THE VALUE OF SWEET CLOVER.

Sweet clover is not a noxious weed. It is of unquestioned value in restoration of worn and eroded soils, and it has many other important uses. It grows luxuriantly in roadside ditches, in the cuts of railroads and generally in situations similar to these erosions and its ability to withstand these adverse conditions and often even to prosper there, indicating its availability as a means of restoration of such waste places.

Sweet clover has a very wide distribution throughout the world, being found on each of the continents and in many of the islands. It is quite generally distributed in England, Scotland and Ireland and throughout Mediterranean Europe. In Switzerland it is used as a flavoring in the manufacture of cheese and in France as a fibrous plant. In Asia Minor it is used in the manufacture of pipe stems and in China and Southern Europe the young plants are used as a "pot herb" (greens). In India it is sown in the rice fields and is much esteemed as a fodder plant for horses and cattle. The department of agriculture for South Australia reports that this plant has transformed the

An eroded clay hill field.

barren, sandy waste of King Island into one of the most profitable dairy regions of Australia.

The plant is found growing in most of the United States as a wayside weed, and in large areas in Mississippi, Alabama, Kentucky, Iowa, Colorado, Nevada, California and Ohio. Badly run-down and abandoned cotton plantations in Mississippi and Alabama have been restored to fertility and profit by the use of sweet clover as a mulch and green manure. It is being used in a similar way in the hills of northern Kentucky in restoring badly eroded tobacco lands and as a soil ameliorant in Iowa. In the far west it grows in profusion on the banks of irrigation ditches and in deserts where the soil is so alkaline that other plants will not thrive. Throughout the world the large areas of sweet clover are usually to be found on soils very calcareous, showing the same fondness for lime that is common to alfalfa. While the plant shows wide soil adaptation, its most luxuriant growth is invariably associated with lime. The nitrogen-fixing bacteria of alfalfa and sweet clover are very similar; those of one plant readily adapting themselves to the other. This makes sweet clover plots of great value as a source of soil inoculation for alfalfa. Fields which have been in sweet clover for a few years can usually be seeded to alfalfa easily and successfully. Sweet clover itself needs inoculation and when it is being introduced into new situations the soil should be inoculated. Failure to do this is a probable cause of many failures.

Seed can be sown broadcast on wheat in midwinter when the ground in honeycombed, with oats in the spring or on a well prepared seed bed in May.

In these latter cases the seed should be lightly covered. It may also be

Restoration completed. Ten years before this picture was taken this field was as bad as that shown in the other illustration. It is now a profitable blue grass pasture. About one-third of the grass is sweet clover.

seeded during August, as is frequently done with alfalfa. The seed usually germinates very poorly, owing to the presence of a large number of hard seeds. For this reason from 20 to 30 pounds of seed should be sown per acre. Even more of the unhulled seed can be used to advantage.

As a soil ameliorant sweet clover gives promise of great benefit to farmers. When used in this connection on areas deficient in lime, this element should be liberally supplied. An application of manure or straw will aid the young clover in getting started and hasten the work of restoration. It is probably best to delay the sowing of other grass seeds for two or more years after the sweet clover has been seeded. The areas should not be pastured, but the sweet clover allowed to fall down and form a surface mulch. On badly eroded areas sweet clover and the yellow locust form an excellent combination. If the land is not leveled before seeding the young trees should be set in the bottom of the ditches. Probably the best plan to get sweet clover started on eroded or very thin soils is to transplant one-year-old plants in the spring. This is neither as slow nor as laborous as it might seem. One plant every four or five feet is sufficient. It possesses the merit of being almost invariably successful. Plants are usually available in wayside sweet clover patches.

DRYING STRING BEANS.

Select young, tender, stringless beans, wash them, cut off stem and blossom ends, cut in one inch lengths, and put them on plates or trays. Cover with a net to protect them from flies, and put to dry in a strong current of air. Stir occasionally while drying. When thoroughly dried, put into insect-proof bags, tie securely, and keep in a dry, well-ventilated place for future use. Some think beans are improved by steaming them a short time before putting them to dry. By putting a few to dry each time beans are prepared for the table, a good supply may be preserved with very little trouble.—Mary L. Bull.

