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Taxonomy and nomenclature of four unresolved names published by Udo Dammer in the genus Chamaedorea (Arecaceae)

John Leslie Dowe & Donald Robert Hodel

Abstract

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In 1905, Udo Dammer published an account of *Chamaedorea* Willd. based on the unpublished manuscripts of his friend and mentor Hermann Wendland who had died in 1903. Dammer introduced numerous novel names, most of which were nomenclaturally valid. However, a few names have remained unresolved. We investigated the nomenclatural status of four names – *Chamaedorea exorrhiza* H. Wendl. ex Dammer, *Chamaedorea galeottiana* H. Wendl. ex Dammer, *Chamaedorea homomalla* H. Wendl. ex Dammer and *Chamaedorea inaequilateralis* H. Wendl. ex Dammer. We determined that they are validly published but are synonyms of earlier described species. Three new synonyms are proposed and we designate four lectotypes from specimens at GOET.

Keywords

ARECACEAE – *Chamaedorea* – Udo Dammer – Hermann Wendland – Nomenclature – Lectotypification

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Introduction

With about 107 currently accepted species, *Chamaedorea* Willd. is one of the largest and most variable palm genera in the Americas (Hodel, 1992a, 1992b, 1995, 1996, 1997; Hodel et al., 1995, 1997; Henderson et al., 1995; Bernal et al., 2004; Dransfield et al., 2008). Nomenclature for the genus is extensive with about 260 names found in IPNI (2021). Since Willdenow (1806) established the genus, taxonomic progression has been clustered around the productive periods of a number of taxonomists, the most prominent being Wendland, Dammer, Burret, Standley & Steyermark and Hodel. Notwithstanding the large number of names associated with *Chamaedorea*, nomenclatural stability is relatively settled in comparison to some other large palm genera (Govaerts et al., 2021).

During research about the great German palm botanist Hermann Wendland (1825–1903) of Royal Gardens at Herrenhausen near Hannover, co-author Dowe uncovered an obscure article that fellow German botanist and horticulturist Udo Dammer (1860–1920), a close associate of Wendland, had written about *Chamaedorea* (Dammer, 1905). It included three names, *C. galeottiana* H. Wendl. ex Dammer, *C. homomalla* H. Wendl. ex Dammer and *C. inaequilateralis* H. Wendl. ex Dammer, that Hodel had not treated in his monograph of the genus (Hodel, 1992a) or any subsequent publications. It also included another name, *C. exorrhiza* H. Wendl. ex Dammer, that has been placed by Hodel et al. (1992a) and other authors as a synonym of *C. tepejilote* Liebm., although there are questions about valid publication that are addressed here.

Our work examines these so far four unresolved names, the objective being to clarify their nomenclatural status and establish them within a taxonomic context.

Material and methods

We searched the taxonomic and horticultural literature to determine if the four names had been used formally or informally. The resources included widely used taxonomic databases such as Govaerts et al. (2021), IPNI (2021), The Plant List (2021) and Tropicos (2021). Other broad-scale searches were made of online published texts in BHL (2021) and Hathi Trust (2021). An examination of Wendland's palm herbarium, formerly at Herrenhausen but incorporated in GOET in 1969, located specimens that Wendland had personally annotated and could be directly associated with the names published by Dammer [as "Morenia (Stephanostachya) exorrhiza", "Ch. galeottiana sp. nov.", "Ch. homomalla" and "Morenia (Chamaedorea) inaequilatera"]. The Shenzhen Code (Turland et al., 2018) was consulted to determine and clarify what constitutes valid publication and typification of the names.

Results and discussion

Although the aim of the dominant online taxonomic resources is apparently to achieve broad consensus, the comparative results amongst them are considerably variable. Three of the four names, *Chamaedorea galeottiana*, *C. homomalla* and *C. inaequilateralis* are not cited in primary online nomenclatural resources for palms such as Govaerts et al. (2021) and IPNI (2021), but are, in contrast, cited in Tropicos (2021) as tentatively valid names and in The Plant List (2021) as unresolved names. The fourth name, *C. exorrhiza*, is included in all the online nomenclatural resources but is conflicted or unresolved.

