

KERNELS FROM THE O. A. C. EXPERIMENTAL DEPARTMENT.

OATS.

To the June excursionists visiting the Ontario Agricultural College this year Prof. Zavitz, the general of the experimental department, pointed out a series of plots to compare the strength of straw of oats grown on low land. Liberty is one of the stiffest strawed of the ordinary white oats. Tartar King and Storm King, although pretty stiff, when they do lodge go down badly. Siberian and American Banner are better than the average in this respect, and also very productive. In point of yield the Yellow Russian has now given the greatest yield of all varieties tested in the average of the last five years' work, the Banner, Siberian and Irish Victor following close behind. Early Ripe is the earliest oat, but only a fair yielder. Daubeney is the best very early oat. In reply to a question, Prof. Zavitz stated that Ligowo is a very good oat, weighs well, and is of good quality.

DEMONSTRATION SEEDING OF ALFALFA.

The crowd was treated to quite an instructive address on alfalfa, which, they were informed, does well on land of the right kind when put in and handled in the right way. Good deep subsoil drainage is of prime importance. Under these conditions alfalfa may be expected to yield 15 to 20 tons of green crop per acre, or four to five tons of hay in three cuttings. The mixing of the third cutting with corn in the silo was suggested. Along the central lane leading back through the plots a demonstration plot of one-tenth acre had been sown, according to directions recommended in Prof. Zavitz's recent bulletin on alfalfa. Good seed, at the rate of 20 pounds per acre, had been sown in spring in front of the tubes of the grain drill, along with a nurse crop (sown through the tubes of course) of a bushel of barley per acre. The catch of alfalfa was very good, while a fair yield of barley was also promised. From this new seeding Prof. Zavitz anticipated about two crops of hay next year and three cuttings the year after.

POTATOES.

Out of 52 varieties of potatoes, the Empire State ranks as one of the best all-round varieties, being a good cropper and a good table potato. Early Fortune is one of the best early potatoes. For planting, use smooth, good-sized tubers, cut in pieces from one to two ounces in weight, depending on the cost of seed at planting time. "How many eyes to a piece," someone asked, in reply to which Prof. Zavitz stated that it didn't so much matter about the number of eyes. In experiments at the College they had found that pieces with two eyes gave a larger yield than potatoes with one eye. Three eyes outyielded two, and four eyes outyielded three, but they failed to obtain a larger yield from five-eye pieces than from those with four eyes. When potatoes were cut and planted on the same day there was an increased yield of 15 bushels per acre over cutting some time ahead. When land plaster was used on the cut potatoes the yield was 17 bushels per acre more than when nothing was used. The advantage of using lime was somewhat less, being in the neighborhood of eight bushels increase as compared with no treatment. Five inches has proven the best average depth at which to plant, though this varies according to season. In one very wet season one inch gave the largest yield, and in one exceptionally dry season seven inches gave the highest yield.

BRIGHT TIN CLIPPINGS AS A SCARECROW.

The best means found for keeping crows away from the corn was to hang pieces of bright tin (clippings obtained from the tinsmiths) up to stakes set about the field. The bright sun glistening on the dangling tin surface, and the slight rattling made by its motion in the wind, answered the purpose, and protected the corn completely.

CORN EXPERIMENTS.

One ton more of total crop per acre has been obtained from planting corn in hills than in drills. Of this ton about one-fifth was ears and four-fifths stalks. For ensilage purposes Prof. Zavitz recommends Whitecap Yellow Dent for Central Ontario. On the College farm Prof. Day is going in for it more and more. For husking, King Philip and Early Genesee Valley are among the best, though Compton's Early and Salzer's North Dakota are good.

LEVEL CULTURE VS. RIDGES FOR ROOTS.

Two-thirds of a ton more has been obtained on the average from roots cultivated on the level than from those grown on ridges. This, the Professor believed, would hold good quite generally on loamy and sandy land, though it might not on clay. Of mangels, the Yellow Leviathan, a mangel of the yellow intermediate class, has gone ahead of every other strain, even of the Mammoth Red sorts, in point of yield, while its quality is also better.

EFFECT OF GREEN MANURING AND CROP RESIDUES.

An interesting rotation experiment was pointed out, the object of which was to test by a succeeding rotation of crops the relative advantages of plowing under a first crop, a second crop, and also a stubble sward of red clover, alsike and timothy, respectively, in comparison with a plot growing no crop whatever. There will be 96 plots involved in this one experiment, which is conducted in manifold.

