

LATE WINTER INJURY OF SOME COMMON TREES  
AND SHRUBS

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## ABSTRACT

During the latter part of February, 1932, temperature conditions throughout Illinois were so mild that growth activities were initiated precociously in different kinds of trees and shrubs. Early in March, however, a sudden freeze occurred which seriously injured vegetative growth.

In the Champaign and Urbana vicinity the effects of winter injury ranged from slight to very severe. Among those woody perennials most seriously injured were elm, pussy willow, poplar, and privet.

The most conspicuous and common symptom associated with winter injury was the presence of numerous dead, bare twigs or small branches protruding either from the tops of injured trees and shrubs or occurring at the ends of lower lateral branches. Quite frequently portions of larger branches manifested the same dead and leafless appearance. The extent of dying back ranged from only a few inches to as much as several feet, in accordance with the particular species of plant.

Another common and striking characteristic of the winter-injured plants was the presence of much enlarged or partially opened buds killed by freezing. Buds of the most precocious trees and shrubs were fully opened when killed. Those woody perennials characterized by a more retarded growth showed only swollen or partially unfolded buds, while buds on other plants with a still more prolonged period of dormancy, were only slightly enlarged and had been killed, apparently, just as growth activities were being initiated.

The American elm (*Ulmus americana* L.) commonly suffered winter injury during the spring of 1932. The occurrence of an exceptionally dense or compact foliar growth immediately below the winter-killed twigs and branches was a conspicuous character manifested by severely injured elms. Such leafy growth originated from the premature development of buds normally developed at the bases of already expanded leaves. Ordinarily these buds would have remained dormant until the following spring.

The cultivated pussywillow (*Salix caprea* L.) was so commonly injured that very few instances were observed in which no serious effects of freezing were evident. Injury was most noticeable among the lower branches though some lower laterals were also injured.

Winter injury to poplar was also quite general and extensive. The Lombardy poplar (*Populus nigra* L. var. *italica* Du Roi) was more extensively injured than the White (*P. alba* L.), Carolina (*P. canadensis* Moench.) or Simon (*P. simonii* Carr.). Greater injury to the Lombardy poplar was due not only to its more general cultivation, but also to the fact that the tree is usually grown singly, or in rows, quite isolated from other trees, and left unsheltered.

The common privet (*Ligustrum vulgare* L.) suffered extensive, though only moderately severe, winter injury. In most instances no large portions of the plants were killed, but instead, it was of more common occurrence for numerous small twigs scattered throughout the bush to be killed.

Most noticeable among those trees and shrubs injured to a lesser extent was the hard maple (*Acer saccharum* Marsh.)