Notes on the nomenclature and typification of eight names in Bignoniaceae

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Abstract

Lectotype is designated for two names, Bignonia xylocarpa Roxb., Radermachera tonkinensis Dop and second-step lectotype is also designated for six names, Radermachera corymbosa Steenis, R. elegans Steenis, R. pentandra Hemsl., R. pierrei Dop, R. poilanei Dop and Stereospermum seemannii Rolfe

Keywords

Bignonia; Lamiales; lectotype; Radermachera; Stereospermum

Introduction

The family Bignoniaceae comprises 82 genera and about 860 species, distributed predominantly in tropical regions especially South America (1). During the preparation of a proposal to add an example of lectotypification of names published before 1990 in the Code under Art. 9.17 (2), we have been able to study the relevant literature pertaining to the genus Radermachera (3, 4, 5, 6, 7, 8, 9, 10, 11). We realized that lectotypification is required for two names, Bignonia xylocarpa Roxb., Radermachera tonkinensis Dop and six names, Radermachera corymbosa Steenis, R. elegans Steenis, R. pentandra Hemsl., R. pierrei Dop, R. poilanei Dop and Stereospermum seemannii Rolfe would undergo for second-step lectotypification following Art. 9.17 and Art. 9.22 of Shenzhen Code (12; hereafter ‘Code’).

Materials and Methods

An extensive literature survey was carried out and the protologue of each name was studied. The types were studied from online resources of A, E, HK, K, L, NY, MO, P, U, US (13), JSTOR Global Plants and the Director of BO was also consulted for study of type images. Roxburgh icons at CAL and K were also studied.

Nomenclature and Typification

1. Bignonia xylocarpa Roxb., Fl. Ind. ed. 1832, 3: 108. 1832.

Type

(lectotype designated here): [unpubl. icon] Roxburgh Icon No. 2076 (K, digital image!). Remaining original material: Roxburgh Icon No. 2076 (CAL!).

Accepted name

Radermachera xylocarpa (Roxb.) Roxb. ex K.Schum. in Engler & Prantl, Nat.
Bignonia xylocarpa Roxb. was introduced into Calcutta Botanic Garden from Soonda by Dr. Andrew Berry (14). Roxburgh's understanding of this species was based on either live wild plants or the specimens grown in the Garden (14). We could not trace any specimens of Roxburgh but could trace Roxburgh's drawing number 2076 at CAL and K. The drawing at K is depicted with leaves tri-pinnate; panicles terminal; calyx 5-toothed; corolla large, white, tinged yellow, 5–6-lobed, lobes sub-orbicular and much curled along margins; stamens 5–6, stigma 2-lobed; fruits linear, woody, rough, tubercled; seeds winged, all matching well with characters specified in the protologue. Additionally, the Kew drawing is clear, partially coloured and comparatively better than the CAL drawing. Therefore, we designate Roxburgh Icon No. 2076 (K) as the lectotype.

2. Radermachera corymbosa Steenis, Bull. Jard. Bot. Buitenzorg, sér. 3, 10: 249. 1928.

**Type**
(first-step, lectotype designated by van Steenis 1976: 129): INDONESIA. Sumatra, Simaloe, 24 December 1918, Achmad 811; second-step, lectotype designated here: INDONESIA. Sumatra, Simaloe, 24 December 1918, Achmad 811 (BO-1297608, digital image!; isotype L0483426, digital image!); second-step, lectotype designated here: INDONESIA. Sumatra, Simaloe, 4 January 1918, Achmad 164 (BO-1295019, L0883307, digital images!).

**Accepted name**
Radermachera quadripinnata (Blanco) Seem., J. Bot. 8: 147. 1870.

**Notes**
The protologue cites two gatherings, Achmad 164, and Achmad 181 (15). We have been able to trace two specimens (BO, L) belonging to Achmad 164 and five specimens (BO, L) belonging to Achmad 811 [181 as error in the protologue]. The protologue associated the vernacular name koedo koedo paya with collection number 181. The collection number 181 in the protologue is erroneous because all five specimens (BO and L) with vernacular name koedo koedo paya bear the collection number 811. Among all specimens, two sheets belonging to Achmad 811 at BO were annotated as ‘Type specimen!’. Moreover, ‘type specimen’ was also cited with Achmad 811 (BO) in the protologue, therefore, these two specimens as well as three specimens at L can be considered as syntypes. van Steenis (7) cited “Type: Achmad 181 (BO, L). N. Sumatra, Simalur l!” and his indication of type should be considered as inadvertent first-step lectotypification because specifying herbaria was not necessary before 1990 under Art. 9.22 of the Code and Achmad 811 (181 as error) is a single gathering. The specimen BO-1297607 is in brittle condition and bears three fragments devoid of leaves, flowers, fruits, two detached leaves and van Steenis’ annotation ‘Type specimen!’. We designate Achmad 811 (BO-1297608) (Fig. 1) as the second-step lectotype because the specimen is in good condition and bears a single fragment with leaves and the annotation ‘Type specimen!’ in van Steenis’ handwriting.

