

## FARM FIELD AND GARDEN

### THE WEEDER.

A Tool of the Good Farmer and the Best Way to Use It.

The weeder is essentially a tool of the good farmer, but it is not always the good farmer even that can give it just the proper place, where it will do the best work, and out of its proper place it is not worth much. But usually the good farmer will be more apt to have the proper place than the poor farmer. Says a writer in the Ohio Farmer. Where I have found the best place to use the weeder is on land that was well plowed and harrowed until perfectly level, and land that is full enough of vegetable mold to be loose and mellow, and the seed, whatever it was, put in an even depth and deep enough so that the weeder would not pull it out. With the soil in such a shape, and every careful farmer likes to see it, the weeder used often and early will prove itself a very valuable tool.

But, on the contrary, if the field is badly plowed and harrowed and left lumpy and cloddy, with roots and stones and other obstructions in the way, and if the seed is put in it won't have to be in such a place, and then if the weeds are permitted to get a good start, it will be about as poor a tool as can be put in the field. It can never come into competition with "the map with a hoe" when it comes to pulling and digging good sized weeds from around the crop. But those who have learned that the best time to kill weeds is before they can be seen are the ones that will make a success with the weeder.

Or perhaps it may be better to go farther back than that and say that the killing of weeds is only the secondary object in cultivation, and that the loosening and stirring of the soil to stimulate the plant growth are the first object of cultivation and that the killing of weeds is but a side issue. This I believe is the best way to look at it, and if we work on this principle the weeds will not give us much trouble.

The use of the harrow on cultivated crops after they are planted has become quite common among farmers, and has done much to pave the way for the weeder, which can be used much longer and after the crop is much larger. Any one who has harrowed his corn or potatoes will not doubt have noticed that the greater part of the damage done to the crop is when something like a corn stubble or sod catches under and drags along and tears up the crop. This trouble does not occur with the weeder, as it is so closely under the control of the one who holds it.

Of the various makes of weeders it is hard to say which is best. It is not so much a question of round teeth, or flat teeth, or slant teeth, as it is where and when we use it, and the farmer who uses his weeder when the conditions are the best and uses it intelligently will be satisfied with it. But unless he does he will be apt to condemn it.

### Our Agricultural Exports.

According to official statistics of our foreign trade, of the merchandise of domestic origin that was shipped from this country to foreign markets during the fiscal year 1898, 70.98 per cent, measured in value, consisted of the various products of American agriculture. Without exception these were the largest agricultural exports ever sent from the United States, their total value reaching as high as \$858,507,842. The next highest value on record, for 1893, was exceeded in 1898 by more than \$30,000,000. The increase over the figures reported for 1897 amounted to \$168,732,749, making a gain of nearly 25 per cent.

One of the interesting facts as regards our agricultural exports for 1898 is that they show a greater gain proportionately than our nonagricultural exports. In 1898, as has already been pointed out, products of agriculture formed 70.98 per cent of our total shipments of domestic merchandise, whereas in 1897 they formed only 68.84 per cent. Our export trade in farm produce more than kept pace during 1898 with the remarkable growth that occurred in the exportation of American manufactures.

**Experience With Bee Plants.**  
I have tried crimson clover for three seasons, and for this section it is a success, and coming just after fruit bloom it has proved a great boon to my bees. I practice sowing in corn at the last cultivation or with buckwheat. I prefer to have it sown from June 20 to July 1, as it is not so liable to winter kill as sown this early, but I have sown as late as Aug. 15 with a good stand the following spring.

Sweet clover yields abundantly here, but grows most successfully on rich land. I find the seed propagates best when sown during the winter, and when thus sown it will hold its own in all waste places, provided the ground is rich, says a West Virginia correspondent of American Bee Journal.

**How to Kill Weevils.**  
Bluishphide of carbon is a very deadly gas, and will kill any living thing that breathes it. The woodchuck has usually several openings to his burrow. It is necessary to use the gas in some slight inclosure. First make sure that the woodchuck is at home. Then close all the openings but one. Wrap a small stone in either cotton batting or rag and saturate the cloth with the bluishphide, being careful not to breathe it. Then roll the whole thing down into the hole, poking it in with a stick if necessary, and then close the opening securely. The bluishphide will evaporate quickly, and the vapor will spread through the hole and kill the weevil. If he breathes it—Burlington.

### ABOUT BEES.

A Number of Timely Hints For Apiculturists and Farmers.

