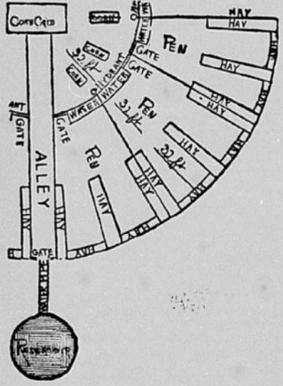


# FARM AND GARDEN

## SHEEP PENS.

**A Circular Corral Which Minimizes Time and Labor in Feeding.**

Sheep men are divided somewhat in opinion as to the best manner of handling sheep when preparing them for market. Some prefer square or oblong pens, but a number of Colorado feeders build their pens on the general plan of a circular inclosure. The Daily Drovers' Telegram gives an account, which bears upon this point, of the farm and feeding pens of one of the



QUARTER SECTION OF CIRCULAR CORRAL.

most successful sheep men of the Rocky Ford region, who buys southwestern lambs and prepares them for market. It is stated that of the farm of 320 acres 250 are seeded to alfalfa and the remainder is used for pens, barns and residence. The manner in which the corrals and feed lots are arranged is an admirable one for caring for sheep, and it would be a hard matter to devise a more practical arrangement.

The corral is circular in shape and has a smaller pen in the center. Radiating from this center pen to the outside are fences, as shown in the cut, which divide the outer portion of the corral into 12 different pens. These outside pens are called hay pens, where the sheep remain when not in the corn pens, two smaller pens in the center. At the immediate center of the corral is located the corn bin or crib. Water is furnished by means of a reservoir and pipes, which are connected with each pen, necessitating the use of six hydrants, one for each two pens. The feeding pens are connected with gates to the hay or outer pens.

Feed is given twice a day, and it usually takes three hours each time to handle the 12 pens. Two pens are fed at the same time, one pen on each side of the dividing fence, thus minimizing both labor and time. All the corn used is carefully weighed each day as it is fed. This is a point that a good many feeders overlook. A pair of hand scales is kept at the pens, and not a grain of corn more than the determined weight is given.

The accompanying diagram shows a little more than a quarter section of the whole arrangement.

## Suffocation in a Silo.

The suffocation of three men by carbonic acid gas in a silo in Wisconsin is reported. Carbonic acid gas is not in itself a poison, but being heavier than the air it had collected below the silo opening to such a depth that the men entering the silo were drowned as if in water. While this case occurred through an unusual combination of circumstances, it seems to show the desirability of starting the cutter before men enter a silo that has been left standing for some time when filling is in progress. The stirring of the air by the falling silage dilutes the gas and renders it harmless. Doors should be so close together that the heads of the men are always above an opening when working. The accident appears to have been analogous to the deaths that occur when men descend into wells and are overcome by accumulated gas.

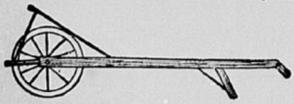
## Comparative Yields of Oats.

In four years' experience in growing oats the highest yields at all the Canadian experimental farms have averaged as follows:

	Bushels.	Pounds.
Banner.....	71	17
American Beauty.....	71	16
Columbus.....	70	5
Golden Beauty.....	67	17
Bevarian.....	66	18
Holstein Prolific.....	66	18
White Schooner.....	65	29
Early Golden Prolific.....	65	27
Walla.....	65	19
Abundance.....	65	9
Golden Giant.....	64	19
White Russian.....	64	11
Improved Ligowo.....	64	6

## A Handy Device.

In making a husking horse an Ohio farmer correspondent employs a pair of old wheels of convenient size, an



FOR HUSKING AND FODDER CARTING.

axle of gas pipe the desired length and two pieces 1 by 3 and 10 feet long for sides. These are made up like a wheelbarrow. Then he puts uprights in a slant over the wheels. You can husk on one end and pile the fodder on the other end. He uses it for carting fodder from one shock to the other and has hauled five shocks at once on it. It is very handy in winter, when feeding when the ground is frozen, to wheel fodder or straw on.