CELERY FOR WINTER USE.

Late Celery Can Be Set Out Any Time From July to September, With Good Results.

By A. GALIHER

Late celery can be set out any time from July to September with good results. Ours was transplanted last year, on August 30th, when the drought had just been broken by a heavy shower.

After the ground was thoroughly spaded the plants were set in double rows about one foot apart.

The advantage in the double rows is that when drawing the earth up to blanch two rows can be handled just as easily as one.

Our celery is never set in trenches, for two good reasons: The soil here is not very deep and when the plants are set in trenches the latter have to be made quite deep and then partly filled with rich soil so that the roots will have something to feed on.

The other reason for level ground culture is this: When plants are in a trench they are liable to be drowned every time there is a heavy rain. It takes a lot of work to rescue the submerged plants.

Celery that is tough and stringy is very poor eating and unless there is plenty of plant food in the soil and also plenty of moisture the stalks will be full of strings and hollow, as well.

To be at its best celery should be grown quickly. To promote rapid growth keep the roots cool and damp.

Late planting is conducive to rapid growth because there is always more rain in the fall and no mulching with straw is needed to keep the soil cool around the roots.

After the plants got well started they were hoed and then the entire surface of the ground around the plants was covered with manure from the poultry houses.

After this nothing more was done with the soil or plants for about two weeks. In the meantime there had been several soaking rains, which was exactly what we wanted, for without it the top dressing would not have benefited the plants.

The soil was loosened around the plants with a hoe once more and then the soil was gradually drawn around the plant.

They were growing by this time. Every few days a little more earth was packed around the plants, care being taken that the stalks were all in proper position and always allowing plenty of room for growth.

They grew very fast after the ridging or banking process was once begun.

Some growers do not begin to blanch their celery until it is nearly full size and the result is there are more green stalks than anyother kind.

When a celery stalk grows green it grows green for keeps; no amount of labor will induce it to turn white.

We had the White Plume last year and it was white, indeed, and very crisp; but the process would have been the same with any other variety and doubtless the results would have been similar.

When blanching celery it should not be disturbed when either the celery or the soil is wet because it will cause the stalks to rust and rot.

It is a very good plan to tie paper loosely around the plants before the banking-up is begun. However, this will not do away with the banking-up, even with the self-blanching varieties when planted late in the season.

When the frost came the celery ridges were quite high. Stakes were driven along the sides and boards placed on edge; then more earth banked up.

The top of each ridge was nearly level, although the celery leaves protruded several inches above. This is essential, for if the air is entirely excluded the celery will rot.

When the freezing weather set in old carpet was spread over the tops of the celery. Additional covering was put on as needed and during the mild weather it was all removed and replaced whenever there were signs of a freeze.

