

PLANT SPECIES DESCRIBED BY WILLIAM GRIFFITH IN ‘SOME ACCOUNT OF THE BOTANICAL COLLECTION BROUGHT FROM THE EASTWARD BY DR. CANTOR’

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William Griffith wrote an account of the plants collected by Theodore Cantor in 1840 while on a military expedition to Chusan in China. This was published posthumously in 1854, but was also distributed in 1844 or 1845 as a preprint. The 14 new names at species rank appearing in the paper are reviewed (including the often overlooked *Leucopogon ophirensis* and *Corylopsis grata*) and their typification considered. Lectotypes are designated for 10 of these names, one second-stage lectotypification is proposed, and *Corylopsis griffithii* Hemsl. is also lectotypified.

Keywords. *Bouea*, Theodore Cantor, *Corylopsis*, Cucurbitaceae, *Tristaniopsis*, typification.

INTRODUCTION

Theodore Edward Cantor (1809–1860) was the nephew of Nathaniel Wallich. Cantor was, like his uncle, born in Copenhagen, a medical doctor who worked in India and very interested in natural history, though zoology rather than botany was where his expertise lay. In 1840 he volunteered for military service in order to take the opportunity of visiting China during the First Opium War (Turner, in press). He served with the 26th Regiment and was requested to collect natural history specimens for the East India Company. Plants were obtained from Penang, Malacca and Singapore on the outward journey, as well as during stays on the islands of Lantao and Chusan (Zhousan) off the coast of mainland China. Cantor sought assistance from William Griffith in naming the plants. A preliminary overview of the botanical collections was published by Cantor in a paper on Chusan (Cantor, 1842). A more detailed account, including novelties, was written by Griffith for inclusion in a full report to appear in *Asiatic Researches*, the well-known journal published by the Asiatic Society of Bengal in Calcutta (Turner, in press). For a variety of reasons, however, this was never published. While Griffith’s paper was eventually published in full (Griffith, 1854), a small number of proof or preprint copies of the original *Asiatic Researches* paper were circulated (Griffith, 1844/1845) and are considered to have been effectively published in late 1844 or early 1845 (Dorr & Nicolson, 2009; Turner, in press).

The aim of this paper is to review the nomenclatural novelties at species rank appearing in Griffith's paper and their typification. A notable point is that while Griffith's paper is supposedly about the specimens brought to India from the Malay Peninsula and China by Cantor, most of the novelties actually concern species collected by Griffith in the Himalayas, Burma or Malacca. The paper also includes publication of three new genera (all Cucurbitaceae: *Actinostemma*, *Enkylia* and *Gomphogyne*), but there seems little new to say about these (see Chakravarty, 1959; Farr *et al.*, 1979; Jeffrey, 1980; de Wilde *et al.*, 2007; Renner & Pandey, 2013), so focus is restricted to the species.

GRIFFITH AND CANTOR SPECIMENS

While written in reference to material collected by Griffith in Afghanistan, Lamond (1970) provides an excellent account of how Griffith's extensive herbarium was distributed. The bulk of the specimens were bequeathed to the East India Company after Griffith's untimely death in Malacca in 1845. They were shipped from India to the Company's Museum at India House in London where, with several other important collections, they lay neglected in the cellars. They were not rescued until 1858, when Joseph Hooker eventually managed to get them removed to Kew for sorting and distributing. Royle reported on the botanical collections in the Company's Museum in 1849, noting that they included some 200 specimens collected by Cantor in Chusan (Desmond, 1982). These are not mentioned by Hooker (1865) in his listing of the material he eventually distributed. I have not seen any Cantor Chusan specimens likely to have come out of the India House cellars, so presume that they, like many others, were so damaged by damp and vermin that they were discarded by Hooker. The Cantor specimens that I am aware of consist of collections at Kew which all arrived via the herbarium of George Bentham, and at the University of Cambridge herbarium that were part of the herbarium of Charles Morgan Lemann. Lemann received specimens from Griffith, and my supposition is that Griffith passed on to Lemann the set of duplicates from Chusan given him by Cantor. Bentham sorted and identified Lemann's herbarium and there seems to have been some interchange of material between their personal collections (Lamond, 1970); so via this route the Cantor material may have ended up in Bentham's possession. This would have been helpful for his work on the flora of Hong Kong. Griffith believed that all the Cantor plant material from the Straits Settlements (Penang, Malacca, Singapore) was received from Rev. Edward White, Chaplain of Singapore. At least some of this material does seem to have been incorporated within Griffith's herbarium.

