required to do practical farm work of some kind, and as instructive in character as possible. The students are taken to the farm and put at work under the guidance of the professor in charge. For this labor no pay is given in money. When material is available the class is taken out and given object lessons on the farm. In every way at our command an attempt is made to interest the students in the work in hand. Specimens are used in the class-room to illustrate lectures and at the proper time the classes will be taken out to visit farms in this vicinity, to take object lessons in good farming.

In the agricultural building on the upper floor we have a large hall that is to be an agricultural museum, in which will be placed a collection of the product of Tennessee as intimately related to her agriculture. At the present time this room is about empty. We mean to make this museum a credit to the State and the University, and in aid of that plan I wish to call upon all the farmers of Tennessee to help us by sending specimen of varieties of grain both in the seed and shock different kinds of soils, etc., and anything they may have that would be suited to an agricultural museum. The benefits to be derived from such a museum are at least two fold; first we have therein available specimens with which to illustrate lectures for the benefit of the classes in agriculture; and second, we have a collection especially for the people of Tennessee wherein they may study her agricultural products. The development of this museum may be greatly aided by interested parties sending us specimens.

Close by the agricultural hall is a greenhouse, which is used for growing cut flowers, plants for the class-room lectures, and for ornamenting the University grounds. This is being rapidly put into good condition. As means will permit, rare and interesting plants will be added to the collection we now have, so that the greenhouse will be a valuable adjunct to the horticultural and botanical work. Another object is also kept in view in having this house, and that is growing flowers and plants for sale. Not only is the public thereby attracted to the University but the propagating of flowers and plants for market carried on in a practical manner close by the class-room cannot but be of service to the students interested in such things.

The University farm, comprising over 250 acres is to be developed in a practical business-like manner, with the end in view of paying its own expenses, if possible. At the same time it will be made educational in being as nearly as possible a model farm as our circumstances will permit. At present we have a herd of Jersey cattle with some natives, Short-horns, Holstein, Friesians, etc. This herd is to be reduced to two standard breeds, for which we can hope to derive the most income, and at the same time teach the farmers of the State valuable lessons in good stock breeding. We also propose to keep one or two of the most profitable breeds of pigs. In the summer the standard farm crops will be raised, but in addition to this, certain other ones will be grown experimentally.

And that leads me to say that we have in connection with the University a State Agricultural Experiment Station. We have now feeding experiments with steers and milch cows in progress, and much experimental work will be done in the future, both on the farm and at the University. At the latter place, on the southern slope of the grounds, a piece of land has been set aside for an experimental orchard and garden. Already 260 varieties of fruits have been planted out, and next summer a large variety of vegetables will be tested as well as grasses and forage crops. In connection with these, tests will be made with fertilizers.

A great deal of work is now being carried on, or is being planned, at the agricultural department of the University—work that must be of value to the farmer the length and breadth of the State. Our agricultural college is not to be simply a name in the

future, but a thing of life—a working reality. In a short time, when results begin to come in as a consequence of this work, we shall begin publishing bulletins which will be issued several times a year, that will be distributed over the State to farmers desiring them.

As the representative of the agricultural department of the University, I shall always be glad to see any and all persons interested in our work here, and will be glad at any time to show them what the college is doing for the farmers of Tennessee. And to these men I would extend a warm welcome to visit us here and see what we are doing.—C. S. Plumb, in *Tennessee Farmer*.

WHAT WOMEN CAN DO.

