

ONLY ONE – A Tragedy in Three Acts

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This conservation discussion is centred around the consequence of collecting one orchid plant. Depending upon how we script the story, the orchid could be the only one collected from a wild population, it could be the only one left after an unscrupulous collector took the rest, or it could be the only one surviving in cultivation.

ACT ONE : Scene 1

In a pine wood just outside a newly developed suburb somewhere in North America.

"Aren't the pink lady's-slippers beautiful! I'll just dig one, the largest plant with the most flowers, leaving the smaller ones to grow for others to enjoy..... This plant will look lovely in my garden!"

ACT ONE : Scene 2

In the suburban garden one year later.

Wow! It's blooming. Those nosy neighbours said it wouldn't live but I have proved them wrong. I succeeded where others have failed! I must tell _____. He has always hesitated to collect wild orchids because he thought they wouldn't survive transplanting. I will show him what I did and where they are growing so he can take one too. I want to share my success story!

ACT ONE : Scene 3

In the suburban garden two years later.

I can't understand it. The orchid flowered last year and looked fine. The leaves maybe were not as big as in the woods but I think that was because of the drought. Maybe a squirrel dug the plant up. Before I collect another to replace this one, I must think of a way to foil those squirrels.

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ACT TWO : Scene 1

Somewhere in South America. The year, 1840.

"I must hurry with the collection of this spectacular new species found in bloom this May, 1840. I have collected every plant that I can in this valley, taken notes, and destroyed the rest....."

ACT TWO : Scene 2

Somewhere on the way to port, June, 1840.

"Packed the plants carefully but lost two crates to the river..... The one remaining lot should fetch a premium commission."

ACT TWO : Scene 3

A stovehouse somewhere in England, May 1841

"The orchids purchased at auction continue to thrive except for two that promised to be spectacular specimens but alas those dwindle day by day."

ACT TWO : Scene 4

A conservatory somewhere in England, January, 1941

"The coal ration is such that we must soon cease heating the conservatory. Pity that grandfather's orchids may not survive but once the war is over, I expect we shall get some replacements."

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ACT THREE : Scene 1

In a Vanilla plantation outside of Oxaaca, Mexico, 1990

"More vines must be destroyed today as they are diseased. The winter rains caused root rot. We must propagate more vines to keep up production."

ACT THREE : Scene 2

An investigator prepares his report: June, 1999.

"No more than 30 wild specimens have been located. There may not be large enough tracts of forest with living plants remaining to ensure *in situ* survival of the species.... The establishment of gene banks is extremely urgent for this orchid that represents an important source of foreign exchange for several tropical countries."

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The story in each of these scenarios is much the same although species, time and place vary. "Only One has been taken", without realizing that others may come, one by one, to each take one..... and then one day, there will be none. If all the collected plants survived in cultivation and remained healthy perhaps the story would not be quite so tragic but more often than not, few of the collected plants survive in cultivation for decades let alone for centuries. Perhaps the most troubling is that some of the most robust plants may also be keystone seed parents within a population but we will never know as these are often the plants first collected and once lost in cultivation can no longer serve a reproductive role.

Consider this: Vanilla is an ancient crop of the tropical Americas and now raised in many tropical countries around the world. A hand pollination technique developed in the 1840's is still being used, an expert being able to pollinate 1000-1500 flowers a day. Long before virus and other diseases were understood, propagation and pollination techniques possibly contributed to the spread of disease within plantations. Diseased vines were burned and new material acquired from the wild. Vigorous cultivars producing the best quality fruits were conserved resulting in the selection of narrow gene pool. When crop improvement specialists now seek wild specimens as sources of genetic variation, as a means of getting around self-compatibility problems, or as sources of genes controlling resistance to diseases such as root rot, there are few wild plants to be found. When hybridizers look for new genetic material to instill vigour to their breeding lines, their search is often in vain. Do we see a parallel situation now looming with cultivated orchids? What steps must the orchid community take to conserve our beloved orchids so that they do not go the way of vanilla, one of the orchids longest in cultivation?

"Taking Care of the Only Ones Left" is fundamental to conservation.