SPECIES

The new species described by Griffith in the paper will be dealt with in the order that they appeared. There are two versions of *Some account of the botanical collection*

based on pagination (Turner, in press). One is paginated from 1, whereas the other starts at 33. Below, I quote page numbers as in the first version as this seems the standard practice in the literature. Plates were included in at least one copy. These are identical to those in the 1854 reprint. It is not possible to know for certain that Griffith collections distributed under the same number are true duplicates. Those with the itinerary numbers are probably mostly acceptable as such, but certainly the material distributed from Kew under the HEIC numbers at times includes different gatherings under the same number. I therefore cite all isotypes below with doubt.

Ixonanthes dodecandra

Griffith described this species from dried material and living seeds from woods about Pringgit and near Rhim in Malacca. As the species is not listed in the summary of collections (p. 3) received from Cantor, I presume that Griffith referred to his own collections from Malacca. The specimen effectively selected as lectotype by Kool (1980) (referred to as *Cantor* s.n.) comes from Hooker's herbarium and is annotated 'Malacca, Griffith'.

Ixonanthes dodecandra Griff., Account Bot. Coll. Cantor 12–13 (as *T.* [sphalm.] *dodecandra*), PL. I fig. 7–22 (as *Ixonanthes subdodecandra* on plate) (1844/1845). – Type: Peninsular Malaysia, Malacca, [*W. Griffith* s.n.], s.dat. (lecto K (barcode no. K000501048), designated by Kool (1980: 197)).

= *Ixonanthes icosandra* Jack, Malayan Misc. 2(7): 53 (1822).

Bouea burmanica

Griffith described this species from material that he had seen in Burma but, as he cited *Mangifera oppositifolia* Roxb. in synonymy, the name is superfluous and illegitimate. In a footnote, Griffith argued that as opposed leaves were a generic characteristic of *Bouea*, Roxburgh's epithet was inappropriate. This argument has no standing under contemporary nomenclatural rules.

Bouea burmanica Griff., Account Bot. Coll. Cantor 14 (1844/1845), as *Boueia burmannica*, *nom. illegit.*, *superfl.*

= *Mangifera oppositifolia* Roxb., Fl. Ind. 2: 434 (1824). – ***Bouea oppositifolia*** (Roxb.) Meisn., Pl. Vasc. Gen. 55 (1837).

Bouea macrophylla

Griffith described this species from Malacca, referring to the Malay name Roomaniya Baitool. However, I suspect that in this paper, Griffith transposed the Malay names of the two species of *Bouea* (this and the next) that he described from Malacca.

The Kew herbarium has specimens with collecting labels in Griffith's hand that include 'Bouea microphylla Griff. Roomaniya Baitool' and another 'Roomaniya Paygo – has very large Jambosa like leaves' [while this is mounted with a specimen of *Bouea oppositifolia* the labels may well have been separated from the original collection and the current specimen has small leaves]. *Bouea macrophylla* is not listed under the Cantor collections in the Griffith paper, so I presume Griffith was referring to his own collections. I select as lectotype a flowering specimen in the Kew herbarium that came from George Bentham's herbarium.

Bouea macrophylla Griff., Account Bot. Coll. Cantor 15 (1844/1845), as *Boueia*.
– Type: Peninsular Malaysia, Malacca, *W. Griffith* s.n. (lecto K (barcode no. K000695173), designated here).

Bouea microphylla

Again Griffith described this species from Malacca, referring to the Malay name as Roomaniya Paigo (see comment above). This time the summary listing of collections indicated that he did receive a specimen from Cantor. There is a specimen in the Kew herbarium (K000695172) with the label in Griffith's hand noting it as a collection of Mr White; but there are also Griffith's own specimens from Malacca available. I select one of these formerly in William Hooker's herbarium as lectotype as it has small leaves that fit Griffith's description better than the rather large-leaved White specimen.

Bouea microphylla Griff., Account Bot. Coll. Cantor 15 (1844/1845), as *Boueia*.
– Type: Peninsular Malaysia, Malacca, *W. Griffith* s.n. (lecto K (barcode no. K000695171), designated here).
= **Bouea oppositifolia** (Roxb.) Meisn., Pl. Vasc. Gen. 55 (1837).

Tristania burmanica

Griffith referred to this species as being from 'hills about Moulmein; number 76 of a small Burmese collection sent to England in 1834'. Both Cambridge and Kew have specimens under this number, but I select the Cambridge sheet as lectotype as it has more collecting details than the others.

Tristania burmanica Griff., Account Bot. Coll. Cantor 17 (1844/1845), as *burmannica*.
– Type: Burma, Moulmein, chalk hills, *W. Griffith* 76, 1834 (lecto CGE (barcode no. 10996(CGE)), designated here; possible isolectos K (barcode no. K000793710), K (barcode no. K000793709)).
≡ **Tristaniopsis burmanica** (Griff.) Peter G. Wilson & J.T. Waterh., Austral. J. Bot. 30: 439 (1982).

