thistle. The field being in hay, the year I started, I cut the hay early and plowed immediately. I worked the field well with an ordinary spring-tooth cultivator and harrows, all season, then cross-plowed it in the fall. The following spring I sowed the field to spring grain. From this I secured a pretty fair crop of grain, also sow-thistle. This season's work convinced me that this method was no good for cleaning out the "yellow scourge."

Having great faith in a root crop as a weed destroyer I placed part of the field in roots the following year, and having heard that two successive crops of buckwheat would completely eradicate sow-thistle, I placed the balance of the field under buckwheat, sowing the first crop about the middle of July, about one bushel per acre. This crop which grew very thick was plowed under about July 1st.

Both methods, root-crop, and double crop of buckwheat proved a failure, so far as cleansing the ground of sow-thistle was concerned. I did not plow after these crops, but merely ribbed up the ground in fall, hoping the action of the frost would deal it the death blow. However, the hope proved vain when the warm weather appeared again.

THE MOST SUCCESSFUL METHOD

In 1906 I tried a new scheme and I think this plan if carried out thoroughly, with probably some slight modifications to suit different farms and farmers, is the most advanced and successful for the eradication of sow-thistle yet arrived at.

Having read something of the use of broad-share or thistle cultivator points, I procured a set, and attached them to an ordinary spring-tooth cultivator. I plowed the field four or five inches deep about June 6th and cultivated at least once a week until July 14th. Then I sowed to buckwheat, one bushel to the acre. My object was to smother any remaining sow-thistles. The fall of '06 being exceptionally free from heavy frost my buckwheat ripened and produced a magnificent crop of grain of very fine sample.

But to return to sow-thistle. After the first stroke of the cultivator the ground was white with big, streng juicy roots ready for a big season's business. After the last stroke of the cultivator about the middle of July, any roots appearing at all, were shrunken and blackened like last year's stubble. That these roots lacked life was proven by their non-appearance in the buckwheat.

Unlike twitch or quack grass which must be killed by exposing the roots to sun or frost to remove its sap, the sow-thistle with its more brittle roots is best killed by encouraging roots to grow or produce plants, then cutting these plants before leaves are produced and thereby slowly starving the root stalk.

THE PRINCIPLE OF ERADICATION

The principle as I understand it is simply this: Each plant must get nourishment enough from the root stalk to carry it to the surface. Then if unmolested, its leaves shoot out and draw considerable nourishment from the air. This nourishment is returned to the root leaving it as strong as previously. Now if the plant is severed from the root before the leaves have a chance to work, the root immediately draws upon its supply of nourishment and starts another plant. If the cultivator arrives sharp on time and gets plant No. 2 before it breathes the life-sustaining air, the root stalk will be called upon to start a new child on its way to the surface. Now the process goes on, if the man with the cultivator "means business, and means it all the time," until the big juicy root has given of itself until its last vestige of plant nourishment is gone. The root itself has failed to a mere skeleton, and as it is too weak to give birth to another plant it just simply makes up its mind to die. Then, farmer, it is your time to laugh and sow your rapid-growing, sturdy buckwheat or rape to fatten on the skeletons of sow-thistle, and take advantage of your thorough cultivation.

A GOOD THREE YEARS ROTATION

In dealing with sow-thistle, one of our most persistent weeds, as with any other work in life, the old maxim, "What is worth doing, is worth doing well," applies, and underlies the whole scheme. I can see no reason why any farm with proper drainage can not be made and kept practically clean with the following three-year-rotation: First year clover; 2nd year (the cleaning year) corn, roots, etc. for land infested with wild oats, herrick, etc. and similar treatment to the one I have described above for sow-thistle, bindweed and kindred plants with creeping root stalk. Third year without plowing any of the land used in 2nd years rotation, sow to grain seeded with clover.

AGRICULTURE IN THE HIGH SCHOOLS

A Review of the Work that Has Been Carried on by the Agricultural Specialists at Morrisburg, and at Essex, Ontario.

