



Climbing plants of a fragmented area of lowland Atlantic Forest, Igarassu, Pernambuco (northeastern Brazil)

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Abstract

This study was undertaken in fragments of lowland Atlantic Forest surrounded by sugar cane plantations in Igarassu, Pernambuco, Brazil. Amongst the 93 species recorded for the locality, 30 species have a climbing habit. *Passiflora* is among the most species-rich genera which is novel in a floristic study. Morphological characters such as the presence and position of a tendril, limb form and flower symmetry are the most important for species identification. Here we present a species checklist for the locality, annotated with distribution data. An illustrated key to the climbing species found in Igarassu is also provided.

Key words: checklist, floristics, lianas, Passifloraceae

Introduction

Climbing plants are defined as plants incapable of autonomous vertical support once they reach a certain height (ca. 1 m tall) and depend on other plants for support in their natural environment (Gentry 1991). Lianas are defined as woody climbing plants (Putz 1984, Gerwing *et al.* 2006). Twining habit is a very common amongst climbing plants; this consists of the stems twisting around the branches or stems of a host with or without the aid of specialized structures such as tendrils (Darwin 1867, Gentry 1985).

The climbing habit has arisen several times in the evolutionary history of Angiosperms, and this has resulted in a great taxonomic diversity of climbing plants (Gentry 1985). Families such as Smilacaceae, Menispermaceae, Passifloraceae, Cucurbitaceae and Convolvulaceae are essentially entirely composed of or dominated by species with a climbing habit. According to Gentry (1991), New World families with the highest diversity of climbing plants are Apocynaceae (esp. Asclepiadoideae), Convolvulaceae and Fabaceae. In the Brazilian flora, 86 of the 217 native families cited by Souza & Lorenzi (2008) have at least one species with a climbing habit.

In his discussion of the climbing plants of Puerto Rico and the Virgin Islands, Acevedo-Rodríguez (2005) identifies lowland tropical forest as including the highest number of climbing species. According to Schnitzer & Bongers (2002) these species play an important role in vegetation dynamics, although the exact contribution of woody climbing plants in tropical forests biomass is currently unresolved. Hegarty & Cabalé (1991) estimated that up to 40% of the total leaf area and leaf productivity in a forest may be represented by climbers. Climbing species may also represent a significant component of the plant diversity of an area, accounting for ca 25% of the woody plant species (Gentry & Dodson 1987). The ecological importance of climbing plants, forming physical bridges for the fauna between individual trees in a forest was noted by Darwin (1867) and Hegarty (1991). Some climbers also have strict ecological relationships, for example, *Heliconius* butterflies and Passifloraceae species, Ithomiinae butterflies and Solanaceae species, and Buprestidae beetles with Bignoniaceae species (Odegaard 2000).