Dammer (1904a, 1904b, 1905) provided a descriptive summary of all the then recognised species of *Chamaedorea* with his work largely based on unpublished manuscripts that Wendland, at that time the worldwide palm expert, presented to him. Toward the end of his career, Wendland intended to prepare a monograph of *Chamaedorea*, a genus that had occupied a considerable amount of his taxonomic and horticultural energies (Hodel, 1992a). He had provided an early taxonomic account (Wendland, 1854) and described new species through his career (Dowe, 2019).

Dammer commenced to publish the *Chamaedorea* articles in 1904, the year after Wendland's death. He chose to publish in the *Gardeners' Chronicle*, a British horticultural periodical that had international reach and, despite its main focus being horticultural, it also included taxonomic articles on plants that were of horticultural interest. Dammer's articles included proposed names and Latin descriptions of some new species, despite his interest in providing a vegetative key for gardeners who would not otherwise have plants with flowers or fruits. The simple-leaved species were treated in two articles (Dammer, 1904a, 1904b) whilst the pinnate-leaved species in a single article (Dammer, 1905). It is in this later article that the unresolved names were used.

Dammer structured his work in the *Gardeners' Chronicle* in the form of an extended text key largely based on the characteristics (i.e. form and dimension) of leaves and leaf segments. Thus, species with morphologically similar leaves were treated as discreet groups and affinities between them and other groups were proposed. He also provided discussion on the generic limits of *Chamaedorea* and some nomenclatural rationalisation of the names that could be applied to the genus, in particular under the genera *Morenia* Ruiz & Pav. and *Kunthia* Bonpl. Dammer (1905) noted that he also intended to complete a monograph of *Chamaedorea* but this never happened. However the three articles were in themselves a monograph of sorts, as all the then known species were systematically accounted for and new species formally described. The choice of new names in Dammer's articles can unequivocally be attributed to Wendland as Dammer noted that "for the new species where no authority is mentioned Wendland is always

Fig. 1. – A. *Chamaedorea tepejilote* Liebm., moist montane forest, Suchitepequez, Guatemala; **B.** *Chamaedorea elatior* Mart., moist forest, Veracruz, Mexico; **C.** *Chamaedorea warscewiczii* H. Wendl., moist forest, Panama; **D.** *Chamaedorea costaricana* Oerst., moist forest, Costa Rica. [**B:** *Hodel 949*; **C:** *Hodel 725*; **D:** *Hodel 693*] [Photos: D.R. Hodel]

the authority" (Dammer, 1905: 44). Therefore authorship of all new names in Dammer's articles is "H. Wendl. ex Dammer". As Dammer did not cite any specimens in his article, it is appropriate to designate lectotypes from the specimens that Wendland had annotated and provided tentative names. Since Dammer considered Wendland as the author of the names, he makes an implicit reference to the original material used by Wendland (see Turland et al., 2018: Art. 9.4(a)). It is reasonable to conclude that Dammer examined the specimens as part of his investigations and not only saw the specimens before publishing the names, but associated them with the respective taxa. These specimens are all held in GOET.

Taxonomy and nomenclature

Chamaedorea exorrhiza H. Wendl. ex Dammer in Gard. Chron. ser. 3, 38: 44. 1905.

Lectotypus (designated here): **Costa Rica:** San Miguel, near Sarapiqui River, 16.V.1857, *H. Wendland 71* (GOET [GOET025396]!).

= ***Chamaedorea tepejilote*** Liebm. in Mart., Hist. Nat. Palm. 3: 308. 1849 (Fig. 1A). ≡ *Stephanostachys tepejilote* (Liebm.) Oerst. in Vidensk. Meddel. Naturhist. Foren. Kjøbenhavn 1858: 28. 1859. ≡ *Nunnezharia tepejilote* (Liebm.) Kuntze, Revis. Gen. Pl. 2: 731. 1891. **Holotypus: Mexico:** Oaxaca, Chinantla, S. Pedro Tepinapa, VII.1842, *Liebmann s.n.* (C [C10006547]!; iso-: P [P00725352, P00725253]!, US [US00021723, US00021747]!).

= *Chamaedorea exorrhiza* H. Wendl. ex Guillaumin in Bull. Mus. Natl. Hist. Nat. 28: 542. 1922 [nom. illeg.]. **Lectotypus** (designated here): **[Costa Rica]:** cultivated in Paris, "1921–1922", *Guillaumin s.n.* (P [3-part specimen: P00725349, P00725350 excl. fragm. packet, P00725351]!).

