



***Rinorea calcicola* (Violaceae), an endangered new species from south-eastern Gabon**

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Abstract

Rinorea calcicola, endemic to south-eastern Gabon, is described as a new species. Its most striking characteristic is the laminate fruit, a character so far only known for *R. zenkeri*. *Rinorea calcicola* has a limited distribution and appears to be restricted to limestone outcroppings. We have assessed it as endangered—EN B1ab(ii,iii,iv,v)—according to IUCN criteria. Morphological affinities of *R. calcicola* are discussed, and a key to *R. zenkeri* and the Gabonese species of *Rinorea* with textured fruits is given. The new species is one of many endemic species from the same region, and we recommend that a study of their distribution and ecology is undertaken to inform conservation planning. Because of the presence of so many narrow endemic species in the region, we suggest that the area be considered for protected status.

Introduction

Rinorea Aublet (1775: 235 & pl. 93) is a genus of about 280 species distributed across the tropics, with the majority of species growing in sub-Saharan Africa (Engler 1921, Taton 1969, Hekking 1988, Achoundong 2000, Ballard *et al.* 2014). Species of *Rinorea* are considered to be important bioindicators for forest typification as they are often locally abundant and different species of African *Rinorea* are characteristic for different forest types (Achoundong 1996, 2000, Adomou *et al.* 2006, Mwavu & Witkowski 2009, Tchouto *et al.* 2009, Djuikouo *et al.* 2010). In addition, African *Rinorea* species are ecologically significant as larval host plants for *Cymothoe* (Nymphalidae) butterflies, of which at least 32 species are highly specialised on particular species of *Rinorea* (Fontaine 1982, Amiet & Achoundong 1996, Amiet 1997, 2000, McBride *et al.* 2009, van Velzen *et al.* 2009, 2013).

During the last decade 12 new species have been described from Cameroon, Gabon and the Republic of the Congo (Achoundong & Bos 1999, 2001, Achoundong 2003, Achoundong & Cheek 2005, Achoundong & Bakker 2006). However, despite these efforts, a large number of species remain to be described (Achoundong 1996).

On a recent collecting trip to Gabon, Wieringa collected (*Wieringa et al.* 5991) a *Rinorea* with strikingly lamellate fruits. It was growing near Lastoursville where the Ogooué River cuts through a plateau. Along the slope from the plateau to the Ogooué River, a small limestone layer is exposed which is precisely where *Wieringa et al.* 5991 was gathered. The plants were quite abundant on the slope just below the nearly vertical limestone outcrop. Before our discovery, *Rinorea zenkeri* Engler (1902: 146) from Cameroon was the only species of *Rinorea* species known to bear a lamellate fruit. As the Gabonese population clearly differed in leaf and androecium characters from *R. zenkeri*, we soon concluded that the material represented an undescribed species. Here, we describe *Rinorea calcicola* on the basis of morphological characters, and compare this new taxon with similar *Rinorea* species from Gabon and Cameroon.

Key

Below, we provide a key to the Gabonese species of *Rinorea* with verrucose, farinose or lamellate fruits, in addition to *R. zenkeri* from Cameroon. Despite the fact that species with such textured fruits do not form a natural group (Wahlert & Ballard 2012), we have produced a key with the aim to aid identification of these species when found in fruit.

1. Leaf base cordate; inflorescence bracts 3–10 mm long, covered with long hairs up to 1 mm 2
- Leaf base obtuse to cuneate; inflorescence bracts 1–4 mm long, glabrous or covered with short hairs < 0.1 mm 3
2. Inflorescence a raceme with undivided secondary ramifications; fruit lamellate..... ***R. zenkeri***
- Inflorescence a panicle with secondary ramification divided in threes; fruit verrucose.....
..... ***R. curtirama*** Achoundong & Bos (1999: 128)
3. Lower leaf surface without glands; inflorescence terminal 4
- Lower leaf surface covered with glands; inflorescence usually axillary ***R. verrucosa*** Chipp (1923: 293)
4. Leaves obovate, with densely dentate margins; filaments glabrous; fruits farinose or lamellate..... 5
- Leaves elliptic, with coarsely dentate margins; filaments hairy; fruits verrucose ***R. cerasifolia*** Brandt (1913: 118)
5. Fruits farinose; staminal tube continuous, all filaments inserted on the inner side of the staminal tube; midrib below sparsely covered with hairs ***R. dentata***
- Fruits lamellate; staminal tube discontinuous, adaxial filament free, other filaments inserted on the inner side of the staminal tube; midrib below densely covered with hairs ***R. calcicola***

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