## THE FARMER'S ADVOCATE

#### The Valuable Artichoke.

298

The Jerusalem artichoke (Helianthus tuberosus), or tuberous sunflower, is not grown as much as it deserves to be, considering that, unlike the potato (yet a native of the same warm country). it does not feel the frost, being perfectly hardy, and has no insect enemies or diseases ; this alone is a saving of labor and Paris green. The artichoke is as nutritious or even more so than the potato, and is valuable for feeding pigs, and is especially recommended for sheep. lt is an excellent substitute for potatoes, and is very prolific. An Ontario seedsman claims that artichokes planted in rows four feet apart, on strong soils, will produce 1,500 bushels per acre.

The ground should be prepared for artichokes in the same way as for potatoes. Any method that will succeed in growing good potatoes, will grow good artichokes. Last summer we succeeded in growing an excellent crop of artichokes by furrowing out and putting stable manure in the furrows, and, after covering the manure, dropping the sets a foot and a half or two feet apart in the rows, and the rows three feet apart. The crop was hoed once, and kept growing by constant cultivating; thus the ground was kept friable all summer. This treatment yielded us a splendid crop of large artichokes, with stems eight and nine feet high, a dense mass of foliage, sur-mounted by small golden sunflowers. It is said that the artichoke rarely flowers, but this year I saw the plant in all its glory.

All through September and into October, after the frost had taken the corn, we were able to cut fresh, green artichokes and feed them to the cows, which they enjoyed, leaves and stalks. This was an experiment of my own, as I had heard that sunflowers were used in a similar way, and I saw no reason why artichokes should not answer the purpose.

Since my experiments proved successful, I have read that the French are in the habit of feeding artichoke leaves to cows. In this way I got rid of my artichoke tops, got green food when it was scarce, and still had a good crop of tubers in the ground. The early frosts that injured the corn did not affect the artichokes, and we had an abundance of them growing behind the barn.

There are two varieties of Jerusalem arti-The white are chokes, the white and the red. not so irregular as the red or purple, and are easier to pare; but as far as quality goes, they are much alike. The best time to plant artichokes is in April or May, or in the fall, whenever the ground can be worked, as they are perfectly hardy. The sets should be cut like the potato. but the small ones ought to be planted whole. It is customary in England to sort out the small ones and save them for sets, and in the Old Country they plant them six inches deep, but I prefer shallow planting.

The artichokes may be dug from September onwards, or may be left in the ground until spring; but late in spring they begin to grow, and lose their value. Sometimes we plow the tubers out, or dig them with a fork or hack. Although artichokes are not affected by the frost when under the ground, it will not do to leave them exposed. If left to the influence of sun or frost, they will spoil quickly. They should at once be put in the cellar and covered with sand or sacks, as they wither easily, and it is desirable to keep them crisp and nutty.

The one disadvantage that the artichoke has

The artichoke will grow anywhere, but the better the soil and the better the cultivation, the better the artichoke. It pays to grow big tubers. Neglect means the little tubers that we often find in some out-of-the-way corner.

The artichoke is a native of Brazil, and was introduced in the year 1617. It is not a true artichoke, but a tuberous sunflower. The term Jerusalem is a corruption of the Italian word Girasole," as it is claimed that the first artichokes were grown in Rome.

For home use, we consider the artichoke one of our best vegetables. It can be eaten raw in salads or pickles, or cooked in soups or stews, and used as a substitute for potatoes. For pigs and hens, artichokes are good boiled or raw. Even the horses will eat tops or tubers, but some animals have to get accustomed to the taste of the leaves before they will eat them.

In French agriculture the artichoke fills prominent place; the leaves are fed to the cattle and the stalks used as fuel. The tubers are given to sheep and cows with salt and half the weight of dry food, and the young stalks are fed off to sheep and cows in spring before plowing. The artichoke will thrive under trees, where other things will not, and, to add to its many uses, it is grown by gamekeepers near preserves for feeding pheasants. EUNICE WATTS. King's Co., N. S.