![Fig. 1. Second-step lectotype of *Radermachera corymbosa* Steenis (BO-1297608) © Herbarium Bogoriense, Indonesia. Reproduced with the permission.](https://plantsciencetoday.online)

3. Radermachera elegans Steenis, Bull. Jard. Bot. Buitenzorg, sér. 3, 10: 252. 1928.

**Type**
(first-step, lectotype designated by van Steenis 1976: 129): INDONESIA. Celebes, Minahasa (Manado), Kojoewatoe, 11 March 1895, Koorders 16256β; second-step, lectotype designated here: INDONESIA. Celebes, Minahasa (Manado), Kojoewatoe, 11 March 1895, Koorders 16256β (BO-1897992, digital image!); isotype L0003398, digital images!). Additional syntypes: INDONESIA. Celebes, Minahasa, Koorders 16253β, Koorders 16254β, Koorders 16255β (L0483430, digital image!); Koorders 16254β (L0483426, digital image!); Koorders 16255β (L0483427, digital image!).

**Accepted name**
Radermachera quadripinnata (Blanco) Seem., J. Bot. 8: 147. 1870.

**Notes**
Radermachera elegans Steenis was described based on the gatherings Koorders 16253β, 16254β, 16255β, 16256β, and 16257β collected from Sulawesi (Celebes) which can be considered as syntypes. We could trace three specimens belonging to Koorders 16253β, 16254β, 16255β at L and there are no extant specimens at BO. Furthermore, Koorders 16256β (BO, L) was cited as the “type specimen” in the protologue and we have been able to trace two...
specimens of this collection at BO and L. van Steenis (7) cited “Type: Koorders 16256 (BO, L), NE Celebes, Minahasa” and it should be considered as inadvertent first-step lectotypification following Art. 7.11 and 9.22. Therefore, we designate here Koorders 16256 (BO-1897992) (Fig. 2) as second-step lectotype because it bears the annotation “type specimen!” in van Steenis’ handwriting.

5. Radermachera pentandra Hemsl., Hooker’s Icon. Pl. 28: t. 2728. 1902.

Type (first-step, lectotype designated by van Steenis 1976: 129): CHINA. Yunnan, Mengtze, 5000 ft. A.Henry 10909; second-step, lectotype designated here: CHINA. Yunnan, Mengtze, 5000 ft. A.Henry 10909 (K000779284, digital image); isolecotypes A00093053, A00093054, A00093055, E00265701, E00265702, K000779285, K000779283, K000779282, L0003391, MO-091367, MO-091368, MO-091369, MO-091370, NY00328931, NY00328930, US00125940, US00125939, digital images).

Notes Hemsley (18) described the species based on the single gathering A. Henry 10909 from Yunnan, China. We have been able to trace 18 specimens at A, E, K, L, MO, NY and US which should be considered as syntypes following McNeill (17) and Art. 40 Note 1 of the Code. van Steenis (7) cited “Type: A. Henry 10909 (A, K), Yunnan, Mengtze” and his indication of “type” must be accepted as inadvertent first-step lectotypification following Art. 9.17 and Art. 9.22 because A. Henry 10909 is a single gathering. However, two herbaria were mentioned by van Steenis but specifying herbaria were not necessary before 1990 for effective lectotype designation under Art. 9.22. Therefore, the name would undergo second-step lectotype designation and we designate here the specimen K000779284 as second-step lectotype because Hemsley was based at Kew.

6. Radermachera poilanei Dop, Bull. Mus. Natl. Hist. Nat., sér. 2, 2: 155. 1930.

Type (first-step, lectotype designated by Santisuk 1974: 30): VIETNAM. Annam, Ca Na, Prov. Phanrang, 1 April 1923, Poilane 5953; second-step, lectotype designated here: VIETNAM. Annam, Ca Na, Prov. Phanrang, 1 April 1923, Poilane 5953 (P00609723, digital image); isolecotypes A00093059, NY00328909, P00609722, P00609724, digital images). Additional syntypes: VIETNAM. Annam, Ca Na, Prov. Phanrang, 25 November 1923, Poilane 8759 (K000779275, P00609725, P00609726, digital images).

Accepted name Radermachera hainanensis Merr., Philipp. J. Sci. 21: 353. 1922.

