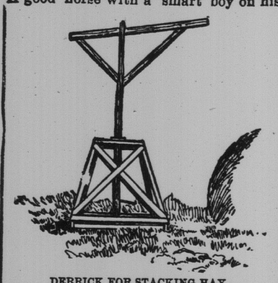
FARM AND GARDEN

HANDLING CLOVER HAY.

Derrick and Rake For Quick Stacking From the Swath.

"Where clover hay is stacked outside many farmers use the devices described by Mr. Jamison in the following article: The derrick revolves in the frame. The high arm permits the slingful of hay to be lifted above the stack. Then by pulling on the bar shown near the bottom of the pole the load is swung over the stack and dropped where it is wanted. The rake slides on the ground. A good horse with a smart boy on his



DERRICK FOR STACKING HAY.

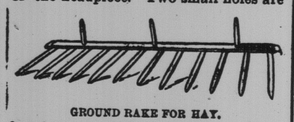
back is hitched at each end. They drive along the swath and push or pull the hay into bunches at the side of the stack," says The Rural New Yorker.

In the article alluded to Mr. Jamison advises in part as follows:

As clover hay in stacks or ricks, to be kept from spoiling, must be covered with some other material, the stacks should be as large as possible, or the cost of the covering will approximate in cost the value of the hay. The risk in allowing the hay to cure in the cock makes it necessary to put in the rick from swath or windrow, or, if from the cock, before it has thoroughly settled.

By the use of a derrick, with arm swinging 35 feet high, a haysling instead of horse fork and the hay brought to the rick with a large rake, it can be put up very rapidly. This plan will save the cocking, but it should be drier to put in rick from the swath than if put in cock. The material for the derrick illustrated is as follows: If the pole can be secured in the nearby woods, only the labor in securing it stands against it. The base is 8 feet square, built on runners; frame, 10 feet high. The pole for sling use should be 30 feet long; long boom, 17 feet; short end, 4 feet; long end, 13 feet; short brace, 7 feet long; brace, 14 feet. Top of frame should be 5 feet square. The whole should be bolted together, so that it can be taken to pieces and stored in shelter when not in use. If built to use a sling, the long end of the arm should be 35 feet high.

The long rake shown is 18 feet long, with 12 teeth 6 feet long. The headpiece is 2 by 8 inch hard pine. The teeth are heart hickory, 1½ by 3 inches and 6 feet long. The teeth should be set in the headpiece an inch in front and one-half an inch at back and the teeth sloped for about a foot back from the point on the lower side. Set in headpiece as directed. This will cause them to follow the ground closely. Over the teeth where set in the headpiece should be placed a plank 1 by 8 inch by 18 feet and bolted through teeth, plank and headpiece. The teeth should not be set too rigid, as they will work better with some play. The rake should have three standards in the headpiece about 2 feet high. A bolt is put through each end of the headpiece. Two small holes are



GROUND RAKE FOR HAY.

bored in each end, the narrow way of the piece, and sufficient wire run through to make a strong loop.

For hitching use a light chain 8 feet long at each end, with ring at one end and grab hook at the other.

Making the Lower Grades of Hay.

As the hay crop of the New England states promises not to be large this season, the following by an American Cultivator correspondent is quite apropos: "As there are many fields of grass that will not make prime timothy hay, it is a question sometimes what to do with it. If there are indications of a good market, it will pay to give as much attention to curing this hay as the best timothy, for the grades approximating prime timothy sell only for a few cents a hundredweight less. A good deal of the final valuation of this hay will depend upon the cutting, curing and packing for market. This more often determines the selling price of hay than the actual condition of the grass before cutting. But if the hay is indifferent and bad in the field it will pay best to use the land for something else. A run down hayfield is of little real value in these days of competition.

Sprinkling Roads With Oil.

Supervisors of Los Angeles county, Cal., recently examined several sections which had been sprinkled with oil and found them in excellent condition. A mile stretch at Alhambra, sprinkled once, a year ago, had no dust, and riding over it was like riding on rubber. Another section had 33 barrels of oil used on it three weeks ago and was in perfect condition. Roadbed oil costs about $4 a barrel.—Rural New Yorker.