If the hives are located where they get the direct rays of the sun during the middle of the day in the months of June, July and August, it will add to the comfort of the bees if some kind of artificial shade is provided. This can easily be made by using boards fastened together so as to form a wide cover to extend over the front of the hives, and it should be held in place by stones, bricks or some other weights. All hives should be painted white or some light color, as dark colors absorb heat. There is danger of the combs melting down in dark colored hives exposed to the direct rays of the sun. Whatever form of shade is provided it should be so arranged as to admit of a free circulation of air all about the hives.

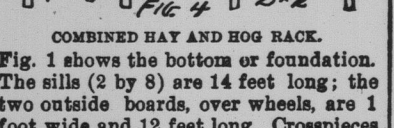
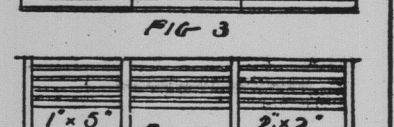
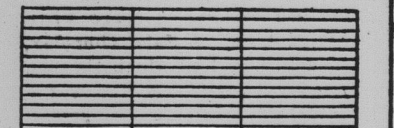
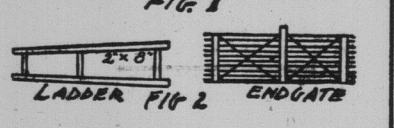
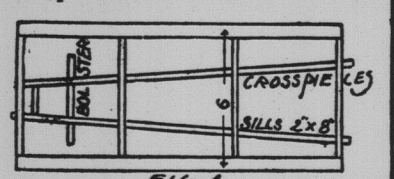
A swarm of bees in May is worth a load of hay.  
A swarm of bees in June is worth a silver spoon.  
A swarm of bees in July is not worth a fly.

Thus runs the old adage, and with the old box hive method of bee keeping a swarm in July was of but little value. But with the use of movable frame hives, foundation and other modern improvements "a swarm in July" can easily be built up into a strong colony before winter sets in.

No intelligent beekeeper will deny that bees will at times during a hot, dry spell, when no honey is to be had in the fields, turn their attention to overripe or unsound grapes, peaches, etc. But they are seldom if ever the aggressors or the first to begin the attack. "But," says some one, "I have seen bees feeding upon grapes." Very true, but if you saw a lot of dogs feeding upon the carcass of a dead horse would you come to the conclusion that they had killed the horse? After the skin of a grape has been punctured by a bird or wasp, so that the bees can get their tongues in the opening, they soon clear it out. A careful investigation will prove that bees do not destroy sound fruit. They simply gather up what would otherwise be lost.

**Does spraying fruit trees injure the bees?** I believe it is generally conceded by both beekeepers and horticulturists that if fruit trees are sprayed at the proper time, either before or after they are in bloom, it cannot possibly injure the bees, says a writer whose hints, as given above, occur in American Gardening.

**Useful Combination Rack.**  
The following plan for a hay and hog rack is presented by an Ohio Farmer correspondent as the best he has seen.



**COMBINED HAY AND HOG RACK.**  
Fig. 1 shows the bottom or foundation. The side (B by C) are 14 feet long; the two outside boards, over wheels, are 1 foot wide and 12 feet long. Crosspieces (B by D), 6 feet long.  
Fig. 2 includes the ladder or upright, 9 by 4 stuff any length desired, and the end gate. Fig. 3 is the floor for the bottom and may be made of any floor stuff. Fig. 4 is the side for the rack, the lengthwise pieces of 2 by 5 stuff and the uprights 2 by 2. Trace chains with hook on each end are used with each end gate.

**Notes From the Crop Circular.**  
According to Statistician Hyde's report for June, with the exception of Oklahoma, there is not a state or territory reporting winter wheat, the condition of which is not below the 18 year average. The number of points below the June average in the principal winter wheat states is as follows: California, 1; Ohio and Texas, 7; Tennessee and Oregon, 11; Pennsylvania, 13; Kentucky, 14; Maryland, 15; Virginia, 17; Missouri and Washington, 20; Kansas, 26; Indiana, 27; Illinois, 36, and Michigan, 38.

The total reported acreage in oats is about 69,000 acres, or seven-tenths of 1 per cent less than last year. The average condition is 88.7 as compared with 98 on June 1 of last year and 91.2, the mean of the June averages for the last 13 years.

