

SHORT NOTE

On the identity and typification of *Nicotiana urens* and its replacement name *Wigandia pruritiva* (Hydrophyllaceae)

Sobre la identidad y tipificación de *Nicotiana urens* y su nombre de reemplazo *Wigandia pruritiva* (Hydrophyllaceae)

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Abstract: The typification of *Nicotiana urens* L. is revisited and discussed in this study. When this species was transferred to the genus *Wigandia*, the epithet *urens* was blocked and unavailable due to the prior existence of *Wigandia urens* (Ruiz & Pav.) Kunth. To resolve this, Sprengel established *Wigandia pruritiva* in 1824 as a replacement name, using *Nicotiana urens* as replaced synonym. Although Cornejo in 2007 designated a specimen from the herbarium of the Muséum national d'Histoire naturelle in Paris (Vaillant Herbarium) as the lectotype of *Nicotiana urens*, this specimen cannot be considered original material used by Linnaeus to describe his species. Therefore, this lectotypification may be superseded. Instead, an illustration titled "*NICOTIANA foliis cordato-crenatis*", published by Plumier and Burman in 1759 and explicitly cited by Linnaeus in the protologue of *Nicotiana urens*, is designated as the lectotype for this name. In addition, the specimen preserved in the Vaillant Herbarium at P provides a more accurate interpretation of Plumier's illustration and is designated as the epitype to facilitate the correct application of Sprengel's name.

Keywords: Lectotype, nomenclature, original material, replacement name, *Wigandia urens*.

Resumen: En este estudio revisamos y discutimos la tipificación de *Nicotiana urens* L. Cuando esta especie se transfirió al género *Wigandia*, el epíteto *urens* estaba bloqueado y no disponible para su uso debido a la existencia previa de *Wigandia urens* (Ruiz & Pav.) Kunth. Para resolver esta situación, Sprengel estableció en 1824 *Wigandia pruritiva* como nombre nuevo con *Nicotiana urens* como sinónimo substituido. Aunque Cornejo en 2007 designó como lectotipo de *Nicotiana urens* un espécimen del herbario del Museo Nacional de Historia Natural de París (Herbario Vaillant), este espécimen no puede considerarse material original utilizado por Linneo para describir su especie. Por lo tanto, dicha lectotipificación puede ser substituida. En su lugar, una ilustración titulada "*NICOTIANA foliis cordato-crenatis*", publicada por Plumier y Burman en 1759 y citada explícitamente por Linneo en el protólogo de *Nicotiana urens*, se designa como el lectotipo para este nombre. Además, el espécimen conservado en el Herbario Vaillant en P ofrece una interpretación precisa de la ilustración de Plumier y es designado como epitipo para facilitar la correcta aplicación del nombre de Sprengel.

Palabras clave: Lectotipo, material original, nombre de reemplazo, nomenclatura, *Wigandia urens*.

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Supplementary Information ↓

Wigandia Kunth (Hydrophyllaceae R.Br.) is a small Neotropical genus comprising six species (Brand 1913; Verdcourt 1989; Cornejo 2007). Four occur on the mainland of the Americas, including *Wigandia urens* (Ruiz & Pav.) Kunth, *W. crispa* (Ruiz & Pav.) Kunth, *W. wurdackiana* Ferreyra, and *W. ecuadorensis* Cornejo. The remaining two species are restricted to the Antilles: *W. pruritiva* Spreng., found in Cuba and Hispaniola, and *W. brevistyla* Cornejo, endemic to the Cordillera Central in the Dominican Republic (Cornejo 2006, 2007). *Wigandia pruritiva* was originally published by Sprengel (1824: 865) citing *Nicotiana urens* L. (Linnaeus 1762) as the replaced synonym, and placing it in Solanaceae, with a vague reference to “South America” as its habitat (“Amer. austr.”). Recognizing the species as belonging to *Wigandia*, Sprengel (1824) renamed it *W. pruritiva* since the epithet *urens* was blocked and unavailable due to the prior existence of *W. urens* (Ruiz & Pav.) Kunth (Kunth 1819: 127), based on *Hydrolea urens* Ruiz & Pav. (Ruiz & Pavón 1802: 21, t. 243). *Wigandia pruritiva* Spreng. must therefore be treated as a replacement name for the legitimate name *N. urens* L. (Turland et al. 2025: Art. 6.11), and is typified automatically by the type of the replaced synonym (Turland et al. 2025: Art. 7.4). Although Cornejo (2007) previously designated a specimen from the Vaillant Herbarium at P as the lectotype of *N. urens*, this material cannot be considered original material used by Linnaeus to describe his species. Consequently, the previous lectotypification may be superseded.

