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Revision of the genus Baroniella Costantin & Gallaud (Asclepiadaceae, Periplocoideae)

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RÉSUMÉ

KLACKENBERG, J. (1997). Révision du genre Baroniella Costantin & Gallaud (Asclepiadaceae, Periplocoideae). *Candollea* 52: 383-407. En anglais, résumés français et anglais.

Le genre *Baroniella* Costantin & Gallaud *(Asclepiadaceae, Periplocoideae),* endémique de Madagascar, est révisé. Trois nouvelles espèces sont décrites, *B. capillacea* Klack., *B. ensifolia* Klack. et *B. longicornis* Klack. Une clé du genre ainsi que, pour chaque taxon, une description, des données sur la typification et une illustration sont fournies. Une analyse cladistique présente les relations phylogéniques des taxons. Enfin la répartition du genre est discutée.

ABSTRACT

KLACKENBERG, J. (1997). Revision of the genus Baroniella Costantin & Gallaud (Asclepiadaceae, Periplocoideae). *Candollea* 52: 383-407. In English, French and English abstracts.

The endemic genus *Baroniella* Costantin & Gallaud *(Asclepiadaceae, Periplocoideae)* from Madagascar is revised. Three new species are described, viz. *B. capillacea* Klack., *B. ensifolia* Klack. and *B. longicornis* Klack. A key, typifications, descriptions as well as drawings of all taxa are given. A hypothesis of the cladistic relationship of the species is presented. Phytogeographical patterns are discussed.

KEY-WORDS: ASCLEPIADACEAE – *Baroniella* – *Baseonema* – Taxonomy – Phylogeny – Biogeography – Madagascar.

Introduction

Baroniella Costantin & Gallaud is a small periplocoid genus of suffrutescent twiners with small dull red to violet flowers endemic to the eastern part of Madagascar. It consists of seven species which are characterized by having the pollen carriers exposed on small knobs between the anthers, as well as by having an annular corolline corona which furthermore has the largest lobes between the stamens, not opposite to them which is the usual state in *Periplocoideae*. *Baroniella* is supposed to be most closely related to *Camptocarpus* Decne., a genus distributed in Madagascar and the Mascarenes.

Baroniella has been regarded as congeneric with the African monotypic genus *Baseonema* Schltr. & Rendle, but is here considered to be a separate genus.

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Material and methods

This study is based on herbarium material from the BM, K, MO and P herbaria (abbreviations according to HOLMGREN & al., 1990). All specimens cited have been studied unless otherwise stated.

The species concept used in this revision conforms to KLACKENBERG (1992b: 597) and the spellings of geographical names are in accordance with the guidelines given in KLACKENBERG (1992a: 7).

Measurements of floral parts were made on boiled material; of the vegetative parts and fruits, on dry material.

Historical background

In 1908, COSTANTIN & GALLAUD described a new species of *Periplocoideae, Baroniella camptocarpoides,* from Madagascar. They hesitated to put their new species in *Camptocarpus* although they noticed an over all similarity, and they decided to describe a new genus for this taxon, *Baroniella*. This genus was based on two characters, viz. the small size of the corona and the rounded filaments, that the authors found distinctly different from the large corona and flattened filaments which were thought to be characteristic of *Camptocarpus* (COSTANTIN & GALLAUD, 1908: 354). A few years later CHOUX (1913, 1914) described three new species from Madagascar that he placed in the previously monotypic East African genus *Baseonema*, viz. *B. acuminatum, B. lineare* and *B. multiflorum. Baseonema* was described by SCHLECHTER & RENDLE (1896: 97), and the only known species, *B. gregorii* Schltr. & Rendle, was characterized by its almost exappendiculate anthers and by a whorl of small corolline appendages alternating with the stamens. Furthermore, CHOUX (1913: 2004) transferred *B. camptocarpoides* to *Baseonema.* These four taxa, correctly placed together in one genus, were also recognized in Choux's Catalogue of Malagasy plants, a check list in which CHOUX (1931) summed up the *Asclepiadaceae* taxa of Madagascar. BULLOCK (1955: 283), however, argued that *Baseonema gregorii* from continental Africa, could not belong to the same genus as the four Malagasy species of Choux, Costantin and Gallaud, due to different flower form, habit and ecology, and accepted Costantin's and Gallaud's genus *Baroniella.* By recombining *Baseonema acuminatum, B. lineare* and *B. multiflorum,* BULLOCK (1955: 283) added three more species to the only one hitherto described as *Baroniella,* viz. *B. camptocarpoides.*

In this paper three new species of *Baroniella* are described, viz. *B. capillacea, B. ensifolia* and *B. longicornis.* With these three taxa, *Baroniella* now consists of seven species, all endemic to Madagascar.

Generic delimitation

Baroniella has small dull red to violet flowers. The flowers are usually smaller than 0.5 cm but *B. camptocarpoides* has corolla lobes which occasionally are almost 1 cm long. The genus is characterized, with the exception of *B. camptocarpoides,* by having the pollen carriers exposed between the anthers on small knobs on the style head. Furthermore, the largest corona lobes are situated between the stamens, not opposite them which is the usual state in *Periplocoideae*. It is supposed to be most closely related to *Camptocarpus* (including *Harpanema* Decne., *Tanulepis* Balf. f. ex Baker and *Symphytonema* Schltr.), a genus distributed in Madagascar and the Mascarenes, with which it shares the character of having narrow and repeatedly constricted fruits, i.e. with an articulated aspect, as well as by having fused corona lobes at base, i.e. an annular corolline corona.

As seen above from the historical overview, *Baroniella* has been regarded as congeneric with the African monotypic genus *Baseonema*. When CHOUX (1913, 1914) transferred *Baroniella camptocarpoides* to *Baseonema,* as well as placing three new Malagasy species in this genus, he argued that the flower morphology was the same as in *Baseonema gregorii,* notably 1) absence of a corona, 2) the staminal filaments being dilated at the base and 3) small lobes at the corolla lobes alternating with the stamens. BULLOCK (1955), however, stated that although the absolute floral characters of *Baseonema* as described by SCHLECHTER & RENDLE (1896: 97) may be repeated in the Malagasy taxa of Choux, a generic separation is amply justified as the flower form and habit are so very different. Bullock also doubted that a species from semi-arid continental Africa could be congeneric with a rain forest species in Madagascar.

Baseonema and *Baroniella* ought to be kept as separate genera, due primarily, however, to different flower morphology. In *Baseonema gregorii* the staminal filaments are much dilated at base, seemingly situated on five thick triangular lobes. Five somewhat smaller, inwardly directed lobes are situated between these triangular filament bases. These interstaminal lobes are interpreted as corona lobes of corolline origin. In *Baroniella* the filaments are not dilated but adhere to the corolla tube inside a ring of corona lobes of corolline origin. This had already been observed by CHOUX (1913), who, however, instead of pointing to this difference between the Malagasy species and the continental one, supposed, without having seen the material, that SCHLECHTER & RENDLE (1896) had misinterpreted this structure in *Baseonema gregorii.* Consequently, Choux proposed that his new species and *Baseonema gregorii* all the same had similar flower morphology. This annular, corolline corona consists of depressions or smaller lobes outside the staminal filaments and larger lobes between the stamens. An annular corona with the largest lobes situated interstaminally is a rare character, perhaps unique to *Baroniella* in the subfamily *Periplocoideae*, in which the usual state is corolline corona lobes situated outside the stamens (LIEDE & KUNZE, 1993). The larger corona lobes are straight, directed upwards towards five small knobs on the style head. These knobs bear the pollinaria, and are not found in other periplocoid genera in Madagascar, nor in *Baseonema gregorii.* They are also indistinct in *Baroniella camptocarpoides. Baseonema gregorii* has furthermore interpetiolar stipules, hairy leaves and hairy corolla lobes outside, characters which are all absent in the Malagasy species. In addition, *B. gregorii* has reflexed corolla lobes, a character unknown of in *Baroniella.* The secondary veins of *Baroniella,* if present, are straight and parallel and united to a straight submarginal vein, whereas in *Baseonema gregorii* the veins unite in a crenate pattern. Consequently, both *Baseonema* and *Baroniella* have sets of derived characters of their own and are best considered as separate genera.

In the protologue of *Baroniella*, COSTANTIN & GALLAUD (1908: 354) pointed to the similarity with *Camptocarpus,* particularly the fused corona lobes. According to the authors, *Baroniella* differed by the small size of the corona and by its cylindrical, not flattened, staminal filaments. The presence of flattened filaments, however, is not a constant character in *Camptocarpus,* although small corona lobes are indeed characteristic of *Baroniella.* The most important differences, however, between these two genera, are that the largest corona lobes are situated between the stamens in *Baroniella* but opposite the stamens in *Camptocarpus.* Furthermore, the pollinaria are situated on five small knobs of the style head in *Baroniella,* except in *B. camptocarpoides* where these knobs are indistinct, but in five depressions in *Camptocarpus. Camptocarpus* also differs by lacking a tectum layer on the inner walls of the pollen grains (VERHOEVEN & VENTER, 1994). The dull red to purple flowers of *Baroniella* are not found in *Camptocarpus,* which usually has white flowers. On the other hand, in addition to the annular corolline corona, *Baroniella* and *Camptocarpus* share the same type of long, curved, narrow and repeatedly constricted follicles. Consequently, *Baroniella* and *Camptocarpus,* although similar, differ in several floral characters and are best kept as two separate genera.

Phylogeny and morphological aspects

Methods. – The phylogenetic analyses were made using the parsimony program PAUP version 3.1 by SWOFFORD (1991).

Outgroups and analyses. – *Camptocarpus mauritianus* (Lam.) Decne. has been used as the outgroup. *Camptocarpus* shares with *Baroniella* the annular corolline corona as well as the long and narrow follicles which are curved near the base and have sinuately constricted margins. These two characters are considered to be synapomorphies for *Baroniella* and *Camptocarpus* and have not been observed in other Malagasy *Periplocoideae*. *C. mauritianus* is the most widespread and frequent species of *Camptocarpus*.

Data from 18 characters were derived from vegetative (8) and floral (10) parts, respectively, with autapomorphies excluded. The characters are described below and the character distribution within the taxa is presented in the data matrix in Table 1. A cladistic analysis with the characters unweighted resulted in 2 most parsimonious trees 26 steps long with CI 0.81 and RI 0.75. One of these trees, which moreover is identical to the consensus tree of the two, is presented in Fig. 2A, with the autapomorphies added.

A Decay or Bremer support analysis (DONOGHUE & al., 1992; KÄLLERSJÖ & al., 1992), i.e. an evaluation of how much longer trees one has to accept before the different clades collapse in a strict consensus of the trees found, is shown in Fig. 2B where trees 27 steps long have been accepted. If trees two steps longer than the most parsimonious tree are accepted, all species of the genus collapse to the base.

