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# Plant Collecting: Reason and Process

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## INTRODUCTION

Over the past thirty years, I have had the profoundly rewarding opportunity to look at, collect seed of, evaluate, and introduce to cultivation, if warranted, plants from throughout the world. My interest in this regard has been catholic – encompassing plants considered native to my region and those thought of as exotic in both northern and southern hemispheres.

My fascination with looking at plants in the wild and the compulsion to grow them began at a young age. It has propelled me into a vocation that I love and for that alone I remain grateful to have discovered my passion at such an early age.

The reasons for what I have undertaken in my life's work I believe to be inherently justifiable. Among others, these include the following.

First, having collections with known provenance make them inherently valuable to the taxonomist and ecologist. The data recorded during the time of collection provides a snapshot of what was growing in any region at any point in time. In a methodical and fast paced destruction of ecosystems worldwide, having this record provides a reasonable assessment of the degree of alteration of landscapes worldwide.

Second, collections by seed increase the genotypic reserve of any taxa, especially important in terms of plants already in cultivation with just a few clones. Having additional genetic material provides a deeper vault of possible resistance to the rigors of climate change, insect predation and disease.

Third, collections by seed and/or divisions of plants unknown to cultivation increases the genetic resources for breeding work in both food and ornamental crops.

Fourth, observing the light, water, and soil requirements of any plant species in its native environment provides insight into its proper cultivation. Such an approach



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leads to better communication to the gardening public in regard to proper cultivation of known as well as unknown plant species.

Fifth, a reserve of genetic material of known provenance provides at least some opportunity in terms of conservation and possible re-introduction to the wild. This can be overstated, but it is applicable more, at least initially, to flora than fauna.

The process of collection varies considerably from country to country. However, the mechanics remain the same. Correct latitudes and altitudes corresponding to the desired climate to introduction must be identified. Rainfall patterns, i.e. summer vs. winter, must be identified for long term success. Proper import permits must be in place with a need to keep abreast of an ever-changing subset of requirements by APHIS prior to every importation. Permission by host countries and/or institutions, where required, must be obtained. Detailed collection data should be recorded including date of collection; GPS coordinates; altitude; habitat and common plant species of the same general vicinity; description of the taxa including height, leaf size and shape; leaf type; infructesence type; fruit color or characteristics of dry fruit; and number of seed per fruit.

In addition, seed collections must be thoroughly cleaned of flesh or dried material. Seed sufficiently large enough to host parasitic larvae should be provided adequate time after cleaning to mature and emerge from the seed embryo or endosperm. Seed must be thoroughly dried before final packaging to prevent rotting and damage to the embryo. Seed must be sent directly to APHIS from the country of origin. Cuttings or divisions must be pre-inspected and provided a phytosanitary certificate in the country of origin before sending directly to an APHIS facility.

Identification of the taxa collected must take place before sending to the any APHIS facility, including plant family, genus and species. Taxa restricted from import per APHIS or CITES rules must be abided by. A protocol for sowing upon receiving the inspected material after release by APHIS should be well considered before collection. Sharing of genetic material with as many institutions as possible, pre or post sowing, should be considered to increase likelihood of success in germination and preservation of the seed collected. Labeling and/or distribution of plants with appropriate collection numbers should be considered in the event of nomenclatural changes and/or tracking purposes.

With the best intentions and astute attention to the threat of bio-invasion, the introduction of unknown quantities into cultivation remains a possibility. These concerns can be mitigated to a degree by being acutely aware of red-flagged genera and/or families that have already proven to be invasive somewhere in the world. Also, the model of Reichard to predict invasiveness of collected plant material should be used. In addition, efforts should be made to evaluate and monitor collections for possible invasiveness before widespread distribution. Collectors and horticulturists should maintain the ability to destroy any collection and alert those who have received the collection if bio-invasiveness is noted.

Through proper procedure and etiquette, the introduction of new plants into cultivation and/or new clones of taxa already existing in cultivation remains a worthwhile endeavor, making our gardens more opulent while providing a greater appreciation of the floral richness of our planet.