

by the pedlars. The varieties of apples grown are Pearmain, Bellflower and Newton Pippin. They are very nice to look at, but very light in weight, and of very poor flavor. We carried a few Northern Spies with us just to compare with theirs. We have them all beaten for flavor, so you see the proof of the pudding is in the eating. But, on the other hand, they certainly can beat us badly in the care they give their orchards, for they are a picture to look at. It is no uncommon thing to see fifty and sixty acres in one orchard, and apparently not a missing tree. It makes a fellow ashamed of himself to come back and look at our scrubby orchards here in Canada. Now, would it not pay a farmer who is thinking of planting to go to the nursery and pick his trees, and pay a little extra for the privilege, instead of buying from some of these fruit pedlars that come around and take orders, and send such stuff as some of them do? And that's the last seen of the pedlar, for another man delivers the goods, and there you are up against it. I feel sure it would pay in the end to do your own selecting, for what will improve a man's property more than a nice orchard, well taken care of?

The orchards above described are situated a few hours' ride from Los Angeles, on the Santa Fe Railroad. JOS. POOLE.

Middlesex Co., Ont.

Organization of Co-operative Fruit Shippers' Association.

An Ontario fruit-grower who is interested in the organization of a co-operative fruit-shipping association, inquires as to methods of procedure. A. McNeill, Chief of the Fruit Division, Ottawa, discusses the question as follows:

No great formality is required in forming a fruit-growers' association. If a dozen neighbors, or a half a dozen, even, each having an apple orchard or other kind of fruit, were to agree upon shipping their fruit in common, and upon doing their spraying with one machine, it would be well for them to select a president, a vice-president to take the place of the president when he is absent, and a secretary-treasurer to look after the correspondence and the finances. The secretary-treasurer, if possible, might also be the manager, to save the duplication of offices, and they could then proceed to business.

Write to P. W. Hodgetts, Parliament Buildings, Toronto, for a copy of the Model Constitution and By-laws for Co-operative Associations, and proceed as there directed. If it is deemed necessary to incorporate, it can be done at a cost of \$10. Perhaps, for the first year the association could work without incorporation.

One good hand-spray pump will spray efficiently ten acres of orchard, and more if the orchards are close together. If the trees are full-sized, from one to two hundred trees can be sprayed with a hand pump per day, but very much depends upon the efficiency of the men who handle it, and the convenience of water, etc.

Your inquirer asks about how many farmers would be required to start an association. Several successful shipping associations have fewer than ten members, but probably it would not be worth while incorporating with less than 10. It would pay even two farmers, however, to join in shipping their fruit co-operatively, even if there was no formal organization.

Tobacco Culture in Canada.

Tobacco is a plant of the South. In our minds its culture is associated with that of cotton and the sugar-cane. We think of the old slave days, when such crops were tilled and attended to by gangs of darkies, each under its own overseer. In imagination we hear the jolly songs the darkies sing, but along with these there is also the hiss and crack of the overseer's whip.

Tobacco is cultivated for profit in three widely-separated districts in Canada. The fragrant weed is grown as a farm crop in a section of Quebec, in the southwestern counties of Ontario, and in British Columbia. In Essex and Kent Counties, Ontario, its culture has rapidly increased of late, and in the towns there large factories have been rushed up to take care of and further perfect the product after it leaves the farms.

A representative of "The Farmer's Advocate" recently interviewed several tobacco-growers in Essex County, with a view to preparing an account of the various cultural operations required of the farmer who would grow this special crop.

The first and one of the most important requisites for success is to get good plants. To secure these in good season, some sow the seed in hotbeds, some in cold-frames covered with glass, the majority in cold-frames with cotton covers. Those who have had experience with the latter glass is a much superior cover to either of the other two—frame—that is, an enclosed bed, and in which the soil alone has been prepared and sheltered—is, on the whole, as satisfactory as the hotbed. Great care must be taken to get the soil, and to have it as free as possible from weed seeds. Many a promising start of plants has been

choked or weakened by weeds. Leaf-mold from the woods makes an excellent surface for the bed, especially if taken from a spot where a brush heap has been burned. The burning insures a clean bed. About the first of May is a very good time for the tiny seeds to be sown. Some sow the seed dry, others moisten it and keep it warm until it has sprouted, before sowing, while others, who claim to have the best method of all, bring the seed to the swollen stage, just when the seed-coat bursts, and then sow it. The one aim in soaking or sprouting the seed is to gain time. As soon as danger from frost is past, the sooner planting out can be done, the better. The right stage for setting out is when the leaves are about four inches long. One grower who sowed an ounce of sprouted seed in a cotton-covered bed on the first of May, 1911, set out 1,400 plants on

great extent has frequently to be done to save the crop when this pest has been prevalent. Occasionally the whole field has to be replanted.