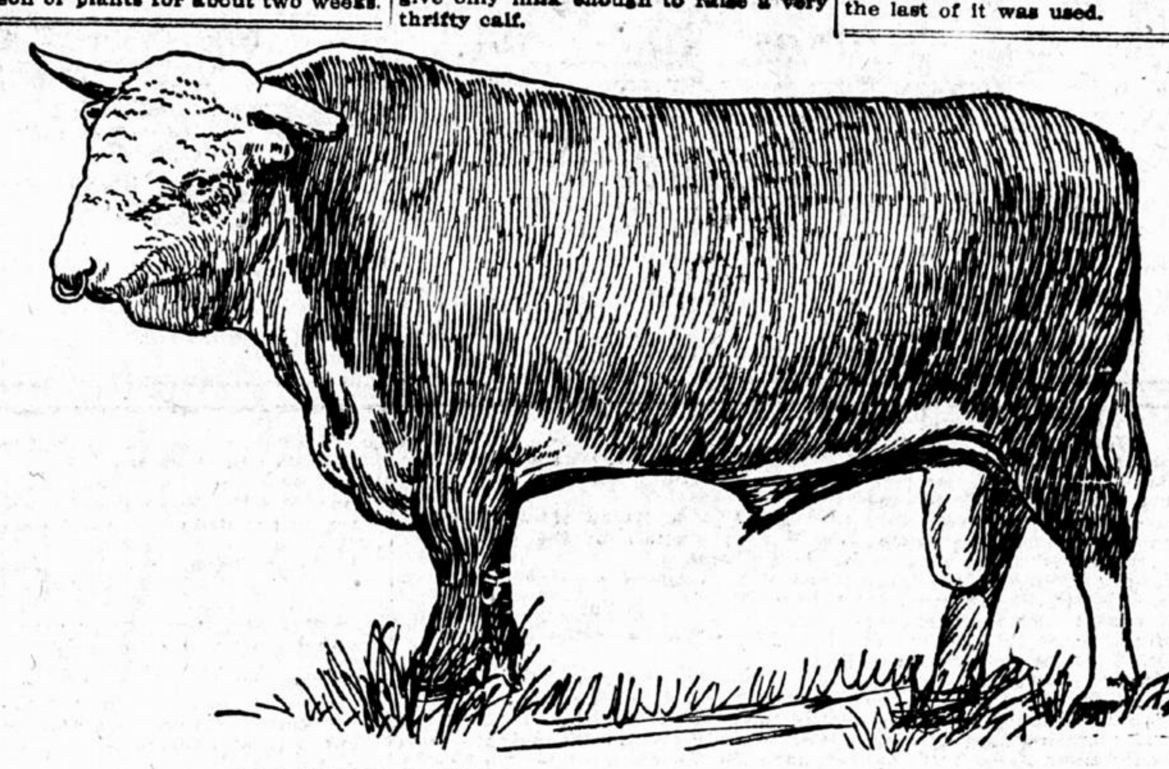
In this manner the celery was kept growing until late in the winter when the last of it was used.

Beef Breeds of Cattle. The Hereford.

The Hereford derives its name from its native district in England.

The most popular color and markings are dark claret or cherry, white face, throat, chest, legs, belly and small strip of white on neck and before the shoulders. The horns are medium to long, white and generally turning outward.

This breed represents the type that is suitable for the largest production of beef as it is low set and broad, heavy in forequarters; full, deep chest, level wide back, wide thick loin and quarters. The form represents that which is associated with a strong constitution, vigor and prepotency, and one of the strong points of the breed is their grazing attributes. The Hereford probably has no superior on the range. The cows of this breed give only milk enough to raise a very thrifty calf.



HEREFORD BULL, COLUMBUS, AGE 6 YEARS.

RAISING GEESE FOR PROFIT.

Raising geese for market is an important industry and has proved very profitable. It stands midway in importance between the chicken and turkey industries.

Geese are probably the hardiest of all domestic fowls, requiring less attention than cows or hens, and little or no outlay for buildings. The old geese do well in all weathers with

Embden and Toulouse crosses.

nothing in the way of shelter but a shed to run under, and usually they disdain that. They do best on wet or marshy land, where hens and turkeys would not thrive. They are, however, very different from other fowls, and unless their nature is understood and their requirements met they are the least profitable of all stock. In order to throw more light on the subject of geese and their greatest profits, the Rhode Island Station has experimented for some time, and has issued a most interesting report of tests made in cross breeding.

The following breeds and crosses were tested. Embden-Brown China, Embden-Toulouse, Brown China, Embden-African, Toulouse Brown China, Embden-White China, African-Brown China, African-Toulouse, Pure African, Pure Embden, and Prince Edwards Island.

The Embden-White China were the easiest to pick, were white when dressed, and though small, were plump and presented an attractive appearance. The Embden-African were also easy to pick and were large and plump. The White China, though the weakest and smallest of all breeds, when mated with Embden ganders produced vigorous, quick-growing goslings which were plump and solid when dressed. The Embden-Toulouse is regarded as the most satisfactory cross for large geese for Christmas trade. Pure African and Embden and African crosses grow best early in the season and should be marketed early. Pure bred China, African-Toulouse, and African-Brown China should be dressed before fall, in order that they may be easy to pick.

White-plumaged Embden and White crosses may be picked easily and later than the others.