The acreage reported as under barley shows an increase of 3.1 per cent over last year. The average condition is 91.4 as compared with 78.8 on June of last year and 89.6, the mean of June averages for the last 18 years.

FALL PASTURES.

Advantages of Some of the Cereal Grains.

The present is a good time to consider the methods of supplying ample pasture for stock this fall, says Professor W. A. Henry. If there is any possibility of scant pastures from the means already available, let one of the present grainfields be devoted to that purpose. As soon as the grain crop is harvested let the land be prepared by plowing and reducing to the finest possible condition. On this well made seed bed sow oats, wheat, rye or barley, the last named being far preferable. Where one wishes to gain both fall and spring pasture, rye will be found satisfactory. Where fall pasture only is desired, by all means let barley be sown. When sown in midsummer, rye and wheat plants are apt to show red rust in the hot weather, and this is a serious drawback in many cases.

Barley is a wonderful plant in many particulars. Next to rye, it grows nearest to the north pole of any cereal in Europe, and still it flourishes in Arabia and other hot countries. Sown in midsummer, young barley plants will in a short time reach a height where they can be pastured off, and a barley pasture will hold good until late in the fall. On several occasions the writer of this has seen barley which was sown in July head out in the fall, and last season a sample of mature barley grains was sent to us grown from the second crop. This, of course, is unusual, but it shows what may happen. The first freezes of fall do far less harm to young barley plants than to wheat or oats, and this is an additional advantage.

Few farmers realize how advantageously some of the cereal grains may prove for pasture purposes. They are apt to think of them only as grain producers, when in truth wheat, rye, oats and barley are all grass plants as much as timothy and blue grass, though they do not form quite as dense sod. It is well to bear in mind the secondary value which these plants possess and use them whenever necessity or opportunity requires.

Grasses and clovers can usually be sown along wth these grains, with a good "catch" as the result. I think that experience will show that even when the barley or oats are pastured off the grasses and clovers will still hold, and thus one can get a pasture crop and a catch of grass the same season. More experience is needed on these points, but the subject is an interesting one for those who are studying to increase the capacity of each field of his farm until all are made to produce to the utmost.

Sunflower Seed For Cattle Food.

Sunflowers are no longer to be regarded as mere garden ornaments with a faculty for turning their heads so that their large, full faces are aimed always at the sun. The plant is a big, oily, gold producing article of commerce and has its own peculiar points of growth and management. It has just been learned in England that sunflower seed is the most fattening of all foods for cattle. Several farmers there are coining money by raising the plant wholesale for market. Within a mile of the principal farm in the southern counties there are more sunflowers probably than in all other parts of the world. The farms look like great yellow mists when viewed from Edgeton hill, 20 miles away.

There are 500 acres of sunflowers altogether, and when the ripe heads are cut in the fall the crop will yield about 300 wagon loads of seed. The market value of the seed is $50 a load—a total income of $15,000 for the crop. The seed is crushed and pressed into cattle cakes. To raise these great sunflower crops the fields must first be fertilized with calf bone dust. That is an expensive feature. Twenty men are employed in the bone grinding mill.

The fields have to be watched closely while the flowers are ripening. Blackbirds, starlings and especially sparrows know the fattening qualities of the seed and immense flocks of the birds come from all points of the compass to feast upon the growing crop. Boys are posted around the edges of the plantations during that period to scare the feathered thieves away.

West Indian Cattle.

Some of the stockmen who have recently visited Cuba and Porto Rico have expressed their surprise at the large size of the native cattle, there having been no attempt made to improve them by the use of bulls of the beef breeds. It must be remembered, nowever, that the abundant supply of highly nutritious pasturage throughout the year and the mild winters of the West Indies permit the calf to grow to maturity without any check. This alone is enough to account for the large size attained by range cattle on those islands. The native stocks in Texas have degenerated from taxing the ranges too heavily and from the stunting effect of winter on young stock. With the food and climate which the Porto Rico cattle enjoy they ought to be large.—Live Stock.

