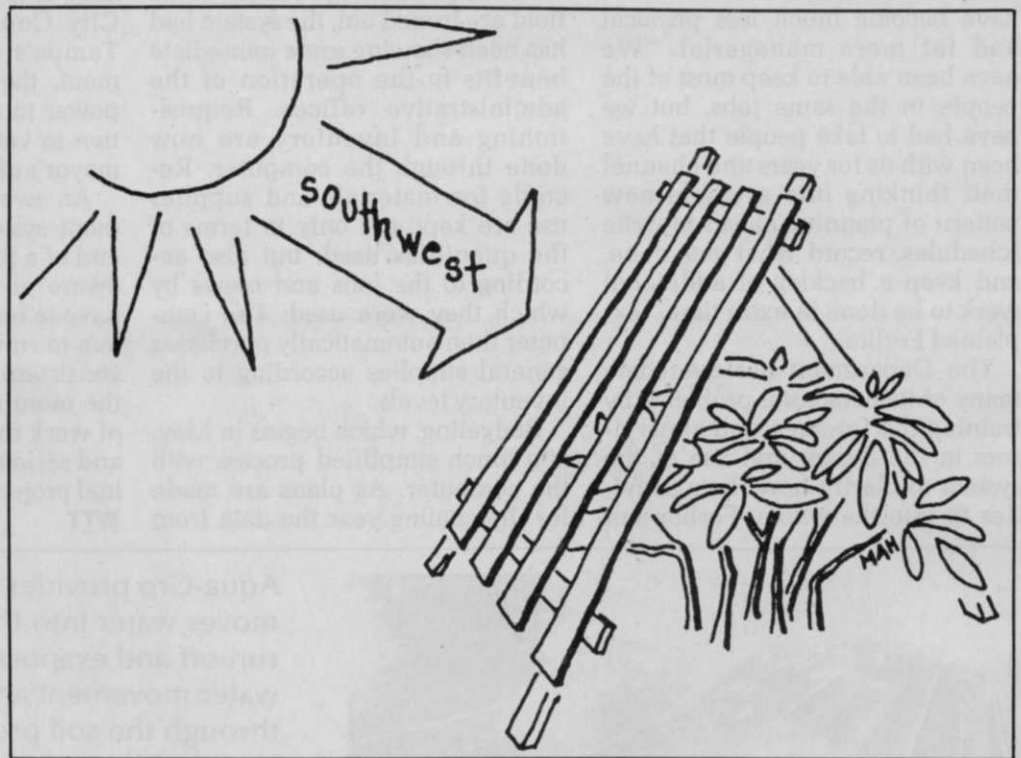


COMBAT WINTER'S FURY WITH SIMPLE PRECAUTIONS

BY DOUGLAS CHAPMAN



Protect evergreen from excessive sun in mid to late winter.

Winter protection is a consideration of every horticulturist. When considering winter protection, we are trying to protect against desiccation (sun or wind induced), temperature fluctuation, salt, and rodent injury. We must all consider slight modifications or, if you will, precautions to the rigors of winter.

Desiccation or loss of water is most severe on evergreens but can also be a problem on newly transplanted deciduous trees, notwithstanding, any plant exposed to bright winter sun or severe southwest winds. This extreme loss of water or death due to loss of water is often called sun scald or southwest injury. Essentially, one should try to protect evergreens from excessive sun mid to late winter (February-March). This protection can be nothing more than a bushel basket or snow fence

on the south or southwest sides of plants or correct companion plants, e.g. rhododendrons under pines. The key to protecting against this type of injury is to slow the drying late winter or early spring winds. Further, it is important to insure there is sufficient moisture so that when the soil does warm up, water is quickly replenished to the plant. Although structures are often used, branches from pruning, discarded Christmas trees, burlap, etc. will do an effective job.

Sun scald is another form of death of plant tissue due to drying sun. Often, as in wind burn, we see it on the south to southwest side of the plant. This is essentially desiccation of evergreens, that is the sun warming the foliage, thus allowing transpiration to occur while having a root system frozen and, thus, not active. Similar structures as men-

tioned above are used to protect or shade plants. Further, companion plants, such as yews—spruce, rhododendrons—pine, oak—azalea, are effective. Lastly, many plants are tolerant or resistant to wind burn, e.g. Norway Spruce, White Spruce, and many of the junipers. In fact, these plants can be used to protect more tender plant material, e.g. yews, rhododendrons, *Acer palmatum*. Companion planting or protection of tender plants is critical to winter survival.

Wide temperature fluctuation in a short period of time is considered more damaging than high or low temperature extremes. Many plants are capable of withstanding

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temperatures of 20 to 30 degrees below zero, e.g. *Rhododendron catawbiense*, *R. maximum*, *Acer griseum*, *Koelerutaria paniculata*, but a few will tolerate 30 to 50 degree temperature fluctuation in one day. Several ways to protect against rapid fluctuation include protection of tender plants (giving a north to northeast exposure) and mulching.