Old geese lay a greater number of larger eggs and are more reliable than young geese. Young ganders are better for breeding than young geese. Young geese do not lay as many fertile eggs or produce as many goslings the first breeding season as they do the second. If geese are often changed from one place to another they are apt not to breed well, and the other conditions being equal they breed better the third season they are in a locality than the second.

In order to [illegible] geese for breeding should be [illegible] as early in the fall as possible, [illegible] later than October. Breeding [illegible] should have considerable exercise [illegible] be kept moderately thin [illegible] through the winter by light [illegible] and a free range for [illegible]. Toulouse geese lay well, but often [illegible] not set. The Embden geese [illegible] eggs, but make better mothers.

Brown China and [illegible] geese [illegible] graziers, and [illegible] good for [illegible] they should [illegible] green food and [illegible] pond or other body of water [illegible] is not [illegible] with the [illegible].

Very early [illegible] since the [illegible] they have an [illegible] Goslings are liable to [illegible] the heat [illegible] some place [illegible] escape the [illegible].

The [illegible] ly under [illegible]

[illegible]

be immediately taken away [illegible] them. They may be brooded [illegible] short time in outdoor brooders [illegible] after that confined in [illegible].

MAKE CAPONS [illegible] COCKERELS.

The very best [illegible] selected for capons. They should be good sized, vigorous. A [illegible] is necessary if much [illegible] to be put upon it and in handling [illegible] one should select a [illegible] tures as early as possible.

The capons must be [illegible] every moment and [illegible] reasonably large range.

If confined too [illegible] to become droopy and [illegible] not particularly active [illegible] ter if they have a [illegible] run and they [illegible] better.

Too many people [illegible] of waiting until [illegible] marketing before [illegible] If they are to be sold [illegible] should be pushed at [illegible] to get the very best [illegible] produce a large, fat capon [illegible] being a fancy price [illegible] white paper in a dish [illegible]

Movable hog houses [illegible] ble to distribute the hogs over the farm in clean, fresh quarters, [illegible] utilizing grass and forage crops [illegible] highest degree and at the same time reducing the danger of [illegible] minimum.

The Corn-Ear Worm Easily Controlled.

One of the encouraging things that turn up occasionally in the eternal warfare against insect pests is the fact that some remedy or other that is recommended is also an ordinary feature of good farm practice. It is that way with fall plowing. Several troublesome insects of field and garden happen to be in such location in the late fall that we can reach them by stirring the soil. One or two of them can be fought in almost no other way.

The pest that hits the mark most

Corn ear worm at work, eating the silk and young kernels.

closely is the corn ear worm. When infesting corn it eats its way along within the husk devouring the young and tender kernels and silk. As it works its way down into the ground the worm fills the hole behind it with soil. But once at a depth of 3 or 4 inches it turns and makes a short open gallery, part way to the surface. Then it retires to the bottom of this and remains until it becomes a moth. In the gallery the pupa of the last generation remains all winter. The moth does not come out again until next spring. Now, send a plow through the field in late fall and you accomplish very good results. The pupa is buried beneath solid earth, which later is compacted by winter or spring rains. The moths are thus effectually imprisoned, and never reach the surface to lay eggs and start the life round once more. Weather conditions or demands of crop rotation may make fall plowing out of the question, but if it can be done, there is much to be gained by it.—W. C. O'Kane.

MULCHING POTATOES GOOD PRACTICE.

The farmers of the great west are beginning to realize the great importance of mulching potatoes. Years ago when the soil was new this manner of treatment was unnecessary because the soil was so rich in food elements that the potatoes took an early and rapid start and made such excellent growth that the vines shaded the ground, thus preserving the moisture in the soil.

It would have been queer indeed for these early farmers to mulch their potatoes under such conditions, and when also, hay and straw were scarce articles.

But now the fact must gradually dawn upon them that if they wish to keep up the abundant yield of large mealy potatoes they must resort to some other means than merely letting nature attend to the matter to get results.

Perhaps if we understood the present condition of the soil it would help us to understand more clearly the necessity of mulching. The soil through continued cropping has become deficient in food elements and humus. Nearly every crop we raise is taken entirely from the field and no return is made in the form of manure, fertilizer or humus.

