grasses. There may be as many as five million cluster cup spores on a single moderately infected barberry leaf, and each one of the spores can infect grain and produce rust on it within a week. The amount of rust therefore increases by geometrical progression.

The Spread of Rust from the Barberry

Barberry bushes usually become rusted sometime in May and the rust soon spreads to grain plants if they happen to be near the bushes. But even if there are no grain plants in the region the rust can spread because it can pass equally well to many grasses, including wild barley, quack grass, slender wheat grass, western wheat grass, red top, orchard grass, the wild rye grasses and many others. From these rusted grasses the rust then spreads to other grasses or to grains. There are different strains of the rust and the particular strains present determines what will happen. The rust from oats, for instance, will not infect wheat, the rust from wheat will not infect rye normally and the rust from rye will not infect either wheat or oats. Barley can be infected by both the wheat and rye strains and each strain can infect at least some of the grasses.

It is clear therefore that the barberry bush is a centre from which the rust spreads and this fact ought to be enough to condemn it. Even if the barberry is not the only means by which the rust can get started in the spring it develops a tremendous amount of rust and ought to be destroyed. There was a belief that the rust could live over winter in the seed. This idea has been pretty well disproved. Some botanists have also held that the barberry was not necessary in the life history of the rust. It is true that in the Gulf States of the United States the rust continues to develop in the red stage almost the year around, but it certainly does not do this in the Northern half of the United States and in Canada. While it cannot be said that the red spores never live through the winter and attack the grains the next spring, the evidence is all against it. There can be no question that the barberry bushes develop rust in the spring and that the rust spreads from the bushes to grains and grasses long before there is any rust at considerable distances from the bushes. Neither can there be any question that the bushes are responsible for the development of tremendous amounts of rust and that they are a very important factor, and in many regions the most important factor, in the development of the terrific epidemics which are the terror of all grain farmers in Canada and the United States. The obviously sensible thing to do therefore is to destroy every common barberry bush in the United States and Canada.

Description of the Barberry

Not all species of barberry rust. The Japanese or low bush barberry is immune to rust while the common, high bush, or European species rusts heavily. Both are planted widely as ornamentals but the harmless Japanese species is much more beautiful than the common form and is replacing it rapidly in popular favor.

The common barberry is a tall shrub, often as much as twelve feet high. The bark is greyish in color and along the stem are many long spines, usually in clusters of three to five. Above the groups of spines are clusters of fairly large green or purple leaves with saw-tooth edges. The yellow flowers and red berries are born in racemes like currants. In Ontario the purple leav-