WINTER WHEAT.

In winter wheat Dawson's Golden Chaff no longer heads the list in yield, having been outclassed by four or five other wheats of the same class. Abundance is now first, then American Banner, then Beardless Rural New Yorker, while fifth or sixth comes the Dawson's Golden Chaff. Of red wheats, Imperial Amber has given the largest returns.

MIXTURES OF SPRING GRAINS.

Among spring grains the best yields obtained in experiments, comparing all sorts of single grains with all sorts of mixtures, have been obtained from a bushel each of oats and barley per acre. The varieties recommended are Daubeney oats and Mandscheuri barley. Peas and oats have not given quite as big yields of grain as barley and oats, although two points that deserve to be stated in this connection are that peas leave the land in better condition than barley, and both grain and straw possess a much higher feeding value per pound. These considerations, in our opinion, quite outweigh the slight difference in yield of the two mixtures. For green feed, Prof. Zavitz recommends peas and oats.

CATCH PASTURE.

As an annual pasture or "catch" crop, Prof. Zavitz's favorite mixture still is 1½ bushels oats, 80 pounds Early Amber sugar cane, 7 pounds red clover. Quite a large area of this had been sown and was looking well, the oats having made a good growth; the sugar cane started nicely, and the clover obtained a good catch.

THE FOUR-HORSE AGE.

Editor "The Farmer's Advocate":

At "The Oaks" we use four horses for a number of operations, and when purchasing new machines will get the large four-horse outfits. We now use the four horses on cultivator, harrow, two-furrow plow, and sometimes roll and harrow at one operation, using three sections of harrow, or just a little over the width of roller. With the two-furrow plow four acres a day can easily be overturned when the soil is in good condition—not too hard and dry.

We are at date of writing (June 22nd) breaking an alfalfa sod with four horses and a one-furrow sulky. It takes lots of power for alfalfa sod, a good new point and a heavy man on the plow, then it makes the roots rip and crack; those not cut stick out of the inverted sod like a lot of long rat tails. We intend putting wheat in this field, from which a nice crop of hay has just been harvested, and expect a good crop.

While driving through the country a few days ago I saw a man in a large field working one horse on a harrow. I wondered that he did not get discouraged, or the work monotonous, as I am sure from the size of the field he could not go over it in less than from a day and a half to two days. Surely the man and horse would think the tramp was endless. Had this man a good four-horse outfit, to cover the field would have been a small half day's work, and he would have had a pleasant forenoon's drive (riding, of course). Now, let us find out how many miles this man would walk harrowing an 18-acre field. A six-foot harrow would be about enough for the one horse, while a four-horse team pulls an 18-foot harrow and cart. Supposing the field is 60 rods long, the one horse and man would travel just 24½ miles in harrowing; the four horses would travel 8½ miles. The number of turns for the one-horse outfit would be 132, and for the four-horse 44 times. With reasonable time for resting with both outfits, it figures out an easy one-half day for the four horses and man, and a good hard day and a half for both man and horse of the one-horse rig. If time is of any value, and it is generally considered so, the man who drives a one-horse outfit in this age is losing days and dollars.

This is an age of advancement—the day of doing and achieving more and better work for each man en-

gaged. The time when men could profitably spend their days of labor in walking after a one-horse or two-horse team has passed. ARTHUR L. CURRAH, Oxford Co., Ont.

ORANGE HAWKWEED.