Tristania merguensis

Griffith referred to this species as being from ‘the sea-shore of the Island Madamacan, opposite Mergui, in flower in August. No 235 Herb Mergui’. There are two specimens in the Kew herbarium from Mergui with the number 235. One of these is labelled lectotype by John Parnell, but this typification seems never to have been published. To avoid confusion, I follow Parnell’s choice here.

Tristania merguensis Griff., Account Bot. Coll. Cantor 18 (1844/1845), as *P.* [sphalm.] *merguensis*. – Type: Burma, Mergui, *W. Griffith* 235 (lecto K (barcode no. K000793713), designated here; possible isolecto K (barcode no. K000793714)).

≡ **Tristaniopsis merguensis** (Griff.) Peter G. Wilson & J.T. Waterh., Austral. J. Bot. 30: 439 (1982).

Tristaniopsis whiteana

Griffith described this species based on a specimen of Rev. Mr White from Singapore. He reported the Malay name as Plowan. The Kew herbarium has a specimen distributed from Griffith’s herbarium with a label, apparently in Cantor’s hand, saying ‘*Euthemis leucocarpa* Jack Mal. Plowan’. I designate this as lectotype.

Tristania whiteana Griff., Account Bot. Coll. Cantor 18 (1844/1845), as *P.* [sphalm.] *whitiana*. – Type: [Singapore], *Anon.* [?E. White] s.n. [HEIC 2340] (lecto K (barcode no. K000793729), designated here).

≡ **Tristaniopsis whiteana** (Griff.) Peter G. Wilson & J.T. Waterh., Austral. J. Bot. 30: 440 (1982).

Leucopogon ophirensis

This Griffith name seems to have been very largely overlooked. In a footnote on p. 19, Griffith writes:

The Mount Ophir species of this genus [*Leucopogon*], which is not uncommon at Paddam Bhattoo, differs from that found in the littoral tracts of Malacca in the narrow leaves crowded on short branches, the corolla scarcely partite to the middle, the large hypogynous scales which nearly enclose the ovarium, and the smooth filiform style. For this the name *L. ophirensis* may be proposed.

I select a sheet in the Kew herbarium that is annotated *Leucopogon ophirensis*.

Leucopogon ophirensis Griff., Account Bot. Coll. Cantor 19 (1844/1845). – Type: Peninsular Malaysia, Malacca, Mt Ophir, *W. Griffith* s.n. (lecto K (no barcode), designated here).

= **Styphelia malayana** (Jack) Spreng., Syst. Veg. 4(2): 67 (1827).

Corylopsis himalayana

Griffith described this species from his own gatherings in the Himalayas. Morley & Chao (1977) effectively lectotypified the species to *W. Griffith* 593 in the Kew herbarium by referring to it as the holotype. This sheet bears two, apparently original, small tickets. One carries the number 593, the other states ‘Tongsa in erectus common’. Griffith’s itinerary (Griffith, 1848) gives 593 as a collection from Tassangsi, but Tongsa on the other label conflicts with this. Both localities are listed by Griffith in the original publication. Only one flowering shoot is mounted on the sheet so there is no doubt as to which specimen is involved, but the type locality remains uncertain.

Corylopsis himalayana Griff., Account Bot. Coll. Cantor 22 (1844/1845). – Type: Bhutan, Tongsa, [1837–1838,] *W. Griffith* 593 [HEIC 3378] (lecto K (barcode no. K000704864), designated by Morley & Chao (1977: 401); possible isolectos CAL (barcode no. CAL0000026138), CGE (barcode no. 15229(CGE)).

While in the Cantor paper Griffith used the name *Corylopsis himalayana* in the text for the species of Hamamelidaceae described, the plate and its legend refer to *Corylopsis grata*. There is no citation of the plates in the main text of the paper. *Corylopsis grata* is therefore validly and legitimately published as an illustration with analysis (ICN (McNeill *et al.*, 2012) Art. 38.7). In order to maintain the synonymy established by Hemsley (1906a), I here lectotypify *Corylopsis grata* to the flowering elements in the plate.

Corylopsis grata Griff., Account Bot. Coll. Cantor 30, PL. II (1844/1845). – Type: PL. II (specifically excluding fig. 3) (lecto, designated here).
= **Corylopsis himalayana** Griff., Account Bot. Coll. Cantor 22 (1844/1845).