The first question is, "What were we created for?" We are to be the helpmate to man, and we must all try and do our part in the battle. We can be a great help to our husbands, or we can be a great drawback to them. These hard times our husbands need encouragement and all the help they can get. I don't believe in a woman going to the field to plow or hoe, for that is not her work. If a woman does all of her housework and washing and ironing and her sewing for her family she will do a very good part. We must raise our chickens and supply our table with chickens and eggs, and milk our cows and supply our table with milk and butter, and all have a few stands of bees and tend to them ourselves. We bought two stands of bees six years ago. Now we have twenty-three stands, and have sold several stands of bees and have some honey to sell every year, so that is a great help. We Alliance people must raise what we eat at home. It won't do for poor farmers to live at home and board at the store. We must live as saving as we can until we all get out of debt. We must not run our husbands into debt for fine dressing. We must make our own dresses and trim them over, and they will look as well as new. We must trim over our hats, for a poor farmer cannot afford to buy his wife a new hat or bonnet every season of the year. When a woman tries to help her husband and saves all she can, that encourages him to work and try to make a living for her, but if a woman don't try to help and save, and always runs her husband into debt, he soon becomes discouraged, and he very often takes to drinking and his course is soon run. A word to all Alliance women: We must encourage our husbands in their great and noble cause and go with them to their meetings. That is a great encouragement to them. I have missed but one meeting since I joined it. It has been eleven months since I joined. Who can do better than that? If the women go, that encourages the men to go, for they would not like to see their wives go and they stay at home.—Mollie Hall, of Luling, Texas, in *The Mercury*.

A TRICK IN RIFLE SHOOTING.

"No, sir, I do not claim to be an expert at fancy shooting," said Capt. Jack Crawford the other day. "There is too much trickery, a sort of sleight-of-hand business connected with it. I do pretend to be a crack shot, and to excel in accuracy and rapidity with a Winchester rifle. The Winchester Arms Company has offered repeatedly to back me for \$5,000 against any man in the world in that sort of skill. I have fired twelve shots in three and three and a half seconds. But here, let me enlighten you as to one of the neat little tricks used in fancy shots." Here the scout produced what appeared to be, as he held it at a distance, a brass shell tipped with a leaden ball. "Looks like a bullet, don't it?" he said, with a laugh. "Well, it isn't. It is simply a papier-mache protuberance appropriately colored to look like lead. Now, I'll show you what's behind it." Picking open the end he disclosed to view a quantity of shot, about 200 he said were in the shell, with just enough powder at the butt to do the work. "How are these used? You have probably witnessed the feat of cracking glass balls thrown in the air by shooting at them with a Winchester, and while riding a horse going at a gallop. Well, that's the kind of a ball cartridge that is used, and the spectators look on with wonder and admiration, supposing that it is done with a single ball; and that is something, my boy, that no man in the world has ever done or will do, because it is a physical impossibility."

WASTE FROM THE BARNYARD.

Under the most careful arrangement and management some manurial matter is unavoidably carried off by rains from the barnyard. Though animals be kept in stalls, there is always some waste about the lot, some droppings, some wastage in cleaning out the stalls, some scattered provender is generally present, in short, a barnyard is never a very clean place, and here want of cleanliness means manure. Where animals are confined in open lots the loss of manure is obviously much greater, and still the problem how to save it becomes very important. If the lot is sloping the manure-laden water runs down hill, finding its way into some gully or hollow, and thence into streams, and it is lost. But is there a necessity; cannot the water be checked and made to deposit its treasures on its way? The most obvious arrangement to bring this to pass, is to have a grass or grain patch immediately below the lot and have the water flow over it. This arrangement is often seen, but is generally defective in two important points: the water is allowed to choose its own path, and is usually concentrated on a very limited portion of the patch; the other, no contrivances are present to check the velocity of the water and allow the soil to get its valuable contents. The first may be obviated by building a low dam at bottom of lot, the top of the dam to be level so the water will not run over at one place, but along its whole length in a thin continuous sheet, or else openings made in the dam, and the water discharged first at one point and then another. By such contrivances every portion of the patch would get some of the fertilizing water. One very common error is to put the stables and barnyard by the side of the road so that all the wastage runs into and down the road to the branch and so is entirely lost. Don't do this. Put the stable so that the drainage therefrom will be taken in by some part of the farm.—*Ex.*

DIVISIONS OF TIME.

A Solar day is measured by the rotation of the earth upon its axis, and is of different lengths, owing to the ellipticity of the earth's orbit and other causes; but a mean solar day, recorded by the time-piece, is twenty-four hours long.

An astronomical day commences at noon, and is counted from the first to the twenty-fourth hour. A civic day commences at midnight, and is counted from the first to the twelfth hour, when it is counted again from the first to the twelfth hour. A nautical day is counted as a civic day, but commences, like an astronomical day, from noon.

A calendar month varies in length from 28 to 31 days. A mean lunar month is 29 days, 12 hours, 44 minutes, 2 seconds and 5.24 thirds.

