

Typification of Linnaean *Impatiens latifolia* (Balsaminaceae)

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Abstract: *Impatiens latifolia* L. is nomenclaturally reviewed, compared with *Impatiens bifida* Thunb., and both names have been lectotypified.

Keywords: Balsaminaceae, *Hortus Malabaricus*, *Impatiens bifida*, *Impatiens latifolia*, Lectotypification, Linnaeus, Thunberg.

Introduction

Impatiens latifolia L. (Balsaminaceae) is one of the species where illustrations (Valli-onapu, Rheede 1689: t. 48) from the *Hortus Malabaricus* were cited by Linnaeus (Manilal *et al.*, 2003; Dessai & Janarthanam, 2011). However, Jarvis (2007), who worked on Linnaean plant names and types, doubted that *Impatiens latifolia* was solely based on 'Valli-onapu', and added the "LINN 1053.2" collection as more possible correspondence as the original material. To brief this, Singh (2017) affirmed LINN 1053.2 as the original material (*vide* Jarvis *loc. cit.*), which was lectotypified, and expressed concern for its incompleteness, where it has been supported with 'Valli-onapu' illustration (Rheede 1689: t. 48) as the epitype.

Detailing the possibilities of the original material associated with *Impatiens latifolia* L., we were able to make out some interesting findings. Linnaeus wrote one of the two annotations on LINN 1053.2 which was on the right bottom corner "2. *latifolia*" [Savage, 1945; *pers. correspondence* Dr Isabelle Charmantier, Head of Collection at LINN]. The species number 2 refers to the *Species Plantarum* number (Savage, 1945). The other annotation is

"*bifida* Thunb. Cap" on the specimen appears to be by David Don, in 1822 he was a Librarian and Clerk at the Linnean Society and studied most of the LINN collections and did considerable annotation (Miller, 1970).

Singh (2017) mainly emphasized the annotation "2. *latifolia*" present at the right bottom corner on the specimen LINN 1053.2, overlooking the equally significant annotation "*bifida* Thunb. Cap." on the left bottom corner. Notably, the specimen comprises three leaves disposed in an ambiguous manner and exhibits an atypical spur morphology, further complicating the identification. Singh (2017) speculated that "Linnaeus might have used the specimen while describing the species".

However, the taxonomic identity, and collection details of LINN 1053.2 remains uncertain. These uncertainties raise critical questions about the specimen's provenance; specifically, whether it predates or postdates *Species Plantarum* in addition to its authenticity as the original material. Although the annotation "2. *latifolia*" aligns precisely with Linnaeus nomenclature, the morphological features described in the protologue do not correspond well with those of LINN 1053.2. Therefore, Singh's (2017) designation of LINN 1053.2 as lectotype and Rheede's Icon t. 48 (1689) as an epitype is not taxonomically justified. Designated epitype cannot be corrected to lectotype because an epitype has no status if the lectotype is superseded (Art. 9.10 of the ICN, Madrid Code, Turland *et al.*, 2025).

The name 'Valli-onapu' reflects two different words, Valli refers to Valley. Onapu refers to

Onam, it is the festival celebrating the harvest of rice crops particularly in South India, especially Kerala (Chandran, 2016). The colour of *Impatiens latifolia* flower and the grain (seed) colour of rice is white. As Rheede might have referred to the colour of rice grain with the *Impatiens latifolia* flower. The phenological window of *I. latifolia* is during August to September coinciding with the Onam festival. Thus, it might be known as Valli Onapu. Also, the flower would be used for the Onam festival. So, Rheede must have indicated the *Impatiens latifolia* as Onapu and a species found in a valley. The Valli-onapu name was given to *Impatiens latifolia*.

Typification

Impatiens latifolia L., Sp. Pl. 2: 937. 1753. *Lectotype* (designated here): INDIA, Malabar. ‘Valli-onapu’ illustration, Hortus Malabaricus (Rheede 1689: 9 p. 91, t. 48).

Impatiens bifida Thunb., Prodr. Pl. Cap. 41.

