

Weeds.

BY J. HOVES PANTON, M. A., F. R. G. S.  
*Cirsium arvense* (Canadian Thistle.)

Few plants have received more notice than this, both from the practical farmer and the theoretical botanist. No weed has been so fully discussed as to the ways and means to get rid of it, and yet it lifts its head year after year as a living testimony of its vitality, vigor and reproductive power. It has a perennial creeping rootstock with many joints, every one of which is capable of sending out roots. All thistle flowers do not bear seed; some have stamens only, others pistils—the latter only can produce seed. This explains how some persons have failed to see thistles grow from what they thought seed. There is no doubt the thistle will grow from seed as well as other plants. This plant is well adapted for spreading rapidly, bearing many seeds easily blown about by the wind, and its roots bear latent buds at each joint. Few subjects are more discussed at farmers' institutes than the destruction of thistles. There seems to be a common opinion among thorough-going, systematic farmers that this weed offers no barrier to its extermination but what may be readily overcome by *thorough tillage*. From among many methods which the writer has heard fully discussed, he has selected the following as likely most practicable:—

1. Summerfallowing.—In this case plow shallow in the fall, and in the spring continue the cultivation so thoroughly as not to permit the thistles to see light, for under its influence they prepare food material which is stored in the rootstock, and thus the plant is fortified against future adverse conditions, and the roots will put forth growth for a time. Now, if the plant is never allowed to add to the rootstock force, in time all the reserve material of the root will be exhausted. If the summerfallow is neglected to be plowed at a time when vigorous young thistles are hourly storing away reserve material, one can readily see how difficult it will be to overcome the trouble. Keep thistles from the sunlight by hoe, cultivator or plow, and their continuance will not last long.

2. Plow in the fall, cultivate in the spring from time to time until about June, and then sow buckwheat. Plow this under about the time that it is flowering—if necessary, a chain may be used to assist in covering the buckwheat; then harrow and roll. Cultivate regularly on the surface until time of sowing.

3. Seed down a spring crop with clover (10-15 pounds per acre). Cut early the next year. Manure the clover stubble and plow deep; then cultivate weekly, and sow at the proper time fall wheat. Some, instead of manure, let the second crop of clover grow four to six inches and plow under.

4. Plant corn and keep the thistles *well hoed*; never allow any of them to get above the soil, at least but a short time. Repeated cutting will soon weaken them, and finally destroy them. If this is followed by another *well hoed* crop, but few, if any, thistles will remain. The old roots will be dead, and what, if any, remains will be seedlings, which will always be appearing as long as careless farmers permit thistles to seed.

5. Soiling.—This is a method which has been followed with much success at the College farm. Rye is sown in autumn, and cut when in early blossom. This is followed by rape sown in drills, upon which sheep are fed as soon as sufficiently grown.

*Cirsium lanceolatum* (Bull Thistle.)

This large species of thistle is frequently seen on new land, but is never viewed as a serious weed. It is a biennial, and is soon got rid of by cutting or spudding a little below the surface. If cut below the crown before flowering it is soon killed. It is readily known from its large purple heads with strong prickles, and darker green foliage in contrast with the common Canadian thistle. Unless in new land, they are generally found growing isolated along the roadside, or in the fence corners of the fields.

*Aster cordifolius*.

This beautiful aster, covered with flowers, does little harm in the fields; it seldom leaves the fence corners and roadsides. The stem is much

branched, bearing innumerable small, pale blue flowers. The lower leaves are heart-shaped. This perennial plant is somewhat shrubby in appearance, and flowers in the autumn.



*Bidens frondosa* (Bur-marigold, Spanish Needles) Fig. 25.

A coarse weed in low grounds, 2-5 feet high, branched with pinnate leaves 3-5, coarsely toothed leaflets. Seed flat, hairy, with upturned bristles and two-awned. It flowers in summer, and the seeds, like burs, are sometimes troublesome from sticking to the fleece of sheep by their barbed awns.

*Inula helenium* (Elecampane.)

A perennial very common along the roadside in some parts. It looks something like a small sunflower, with stem 3-5 feet high; large, somewhat oval leaves, woolly beneath. The root is very mucilaginous, and is used in medicine. It seldom invades cultivated fields, but may sometimes be seen in pasture land.



*Xanthium maculense* (Cockle-bur). Fig. 26.

A coarse, rough-looking plant, bearing some resemblance in its coarse appearance to the bur-

dock. The leaves somewhat triangular, heart-shaped, toothed on long stalks. The bur is somewhat oval and about one inch long, covered with stiff hooked prickles. It often grows along river banks. Being an annual, if kept from seeding by cutting it can soon be subdued.

Farming for Profit—Past, Present and Future—The Successful Methods of Each.

In the past, when farms were new, success was measured by the energy of the operator. Fertility was abundantly stored in the soil, therefore attention to adding to the supply of plant food was thought unnecessary, and he who produced and sold the most grain added fastest to his wealth. Stock and stock products were only in moderate demand, and the export trade in these as yet had not opened out. The forest still furnished a remunerative means of employing labor in winter, and no excuse was found for idle days on the farm at any season of the year.

During the present decade, and those immediately preceding that in which we live, the successful Canadian farmer has to face a very different state of things. "The stock-in-trade"—the producing capability of the soil of the farm—has to be considered. He still clings to money making by grain-growing, and the little produce fed on the farm is consumed with a view to increasing the capabilities for this purpose. Stock

is fed, and with the best farmers money is made from this source. Farm labor is among the greatest drawbacks in connection with farm operations, chiefly on account of little demand for men during the winter season, while those employing men do not study to provide the means of using labor in the most economical manner. Altogether the cost of production too nearly approaches the cash receipts to leave a sufficient margin for profit, the cheaper producing countries having interfered with and lowered prices of grain.

With this change in circumstances old methods must be changed or the future will not have a promising outlook, as it is argued that there are but slender hopes for grain rising in price. It must, therefore, be from some other source that large cash receipts must be looked for, while cheaper modes of production must be introduced, so that Canadian farmers may compete favorably with those of other countries.

The average ten-year yield of the province of Ontario for fall wheat was a trifle over 19 bushels per acre, while spring wheat is but 15 bushels, barley 25 bushels, oats 34 bushels per acres. The yield in any of these grains at the average market value would leave no margin for profit after the cost of labor is accounted for, to say nothing of the interest on stock and implements, the wear and tear on these, as well as other items not here mentioned against each crop, the cost of growing which, under the cheapest possible methods, would be at least equal to the figures given below:—

| Crop, Dr.                                                       | Fall Wheat. | Barley. | Oats.   |
|-----------------------------------------------------------------|-------------|---------|---------|
| Rent or interest, at 6 per cent., on land at \$60 per acre..... | \$ 3 60     | \$3 60  | \$3 60  |
| Plowing once after preceding crop.....                          | 2 50        | 2 00    | 2 00    |
| Cultivating, harrowing, rolling.....                            | 1 50        | 1 50    | 1 50    |
| Sowing.....                                                     | 30          | 30      | 30      |
| Seed.....                                                       | 2 50        | 1 50    | 80      |
| Yearly expenditure in keeping up fences in ten-acre fields..... | 1 00        | 1 00    | 1 00    |
| Cutt'g, twine and shocking.....                                 | 1 25        | 1 25    | 1 25    |
| Hauling.....                                                    | 60          | 60      | 60      |
| Threshing.....                                                  | 1 00        | 1 00    | 1 00    |
| Cleaning, bagging, marketing.....                               | 1 00        | 1 00    | 1 00    |
|                                                                 | \$15 25     | \$13 75 | \$12 85 |