A year is divided into 365 days.

A solar year, which is the time occupied by the sun in passing from one vernal equinox to another, consists of 365,242.4 solar days, or 365 days, 5 hours, 48 minutes and 49.536 seconds.

A julian year is 365 days. A gregorian year is 365.2425 days; every fourth year is bissextile or leap year, and is 366 days. The error of the Gregorian computation amounts only to one day in 3571.4286 years.

Every year, the number of which is divisible by four without a remainder is a leap year, except the last year of the century, which is a leap year only when divisible by 400 without a remainder. Thus, the year 1900 will not be leap year.—*Exchange*.

WINTER CARE.

The horse is the most noble animal on the farm, and his welfare needs studying by the farmer so that his wants may be fully understood; and when anything goes wrong that the remedy may be applied at once. I do not believe in continually pouring medicine down his throat, however, any more than down his master's. Nature and rest will often effect cures, if given the chance. Good care and judicious feeding should be given, if one desires good looking and healthy animals.

A great many farmers feed too much hay and too little grain, especially in winter. I know of one man who some years ago kept his horse eating hay nearly all of the time, and she was thin in flesh. Nearly every time he went to the barn, if her hay was nearly gone he would put another forkful into the manger to make sure she had enough to eat. He fed but little grain, however. Finally he

changed the program somewhat, by feeding regularly three times a day and giving a little more grain, when the mare began to gain. A great many horses have been ruined, by improper feeding in the winter season.

On a great many farms there is but little work to be done in the winter season, so the horses are allowed to stand in the barn most all of the time, devouring great quantities of hay, and receiving but little care and exercise. This practice needs to be changed. Do not overfeed, and be sure that the horses receive proper exercise, even if you have to hitch them up for nothing else than to give your wife a pleasant sleigh-ride. No matter if it is every day, she will appreciate it. Have the horse well groomed every day, and twice a day, if used. After a day's work, I make a practice of grooming mine even if it is quite late at night. I enjoy washing up and combing my hair when coming in, and my horses enjoy the same treatment. It is a duty we owe them.—F. H. D., in *Farm and Home*.

GO AHEAD.

There is no class enterprise that should meet with more encouragement and be welcomed more heartily than the establishing of productive industries in the midst of a community. To any thoughtful mind it must be obvious that capital and administrative ability employed in utilizing the raw material produced at home, and both giving employment to our people, and attracting skilled artisans to settle among us, must be productive of incalculable benefit to our city.

No such work can be carried forward—whether its promoters have any such purpose in view or no—without helping in many ways the whole community in which it operates.

It seems to us that where any raw material is largely produced, and the means and men are on, or can be brought to the spot to work it, there, and not hundreds or thousands of miles away, is the place where much of it should be converted into the state in which it is utilized by mankind.

The most independent and prosperous communities are those where varied industries prevail, and where the greater part of the necessities of life are produced and manipulated into their different forms of use.

With splendid natural advantages, this should become a great manufacturing district, and the signs of the times are beginning to read that way.

Within a few years we have seen established many industries among us, and others of considerable magnitude are unday way.

Yes, welcome cotton factories, furniture factories, spoke and handle works, clothing factories and so forth. These are all blessings, however uncouth in form, and *The Hornet* but voices the sentiment of all who wish well to our community in saying to such enterprises. Success attend you!—*Daily Hornet*.

CURING HOG CHOLERA.

We always place before our readers, says the *Farmers' Magazine*, any information to be derived on hog cholera. *The Southern Cultivator*, some time ago, published a communication from a well-known planter of Calhoun county, Ga., telling how he had checked the ravages of cholera among his swine by mixing with their food a moderate quantity of soda. A recent issue of *The Cultivator* contains a letter from W. K. Crowell, of Marionville, S. C., who tried the remedy. For ten days after the cholera made its appearance he fed his hogs a liberal quantity of soda and salt, mixed with ground food, twice a day, after that giving occasional doses. He claims that the sick animals recovered and he has not had a case of cholera since. And we can believe his statement under the supposition that soda, being alkali, neutralizes the acids produced by the fermentation of the food. He does not state what kind of soda is used, whether it is carbonate, bi-carbonate, or caustic, but we would suggest that the bi-carbonate of soda (bread soda) be given, as it is at least harmless in any quantity.—*Atlanta, Ga., Southern Cultivator*.

