

THE FINAL WORD

Preserving Rose Genetic Diversity and the Future of the Rose

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A critical issue facing the rose world is the preservation of genetic diversity in the rose family. Wilhelm Kordes of 'Crimson Glory' fame, referring to the limits of breeding, said, "the soup ladle will bring out only what is in the tureen." To create truly "different" roses, we likely must resort to unused rose species. Unfortunately, wild roses, vital for creating such diversity, are under grave threat today from climate change and habitat loss. The latter is particularly significant in Asia, where most rose species are found.

Climate change is too easily dismissed as an example of "mad scientist syndrome"; but gardeners know it is real. In our mountain garden at 7,000 feet in southern India, plants until recently found only below 5,000 feet have in the last 15 years climbed to the very peaks. Again, we see significant changes in widely separate regions, pointing to climate change as a problem, e.g., wine regions of Chile are moving south, decreasing apple yields in the Himalayas indicate lack of winter chill, and so on.

Clearly, we must undertake seriously the conservation of rose species worldwide. We must also bear in mind that a rose species is often a composite of several different eco-types, that is, not genetically different, but adapted to different climates. For example, the swamp rose of North America, *Rosa palustris*, while always growing in swampy areas, can be found from Alabama to Quebec. Many eco-types are often involved – and we must, if possible, preserve all. In addition to eco-types many species exhibit wide variation in important characteristics, e.g., color. *R. chinensis spontanea*, ranges in color from pink to red to pale yellow. This is just one example. Such color forms need to be preserved.

Climate change and habitat loss also force us to reappraise the relative importance of preservation within the normal species habitat (*in situ*), or outside in collections, especially in public gardens around the world (*ex situ*). *Ex situ* conservation has become increasingly important, and the establishment of species collections should be a priority aim of future rose society policy.

We also look to preserve heritage roses. Valuable not only for sentimental reasons, heritage roses provide a means to evolve better roses for various parts of the world. David Austin with his English roses has effectively demonstrated this, but his work is focused on cold-climate Britain. What happens to the rest of the world – the sub-tropical and the tropical world, where there is this great lacuna in rose breeding, because warm climate heritage roses and rose species have been largely neglected in modern rose breeding? If the rose is to remain the world's most popular flower, we must take some very energetic steps, indeed, to fill the rose vacuum.

Roses have to be created for various climatic regions of the world, and in larger countries (such as India and the U.S) for different agro-climates. The concept of *regionality* is nothing new – nature has always followed it. If we look at the distribution of wild roses, we can see that the diploid species (with two sets of chromosomes) are concentrated closer to the equator, tetraploid (four sets) in the temperate regions, and the few octoploid (eight sets) in the circumpolar regions. Excepting a very few great roses, all others are at their best in specific climates. Even the greatest of modern roses, 'Peace', does not grow well in north India, where other beautiful roses thrive. Significantly, in the U.S., American Garden Rose Selections™ (AGRS™) has established regionality as crucial in making awards. Wider acceptance of regionality will, undoubtedly, be a major step in our worldwide quest for sustainable rose growing. But whatever new demands are being made on roses, we inevitably must look to preserving the rich genetic pool of the past to benefit the future.

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