Later in the season come the tobacco worms, which lower the grade by eating holes, even where they do not destroy the whole leaf. Spraying with arsenate of lead is practiced by some, though many of the smaller growers depend entirely on hand-picking to save the crop. Of late years, however, it has been found that, better than either is to turn a flock of ducks into the tobacco field, and make them hunt their living by giving them nothing but water. One experimenter found that a flock of twenty ducks cleared a twelve-acre tobacco field of worms, without harm to the plants.

In order that the whole strength of the plant may be stored up in the leaves, it is necessary to

hinder it from blossoming and going to seed. The operation by which this is accomplished is called topping. When there are about sixteen or eighteen leaves on the plant, or, to put it in another way, when the upper leaves have to be parted to get at the flower-cluster bud, is the proper time to break it out. Everything should be topped by the 20th of September. In three weeks after topping is finished, it should be ready to cut. But between topping and cutting comes the most laborious and back-breaking part of the whole work. As soon as the top is broken off, the plant, working in harmony with nature's law of reproduction, tries to have seed produced by throwing out a blossom sprout or sucker at the base of every leaf. The pulling out of these sprouts is called suckering, and has to be done twice for every leaf on every plant. This is the part of the work that they say Canadians will do for themselves, but not for anyone else, and that, therefore, causes a strong demand for immigrants, who are not so particular.

When fit to be cut, the tobacco leaves are spotted with yellow. One test of the proper stage of ripeness is to fold a leaf double between the ribs and pinch it with the

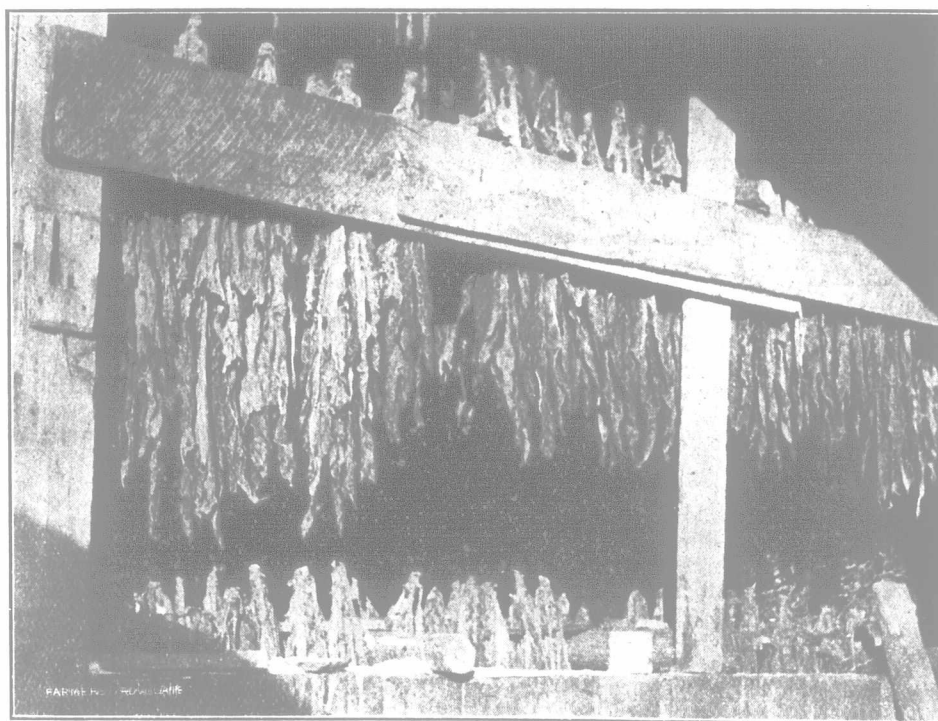
fingers, when, if ready, it will crack right across.

Long-handled, bent clippers are used to cut the plants close to the ground, though a hatchet works all right, or a spade, well sharpened, may be used.

After being cut, four to seven plants are piled one above the other, and left for one or two days to wilt, and then the grower starts in to string it. Common lath is sometimes used to string plants on, though generally a stick of the same length (4 feet), but thicker and narrower, is used. A movable spear-point is put on the end of stick, and with this the stalk of each plant is pierced about four inches from the butt, the plant then being pulled onto the stick. Seven or eight plants are strung on each stick, and the sticks are hung up in the barn, about eight inches apart, and left there until they are all curled up. Large growers have tobacco barns built for the purpose.



A Stick of Tobacco.



Tobacco hanging in an ordinary barn.

the 3rd of June, and finished planting three acres in the latter part of June. Some set the single plants at a distance of 3 feet 6 ins. each way, some 3 feet 6 in. by 2 feet 6 in., while others favor a distance of 3 feet 8 in. one way, by 2 feet 8 in. the other, the various distances depending considerably on the strength of the soil and the variety planted.

Cultivation is begun as soon as plants are set, and continued until the growth of leaves interferes, after which the hand hoe is used. Tobacco, more than most plants, responds to thorough cultivation. For a few rows he hood alongside of other rows left unhooded, and the difference in a few days is quite marked. So noticeable is this that even a single plant which has been hooded can be readily picked out from those around it.

Leaving free of coat, the worst foe of the newly-set plant, is the cutworm. Resettling is a