



Anjanaharibe-Sud Special Reserve Madagascar



Fact Sheet: *Takhtajania perrieri* (Capuron) Baranova & Leroy, 1972

Taxonomy:

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| Class: | Angiospermae |
| Sub-class: | Dicotyledonae |
| Super-order: | Magnoliidae |
| Order: | Magnoliales |
| Family: | Winteraceae |
| Sub-family: | Takhtajanioideae |
| Genus: | <i>Takhtajania</i> |
| Species: | <i>perrieri</i> |



photo: Eric Mathieu

Chronology:

- 1909: Two specimens collected by Henri Perrier de la Bâthie from the Manongarivo Massif at an elevation recorded as 1700 m.
- 1963: Classification of the species in the Winteraceae family by René Capuron, who named it *Bubbia perrieri* in honor of the original collector, Perrier de la Bâthie.
- Since the 1970s, several botanists have searched for the species in Manongarivo without success.
- 1978: Classification revised by Baranova and Leroy who recognized that the species, while indeed in the Winteraceae family, more correctly belonged to a new taxon, and renamed it *Takhtajania* in honor of the Armenian systematist Armen Takhtajan. They also placed it in the new sub-family of Takhtajanioideae.
- 1994: Rediscovery of the species in Anjanaharibe-Sud during a botanical inventory conducted by the Missouri Botanical Garden (MBG) and the World Wide Fund for Nature (WWF) for the Marojejy – Anjanaharibe-Sud Integrated Conservation and Development Project.
- 1997: Specimen collected in Anjanaharibe-Sud identified by George Schatz of the MBG as *Takhtajania perrieri*.
- 2000: Discovery of a third population (consisting of only three plants) on the eastern side of Masoala Peninsula. (It is possible that these plants actually belong to a new species, however.)

Plant Characteristics:

Takhtajania perrieri is a sparsely branched shrub or small tree growing 5 to 9 m high. It belongs to the Winteraceae family, which has existed on Earth for the past 120 million years and is one of the oldest families of flowering plants (angiosperms). Fossil pollen analyses

show that Winteraceae species were formerly established throughout the ancient continent of Gondwana (present day South America, Africa, Australasia, and Antarctica), but all extant species are found on islands in the southwestern Pacific Ocean, in Central and South America, and in Madagascar.

Unlike most other angiosperms which exist on earth today, *Takhtajania* does not transport water via vessels, but instead utilizes other types of cells, resulting in less-efficient water conduction and an inability to withstand drought. This was previously thought to be a relict of its primitive ancestry but has since been shown to be a secondary characteristic (it once had water-conducting vessels but has since lost them).

In Anjanaharibe-Sud, *Takhtajania* grows only in humus-rich soil above 1100 m, on ridges and at the upper reaches of steep mountain slopes. It has been found only on the eastern side of the Anjanaharibe massif in an area covering less than ten square kilometers. The *Takhtajania* population here is estimated at 18,000 individuals.

The seeds of *Takhtajania* are highly fragile and perishable, and cannot be transported by wind, water, animals or birds. Adequate protection from all human disturbance of the species and the surrounding forest is essential, particularly due to its limited distribution and the fact that slash-and burn agriculture (*tavy*) is commonly practiced in the region.

Description:

Tree height to 9 meters; trunk diameter to 11 cm. Leaves simple, leathery, obovoid, entire, persistent, strongly aromatic, alternately arranged. Terminal inflorescence pendulous, reddish. Flowers are small, dark red, petals with narrow white margins. 12 stamen. Unilocular superior ovary with two fused carpels. Fruits born in January, red, ovoid, approximately one centimeter in diameter.

References:

Birkinshaw, C., Rakotonasolo, F., Ravelonarivo, D., 1997. Collecte et observation du *Takhtajania perrieri* dans la Réserve Spéciale d'Anjanaharibe-Sud. Rapport MBG: 7 p.

Leroy, J.F., 1978. Une sous-famille monotypique de Winteraceae endémique à Madagascar : les Takhtajanioidae. *Adansonia*, ser. 2, 17(4) : 383-395. Paris.

Thien, L.B., Birkinshaw, C.R., Andriamparany, R., Rabakonandrianina, E., Schatz, G.E., 2003. Winteraceae, *Takhtajania perrieri*. In: *The Natural History of Madagascar*, S.M. Goodman and J.P. Benstead (eds.), The University of Chicago Press, Chicago, pp. 314–316.