Characters used for the cladistic analysis and comments on morphology

Leaves

1. Leaf lamina narrow, ± linear (1); leaf lamina broad, ovate to elliptic (0). – The narrow leaves of *B. linearis* and *B. capillacea* have furthermore a similar anatomy, except for the distinctly raised mid-nerve present in *B. linearis,* and narrow leaves seem to be a synapomorphy for these taxa. However, the narrow leaves in *Baroniella ensifolia* turn out to be a parallelism. It is only the shape of the lamina that is similar to the one of *B. linearis* and *B. capillacea,* and the leaf anatomy differs in several structures (see chs. 3, 4, 5, 8)
2. Leaf lamina with mid-nerve raised above (1); mid-nerve even or impressed above (0). – This is a distinct character in most species of *Baroniella*. In the very narrow leaves found in *B. capillacea* this character has reversed.
3. Xylem of mid-nerve in lamina straight in cross section (1); xylem falcate in cross section (0). Fig. 1.
4. Leaves thick with the palisade layer occupying less than 1/3 of the leaf thickness; parenchyma between the palisade layer and the secondary veins (1); leaves thin with the palisade layer occupying more than 1/3 of the leaf thickness; no parenchyma between the palisade layer and the secondary veins (0).
5. Sclerenchyma cells above the mid-rib (1); no sclerenchyma cells above the mid-rib (0). – The sclerenchyma cells form a distinct patch several cell layers thick in *B. camptocarpoides*. In *B. ensifolia* it is less conspicuous and consists of only a few cells. – Fig. 1.
6. Palisade layer above the mid-rib absent, sclerenchymatous (2); palisade layer above the mid-rib absent, parenchymatous (1); palisade layer entire above the mid- rib (0). – In *B. longicornis* and *B. multiflora* the palisade layer above the mid-rib is indistinct and consists of

Species		Characters	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	1	B. camptocarpoides	0	0	0	1	1	2	0	1	1	0	0	1	1	1	0	1	1	0	0	2	0	0
	2	B. ensifolia	1	0	0	1	1	0	0	1	0	0	0	1	0	0	0	1	0	0	1	1	1	1
	3	B. acuminata	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	1	1	1
	4	B. longicornis	0	1	1	0	0	1	1	0	0	0	0	1	0	1	1	0/1	0	1	1	1	1	1
	5	B. multiflora	0	1	1	0	0	1	1	0	0	0	0	1	0	0	1	1	0	0	1	1	1	1
	6	B. linearis	1	1	1	0	0	0	0	0	0	1	1	1	0	0	1	1	0	0	1	1	1	1
	7	B. capillacea	1	0	1	0	0	0	0	0	0	1	1	1	0	0	1	1	0	0	1	1	2	1
		C. mauritianus	0	0	0	0	0	0	0	0/1	0	0/1	0	0	0	0/1	0	0	?	0	0	0	0	0

Table 1. – Data matrix. 0 = plesiomorphy. 1 or 2 apomorphies. 0/1 = polymorphism. ? = character state inapplicable. – For description of characters see text.

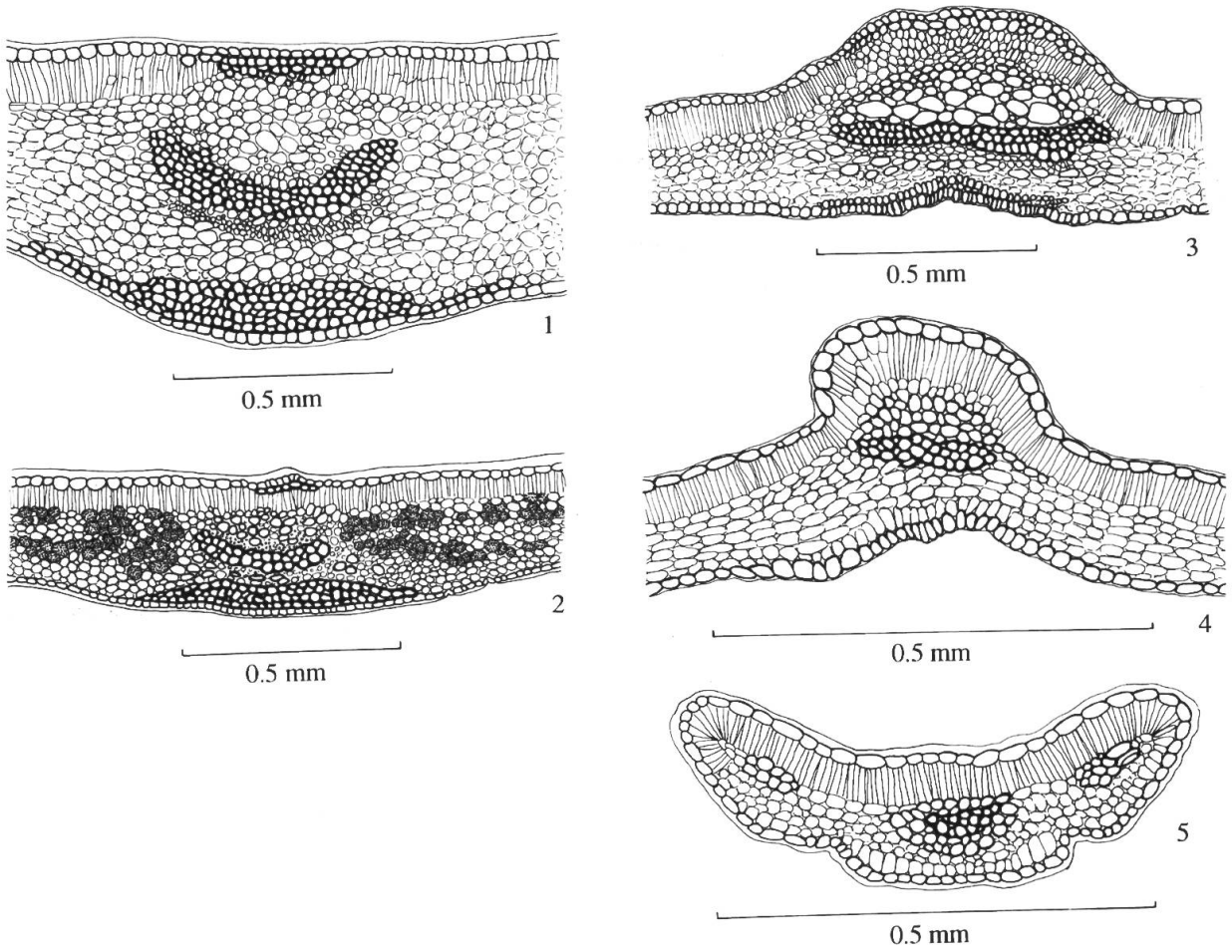


Fig. 1. – Cross section of central part of leaf. – **1,** Leaf with even surface above the mid-nerve and with many sclerenchymatous cells above the xylem interrupting the palisade layer (*B. camptocarpoides*); **2,** Leaf with even upper surface above the mid-nerve and with few sclerenchymatous cells above the xylem not interrupting the palisade layer (*B. ensifolia*); **3,** Leaf with raised upper surface above the mid-nerve and with parenchymatous cells above the xylem interrupting the palisade layer (*B. longicornis*); **4,** Leaf with raised upper surface above the mid-nerve and with uninterrupted palisade layer above the xylem (*B. linearis*); **5,** Leaf (narrow) with even upper surface above the mid-nerve and with uninterrupted palisade layer above the xylem (*B. capillacea*). – **1,** *Dumetz 617;* **2,** *Humbert 28369;* **3,** *Humbert 23107;* **4,** *Armand 82;* **5,** *Rakotomalaza 55.*

rounded parenchyma cells topped by a double epidermis (ch. 7). In *B. camptocarpoides*, the palisade layer is substituted by sclerenchyma cells above the mid- rib. – Fig. 1. – This character is coded as unordered.

7. Epidermis double above the mid-rib (1); epidermis of one layer (0). – Fig. 1.

8. Stomata large (1); stomata small (0). – *B. camptocarpoides* and *B. ensifolia* have distinctly larger stomata than the remaining species of *Baroniella.* The out-group, however, is somewhat intermediate in this character.

Inflorescence

9. Upper peduncles (internodes) of inflorescence sometimes suppressed and inflorescence then more or less umbel-shaped (1); all peduncles more or less elongated (0). – This autapomorphy for *B. camptocarpoides,* more or less condensed inflorescences, has several parallelisms within the *Secamonoideae* and *Periplocoideae.*

10. Inflorescence 1-3-flowered (1); inflorescence > 5-flowered (0). – The usually 1-flowered inflorescences of *B. capillacea* and *B. linearis* are quite distinct in this genus. However, in the out-group, *C. mauritianus,* both few and many-flowered specimens can be observed. Most other *Camptocarpus* species have many-flowered inflorescences.

Calyx

11. Margin finely hairy to laciniate (1); margin entire (0).

Corolla

12. Flowers dull red to violet (1); flowers white (1). – The dull red to violet flowers are a synapomorphy for *Baroniella.*

13. Corolla thick when dry (1); corolla membranaceous when dry (0).

14. Corolla lobes > 5 mm long (1); corolla lobes < 4 mm long (0). – Most species of *Camptocarpus* have small flowers. *C. mauritianus,* however, have 3-5 mm long corolla lobes. The larger corollas of *B. camptocarpoides* and *B. longicornis* turn out to be a parallelism.

15. Corolla lobes with one main vein only (1); corolla with 3 major veins (0).

16. Longest corona lobes between the stamens (1); longest corona lobes opposite the stamens (0). – The corona in *Periplocoideae* is usually furnished with large lobes outside the stamens. *Baroniella,* however, is characterized by its small corona with its largest lobes situated inbetween the stamens. *Camptocarpus* has the corona lobes fused into a ring or tube with the lobes opposite the stamens. *B. longicornis* has a corona typical for *Baroniella* but the inter-staminal lobes and the lobes opposite the stamens are more or less of the same size.

17. Inter-staminal corona lobes with revolute tips, seemingly slightly bifid (1); corona lobes not folded, rounded to acute at tips (0).

Androecium

18. Connective prolonged ca. twice as long as the thecae (1); connective as long as or shorter than the thecae (0). – Much prolonged thecae is a parallelism also observed in other *Asclepiadaceae*, e.g. *Fockea* Endl. *(Fockeae), Atherandra* Decne. *(Periplocoideae), Pervillea* Decne. (KLACKENBERG, 1995, 1996b) and *Calyptranthera* Klack. *(Secamonoideae)* (KLACKENBERG, 1996a, 1997).
19. Pollen carriers with distinct stalk (1); pollen carriers without stalk (0). – *C. mauritianus* has pollen carriers with distinct stalk. However, the majority of the *Camptocarpus* species have pollen carriers without a stalk.

Gynoecium

20. Style head thick, obconical (2); style head conical, with thin and discoid margin (1); style head conical, without thin and discoid margin (0). – The thick and obconical style head of *B. camptocarpoides* is an autapomorphy for that species. The style head with a thin and more or less discoid, 5 or 10 lobed margin is characteristic of the remaining *Baroniella* species. – This character is coded as unordered.
21. Style head with lobes (knobs) between the stamens carrying the pollen carriers; lobes reflexed (2); same but with the lobes divaricate to deflexed (1); style head without lobes projecting between the stamens (0). – This way of exposing the pollen carriers outside the stamens is a synapomorphy for all *Baroniella* species except *B. camptocarpoides.* In all species of *Camptocarpus* the pollen carriers are situated in grooves. – This character is coded as unordered.
22. Upper part of style head distinct (1); upper part ± missing (0). All species of *Baroniella* except *B. camptocarpoides* have a thick but short upper part of the stigma head.

Discussion

The phylogenetic analysis gave two most parsimonious trees. One is presented in Fig. 2A. The other one differs by having *B. acuminata* forming a clade together with *B. longicornis* and *B. multiflora.*

B. camptocarpoides and *B. ensifolia* share several anatomical leaf traits, which, however, turn out to be parallelisms or synplesiomorphies, due to the four contradictory flower characters, mainly the structure of the style head (chs. 19-22). The mid-nerve of the leaf lamina, which is even or somewhat impressed above (ch. 2), and the falcate xylem (ch. 3) are synplesiomorphies. The thick leaves (ch. 4) and the sclerenchyma cells above the mid-rib (ch. 5) turn out to be homoplasies or, as shown in the Figure 2A, reversals above *B. camptocarpoides* and *B. ensifolia.* Furthermore, the large stomata shared by *B. camptocarpoides* and *B. ensifolia* are interpreted as a synplesiomorphy. The morphological distinctness of *B. camptocarpoides* can be deduced from the five autapomorphies characterizing this species and the four synapomorphies uniting the remaining species.

