

## The correct name of *Croton roxburghii* N.P.Balakr., nom. illeg. (Euphorbiaceae)

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### ABSTRACT

The complicated nomenclatural situation surrounding the names of the widespread species currently known as *Croton roxburghii* N.P.Balakr. is discussed, and *C. mangelong* Y.T.Chang is established as the valid name to be used. The confusion with other, superficially similar species is discussed and important differences listed. A lectotype for *C. roxburghii* is designated.

KEYWORDS: *Baliospermum*, *Chrozophora*, nomenclature, taxonomy, typification.

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### INTRODUCTION

One of the most widespread species of *Croton* L. (Euphorbiaceae) in South-East Asia, including Thailand, is currently known as *Croton roxburghii* N.P.Balakr. Unfortunately this name, although widely used recently, is illegitimate.

The species is distributed from India through Indochina (including Thailand) to southern China. It had been originally described as *C. oblongifolius* Roxb. However, this name from 1832 was recognized as illegitimate by Balakrishnan (1962), being a later homonym of *C. oblongifolius* Delile from 1814. Although this latter name is now classified under the genus *Chrozophora* A.Juss., it nonetheless has nomenclatural priority. Consequently, Balakrishnan replaced Roxburgh's name with *C. roxburghii* N.P.Balakr. This latter name has been used in several recent publications, including the Flora of Thailand (Esser, 2005) and Forest Herbarium (2001).

It was recently recognized that *C. roxburghii* is illegitimate too as it is predated by *Croton roxburghii* Wall. This latter name was validly published in an obscure publication by Wallich (1840), a letter that had been printed and distributed in several copies and must therefore be considered a valid publication, but had long been overlooked. This earlier homonym is a replacement name for the likewise illegitimate *C. polyandrus* Roxb. (non Spreng.), but is actually

a synonym of *Baliospermum solanifolium* (Burm.) Suresh. Because of this unfortunate and complicated nomenclatural situation, the name *C. roxburghii* was not used in the Flora of China (Li & Esser, 2008), but left unsolved. A replacement name for this widespread species, namely *C. virbatae* M.R.Almeida, had been published in 2003, but it was widely overlooked. This name was validly published in two publications, in the Flora of Maharashtra and in the Journal of the Bombay Natural History Society (Almeida, 2003; Almeida *et al.*, 2003). The exact publication date of this volume of the Flora of Maharashtra is not currently known (K. Gandhi, pers. comm.), and the journal paper (which is a summary of distribution patterns and nomenclatural changes in the Flora of Maharashtra) is dated August–December 2003.

In the Flora of China (Li & Esser, 2008), it was mentioned that *C. mangelong* Y.T.Chang might be identical to *C. roxburghii* N.P.Balakr. After studying the protologue and holotype image of *C. mangelong* this can now be confirmed. *Croton mangelong* had been proposed as a new species characterized by scattered, flat and lepidote trichomes and compared with *C. cascarilloides* Raeusch. and *C. roxburghii* (Chang, 1983). From the former the species is clearly distinct in several characters, such as serrate leaves that are much larger and abaxially not silvery-whitish. To distinguish it from *C. roxburghii* only a

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single difference was cited, namely ciliate trichomes, referring to their apically slightly free radii. This falls within the range of variation of *C. roxburghii*, and the names are indeed synonymous.

The situation of *C. roxburghii* N.P.Balacr. was complicated further in that the species had been synonymized with two older names, i.e. with *C. persimilis* Müll.Arg. (by, e.g., Pooma & Suddee, 2014) and with *C. laevigatus* Vahl (by, e.g., Govaerts *et al.*, 2000). This might have happened because the unpublished herbarium name *C. laevigatus* Wall. is indeed referable to this species, and while *C. persimilis* Müll.Arg. was based on a mixed concept that included several species, the name was later restricted to plants from Sri Lanka by lectotypification (Philcox, 1997).

The three species are, although superficially similar, distinct taxa (see also Li & Esser, 2008). Differences are summarized in Table 1.

