Brief Communication

Swampy Area Transformations by Exploitation of *Raphia hookeri* (Arecales) in Southern Benin (West Africa)\(^1\)

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*The Raphia palms in the southern part of Benin are confined to freshwater swamps, where the natural vegetation consists of a forest rich in Dicotyledons. Human activity has transformed this forest into a "raphiale" where *Raphia hookeri* has become the main arborescent species. The influence of this transformation on the vegetation results in a more regular distribution of *Raphis hookeri* trunks and a gradual disappearing of clumps of ramets. By now, the future of *Raphis hookeri* species is almost ensured except in situations of over-exploitation.*

**KEY WORDS:** *Raphia* palms; transformation of swamps; human impact on vegetation; West Africa, Benin.

**INTRODUCTION**

Three species of the genus *Raphia* P. de Beauvois (1804) (Arecales—Lepidiocaryoideae) are known to grow in Benin (West Africa): *Raphia hookeri* Mann & Wendland and *Raphia vinifera* P. de Beauvois in the southern part, and *Raphia sudanica* A. Chevalier in the center and the

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north. The southern part of Benin belongs to the Guinean zone of African vegetation (Adjahouon, 1966; Guillaumet and Adjahouon, 1971); it is characterized by a semideciduous rainforest transformed by agriculture into a forest-savannah mosaic. The *Raphia* species growing in the southern Benin are usually found in contant freshwater flooding areas. The introduction of brackish water kills *Raphia hookeri*; however, in undisturbed swamp forest, they constitute an important element of the flora with a few arborescent species of Dicotyledons. Under human action, *Raphia hookeri* becomes the dominant or the sole arborescent species in a herbaceous swamp. The species follow the Tomlinson's model (Hallé, Oldeman, and Tomlinson, 1978) and form closed clumps of monocarpic ramets in the swamp.

Like other palms, the species of *Raphia* are now very important in the economy of the villages around the swamps. Most of the people use the fruits and the leaves, and palm wine is made from the sap. This can be consumed fresh or distilled in order to make Sodabi, a strong alcohol. The latter use is undoubtedly a major reason for the transformation of the swamps and for *Raphia* cultivation.

Some ecological studies on *Raphia* swamps in African countries have been undertaken (Paradis 1975a,b; Evrard, 1968; Hoff and Florence, 1977; Paradis and Rabier, 1979). The transformations of swamp in monospecific areas are emphasized by several authors (Mangenot, 1955; Evrard, 1968; Paradis, 1975b; Schnell, 1976). The aim of the present work is to estimate the human impact by using vegetational and structural observations on different stages ranging from swampy forests to "raphiiale" or swampy areas where *Raphia hookeri* is the dominant arborescent species or is in cultivation. The study reported on here synchronically analyzes different geographical areas. Because of economic interest in the *Raphia hookeri*, the observations are concentrated on this species.

**METHODS**

Forty-two stations were selected and a detailed physionomical classification of four patterns of vegetation and four patterns of exploitation was...