

"In the first place, it often seems as though the bad things of this continent have been specifically named Canadian by way of characterization. We have Canadian thistle; Canadian blue grass, a sort inferior to the Kentucky variety, and so on. Of course, you know the Canadian thistle is an importation from Britain, though it is true we have had a good deal of experience with it in Canada, where we have learned that, while a noxious weed, it is one of lesser importance, not at all to be compared with perennial sow thistle, bindweed, or wild mustard. In times gone by, the Canadian thistle was regarded as an awful pest; now it is comparatively scarce on any well-managed Canadian farm. It can be easily exhausted by repeated surface tillage with any broad-share cultivator, or with a disk harrow.

"True, the rootstocks will at once send up a prolific crop of new shoots, but by cultivating several times in frequent succession, not allowing the thistle to breathe, the rootstocks are entirely exhausted, and no further trouble need be experienced. One season in properly-cultivated hoe crop will rid any field of this pest. Summer-fallowing is even more effective, but it is not really required. The cultivation will be the more effective if performed on land plowed in June, when thistles are coming into blossom, but before any have gone to seed. Seeding down greatly checks the development of thistles, although a good many will show the first year if the "catch" of grass and clover has not been thick and even.

"The chief trouble with thistles in Canada is that many farms are continually reinfested by seeds produced on neglected or carelessly-tilled holdings and roadsides. In the United States, where the plants do not produce so much seed, and where infestation is less prevalent, the problem should be easy. Thoroughness is the keynote in treating any perennial weed. The Canadian thistle (*Cnicus arvensis*) is held up to the American farmer as a far greater bugbear than the facts of the case warrant."

PREPARING FOR FALL WHEAT.

The excellent crops of fall wheat harvested in many sections of Ontario this year prove that the soil of this Province has lost little, if any, of its ability to produce liberal yields of this cereal. Though there may not appear to be much profit in growing wheat in the East in these times, in competition with newer lands of the Western Provinces, where the cost of production, as a rule, is so much less, yet a limited acreage may be devoted to this crop, with fairly satisfactory results in the average year, in those districts best suited to its production. The seeding and harvesting of fall wheat come at times when other farm work is not pressing, the straw, being usually bright and clean, sometimes comes useful in a mixture of stock foods, and always for bedding, while fall wheat is one of the best nurse crops on which to seed to timothy and clover for hay and pasture. Blended flour, made from a mixture of fall wheat and Western spring wheat, is excellent for household purposes, while the growing of wheat tends to promote a milling industry in our midst, and this means more milling by-products available for stock-feeding.

With the possible exception of a manured summer-fallow, there is no better preparation for fall wheat than clover or other sod plowed down in July or early in August, rolled and harrowed immediately after plowing, and harrowed or lightly cultivated occasionally to retain moisture and hasten decomposition of the sod and firm the land. The next best preparation is a pea stubble, or, failing that, a barley stubble, either plowed or deeply disked as soon as practicable after harvesting, the plow being followed immediately by the roller, and this in turn by the harrow, the same or some other pulverizing implement being frequently used thereafter, especially soon after each rain. While a clover sod, treated as described above, makes an excellent preparation for wheat, it is not an order of cropping that is to be most highly commended, since, on a well-managed farm, where an up-to-date rotation is practiced, the whole clover-sod area is usually required for corn, roots, potatoes, peas and soiling crops, and in this case the most commendable practice is to sow wheat on the pea stubble. While clover sod is an exceptionally good preparation for almost any crop, it is of relatively more advantage to a crop of corn or roots than to a crop of wheat. Moreover, wheat being a crop that is usually seeded down with to put wheat after clover, means having that field only one year out of sod, while other fields on the farm probably suffer the disadvantage of being several years in grain. On farms where there is a larger area of clover sward than will be utilized the next year for hoed crop and peas, a field of fall wheat may be sown, with ordinary prospect of an excellent crop. Clover sod is an exceptional preparation for almost any crop, but it is of more value to a crop of corn or roots than to a

crop of wheat. There are generally times during the grain harvest when rain puts a stop to such work for a few days, and these spells may be profitably utilized, and the teams kept busy plowing and fitting a field for wheat.

DODDER—TOAD FLAX.