Notes. – Dammer (1905) provided the following description when presenting the first use of the name *Chamaedorea exorrhiza*: leaves pinnate, segments lanceolate, 10–20 per side, more than 5 cm wide, 9-nerved. Dammer's publication clearly satisfies the requirements of valid publication of the name. Guillaumin (1922: 542) described the same species based on a plant cultivated in the greenhouse in Paris grown from seeds received from Wendland in 1901 because he believed that Dammer's species was not validly published and noted that: "C'est sans doute la même espèce que celle signalée sans description, sous le nom de *C. exorrhiza* Wendl par Dammer [It is probably the same species reported without description, under the name of *C. exorrhiza* Wendl by Dammer]". Guillaumin's name has therefore to be treated as an illegitimate later homonym, and a heterotypic synonym, of Dammer's name. Original material in P is a mixed gathering between the Guillaumin collection and the seeds sent by Wendland in the fragment packet of P00725350. Therefore a lectotype is designated here on the Guillaumin cultivated collection from 1921–1922.

Guillaumin's later homonym has previously been proposed as the valid publication of *Chamaedorea exorrhiza* (Hodel, 1992a; Govaerts et al., 2021).

The lectotype of *Chamaedorea exorrhiza* H. Wendl. ex Dammer chosen here [GOET025396] consists of a single collection composed of five sheets. One sheet has a complete inflorescence including bracts, an inflorescence without bracts, and a leaf petiole. The remaining four sheets hold a complete leaf divided into four sections. The collection was labelled by Wendland as "Morenia (Stephanostachya) exorrhiza".

Chamaedorea tepejilote (Fig. 1A) is one of the most wide-ranging species in the genus, occurring from Colombia north into Mexico. One of the largest species of the genus in habit, it is unusually variable across its range and is found as solitary or cespitose individuals and has leaves and inflorescences that vary in size and quantity of subdivisions (pinnae and rachillae). In the northern part of its range, especially in Guatemala and southern Mexico, it has been domesticated and cultivated for thousands of years for its unopened staminate inflorescences consumed as a cooked vegetable called "pacaya".

Chamaedorea galeottiana H. Wendl. ex Dammer in Gard. Chron. ser. 3, 38: 44. 1905, **syn. nov.**

Lectotypus (designated here): **Mexico:** Oaxaca, 2000–3000 ft [600–900 m], s.d., *H. Galeotti 4972 ter* (GOET [GOET025370]!).

= ***Chamaedorea elatior*** Mart. in Linnaea 5: 205. 1830 (Fig. 1B). ≡ *Nunnezharia elatior* (Mart.) Kuntze, Revis. Gen. Pl. 2: 730. 1891. **Holotypus: Mexico:** Veracruz, Jalapa, s.d., *Schiede s.n.* (M [M0208949]!).

Notes. – Dammer (1905) provided the following description: leaves pinnate, segments regularly arranged, either lanceolate, oblong-lanceolate or elliptical, not decurrent, less than 15 per side, less than 3 cm wide, single nerved. The specimen designated here as lectotype for *Chamaedorea galeottiana* [*Galeotti 4972*] was cited in Martens & Galeotti (1843) under the name "Chamaedorea oblongata? Mart." and was noted as growing in the woods and dark damp ravines of the German Colony of Mirador from 2,000 to 5,000 feet with yellow flowers in December. After returning to Europe, Galeotti renumbered his collections more or less into family groups, so specimen numbers cannot provide any information about time or place of his collections (McVaugh, 1973). Henri-Guillaume Galeotti (1814–1858) was a French-born Belgian botanist and collector in Central America (1835–1840) and later director of the botanic garden of Bruxelles (1853–1858) (McVaugh, 1973).

The lectotype chosen here [GOET25370] consists of a single collection composed of two sheets. One sheet has a complete inflorescence with attached fruit, and the apical portion of a leaf. The second sheet has the middle and basal portions of a leaf. The collection was labelled by Wendland as "Ch. galeottiana sp. nov.".