Notes A single gathering, Pierre 570 was cited in the protologue (16). We have been able to trace nine specimens at A, K, L, NY and P and all are syntypes under Art. 40 Note 1 of the Code and McNeill (17). van Steenis (7) cited “Type: Pierre 570 (A, K, P), Cambodia, Mt. Schral”. Although three herbaria were cited by van Steenis (7), but before 1990 speci-
K. P. Santisuk (4) cited “Type–Annam: Ca-na, Phanrang, 1-4-23, Poilane 5953 (K, P)” and this citation of type should be accepted as effective lectotypification under Art. 7.11 of the Code because specifying herbaria were not necessary before 1990 under Art. 9.22. As Poilane 5953 is a single gathering deposited at A, NY, P, a second-step lectotypification is required under Art. 9.17. Thus, we designate here Poilane 5953 (P00609723) as second-step lectotype because the specimen bears Dop’s annotation.

7. Radermachera tonkinensis Dop, Bull. Mus. Natl. Hist. Nat. 32: 233. 1926.

Type
(lectotype designated here): VIETNAM. Without precise locality, 27 November 1924, M. Poilane 10859 (P00609733, digital image); isolecotypes L0003404, P00609734, P00609735, digital images!). Additional syntypes: VIETNAM. Tonkin, H. Bon 2420 [L0003404, P00609731, P00609732, digital images!).

Accepted name
Radermachera sinica (Hance) Hemsl., Hooker’s Icon. Pl. 28: t. 2728. 1902.

Notes
The protologue cites four gatherings, H. Bon 2710, 2753, 2420, Poilane 10859 (16). We have been able to trace seven specimens belonging to two gatherings, H. Bon 2420 (fructing) and Poilane 10859 (flowering) at L and P. All five specimens at P bear Dop’s annotation. Dop (16) cited “Cette espèce est voisine du Stereospermum (Radermachera) sinicum Hance. Elle en diffère par les feuilles coriaces et acuminées-caudées, les fleurs blanches plus grandes, le calice beaucoup plus long” [this species is close to Stereospermum (Radermachera) sinicum Hance. It differs from it by coriaceous and acuminate-caudate leaves, the larger white flowers, the much longer calyx]. Thus, flowers are more informative for identity of the species. The specimens belonging to H. Bon 2420 bear ruptured fruits without seeds. Among the three flowering specimens of Poilane 10859, the only sheet bearing the annotation “sp. n.” in Dop’s handwriting is the specimen with barcode [P00609733], which is here designated as the lectotype.

8. Stereospermum seemannii Rolfe, J. Linn. Soc., Bot. 21: 314. 1884.

Type
(first-step, lectotype designated by van Steenis 1976: 129): PHILIPPINES. Luzon, Prov. Albay, H. Cuming 996; second-step, lectotype designated here: PHILIPPINES. Luzon, Prov. Albay, H. Cuming 996 (K000779261, digital image); isolecotypes K000779259, P02892526, digital images!).

Accepted name
Radermachera quadripinnata (Blanco) Seem., J. Bot. 8: 147. 1870.

Notes
Rolfe (20) cited a single gathering, Cuming 996 from Philippines in the protologue of Stereospermum seemannii. There are two specimens at K and one specimen at P which can be considered as syntypes following McNeill (17) and Art. 40 Note 1 of the Code. van Steenis (7) cited “Type: Cuming 996 (BM, K), Philippines” and his indication of “type” should be considered as inadvertent lectotypification following Art. 7.11 and 9.22 because specifying herbaria were not necessary before 1990. The specimen K000779259 consists of a flowering fragment without leaves, and is mounted together with another specimen, with barcode K000779260, bearing the annotation “This lower specimen is Stereospermum cheloneoides DC., and is probably not from the Philippines at all” by an unknown hand. We have chosen to designate the specimen K000779261 as second-step lectotype because it is unambiguously a part of the type gathering and bears Rolfe’s annotation “Stereospermum seemannii Rolfe!” in his own handwriting. .

Acknowledgements
The authors are grateful to Dr A.A. Mao, Director, Botanical Survey of India, Kolkata and Dr R.K. Gupta, Head of Office, Central National Herbarium, Howrah, India for facilities. We are also thankful to N.J. Turland (B) for clarification on pre 1990 lectotypification; to all the curators of A, BM, E, K, L, NY, MO, P and US for putting the images online; Mrs. Ranee Om Prakash (BM) for looking type specimens at BM; Dr Atik Retnowati (BO) is also thanked for sending the type images of Radermachera corymbosa and R. elegans and Dr Himmah Rustiami (BO) for permission to reproduce the images of the same.

Authors contributions
AK executed the research and prepared the manuscript. TC planned the research. All authors read and approved the final manuscript.

Compliance with ethical standards
Conflict of interest: Authors do not have any conflict of interests to declare.

Ethical issues: None.

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