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FLOWER STRUCTURE IN *FREYCIKETIA ARBOREA* GAUDICH. (PANDANACEAE)

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Résumé

Chez *Freycinetia arborea*, la seule espèce de ce genre dans l'archipel des Iles Hawaii, une étude statistique de la structure florale montre que la fleur femelle comprend 5-9 staminodes et un pistil de 3-8 carpelles, tandis que la fleur mâle a 5-9 étamines et un pistillode de 3-8 carpelloïdes.

Summary

In *Freycinetia arborea*, the only species of the genus in the Hawaii Islands, a statistical study of the flower structure reveals that the pistillate flower comprises 5-9 staminodes and a pistil with 3-8 carpels, while the staminate flower has 5-9 stamens and a pistillode with 3-8 carpelloïdes.

INTRODUCTION

In the genus *Freycinetia*, the pistillate flowers are distinct in the pistillate spikes; consequently, the carpel numbers in these flowers may be known by counting the stigmas, which are in the same numbers as the carpels. By contrast, the staminate flowers are indistinct in the staminate spikes; as a result, the stamen numbers in these flowers cannot be known unless using serial tangential sections of staminate spikes for observing these flowers, as has been done in *F. cumingiana* Gaudich. (HUYNH, 1991: fig. 1), *F. banksii* A. Cunn. (HUYNH & SAMPSON, 1992), *F. reineckeii* Warb. (HUYNH & COX, 1992: fig. 1), and *F. scandens* Gaudich. (HUYNH, 1993). These four species are to date the only species of *Freycinetia* where the stamen numbers in the staminate flowers are known.

The present paper studies the flower structure of *F. arborea* Gaudich., especially for ascertaining the stamen numbers in the staminate flowers. This is the only species of *Freycinetia* in the Hawaii Islands (STONE, 1990). Serial tangential sections of staminate spikes

Female components	Male components	Female compared with male components	Flowers observed
3 carpellodes	6 stamens	(-3)	2
4 carpellodes	5 stamens	(-1)	3
4 carpellodes	6 stamens	(-2)	3
4 carpellodes	7 stamens	(-3)	1
4 carpellodes	8 stamens	(-4)	2
5 carpellodes	5 stamens	(0)	14
5 carpellodes	6 stamens	(-1)	29
5 carpellodes	7 stamens	(-2)	17
5 carpellodes	8 stamens	(-3)	4
5 carpellodes	9 stamens	(-4)	1
6 carpellodes	5 stamens	(+1)	3
6 carpellodes	6 stamens	(0)	45
6 carpellodes	7 stamens	(-1)	32
6 carpellodes	8 stamens	(-2)	10
6 carpellodes	9 stamens	(-3)	1
7 carpellodes	6 stamens	(+1)	2
7 carpellodes	7 stamens	(0)	5
7 carpellodes	8 stamens	(-1)	3
7 carpellodes	9 stamens	(-2)	2
8 carpellodes	7 stamens	(+1)	1
8 carpellodes	9 stamens	(-1)	1

Table 1: Staminae flowers of *Freycinetia arborea* studied

were made and used, as has been done for *F. banksii*, *F. cumingiana*, *F. reineckeii*, and *F. scandens* mentioned above. Pistillate spikes were also used in particular for establishing the staminode numbers in the pistillate flowers by counting the staminodes around the pistil bases.

OBSERVATIONS

In the genus *Freycesetia*, each staminate flower comprises stamens and a pistillode in its centre while each pistillate flower has a pistil and staminodes around its base, as observed for example in *F. cumingiana* (HUYNH, 1991: fig. 26 and 48) and *F. scandens* (HUYNH, 1993: fig. 10 and 12). Generally speaking, in one and the same species, the carpelodes in the pistillode are in the same numbers as the carpels in the pistil and the staminodes in the same numbers as the stamens. This is also the case for *F. arborea*.

1. Structure of the staminate flower of *Freycesetia arborea*

Some 181 staminate flowers of *F. arborea* have been studied. As shown in Table 1, they have 3-8 female components (carpelodes) and 5-9 male components (stamens). Most of them have 5-6 female components. In addition, they generally have more male components than female components, as

also observed in *F. banksii* (HUYNH & SAMPSON, 1992: 186).

2. Structure of the pistillate flower of *Freycesetia arborea*

As shown in Table 2, the pistillate flowers of *F. arborea* also have 3-8 female components (carpels) and 5-9 male components (staminodes).

Female components	Male components
3 carpels	6 staminodes
4 carpels	5-8 staminodes
5 carpels	5-8 staminodes
6 carpels	5-9 staminodes
7 carpels	6-9 staminodes
8 carpels	7-9 staminodes

Table 2: Pistillate flowers of *Freycesetia arborea* studied

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REFERENCES

- HUYNH, K.-L. 1991. The flower structure in the genus *Freycesetia*, Pandanaceae (part 1) - Potential bisexuality in the genus *Freycesetia*. *Bot. Jahrb. Syst.* 112: 295-328.
- HUYNH, K.-L. 1993. Flower structure in *Freycesetia scandens* Gaudich. (Pandanaceae). *Beitr. Biol. Pflanzen* 67: 259-271.
- HUYNH, K.-L. & COX, P. A. 1992. Flower structure and potential bisexuality in *Freycesetia reineckeii* (Pandanaceae), a species of the Samoa Islands. *Bot. J. Linn. Soc.* 110: 235-265.

HUYNH, K.-L. & SAMPSON, F. B. 1992. Flower structure in *Freycinetia banksii* (Pandanaceae) of New Zealand. *Bot. Helv.* 102: 175-191.

STONE, B. C. 1990. Pandanaceae. In: WAGNER, W. L.; HERBST, D. R. & SOHMER, S. H. (eds.). Manual of the Flowering Plants of Hawaii, vol. 2: 1478-1479. *Bishop Mus. Spec. Publ.* 83.