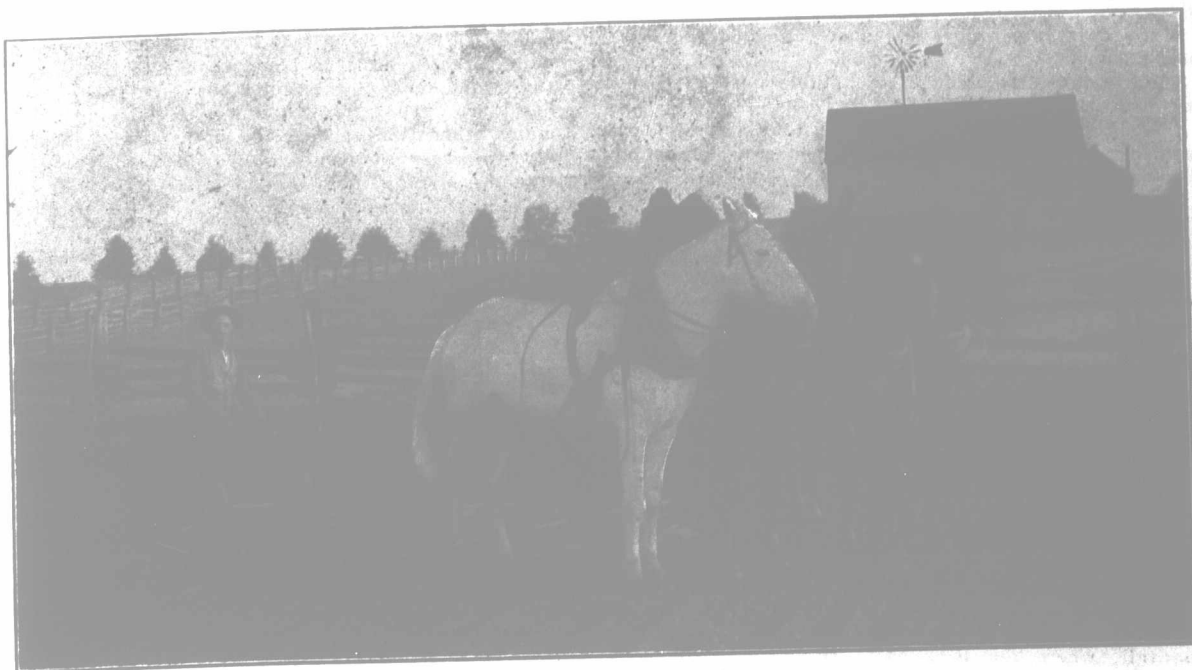
S. D. S., of Compton Co., Que., sends a plant for identification.

This low-growing perennial noxious weed, with simple erect stems one to two feet high, filled (when fresh) with bitter, milky sap, and bearing at the top a corymb of about a dozen handsome flower-heads, characterized by a fiery orange-red color, is the common pasture weed, Orange Hawkweed, or Devil's Paint-brush (*Hieracium aurantiacum*, L.). It is abundant and very troublesome in the upland pastures of the Eastern Townships and in some parts of New Brunswick and Prince Edward Island, being occasionally reported from Ontario and all the Eastern Provinces. It is propagated by seeds and creeping stems. It is a vigorous grower, and matures a large number of small winged seeds, by means of which it overruns land that cannot be plowed, ruining meadows and pastures. Although a vigorous grower, it roots close to the surface, and, in arable land, plowing down and surface cultivation will kill it. Infested meadows should be broken up and put under a short rotation of crops. For pastures, where plowing is impracticable, broadcast dry salt over the patches so as to fall on the leaves of the plants at the rate of 1½ tons per acre (18 pounds per square rod). This will kill all the plants of hawkweed, while usually improving the grass.

ENCOURAGING THE BUMBLEBEES.

There has been for years a popular idea that the amount of clover seed in a locality depends upon the number of old maids in the community. Without wishing to cast any reflection on the spinster class of citizens, the alleged connection they play in clover-seed production is that the favorite pet of the old maid is the cat. Plenty of cats are supposed to mean scarcity of mice, and scarcity of mice spells plenty of bumblebees, which are conceded to be instrumental in the fertilization of the red clover plant. It is a commonly accepted idea that plenty of bumblebees means a good crop of clover seed, as they are the only bees which seem to have long enough tongues to extract the nectar from the clover flower; consequently, they are the only ones that transfer the necessary pollen from one blossom to another. Every farmer knows that if he has any wool lying around where it can be found by bumblebees there he is most likely to find a nest. Refuse wool, or even good wool this year—considering the price—might be placed in a piece of hollow rail, or a box could be made in any shape, like a rail or log, with an opening sufficient to allow of the free access of bees in and out, and wired to the wire or rail fence, as the case might be, around the clover field, and at some distance from the ground. Old rags would take the place of refuse wool if it weren't available. It might be argued that field mice could climb the fence and find the nests if they were fond of robbing the nests, but, as a matter of fact, they are seldom seen off the ground, where they burrow in the long grass. It is questionable, too, whether field mice are so fond of honey or brood that they would go out of their way to look for bees' nests. Possibly the idea of field mice being adverse to bumblebee propagation arises from the fact that frequently bumblebee nests are found in mouse nests or runs. There is no question, however, about the boys destroying them, and they should be better educated.

Whatever the truth may be about field mice being enemies to bumblebees, the writer believes, from our



A Four-horse Harrowing Outfit, in Oxford Co., Ont.

(Photo by Carter & Isaac.)