

GRASS FAMILY (*Gramineae*)

DARNEL (*Lolium temulentum* L.)

PLATE IV.

COMMON NAMES: Darnel is also called poison-darnel, white darnel, bearded darnel, and tare. The French name for it is "Ivraie," derived from "*ivre*" meaning drunken, as when brewed with barley it acts as an intoxicant.

DESCRIPTION: Darnel is an annual grass. It has smooth simple stems from two to four feet high. The leaf blades are four to ten inches long and about one-quarter inch wide, rough on the upper surface and smooth on the lower. The flower spike is four to twelve inches long, with four to eight flowers to each spikelet, which fits tightly into a slight curve on either side of the stalk. The seed is about the size of a small grain of wheat, it is rounded at each end, with a shallow groove on the inner surface, and is closely covered by two scales, the outer one usually possessing a short awn. The kernel itself is greenish, tinged with brown or purple. It is in bloom from June to August. Darnel is very closely related to English and Italian rye grasses, but may be readily distinguished from both in having no leafy shoots from the base, and consequently it does not grow in tufts or bunches.

DISTRIBUTION: Introduced from Europe, it is now scattered throughout Canada on cultivated ground and waste places in New Brunswick, the Prairie Provinces and on the Pacific coast.

POISONOUS PROPERTIES: The injurious effect of darnel has been recognized since early scriptural days, as there is no doubt it was really the tares which the enemy sowed among the wheat. There are also many references to it in the classics; Ovid says "Let the fields be clear of darnel that weakens the eyes." It is referred to in one of Shakespeare's plays as spoiling the bread, and in the same connection Gerard (1597) says: "The new bread wherein darnell is, eaten hot, causeth drunkenness; in like manner doth beere or ale wherein the seede is fallen, or put into the mault."

The toxic principle seems to be only in the seed or grain itself, and has been determined as a narcotic alkaloid *temuline*, which Hofmeister has shown to be a strong nerve poison. Other authorities give different toxic principles, and some refer the cause of injury to a fungus which infests the seed. Esser concludes that according to most authorities who have investigated darnel the fungus alone contains the toxic substance—the *temuline*—and hence the grains in which the fungus does not occur should be harmless. H. C. Long, in referring to Esser's work, says: "So far as