val was known as the Robigalia and was taken very seriously by the toga-clad Roman fathers. Those taking part in the festival marched out along the Claudian way to a sacred grove where the real heavy work of warding off the disease was done. A priest prayed to Robigus, the entrails of a sheep and a reddish dog and some wine were thrown upon an altar and burned; and the crowd probably performed other meritorious rites. Apparently the Romans did not become discouraged with this method for they retained it for many years. And when all is said and done the methods in use until recently have not been much more efficatious, except that the wine has not been wasted.

Plant doctors went into consultation after the awful epidemic of 1916. They realized that a heavy responsibility rested upon them at that time when another such epidemic might affect the National destiny profoundly. They were not willing to entrust the fate of grain crops to a bottle of wine, the entrails of a yellow dog and Robigus, who was aging rapidly, so they took inventory of their knowledge about the nature, peculiarities and habits of the rust and tried to determine what could be done to prevent the recurrence of another such disaster. After considering the matter carefully they decided that the common barberry was guilty of developing and spreading rust, and that it was the one culprit within easy reach. They agreed that the barberry did for the rust what the cootie does for trench fever—spread it. They therefore prepared the case against the barberry and asked all public-spirited citizens to do the rest.

The Case Against the Barberry

In order to understand clearly the relation of barberry to rust, it is necessary to know something about the rust itself. Every student who has studied botany knows something about rust, but that something is not always sufficiently definite. At one of the great American Universities one of the questions in the freshman botany examination was to give the life history of Puccinia graminis—the stem rust fungus. One enterprising freshman penned the following words of profound wisdom: "The rust starts out on the barberry and then has a long checkered career." The freshman had grasped the principles all right but he was not strong on detail.

Rust is caused by a parasitic fungus, Puccinia graminis. This fungus can live in the tissues of wheat, oats, barley, rye and about fifty wild and cultivated grasses. It reproduces by means of spores which correspond roughly with the seeds of higher plants. There are several stages of the rust and each produces a different spore form. The red rust, or summer stage, develops during the growing season while all conditions are favorable. The red spores can germinate immediately and infect grain and grass plants but no other plants. In the fall the black stage is produced on the grains and grasses. The black spores cannot germinate until the next spring. They send out germ threads which in turn produce small secondary spores known as sporidia. Strangely enough the sporidia cannot infect grains or grasses but can infect only barberry and Mahonia, a plant closely related to the barberry.

Within about a week after the barberry is infected it develops the cluster cups on the lower surface of the leaves. The cluster cups contain the cluster cup spores which cannot attack barberry but can and do infect grains and