I enclose two specimens of weeds. The nature, habits and best mode of destroying I would be pleased to have you explain. The one with yellow flower is a stinking weed, and is growing up in patches in one of my fields. I have tried to kill it by smothering; kept it down all one season, never allowing it to grow at all, or go to seed; seeded heavily with clover; have a splendid crop this year, but the weed is here live as ever with the clover. The other sample I suspect to be dodder, something I have not seen before on our farm—a space about three feet square, thickly matted with fibres, same as enclosed.

As a subscriber to "The Farmer's Advocate" for some years, I venture to ask your advice on the above, through "The Farmer's Advocate" if you will. Wishing success to your unrivalled magazine. J. H. W. Elgin Co., Ont.

The plant with the showy pale yellow flowers is toad flax (*Linaria vulgaris*), a persistent, deep-rooted perennial weed. Short rotation is necessary to eradicate it. Do not allow it to seed. Plow up the clover field this summer, cultivate thoroughly till autumn, then rib up, and next spring plant a hoe crop of some kind.

The second weed is rightly suspected to be dodder, a parasitic plant, the seed of which often infests clover or alfalfa seed, and, being sown with it, germinates in the usual way, throwing up an inconspicuous yellow shoot, which throws out suckers at points where the stem comes in contact with that of the clover or alfalfa, and establishes a union which enables it to abstract the juices of the clover, on which it thrives, disconnecting itself entirely from the earth. The clover

scope, whereas the seed of clover is bright and smooth. The seeds of the *C. epithymum* (alfalfa dodder, so called) are much smaller than clover seed. The seed of *C. arvensis* is about the same size as white clover seed. In the bulletin, "Farm Weeds of Canada," it is stated that G. H. Clark, Dominion Seed Commissioner, has detected the seeds of another species in South American seeds, which he has identified as *Cuscuta racemosa*. These seeds are about twice as large as those of alfalfa dodder, and have a more rounded contour, and a much larger and more distinct basal scar. These large seeds are difficult to clean out of clover and alfalfa seeds, and should be watched for very carefully. Dodder is a very noxious weed, the special scourge of the alfalfa field, for once started, unless checked, it spreads in a widening circle until a whole field may be ruined.

COST OF MAKING HAY.

Editor "The Farmer's Advocate":

In hurriedly reading over the questions in your letter on "Making Alfalfa, Red Clover and Timothy Hay," I had misunderstood the sixth question to mean, "What could alfalfa, clover and timothy be produced and stored for?" Hence the big difference in my estimate. However, I would think \$1.25 per ton for making timothy, and \$1.50 for clover and alfalfa, would be fairly near the mark, or probably even a little less, with all the labor-saving machinery now in use.

Welland Co., Ont.

THOS. McCREDIE.

THE DAIRY.

ANOTHER TEST FOR MOISTURE IN BUTTER.

Like the making of books, in the making of moisture tests there seems to be no end. The latest test is from the Iowa Experiment Station. It is the joint work of Professors McKay and Bower, both of whom, by the way, are Canadians. The former has recently resigned the position of Head of the Dairy Department of the Iowa College to assume the management of what is known as the "Centralizer Creamery Combine" of the Western States, with a salary of more than double what he received as Professor of Dairying. Some of the dairy exchanges are wondering why a rich State like Iowa cannot pay as much as a business corporation in order to retain the services of a first-class man.

The major portion of the Bulletin (No. 97) deals with previous moisture tests,

which have been used by chemists and others for determining the amount of moisture in butter. The following list of moisture tests will indicate the importance which is attached to the question:—

"Official method by gravimetric analysis."

"Wisconsin high-pressure oven."

