

septoria leaf spot, or septoria blight, one of the diseases which has caused such extensive destruction of leaves often to the extent of complete defoliation this year. This disease is particularly active in wet weather and when temperatures range from 60° to 80° F. Suggested control measures include complete destruction of all tomato plant residues this fall and deep fall or deep spring plowing, and avoidance of returning tomatoes to infected portions of the field or garden for several years. This sanitary precaution is not enough however, hence systematic use of copper sprays or dusts are advised. Directions are given for making a Bordeaux mixture for spraying and for use of copper dusts.

Other diseases of special interest to North Dakota gardeners are the

two physiological troubles, sunscald and growth cracks. Growth cracks are common during periods of abundant rain and high temperatures and unfortunately little control seems possible. Sunscald injury is brought about by the loss of leaves as, for example, by septoria leaf spot. Blossom-end rot frequently occurs in the drier seasons, but sometimes after periods of unusually abundant rainfall. Excessive rainfall which leads to rootlet destruction because of lack of air in the soil, or the activity of rot fungi may produce a condition whereby the plant is unable to secure water even though the soil is moist. This reviewer urges that all those who are interested in tomatoes send for a copy of "Tomato Diseases."

H. L. Walster.

New Facts About Russian Thistle

NO PLANT, regardless of how humble and common it is, is unworthy of study. The North Dakota Agricultural Experiment Station has just released its Bulletin 326 on the life history and growth of the Russian thistle. Professor O. A. Stevens, associate botanist at the Station, long a careful student of weeds, tells us that Russian thistle was first observed in America in Bon Homme county, South Dakota, in 1873, just 70 years ago. 1943 might well be called the Three Score and Tenth Anniversary of the invasion of this weed. Even 20 years after its invasion (i.e. by 1893) it had not yet gained much headway in North Dakota but the farseeing J. H. Worst, formerly President of the North Dakota Agricultural College, then a farmer in Emmons county, warned the public that means should be taken to suppress the weed.

Professor Stevens tells us about the development of the spines and seeds of this "Russian cactus" as it was once called. He finds that under usual conditions the seed germinates about the last of April but some seeds may start in even late June. Flowering begins soon after July but it is about a month before these single-seeded flowers "set" seed. The capacity of a single Russian thistle plant to produce seed is enormous. A single plant harvested in 1938 provided 19,152

seeds. Russian thistle seed analyzed in the department of Agricultural Chemistry by T. H. Hopper, formerly Station Chemist, contained from 14.8 percent to 18.3 percent ether extract, which material was presumably mostly oil. This oil had an iodine number of from 134 to 140, hence it could not be considered a drying oil.

A free copy of Bulletin 326 may be obtained from the Information Department, State College Station, Fargo, North Dakota. (H. L. W.)