Phytogeography

Baroniella is distributed in the East Malagasy Phytogeographic Region (for the division into phytogeographical regions, see HUMBERT (1955)). From the data available (Fig. 2A, 11)

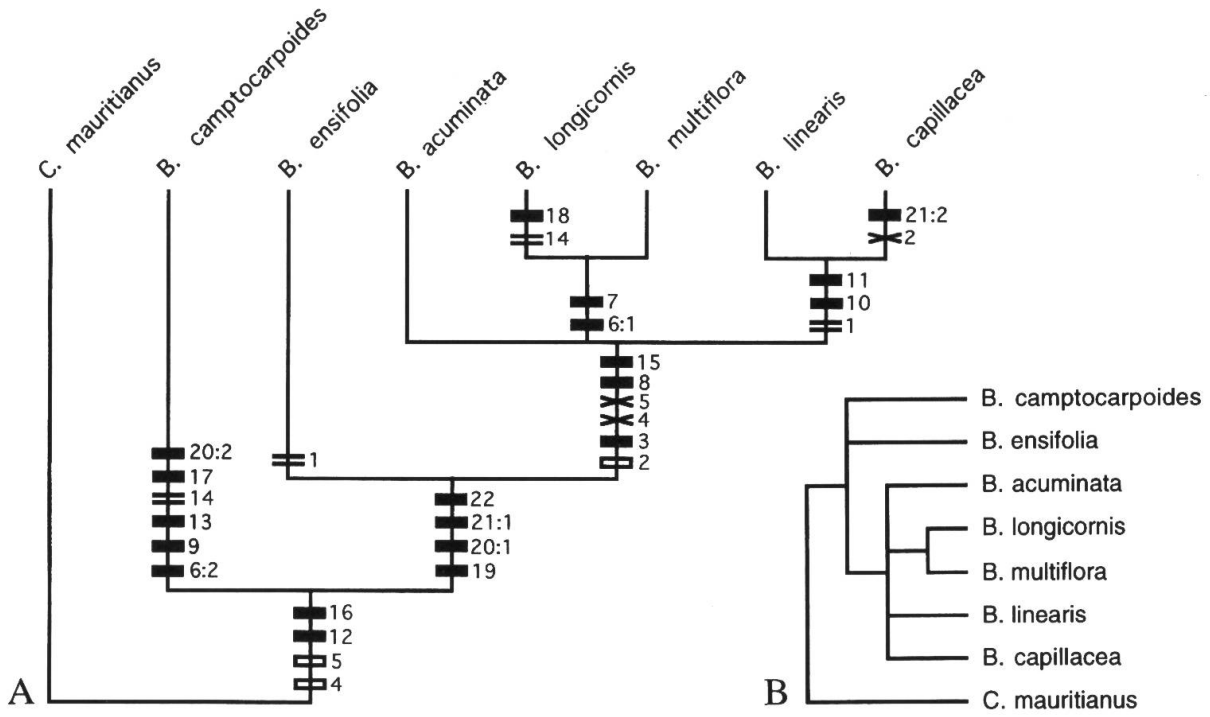


Fig. 2. – Phylogeny. – **A,** One of the two most parsimonious cladograms of *Baroniella;* this tree has moreover the same topology as the consensus tree. The apomorphies are indicated with bars and parallelisms with double lines. Unfilled rectangles indicate characters that later reverse to the plesiomorphic state, and crossed bars indicate these reversals. The numbers refer to characters explained in text. As outgroup has been used *Camptocarpus mauritianus.* A data matrix of the characters is shown in Table 1. – **B,** Bremer support showing the consensus tree of the five trees found which are one step longer the the most parsimonious tree, i.e. 27 steps long without autapomorphies.

two major conclusions on vicariance phytogeography of the genus might be drawn. First it can be seen that *B. camptocarpoides* is mainly distributed in the coastal forest along the eastern coast, with only one morphologically different specimen from the lower parts of the Marojejy Mts as an exception. *B. camptocarpoides* is according to the cladogram a basal taxon within the genus, a sister taxon to the remaining six species. Consequently, an older vicariance between the coastal forest and the rest of the vegetation types in the East Malagasy Region can be proposed (Fig. 3).

Secondly, a parallel recent north-south vicariance can also be observed, viz. between *B. multiflora* and *B. longicornis* as well as between *B. linearis* and *B. capillacea.* This pattern is also paralleled within *B. camptocarpoides,* with the deviating specimen found in the Marojejzy Mts vicariating with the southern population which has smaller flowers with more elliptic corolla lobes. A recent North – South vicariance in Madagascar has also been observed in *Tachiadenus* Griseb. *(Gentianaceae)* (KLACKENBERG, 1987), in *Pervillea (Asclepiadaceae)* (KLACKENBERG, 1996b) and in *Calyptranthera* (KLACKENBERG, 1997), and seems to be a general pattern, both in the dry West Malagasy Region and the wetter East Malagasy Region. It can also be noted that *B. ensifolia,* which is a sub-basal clade, and consequently old, in the cladogram, shows the east-west vicariance with the remaining taxa (Fig. 3). It must be noted, however, that the distribution for three of the species of *Baroniella* are known from only one locality, which renders the phytogeographical analyses uncertain.

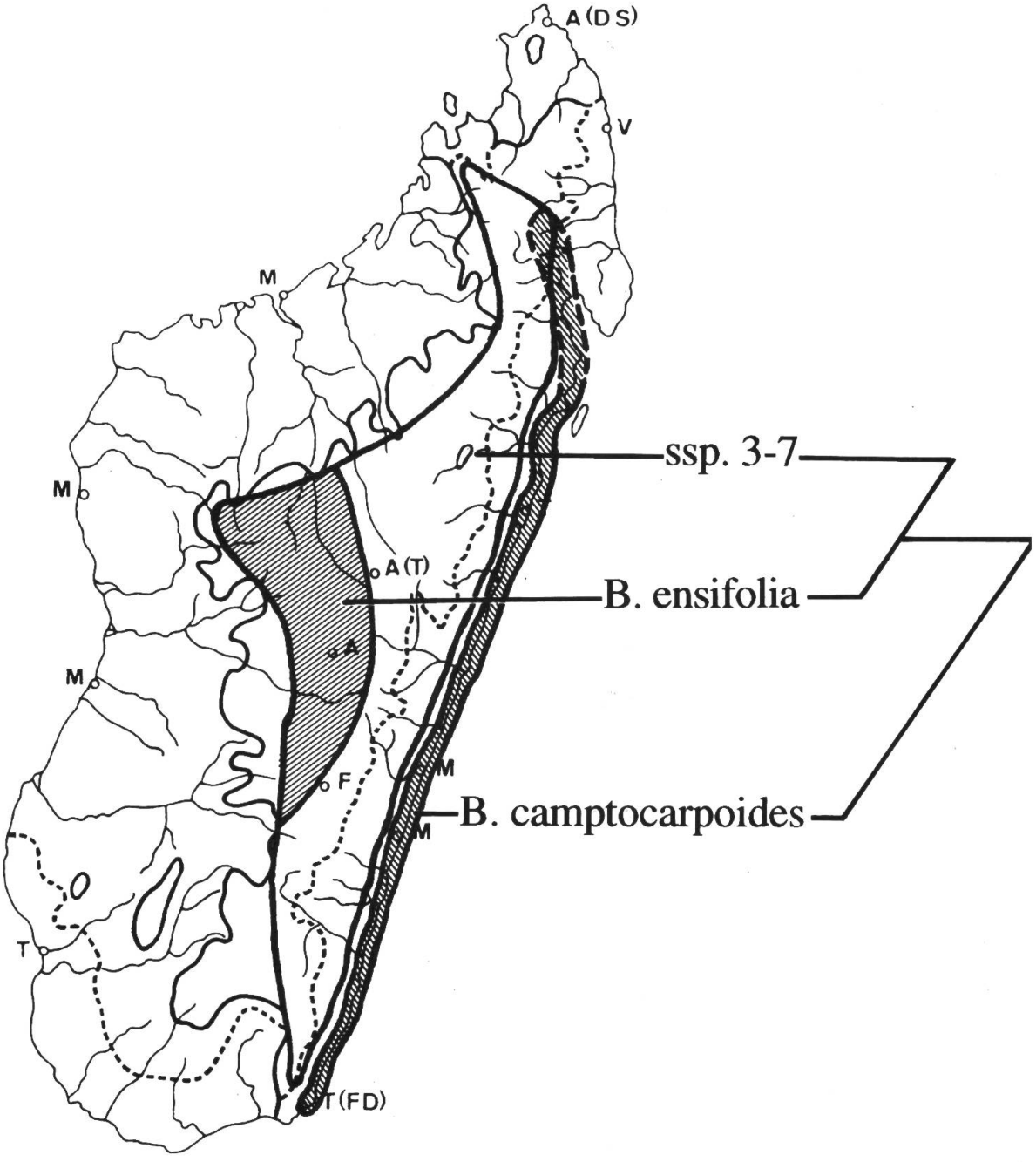


Fig. 3. – Phytogeographical vicariance pattern of *Baroniella*.

Taxonomy

Baroniella Costantin & Gallaud in Ann. Sci. Nat. Bot. ser. 9, 6: 354. 1908.

Type: *Baroniella camptocarpoides* Costantin & Gallaud

Suffrutescent glabrous twiners with milky latex, up to 4 m. Leaves opposite, herbaceous to thick and waxy or somewhat coriaceous, sometimes revolute at the margin; blade linear to elliptic or narrowly ovate to obovate, cuneate to truncate or shortly attenuate at the base, acute to acuminate at the apex or sometimes apiculate; margin even; venation pinnate, looped with the secondary veins ± straight and parallel to each other or with mid-rib visible only, raised or impressed above and below when dry; epidermis ± smooth on both sides; petiole distinct.

Inflorescences terminal and/or axillary, shorter to usually longer than the adjacent leaves; cyme rather lax, sometimes forming small umbels but usually ± regularly dichasially branched below and monochasially above, one to many-flowered; bracts present, minute.

Flowers pentamerous, actinomorphic, usually only 0.5 cm in diameter, rarely up to ca. 2 cm, glabrous in all parts. Calyx lobes free, about as long or shorter than the corolla tube, ovate to very broadly ovate or roundish, acute to rounded, with 5 or more glands at base inside; margin entire, glabrous or papillately hairy to laciniate. Corolla globose to elliptic in bud, contorted with the lobes overlapping with their right margins, not twisted, with the lobes fused at the base only or up to 1/3 of their length into a wide tube, reddish, often dull red to violet; lobes oblong or ovate to broadly elliptic, rounded to rarely acute at the apex. Corona arising from corolla tube, small, not reaching the style head; lobes basically in two circles but which are more or less united; larger lobes situated between the staminal filaments; smaller lobes outside and opposite the filaments, usually radiating towards the sinuses of the corolla lobes, sometimes as indistinct bosses or missing. Stamens 5, inserted at the mouth of the corolla tube inside the corona lobes, free; filaments narrow, rather long; connectives prolonged; prolongation flattened, short and ± triangular to oblong and ca. twice as long as the thecae. Pollen carriers situated on 5 lobes (knobs) on the style head; spathe obovate to elliptic or rounded; stalk present to usually absent; viscidium circular. Ovary of 2 mostly separate carpels, subinferior, with numerous ovules. Style 2, united in upper half below the style head; style head thick, broadly obconical to discoid, usually topped by a ± distinct narrow upper part, with 5 lobes protruding between the anthers, and sometimes with 5 additional usually smaller lobes opposite the anthers; interstaminal lobes small and bifid or usually distinctly protruding between the stamens and entire; lobes opposite the anthers, if present, small or as large as the interstaminal ones, entire; upper part broad and short, rarely ± missing.