## A BEE TALK.

**Up to Date Houses and Hives That Are Every Man's Privilege.**

There are many advantages in keeping bees in a house. While there are many apiarists who use beehouses exclusively, the majority do not. There are also many different kinds and varieties of houses used. A beehouse need not be an expensive one, and almost any kind of house will answer the purpose. None is better than an old dwelling house, and two or more rooms are the more convenient, provided they have an outside face of one end or side, or both.

Perhaps a two room house with one partition is the best. Such a house with two ordinary sized rooms, say 14 feet square, will give 112 feet of outside surface, but take off 12 feet for doors, etc., and the 100 feet left will accommodate 50 colonies of bees by setting the hives two feet apart from center to center, which will give ample working room. The entrances are cut through to the outside and made to correspond to the entrance to the hives. The hives may be set directly on the floor, but I would prefer them set on the usual bottom boards, nailed to cleats at each end, that would raise the hives some four inches from the floor, this for the purpose of chaff packing in winter. Bees kept in a house are very easily prepared for winter, and the extra protection thus afforded brings them through the winter in prime order.

A very cheap beehouse and a very convenient one that I have used and which I make exclusively for bees is a small house 10 feet long, 6 feet wide and 6 feet high. This building accommodates 11 colonies, and the expense does not exceed \$1 per colony. This is no more than chaff hives will cost for each colony outside. Floor space



LATEST HIVES COMPLETE.

for the hives to rest on only is used, as a ground floor in the center is preferred. The objection to a much longer house on the same plan is that it is not convenient to move, and also that bees become more or less confused where so many entrances are close together and all have the same appearance. This has always been the objection to beehouses, but small buildings such as these, located around at different places, overcome this objection.

In addition to the foregoing paragraphs by A. H. Duff of Kansas, The Farm, Field and Fireside illustrates the latest style of hives, with the statement that they are no man's private property, but about every beekeeper's furniture, used now almost exclusively by all specialists. No. 1 is a hive arranged for comb honey with two supers, each containing 24 one pound section boxes, thus saving a surplus capacity of 48 pounds. The brood chamber contains eight of the standard frames. Hive No. 2 is simply two brood chambers, the upper set of frames used for extracting honey.

## Cutting Down Ensilage in the Silo.

Where a silo is so large that in feeding ensilage a layer cannot be removed daily to the depth of about three inches a Rural New Yorker writer recommends to feed from a portion of the silo each day, instead of attempting to feed from the entire surface, especially in summer. During the winter it is probable that one would be able to feed from the entire surface without danger of having any of the ensilage spoiled.

A practicable way, he says, to secure a smaller surface from which to feed is to cut down a portion of the ensilage with a hay knife, just as one would cut down a portion of the haymow. The knife used for this purpose should be one with a serrated edge, and care should be taken that the knife is well sharpened. If the ensilage is cut down so that a smooth edge is left exposed, it will be impossible for the air to penetrate to any considerable extent, and it has been found in actual practice that there is no waste whatever.

## Nitrogen For Grass.

The Rhode Island experiment station affirms that two points are well illustrated by its recent experiments as to the effect of nitrogen on grass and clover:

1. In order to secure large crops of grass, considerable quantities of immediately assimilable nitrogen, preferably in the form of nitrate, must be applied early in the season. The earliness of the application is an important feature in a dry season like that during a part of May and June in the year 1899.

2. Good crops of clover can be grown upon limed land without an artificial supply of nitrogen. This was also demonstrated here in a former experiment.

## News and Notes.

At the recent meeting of the American Pomological society the committee on new native fruits reported as among the most promising kinds: Apples, the Canajoharie, Pride of the Hudson, Koffman's June and the Pride of Tennessee; peaches, the Worcester, Evans and Dewey; grapes, Brown's Seedling and the Charlton; strawberries, the Gibson, Seaford and Hall; the blackcap raspberry, Evans.

