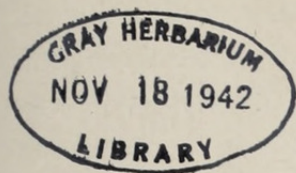


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AN AMATEUR'S OBSERVATIONS ON HARDINESS FROM GROWING RHODODENDRONS IN THE PACIFIC NORTHWEST

THE chief difficulty in discussing this subject lies in the fact that few people are in agreement as to just what constitutes "hardiness." To some it means a plant which will never "winterkill." To others it means a plant the flowers of which are never injured by late frosts. To a third group it means a plant which weathers the ordinary winter but may react unfavorably under unusual climatic conditions. There are thousands of other gradations of thought depending upon the individual and his experiences.

In a recent discussion of this subject conducted by an English garden magazine one prominent grower gave his definition for hardiness as a plant which is "locally tolerant." This may only shift the discussion from the meaning of hardiness to that of tolerance, but to me it has much merit. We are often guided in purchasing plants on the basis of our zone rating which in general is a valuable guide but with "border line" varieties, this may be inaccurate for a certain locality.

It behooves us, therefore, to study not only our zone conditions and other factors which in a general way influence hardiness, but to bring our problem directly to our own gardens.

First among the general factors is the early fall frost. While such frosts are unusual in the Pacific Northwest, they do occasionally occur and may prove disastrous to some plants. Some years ago a Northern California nurseryman lost an entire field of *Rhododendron* "Britannia" due to an October freeze. This might have been a purely local condition but my own experience indicates that this occurs more often when plants do not receive proper care. Either late fertilizing or late watering may cause such a loss, for both stimulate late vegetative growth which may not have time to mature and therefore be susceptible to an early frost. I suffered a similar loss with a group of *R. Augustinii* but in my case only the new growth was injured. Second growth is nearly always too tender to weather

a cold winter. I believe, then, it is safe to say that hardiness may be increased by withholding late feeding and watering so that new growth will enter the winter thoroughly ripened. Many experienced growers in the Pacific Northwest do not water after August 1 except when the plants show definite signs of being affected by drought. This does not mean that they should enter the winter in a dry condition for Eastern growers recommend heavy watering just prior to the advent of cold weather. In the Pacific Northwest our normal rainfall usually cares for this.

The late spring frosts come next and while not numerous here are often most troublesome in England, Holland and Belgium and are known to have caused much damage. The Ghent Azalea originated from the experience of P. Mortier, a baker at Ghent, who endeavored to obtain new hardy varieties with late flowering, by crossing certain hardy azaleas with tender late flowering varieties.

In the Pacific Northwest area the Seattle weather reports show only five days from 1935 to 1941 inclusive when the thermometer touched freezing after March 1. Many people have never had a plant injured after that date, yet I know some localities near the city where much damage has occurred from these frosts which sometimes come as late as May. It is obvious from these facts that there are definite factors applicable to each location and some of these may appear in the following discussion.

Perhaps the first of these would be air drainage. After years of observation I am convinced that this is one of the most important factors in the hardiness of plants. It might be more correct to say it may often be the governing factor in growing a borderline plant.

Cold air, like water, naturally follows the ground and flows to the lowest point. When it enters a confined depression, it remains there like a lake or pool and as additional cold air flows in, the warmer air overflows and the pool constantly becomes colder. Such a depression may prove disastrous to many shrubs. I have seen plants in such an area severely injured while those only a few yards away came through in splendid shape.

Winter injury in many locations is due no doubt to just such a condition. This is especially true in lowlands and valleys where drainage is sluggish. On the other hand, those who have gardens near the salt water generally have an unobstructed flow of cold air. The water of Puget Sound varies only four degrees between summer and winter, and as the hot air rises from this warm area, it makes room for a continuous flow of the colder currents. This is likewise true of hillside locations.

Nearness to water generally stimulates air flow but it is less active adjacent to inland waters as the winter temperature variation of such water is much greater than that of salt water.