Follicles curved and linear with slightly sinuate margins, glabrous but finely ribbed, recurved at base. Seeds several, situated between the constrictions, with an apical tuft of hairs.

Key to the species

1 Leaves linear to narrowly lanceolate, more than 4 times as long as broad 2

1a Leaves elliptic to broadly ovate, less than 4 times as long as broad 4

2 Leaves less than 1 mm wide; 5 corona lobes reaching from the staminal filaments to the sinuses of the corolla lobes ..... ***7. B. capillacea***

2a At least some leaves more than 1 mm wide; corona lobes reaching less than half way from the stamens to the sinuses 3

3 Mid-rib of leaves distinctly raised above when dry; style head with thin disc-like faintly 5-lobed lower part ..... ***6. B. linearis***

3a Mid-rib ± even with upper leaf surface when dry; style head with distincly 10-lobed lower part ..... ***2. B. ensifolia***

4 Prolonged anther connective ca. twice as long as theca ..... ***4. B. longicornis***

4a Prolonged anther connective about as long as the theca or shorter 5

5 Leaves with secondary veins not or only faintly visible when dry; flowers large with corolla lobes more than 5 mm long ..... ***1. B. camptocarpoides***

5a Leaves with secondary veins distinctly visible when dry; flowers small with corolla lobes less than 5 mm long 6

6 Corolla lobes more than 2 mm long; style head with 5 large lobes ..... ***3. B. acuminata***

6a Corolla lobes less than 2 mm long; style head with 10 more or less equally large lobes ***5. B. multiflora***

1. Baroniella camptocarpoides Costantin & Gallaud in Ann. Sci. Nat. Bot. ser. 9, 6: 354. 1908 (Fig. 4, 11 (map)).

≡ *Baseonema camptocarpoides* (Costantin & Gallaud) Choux in Compt. Rend. Hebd. Séances Acad. Sci. 156: 2004. 1913; Ann. Mus. Colon. Marseille ser. 3, 2: 274. 1914.

Type: MADAGASCAR, "Donné par M. Decaisne 1856, *Camptocarpus*?", s. coll., (lecto-P, here selected).

Suffrutescent glabrous twiner. Leaf blade 3-6 × 1-3.5 cm, narrowly elliptic to elliptic, truncate to usually cuneate, acute to apiculate; venation pinnate; midrib impressed above, raised below when dry; secondary veins ± even with the leaf surface, usually only faintly visible when dry; petiole 5-12 mm long.

Inflorescences shorter to often longer than the adjacent leaves, pendent, 2-10 cm long; cyme ± regularly dichasially branched below and monochasially above, with lower internodes 1-4 cm long but some sometimes totally suppressed and then forming small umbels, 5 to many-flowered; pedicels 5-15 mm long; bracts up to 1 mm long, falling off.

Calyx lobes 1.3-1.6 × 1.2-1.6 mm, shorter than the corolla tube, oblong to very broadly ovate, rounded at the apex; margin entire. Corolla fused for 1/4-1/6 of its length into a tube, dull reddish purple; tube 1.8-2.7 mm long; lobes 6.1-8.8 × 3.1-5.4 mm, narrowly ovate to broadly elliptic, acute to usually rounded at apex. Corona forming an undulating short ring at base; interstaminal lobes rather flat but with the upper part thicker due to apices turning downwards, 0.2-0.3 mm high, truncate to slightly bilobed, reaching less than half way to the style head; lobes opposite to the staminal filaments indistinct but with a ridge outside along the sutures of the corolla lobes radiating towards the sinuses where it is cleft and continues shortly along the lobe margins. Anthers ± rectangular; filaments 0.5-1.0 mm long; prolongation of connectives about 1/2 or as long as the thecae. Pollen carriers with rounded 0.4-0.8 mm long spathe; stalk distinct. Style including style head 1.4-1.9 mm high; style head broadly obconical with small interstaminal lobes and inconspicuous upper part; lobes bifid, only slightly protruding between the stamens.

Follicles 20-28 × 0.2-0.3 cm, curved and linear with slightly sinuate margins, recurved 45°-90° at base. Seeds 7-8 mm long; hairs ca. 2.5 cm long.

Distribution and habitat. - *Baroniella camptocarpoides* is distributed along the southern and central parts of the East coast growing usually in coastal forests in sand, but it has also been found in *Phillippia* vegetation at 580 m elevation in the Marojejy mts.

Flowering specimens seen from March to June and from September.

Note. – This is the most conspicuous species of *Baroniella*, probably also the most common one. It has the largest flowers within the genus. It is also characterized by the usually elliptic

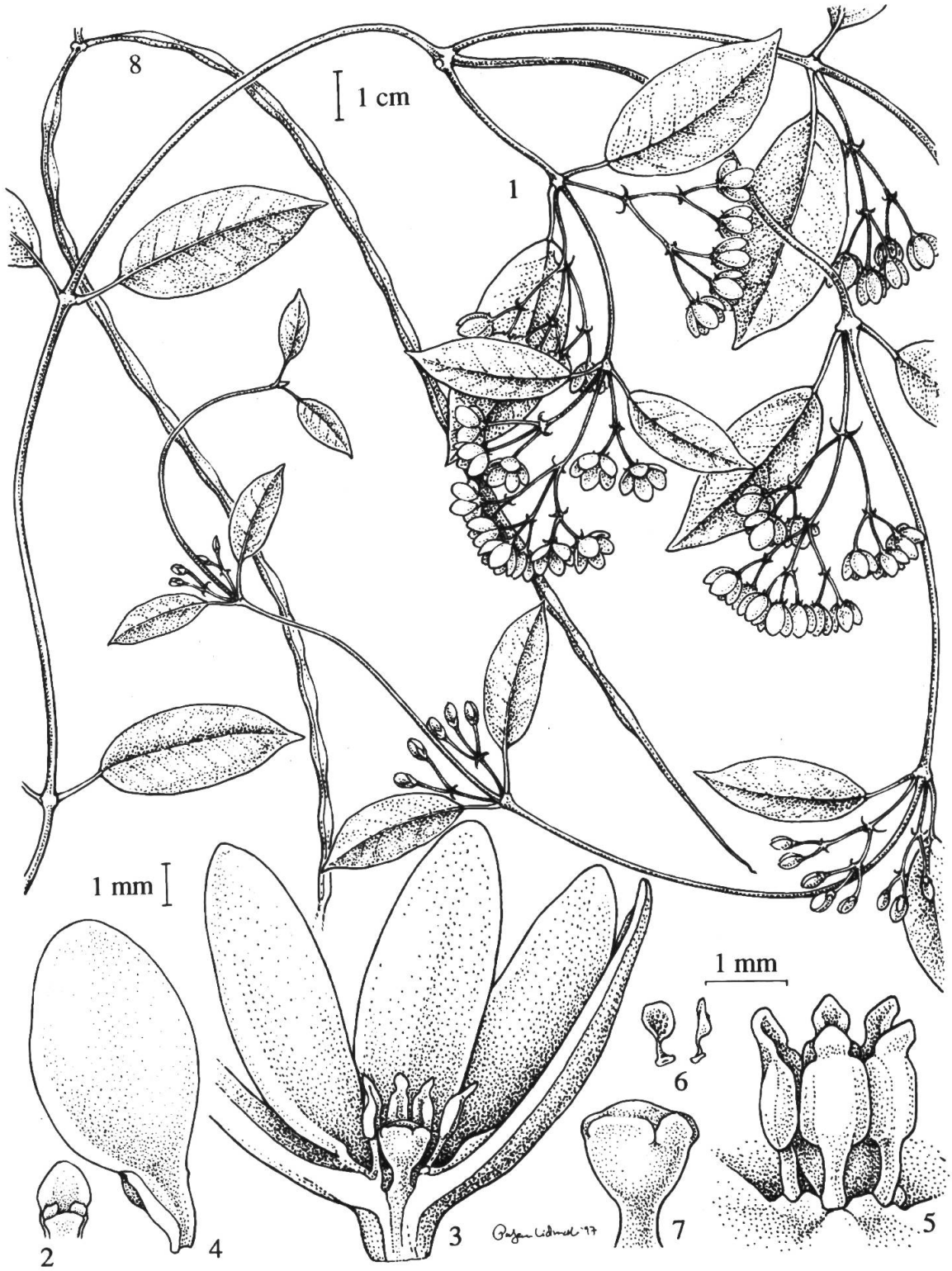


Fig. 4. – *Baroniella camptocarpoides* Costantin & Gallaud. **1,** Habit; **2,** Calyx lobe from within; **3,** Flower with one corolla lobe removed; **4,** Corolla lobe from southern population; **5,** Corona and anthers surrounding the style head; **6,** Pollen carriers 10; **7,** Style head; **8,** Follicles – **1,** *Zarucchi & al. 7485;* **2,** *Bosser 14337;* **3, 5-7,** *Randrianasolo 324;* **4,** *Dumetz 617;* **8,** *Perrier de la Bâthie 18111.*

leaves, which though being large, have inconspicuous veins even when dry. It has a thick, obconical style head, unique within the genus.

Plants from the southern part of the distribution area have elliptic or broadly elliptic corolla lobes. In contrast, specimens from the northern part and especially the only collection from outside the coastal forest, i.e. from *Phillipia* vegetation in the Marojejy Mts, have elliptic to almost narrowly elliptic corolla lobes. Furthermore, this latter collection has flowers which are larger in all parts than the ones collected in the coastal area.

Additional specimens studied. – *Baron s.n.,* ca. 10 miles W of Mahanora (P); *Bosser 14337,* Tôlanara, Mandena, 1960 (P); *D'Arcy & Rakotozafy 15352,* prov. Toliara, Réserve Forestière Mandena, 1983 (MO, P); *Decary 3880,* Vanganidrano, 1925 (P); *Decary 9791, 9794,* Tôlanara, 1932 (P); *Dumetz 617,* distr. Toliara, préf. Tôlanaro, NW Marokoky, 0-10 m alt., 1989 (K, MO, P); *Hilsenberg s.n.,* Hab. in prov. Bé-tani-mena prov. Emerinae (BM); *Keraudren 1055,* env. de Tôlanara, vers Mandena, 1960 (P); *Leeuwenberg 13786,* forêt d'Analalava, 2 km W of Foulpointe (= Mahavelona), 10 m alt., 1985 (MO); *Martine D12,* Ambila, 1931 (P); *Perrier de la Bâthie 12613,* Farafangana près de la mer, 1919 (P); *Perrier de la Bâthie 18111,* env. de Mahanoro, forêt littorale, 1927 (P); *Petit-Thouars 35,* s. loc. (P); *Phillipson 1858,* prov. Toamasina, Ambila-Lemaitso, 1987 (MO, P, S); *Phillipson & al. 3956,* Toliara, 44 km N of Fort Dauphin on road to St. Luce, Manafiafy, 50 m alt., 1992 (K); *Randrianasolo 324,* reserve integrate naturelle Marojejy (no. 12), N of Mandena village, 580 m alt., 1993 (MO, S); Service Forestier: *SF-2379,* Soanierana-Ivongo, 1949 (P); *Zarucchi & al. 7485,* distr. Toliara, about 10 km NNE of Tôlanaro, Mandena region, 10 m alt., 1991 (MO, P, S).