Concerning the identity of *Nicotiana urens*, this name was published by Linnaeus (1759: 932) through a short diagnosis (“*N. [Nicotiana] fol. [foliis] cordatis crenatis, racemis recurvatis, caule hispido-pruriginoso*”) followed by the reference “*Plum. ic.*” *Nicotiana urens* is listed as the species indicated with the letter “B” after *N. paniculata*. In this work, Linnaeus retained the original numbering of species that were included in the main part of *Species Plantarum*, but unnumbered species (including those that appeared in the Appendix and names published in various dissertations that appeared between 1753 and 1759) were typically intercalated and given letters instead of numbers. The reference “*Plum. ic.*” makes reference to Plumier (1759: Tab. CCXI “*NICOTIANA foliis cordato-crenatis*”) (Fig. 1). The diagnosis was also repeated by Linnaeus (1762: 259) as “7. *NICOTIANA foliis petiolatis cordatis crenatis, racemis recurvatis, caule aculeato pruriginoso frutescente*” followed by the synonym “*Nicotiana arborescens spinosissima, flore exalbido*” cited from Plumier as “*spec. 3 ic. 211*” (see Plumier 1703: 3; Plumier 1759: Tab. CCXI), the provenance “*Habitat in America meridionali*”, and finally, a description of this plant “*Fructificatio Racemis secundis revolutis, Corollis campanulatis, Foliaque cordata praecedentis, sed crenata & tota arbor aculeata*” (Transl.: Infructescence with revolute racemes, bell-shaped corollas, and heart-shaped leaves of the preceding [species], but crenate, and the entire tree is spiny). Jarvis (2007: 694) mentioned that the application of *N. urens* was uncertain and did not provide any original elements for this name.

The reference “*Plum. ic.*” (i.e., *Plumier icones*), cited in a very cryptic manner in the protologue and later mentioned with more detail in the second edition of *Species Plantarum*, contains an illustration that can be considered as an original element used by Linnaeus to describe his species (Jarvis 2007: 149–151). This illustration was published before the protologue, on 20 March 1759, and the second volume of the tenth edition of Linnaeus’ *Systema Naturae* was published on 7 June 1759. Plumier’s illustration shows a leaf, part of the inflorescence with flowers and two of the flowers in the inflorescence with corollas, and a detail of a fruit with two styles. Plumier (1759) included a reference to Tournefort (1700: 117) for the polynomial “*Nicotiana arborescens, spinosissima, flore exalbido*”. Stafleu & Cowan (1981) state that the dates of publication of the fascicles of Plumier’s *Plantarum americanarum* can be established from the correspondence between Burman and Linnaeus, showing that Linnaeus was aware of the publication and could have known about its contents (Moura et al. 2019).

As indicated by Tryon (1964: 225), a few Plumier specimens are extant in Jussieu’s herbarium at P-JU. Fortunately, I found relevant herbarium material that can be treated as a voucher for Plumier’s

illustration, the specimen P [P00307208] (Fig. 2). The sheet bears part of an inflorescence, with flowers and fruits, and one leaf. This material is labeled as "*Nicotiana arborescens spinosissima, flore exalbido. Plum. I.R. Herb. 117*", and was subsequently acquired by Sébastien Vaillant (at the base of the label is the annotation "*herbier du Vaillant*"), but it cannot be shown to have been studied by Linnaeus and so it is not part of the original material for the Linnaean name. However, herbarium material such as this can be of assistance in interpreting Plumier's illustration (which was used by Linnaeus) and may be considered as 'typotype' material if it is clear that the illustration was originally prepared from it. The specimen can be identified as belonging to the current concept and use of the name *Wigandia pruritiva* in its current circumscription. On the other hand, this material could also serve as an epitype for *N. urens* (see below).