Lack of Forage.

The Denver Field and Farm says: "In some instances the present lack of forage is due as much to the slowness of the farmers and stockmen to adapt themselves to the existing conditions as it is to the want of suitable crops for cultivation. It is difficult to get out of the old slipshod range ways, even though it is known that a little well directed effort will make a given amount of land yield several times as much forage as it did formerly. Careful attention to the development of native meadows and pastures and a more general cultivation of miscellaneous forage crops that can be grown with at least a fair degree of success in nearly all localities will do much toward solving the forage problem."

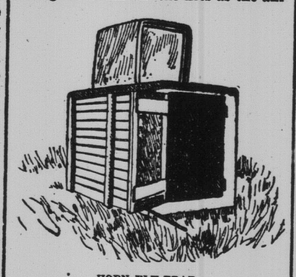
DAIRY AND CREAMERY.

HORN FLY TRAP.

A Device to Starve the Pests to Death.

Horn flies came early and in force this season and so tormented our cows and bulls that humanity as well as a due regard for pocket interest demanded that something should be done, says P. S. Lewis & Son in The Breeder's Gazette. Having previously tried with poor results to keep off the flies by putting nasty stuff on the cows and not having forgotten the trap, we concluded to try to build one.

The size and proportions are a guess on our part and can be altered to suit. This one is 20 feet long, 6 feet high and 4 feet wide, made of inch oak boards. It has a door at each end nearly full size and is lined inside with tar paper, which is put outside on the top to keep out the rain. Every ray of light is excluded except what comes down through the trap, and, of course, it is fly tight. Midway a six inch board is set on edge across the bottom, and to it the sides and top are tacked bunches of evergreen foliage to brush off the flies as the ani-



HORN FLY TRAP.

mal passes through. There are also side curtains and a short middle one, sweeping back and sides to keep the flies from following through when the door is opened to let the cow out. This is the most difficult part of the performance, the flies being very loath to leave their bed and board, as any one can find out by trying to drive them off a cow when out of doors. This screen makes two rooms, each ten feet in length, one very dark and the other lighted from above through the trap. We used two cast off screen doors to make sides and ends of trap and covered with wire screen, and it is probably larger than necessary, but have found that no objection. It is 5 feet long, 3 feet wide and 3 feet high, and an opening three feet long and a foot wide lets the light down and the flies up into the trap. Once in the trap they rarely try to go back, but spend their time trying to get out through the top and in from one to two days are starved to death.

On our first use of the trap we were surprised to find many got out by forcing themselves through the screen. We then covered it with light cheesecloth and have lost none since. Usually we lead or drive the cow into the first room, closing the door behind it. As it passes on into the dark room the brush and curtains sweep off the flies, and they follow the light into the trap. Give a few minutes then with both doors closed to secure all of the flies, but we have passed through several, one at the heels of the other, with good results. After the first time it is little trouble to get a sensible cow to go through. They seem to realize it is doing them good.

Care of Cow Stables.

At least twice a year we like to thoroughly overhaul the stable and all its furniture, a general house cleaning as it were, writes L. W. Lighty in The National Stockman. We prefer rather a windy day and open up all windows and doors and completely sweep and brush out all nooks and corners. Remove everything that is movable. Clean out manure, straw, hayseed, etc., and flush the gutters completely. Now disinfect the stable thoroughly. Sulphate of copper or chloride of lime is what we generally use, though some of the commercial disinfectants are sometimes preferable. Common whitewash or quicklime is very good to use for some parts of the stable. If there is any suspicion that any disease is lurking in the stable, such as abortion or any other, this disinfection should be particularly thorough. Close the stable quite tight and burn sulphur or, still better, generate chlorine gas by pouring hydrochloric acid or some chloride of lime. This forms a deadly gas, and you want to use it with caution, but it will do thorough work. All the mangers or troughs should be scoured with boiling water. By this semiannual cleaning up we have thus far escaped all the troubles that often cause serious loss to many dairymen, such as calf scours, abortion, etc., and at the same time it helps to produce the best and cleanest milk from which to make first class butter.

Benefits of Dairying.