In the 13 states having 3,000,000 or more apple trees in bearing at the last census the condition on June 1, as compared with the average June condition for the last 15 years, was as follows: New York, 1 above; Pennsylvania, 6 below; Michigan, 14 below; Missouri, 3 above; Illinois, 8 above; Indiana, 5 above; Kansas, 4 above; Kentucky, no difference; Tennessee, 3 above; Virginia, 3 below; North Carolina, 4 below; Iowa, 11 below, and Maine, 31 below.

The peach crop will probably come as near being a total failure as it ever will come in a country of such vast extent and such varied climatic conditions as the United States. With the exception of California, where the conditions indicate from 75 to 95 per cent of a full crop, there is not a state that has the promise of as much as two-thirds of a normal crop. Few look for even a full crop.

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### THE GRAIN HARVEST.

When to Cut the Small Grains—Use of the Self Binder.

The exact time of harvesting small grains depends primarily upon the use to which the crop is to be put. With wheat, where the straw is a secondary consideration, or no consideration at all, as in feeding the greater part of the wheat to stock, sections of the United States should be cut when the grain will weigh the most. To secure this condition cut when the grain is in the advanced dough state. On small farms where one machine is used for the entire crop, this rule must be varied according to circumstances. If the crop is attacked by the Hessian fly, straw falling occurs and becomes more serious as the grain matures. It is consequently advisable to begin cutting a little earlier, so as to secure as much of the grain as possible. The binder should be run low in this event, to gather up the fallen heads. Then, too, if the crop is attacked by rust, the sooner the crop is in the shock the better. The longer it stands the more injury the grain will sustain. If the wheat is allowed to get too ripe, great loss results from shattering when the bundles are handled. In view of all these considerations, no definite rule can be given as to the best time for harvesting wheat, but each farmer must be governed by circumstances.

With oats, the condition of the straw must be considered as well as that of the grain, as this makes valuable forage, provided the crop is cut at the proper time and well cured. If the weather is dry, as is usually the case during oats harvest, cut when on the green order, bind in small bundles, put up in shocks containing not more than ten sheaves and stack as soon as thoroughly dried out. When thrashed, the grain may not weigh quite as heavily as when allowed to stand a week longer, but the straw will be very nutritious and almost as valuable as timothy hay for cattle and horses. Some farmers prefer to cut their oats with a mower and treat it exactly as they do hay. In this case, after it is cut with a mower, it is raked into windrows and taken directly to the barn or stack. It is not thrashed, but the grain and straw are fed together.

For young stock and dairy cattle this kind of food, if well cured, is especially desirable. Because of the shortness of the clover crop this season more oats than usual will be cut in this manner. It is necessary when storing to put in some place where mice and rats cannot get at it readily, otherwise there will be great loss. The rats not only destroy the grain of the oats, but cut up and mutilate many of the leaves, rendering the forage unpalatable and unfit for feed. As a rule, most farmers prefer to cut their oats with a binder. In concluding this advice about harvesting the small grains American Agriculturist notes the excellent work of the modern self binder: It cuts everything from the flax to the tallest rye. Self binders are now so simple that almost any one can operate them, and they need but a few extra hands. Keep well oiled, never allowing the machine, particularly the canvas parts, to get wet. Cover it carefully each night and place in a shed as soon as the harvest is completed.

**Late Cabbage.**  
Keep the soil between the rows loose and free from weeds by use of the horse hoe or the corn plow. Immediately around the plants hand weeding should occasionally be used to keep the ground loose and porous. A handful or more of superphosphate of lime hoed in around each plant when about one inch grown or a little earlier will have a strikingly beneficial effect on the thriftiness of the plants.

This keeping of the plants in healthy condition by heavy manuring and good weeding is mentioned in W. Atlee Burpee's little manual on growing cabbage as the best remedy against cabbage lice, which during long dry spells should occasionally be used to keep the ground loose and porous. A handful or more of superphosphate of lime hoed in around each plant when about one inch grown or a little earlier will have a strikingly beneficial effect on the thriftiness of the plants.

**Saving the Late Cucumber Crop.**  
Co-operative spraying experiments of the Ohio station upon a commercial scale have given an increase of 75 bushels per acre upon sprayed compared with unsprayed cucumber vines attacked by downy mildew.

The practicability of saving the late crop of cucumbers from down mildew by use of bordeaux mixture is fully demonstrated by the experiments. Spraying for this purpose need not be begun earlier than July 25 to Aug. 1. If a crop of pickles or cucumbers is harvested by Aug. 15, spraying for downy mildew is not required.