IN connection with the new movement in agriculture, the work at Morrisburg has been conducted under the direction of W. A. Munro B. A., B. S. A. In a letter to The Canadian Dairyman and Farming World, Mr. Munro describes his work as follows:

The teaching of agriculture in the Morrisburg Collegiate Institute has not yet become a possibility, notwithstanding the fact that the teacher, the equipment and the grounds are all that could be desired. No students have yet expressed the desire to take up the subject in the Collegiate course. It was evident to the teacher in September, when no students registered, that something must be done to show farmers the great need of agricultural education and the opportunities that were afforded of acquiring that education in the high schools. There was no precedent and much time was lost in feeling for the best policy.

W. A. MUNRO, B.A., B.S.A.

Plans were laid for an elaborate short course to be held in Morrisburg in January and the farmers considered it the main thing in prospect, but no one could be made to promise to be in attendance for the length of time required. This was not because they lacked faith in it but simply because of the vexed labor question. There did not seem to be more men on the farm than could do the work and time could not be spent in attendance at the short course. This plan had to be rejected.

"The new policy was to hold one day of the short course in each representative centre through out the country and the work of the agricultural teacher during the whole winter has almost altogether been confined to the holding of what he has chosen to call "Day Schools" the subjects particularly dealt with being, "Horses" "Cattle" and "Grains."

"To illustrate in detail what a day school is, it might be well to outline a day on "cattle." By previous arrangement a blacksmith shop had been secured for the afternoon and a hall for the evening meeting and three cows each of Ayrshire and Holstein, and a bull of either of the breeds for the afternoon demonstration. At 1:30 o'clock a representative dairy cow was scored, plenty of opportunity being left for the farmers to ask questions and make suggestions. The scoring took up about one hour and a half. Three cows of one breed were then brought into the ring and the class asked to judge them. After each an interesting discussion took place followed by the decision of the expert with reasons. The three cows of the other breed were likewise dealt with after which a demonstration was given on the desirable characteristics of a dairy bull.

"The evening meeting was a continuation of the afternoon demonstration and took the form of a lecture on some phase of the dairy industry. The chairman of the evening meeting was usually appointed from the farmers at the afternoon demonstration. After the dairy question had been dealt with at full length the instructor gave a brief but definite outline of the scheme of the new movement in agricultural education.

"In nearly every place visited a vote of thanks was passed and an urgent request put in for the instructor to come again on some other subject. The best evidence of the success of the day schools lies in the fact that the second meetings were invariably better attended than the first.

"The office is no mean consideration in the new plan. The Morrisburg office is large enough to comfortably seat 70 people, is on the ground floor and has a large plate front. There are two large reading tables with over 36 newspapers and Agricultural Periodicals, and shelves containing bulletins from different American States, and books on different phases of agriculture. It is fast becoming a rendezvous for farmers without the indignity of being a loafing place.

"On March 28th a "Farmer's Club" was organized which is to meet monthly and discuss some one question at each meeting. Prospects are bright for good demonstration work being carried on, on the grounds. The public and high school children are helping in this.

"The citizens, teachers and students of the Morrisburg district are continually gaining a better opinion of the new movement and everything points to its becoming one of the prominent corner stones in the Educational development of Old Ontario."

AGRICULTURAL EDUCATION IN ESSEX COUNTY

Mr. A. McKenney, B. S. A., the representative at Essex of the Department of Agriculture, whose portrait appeared in our issue of July 8th, has written us as follows: "The geographical situation and climatic conditions of Essex County place it in a position very much by itself in so far as its agricultural possibilities are concerned. Situated on the 42nd parallel of latitude, the climatic conditions are such that the farmers of the county are enabled to grow with a fair degree of success, almost any crop that can be grown in any other part of the world. Such crops as corn, tobacco, and even sweet potatoes may be grown to a degree of perfection nearly equal to that of the countries to which these crops are indigenous. The great variety of special crops which are grown in the county makes the field for investigation work a very broad and interesting one.

"It has been my duty since coming to the County to make a special study of the crops and conditions as well as of the special needs and problems of the growers. The interests of the farmers of Essex County are many and varied. The board of the Essex High school is composed of men who fully recognize the value of education to the farmer, and they have done much by their personal help and generous financial assistance to give the new department a proper start. The Essex county council also supported the work of the work being handicapped for lack of fi-