

## A new character for distinguishing vegetative material of the mangrove genera *Bruguiera* and *Rhizophora* (Rhizophoraceae)

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### Abstract

A character based on vascular traces in leaf abscission scars enables identification of vegetative material of the mangroves *Bruguiera* and *Rhizophora*. In *Bruguiera* the leaf traces are aggregated into three distinct bundles whereas in *Rhizophora* they are arranged in a crescentic pattern.

The mangrove genera *Bruguiera* and *Rhizophora* (Rhizophoraceae) occupy overlapping ecological zones in mangals (mangrove communities). Because species of these genera often occur sympatrically and because vegetatively they are very similar their names may be incorrectly applied both in the field and on herbarium sheets.

In many instances mangals occur in remote areas (e.g. the north-west Kimberley coast of Western Australia) and collections by botanists and others tend to be opportunistic. Hence, much of the material collected is in a vegetative condition.

In field situations plants of the two genera can be distinguished by the presence or absence of stilt roots (present in *Rhizophora*, absent in *Bruguiera*). However, as they are otherwise so similar vegetatively and as their crowns often interlace, collections are sometimes mixed.

The authors are currently preparing a field guide to the mangroves of Western Australia and this has involved the consultation of previously published keys on their identification (e.g. Jones, 1971; Pervival and Womersley, 1975). In all keys consulted, morphological characters used to separate *Bruguiera* and *Rhizophora* have been based on the presence or absence of stilt roots and/or floral features. For the reasons mentioned above, identification of the two genera must often be made on non-flowering material, and a character was therefore sought that would enable such material of *Bruguiera* and *Rhizophora* to be distinguished.

Examination of the prominent leaf scars on both genera, using a x10 hand lens, has revealed a character that appears to have been previously overlooked. The scars of *Bruguiera* show three distinct, usually horseshoe-shaped, bundles of leaf traces. These are most evident on scars of newly abscised leaves (Fig. 1A). In *Rhizophora* however, the scars show small groups of leaf traces in a crescentic pattern but never aggregated into three discrete bundles (Fig. 1B). Examination of a wide range of flowering material of *Bruguiera* and *Rhizophora* at the Western Australian Herbarium (PERTH) and Herbarium Australiense (CANB) has shown this character to be constant.

Selected specimens examined: *Bruguiera cylindrica* (L.) Bl.: Yule Is., New Guinea, *Darbyshire* 765 (CANB). *B. exaristata* Ding Hou: Napier Broome Bay, 13°59'S, 126°36'E, Western Australia, *Gardner* 1045 (PERTH); Prince Regent River, 15°32'S, 125°13'E, Western Australia, *George* 12607 (PERTH); 12°05'S, 132°38'E, Northern Territory, *Lazarides* 7501 (CANB); Augustus Is., Bonaparte Archipelago, 15°25'S, 124°35'E, Western Australia, *P. G. Wilson* 10692 (PERTH); Champagne Is., Bonaparte Archipelago, 15°18'S, 124°15'E, Western Australia, *P. G. Wilson* s.n. (PERTH). *B. parviflora* (Roxb) Wight and Arn. ex Griff.:

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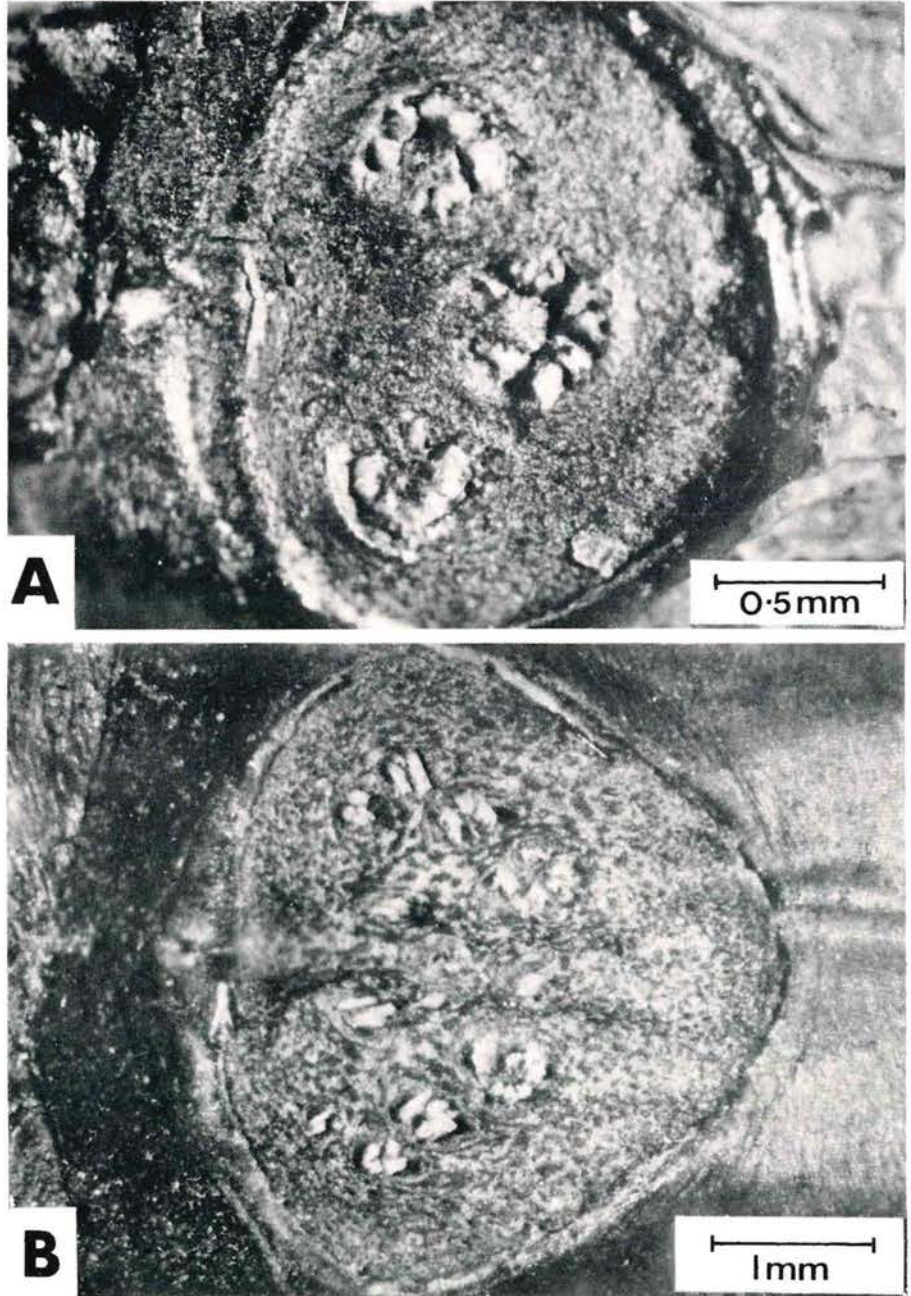


Figure 1. Leaf scars of *Bruguiera* and *Rhizophora*. A=*B. exaristata* leaf scar showing 3 horseshoe-shaped bundles of leaf traces. B=*R. stylosa* leaf scar showing numerous vascular traces arranged in a crescentic pattern.

A from P. G. Wilson 10692; B from K. F. Kenneally 5247.

Darwin, Northern Territory, *Balgooy* 1415 (CANB); Prince Regent River, 15°32'S, 125°13'E, Western Australia, *George* 12619 (PERTH). **B. sexangula** (Lour.) Poir.: Darwin, Northern Territory, *Must* 928 (CANB).

**Rhizophora apiculata** Bl.: Tonolei Harbour, New Guinea, *Sayers* (NGF 19713) (CANB). **R. mucronata** Lamk.: Kanosia, Papua, *Carr* 11513 (CANB). **R. stylosa** Griff.: Prince Regent River, 15°17'S, 125°04'E, Western Australia, *George* 12732 (PERTH); Port Warrender, Admiralty Gulf, 14°34'S, 125°50'E, Western Australia, *Kenncally* 5247 (PERTH); Papa, Papua, *Schodde* 2695 (CANB); Augustus Is., Bonaparte Archipelago, 15°25'S, 124°25'E, Western Australia, *P. G. Wilson* 10693 (PERTH); Sir Graham Moore Is., 13°56'S, 120°33'E, Western Australia, *P. G. Wilson* 11316 (PERTH).

### References

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