Chamaedorea elatior (Fig. 1B), currently the only climbing species in the genus, has reflexed terminal pinnae that act like grappling hooks, enabling the plant to clamber up and onto adjacent vegetation. Ranging from Honduras into Mexico, it is a variable species in habit, with solitary, cespitose, and aerially branched forms, and in leaf, with an unusual form that retains simple, bifid, typically juvenile foliage well into maturity. More work is needed to sort out these various segregates of *C. elatior* satisfactorily; some might be worthy of specific or varietal status.

Chamaedorea homomalla H.Wendl. ex Dammer in Gard. Chron. ser. 3, 38: 43. 1905, **syn. nov.**

Lectotypus (designated here): **Costa Rica:** Turrialba, 24.III.1857, *H. Wendland 27 & 32* (GOET [GOET025302]!). **Syntypus:** *ibid. loco*, *H. Wendland 27* (GOET [GOET025301]!).

= ***Chamaedorea warscewiczii*** H. Wendl. in Bonplandia 10: 37. 1862 (Fig. 1C). ≡ *Nunnezharia warscewiczii* (H. Wendl.) Kuntze, Revis. Gen. Pl. 2: 731. 1891. **Holotypus: [Costa Rica or Panama]:** cultivated in Herenhausen Gardens, Germany, s.d., *H. Wendland s.n.* (GOET [GOET025403]!; iso-: K [K000462925]!).

Notes. – Dammer (1905) provided the following description: leaves pinnate, segments 5–7 per side, 2 to 4 times longer than broad, 25–50 cm long, 7–9 nerved.

The lectotype chosen here [GOET025302] consists of a single collection composed of two sheets. One sheet has three inflorescences that lack bracts, and with the remains of some flowers and calyxes. The second sheet contains a section of stem, a large number of detached pinnae, sections of naked rachis and a complete crownshaft. There are two labels in Wendland's hand: one includes "Morenia warscewiczii N. 27 & 32. Turialba. 24.3.57", the other "Ch. homomalla".

The remaining syntype [GOET025301] has a label in Wendland's hand: "27. Ch. homomalla".

Chamaedorea warscewiczii (Fig. 1C), which occurs in Costa Rica and Panama, is a handsome species because of its leafy crown and broadly rhombic, sigmoid, conspicuously 5–9-nerved pinnae. The pistillate inflorescence, with its rachillae typically and uniformly curved in the same direction, is distinctive and diagnostic.

Chamaedorea inaequilateralis H. Wendl. ex Dammer in Gard. Chron. ser. 3, 38: 43. 1905, **syn. nov.**

Lectotypus (designated here): **Costa Rica:** above Turrialba, 25.III.1857, *H. Wendland 24* (GOET [GOET025266]!).

= ***Chamaedorea costaricana*** Oerst. in Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn 1858: 19. 1858 (Fig. 1D). ≡ *Nunnezharia costaricana* (Oerst.) Kuntze, Revis. Gen. Pl. 2: 730. 1891. ≡ *Omanthe costaricana* (Oerst.) O.F. Cook in Science 90: 298. 1939. **Holotypus: Costa Rica:** Cartago, Turrialba, s.d., *Oersted s.n.* (C [C6543]!).

Notes. – Dammer (1905) provided the following description: leaves pinnate, segments lanceolate, oblong lanceolate or elliptical, almost imbricate, more than 20 per side, greater than 30.5 cm long, 3.5–3.8 cm wide. Wendland (1857) related his observation of *Chamaedorea* species in the vicinity of Turrialba where the type specimen of *C. inaequilateralis* was collected. In his report dated 4 April 1857 written at San Jose, Costa Rica, Wendland noted that among the plants gathered at Turrialba were chamaedoreas that had roots emerging from high on the stem.

The lectotype chosen here [GOET025266] consists of a single collection composed of three sheets. One sheet includes a complete inflorescence with flowers. The second sheet includes a complete inflorescence with flowers, the apical portion of a leaf with intact pinnae and sections of leaf rachis lacking pinnae. The third sheet includes numerous detached pinnae. There is a label in Wendland's hand: "Morenia (Chamaedorea) inaequilatera".

Chamaedorea costaricana (Fig. 1D), with clustering stems and long-pinnate leaves, is a variable and wide-ranging species occurring from at least Panama in the south to Honduras in the north. If one includes the perhaps-not-distinct *C. quezalteca* Standl. & Steyerm. in *C. costaricana*, its range extends north into Mexico.