### A Nova Scotia Orchardist's Practice in Heading Apple Trees.

#### Editor "The Farmer's Advocate":

We have some thousand apple trees in orchard form, and have headed about five feet from the ground. After some twenty years' experience, am not inclined to vary much from this standard. I should certainly advise a farmer who intends to crop his young orchard to head his trees at five feet. The specialist, who intends to give his land fully up to the orchard, may with impunity drop the head a foot or two lower.

A low-headed tree will, in some measure, at least, protect the trunk from sun-scald, which often does serious injury. The low-headed tree is more easily pruned and sprayed, and, when the crop is thinned or graded on the tree, as our British Columbia friends are doing, the lowheaded tree becomes an essential. Gathering the crop, too, in these days of dear labor, is all in favor of a low-down tree. On the other hand, the greater difficulty in clean cultivation is an objection to low heads. In this, too, the professional orchardist has the advantage in lowheading, for he will be supplied with special tools, while the men who grow an acre or two of orchard as a side line to general farming must work their orchards with ordinary farm tools.

In these days one can hardly advise what course to pursue, for we are liable to have a revolution in fruit-growing methods in the near future. S. C. PARKER.

#### How a Lincoln County Fruit-grower Heads His Trees.

Editor "The Farmer's Advocate"

The following is about the height I should head young trees, varying some, perhaps, according to the habit of the variety : Apples, 3 to 31 feet ; plums, 2 to 21 feet; pears, 2 to 21 feet; peaches,

FOUNDED 1866

tion of pollen, which falls or is carried by the wind from the tassels at the top of the plant to the silks at the end of the ear. Investigations here have shown that rye is also, to some extent, dependent upon the wind for pollination, whereas most of the other grains, such as wheat, oats and barley, are self-fertile. The red clover is largely dependent upon the bumblebee for pollination, although it was claimed by some beekeepers a few years ago that, with the introduction of the Italian, Cyprian and Holy Land races of the honeybee, these would be able to work upon the deep flowers of the red clover as well as upon the shorter flowers of the white clover, but I doubt if experience has proven that any of these strains of bees have proboscis long enough to reach the deep flowers of average-sized red-clover blossoms. O. A. C. H. L. HUTT.

#### The Bees in Midwinter.

This is the time of year when it is the bees' business to do nothing-absolutely nothing but stay alive, And the nearer to nothing it requires to keep them alive the longer they will live. From the time the bee takes its last flight in the fall until it flies again in the spring, its body must retain all the waste from the food it takes to keep it alive. It is, therefore, important that conditions should be such that the bee can maintain life with the least possible consumption of food. These conditions consist in absolute comfort and quietness, with a temperature just low enough to keep the bees in a semi-dormant state. The lower the temperature below the point at which the bees become dormant, the more food will be required to keep up the animal heat in their bodies. If, in addition to being too cold, the atmosphere be damp, conditions are very much worse, for it is cold and dampness that bring on dysentery, the great destroyer of bees in the winter. Any disturbance to a hive in the winter will excite the bees and cause them to consume more food than they otherwise would, with a corresponding increase in the accumulation of waste, and a decrease in comfort ; but a disturbance, such as having the cover lifted off their hive for a moment if wintering outdoors, or having a light taken into the cellar if wintering inside, produces only a temporary activity, and sometimes none, if the act be not repeated too frequently; whereas cold and dampness produce a continual and always increasing discomfort, which is very hard on the bees, and wears out their vitality, so that they die very soon after commencing work in the spring. But playing with bees in midwinter certainly does no good, and they should be let strictly alone, unless there is reason to believe that something is going wrong. It may be necessary to place a comb of honey or a cake of hard candy on a hive, that from some reason went in to winter light in stores; it may be necessary to break the crust on the snow, if such forms over the entrances of outside-wintered colonies, or to clean out the dead bees from the entrances, if there is danger of their becoming clogged so the inside bees cannot obtain fresh air sufficient to keep them comfortable; or to look at bees in the cellar occasionally, to see that all is well; but the more the bees can be helped in their work of doing absolutely nothing at this time of year, by being let entirely alone in perfect comfort and quietness, the better will be their chances for earning dividends for their owner five months hence. E. G. H.



that it is hard to get out every tuber when digging. Many of the tubers branch out quite a distance from the plant, and any left in the ground will be sure to grow next season. The best artichoke-digger is the old sow; she never fails, and I should think that where ground is infested by white grubs it would be well to plant artichokes and turn the pigs in to root out grubs and artichokes, thus killing three birds with one stone.