**A Scotch Verdict on Nitrogen.**  
A Scotch investigator concludes that "the conditions under which we are warranted in expecting that nitrogen will be of service to agriculture are the absence of sufficient nitrogenous matter in the soil capable of producing a full leguminous crop and the absence of the bacillus radiicola, which is the plant to obtain a sufficient supply of nitrogen from the atmosphere. It is doubtful if these two conditions will be found to coexist in any soil under rotation in this country."

### SAUERKRAUT FOR COWS.

Said to Be an Excellent Thing to Eat.

A reporter among the Pennsylvania Germans of Lancaster county discovered what will probably be to most people a distinctively new use for sauerkraut, a native production of old Lancaster and a staple article of food, says the Pittsburgh Times. He had called to see an old friend who keeps a dairy and found the dairyman in the act of taking great bunches of succulent cabbage from a barrel in the cellar. The odor pervaded the neighborhood and made glad the nostrils of every true and loyal Pennsylvania Dutchman within a distance of about half a mile. The reporter was astonished when the dairyman picked up a bucketful of sauerkraut and carried it to his cow stable. The second animal in the long row of stalls was a big, strong boned cow. Her head was hanging low under the manger, although there was a plentiful supply of hay in the rack above. Her ears had a dejected droop and her eyes were half closed. She was evidently a very sick cow at a time when she should have been in good spirits. For among the Pennsylvania Germans it is still a popular belief that on Christmas eve the cows in their stalls may be heard to talk to each other of the great event of the day commemorated. The bucketful of sauerkraut was dumped into the manger. The cow by some peculiar system of feeding first gave evidence of the appreciation by slowly switching her tail, which had before hung limp and lifeless. Then she raised her head, poked her great muzzle into the kraut and slowly began to munch the stuff. Fifteen minutes later she looked quite happy. She had eaten all the kraut and was taking great mouthfuls of the hay. The dairyman said sauerkraut had long been known as one of the best things in the world to give a sick cow an appetite.

### Modern Milking Stool.

The cow cannot kick over the milk pail where the invention of Andrew Dahlstrom is used. Besides offering security for the milk, it also affords a seat for the milker. The idea, which is clear-



MILKING STOOL AND PAIL HOLDER.

ly shown in the cut, consists of an ordinary oblong four legged bench of sufficient size to permit of an opening in its top to receive the bucket. This opening has slanting walls, so as to hold the vessel at an angle to facilitate the milking operation.

### Buttermilk From Skimmilk.

In a late issue of Home and Farm a number of inquiries were printed as to the feasibility of making good butter milk out of separator skimmilk. As there seemed to be some doubt about it in the minds of some of our correspondents, to set that doubt at rest the De Laar separator people have sent us the following communication in regard to inquiries about making buttermilk from separator skimmilk: "The usual way of treating this skimmilk for making buttermilk is to set the milk after it is separated in a vat or tub mixed with what is called a starter, or, in other words, a small portion of buttermilk. This has a tendency to sour skimmilk, and this should stay in the can at least 24 hours before it is churned. If soured, put it in a churn and churn it for one-half an hour to an hour. By treating the milk in this way you will have excellent success in making buttermilk. Your idea of mixing the buttermilk is correct, and the temperature stated, 75 to 80 degrees, is about right. We know of a great many that are treating their milk in this way and are getting entire success with the buttermilk."

### Iodine Treatment For Milk Fever.

The new cure for milk fever by the injection into the udder of a solution of iodide of potash is claimed by veterinarians and others to give very excellent results, and already it is becoming recognized in certain quarters as one of the most reliable remedies yet introduced. As already pointed out in these columns, it consists in injecting into the udder through the teats one dram of iodide of potassium mixed with one quart of boiling water cooled down to 88 degrees F. before being used. Half a pint of this is to be injected into each quarter of the udder. The animal should then be placed in a comfortable position on her chest and the udder gently rubbed. Her position should be changed every two or three hours, and only one injection is necessary. It should be borne in mind that before the injection is given the udder and teats should be carefully washed with soap and water to which a little carbolic acid has been added.—Farmers' Gazette, Ireland.

### Yarding Cows at Night.

The practice of bringing cows up at night is not a good one. It is far better to leave them in the pasture and milk them there, even though it makes more labor. In hot weather the cows, if allowed their freedom, will graze during the evening and early morning while the dew is in the grass, and will then be down to digest what they have eaten. If yarding of cows is done at any time of the day, it should be in the middle of the day.—Boston Cultivator.