Mr. R. G. Welford in an address before the Illinois Dairymen's association made the following observation upon the beneficial effects of dairying on any community in which it exists. He said "In my experience of 30 years in Illinois, Wisconsin, Iowa and Missouri I have noticed that wherever the dairy cow is there is prosperity, whether the climate be good or bad. Dairying has also greatly increased the sociability and contact of farmers with one another, for they meet when they come to the creamery or factory. While they are waiting they discuss how to get and keep good cows. This has done wonders for such farmers. It has also called out more intelligent farming, and we find that the papers that cater to their ideals are sought for and eagerly read."

BUTTER EXPORTS.

Why Our Product Is Not More Popular In England.

The report of the bureau of animal industry of the agricultural department contains a special detailed report by Major Henry E. Alvord, chief of the dairy division of the department, recounting experiences in efforts by department officials to increase sales of American butter in England. The experiences of American exporters of butter as told in the tables of export business during the past 25 years show that the department has much work to do to build up the fluctuating trade in butter across the sea. In closing his observations on experimental work Major Alvord says:

"It is evident that successfully to introduce fine creamery butter from the United States and establish a demand for it in British markets there must be a considerable period of persistent effort. No regular demand can be built up unless retail merchants of a desirable class can be continuously supplied. The department cannot establish this foreign trade in high class butter or even commence it, but it may do something toward ascertaining conditions which control such trade, present and prospective, and assist in making them known to many interested parties." Major Alvord concludes that experimental trials justify a repetition of the efforts upon a larger scale and in a broader field to include besides butter other perishable farm products which this country has to sell.

The detailed figures on the exports of butter from the United States for the past 40 years show interesting fluctuations. Back in 1880 there were sent abroad 89,000,000 pounds of butter, the highest record for any year recorded. The annual exports have fluctuated between 10,000,000 and 20,000,000 for the past 15 years. The fiscal year sales reported show the following exports:

Years.	Pounds.
1895	5,598,812
1896	19,373,913
1897	81,845,224
1898	25,690,025
1899	20,247,997

As having a special bearing upon the experimental work of special agents of the department the report on these operations gives the statement of the imports of butter into the United Kingdom from different countries during the past few years. The British people have doubled their purchases of butter from outside from 1886 to 1898, and the 1897 figures are given as follows:

Countries.	Cwt.
United States	154,196
Canada	169,402
Denmark	1,334,728
Other countries	1,619,475
Total	3,217,801

The butter exported was sent in various sized packages, being claimed that a package holding from 50 to 60 pounds is wanted in Great Britain as well as in this country. The report says the chief objection to the creamery tub at present in British markets is that poor butter from the United States has been so largely exported in that form that this package is closely associated in the minds of English buyers with low grade goods. The packages alone are insufficient protection, and there are double linings of parchment paper with paraffin applied hot to thoroughly coat the inner surfaces. The department grails also include butter in prints or blocks, and also in boxes of tin and paper boards, sealed suitable for ocean voyages.

The butter sent to London by the department was handled in that city in various ways. It was found that wholesale merchants there all had their favorite sources of supply, and they were unwilling to admit that American butter was at all equal to the English, Irish, Scandinavian, French or colonial product. The prejudice against States butter was noted as remarkable. However, opinions obtained from consumers of the experimental export were nearly all highly commendatory, although in most cases the consumers believed the product to be "best Dorset" (English) or Danish butter, the favorite brands in high class retail trade for cured or salted butter in London. In few instances by special effort dealers were induced to advertise "selected creamery butter from the United States." To sell it readily as such they were obliged to place the price lower than that of butter of greater reputation. Twenty-four cents was usual for the former and 26 for the latter.

Milkers and Milking.

