THE FARM.

Wild Oats and False Wild Oats.

Many farmers in this country are familiar with wild oats, while many others have had no experience with them. Wild Oats and False Wild Oats is the title of a Dominion bulletin by Norman Criddle, of the Seed Branch. Of the wild oat he says : "There are few problems of greater importance to the grain grower than that relating to wild oats belonging to the species fatua. The injury caused by this weed at the present time amounts to an annual loss of thousands, or perhaps millions, of dollars, and the loss is becoming greater yearly as the plant spreads further afield. The question of its control has been discussed frequently and most practical agriculturists are now aware of the best means to keep the plants within reasonable bounds. I say reasonable bounds because to exterminate them is a task of years, which few farmers care to undertake."

In experiments Mr. Criddle has grown three fixed forms of wild oats (avena fatua) which he terms (1) Avena fatua proper, described as a tall, somewhat slender plant, with bending head and long pedicles bowed down with the weight of the seeds so that the whole head has a droopng appearance. The panicles mature unevenly ; seeds borne on the upper part of the heads and at the tips of the branches ripening first and often shelling before those on the lower part are fully matured. Usually too A. fatua stands well above cultivated oats. The seed is dark brownish, almost black, turning to a lighter shade at the tip. In form it resembles a common black oat, but is not so plump, and differs from the ordinary cultivated varieties in having a much longer scar at its base, formed somewhat in the shape of a horseshoe, and also in having a long stiff awn and a densely hairy base. In fresh specimens these hairs, which are brown, cover approximately half the oat, and are particularly numerous upon the rachilla (the small footstalk supporting the bosom grain in the spikelet) but the basal scar with its hairs, and the awn also, may be broken off by threshing or handling the grain.

(2) A. fatua.—White form. This form resembles exactly the typical fatua as described above, excepting in its seeds, which are creamy-white like ordinary white oats. It also seems rather less hairy, but this is partly due to the hairs being white, and consequently less conspicuous. This variety breeds true to seeds and on account of its color is difficult to detect in white oats. Beginners are also liable to confuse it with false wild oats. of the same shade.

(3) A. fatua.—Hairy form. This is also very similar to the type described first, but differs in the seeds, which are densely hairy almost to the tip ; the hull is also rather lighter in color. This form has grown true to type for three years.

Another type of Avena fatua similar to the foregoing ones but having slaty gray seeds has been grown for two years but proves less fixed. Some of the seeds remain gray while others turn either white or black ; possibly some form of combination due to a cross between black and white varieties.

For a number of years there has been some difficulty in judging oats at seed fairs due to there being found among the samples, kernels showing the outward appearance of wild oats ; that is, having a long, twisting awn and characteristic horseshoe base. These at first were unhesitatingly classed as wild oats, but later doubts arose as to the correctness of this and eventually most of those who had had practical experience in the matter arrived at the conclusion that the forms involved were not wild oats, but represented some form of deviation from type which affected, apparently, the seed coat only and left the seed proper unaltered. I found by experiment that any type of oat showing these retrogressive characters when grown would produce a plant of typical appearance which, but for the long awn, could not be told from the cultivated variety from which it originated. It had also a seed of the same shape and plumpness, but in addition to the long awn had a horseshoe shaped base, thus resembing a wild oat excepting in size. Apart from this, however, all the forms examined by me have been less hairy than a wild oat, especially round the base.

The problem of distinguishing a true wild oat from a false wild oat is an important one from the farmer's standpoint. In the growing stage this is a comparatively simple matter, as the false wild oat will have the manner of growth characteristic of a cultivated oat, in contrast to that of the wild oat previously described, but in the seed form the difficulty is much greater, and there seems to be no fixed character by which to distinguish between some of the smaller varieties of false wild oats and the true wild forms. With the larger sorts now grown so extensively the difficulty of distinguishing them is not so great, and an experienced eye will at once detect the false wild oat by its larger size and its usually close resemblance to the cultivated variety, in which it is found. Generally speaking too the lemma or outer seed coat is more open in front with cultivated forms and false wild oats so that the palea or inner coat is broadly visible, whereas in wild oats the edges of the lemma almost meet. There are, however, some exceptions to this rule. The seeds of false wild oats carefully picked will show the very characteristics of true wild oats, though somewhat less pronounced in most cases, but will mostly correspond with the cultivated variety in which they appear in size, plumpness, color and smoothness of the glumes.

Germination tests will also reveal the nature of an oat if recently ripened, owing to the readiness with which false wild oats grow in comparison with true wild oats, but unless at least one hundred seeds are tested the result will not be satisfactory. One of the worst traits in Avena fatua, true wild oats, is the power of its seed to resist the ordinary factors of germination. Thus newly ripened seed usually fails to germinate under any conditions or at most does so to the extent of only about one per cent. On the other hand, if kept for some three months or more approximately 50 per cent. will grow. Some seeds, however, may not germinate for several years, and if buried deeply they are said to remain dormant for a very long time. Fortunately, this is not a character of false wild oats.

