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# Notes relating to William Roxburgh's study of the flora of St Helena

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**Summary.** Shortly after his death in 1815, a report written by William Roxburgh on the flora of the Atlantic island of St Helena was published by Alexander Beatson. Roxburgh spent 10 months on the island in 1813 – 1814 in an attempt to recover his health. Some of Roxburgh's names for the indigenous plants have still not been typified. Eleven native taxa are dealt with here with three new lectotypes and seven new neotypes. The relevance of the St Helena publication for the nomenclature of exotic species seems not to have been appreciated. Roxburgh published a new combination for an orchid species, the name *Rosa triphylla* for the Cherokee rose and names in the genus *Scytalia* for the Asian fruit trees: lychee, longan and rambutan. A neotype is selected for *Rosa triphylla* and lectotypes for *Rosa anemoniflora* Fortune ex Lindl. and *Scytalia litchi*.

**Key Words.** lectotype, neotype, William Roxburgh, St Helena, typification.

## Introduction

William Roxburgh (1751 – 1815), born in Scotland, spent 37 years in the service of the East India Company in India (Robinson 2008). Much of this time was spent working tirelessly on the flora of India and on the many species introduced to the Company's Botanic Garden in Calcutta. In early 1813, Roxburgh's health failed and he requested leave to travel to St Helena in the hope of recovery. Roxburgh and his family arrived on the remote Atlantic island in June 1813 and did not depart for England until April 1814. While Roxburgh's health remained precarious during the stay, his interest in botany could not be entirely suppressed and he worked on the flora of St Helena. Shortly before his death in 1815, he sent a listing of the plants (both indigenous and exotic) that he had encountered on St Helena to Alexander Beatson. Beatson had been the East India Company's Governor of St Helena in the period 1808 – 1813. Roxburgh had first met Beatson in India more than 20 years earlier (Robinson 2008). Beatson published the list (Roxburgh 1816), which included description of a number of new species. Roxburgh's work was the principal publication on the flora of St Helena for much of the nineteenth century. Cronk (1995) provided a detailed analysis of Roxburgh's work on St Helena with emphasis on the new endemic taxa descriped by Roxburgh, including their typification. However, there remain a few loose ends. The types of a number of Roxburgh names that had been reduced to synonymy or were illegitimate later homonyms were not considered by Cronk. Nomenclatural novelties relating to the non-native species listed by Roxburgh have also been largely overlooked.

## Typification of Roxburgh taxa from St Helena

While Roxburgh collected plant specimens throughout his career, he never kept an extensive personal herbarium probably because of the difficulties of preserving specimens in India. Roxburgh's St Helena list makes no reference to plant collections. There is a set of Roxburgh specimens collected on St Helena in the herbarium (BM) of the Natural History Museum in London; although many species in the St Helena list are not represented among the BM collection (Cronk 1995). The collection seems largely to represent a set of specimens given to Sir Joseph Banks. However, there are some fern specimens that reached the BM collection via the herbarium of John Smith (1798 – 1888) who purchased them from the estate of Aylmer Bourke Lambert. It may therefore be the case that Roxburgh gave St Helena specimens to Lambert, as well as Banks. Lasègue (1845) indicated the presence of Roxburgh specimens from St Helena in the Delessert collections also.

## Typification of some indigenous species described by Roxburgh

*Asplenium tenellum* Roxb. (Roxburgh 1816: 299). Type: St Helena, *R. H. Beddome* s.n. (neotype, selected here K! (barcode no. K000214952)).

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= **Asplenium erectum** *Bory ex Willd.* (Willdenow 1810: 328).

*Aster glutinosa* Roxb. (Roxburgh 1816: 300). Type: St Helena, *W. Roxburgh* s.n. (lectotype, selected here, BM! (barcode no. BM001125317)).
= **Commidendrum rugosum** *(Dryand. ex Aiton) DC.* (de Candolle 1836: 345).

*Bidens arborea* Roxb. (Roxburgh 1816: 301 – 302). Type: St Helena, near Diana's Peak, *N. R. Kerr* 15 (neotype, selected here, BM (barcode no. 000040168(BM))).
= **Petrobium arboreum** *(J. R. Forst. & G. Forst.) R. Br.* (Brown 1817: 113).

*Fimbristylis textilis* Roxb. (Roxburgh 1816: 309). Type: St Helena, Botley's Lay, 1700 feet, March 1956, *N. R. Kerr* 133 (neotype, selected here, BM!).
= **Ficinia nodosa** *(Rottb.) Goetgh. & al.* (Muasya *et al.* 2000: 133).