2. Baroniella ensifolia Klack., **spec. nova** (Fig. 5, 11 (map)).

Type: MADAGASCAR, env. d'Ambatofinandrahana, 1300 m alt., février 1919, *Perrier de la Bâthie 12415* (holo- P).

Species haec foliis angustis ad Baroniellam linearem accedens sed nervo medio foliorum in sicco non elevato vel plus minusve impresso ab ea recedens.

Suffrutescent glabrous twiner. Leaf blade 2-6 × 0.2-1 cm, linear to narrowly ovate, truncate to shortly attenuate with margin folded upwards at the very base, acute at the apex; venation with midrib only visible, ± even with leaf surface on both sides when dry; petiole 1-2 mm long.

Inflorescences longer than the adjacent leaves, 3-7 cm long; cyme di- and monochasially branched, with lower internodes 1-4 cm long, usually many-flowered; pedicels 2-7 mm long; bracts ca. 1 mm long, persistent.

Calyx lobes ca. 0.8 × ca. 0.6 mm, about as long as the corolla tube, broadly ovate, acute to rounded at the apex; margin entire. Corolla fused for ca. 1/7 of its length into a tube, reddish/mauve; tube ca. 0.3 mm long; lobes ca. 1.9 × ca. 1.1 mm, ovate, rounded at apex. Corona forming an undulating short ring at base; interstaminal lobes ca. 0.2 mm high, rounded to truncate, reaching almost to the style head; lobes opposite the staminal filaments distinct but only shortly radiating towards the sinuses of the corolla lobes. Anthers ± rectangular; filaments ca. 0.3 mm long; prolongation of connectives less than half as long as the thecae. Pollen carriers ca. 0.3 mm long; spathe elliptic; stalk missing. Style including style head ca. 0.8 mm high. Style head discoid, with 5 lobes opposite the anthers and 5 slightly longer distinct interstaminal lobes; lobes divaricate to slightly deflexed; upper part distinctly protruding.

Follicles not seen.

Distribution and habitat. – *Baroniella ensifolia* is known from the central part of the central plateau collected between 1300-1700 m altitude in forest/secondary vegetation.

Flowering specimens seen from January to March.

Note. – This species differs from *B. linearis* by having the mid-rib of the leaves more or less even with the upper leaf surface when dry or slightly impressed, not distinctly raised. Further-

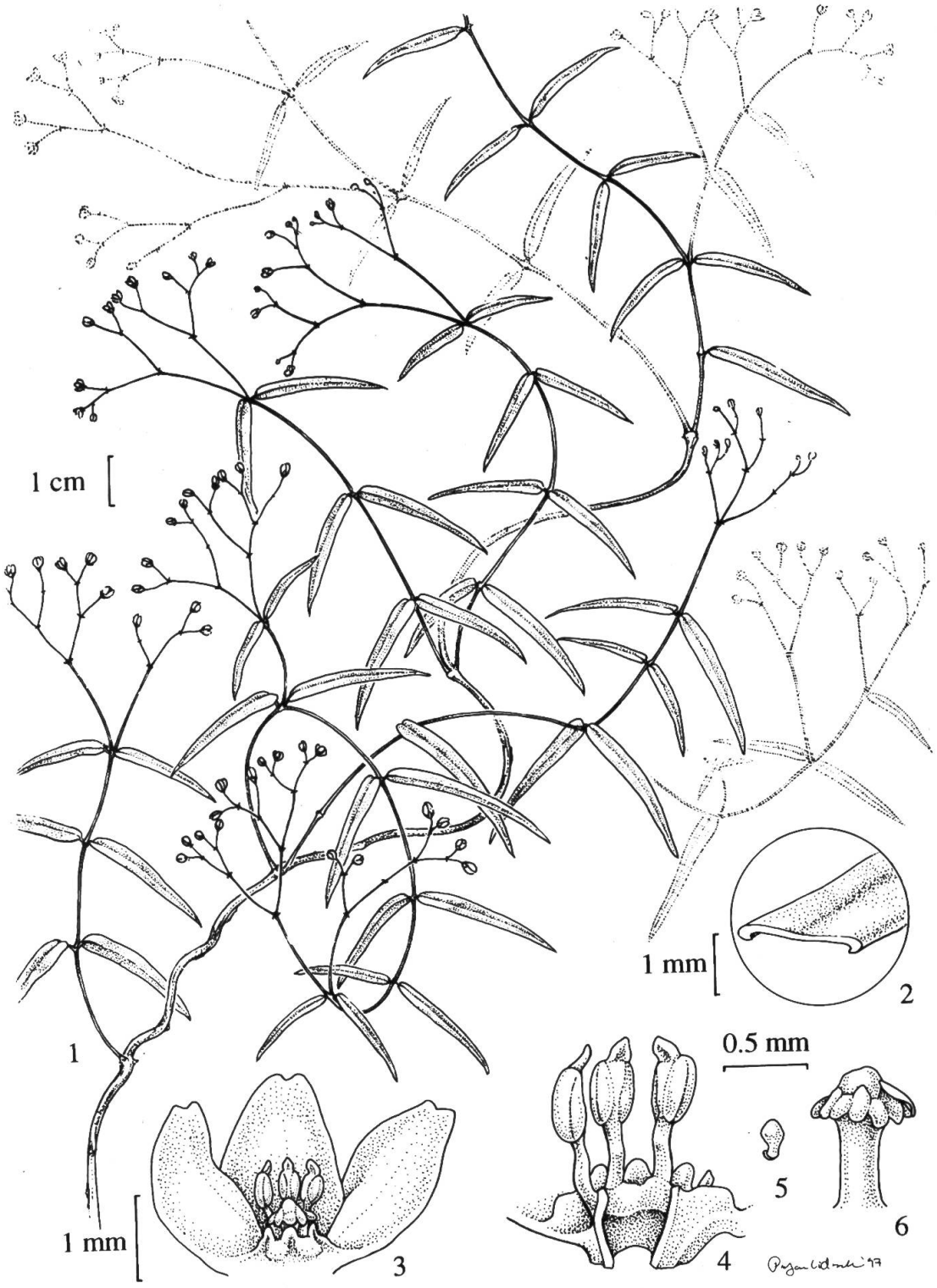


Fig. 5. – *Baroniella ensifolia* Klack. **1,** Habit; **2,** Cross section of leaf; **3,** Flower with two corolla lobes removed; **4,** Three anthers with part of corona ring (two lobes removed); **5,** Pollen carrier; **6,** Style head. – **1,** *Humbert 28369;* **2-6,** *Perrier de la Bâthie 12415.*

more, the tips of the leaves are acute, not apiculate as in *B. linearis*. The leaf lamina is rather thick when dry, with revolute margins. With its linear leaves it is also similar to *B. capillacea* but is distinguished by its, though narrow, much broader leaves, usually more than 2 mm broad. It is also characterized by its 10-lobed style head, a character only found also in *B. multiflora*.

Additional specimens studied. – *Humbert 28369,* montagnes à l'ouest d'Itremo, 1500-1700 m, 1955 (P); *Le Myre de Villers s.n.,* Madagascar central, 1887 (P); *Perrier de la Bâthie 16914,* Tsinjoarivo, 1400 m alt., 1925 (P).

3. Baroniella acuminata (Choux) Bullock in Kew Bull. 10: 283. 1955 (Fig. 6, 11 (map)).

≡ *Baseonema acuminatum* Choux in Compt. Rend. Hebd. Séances Acad. Sci. 156: 2003. 1913; Ann. Mus. Colon. Marseille ser. 3, 2: 267. 1914.

Type: MADAGASCAR, Analamazoatra, 800 m alt., 1912, *Perrier de la Bâthie 11753* (lecto- P, here selected).

Suffrutescent glabrous twiner. Leaf blade 2-3 × 1-2 cm, ovate to elliptic, ± truncate, acuminate; venation pinnate; midrib and secondary veins raised above, ± even with the leaf surface below when dry; petiole 1-3 mm long.

Inflorescences about as long to usually longer than the adjacent leaves, 2-5 cm long; cyme ± regularly dichasially branched below and monochasially above, with lower internodes 1-3 cm long but some sometimes totally suppressed, 3 to ca. 10-flowered; pedicels 3-7(-20) mm long; bracts 0.5-1.5 mm long, persistent.

Calyx lobes ca. 0.6 × ca. 0.6 mm, shorter than the corolla tube, roundish, rounded at the apex; margin entire. Corolla fused for ca. 1/5 of its length into a tube, violet; tube ca. 0.7 mm long; lobes ca. 2.7 × ca. 2.2 mm, broadly elliptic, rounded at apex. Corona forming a short ring at base; interstaminal lobes ca. 0.2 mm high, rounded to truncate, reaching ca. half-way to the style head; lobes opposite the staminal filaments distinct, radiating towards the sinuses of the corolla lobes. Anthers ± rectangular; filaments ca. 0.4 mm long; prolongation of connectives about as long as the thecae. Pollen carriers 0.2-0.3 mm long; spathe broadly obovate; stalk missing. Style including style head ca. 0.8 mm high; style head discoid, with 5 distinct interstaminal lobes; lobes divaricate to slightly deflexed; upper part distinctly protruding.

Follicles not seen.

Distribution and habitat. –*Baroniella acuminata* is known from three collections, two from the transition zone between the eastern rain forest and the central plateau at ca. 800 m altitude between Antananarivo and the coast, and one from ericoid vegetation at 1500 m altitude in the southern part of the central plateau.

Flowering specimens seen from November, December and February.

