



**Fig. 1.** A portion of a strict consensus cladogram of subtribe *Arecinae* summarising the relationships between *Gronophyllum*, *Gulubia*, *Hydriastele* and *Siphokentia*. The cladogram results from simultaneous parsimony analysis of DNA sequence data from two low copy nuclear regions (Loo *et al.*, in prep.). \*\* = 80 – 100% bootstrap support, \* = 60 – 79% bootstrap support.

strength of the molecular phylogenetic evidence and the morphological similarities described above, we propose a pragmatic and informative solution by reducing the four genera into a single, more broadly defined genus. In this paper, we place *Gronophyllum*, *Gulubia* and *Siphokentia* in synonymy under the oldest generic name, *Hydriastele*, and provide a synopsis of the 48 accepted species, including 34 new combinations, two new names and one new species. The species and synonymies that were recognised by the authors of the most recent accounts of the four genera (Essig 1982; Essig & Young 1985; Baker *et al.* 2000; Dransfield, unpublished) are accepted here. However, a revision of this group is currently in progress and it is expected that some of the 48 names will be reduced to synonymy in due course. Nevertheless, we present an outline classification here so that the new generic delimitation and validly published combinations in the genus *Hydriastele* are immediately available for general use.

### Taxonomic Treatment

***Hydriastele*** *H. Wendl. & Drude*, *Linnaea* 39: 208 (1875).  
*Adelonenga* (Becc.) Hook. f. in *Bentham & Hooker*,  
*Gen. Pl.* 3 (2): 885 (1883).  
*Gronophyllum* Scheff., *Ann. Jard. Bot. Buitenzorg* 1:  
 135 (1876), **synon. nov.**

*Gulubia* Becc., *Ann. Jard. Bot. Buitenzorg* 2: 131  
 (1885), **synon. nov.**  
*Gulubiopsis* Becc., *Bot. Jahrb. Syst.* 59: 11 (1924),  
**synon. nov.**  
*Kentia* Blume, *Bull. Sci. Phys. Nat. Néerl.* 1: 64 (1838),  
 nom. illeg.  
*Leptophoenix* Becc., *Ann. Jard. Bot. Buitenzorg* 2: 82  
 (1885), **synon. nov.**  
*Nengella* Becc., *Malesia* 1: 32 (1877), **synon. nov.**  
*Paragulubia* Burret, *Notizbl. Bot. Gart. Berlin-Dahlem*  
 13: 84 (1936), **synon. nov.**  
*Siphokentia* Burret, *Notizbl. Bot. Gart. Berlin-Dahlem*  
 10: 198 (1927), **synon. nov.**

**1. *Hydriastele affinis*** (Becc.) *W. J. Baker & Loo*,  
**comb. nov.** *Nenga affinis* Becc., *Malesia* 1: 29 (1877).  
*Leptophoenix affinis* (Becc.) Becc., *Ann. Jard. Bot.*  
*Buitenzorg* 2: 82 (1885). *Nengella affinis* (Becc.)  
 Burret, *Notizbl. Bot. Gart. Berlin-Dahlem* 13: 316  
 (1936). *Gronophyllum affine* (Becc.) Essig & B. E.  
 Young, *Principes* 29: 136 (1985). Type: Indonesia,  
 Papua, Kapaor, *Beccari* s.n. (holotype FI).

**2. *Hydriastele aprica*** (B. E. Young) *W. J. Baker & Loo*,  
**comb. nov.** *Gronophyllum apricum* B. E. Young, *Principes*  
 29: 139 (1985). Type: Papua New Guinea, Sandaun,  
 Telefomin, *Essig & Young* 74082 (holotype LAE).

**3. *Hydriastele beccariana*** Burret, *Repert. Spec. Nov.*  
*Regni Veg.* 24: 292 (1928). Type: Indonesia, Papua,  
 Noord R., *Versteeg* 1662 (holotype B†; isotypes BO, L).

**4. *Hydriastele beguinii*** (Burret) *W. J. Baker & Loo*,  
**comb. nov.** *Siphokentia beguinii* Burret, *Notizbl. Bot.*  
*Gart. Berlin-Dahlem* 10: 198 (1927). Type: Indonesia,  
 Maluku, Halmahera, Soa Toberoe, *Beguin* 1995  
 (holotype B†; isotype BO).  
*Siphokentia pachypus* Burret, *Notizbl. Bot. Gart. Berlin-*  
*Dahlem* 10: 199 (1927). Type: Indonesia, Maluku,  
 Halmahera, Weda, *Beguin* 2349 (holotype B†;  
 isotype BO).

**5. *Hydriastele boumae*** *W. J. Baker & D. Watling* **sp.**  
**nov.**, *H. vitiensis* affinis sed fructu majore oblongo,  
 triadibus decussatis dispositis et foliis indivisis in  
 submaturitate longe persistentibus differt. Typus: Fiji,  
 Taveuni, Bouma, Cakaudrove, Oct. 2001, *Watling*  
 170127 (holotypus K; isotypi L, NY, SUVA).