## TAXONOMY

***Croton mangelong*** Y.T.Chang, Guihaia 3: 172. 1983; P.T.Li & Esser, Fl. China 11: 260. 2008. Type: China, Yunnan, Gengma, Mangelong, 560 m, *Y.F.Li 2179* (holotype KUN 0394768 image!). Fig. 1. — *Croton oblongifolius* Roxb. (Hort. Bengal.: 69. 1814, nomen) Fl. Ind. ed. 1832, 3: 685. 1832, **nom. illeg.** [non Delile, Descr. Egypte, Hist. Nat.: 283. 1814, = *Chrozophora oblongifolia* (Delile) A.Juss. ex Spreng.]; Müll.Arg. in DC., Prodr. 15, 2: 573. 1866; Kurz, Forest Fl. Burma 2: 373. 1877; Hook.f.,

Fl. Brit. India 5: 386. 1887; Craib, Bull. Misc. Inform. Kew 1911: 464. 1911; Contr. Fl. Siam: 190. 1912; Gagnep. in Lecomte, Fl. Indo-Chine 5: 279. 1925; Airy Shaw, Kew Bull. 26: 249. 1972. — *Croton roxburghii* N.P.Balacr., Bull. Bot. Surv. India 3: 39. 1962, **nom. illeg.** [non Wallich, Rep. Calcutta Bot. Gard. to G.A. Bushby: 20. 1840, = *Baliospermum solanifolium* (Burm.) Suresh]; Airy Shaw, Kew Bull. 32: 74. 1977; P.H. Hô, Càyco Vietnam 2, 1: 298, fig. 4475. 1992 (as ‘*roxburghianus*’); Chakrab. & N.P.Balacr., Bull. Bot. Surv. India 34: 67. 1997 (‘1992’); Forest Herbarium, Tem Smitinand’s Thai Plant Names: 156. 2001; Esser in Chayam. & Welzen, Fl. Thailand 8.1: 218. 2005. — *Croton virbalaie* M.R.Almeida, J. Bombay Nat. Hist. Soc. 11: 580. August–December 2003, Fl. Maharashtra 4B: 300. 2003 (as “*virbalaie*”). Type: India, Calcutta, *W. Roxburgh s.n.* (‘Buragach’) (lectotype BM 000754910!, here designated, isolectotypes A!, G 00434425!); **syn. nov.**

— *Croton laevigatus* auct. non Vahl: Govaerts *et al.*, World Checkl. & Bibliogr. Euphorbiaceae: 467. 2000.

— *Croton persimilis* auct. non Müll.Arg.: Pooma & Suddee, Tem Smitinand’s Thai Plant Names rev. ed.: 163. 2014.

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Table 1. Comparison of *C. mangelong*, *C. laevigatus* and *C. persimilis*

	<i>Croton mangelong</i>	<i>Croton laevigatus</i>	<i>Croton persimilis</i>
Distribution	widespread (India to China)	endemic to Hainan (China)	endemic to S India and Sri Lanka
Trichome type	peltate with mostly fused radii	stellate with free radii	peltate with mostly fused radii
Leaf margin	distinctly serrate	subentire	distinctly serrate
Indumentum of inflorescence	scattered, trichomes pale-hyaline (not yellowish)	dense and persistent, trichomes pale yellowish	dense and persistent, trichomes pale yellowish