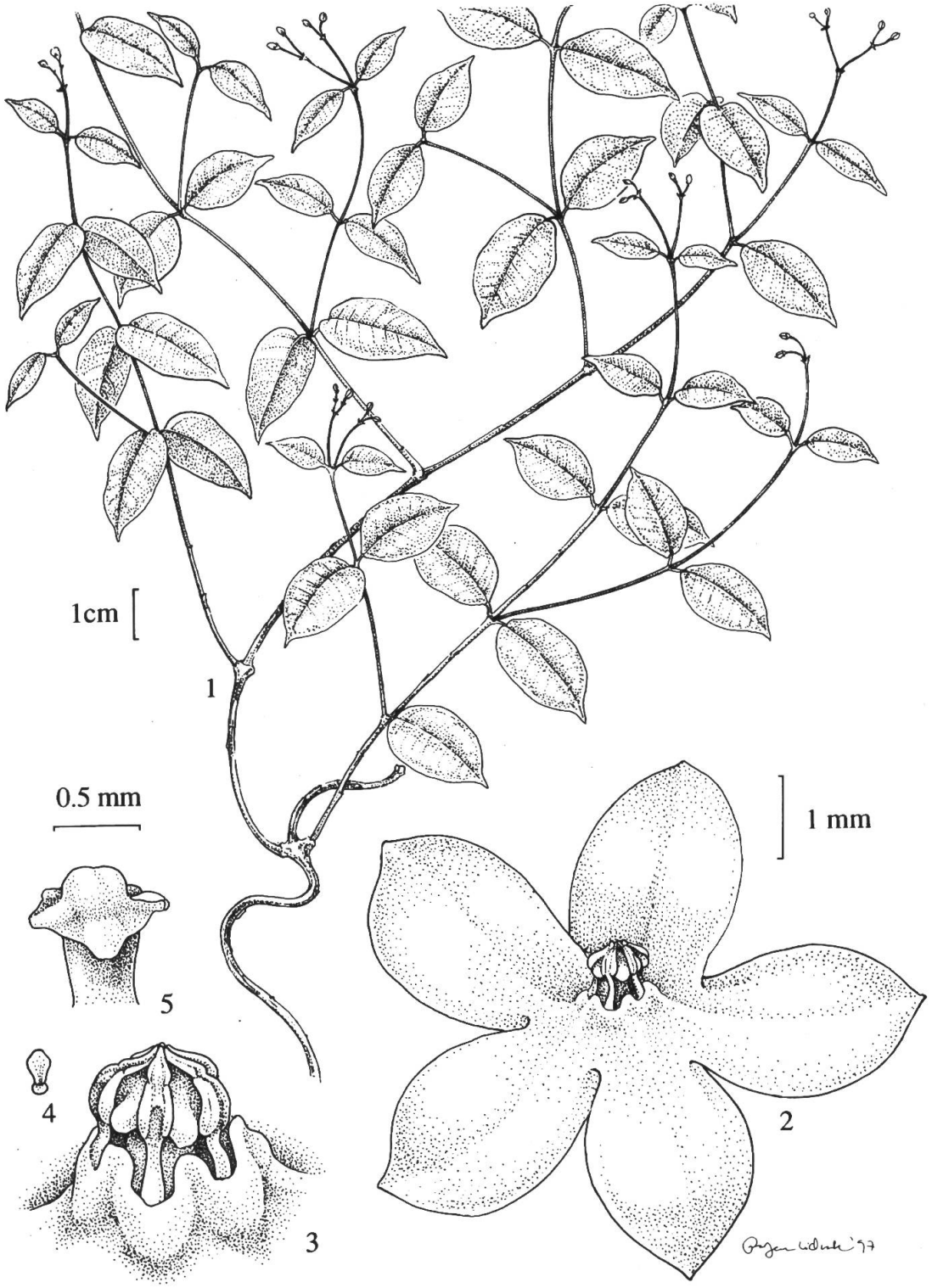
Note. – *B. acuminata* is characterized by its acuminate leaves, a character, however, also found more or less distinct in *B. longicornis* and *B. multiflora*. *B. longicornis* differs by its larger flowers and distinctly longer connectival projections, *B. multiflora* by its 10-lobed style head.

Additional specimens studied. – *Humbert 6349,* massif de Beampingaratra, Mt Papanga, 1400-1576 m alt., 1928 (P); *Perrier de la Bâthie 8975,* Analamazoatra, 800 m alt., 1912 (P).

4. Baroniella longicornis Klack., **spec. nova** (Fig. 7, 11(map)).

Type: MADAGASCAR, massif de Marojejy près du col de Doanyanala, limite des bassins de la Lokoho et de l'Andraronga, 800-1200 m alt., 1949, *Humbert 23107* (holo- P).

Species haec foliis acuminatis ad Baroniellam multifloram et praesertim ad B. acuminatam accedens sed floribus majoribus vel connectivo ultra loculus dilatato necnon duplo longiore producto ab eis recedens.



ig. 6. – *Baroniella acuminata* (Choux) Bullock. **1,** Habit; **2,** Flower; **3,** Corona and anthers surrounding the style head; **4,** Pollen carrier; **5,** Style head. – **1,** *Humbert 6349;* **2-5,** *Perrier de la Bâthie 8975.*

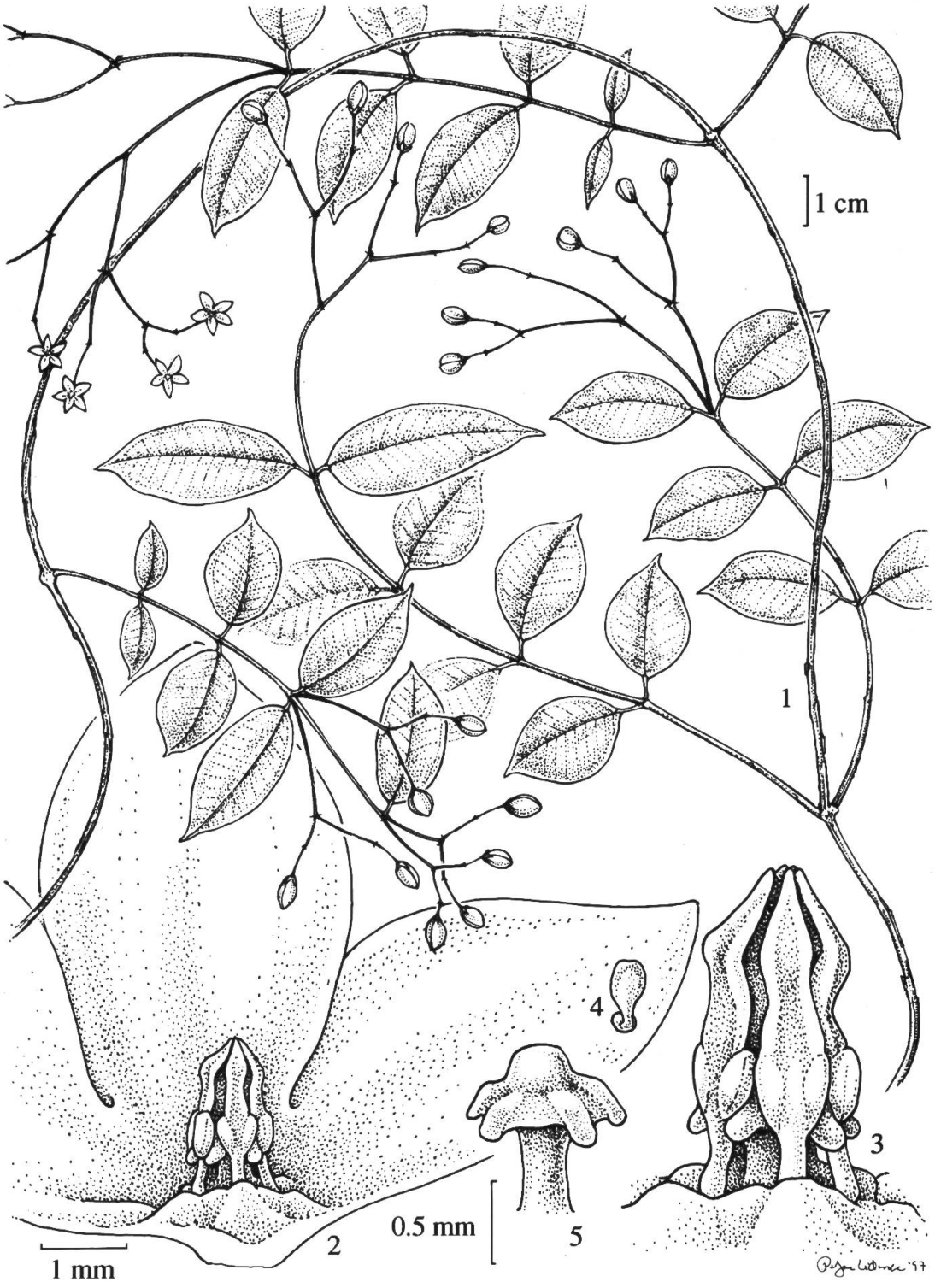


Fig. 7. – *Baroniella longicornis* Klack. **1,** Habit; **2,** Flower with two corolla lobes removed; **3,** Corona and anthers surrounding the style head; **4,** Pollen carrier; **5,** Style head. – **1-5,** *Humbert 23107.*

Suffrutescent glabrous twiner. Leaf blade 3-4 × 1.5-2.5 cm, elliptic, truncate, acuminate; venation pinnate; midrib and secondary veins raised above, ± even with the leaf surface below when dry; petiole 2-3 mm long.

Inflorescences about as long to usually longer than the adjacent leaves, 3.5-5 cm long; cyme ± regularly dichasially branched below and monochasially above, with lower internodes 2-2.5 cm long, few-flowered; pedicels 5-12 mm long; bracts 0.5-1 mm long, persistent.

Calyx lobes ca. 1.1 × ca. 1.0 mm, shorter than the corolla tube, broadly obovate, rounded at the apex; margin entire. Corolla fused for ca. 1/5 of its length into a tube, globose in bud, dull red; tube ca. 1.3 mm long; lobes ca. 6.0 × ca. 4.5 mm, broadly elliptic, acute at apex. Corona forming an undulating short ring at base; interstaminal lobes ca. 0.3 mm high, rounded to truncate, reaching less than half way to the style head; lobes opposite the staminal filaments distinct, radiating towards the sinuses of the corolla lobes. Anthers obconical; filaments ca. 0.3 mm long; prolongation of connectives ca. twice as long as the thecae. Pollen carriers ca. 0.4 mm long; spathe ovate; stalk missing. Style including style head ca. 1 mm high; style head discoid, with 5 distinct interstaminal lobes; lobes divaricate to slightly deflexed; upper part distinctly protruding.

Follicles not seen.

Distribution and habitat. –Baroniella longicornis is known only from the type collected in flower in the Marojejy mountains in forest between 800 and 1200 m altitude in January or February.

Note. – B. longicornis has acuminate leaves and is in habit similar to *B. multiflora* and particularly to *B. acuminata.* It differs, however, by its larger flowers and by its connectives being almost twice as long as the thecae. It is also characterized by its rather narrow and long lobes at the style head, distinctly protruding between the filaments.

5. Baroniella multiflora (Choux) Bullock in Kew Bull. 10: 283. 1955 (Fig. 8, 11 (map)).

≡ *Baseonema multiflorum* Choux in Compt. Rend. Hebd. Séances Acad. Sci. 156: 2003. 1913; Ann. Mus. Colon. Marseille ser. 3, 2: 266. 1914.

Type: MADAGASCAR, Mt Vatovavy, 400 m alt., 1911, *Perrier de la Bâthie 11752,* (lecto- P, here selected; iso- P).

Suffrutescent glabrous twiner. Leaf blade 3.5-6.0 × 1.5-3.5 cm, elliptic to obovate, cuneate, apiculate; venation pinnate; midrib and secondary veins raised above, even with leaf surface below when dry; petiole 2-6 mm long.

Inflorescences longer than the adjacent leaves, 3-6 cm long; cyme di- and monochasially branched, with lower internodes 1-3 cm long, many-flowered; pedicels 4-10 mm long; bracts ca. 0.5 mm long, persistent.

Calyx lobes ca. 0.7 × ca. 0.7 mm, about as long as the corolla tube, broadly ovate, rounded at the apex; margin entire. Corolla fused for ca. 1/3 of its length into a tube, red; tube ca. 0.7 mm long; lobes ca. 1.4 × ca. 1.3 mm, broadly ovate, rounded at apex. Corona forming an undulating short ring at base; interstaminal lobes ca. 0.2 mm high, rounded to truncate, reaching almost to the style head; lobes opposite the staminal filaments distinct, radiating towards the sinuses of the corolla lobes. Anthers ± rectangular; filaments ca. 0.4 mm long; prolongation of connectives less than half as long as the thecae. Pollen carriers ca. 0.1 mm long; spathe elliptic; stalk missing. Style including style head 0.8 mm high; style head discoid, with 5 lobes opposite the anthers and 5 slightly longer distinct interstaminal lobes; lobes divaricate to slightly deflexed; upper part distinctly protruding.

Follicles not seen.

Distribution and habitat. – Baroniella multiflora is hitherto only known from Mt Vatovaty in the eastern rain forest not far from Mananjary, collected in a dry area at 400 m altitude.