Under these conditions the potatoes make a slow growth and before the vines get the ground shaded the season is so far advanced that the hot winds and sun's heat have taken up most of the moisture of the soil, with the result that the crop is materially decreased.

The potatoes, being a large per cent water, naturally require a great deal of moisture to insure a large crop.

One should choose such time for mulching when the first potatoes show above ground. If mulched before this time it has a tendency to make the plants soft and puny, but if left until the first potatoes appear above the ground the plants will be stronger and better able to push through the mulching.

A fairly light mulch is to be preferred to a heavy one, for two reasons. First, there will be less trash to be removed from the fields in the fall; and, second, a light mulch will allow the vines to become low set and therefore less liable to danger from drought.

A light mulching need not be removed from the field at all but should remain there and thus add more humus to the soil.

The mulching should be about two or three inches deep when fairly well settled. Hay is to be preferred to straw for mulching as the latter has a tendency to become hot during the day, while the former will keep cooler under the same conditions.

After the potatoes are mulched they should not be molested except to pull the weeds that might come through the mulching.—E. Gitske.

SUMMERTIME DAIRY RATIONS.

While the average farmer takes it for granted that the dairy herd requires little or no attention as to the feed supply during the summer months, we have, nevertheless, found that the dairying will prove more profitable at this season if some system of feeding grain and roughage is but adhered to.

It is true that the cows become sleek and in prime shape while they can secure an abundance of green grass, but a little clean, bright roughage and some pure grain feeds in addition to the grass ration will aid in forming more substaintial bone and muscular tissue, at the same time increasing the milk-flow to a considerable degree.

Although the flavor and natural properties of grass are very conducive to stimulating a more profuse flow of milk, the elements contained therein are not adapted to the formation of a high quality dairy product, either in milk, cream or flesh, but will require something to improve its watery consistency—in other words, to add strength and solidity to it; for the well-filled milk pail does not necessarily contain a high per cent of butterfat, neither is the sleek, plump, grass-fed cow in solid flesh.

A man who thought he was a pretty good farmer was getting about $50 per month for his milk from his herd two years ago. He employed a young Hollander just over from the old country and in 18 months he almost doubled the output.

Try an old shoe for a sore toe;

DEEP FURROWS.

BY GUM.

Every man to his business. Naturally, the doctors and undertakers opposed the removal of the old-fashioned horse racks before the stores along the village streets.

If you have earned it, it is not criminal to rest at the proper time. For your hour of ease provide a rocking chair for yourself and be sure to have an extra comfortable one for your wife.

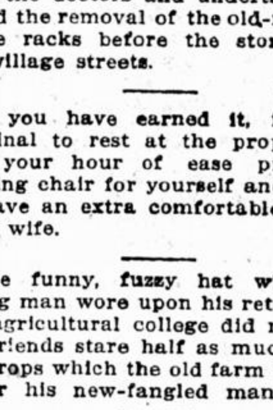
The funny, fuzzy hat which the young man wore upon his return from the agricultural college did not make his friends stare half as much as the big crops which the old farm produced under his new-fangled management.

Some farmers acquire an excellent reputation for keeping hired help year after year, when the real secret of their success is the good table their wives set.

Trousers patched in the rear are usually not evidence of industry. But we must be charitable—some men claim they think better while sitting.

FARMERS GAIN BY USING CONCRETE

Safety, economy and utility are the prime considerations in silo building and on all of these points farmers are finding themselves gainers from the use of concrete. Concrete structures are much safer and in the long run are more economical. The original



Concrete trough for stock.

cost is about the same as for silos of other materials if the farmer is able to do the work with his regular force. When the durability and lessened risk are considered it is seen that the concrete construction is economical in almost all circumstances. The concrete silo is sanitary and preserves the fodder in a satisfactory way. This fact has been demonstrated by government tests.

Farmers who have not studied the subject of concrete construction will do well to take it up. In most cases the material will be cheaper and handier than lumber. It is of high value for walks, dairy floors, milk houses, watering troughs and steps, as well as for general architectural work.

Where the farmer is able to supply the sand and gravel without much expense and has time to perform the labor of construction, or at least to supervise it, the outlay for any given piece of work will probably be less than it would be if lumber were used. The proportion of cement required is not a large item of expense.