Griffith described *Corylopsis himalayana* based on an array of material from the Himalayas including flowering material from Bhutan and fruiting material from Assam which Griffith referred to as var. A and var. B respectively. Hemsley (1906a) considered the fruiting plant from Assam (var. B) to be a separate species, *Corylopsis griffithii*. However, he first validated this name (Hemsley, 1906b) with reference to a cultivated plant figured by Hooker (1884) as *Corylopsis himalayana*. As Hemsley restricted *Corylopsis griffithii* to the cultivated plant in the original publication, all the other material referred to by Hooker has to be excluded for the purposes of typification. Therefore the effective lectotypification by Morley & Chao (1977: 403) to a Hooker & Thomson specimen from Khasiya is not acceptable. I therefore lectotypify *Corylopsis griffithii* to Hooker’s plate.

Corylopsis griffithii Hemsl., Gard. Chron. 39: 19 (1906). – Type: Hooker, Curtis Bot Mag. t. 6779 (lecto, designated here).
≡ **Corylopsis himalayana** Griffith var. **griffithii** (Hemsley) B.D.Morley & J.M.Chao, Garden (London) 102(3): 106 (1977).

Actinostemma tenerum

Griffith described this species from his own collection from the Himalayas (Upper Assam and Khasiya Hills), but also referred to a Cantor specimen from Chusan. Keraudren-Aymonin (1975) seems to have been the earliest to attempt typification for the species. She referred to *Griffith* 2523 at Kew as the holotype. However, there are two sheets bearing the HEIC 2523 number and neither is annotated by Keraudren-Aymonin. I therefore here propose the second stage of lectotypification by selecting a lectotype from one of the two sheets. I select the flowering specimen from Khasia over the fruiting specimen from Assam.

Actinostemma tenerum Griff., Account Bot. Coll. Cantor 25, PL. III (1844/1845).

– Type: [India or Bangladesh], Khasia, *W. Griffith* s.n. [HEIC 2523] (lecto K (barcode no. K000742924), designated at the first stage Keraudren-Aymonin (1975: 21) and the second stage here).

Gomphogyne cissiformis

Griffith described this species from a specimen collected by M. P. Edgeworth at Badrinath in northern India. In the absence of a collection matching Griffith's protologue citation, Keraudren-Aymonin (1975: 23) designated as neotype *Edgeworth* 88 in the Kew herbarium. Here again, there are actually two specimens, one of a male plant and the other of a female, mounted on separate sheets with no annotation connecting the two. The specimens were collected by Edgeworth in 1844 at a place referred to as Pandkwaar. I suspect that this may be the same as Pandukeshwar, a place near Badrinath, in Uttarakhand. Therefore these sheets could well be duplicates of the specimen Griffith saw but, until the relevant Griffith specimen is discovered, this cannot be proven. Designation of a neotype is only necessary when all original material is lost. While no relevant specimens seem to have been traced (Chakravarty, 1959; Jeffrey, 1980; Renner & Pandey, 2013) there are also the illustrations to consider. As plates were included in the original publication, these are eligible for consideration as type material, so I designate the relevant one as lectotype.

Gomphogyne cissiformis Griff., Account Bot. Coll. Cantor 26, PL. IV upper part (1844/1845). – Type: PL. IV (specifically excluding those parts relevant to *Enkylia* spp.) (lecto, designated here).

Enkylia digyna

Griffith described this species from two of his collections from the Mishmee Hills in Assam. The only relevant material that I have traced is a specimen labelled with the name among the material distributed from Kew. This is designated lectotype.

Enkylia digyna Griff., Account Bot. Coll. Cantor 27, PL. IV lower part, fig. 1–9 (1844/1845). – Type: [Assam, Mishmee Hills], *W. Griffith* s.n. [HEIC 2524] (lecto K (barcode no. K000742905), designated here; possible isolecto CAL).
= **Gynostemma pentaphyllum** (Thunb.) Makino, Bot. Mag. (Tokyo) 16: 179 (1902).

Enkylia trigyna

Griffith described this species from collections that he had made in Bhutan and the Khasiya Hills. Among the specimens at Kew there is one with the Griffith number 194. The itinerary (Griffith, 1848: 115) lists this as being from Dewangiri in Bhutan. This locality matches the protologue, so this specimen is selected as the lectotype.

Enkylia trigyna Griff., Account Bot. Coll. Cantor 27, PL. IV lower part, fig. 10–15 (1844/1845). – Type: [Bhutan, Dewangiri], *W. Griffith* 194 [HEIC 2525] (lecto K (barcode no. K000742907), designated here).
= **Gynostemma pentaphyllum** (Thunb.) Makino, Bot. Mag. (Tokyo) 16: 179 (1902).

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