Robust, solitary tree palm to 32 m. *Stem* 26 – 28 cm  
 diam., brown, nodal scars inconspicuous, adventitious  
 root growth forming an expanded cone at base of stem

c. 15 cm in height. *Leaf* to 2.4 m long including petiole, to c. 3 m in juveniles; sheath 90 cm long, forming distinct crownshaft, green, with thin, caducous, powdery indumentum of fine, white scales, interspersed with white, filamentous scales and scattered, dark brown scales; petiole 33–35 cm (to 1.2 m in juveniles), 60 × 14 mm at base, channelled adaxially, rounded abaxially, indumentum as sheath; rachis c. 2 m, arcuate, strongly so in canopy-emergent individuals, indumentum as sheath; leaflets 52–57 on each side of rachis, briefly praemorse and sometimes notched at apices, adaxial surface dull green, abaxial surface silvery grey-green, mid-rib yellow, arranged regularly, ascending, not drooping at tips, lamina entire or nearly so in non-emergent individuals up to 12 m or more in height, longest leaflet at middle of rachis to c. 97 × 3.5 cm, apical leaflets c. 13 × 0.6 cm, ramenta not observed. *Inflorescence* infrafoliar, c. 70 cm long at anthesis including c. 10 cm peduncle, branched to 2 (possibly 3?) orders, protogynous; prophyll not seen, caducous; peduncular bracts c. 3, first peduncular bract caducous, not seen, but most likely closely resembling prophyll, remaining peduncular bracts and rachis bracts consisting of low membranous flanges, to 16 × 2 mm, sometimes bearing an acutely apiculate extension; primary branches c. 17, to c. 50 cm long, closely spaced, inserted at a narrowly acute angle to the rachis; rachillae to c. 45 × 0.4 cm, somewhat arching; rachilla bracts very inconspicuous; triads 2–5 mm apart, decussate. *Staminate flowers* 10–11 × 3.5–4.5 mm shortly before anthesis, asymmetrical, white; calyx with 3 triangular, imbricate sepals c. 1 × 1.5 mm; corolla with 3 narrowly triangular to lanceolate, valvate petals 8–10 × 3–3.5 mm, outer surface spotted at base; stamens 6, filaments 0.6–1 × 0.5–0.6 mm, anthers 5–5.8 × 1–1.2 mm; pistillode minute, trifold. *Pistillate flowers* c. 4 × 3 mm at anthesis, cream white; perianth forming low, leathery cupule, calyx with 3 rounded, imbricate sepals c. 2 × 3–3.5 mm; corolla with 3 rounded, imbricate petals to 1.5–1.8 × 2.5–3 mm; staminodes 1–3, minute; ovary 2.5 × 2.5 mm, globose, protruding from perianth cupule at anthesis, style absent, stigmas minutely trifold. *Fruit* oblong, 10–14 × 6–8 mm, pericarp c. 0.5 mm thick, epicarp yellowish white when ripe, with persistent perianth forming a narrow cylinder at base, 3–3.5 mm diam. *Seed* c. 9 × 6 mm, oblong; endosperm homogeneous; embryo basal.

**DISTRIBUTION.** Restricted to the island of Taveuni, Fiji. Currently known with certainty only from the Bouma area, but unconfirmed reports suggest it also occurs in the Soqulu area (R. Phillips, pers. comm.).

**HABITAT.** Undisturbed forest and mature secondary forest between 50 and 800 m.

**LOCAL NAMES.** *Niuniu*, a common generic name for tree palms in many parts of Fiji.

**USES.** Not recorded.

**CONSERVATION STATUS.** Data deficient (Fuller 1997).

**SPECIMENS EXAMINED.** **FIJI.** Taveuni: Wakolotu, nr. Bouma Village, May 1995, *McClatchey* 1143 (FTG, SUVA); Bouma, Cakaudrove, Oct. 2001, *Watling* 170127 (holotype K; isotypes L, NY, SUVA), March 2002, *Watling* 170129 (K, SUVA).

**NOTES.** The existence of an undescribed species of *Hydriastele* from the island of Taveuni in Fiji has been suspected for some time (Fuller 1997). Recent collections have allowed us to compare this palm with other species in the region. It most closely resembles *H. cylindrocarpa* and *H. vitiensis*, but is readily distinguished from both. The new taxon is separated from the other Fijian species, *H. vitiensis*, by its rachillae with decussate triads as opposed to triads arranged in alternating whorls of three, by fruit morphology (10–14 × 6–8 mm and symmetric oblong in the former, c. 10 × 3 mm and slightly curved cylindrical in the latter), and, most strikingly, by its leaves remaining subentire to entire until the crown emerges from the forest canopy. Individuals over 12 m in height have been observed bearing scarcely divided leaves. The leaves of *H. cylindrocarpa* from Vanuatu behave in a similar way, but the fruit of this species differs from that of the new taxon in bearing an open cupule of enlarged, persistent perianth, while the persistent perianth of the new taxon is not enlarged and forms a small, narrow cylinder at the base of the fruit. The new species, *H. boumae*, is named after Bouma, the district of Taveuni in which it grows.

**6. *Hydriastele brassii* (Burret) W. J. Baker & Loo, comb. nov.** *Gronophyllum brassii* Burret, J. Arnold Arbor. 20: 205 (1939). Type: Papua New Guinea, Western, Palmer R., *Brass* 7093 (holotype B†; isotypes A, BRI, BO, L).

**7. *Hydriastele cariosa* (Dowe & M. D. Ferrero) W. J. Baker & Loo, comb. nov.** *Gronophyllum cariosum* Dowe & M. D. Ferrero, Palms 44: 161 (2000). Type: Papua New Guinea, Sandaun, Bewani Mts, *Dowe et al.* 514 (holotype BRI).

**8. *Hydriastele carrii* Burret, Notizbl. Bot. Gart. Berlin-Dahlem 13: 326 (1936).** Type: Papua New Guinea, Central, Boridi, *Carr* s.n. (holotype B†).

**9. *Hydriastele chaunostachys* (Burret) W. J. Baker & Loo, comb. nov.** *Kentia chaunostachys* Burret, Notizbl. Bot. Gart. Berlin-Dahlem 13: 328 (1936). *Gronophyllum chaunostachys* (Burret) H. E. Moore, Gentes Herb. 9: