

ARNOLD ARBORETUM
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WINTER HARDINESS OF TREES AND SHRUBS
GROWING IN THE ARNOLD ARBORETUM

III

(Continued)

(A) TREATMENT OF WINTER-INJURED TREES AND SHRUBS.

EVERY SPRING the Arnold Arboretum, with its large representation of native and foreign introduced trees and shrubs finds that some have suffered more or less from winter injury, though never so much as in the spring of 1934. Such plants require attention with the purposes in view of improving their appearances and assisting them to become re-invigorated. Each plant is a problem by itself and calls for treatment based on experience and judgment. Pruning is the first procedure. Whenever killing to the ground has taken place the entire crown should be removed as soon as possible. If, however, there are signs of life in the wood, as is often the case with deutzias, spiraeas, privets, viburnums and dogwoods, the stems with apparent life should be left until the last of April or until it is certain that their buds will not break. Cutting back forces new growth if the root system is alive and well established, and is likely to result in new, healthy crowns. If the killing has involved branches or parts of branches one should prune back to living wood. Considerable care should be given in pruning young trees; they should be examined from time to time and headed back to live wood above crotches, leaving clean cuts. This should be practiced as soon as dead parts are detected so as to throw strength into the new wood.

After new growth has started and the plants appear to be fresh and moist, a dry period is likely to cause disaster. In early May a mulch of well rotted stable manure will both stimulate growth and serve as

a protection against drying out by retaining moisture in the soil. It should be noted here by way of precaution that fertilizers should not be added during the growing season subsequent to the middle of June, otherwise tender growths are forced and these may not sufficiently "ripen" before the onset of frost in the fall. Mulching with manure or treating with other fertilizers should be done only in late autumn or early spring.

(B) PREPARATION OF PLANTS FOR WINTER.

RHODODENDRONS, FIRS AND SPRUCES should go into the winter in a moist condition. These groups should be watered thoroughly in the early fall, especially after a dry summer. Oak leaves or well rotted cow manure are often used as protection and mulch on rhododendrons and mountain laurel.

Small trees and shrubs, planted in early spring, should be protected by mulch. Medium sized trees should be looked over in late summer for dead wood and all cavities and wounds cleaned and painted with good wound preservative such as a coal tar product.

The following lists indicate for various kind of trees and shrubs the methods used in winter protection at the Arboretum. For the plants protected by earth mounds it is important that soil be taken a safe distance from plants so as not to expose or lessen protection of the root system, otherwise the roots are likely to suffer winter injury. Additional protection for these would be afforded by a good mulch of leaves, straw or manure over the root systems, extending the cover some distance from the stems of the plants.

1. Plants protected by earth mounds, or earth and straw.

Actinidia melanandra	Clematis florida
Berberis buxifolia nana	Clematis Jackmani
Berchemia racemosa	Clematis lanuginosa
Buddleia albiflora	Clematis orientalis
Buddleia Davidii	Clematis patens
Buddleia Davidii magnifica	Clematis Simsii
Buddleia Davidii superba	Clematis - others of large-flow- ered group than those listed above.
Buddleia Davidii Veitchiana	
Buddleia nivea yunnanensis	
Celastrus hypoleuca	Clerodendron trichotomum
Celastrus Loeseneri	Cocculus trilobus
Clematis Fargesii	Cotoneaster salicifolia floccosa
Clematis Fargesii Souliei	Cyrilla racemiflora

Cytisus scoparius Andreanus	Meliosma Beaniana
Gordonia alataamaha	Polygonum Auberti
Helwingia japonica	Rosa Gentiliana
Hydrangea macrophylla	Rosa – tender climbers
Hydrangea quercifolia	Rubus Giraldianus
Hydrangea serrata and vars.	Rubus innominatus
Hypericum patulum	Rubus Linkianus
Hypericum patulum Henryi	Schisandra chinensis
Ilex pedunculosa	Vitis Davidi
Leptodermis oblonga	Vitis pulchra
Ligustrum Quihoui	Vitis vinifera

2. Plants protected by pine or other evergreen branches.

Aukuba japonica	Buxus microphylla koreana
Berberis atrocarpa	Buxus sempervirens and vars.
Berberis Beaniana	Mahonia Aquifolium
Berberis Gagnepainii	Mahonia Bealii (Berberis japonica in some gardens)
Berberis Julanae	Mahonia repens
Berberis Sargentiana	Rhododendron – evergreen hybrids and exotic species
Berberis triacanthophora	
Berberis verruculosa	
Buxus microphylla japonica	

3. Plants covered with coarse hay.

Calluna vulgaris and vars.	Pachistima Canbyi
Chrysanthemum sibiricum	Pachistima myrsinites
Daphne Cneorum	Paeonia suffruticosa and various forms
Helianthemum – various species and forms	

(To be continued)