

## Our School Department.

### Do You Know Your Weeds?

As weeds and tares (darnel) have increasingly occupied the attention of agriculturists from early days, so the ground space occupied by weeds has steadily and surely increased. This is not entirely due to the extent of new land cleared and cultivated, nor is it due entirely to neglect, nor to a lack of literature on the subject of their eradication, as every agricultural pamphlet, paper, magazine and text-book has its chapter of advice on weeds.

It is knowledge of the weed itself that is wanting. No man who once recognizes a weed and its injuriousness would allow it to remain on his land undisturbed for a season! When the progressive farmer knows the weed, he will use every means at his disposal to exterminate it.

To know a weed, one must be able to recognize it in every stage of its development, to understand what harm it does and to know at what period of its growth it should be destroyed.

There are two classes of weeds; those which are of definite duration as annuals and biennials, and those of indefinite duration as perennials. Among the annuals growing in the West are green foxtail, wild oats, wild buckwheat, redroot pigweed, tumbleweed, Russian pigweed, Russian thistle, cow cockle, purple cockle, ball mustard, false flax, hare's ear mustard, stinkweed, wild mustard, tumbling mustard, stickseed, dodder, great ragweed and many others. Among the biennials are squirrel-tail grass (erroneously called "foxtail" in the West), gray tansy mustard, green tansy mustard, biennial wormwood, etc. The perennials include sweet grass, couch grass, veined dock, broad-leaved pepper-grass, prairie rose, great willow herb, blue lettuce, skeleton weed, perennial sow thistle, Canada thistle and others.

Annuals have only one means of reproduction, that is by seeds, and, for this reason, they yield an enormous quantity. One single plant of tumbling mustard will produce 1,500,000 seeds. Think what it means to allow one of these plants to mature its seed, to stand still until dry and be blown by the wind until its shallow foothold snaps or gives way altogether, sending the whole plant across the prairie to scatter its 1,500,000 seeds along the way! The second year there will be 1,500,000 new plants, and the third year 1,500,000 times 1,500,000! What a saving to cut one plant off before it seeds itself! What an advantage to know the plant before it flowers! Russian thistle, tumbleweed and stinkweed (French weed) are equally troublesome, and scatter their seeds in a similar manner. Land may be freed from annual weeds by any method which will kill them before they flower. The seeds already in the soil should be made to germinate, and the young seedlings destroyed by repeated cultivation.

Biennials should be treated as annuals when in the first year's growth, that is, they should be destroyed when in the form of a rosette or mat. If of the second year's growth, they should be cut off or spudded below the crown to prevent the formation of flowering shoots and seeds.

All perennials are capable of reproducing themselves by new shoots from the roots as well as by seeds. There are two things then to be remembered in the eradication of perennials. First, they must not be allowed to seed themselves; second, that the roots and root-stocks must be destroyed. Reproduction by means of seeds may be easily prevented by mowing the plants as soon as the flower buds appear; but the destruction of the underground growth is easy only when the weed is scarce or where digging the roots up and burning them is practical, that is, when the first patch is discovered and recognized as a pest. Thorough and persistent cultivation, which will destroy the green part of the plant, will, if repeatedly practiced, starve the rootstocks to death. Shallow or deep plowing, according to the nature of the plant, to

bring the rootstocks to the surface of the soil where they may be gathered and destroyed, is most effective if properly carried out. On no account should any method be used which would result in scattering the rootstocks, and thus stimulating them to new growth.

An examination of the Canada thistle will show the futility of cutting off the tops and leaving the rootstocks in the soil to send up new shoots. The rootstock possesses great vitality, and every inch with a bud on it is capable of producing a new plant; hence to cut the rootstocks up and leave them on the ground is worse than useless. If the plant is known in a young state it may be very easily killed, but if it is allowed to live till it is six or seven weeks old, then the rootstock must be considered. Other deep-rooted perennials with similar rootstocks are sweet grass, prairie rose, broad-leaved peppergrass, veined dock, white evening primrose, poverty weed and perennial sow thistle. With all of these, deep plowing is necessary, but shallow plowing will do for couch grass as its rootstocks are nearer the surface of the soil.

The difficulty of the weed problem would be considerably lessened if native weeds alone were to be combatted, but the list of weed immigrants is continually increasing. These new weeds are indifferently noticed until they have usurped our food-supplying land. How much more simple the weed question would be in the West if couch grass, wild oats, Russian thistle, perennial sow thistle, the (so-called) Canada thistle, and other introduced weeds had not been allowed to establish themselves.—F. FYLES, Botanist, Ottawa.

### Opportunities for Canadian Teachers to Visit England.

By LILIAN D. MILNER, OTTAWA.

The League of the Empire has made arrangements with the London County Council by which a certain number of teachers from Canada may exchange with teachers from London, England, for one year. The League will do everything in its power to assist these teachers to secure suitable lodgings and to make their stay in England as pleasant and profitable as possible, giving them letters of introduction to people in authority at the historic places of the Realm. Ontario has the reputation, even in England, of having the finest educational system in the world but still there are many things a Canadian teacher may learn during a year's residence in the Old Land.

Teachers will be paid the salaries they would receive if they had entered the London service on qualifying as State teachers, provided that not more than six year's service since qualifying shall be taken into account in determining the salaries. For instance a man teacher who has performed six years or more service as a State teacher if appointed to the London service would receive about \$1,175 per annum, while a woman teacher, who has given six years or more service will receive about \$1,000 per annum.

All travelling expenses are born by the teacher. The cost of living is very much higher than at normal times in England at present and it is possible that a teacher may be out of pocket at least part of her travelling expenses; on the other hand one who takes advantage of this opportunity to become acquainted with another part of the Empire should have gained much as a result of a small investment.

A party is now being formed and, teachers who are interested can obtain further particulars by making application to Miss F. M. Standish, 643 Euclid Ave., Toronto, who is Honorary Secretary of the League for Ontario.



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