Some of the authorities claim that the apple crop is about one-third of a full crop.

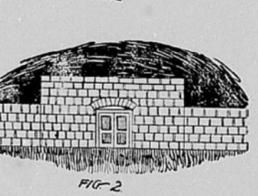
Sulphur mixed with land plaster is advocated by the scientists for onion smut.

# FARM AND GARDEN

## STORAGE FOR ROOTS.

**Plans For Houses, Large or Small, Hillside and Field Cellars.**

The leading features of a good root house or cellar are cheapness of construction, nearness to the place where the roots are consumed, dryness, ventilation, and, above all, it must be frost-proof. These important points must be kept in mind in planning a root house



ROOTHOUSE AND HILLSIDE CELLAR.

or cellar, says a writer in the Ohio Farmer in introduction to descriptions and diagrams as follow of a number of these places:

Fig. 1 is an end view of a roothouse made of brick. As brick is a pretty good conductor of heat and cold, it is necessary in building the walls to leave air spaces. A roothouse should be boarded with matched lumber and shingled, underlaid with two thicknesses of good building paper and ceiled overhead with matched ceiling and should have double doors, one pair to swing out and one pair to swing in.

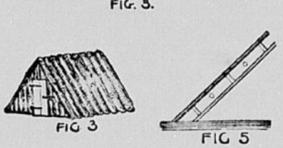
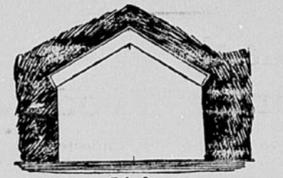
Fig. 2 shows the stone facing of a hillside root cellar. This is a large cellar with bins on each side, with an alley between, and is provided with a wide door. Two tight fences of stakes and planks two feet apart, with earth filled in between, or of logs or stout rails used in the same manner make a cheaper front and give better protection against cold than stone.

A field root cellar, Fig. 3, may be built by digging in dry ground a trench 5 feet deep and 8 wide. Along each side 1 1/2 feet below the surface notch and level the earth up to the surface so as to form an oblique support for a joist 2 by 8.

Procure for rafters 2 by 8 joists, saw them into lengths of 5 feet and set up a pair, spiked together at the top, every two feet of the length of the building. Nail cheap oak boards on the top of these rafters so as to cover it completely. Cover this roof 12 to 18 inches deep with earth and sod it neatly, drawing the sod on each side to a gutter which will lead away the water of the rains.

The ends may be closed with double boarding and filled in between with sawdust. In the gable ends over the top of the doors it should be supplied with movable shutters for ventilation. In light soils it will be necessary to place a stone or brick or post and board wall against the side of the cellar. Such a cellar will last many years and is thoroughly frostproof. If made 30 feet long, it will hold, being filled only to the eaves, about 700 bushels. It may of course be made wider and higher and have root bins on each side, with a passageway between them.

Fig. 4 is a cheap roothouse made of slabs. Fig. 5 is half of a cross section. To make it frostproof take some rough



ROOT CELLAR AND CHEAP ROOTHOUSE.

boards, cut them to the desired length and nail on three 2 by 4 pieces, as shown in cut. Fill in spaces c c with sawdust. The ends must be made double and filled in with sawdust, then put on the roof of rough slabs. It will be tasteful and picturesque in appearance and will answer the requirements of many.

## A New Notion About Black Knot.

Two years ago I found some black knot on a plum tree. To remove it by cutting off the limbs would greatly disfigure the trees. The idea occurred to me to cover it with a plastic substance that would prevent the spores being cast off and thus prevent any further increase. I mixed equal parts of kerosene, lard and resin, melted them together, then applied with a swab, covering completely the enlargement, and in the fall gave another thorough application. In the spring the knots were scraped off easily. Now the bark is growing over the bare spots and will soon cover them. There is no guess-work about this. It does the work, says a Rural New Yorker correspondent.