There seems to be a great deal of discussion among the farmers in regard to the subject of good milkers, says The Rural New Yorker. The remark that it is now almost impossible to find good milkers is quite frequently heard among dairymen. This is a great mistake. I thoroughly believe that there are just as good milkers in this and other localities as there ever were, if not better. The farmer who depends on day hands for his help, as a general rule, is the one who complains most bitterly in regard to this matter. The average man who is hired by the day will not milk even if he can. Wherever or whenever I find a good month hand, one who stays on the farm continually listening for the sound of the 6 o'clock whistle, one who does not go to town every night, I find a good milker. A cow should be milked as quickly as possible. A good milker can milk 12 cows an hour. The muscles of the forearm, wrists and hands of a good milker must be well developed. Therefore, as a rule, women are poor milkers. They require too much time to milk a cow. The evil resulting from this practice is that the cows do not readily give down their milk. Some farmers expect a man to do too much of this work. The number of cows that a man milks should depend on the amount and nature of other labor that he performs. As a rule, I do not believe that a man should be allowed to milk more than six cows.

FARM AND GARDEN

SUN SCALD.

A Factor Requiring Consideration In Growing Fruit Trees.

In some parts of the country sun scald is one of the most important factors in growing fruit trees. Especially is this true in the southwestern states, where the danger from sunburning controls the whole practice of cultivation and pruning. In that country the trees are headed low, even down to within a foot or six inches of the ground, in order to protect the trunks. At the same time any considerable pruning in the tops is avoided, because it would expose the larger branches to the deadly sun scald. This difficulty is less frequently met in the northeastern states, but the writer (F. A. Waugh, in The Country Gentleman) has lately visited an orchard as far north as Canada and New England line, where nearly 50 per cent of the trees were ruined by this trouble. They were pruned too high, with heads six, seven and eight feet from the ground.

EFFECT OF SUN SCALD.

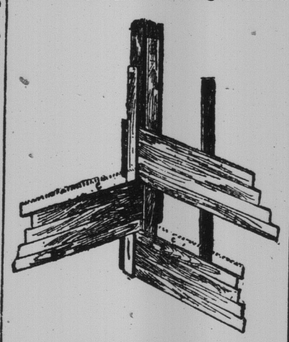
Sun scald is usually worst on apples and pears, but it may appear on almost any tree. The accompanying illustration is from a tree of Downer's Late Red cherry growing (or dying) in Maryland. When the damage is as old as this, where it has been accumulating for several years, it is doubtful if any remedy can be applied, though one can see in the photograph how persistently this tree has tried to heal over the wound. When taken in the early stages, sun scald may be cured by protecting the trunk with boards, papers, straw or some similar material. At the same time the scaly, burned parts should be cleaned away, and some sort of wax may be applied. The best treatment for sun scald, however, is to avoid it.

Sunburns are usually only the beginning of other serious troubles. Borers commonly follow closely after. Bacteria and molds gain access and cause increased damage to wood and bark, and the rain and sun check and crack the exposed tissues, to their great and permanent detriment. It is doubtless a fact that sun scald is a more important enemy of fruit trees than many of the fungi that have been extensively studied and elaborately discussed in recent books and bulletins.

Square Cornered Silo.

The principle reason why ensilage spoils in the corners of the square silo is that the construction is such that the corners pull apart enough to admit the air, says L. A. Clinton in The Rural New Yorker:

With the usual form of construction, there will almost certainly be a slight give at the corners, and the result is the ensilage spoils. The figure shows



A LIGHT CORNER FOR A SILO.

how the corners may be constructed so that there will be no possible chance for pulling apart. The principal corner post A should be at least of 6 by 6 material.

The pieces B B should be of 2 by 4 scantling and nailed securely. The siding may be of 1 inch boards, and if they are well seasoned and matched one thickness of boards will be entirely sufficient. Studding should be placed not more than 2 feet apart. It is unnecessary to explain in detail the drawing. The siding shown by D D D is nailed securely to the 6 by 6 corner posts, and the siding shown by C C is so cut that it can be nailed to the supplementary 2 by 4 studding. After constructing the corners in this way, so there is absolutely no chance for them to pull apart, the usual method of boarding across the corner may be followed, so that the ensilage will settle more evenly.

LATE FORAGE CROPS.

May Be Light, but Useful—Dwarf Rape as Pasture—Rye and Barley.

Drought has worked so much injury to the pastures and hay crop that American Cultivator feels it desirable to again refer to the importance of growing forage crops to feed green and to cure for hay.

