

NOTE ON THE TYPIFICATION OF *PIAROPUS* (PONTEDERIAACEAE) AND ON THE VALIDATION OF “*TOXICODENDRON* SECT. *VENENATA* GILLIS”

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Abstract. The typification of the genus name *Piaropus* (*Pontederiaceae*) and the Validation of the sectional name “*Toxicodendron* sect. *Venenata* Gillis” are addressed.

Keywords: *Eichhornia*, *Piaropus*, *Pontederia* subg. *Oshunae*, *Rhus* sect. *Venenatae*, *Toxicodendron* sect. *Venenata*, type

In 1837, Rafinesque proposed the new genus *Piaropus* and included three syntype species: *P. azureus* (Sw.) Raf. (*Pontederia azurea* Sw.), *P. mesomelas* Raf. (superfluous for *Pontederia crassipes* Mart.), and *P. tricolor* Raf. The typification of the genus name is discussed below.

Nathaniel L. Britton (1859–1934) was one of the founding members of the then practiced American Code, which recognized the first cited species name of a new genus as the type species, and such designations have been treated as a mechanical method of selection and rejected (Shenzhen Code Art. 10.6). However, the Code made an exception as noted here: “A type chosen using a largely mechanical method of selection is superseded by any later choice of a different type not made using such a method, unless, in the interval, the supersedable choice has been affirmed by its adoption in a publication that did not use a mechanical method of selection” (Art. 5).

In 1918, Britton cited *Pontederia azurea* as the type

species for *Piaropus*. In contrast, (Farr et al. 1979: 1337) listed the type as “*non designatus*”.

Pellegrini and Horn published *Pontederia* subgenus *Oshunae* M. Pell. & C.N. Horn (in Pellegrini et al., 2018), with its type as “*Pontederia crassipes* Mart. ≡ *Eichhornia crassipes* (Mart.) Solm” and synonym as “*Piaropus* Raf., Fl. Tellur. 2: 81. 1837, *nom. rej.* Type species. *Piaropus mesomelas* Raf., *nom. Illeg.* (≡ *Pontederia crassipes* Mart.)”

It is noted here that Pellegrini and Horn’s type citation for *Piaropus* differs from that of Britton’s type designation, that these authors did not use the phrase “designated here” (*hic designatus*) or an equivalent, and that their citation does not constitute an act of typification (see Art. 7.11). A search was made to check whether any pre-2000 botanical publication cited *Pontederia crassipes* as the type, but none was found.

The Shenzhen Code Appendix III (Wiersema et al., accessed October 31, 2021, https://naturalhistory2.si.edu/botany/codes-proposals/display_new.cfm) shows the following:

<i>Eichhornia</i> Kunth, <i>Eichhornia</i> : 3. 1842 [<i>Ponteder.</i>]. <i>Typus</i> : <i>E. azurea</i> (Sw.) Kunth (<i>Pontederia azurea</i> Sw.) (<i>typ. cons.</i>).	(≡) <i>Piaropus</i> Raf., Fl. Tellur. 2: 81. Jan–Mar 1837 (<i>typ. des.</i> : Britton, Fl. Bermuda: 64. 1918).
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Whether the triple (≡) sign associated with *Piaropus* could be considered as an equivalence of the phrase “designated here” for an affirmation of Britton’s designation of type, McNeill (E), in a personal discussion, remarked that it could; he further emphasized that the equivalency applies if the affirming author explicitly cited the type of the homotypic genus name to which the identity sign points. McNeill’s assessment on the triple sign was accepted by Turland, Greuter, and Wiersema. Turland mentioned that the triple sign was first used in the St. Louis Code Appendix III (Greuter et al., 2000). Wiersema added that in 1874, Pfeiffer designated *E. azurea* as the lectotype of *Eichhornia*.

In other words, both *Eichhornia* and *Piaropus* have the same type, i.e., *Pontederia azurea*, and *Piaropus* cannot be a heterotypic synonym of *Pontederia* subg. *Oshunae*.

Accordingly, the type citations are shown here:

Eichhornia Kunth, *Eichhornia*, *Gen. Nov.* [Diss.] 1842 (*nom. cons.*).

Type: *E. azurea* (Sw.) Kunth (*Pontederia azurea* Sw.) (vide Pfeiffer, *Nomencl. Bot.* 1(2): 1174. 1874–75).

Piaropus Raf., Fl. Tell. 2: 81. Jan–Mar 1837 (‘1836’) (*nom. rej.*).

Type: *P. azureus* (Sw.) Raf. (*Pontederia azurea* Sw.) (vide Britton, Fl. Bermuda: 64. 1918; affirmed by Greuter et al., 2000: 238)

≡ *Eichhornia* Kunth 1842 (*nom. cons.*)

Pontederia subg. **Oshunae** M. Pell. & C.N. Horn, *Phytokeys* 108: 61. 2018.

Type: *Pontederia crassipes* Mart. ≡ *Eichhornia crassipes* (Mart.) Solms

Piaropus Raf., Fl. Tellur. 2: 81. 1837, p.p. (excluding the type); A. Haines, *Stantec Bot. Notes* 15: 4. 2020.

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VALIDATION OF *TOXICODENDRON* SECT. *VENENATA*

In 1881, Engler proposed the sectional name *Rhus* sect. *Venenatae* Engl., and the type species is *R. venenata* DC., a superfluous illegitimate name for *R. vernix* L.

For a forthcoming volume of Flora of North America, consisting of the family Anacardiaceae, Susan Pell and Gandhi noted the following. Gillis (1971: 72, 163) recognized “*Toxicodendron* section *Venenata*” and distinguished it from *T.* sect. *Toxicodendron* and *T.* sect. *Simplicifolia* Gillis. He, however, did not treat “sect. *Venenata*” and remarked that he considered it “too large and diverse a group to include at the present time,” and therefore, Gillis’s intended composition of it is unclear. Furthermore, he did not provide a Latin diagnosis/description, reference to *Rhus* sect. *Venenatae*, or cite a type for the sectional name. Therefore, “*Toxicodendron* section *Venenata*”

remains an invalid name. Nevertheless, perhaps unaware of its invalidity, the sectional name has been referenced in numerous subsequent publications, e.g., Nie et al. (2009: 417–418, 421, 426–427). The sectional name is validated here.

Toxicodendron sect. *Venenata* (Engl.) Pell & Gandhi, *comb. & stat. nov.*

Basionym: *Rhus* sect. *Venenatae* Engl., Bot. Jahrb. Syst. 1(4): 379. 1881.

Type: *R. venenata* DC., illegitimate (*R. vernix* L., *T. vernix* (L.) Kuntze)

The epithet *Venenatae* is a plural feminine adjective agreeing with the gender of *Rhus*, whereas *Venenata* is a plural neuter adjective agreeing with the gender of *Toxicodendron*.

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