The farmer also gains in the matter of insurance as he goes forward with his experiments in concrete construction. This is an important consideration, and he adds both comfort and safety, besides saving money.

KEEP ONLY THE MONEY MAKERS.

The man who has made two blades of grass grow where but one grew before has been looked upon as a public benefactor. But the man who has succeeded in producing one blade at less cost has worked out a more complex problem.

Increased production does not always bring an increased profit. Increased profits from the diary business must, in a measure, come from more economical production.

To reduce the cost of production we must have cows that by their breeding and individuality are adapted to our needs. For the butter and cream producing diary, the Jersey and Guernsey cows have a certain advantage because of the character of their milk, which contains a higher percentage of butter fat.

The Holstein and Ayrshire cows are compelled to elaborate more solids to produce the same amount of fat. This is a breed characteristic.

On the other hand the Holstein and Ayrshire cows can produce milk solids more economically and are better fitted for the production of cheese and market milk.

Within the dairy breeds we find a greater difference between individual cows than between the breeds. We are keeping too many cows. We do not know what they produce nor how much they eat. Some pay a profit and some are eating up the profits made by the others. It takes the profits from the good cows to balance the loss from the poor cows.

The first step toward reducing the cost of production is weighing and testing the milk from each cow in the herd often enough to keep a good line on what she is producing.

Weighing the milk for one day each week and testing it once each month will give practically the same results as weighing and testing each milking.

By taking these weekly and monthly records and making a yearly average it is easy to determine how much milk and butter each cow has produced for the year.

This is but one-half the question. Some cows are fairly large producers but not economical producers. Others may produce less milk or butter yet be more economical producers.

A light feeder may digest her food perfectly and be an economical producer. We should keep a record of each cow's feed one day each week and its market value, in connection with the weighing and testing of the milk.

This will show what a pound of milk or butter costs from each cow in the herd.

Sell the cows that produce butter for twenty-five cents per pound and keep all that produce a pound for fifteen cents. The scales, the Babcock test and pencil and paper will assits in weeding out the unprofitable cows from the herd.—N. K.

UP-TO-DATE HARVESTING.

We prefer to leave shocks uncapped for a day or two until thoroughly cured; then cap with square canvas to fit the shocks. Light weights are tied to each corner of the canvas to prevent the winds from blowing it off.

These covers last for years and their cost is as nothing compared to what they save in their lifetime.

Protection from the birds and insects must be considered. Wind and rain cannot thresh off the grain. There will be no alternating wetting and drying to shrivel up and lessen the weight. Neither will alternate heating and cooling promote molding as when shocked the usual way.

A man's work lives after him. The man who ends his career on a farm that he has improved in productivity and appearance leaves a suitable monument.

Helping the Farmer [illegible] To Help [illegible]

There is no need [illegible] to keep on farming in the same old haphazard way. A course [illegible] agricultural college will fill him with a strong desire to farm in the most modern way—the way which brings success. Plan to spend a [illegible] or months, if possible, at the [illegible] this winter.

All of these schools have short courses for those farmers, young and old, who can not be away from home for any length of time. [illegible]

Farmers learning to pack [illegible]

courses, the time [illegible] up—morning, afternoon and [illegible] that the wide-awake farmer can accomplish a great amount [illegible] very short time.

A course in general agriculture is given for farmers, who do not care to specialize in any particular branch of farming, but wish to secure a [illegible] knowledge of all phases of agriculture. It includes work in soil [illegible] management, farm [illegible] raising, dairying [illegible] animal husbandry [illegible] sect study, and plant [illegible]. A study of these [illegible] crease the earning [illegible] farmer.

HELPS FOR THE [illegible]

Lack of sufficient ventilation in a bedroom will often produce sleeplessness, though the air should not blow directly upon the bed.

Turpentine sprayed in the [illegible] of cockroaches will [illegible] them and often [illegible]

If stockings are [illegible] wearing they will [illegible] is especially true of [illegible] stockings. The slight [illegible] the threads closer together.

A few chopped raisins [illegible] frosting before spreading [illegible] makes a change [illegible]