*Phylica rosmarinifolia* Roxb. (Roxburgh 1816: 316), *nom. illegit.*, *non* Lamarck (1797), *nec* Thunberg (1804). Type: St Helena, Longwood, 10 Feb. 1808, *W. J. Burchell* 81 (neotype, selected here, K! (barcode no. K000214529)).
= **Phylica polifolia** *(Vahl) Pillans* (1942: 24).

*Polypodium dicksoniifolium* Roxb. (Roxburgh 1816: 318), as 'dicksonifolium'. Type: St Helena, High Knoll, Jan. 1956, *N. R. Kerr* 84 (neotype, selected here, K (2 sheets)! (barcode nos. K000214886, K000214887)).
= **Cheilanthes multifida** *(Sw.) Sw.* (Swartz 1806: 129, 334).

*Polypodium molle* Roxb. (Roxburgh 1816: 318), *nom. illegit.*, *non* Schreber (1771), *nec* Allioni (1785), Jacquin (1789), Kunth (1815). Type: St Helena, *W. Roxburgh* s.n. (lectotype, selected here, BM!).
= **Pseudophegopteris dianae** *(Hook.) Holttum* (1969: 21).

**NOTES.** Besides the selected lectotype there is another Roxburgh specimen of this species in the Pteridophyte Herbarium at the Natural History Museum. This was once in the collection of John Smith.

*Polypodium viscidum* Roxb. (Roxburgh 1816: 319). = **Hypolepis rugosula** subsp. **viscida** *(Roxb.) Schwartsb. & J. Prado* (Schwartsburd & Prado 2014: 215). Type: St Helena, *W. Roxburgh* 191/1 (lectotype, selected by Schwartsburd & Prado (2014: 215), BM! (barcode no. BM001067956)).

*Pteris semiserrata* Roxb. (Roxburgh 1816: 319), *nom. illegit.*, *non* Forsskål (1775). Type: St Helena, Casons Gate 1800 feet, Feb. 1955, *N. R. Kerr* 66 (neotype, selected here, BM!).
= **Pteris dentata** *Forssk.* (Forsskål 1775: 186).

*Solidago cuneifolia* Roxb. (Roxburgh 1816: 324). Type: St Helena, *W. Roxburgh* s.n. (lectotype, designated here, BM!).
= **Pladaroxylon leucadendron** *(G. Forst.) Hook. f.* (Hooker 1870: t. 1055).

**NOTES.** The status of this Roxburgh name is dependent on one's view of the entry on p. 304 where Roxburgh lists *Conyza rugosa* under which is noted 'See *Solidago cuneifolia*', although there is no mention of *C. rugosa* on p. 324 where *S. cuneifolia* is described. If this is considered as Roxburgh citing *C. rugosa* Dryand. ex Aiton as a synonym, then *Solidago cuneifolia* Roxb. apparently becomes a replacement name for *Conyza rugosa* as *Solidago rugosa* Mill. (Miller 1768) is another species.

*Spilanthes tetrandra* Roxb. (Roxburgh 1816: 325). Type: [St Helena,] *H. Cuming* 2454 (neotype, selected here, K (barcode no. K000410233); isoneotype K (barcode no. K000410235)).
= **Petrobium arboreum** *(J. R. Forst. & G. Forst.) R. Br.* (Brown 1817: 113).

## Exotic taxa – overlooked names

**NEW ORCHID COMBINATION.** Roxburgh's combination for this orchid species in *Limodorum* seems to have been overlooked.

*Epidendrum aloifolium* L. (Linnaeus 1753: 953). = **Cymbidium aloifolium** (*L.*) *Sw.* (Swartz 1799: 73). *Limodorum aloifolium* (L.) Roxb. (Roxburgh 1816: 312), as '*aloefolium*'.

***ROSA TRIPHYLLA.*** Roxburgh first used the name *Rosa triphylla* in his *Hortus Bengalensis* (Roxburgh 1814), a listing of the plants growing in the Calcutta Botanic Garden of the East India Company. However, in the