Figure 1. Image of the lectotype of *Wigandia pruritiva* Spreng.: illustration "*NICOTIANA foliis cordato-crenatis*" published by Plumier (Pl. Amer.: Tab. CCXI. 1759).



Figure 2. Image of the epitype of *Wigandia pruritiva* Spreng.: P barcode P00307208 (Haiti, Plumier Herb. 117). Image courtesy of the herbarium P, reproduced with permission.

Typification of Nicotiana urens

Cornejo (2007: 66) designated the lectotype of the name *Wigandia pruritiva* as “Tipo: Haití, Plumier Herb. 117 [lectótipo, aquí designado, P-307208! (herb. Vaillant)]”. However, this lectotypification may be superseded because the specimen preserved at P cannot be treated as original material used by Linnaeus to describe his species. As *W. pruritiva* is the replacement name for *Nicotiana urens*, the lectotype of Sprengel’s name must be selected from the original material (if it exists) of the replaced synonym (**Turland et al. 2025: Arts. 7.4, 9.4 and 9.3**). The only extant original material eligible for typification of the Linnaean name *Nicotiana urens* is the illustration by **Plumier (1759: Tab. CCXI) (Fig. 1)**. Unfortunately, I have been unable to trace any further original material.

However, since Plumier’s illustration lacks key diagnostic details necessary to distinguish this species from others (e.g., *W. brevistyla* Cornejo), specifically the lengths of the styles and corollas (*W. pruritiva*: styles (15)–20–35 mm; corolla 20–43 mm vs. *W. brevistyla*: styles 4–6 mm; corolla 10–17 mm) (**Cornejo 2007**), I consider the designation of an epitype necessary to prevent any ambiguity in the interpretation of Plumier’s illustration, in accordance with Art. 9.9 of the Madrid Code (**Turland et al. 2025**). The selected epitype is the same specimen designated by **Cornejo (2007)** as the lectotype of the name and housed at P.

Wigandia pruritiva Spreng., Syst. Veg. ed. 16, 1: 865. 1824 (“1825”), **nom. nov.** *Nicotiana urens* L., Syst. Nat. ed. 10, 2: 932. 1759, syn. subst. *Wigandia urens* (L.) Urb. in Repert. Spec. Nov. Regni Veg. 15: 415. 1919, nom. illeg., non (Ruiz & Pav.) Kunth. 1819. **Lectotype (designated here)**: Plumier, Pl. Amer. 9, tab. CCXI. 1759 [icon: “NICOTIANA foliis cordato-crenatis”], **Fig. 1**. **Epitype (designated here)**: Haití, s.d., Plumier Herb. 117 (P ex herb. Vaillant barcode P00307208), **Fig. 2**.

On the other hand, the lectotype of the name *Hydrolea urens* Ruiz & Pav. was designated by **Cecchi & Selvi (2014)** from a specimen collected in Peru by Hipólito Ruiz and José Pavón, currently preserved at BC (BC-872628).

Wigandia urens (Ruiz & Pav.) Kunth in Nov. Gen. Sp. (quarto ed.) 3: 127. 1819. *Hydrolea urens* Ruiz & Pav., Fl. Peruv. 3: 21, tab. 243. 1802, basionym. Type: [Peru] Fl. Per. Habitat in Peruviae praeruptis calidis, praesertimin provinciis Tarmae, Chancay, Guarocheri et Cantae prope Huaura, Quive, Yanha et Surco, s.d., H. Ruiz & J. Pavón s.n. (lectotype designated by Cecchi & Selvi (2014: 7): BC barcode BC-872628!).

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Supplementary material

Not applicable.

Data availability

All the data used is available in the main text, figures and tables.

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Authorship contribution statement

P. Pablo Ferrer-Gallego: Conceptualization, Investigation, Writing—original draft, Writing—review and editing.

Competing interests

The author declares that there are no conflicts of interest related to this research.

Statement on the use of Artificial Intelligence

No artificial intelligence tools were used in the preparation of this manuscript.

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