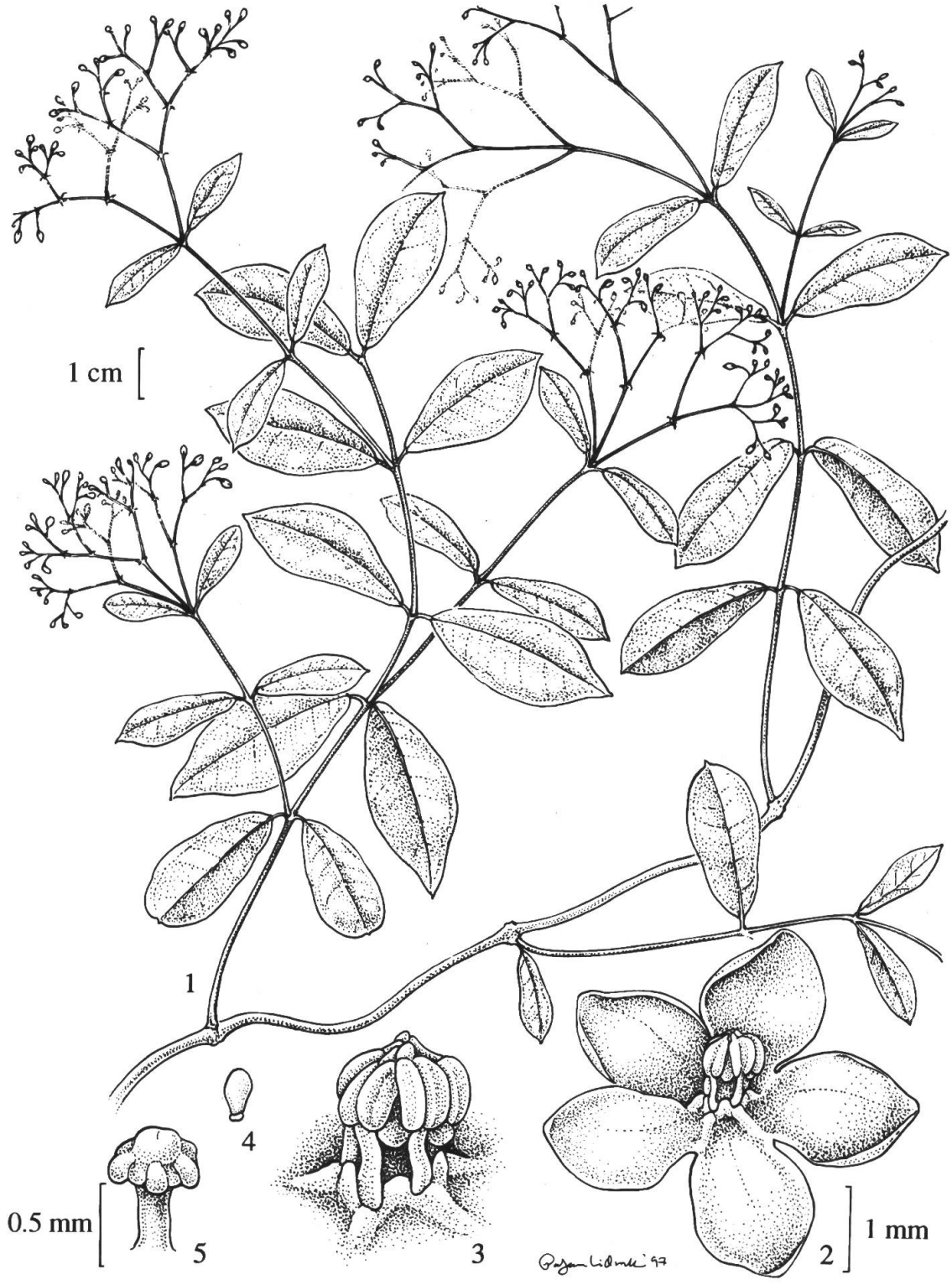


Fig. 8. – *Baroniella multiflora* (Choux) Bullock. **1,** Habit; **2,** Flower; **3,** Corona and anthers surrounding the style head; **4,** Pollen carrier; **5,** Style head. – **1-5,** *Perrier de la Bâthie 11752.*

Flowering specimen seen from October.

Note. – This species is characterized by its small- and many-flowered inflorescences. It shares with *B. ensifolia* the character of 10-lobed style heads but differs by its broad leaves. The leaves are in outline similar to the leaves of *B. acuminata* but the latter species has only 5-lobed style heads. *B. multiflora* has a distinct submarginal vein. The calyx is sometimes unequal with two larger and three smaller lobes.

Additional specimen studied. – *Humblot 56,* s. loc. (P).

6. Baroniella linearis (Choux) Bullock in Kew Bull. 10: 283. 1955 (Fig. 9, 11 (map)).

≡ *Baseonema lineare* Choux in Compt. Rend. Hebd. Séances Acad. Sci. 156: 2003. 1913; Ann. Mus. Colon. Marseille ser. 3, 2: 268. 1914.

Type: MADAGASCAR, Analamazoatra, 800 m alt., 1912, *Perrier de la Bâthie 11754* (lecto- P, here selected; iso- K).

Suffrutescent glabrous twiner. Leaf blade 20-35 × 1-5 mm, linear to narrowly ovate, truncate to shortly attenuate with margin folded upwards at the very base, acute to shortly acuminate at the apex; venation with midrib only visible, distinctly raised above, impressed below when dry; petiole ca. 1 mm long.

Inflorescences longer than the adjacent leaves, 2-3.5 cm long; cyme di- and monochasially branched, with lower internodes 1-1.5 cm long, one- to few-flowered; pedicels 3-5 mm long; bracts ca. 0.5 mm long, persistent.

Calyx lobes 0.6-0.9 × 0.6-0.9 mm, shorter than the corolla tube, broadly ovate, acute at the apex; margin finely hairy to laciniate. Corolla fused for 1/3-1/4 of its length into an open tube, violet; tube 1.0-1.2 mm long; lobes 2.4 -3.0 × 2.0-2.7 mm, oblong, rounded at apex. Corona forming an undulating short ring at base; interstaminal lobes 0.3-0.4 mm high, rounded to truncate, reaching about ca. half way to style head; lobes opposite the staminal filaments distinct but only shortly radiating towards the sinuses of the corolla lobes. Anthers ± rectangular; filaments ca. 0.2 mm long; prolongation of connectives less than half as long as the thecae. Pollen carriers ca. 0.2 mm long; spathe obovate or almost rounded; stalk missing. Style including style head ca. 0.7 mm high; style head thinly discoid, with 5 distinct interstaminal lobes; lobes divaricate to slightly deflexed; upper part distinctly protruding.

Follicles not seen.

Distribution and habitat. –The distribution of *Baroniella linearis* is known only from the transition zone between the eastern rain forest and the central plateau, between 800 and 1200 m altitude.

Flowering specimens seen from February and March.

Note. – *B. linearis* differs from *B. ensifolia* by having a distinctly raised mid-rib at the upper side of the leaf lamina when dry, and from the third narrow leaved species, *B. capillacea,* by its larger corolla tube, constituting as much as 1/4 to 1/3 of the corolla length. Furthermore, the corona lobes reach only less than half way from the stamens to the sinuses of the corolla lobes. The leaf lamina is thin and usually folded upwards with straight margins in the dry state.

Additional specimens studied. – *Armand 82,* env. d'Ivohibe, ca. 1200 m, 1924 (P); *Baron 231,* Central Madagascar (K); *Baron 403,* Madagascar (K, P); *Civevrel 1364,* Mantadia National Parc, Km 10, chemin forestier vers camps d'étude des Lemurs, alt 1000-1100 m, 1994 ; *Cours 4421,* d'Andasibe à Andapabe, 900 m alt., 1951 (P); *Decary 16673,* R.N. 3 Zahamena, 1941 (P).

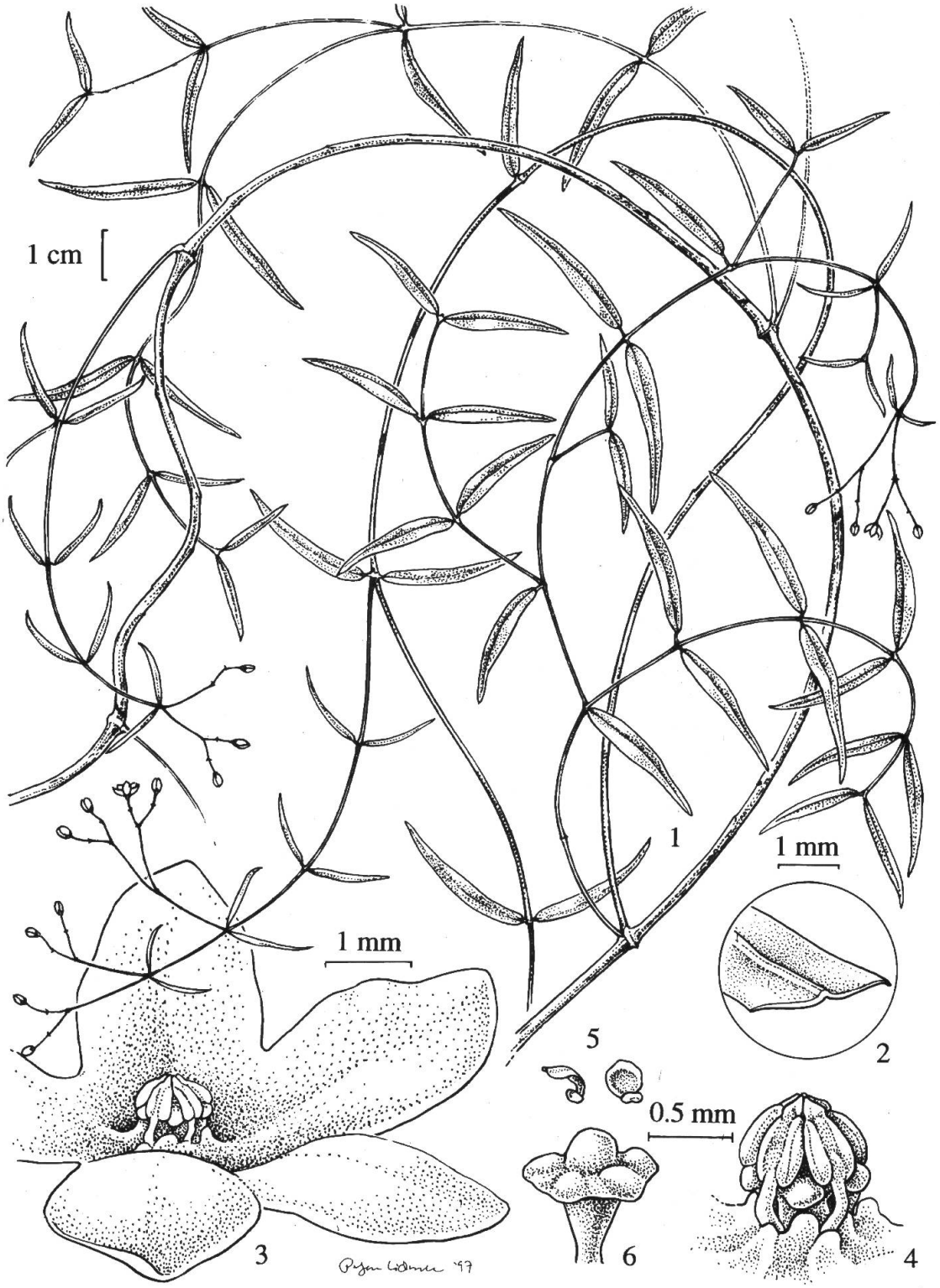


Fig. 9. – *Baroniella linearis* (Choux) Bullock. **1,** Habit; **2,** Cross section of leaf; **3,** Flower; **4,** Corona and anthers surrounding the style head; **5,** Pollen carriers; **6,** Style head. – **1-2,** *Armand 82;* **3-6,** *Perrier de la Bâthie 11754.*