absence of a description or reference to one, the name is here invalid. The validation of the name in the 1832 version of *Flora Indica* is often cited, although Lindley (1820: 138) had reproduced the entry in his *Rosarum Monographia*. The brief description accompanying the name in Beatson's Tracts is very similar to that of the *Flora Indica* manuscript and seems to be the earliest valid publication of the name. The species was generally equated with the Cherokee rose *Rosa laevigata* Michx. via various synonyms in the early Indian literature (Voigt 1845: 195; Hooker 1878: 364). I have seen no Roxburgh specimen from St Helena, nor indeed from Calcutta. Nor is there a Roxburgh Icon for this species. We do know from Wallich's *Numerical List* and specimens in the East India Company Herbarium (K-W) that *R. laevigata* was grown in the Calcutta Botanic Garden in the early Nineteenth Century following introduction from China. However, Forbes & Hemsley (1887: 247), without explanation, cited *R. triphylla* as a synonym of *R. anemoniflora* Fortune ex Lindl., another Chinese species. More recently, Ghora & Panigrahi (1995) have taken up *R. triphylla* as the correct name for *R. anemoniflora* (as did Boulenger 1933: 275), but they provided no evidence that Roxburgh's description was made from material of *R. anemoniflora* and confirmed that the Wallich collections from Calcutta do not represent *R. anemoniflora*. I feel that it is expedient to fix the application of *R. triphylla* Roxb. as a synonym of *R. laevigata* by designating an appropriate neotype in the absence of any original material. I therefore select a specimen that came from Herbarium Benthamianum and is now at Kew. It is a specimen distributed by Nathaniel Wallich as part of the massive dispersal of herbarium material from the East India Company under number 694. Although he states 'HB Calcutta e China introd.' in the *Numerical List* (Wallich 1828 – 1849) for this number, the sheet in the East India Company Herbarium (K-W) has a field ticket stating that the specimen was from the garden of Edward Gardner in Nepal, although apparently the plant came originally from Calcutta. It would seem likely that there is a mix of material from Nepal and Calcutta under this number, so the selected neotype may be from Gardner's garden rather than Calcutta.

*Rosa triphylla* Roxb. (Roxburgh 1816: 321). Type: Hortus Botanicus Calcuttensis [EIC 694] (neotype, selected here, K ex herb. Benth.).here, K ex herb. Benth.).
= **Rosa laevigata** *Michx.* (Michaux 1803: 295).

I used the name *Rosa anemoniflora* Fortune ex Lindl. in the foregoing discussion. It should be noted that in fact, this name is illegitimate as it is a later homonym of a species described by Andrews. A replacement name for Lindley's taxon is available and is correctly *Rosa beanii*. Heath (1989) published the name as that of a nothospecies, but, until the hybrid origin of the plant is confirmed, I prefer to consider it as a species name. The name seems not to have been typified. I have not found any herbarium material from the Horticultural Society's garden in London from where Lindley reported its flowering but there is material collected by Fortune in China. I select as lectotype a specimen from Lindley's herbarium now part of the University of Cambridge collection.

*Rosa anemoniflora* Fortune ex Lindl. (Lindley 1847: 316), *nom. illegit.*, *non R. anemoniflora* Andrews (1805 – 1828: t. 32). **Rosa beanii** *P. V. Heath* (1989: 97). Type: China, Shanghai Gardens, May 1844, *R. Fortune* a61 (lectotype, selected here, CGE (barcode no. 23025(CGE)); isolectotypes BM, K, P [×4]).

**LYCHEE, LONGAN AND RAMBUTAN.** Roxburgh included species names for three important sapindaceous fruit trees of Asian origin. He placed all three in the genus *Scytalia* Gaertn. (Gaertner 1788: 197 – 198, t. 42 fig. 3). This represents a superfluous renaming of *Litchi* Sonn. so it is highly unlikely that these names will ever be used. All three names appeared in the *Hortus Bengalensis* (Roxburgh 1814), but were invalid in the absence of a description or reference to one. In the St Helena list, Roxburgh managed to validate the names.

For the lychee, Roxburgh did this by citing Gaertner's description of the plant. As he did not cite Gaertner's name (*Scytalia chinensis*), Roxburgh's name is not superfluous. I designate Gaertner's illustration as the lectotype.

*Scytalia litchi* Roxb. (Roxburgh 1816: 322). Type (lectotype, selected here): Gaertner, *Fruct. Sem. Pl.* 1: t. 42. fig. 3.
= **Litchi chinensis** *Sonn.* (Sonnerat 1782: 255).

For the longan, Roxburgh provides a very brief diagnosis 'Longan or Dragon's eye, the small round grey Litchi'. The longan fruit typically differs from the true lychee in being smaller, rounder, and with the sweet fleshy aril greyish and less translucent; so I consider that this is sufficient to validate Roxburgh's

name. In the posthumously published *Flora Indica* account (Roxburgh 1832: 270 – 271), Roxburgh cited Loureiro in synonymy. I therefore assume Roxburgh's intentions were the same in the Beatson Tracts and treat Roxburgh's name as a new combination based on Loureiro's name (ICN (McNeill *et al.* 2012) Art. 41.4).

**Dimocarpus longan** *Lour.* (Loureiro 1790: 233 – 234). *Scytalia longan* (Lour.) Roxb. (Roxburgh 1816: 322).

For the rambutan, Roxburgh provided a superfluous renaming of Linnaeus's name.

**Nephelium lappaceum** *L.* (Linnaeus 1767: 125), as '*lappacea*'. *Scytalia rambootan* Roxb. (Roxburgh 1816: 322), *nom. illegit., superfl.*

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