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### SPRAYING POTATOES.

For the Prevention of Early and Late Blights and Beetles.

In some useful suggestions as to spraying the Rhode Island station says: The most serious disease affecting the potato is commonly known as the late blight, and is caused by the growth within the leaf tissues of a fungus, which may often be seen on the underside of an affected leaf as a delicate white mildew; hence often called potato mildew. Its first appearance is described as a whitish or purplish black spots on the leaves. These spots, under the favorable conditions of warm, moist weather, spread very rapidly, soon involving the entire plant, which becomes black and drooping and decays rapidly, emitting a peculiar, disagreeable odor.

Early blight, sometimes called the "leaf spot" disease, more especially affects early potatoes and is also caused by a fungus. It may be recognized by the appearance of small spots on the leaves, which slowly enlarge, forming irregular, concentric rings. The foliage dies prematurely, but does not decay, nor do the tubers, when affected by the late blight. Yet it largely prevails, the disease very seriously affects the yield not only in quantity, but in quality.

Tip burn is not caused by a fungus, as are the blights, but by unfavorable conditions affecting the growth of the plant, especially dry, hot weather and lack of sufficient moisture.

As both the early and late blights are caused by fungi, the surest and most perfect protection yet known is the bordeaux mixture. This should be applied before the early blight makes its appearance, and the applications continued, as necessary, to keep the plants covered with a thin film of the mixture until the tubers are grown and matured. It should be borne in mind that the best idea in view now of the bordeaux mixture is prevention rather than a cure.

The spores of these fungous diseases as they fall upon the foliage protected by the blight mixture are prevented from entering the host plant by the film of copper compounds and thus prevented from propagating the diseases.

Three to five applications will perhaps be sufficient, yet the weather conditions must govern the number of treatments, as, if heavy showers or rains occur, extra sprayings may be necessary to keep the plants well protected.

In the case of the late blight, selecting seed from fields that were free from the disease and planting tubers entirely free from infection are suggested as checks to the disease. The spores of this disease live over winter in infected tubers; hence, if such are planted, they may become centers of infection by introducing the disease.

Tip burn can only be combated by thorough preparation, proper fertilization, conserving the moisture in very dry seasons by proper cultivation, and making every condition favorable for early, vigorous growth, thus giving more power to withstand the attack of disease.

The Colorado beetle is the most troublesome enemy, although the flea beetle, a very small black beetle which attacks sprouts during the early stages of growth, sometimes causes considerable injury by piercing the leaves full of small holes, and thus rendering the plants weaker and more liable to attacks of disease. The Colorado beetle is easily controlled without extra labor by using from three-quarters of a pound to a pound of paris green per acre in the first two or three applications of the bordeaux mixture as needed. The bordeaux mixture is also very distasteful to the flea beetle, and they will do comparatively little damage where it is used.

### Destroying the Oxye Daisy.

The oxye daisy easily disseminates itself wherever farming is neglected. It can be kept from farms, however, if precaution is exercised. C. S. Murkland says he has seen several farms in New Hampshire that are completely overrun with this weed, but are kept absolutely free from it. During the past few years he has had considerable experience in endeavoring to overcome this pest. One method of keeping it from spreading commonly practiced is to cut the hay early and thus avoid the maturing of the seeds. In order to ascertain just how elastic this period might be, in July, 1897, a number of daisy blossoms were collected for study. The date of the opening of each blossom was noted, and specimens were taken at various periods from this time on.

These observations lead to the belief that it takes at least 12 days for seed maturity of the daisy after its first blossoming.

### Keeping Bees in the House.

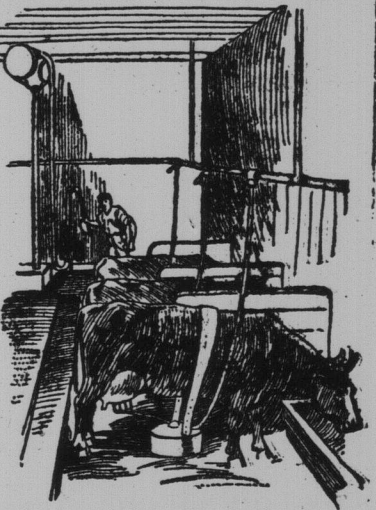
I once visited a place where the mistress of the home told me she always went to the hive in the wood shed when she wanted honey and got on a plate just what she wanted, and no more. In the winter, she could do this without trouble with the bees at all, for they would be down in a cluster. In summer, she drove the bees away with a little smoke, and if the honey ran down on the bottom of the hive, it did no harm, because the bees would lick it right up again. They had kept the same hive for a great many years, and this one colony furnished them with all the honey they wanted to use, and some seasons even more than that. Such a hive should be made very tight and warm, and the door to open to get out the honey should be arranged so the bees would not stick in it, so as to annoy or disturb them in trying it open, writes A. I. Root, in The Rural New Yorker.