Exposure is another factor in hardiness but one hard to determine accurately. It is noticeable that when we have a severe frost, most of the damage is done on the north side of the street, that is, with a southern exposure. This is due according to some authorities to the stimulation which the plant receives from the sun-

light and is especially harmful in the late winter or early spring. At the Arnold Arboretum many rhododendrons do not suffer from severe cold, even zero weather, when they are protected from sunlight and high winds during this period. On the other hand, when plants are in an exposed position, a sharp drop in temperature following bright sunshine will frequently injure the hardiest varieties. Plants with a northern exposure protected from the direct rays of the sun will withstand a severe winter—even a cutting north wind—much better than those subjected to the winter sunshine.

While considering exposures, it might be well to mention again the importance of local conditions, for an open sunny location is more favorable than one against a wall or rock where heat is radiated. Many authorities believe that some plants which we condemn as not being winter hardy are in reality injured during the summer months. In several instances I have seen rock garden rhododendrons die out when placed against a warm rock while those in a more open location survived and prospered. Volunteer Park in Seattle has several examples of open southern exposures where hardy rhododendron varieties prosper and this may be due in part to another factor which must be considered under the head of exposure; that is the intensity of the sun's rays. Ours is often filtered by moisture in the air and by drifting clouds. We seldom have long periods of bright sunshine. Another illustration: the standard practice in planting camellias in the south is to avoid a south or west exposure. My own experience in the Pacific Northwest is that here they do best with a western exposure. This does not change the standard practice in other districts but is evidence of the mildness of our sunshine and brings us back again to local conditions as they effect hardiness.

Exposure to wind must be considered. Rhododendrons outside of a few alpine will not prosper in a windy location, for winds, especially dry ones, absorb moisture from the evergreen leaves and can be as devastating in their own way as a hot south wall. Hence, a drafty location or a windy corner should be avoided, because of increased transpiration due to the wind and also because the wind lowers the temperature in those places.

Returning again to colder weather, it would appear that the length of time such cold continues or the suddenness of the change may adversely effect the plant more than the low temperature. My own plants recover from a short, sharp cold spell much more rapidly than a long continued one, provided, of course, this cold comes in the middle of winter. It is in the colder winter periods that genetical differences in plants of a certain species or variety become evident, for these, as well as environmental differences, frequently are responsible for many peculiar differences in plant hardiness.

One other thing which might be classed under environment is directional planting. Large evergreen shrubs when transplanted should be faced the same direction as originally grown, especially where they have not been partially protected by nearby trees or shrubs. These plants build up a resistance to light over a

period of years in both leaves and bark and this protection is much greater on the side which was exposed to the sun than on the shady side. A reversal of this position may cause a loss of foliage, bark splitting, and in extreme cases, the loss of the plant itself. This damage is less in areas of mild light intensity than in those of brilliancy and warmth.

These comments, as the subject states, are merely the observations of an amateur, not an attempt at scientific statement, for few amateurs are qualified to make correct deductions from the facts available to them. We do know, however, that hardiness is not a fixed quality; that it can be measured by no given standard; and in the Pacific Northwest it is largely a matter of trial and error. It is hoped that these notes may be of assistance to many plant lovers who wish to bring into their gardens a host of fine plants which, contrary to the usual opinion, can be grown in their localities.

HERBERT G. IHRIG
Seattle, Washington

Note:—These observations of Mr. Herbert Ihrig are made by a man who has been growing many different rhododendron species for years in his beautiful Seattle garden. Although his hardiness observations have been made in the Pacific Northwest and deal with many plants that are not hardy here in New England, nevertheless he has been attempting to grow so many “border-line” plants, that he has had an exceptional opportunity to study hardiness problems by intelligently observing the reactions of these plants as they are grown under varying environmental conditions. Consequently, his hardiness notes are sound and are applicable to rhododendrons as well as to other plants, not only in the Pacific Northwest, but in New England also. Because of his many years experience in growing rhododendrons—a particularly difficult group of plants with many of the species susceptible to winter injury—these hardiness notes should be of interest to **Arnoldia** readers.



Ihrig, Herbert G. 1942. "An Amateur's Observations on Hardiness from Growing Rhododendrons in the Pacific Northwest." *Arnoldia* 2(10), 53–56.

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