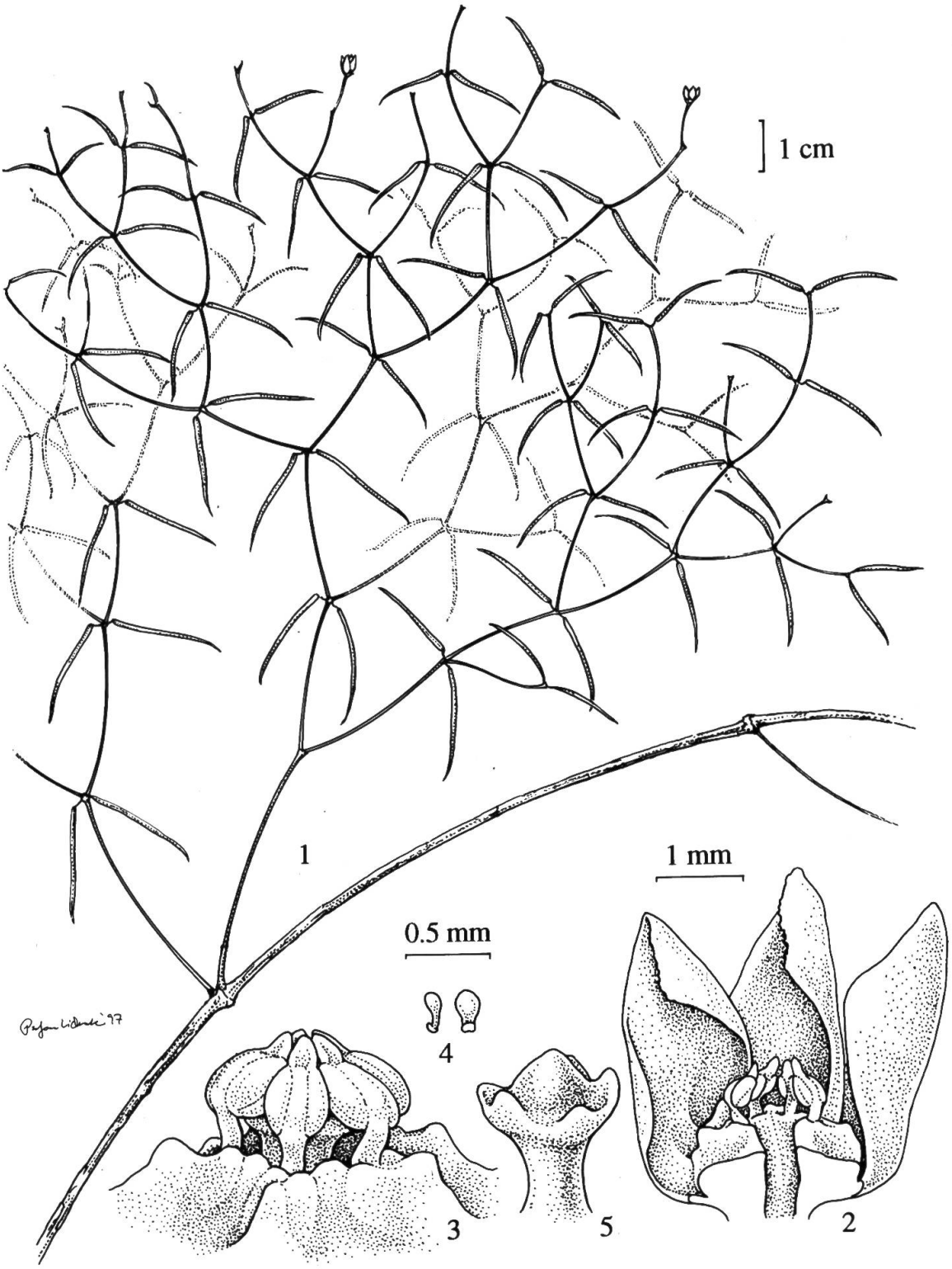


Fig. 10. – *Baroniella capillacea* Klack. **1,** Habit; **2,** Flower with two corolla lobes, two anthers and the style head removed; **3,** Corona and anthers surrounding the style head; **4,** Pollen carriers; **5,** Style head. – **1-5,** *Gautier & Be 2925.*

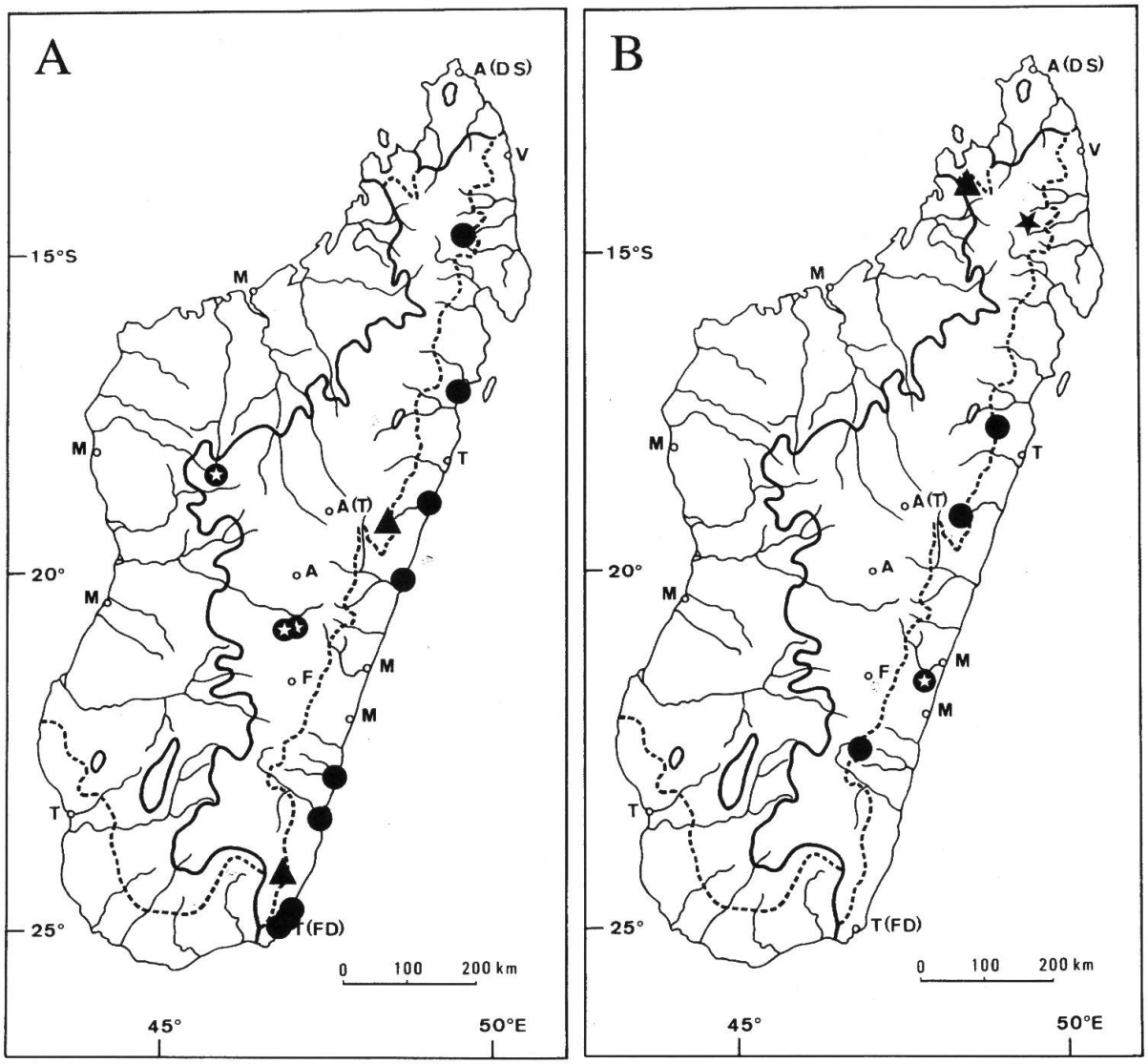


Fig. 11. – Distribution maps of *Baroniella:* **A,** *B. camptocarpoides* Costantin & Gallaud (●), *B. ensifolia* Klack. (✪), *B. acuminata* (Choux) Bullock (▲); **B,** *B. longicornis* Klack. (★), *B. multiflora* (Choux) Bullock (✪), *B. linearis* (Choux) Bullock (●), *B. capillacea* Klack. (▲).

*7. **Baroniella capillacea*** Klack., **spec. nova** (Fig. 10, 11 (map)).

Type: MADAGASCAR, Réserve Spéciale de Manongarivo, Bekolosy, cours sup. riv. Bekolosy, sommet crête rive droite, 1240 m alt., 29-III-1996, *Gautier & Be LG2925* (holo- G; iso- S).

Species haec foliis angustis ad Baroniellam linearem accedens sed corollae tubo non nisi breve coalescenti et nervo medio foliorum in sicco non vel tantum leviter elevato ab ea recedens.

Suffrutescent glabrous twiner. Leaf blade 15-25 × ca. 0.5 mm, linear, truncate to shortly attenuate with margin folded upwards at the very base, acute; venation with midrib only visible, even with the leaf surface above or slightly raised when dry, ± even with leaf surface below; petiole 0.5-1 mm long.

Inflorescences shorter to longer than the adjacent leaves, 1-2 cm long; cyme usually not branched, with lower internodes 5-8 mm long, one- to three-flowered; pedicels 4-7 mm long; bracts ca. 0.5 mm long, persistent.

Calyx lobes 0.8-1 × 0.8-1 mm, of about the same length as the corolla tube, broadly ovate, ± rounded at the apex; margin finely hairy to laciniate. Corolla fused for 1/7-1/8 of its length into an open tube, violet; tube ca. 0.5-0.7 mm long; lobes 3.7-4.0 × 2.0-2.3 mm, ovate, rounded at apex. Corona forming an undulating short ring at base; interstaminal lobes ca. 0.4-0.5 mm high, rounded to truncate, almost reaching to the style head; lobes opposite the staminal filaments rectangular, about as high as the interstaminal ones, reaching the sinuses of the corolla lobes. Anthers ± rectangular; filaments ca. 0.2 mm long; prolongation of connectives less than half as long as the thecae. Pollen carriers ca. 0.2 mm long; spathe obovate; stalk missing. Style including style head ca. 0.9 mm high; style head thinly discoid, with 5 distinct interstaminal lobes; lobes slightly reflexed; upper part distinctly protruding.

Follicles not seen.

Distribution and habitat. – Baroniella capillacea is known only from the Manongarivo Mts in the northwestern part of the island, between 1000 and 1480 m altitude.

Flowering specimens seen from March and April.

Note. – B. capillacea differs from the other narrow leaved species, viz. *B. ensifolia* and *B. linearis,* by having very narrow leaves, usually ca. 0.5 mm wide only when dry, and by its short corolla tube with the corona lobes radiating between the stamens and the sinuses of the corolla lobes. It also differs by the unique character of having the lobes of the style head directed slightly up-wards, instead of being straight or directed slightly downwards which is the usual state. The leaf lamina is usually folded up-wards with straight margins in the dry state. It also differs from *B. linearis* by having leaves with even leaf surface above, without a distinctly raised mid-nerve.

Additional specimens studied. – Rakotomalaza 55, Antsiranana, E d'Ankaramy-be, réserve Spécial de Manongarivo, Bekolosy, 1000-1480 m alt., 1993 (MO, S).

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