

Juania australis in Habitat

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Robinson Crusoe Island lies in the South Pacific about 500 miles west of Santiago, Chile. Its location near 33 degrees south latitude equates with the 33 degrees north latitude of our gardens in southern California. Three oceanic islands make up the Juan Fernandez Archipelago: Isla Santa Clara, Isla Marinero Alejandro Selkirk, and Isla Robinson Crusoe, the only inhabited one and the largest.

The 400 inhabitants are of Spanish descent; they are very friendly and simple-living folk, mainly making their living by lobster fishing. Except for the townsite and the distant airport, the terrain consists largely of steep cliffs rising from the sea up to altitudes of 3,000 to 5,000 feet; the islands are remnants of volcanoes which erupted from the deep surrounding sea 4,000,000 years ago.

Robinson Crusoe Island gets its name from the fact that in 1704 a Scottish sailor named Alexander Selkirk, a crewman aboard a sailing ship, displeased his Captain, for which reason he was put ashore and abandoned on this then uninhabited island. But he was young and energetic, and the island was provident, so he survived well until he was finally rescued four and a half years later by another sailing ship. The narrative of his experience was later published by a newspaper in London, and this account the novelist Daniel Defoe greatly embellished in the classic novel "Robinson Crusoe," which since then, all over the world, has become a well known adventure story.

The staff of CONAF, the National Chilean Forest Service, explained that the flora and fauna of the archipelago is unique

because it evolved without pressure from mainland populations. The islands are out of reach of the frigid Humboldt Current which follows close to most of the Chilean mainland; the water temperature ranges between 13 and 18° C; the air temperature between 12 and 20° C at sea level throughout the year. Very certainly, the Juan Fernandez Islands are one of the most picturesque and unspoiled of the world's undeveloped subtropical lands.

The native flora consists of about 140 species of vascular plants, of which 101, or about 70%, are endemic—growing nowhere else in nature. However, although the vegetation suffers no problem from people, it does suffer from feral browsing animals (horses, donkeys, goats, rabbits, rats, and mice), which have brought 30 of these endemic plants to the endangered status, and which have completely exterminated one.

Happily not seriously endangered is *Juania australis*, a beautiful slender-trunked feather palm which grows to approximately ten meters tall (Fig. 1). The trunk is straight, strongly ringed, and a bright light green. It is very shiny in youth, though the shine is lost in the oldest trees due to lichen growth. The head of foliage is about four meters across; the tree does not have a crownshaft. Flower clusters are branched and borne amidst the foliage. Each tree is either male or female; the fruit is the size of a grape (20 mm diam.) and reddish orange when ripe, taking about four months to germinate. The palm grows very slowly in its youth; several trees known to be 14 years old had about two meters of trunk covered to their bases by persis-



1. This young specimen of *Juania australis* grows on an unfavorable site on Robinson Crusoe Island, as evidenced by its solitariness, its closely spaced leaf scars, its ragged wind-damaged foliage, and its companion plants of rough brush rather than of ferns. Note the presence of a semi-crownshaft.

tent leaf sheaths. We were told that from this point the palm sheds its oldest leaf sheaths and bolts to its mature height of up to 13 meters. This might explain the pristine gloss which we observed on the young trunks. The palms are thought to live for about 200 years.

This palm is found principally on the upper ridges of the wet side of Isla Robinson Crusoe. There are thousands of trees in total; they are described as populations of different ridges. These various populations flower and fruit at different times and are thought to be site-specific to poorly understood microclimates. Conservation efforts to plant palms of one population in another location have often failed. Mr. Silva, the Park Administrator for CONAF, explained that they now are very careful to label all seed collections as to their specific sources and to replant those seedlings in the same locale. The results have greatly improved efforts to repopulate specific habitats.

The habitats are heavily vegetated and almost jungle-like. The palm is found randomly in virgin forests of hardwood trees, principally *Myrceugenia fernandeziana* and *Drimys confertifolia*. These trees average about 12 meters in height, with broad canopies. The undergrowth is mainly ferns, principally *Dicksonia berteriana*, *Blechnum cycadifolium*, *B. sibotii*, and *B. chilense*.

We reached the subject habitat after a four hour mule ride that was adventurous and very clearly dangerous. The trails up

the ridges are very steep and narrow; we often were perched on barren cliffs thousands of feet above the crashing surf. The real test was at the habitat—where there is no trail left. One learns quickly that the only way to get a mule to blaze a trail on steep ridges is to kick “mule” hard!

The palm has little value to the human population; its wood was used for carving in the past. We observed only two specimens under cultivation in private gardens in the town and two more in the public square. The townsfolk live in simple frame houses with charming and cluttered gardens of exotic Mediterranean plants. All of the flora of the island is and has been completely protected since 1935 under the Chilean National Park System. In 1977 the islands were designated as a Biosphere Reserve, and recent conservation efforts have been recommended by the staff of the Royal Botanic Gardens, Kew, England, and financed by the World Wildlife Fund.

Juania australis in its native habitat is so well isolated from “civilization” and now so well protected by the Chilean National Forestry Service that it is not endangered. Nonetheless, because it is a very beautiful palm there have been continuous efforts to bring it into cultivation. Most of these efforts in the past have failed, but with better understanding of its special requirements there is real hope that in the future, in special compatible locations, *Juania australis* will be available for viewing under cultivation.