From an agricultural point of view an interesting point is the lack of increase in false wild oats. This is extremely important because it is the power, or lack of it, to increase faster than cultivated varieties that would make them a dangerous or comparatively harmless plant. The fact that seeds of false wild oats germinate readily when fresh, as do ordinary cultivated oats, is sufficient reason for considering them as not being a noxious weed seed impurity and as they are large and contain as much nourishment as the cultivated varieties from which they are produced, so far as we know without chemical analysis and laboratory tests to determine the per cent. hull, there can be little complaint against them on that account. Probably the chief objection to them is the long stiff awns—which, however, usually become broken off in threshing —and their tendency to shell out, due to the awns. As a matter of fact, it is this very characteristic of shelling that really keeps them down as owing to it they naturally drop to the ground before other oats and not having the power of wild oats to resist germinating they grow in the autumn and are killed by frost before they have time to ripen their seeds. Field experiments indicate that the seeds of false wild oats that shell out and fall to the ground could be destroyed by after harvest cultivation to induce germination. On the other hand, they tend to confirm the opinion that very little can be accomplished toward destroying wild oats by this method.

The origin of these false wild oats still remains doubtful. It is possible that they may be the result of a cross between the wild and cultivated species, but in view of the seeming fact that they are no more numerous in oats which are known to have been brought into contact with wild oats than those kept free from them, and further as some varieties seem to contain far more false wild oats than others, it seems hardly likely that they are produced in this manner.

There is then no necessity of classifying false wild oats as wild oats and their characteristic manner of growth, etc., gives little cause for apprehension or for supposing that they will ever become sufficiently numerous to be classed as anything but an impurity just as a black oat in a white variety would be.

A Rainy River Barn.

Editor "The Farmer's Advocate" :

I noticed in the Farmer's Advocate of February 8th, an article entitled, "A New Ontario Raising."

This was a fine picture. Views like this always are pleasing, especially to farmers. I have been looking since February, endeavoring to procure pictures of a "Barn Raising" in Rainy River. The barn, represented in the accompanying engraving, was raised on the farm of John Wilson, in Carpenter Township, near Emo, Ontario, Canada, in Rainy River District. Barn, 44 x 64 feet, with a good concrete wall, the same size, 9 feet high ; the barn has 20-foot posts, and perline posts 32-feet, and covered with steel shingles, costing fifteen hundred dollars ($1,500.00).

Mr. Wilson has been in this country twenty years. He has about 75 acres cleared, owns one splendid team, and twelve head of cattle. He values his farm at five thousand ($5,000.00) dollars. He has four boys and two girls, oldest boy past eighteen (18) years. When Mr. Wilson arrived there was only one settler north of Emo.

R. A. BURISS.

Ontario Crops — August Forecast.

The following statistics of the principal field crops of Ontario for 1912 show the acreage as compiled from individual returns made by farmers to the Ontario Bureau of Industries and the yields as estimated by a large and experienced staff of correspondents, who give probable yields according to conditions on August 10th, 1912 :

Fall Wheat : 759,888 acres will produce 14,688,495 bush., or 19.3 per acre as against 837,492 acres, 17,926,586 bush., and 21.4 in 1911. The annual average for 30 years was 17,879,855 bush., and 21.0.

Spring Wheat : 123,080 acres, 2,310,571 bush., or 18.8 per acre as against 133,711 acres, 2,295,530 bush., and 17.2 in 1911. Av. 15.9.

Barley : 647,382 acres, 18,938,489 bush., or 29.3 per acre as against 616,977 acres, 16,248,129 bush., and 26.3 in 1911. Av. 27.7.

Oats : 2,601,735 acres, 96,115,119 bush or 36.9 per acre as against 2,699,230 acres, 84,829,232 bush., and 31.4 in 1911. Av. 35.5.

Rye : 105,909 acres, 1,861,575 bush., or 17.6 per acre as against 98,652 acres, 1,562,971, bush., and 15.8 in 1911. Av. 16.4.

Peas : 221,524 acres, 4,108,883 bush., or 18.5 per acre as against 304,491 acres, 4,462,182 bush., and 14.7 in 1911. Av. 19.3.

Beans : 69,703 acres, 1,20 ,420 bush., or 17.3 per acre as against 51,508 acres, 898,212 bush., and 17.4 in 1911. Av. 17.2.

Hay and Clover : 3,177,410 acres, 4,760,502 tons or 1.50 per acre, as against 3,301,468 acres, 4,238,362 tons, and 1.28 in 1911. Av. 1.46. Area in 1911 included alfalfa.

The acreages in other crops for which no estimates as to yield have been made at this date are as follows : buckwheat, 205,893 against 189,039 in 1911; corn for husking, 301,251 and 308,350; corn for silo, 377,982 and 335,935; potatoes, 158,888 and 162,457; mangel-wurzels 60,103 and 64,855; sugar beets, 21,054 and 24,664; carrots,

A Raising in Rainy River District.