1794. *Lectotype* (designated here): AFRICA, *Cap. b. Spei*. Thunberg, THUNB 21169 (UPS: V-133864).

Discussion

Impatiens latifolia is characterised by alternate and lanceolate leaves, with crenate margin, spur is subulate equal to the peduncle (Linnaeus, 1753). The previously typified (Singh, 2017) specimen, LINN 1053.2 bears three leaves and one flower, in addition to leaves and peduncles that are confusing in their arrangement along with the forked spur. (Fig. 1c). Moreover, a divided spur unequivocally agrees with *Impatiens bifida* Thunb. (Thunberg 1794: Fig. 2), which is from the Cape, as determined by D. Don (1822) “*bifida* Thunb. Cap.”

The Thunberg collection housed at UPS (Uppsala Herbarium) possesses a single specimen under the name *Impatiens bifida* Thunb. [V-133864 (UPS THUNB 21169)]. This specimen bears Thunberg’s original annotation “*Cap. b. Spei*.”



Fig 1. *Impatiens latifolia* L. **a.** LINN 1053.2; **b.** Flower; **c.** Forked Spur. CC BY-NC 4.0 licence. Reproduced with permission.

Thunberg” indicating it was collected from the Cape region of South Africa though Thunberg used “Cape” in a wide sense. The specimen matches the protologue in its single flowered peduncles, oblong, serrate leaves, and long bifid nectaries (Thunberg, 1820) as it is the only known original material consistent with Thunberg’s Protologue and Habitat. According to Art. 9.3 of the ICN, we designate here the specimen V-133864 (THUNB 21169) as a lectotype of the name *Impatiens bifida* Thunb. With reference to the findings discussed in the preceding paragraph, the specimen (LINN 1053.2) can be appropriately interpreted as *Impatiens bifida* rather than *Impatiens latifolia* L. The incomplete habitat of LINN 1053.2 is unspecified, reducing its suitability as original material for *Impatiens latifolia* L. Conversely, the illustration published in Hortus Malabaricus 9: t. 48 (Rheede, 1689) matches the morphology described by Linnaeus in the Species Plantarum (t. 2, 937, 1753).

So, we designate Van Rheede’s Hortus Malabaricus 9: t. 48. 1689 illustration as the lectotype for the name *Impatiens latifolia* L., under Art. 9.3 of the ICN, since no original material attribute to Linnaeus protologue is extant.

Impatiens bifida Thunb. was published by Carl Thunberg in *Prodromus Plantarum Capensium* (1794: 41). In 1931, Juel cataloged Thunberg’s collections as a tribute to the botanist, compiling species names without providing morphological descriptions or taxonomic assessments. Within this catalog, Juel treated *Impatiens flaccida* Arn., published later by George Arnott Walker in 1836 from Zeylana (Sri Lanka), as a synonym of *I. bifida* Thunb. But did so without any accompanying justification or taxonomic rationale.

According to POWO (2025) and the principle of nomenclatural priority, *Impatiens flaccida* Arn. is currently treated as the accepted name with *I. bifida* Thunb. which is a heterotypic synonym.



Fig. 2. *Impatiens bifida* Thunb.: **a.** Lectotype (V-133864); **b.** Flower and bud showing bifid spur; **c.** Locality mentioned by C Thunberg. Reproduced under the terms of the Creative Commons Attribution License [CC BY 4.0] (<http://creativecommons.org/licenses/by/4.0>), Museum of Evolution, Uppsala University.

However, this synonym appears to lack critical taxonomic support. The protologues of both taxa indicate that they were collected from distinct geographic regions, *I. bifida* Thunb. from the Cape of South Africa and *I. flaccida* Arn. from Sri Lanka. Moreover, they exhibit morphological differences, further supporting their recognition as separate species.

It is also noteworthy that *Impatiens bifida* Thunb. was not treated by Grey-Wilson (1980). Given the absence of diagnostic comparison, morphological analysis, or referenced justification, the synonymization of *I. bifida* Thunb. under *I. flaccida* Arn. remains taxonomically unsupported and considered here as two distinct taxa.

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