Desiccation is most severe on evergreens, but can also damage newly transplanted deciduous trees.

Mulching for winter protection is under utilized. Many of us in the landscape perceive mulches as an opportunity to conserve moisture and reduce competition due to weeds, but these same mulches are particularly effective insulators and, therefore, reduce temperature fluctuation. Several of the best mulches are organic, e.g. wood chips, bark, peat moss, compost. These materials not only reduce maintenance but help the soil stay colder longer, if you will, warm up slower in the spring. Further, they conserve moisture by reducing competition and evaporation—again, an opportunity to integrate year-round maintenance with a unique consideration—"winter protection." If organic mulches are used, they also help improve the tilth of the soil and encourage plant survival.

Application of sodium chloride, or salt, can be one of the most single devastating practices to the landscape. Many native plants are intolerant of chlorides. Dirr in Illinois did some classic research showing that chloride was, in fact, the harmful element and that some plants are considered more sensitive. One of the outstanding lists revealing sensitive and insensitive plants to chloride was written by Harold Davidson of Michigan State University. His literature review showed clearly that some plants are intolerant to chloride

TABLE 1

CHLORIDE TOLERANT	CHLORIDE INTOLERANT, SOILS	CHLORIDE INTOLERANT TO FOLIAGE
<i>Acer campestre</i>	<i>Crataegus</i> sp.	<i>Acer ginnala</i>
<i>A. platanoides</i>	<i>Gleditsia triacanthos inermis</i>	<i>A. palmatum</i>
<i>A. rubrum</i> (spray)	<i>Picea pungens</i>	<i>Amelanchier</i> sp.
<i>A. saccharum</i>		
<i>Aesculus hippocastanum</i>		
<i>Alnus glutinosa</i>		
<i>Betula papyrifera</i>		
<i>Juniperus virginiana</i>		
<i>Malus</i> sp.		
<i>Pinus nigra</i>		
<i>Quercus macrocarpa</i>		

applied to the soil and/or foliage.

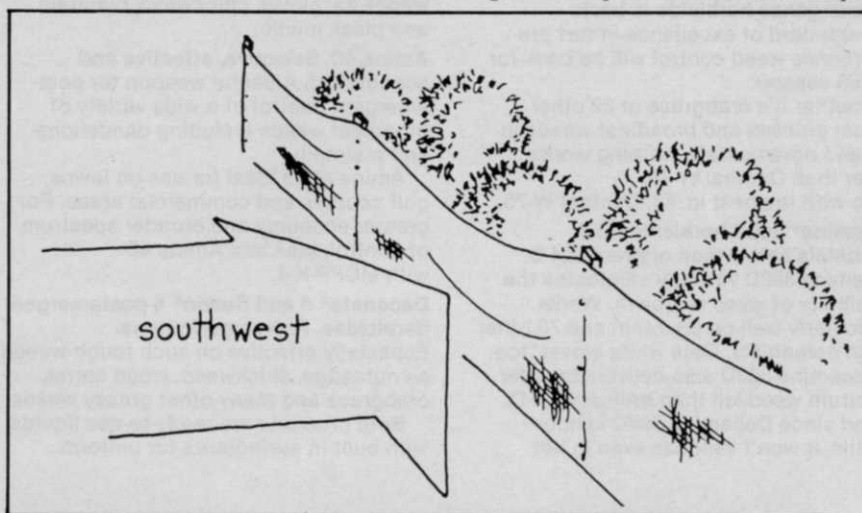
One must build structures around intolerant plants, e.g. burlap, to protect against chloride drift on foliage or branches.

Rodents, specifically mice and rabbits, can raise havoc in the garden. Rodent guards, such as wire mesh or plastic collars that surround the tree trunk, remain the best protection. Rodent guards should be put on prior to the end of November or the initial freezing. One-quarter inch wire mesh or hardware cloth should surround the trunk at the base up to 18 inches if possible. One often sees different rodenticides or poison baits being offered as a major control mechanism, but for public landscapes, e.g. corporation grounds, arboreta, or parks, the increased liability or chance of someone being hurt, precludes the use of these materials. If one is looking for biological control possibilities, having one in-house cat per 10 to 15 acres might be ideal. If this is impractical, rodent guards

fill the needs.

Deer can be devastating to the landscape. They not only chew on plants in the *rosaceae* family, e.g. crab apple, cotoneaster, but *Eunonymus vegetus* and yews are particularly attractive, in fact, seem to be preferred food. There are several repellants that can be used in an effort to reduce deer damage. They include bone tar oil, Thiram, and a new trade-marked product, called Hinder. It must be stressed, though, that these are only repellants and, if the deer are under stress, they will still eat through repellants. Further, if you are in a heavily populated deer area, the growing of tulips can be extremely difficult and one may want to consider substituting daffodils, as they are a non-preferred food.

Winter protection is important and can be accomplished through companion plantings, correct exposure, or mulching. Further, rodents and other animals can have a negative impact in the landscape.



Screen off wind to prevent desiccation and moderate temperature fluctuation.