After Braconnot analyzed the tubers of Jerusalem artichokes, he obtained the following results : Water, 77.150; grape sugar, 14.800; inuline, 3.000; citrate of potash, 1.070; gum, 1.220; wood fibre, 1.220, and small percentages of albumen, fat, phosphate of potash, sulphate of potash, phosphate of lime, citrate of lime, chloride of potassium, malate of potash, tartrate of lime and silica.

Boussingault gives the average composition of the artichoke tubers as follows :

e mar maile .	Fresh state	e. Drv.
Nitrogenous matter	2.38	10.00
Organic matter free from nitrogen	19.99	84.00
Ashes	1.43	6.00
Water	76.20	
	100.00	100.00
The composition of the artichol ing to Boussingault, is as follows	ke stem, a :	ccord-
	Fresh	Dry
	stems.	stems.
Nitrogenous matter	2.18	2.5
Organic matter free from nitrogen	82.48	94.7
Ashes	2.44	2.8
Water	12.90	
÷	100.00	100.00

cherries, feet to 3 feet

The reasons for low heads are several : It is not so much trouble to prune or pick your fruit; the fruit is not so liable to be blown off by wind, and the trunks are less liable to sun-scald.

The chief objections are in cultivation, which may be overcome by use of proper implements, such as grape hoes, extension harrows and cultivators, plows, etc. I have never found any serious trouble in several years' experience. Would do the same either in small or large orchards. Lincoln Co., Ont. A. M. SMITH

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#### The Bee as a Pollinizer.

Please tell us in a few words how far the pollination of flowers, fruits and grains is dependent upon the agency of the bee? C. W. L.

The pollination of flowers, fruits and grains is 10.00too large a subject to be disposed of with a few 84.00 However, to be brief, I may say that words. 6.00 most of the flowers and fruits which have large blossoms are largely dependent upon the bee and other insects for distribution of the pollen. The 100.00 common honeybee is one of the most valuable agents in this work of pollination. I have frequently noticed that some of the most productive orchards in this Province are those in which the growers make a practice of keeping a few hives of bees, or where bees are kept in the near vicinity. There are, however, many species of wild bees, as well as other insects, which are active in the distribution of pollen.

With regard to grains, I may say that corn 100.00 is largely dependent upon the wind for distribu-

#### Man's Methods for Getting A Young Winter Eggs.

It seems to me a great many people must keep hens because they think hens are worth keeping for the sake of a few summer eggs, or else they do not think at all. I have had only a few years' experience, but I have come to the conclusion that the hens which lay throughout the winter, when the prices are high, are the ones that are putting money into their owners' pockets. I am not boasting about my hens, neither do I think they have done extra well, but I think they have more than paid for their keep. Here are a few of my figures : In October, 1906, I sold 111 doz. eggs, receiving for them \$2.08; in November  $11\frac{1}{2}$  doz. for \$2.90; in December 11 $\frac{1}{2}$  doz. for \$3.02; in January 171 doz. for \$5.25; in February (to date, 11th) 16 doz. for \$4.00. The prices per dozen ranged from 17 to 30 cents.

I keep about 60 hens, and in the morning throw some oats in the litter for them, along with about a handful of broken crockery and green bone. This keeps them scratching till about noon, when I give them a pail of dry provender, composed of equal parts of oats and barley; and every intervening day I give them a pail of skim milk and warm water, with beef scraps in it. Then, about three o'clock they receive some more grain, to keep them scratching till bed time. Every day I throw open the door so as to allow them to get plenty of fresh air and sunshine. I always keep clover chaff in a shallow box in their pen, and they seem to like the little clover leaves. I always try to keep them scratching and working hard the whole day long. Glengarry Co., Ont.

A. M.