## THE ERA OF ALFALFA.

**How It Has Revolutionized Farming Methods in the West.**

"We have in Colorado several specific lines of farming that are assuming prominence and permanence—dairying, stock feeding, melon growing, fruit culture and beet sugar. In speaking of these specifically it must not be presumed that our state is confined to them alone. All farm products do well, except corn, for which the nights are rather cool, yet in the valley of the Arkansas corn does well. No finer potatoes grow nor more prolifically than are produced in Colorado. Wheat, oats and barley are unexcelled. Onions, cabbage and all garden vegetables of the best abound, but dairying, stock feeding, melon growing, fruit culture and the sugar beet are presenting special opportunities." Writing thus to The Country Gentleman, a Denver correspondent recounts as follows the changes in farming wrought by the introduction of alfalfa:

Dairying, in a way, is something new. It may seem singular to say it is not indigenous to Colorado, but such is the fact. At first stock raising and grazing were extensive and profitable pursuits, but dairying was no part of the early cattle industry. A cattleman made no butter. He milked no cows. Butter for the Rocky mountains was brought across the plains and sold at high prices. As farming was introduced and ditches for irrigation were extended along the valleys and out on the plains the cattle kings and their herds were driven beyond the limits of irrigating canals.

A singular thing happened about that time. Somebody brought some alfalfa seed and sowed it, more out of curiosity than economic intent. That slight circumstance was of infinite importance to Colorado. Dairying as an industry came in that little sack of curious seed and has grown with the growth of alfalfa, a new and promising industry.

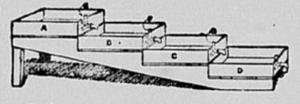
At first alfalfa was not regarded as particularly valuable as a nutrient. In fact, our people knew nothing about it. It is but recently that it has come to be recognized as the richest of all forage plants in use and for dairy purposes without an equal, so that the advent of alfalfa was the advent of the dairy in this state.

The same is true of stock raising. For five or six years our people have been feeding alfalfa as an outlet for the alfalfa crop. As an experiment it proved successful and remunerative till last winter, which was so unprecedentedly severe that they no more than came out even, and yet as a single item 350,000 lambs were fattened for the Chicago market.

Do not think, by the way, that alfalfa is an arid plant, growing out on the plains without water or culture. It is sown as clover is sown, irrigated as wheat is irrigated and harvested like any other hay, so that its production and use for dairy and stock feeding purposes are strictly farm operations. Stock feeding is in its infancy, but the past is suggestive of great possibilities for the future. The same is true of dairying. We do not yet produce more than half the butter we consume.

## Clarifying Sorghum Sirup.

The quality of sorghum sirup is determined by the more or less perfect separation from the juice of the impurities which are solid and of those



TANKS FOR COLD AND HOT SETTLING.

which are in solution. The method of clarification found preferable by A. A. Denton in his investigations, conducted for the agricultural department, into the making of sorghum sirup is to settle cold, limed and clayed juice, draw off and heat the settled juice, clay and settle it, and again draw it off, then evaporate it. These processes are clearly shown in the cut, the raw juice being limed, clayed and settled cold in settling tank A, the settled juice being drawn off by the swing pipe E into the juice heater B, where it is heated to near the boiling point and skimmed, then drawn off by the swing pipe F into the hot settling tank C, where it is again clayed and settled and the clear juice drawn off by a swing pipe G into the evaporator or receiving tank D. The clarified juice is then evaporated to sirup. By this method most of the solid impurities which were in suspension in the juice are removed.

In the cut the tanks A, B, C and D illustrate simply the principle of transferring the juice by gravity. In practice the tanks B, C and D are separated from A and are supplied with a source of heat, either steam or open fire.

## Sugar Beets For Stock Feeding.

I would like to suggest—in fact, to urge upon every farmer—the propriety and great practical value of trying the experiment of growing sugar beets for stock feeding. As a sanitary measure it will pay its way. I believe that the habit of the farmer in feeding condensed rations of grain to stock is largely responsible for a great many diseases of animals and that if he would introduce into this ration a portion of sugar beets results would be a great deal better, as far as the health of the stock is concerned. As an aid to digestion it has certainly wonderful effects, to which fact every extensive feeder of sugar beets will give testimony. My attention has been called time and time again to the fact that cattle fed grain along with sugar beet pulp or sugar beets are able to digest all the grain they eat, and the refuse shows no whole grains. Taking, then, its sanitary value along with its real nutritive value as a producer of flesh, we are able to appreciate its value as a food.—C. F. Saylor.

# FARM AND GARDEN

## CRIMSON CLOVER.

**It Thrives on Thin Soil—Regions in Which it Succeeds.**

Crimson clover, also known as scarlet clover, German clover, Italian clover and carnation clover, is an annual plant native to southern Europe and has long been cultivated as a forage crop in the warmer portions of that country. It is an erect, tufted plant, one to two feet high, with soft, hairy stems and leaves and usually bright scarlet flowers in elongated heads. The root system is well de-



CRIMSON CLOVER PLANT.

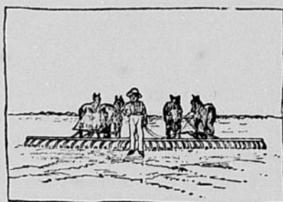
veloped and penetrates deeply into the soil, and the plant is a vigorous grower. The seed is larger than that of red clover, oval in shape, bright reddish yellow when fresh, paler in the white flowered variety, and has a highly polished surface. The plants stool freely, many stems arising from a single root.

Crimson clover will not stand severe freezing, although it is one of the so-called "winter annuals" and under favorable conditions makes much of its growth during the cool, moist weather of fall, winter and early spring. Its strong growing roots enable it to secure nourishment in many soils so poor and thin that red clover would fail entirely. While requiring a warm climate, it will not endure severe drought. It thrives best on rich, rather sandy loam, but when the conditions of moisture and temperature are favorable it gives good results on light, sandy soils as well as on clays, if they are not too stiff and cold.

Crimson clover has come into prominence in this country within comparatively recent years. It can hardly be regarded as a successful crop outside of the region from New Jersey west to the Alleghany mountains and south to eastern Tennessee and Texas. Good crops are often obtained in other sections, but cannot be depended upon year after year. In the middle and south Atlantic states this clover is one of the best crops that can be grown for forage and soil renovation. It has given good results in many portions of the Gulf states, but many failures are also reported. In the colder sections of the country this clover is sometimes successfully grown as a summer crop, but it usually winter kills badly when sown in the autumn. At the experiment stations in Rhode Island, New York, Ohio, Michigan, Illinois, South Dakota, Nebraska and other states in the north and west the general results of tests show that it is too tender for the climate and is less valuable than red clover. From results recently obtained at the Alabama experiment station it seems very likely that in many cases, especially in the south, failures with the crop are to be attributed to the absence from the soil of the tubercle forming organisms which are necessary for the proper appropriation of nitrogen by the plant. These organisms being supplied to the soil, excellent crops were obtained where without them the result was a failure. These facts are a contribution by Agrostologist S. W. Williams in circular No. 17 to the investigation of grass and forage plants which the department of agriculture is pursuing.

## Wholesale Weeding.

A correspondent sends The Rural New Yorker a photo showing how they use weeders in British Columbia. He says the wheat in this photo was four



WEEDING ON A BIG SCALE.

to six inches high and had been twice gone over with the weeder after the wheat was up. They keep these two tools at work until the wheat is too high and can easily go over 50 acres per day. It is light work on the horses.

The amount of crimson clover seed, per acre recommended by Dr. Pieters, the seed expert of the department of agriculture, is about 15 to 20 pounds. A sample that will give 90 per cent of strong spouts will go further than one germinating less than 50 per cent. Seed in the husk is sometimes used and with good results in dry weather. When this is used, more seed is needed, say a bushel per acre.