### MILKING BY MACHINERY.

A New Mechanism Which Milks Several Cows at Once.

In Germany they have invented a machine for milking the cow. The inventor is named Murreland, and his machine is now in successful operation. The principle of the machine is merely suction through long tubes. The advantages of it are the saving of expense and the greatly increased cleanliness due to the fact that human hands do not have to come in contact with the cow or the milk.

An iron tube an inch and a half in diameter runs all round the cow shed at a height of about three feet above the animal's shoulders. This is the distributing pipe, and from it descend to the side of each animal a sterilized rubber tube ending in the milk reservoir placed under the cow. These reservoirs are of cylindrical form and airtight.



MURRELAND MILKING MACHINE AT WORK. With a thick glass cover. From the reservoir a tube with four mouths connects with the four udders of the cow. Instead of a handle the reservoir has two books at the side, to which is attached a band which passes over the cow's body and holds the reservoir at the right place.

All the tubes are in connection with a great cylinder installed in the ceiling, and from which a tube descends vertically into a vat of pure water. A hand pump serves to draw the air out of the cylinder. Rarefaction then takes place and extends throughout the system of tubes. The connection between the pneumatic cylinder and the vat of water serves to regularize the pressure. A few strokes of the pump starts the work of milking the cows. There is a faucet at the end of the tube leading to each reservoir, and as soon as this is opened, the work of milking begins.

### Queer Cheese.

There is one manufactory in Wyoming county, N. Y., of which but comparatively few of its people have any knowledge. Any one who is interested in cheese, especially the Italian makes, can post himself regarding one variety of the article by visiting a little hamlet not 80 miles distant from Rochester or Buffalo on the Erie railroad. The village is Dale, located in the town of Middlebury, this county, and it is such a little place that it has only a store or two and a postoffice. The cheese factory is not far from the station. It is a small frame building with a receiving door on the first floor. The factory hands are Italians, and the farmers who live nearby say the output of the plant is sold in Chicago for Parmesan cheese. The Italians said it was known as something, pronounced like "carzo cavaderle," and from consulting an encyclopedia the writer concluded it was Cacio cavale, of which there are the Milano and Sorrento varieties made in Italy. Visitors to the little burgh are shown the establishment as something out of the ordinary. The cheese is made from cows' milk and the farmers about there are paid 70 cents a hundred for milk delivered. The make up of the plant consists of two boilers, one of which contains hot water, and in it the cheese is dipped after the milk has been turned to curd and is ready for handling. For this cheese is a strictly handmade article. City people who have seen men in the confectionery store windows pull fatty, know about the way. This cheese in the condition of long curled ropes is placed in a big, low tub, and there it is given the hot water bath, and when the Italians pull and repull, put back in the tub and then pull it again. The men stand six feet apart and the cheese is stretched at least double that length, until it has reached the proper grain. When it is completed, it is shaped into cheese wheels which resemble a bowling alley pin with the bottom, about the size of a coconut. It is then, aged for about half a year, when the outside becomes hard. During the aging if it first becomes green, afterward a yellow white. The outside then peels off like the skin of a kid glove orange. The article is then said to have cost about 14 cents a pound. The imported article costs up to 28 cents in New York at wholesale, and is said to be very nutritious.

### Making a Pasture.

An Iowa farmer writes. The best pasture we ever saw in this locality was made by disk and sub in the fall, sowing rye and pasturing the rye and second growth cuts that fall. In the spring after the ground was dry mow clover seed was sown at the rate of one bushel to eight acres and stock turned in. When the rye headed, it was clipped with a mower set as high as possible. This made a mulch for the clover, and also thickened it, and it was a good pasture all the season. The next year it was still better, the cows wagging their bellies in clover. Early in July the clover was clipped with a mower, with the bar set at the highest point and two tons per acre of fine hay secured, and the stock revelled in the new growth of clover the rest of the season. We shall plant 2 1/2 acres this year.