It is not too late to sow fodder crops. We have had a fair crop of corn fodder from corn sown in July, and some good crops of Hungarian grass and millet sown even as late as August, though we should prefer sowing these crops in May or early in June. The late sown crop may not be quite as heavy as an earlier sown crop would have been, and if cured for winter use it may not have as good weather for curing it properly, but a half crop may prove better than no crop, and it is now too late to talk about sowing early.

Rye and barley sown together as late as September will furnish a fall feed that will save an early attack upon the haymow or the silage pit, as they stand quite severe frosts without injury and make a fair hay, though not the best, requiring more grain with them to make a well balanced ration than does good English hay.

For young stock, sheep and stock hogs, we would certainly try the dwarf Essex or dwarf Victoria rape as a pasture. It may be sown at any time up to the middle of August and is best grown in drills 2½ to 3 feet apart, using 2½ to 3 pounds of seed to the acre. Or another way is to sow three pounds per acre broadcast between the rows of corn at the last time of cultivating. It will be ready to turn stock into in from six to eight weeks from sowing, and if among the corn the animals will not touch the corn while they can find rape.

If the animals are allowed to get a fair feed in a pasture in the morning and not turned on the rape until the dew is off, and only for an hour or so at first, gradually extending the time, after a week they may be allowed to go to it as they will without danger of bloat. They should have opportunity to run out into another pasture when they wish to, which they will as soon as they have eaten enough. Lambs and fattening hogs do better if they have some wheat bran every day when on the rape, but this is not necessary for sheep or growing calves.

It is reported that last year more than a million acres of rape were grown in this country, and if sale of seed is a criterion for judgment there may be 10,000,000 acres this year. And yet it was almost unknown here five years ago, excepting in some parts of Canada, where farmers had learned the value placed upon it in England. The general opinion seems to be that where rape is grown and fed where it stands the droppings of animals, even when a part of them are taken out to the pasture field, will leave the land in better condition than before. It furnishes feed until the ground freezes in winter.

Early and Late Plowing.

The Kansas station carried on two experiments, one in the summer of 1897 and the other in the summer of 1898, to determine the relative effect of early and late plowing on the moisture content of the soil. The experiment of 1898 indicates that the disk harrow may be a valuable means of conserving moisture, especially if it is used soon after the last rain preceding a period of drought. A fair comparison between disking and early plowing can not be made from this experiment, because the good effects of the disking were largely obliterated by a heavy rain which fell July 3, before the experiment with early plowing began. The results of the two experiments of 1897 and 1898 certainly show that, as far as the effect upon soil moisture is concerned, early fall plowing is certainly much better than late, and especially is this true when there is a drought through the months of July and August. In addition to this, the much better condition of the soil obtained by the early plowing should have considerable weight toward inducing farmers to push their fall plowing as early in the season as possible. The experiment of 1898 also strikingly illustrates the fact that all effective methods of culture to preserve moisture must break the connection for capillary attraction between the surface and the subsoil, and the culture must be repeated after every heavy rain to continue the effectiveness of the treatment.

Planting Strawberry Beds.

Strawberry beds may be made either in April or August. Spring is generally regarded as the best time for making a new planting. The plants are more certain to live, require less care, the beds become well filled and a full crop is obtained the following season, but young runners planted as early as Aug. 15, carefully nursed, not allowing any new runners, will make strong crowns that will give larger berries the following June than can be obtained by spring planting. The yield, however, will not be so great as if planted the previous spring. Nearly all the prize fruit comes from August planting.—Iowa Homestead.

Spraying Will Save a Pickle Crop.

The proof seems complete that pickles can be grown at a profit upon Long Island if on good soil, properly cared for and thoroughly sprayed.

The New York state station recommends no particular cultural methods, leaving these to the judgment of the grower. It does say, though, with all emphasis, that thorough spraying, between July 15 and Aug. 1, as the season demands and continued at intervals of eight or ten days until frost kills the vines, will most effectually prevent mildew and allow the plants to mature the best crops the soil and surroundings will produce.