A farmer says that if you want to fatten a horse that is hide bound give him one tablespoonful of the following mixture once a day in wet feed: Saltpeter 3 oz., crude antimony 1 oz., sulphur 1 oz.; pulverize and mix the whole together. Dose, a tablespoonful once a day in a bran mash.—*Southern Agriculturist*.

ENSILAGE IN NEW ENGLAND.

Prof. Alvord, of the Massachusetts Agricultural College, in an address before the Massachusetts Board of Agriculture, in relation to ensilage, stated some interesting facts and conclusions as they came under his observation, wherein he said that the silo is a success in New England, also at the West, South and in Europe. The greatest success is attained on lands adapted to the growth of corn and millet rather than grass.

Ensilage properly fed has no bad results in the milk or dairy products, nor to the health of the stock. Injury to milk or butter usually comes through the air rather than through the ensilage. Few silos have been abandoned and their use is spreading. Ensilage is equal to all roots except sugar beets, as a condiment or regular food in moderate quantity. It is worth most when fed with grain and dry food. Sweet ensilage is a misnomer, but acidity seems no fault as the cows do not object to it, and retain their health unimpaired for years.

Prof. Alvord favored prompt-filling, fine cutting, heavy-weighting, and protection from air till the day before feeding. Anything will do for a silo that is air tight. It may be of concrete, stone, brick or wood, or may be dug in a firm soil and closed with earth. Nothing can come from the silo that is not first put in, and there must be some loss by fermentation, but the chemist and cow do not agree as to the practical value of ensilage.

The stories of yield above thirty-five tons he does not believe. Twenty tons is a large yield. The cost of corn ensilage must be from \$2.50 to \$5 per ton, \$3 being a fair average. Rye is of less value than several other crops, but may be raised the same year with corn, thus getting two crops. He would prefer plowing in the rye and thus getting but one crop per year of better ensilage. Manure must be applied heavily for heavy crops. By heavy manuring and judicious feeding the silo will enable one to keep more animals than by hay and grain feeding alone. This means an increase of products and of profits.—*Farm, Field and Stockman*.

A DIVERSIFIED AGRICULTURE.

I believe, with Prof. Newman, that the true farmer should, as far as possible, produce everything needed for the support and comfort of the family. He ought to make his home comfortable and pleasant with trees, grass and flowers around it; then all the fruit and vegetables that could be grown in his climate, with poultry, eggs, meat, not simply bacon, but veal, mutton and beef. Mutton well-grown and properly dressed is both palatable and healthy, and if the family be too small to consume the whole carcass, a system of exchange between neighbors might easily be inaugurated by which the four quarters could be disposed of. In some sections mutton can be produced much cheaper than pork. A friend of mine is a very successful farmer; he raises all these, and thinks his business about the best in the world. He is a man who always has money to pay his taxes, never has any store bills or interest to meet, and seldom has any fault to find with the markets, because, having the best to sell, he always gets the highest price. This man was showing me his well-kept garden, well-filled cellar and fine hogs, poultry, sheep, and cows, when I remarked that he must have a surplus of each. "Yes," said he, "but we always use all we want and sell what is left."—*Atlanta Cultivator*.

SHORT AGRICULTURAL COURSE.

The University of Wisconsin again announce the short course in agriculture, in that State, opening on January 4th, and lasting twelve weeks. Residents of the State pay no tuition fees; non-residents pay a fee of \$6. Books, board and incidental fees will be from \$65 to \$75 for the whole course of twelve weeks.

It is proposed in this course to give the largest amount of instruction in the theory and science of agriculture that the time and conditions will allow, and to adopt this instruction to the immediate and future needs of the farming population. The course will be made up of sixty lectures upon agriculture, sixty upon agricultural chemistry, thirty-six upon botany, and twenty-four upon veterinary science. In addition to the lectures in botany there will be about sixty hours of laboratory instruction given, and any one desiring to do so can devote his whole time to one of these branches.—*Farm, Field and Stockman*.