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References

Bernal, R.G., G. Galeano & D.R. Hodel (2004). A new species of Chamaedorea from Colombia. *Palms* 48: 27–29.

BHL (2021). *Biodiversity Heritage Library*. [https://www.biodiversitylibrary.org]

Dammer, U. (1904a). The species of Chamaedorea with simple leaves. *Gard. Chron.* ser. 3, 36: 202.

Dammer, U. (1904b). The species of Chamaedorea with simple leaves. *Gard. Chron.* ser. 3, 36: 245–246.

Dammer, U. (1905). Species of Chamaedorea with pinnate leaves. *Gard. Chron.* ser. 3, 38: 42–44.

Dowe, J.L. (2019). Wendland's Palms. Hermann Wendland (1825–1903) of Herrenhausen Gardens, Hannover: his contribution to the taxonomy and horticulture of the palms (Arecaceae). *Englera* 36.

Dransfield, J., N.W. Uhl, C.B. Asmussen, W.J. Baker, M.M. Harley & C.E. Lewis (2008). *Genera palmarum: the evolution and classification of palms*. Kew.

Govaerts, R., J. Dransfield, S. Zona, D.R. Hodel & A. Henderson (2021). *World Checklist of Arecaceae.* Facilitated by the Royal Botanic Gardens, Kew. [http://wcsp.science.kew.org]

Guillaumin, A. (1922). Palmiers nouveaux des serres du Muséum. *Bull. Mus. Natl. Hist. Nat.* 28: 542–544.

Hathi Trust (2020). *Hathi Trust Digital Library*. [https://www.hathitrust.org]

Henderson, A., G. Galeano & R. Bernal (1995). *Field guide to the palms of the Americas*. Princeton University Press, Princeton.

Hodel, D.R. (1992a). *Chamaedorea palms: the species and their cultivation*. International Palm Society and Allen Press, Lawrence.

Hodel, D.R. (1992b). Additions to Chamaedorea palms: new species from Mexico and Guatemala and miscellaneous notes. *Principes* 36: 188–202.

Hodel, D.R. (1995). Three new species of Chamaedorea from Panama. *Principes* 39: 14–20.

Hodel, D.R. (1996). Two new species of Chamaedorea from Costa Rica. *Principes* 40: 212–216.

Hodel, D.R. (1997). Two new species of Chamaedorea (Arecaceae). *Novon* 7: 35–37.

Hodel, D.R., J.J. Castillo-Mont & R. Zúñiga (1995). Two new species of Chamaedorea from Honduras. *Principes* 39: 183–189.

Hodel, D.R., G. Herrera & A. Cascante (1997). A remarkable new species and additional novelties of Chamaedorea from Costa Rica and Panama. *Palm J.* 139: 32–44.

IPNI (2021). *International Plant Names Index*. [https://www.ipni.org]

Martens, M. & H. Galeotti (1843). Enumeratio synoptica plantarum phanerogamicarum ab Henrico Galeotti in regionibus Mexicanis collectarum. *Bull. Acad. Roy. Sci. Bruxelles* 10(1): 110–134.

McVaugh, R. (1973). Galeotti's botanical work in Mexico: the numbering of his collections and a brief itinerary. *Contr. Univ. Michigan Herb.* 11: 291–297.

The Plant List (2021). *The Plant List, Version 1.1.* [http://www.theplantlist.org]

Tropicos (2021). Missouri Botanical Garden, St. Louis. [https://www.tropicos.org/name/Search?name=Chamaedorea]

Turland, N.J., J.H. Wiersema, F.R. Barrie, W. Greuter, D.L. Hawksworth, P.S. Herendeen, S. Knapp, W.-H. Kusber, D.-Z. Li, K. Marhold, T.W. May, J. McNeill, A.M. Monro, J. Prado, M.J. Price & G.F. Smith (2018). International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. *Regnum Veg*. 159.

Wendland, H. (1854). *Index Palmarum, Cyclanthearum, Pandanearum, Cycadearum, quae in hortis europaeis coluntur, synonymis gravioribus interpositis.* Hannover.

Wendland, H. (1857). Reisenotizen des Hofgärtners H. Wendland in Central-Amerika. *Hamburger Garten- und Blumenzeitung* 13*:* 361–365.

Willdenow, C.L. (1806). *Species plantarum* 2. Berlin.