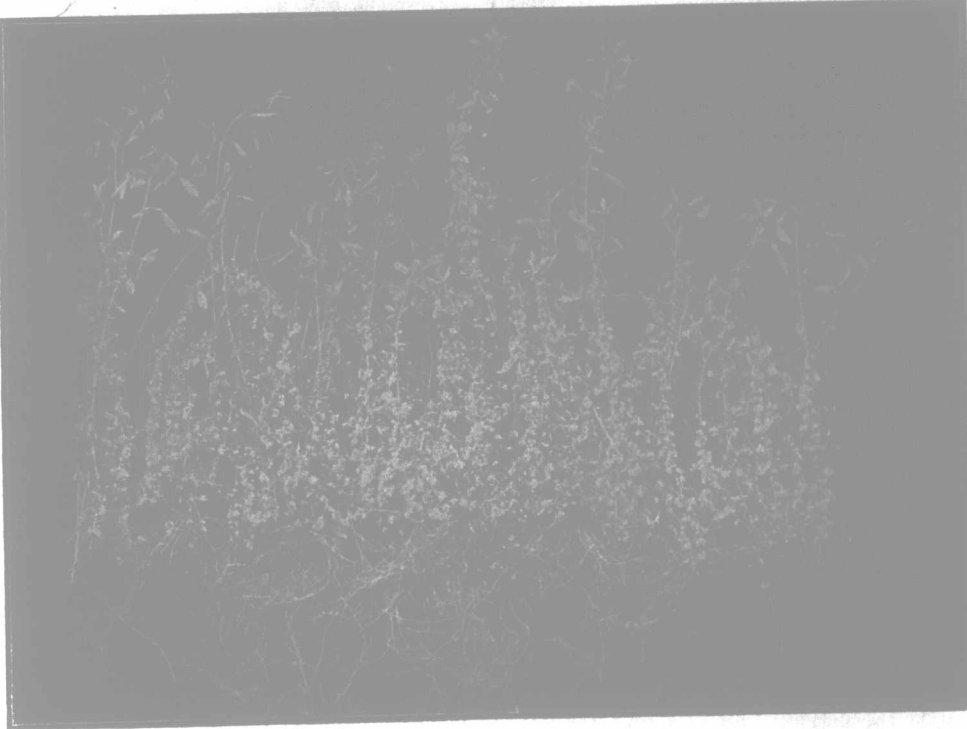
"Low-pressure oven."

"Gray," "Richmond," "Irish," "Patrick," "Aluminum Beaker," and "Gray-Wagner."

In addition, various forms of "butter-testers" are described. The bulletin concludes with directions on the care necessary in sampling, and preparation of samples. It is also pointed out that the percentage of moisture in butter may vary considerably in different parts of the same churning.

THE AMES METHOD.

The object of this new test is to overcome some of the difficulties experienced in all of the previous tests which had been put on the market. The main point about this new test is the heating of the sample of butter in a liquid with a boiling point considerably higher than that of water. For this purpose paraffine is used. The butter is sampled in the usual way. Ten grains of the sample are weighed into an aluminum beaker and placed in the hot paraffine (175°), where it remains until foaming ceases. During the heating process the butter should be occasionally shaken. Care should be taken to have the paraffine at the proper temperature before placing in it the vessel containing the sample. After heating, the outside of vessel should be wiped carefully with a dry cloth to remove any paraffine that may adhere. (The authors do not tell us how to do this without burning the fingers, but we presume it can be done.) The beaker and sample, after being cooled, is reweighed, and the percentage



Dodder.

or alfalfa is soon killed, the affected patches resembling the work of fire. The leafless stems of the dodder produce densely-clustered pink or white flowers, which are succeeded by rounded seed pods. The seeds may retain vitality in the soil for five years or longer. Half-ripe seed will germinate almost as readily, it is said, as fully-ripe seed.

When small spots are first noticed, they should be mowed as closely as possible with a scythe, several feet beyond where the yellow vines are observed. After the vegetation has been removed these spots should be spaded up. The small clusters of flowers that produce most of the seed are near the root of the clover stem, and will often remain on the stubble after the host plant has been cut, there ripening their seed. Cutting and burning small areas is effective, but a considerable degree of heat must be maintained for several minutes to destroy the seeds, if such have begun to mature. This may be accomplished by spreading over the ground straw or shavings well covered with kerosene. For entire fields, cultivation with hoed crops for two successive seasons is usually successful, but leguminous crops should not be sown on the field for several years, until the vitality of seed remaining in the soil has been destroyed.

The utmost care should be exercised to avoid sowing clover or alfalfa seed infested with dodder. At least six species of dodder have been reported in Canada—one on flax, two on clover and alfalfa, and two others on non-economic plants. *Cuscuta epithymum* is the botanical name of the species most common in this country. It has a preference for alfalfa, and is known in some places as alfalfa dodder. *Cuscuta arvensis* also occurs on both clover and alfalfa. The seeds of both these species resemble clover seed in shape; both are dull in color and rough when seen under the micro-