## WESTERN GRASSES.

**Hay and Pasture in the Eastern Rocky Mountain Region.**

There is no other grass which has a reputation for excellence for both summer and winter pasturage equal to that of buffalo grass. However, not all of the praise bestowed upon this grass really belongs to it, for the grasses are often confused with it, and to them, particularly to blue grama, belongs much of the credit given to buffalo grass in many parts of the range region. In the minds of many ranchmen buffalo grass includes blue grama and black grama as well as the true buffalo grass (Bulbils dactyloides), while in the minds of others grama, or "grammer," as it is often pronounced, includes all three.

However, there is no doubt of the great value of the true buffalo grass for pasturage. That it is one of the most palatable of native grasses is shown by the fact that, with plenty of other grasses on every hand, stock will keep it eaten close to the ground, and this is probably the reason that it is one of the first grasses to be killed out in overstocked ranges. It is reported to have practically disappeared from many places where it was formerly one of the commonest species, but while this is no doubt true of some localities, it is certainly not true of all. Examination has shown that it is still quite abundant in some of these localities, but is easily overlooked, as it is kept grazed so closely that it is seldom able to make enough development to show its characteristic habit of growth, much less to bloom and mature seed.

The wheat grasses usually furnish a larger percentage of the pasturage on the prairies than is generally supposed. The most valuable varieties for grazing are provided with underground stems or root stocks, which run along a short distance below the surface and at frequent intervals send up erect branches, either bearing only tufts of leaves or more rarely producing "heads." When too closely grazed or during unfavorable seasons, much of the growth of the plant is made by these underground stems, and very few, if any, fertile branches are developed. On this account many people have an idea that these grasses grow only once in every two or three years, when as a matter of fact the actual yield of forage may be almost as large for an "off" year as for any other. Although regarded primarily as meadow or hay grasses, the wheat grasses furnish a large part of the pasturage throughout the entire range region and on the more strongly alkaline soils are often the only grasses of any value to be found at all.—T. A. Williams.

## Foreign Rhubarb in the Cellar.

Horticulturist Fred W. Card of the Rhode Island station, in summing up his experience in forcing rhubarb, expresses a desire to impress upon every one who has a garden with rhubarb in it the fact that he and his family may be enjoying in February and March of next year a more beautiful product than ever grows in the open ground. To do it he will need to transfer a few roots to a dark corner of the



A CORNER IN RHUBARB.

cellar after they have frozen in the fall, packing a little fine mellow earth about them, and then simply see that the plants are kept moist. Whoever owns a garden with no rhubarb in it should see that some is planted there forthwith.

A warm cellar will hasten the crop, but a moderately cool one will give a finer product and probably a better yield. The length of time between planting and harvesting varies from less than three weeks to more than two months, depending chiefly upon the temperature. Allowing the roots to freeze in the field will greatly facilitate forcing. Large roots should yield five to ten pounds per plant, and every ten ounces of that yield will make a delicious pie. The color of the cooked product will be much brighter if it is placed upon the stove in cold water, and it will be sweeter if the sugar is added just before it is eaten.

## One Thing and Another.

The only impetus given to the goat raising industry in this country which has resulted in organization up to the present time seems to have shown itself in Oregon and California. In the former the Oregon Angora Goat Breeders' association was organized in 1893. The California association has a similar name.

In regions where sugar beets are started in the spring with moisture from rainfall it is the aim of the grower to produce his crop with four or five irrigations of the beets. After they begin to ripen all irrigation ceases for the same reason that makes it undesirable to have rainfall after the beets are ripe.

Smyna fig culture in California was the subject of an interesting address by Dr. Howard before the American Pomological society. It appears not only that California is now producing very good Smyna figs, but that they can be grown by amateurs as far north as southern New York, but not for commercial purposes. When grown in the north, they must be covered during the winter.

While the olive in California is attacked by some diseases and insects, it is said to be exempt from some of the most destructive of diseases which cause trouble in Europe.