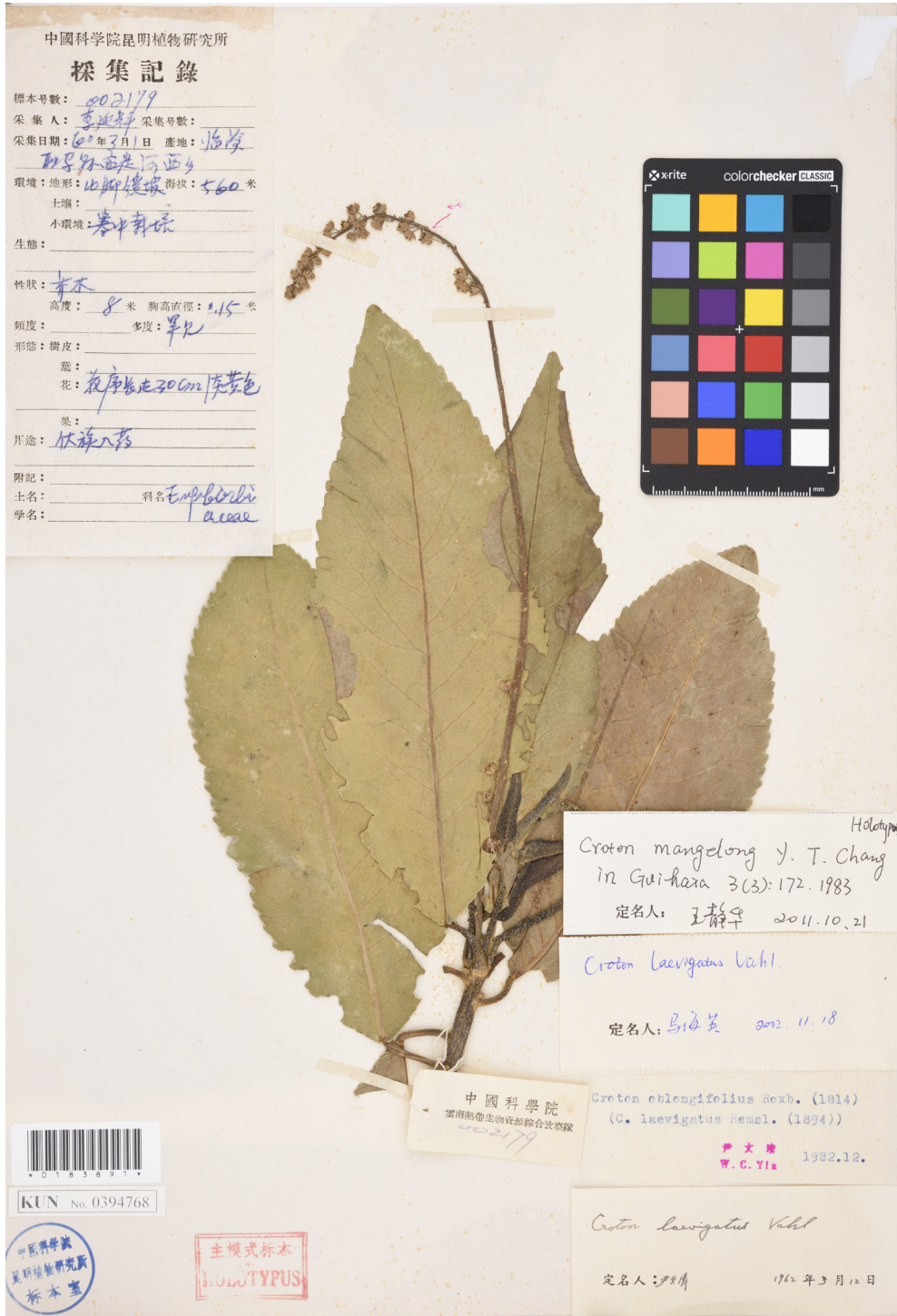


Figure 1. Holotype of *Croton mangelong*

## REFERENCES

- Almeida, M.R. (2003). Flora of Maharashtra 4B (Bischofiaceae to Ceratophyllaceae). St. Xavier's College, Mumbai, pp. 279–399.
- Almeida, M.R., Dutta, S. & Almeida, S.M. (2003). Glimpses of the phytogeography of Maharashtra. *Journal of the Bombay Natural History Society* 100: 559–588.
- Balakrishnan, N.P. (1962). Nomenclatural notes in Euphorbiaceae. *Bulletin of the Botanical Survey of India* 3: 39–40.
- Chang, Y.T. (1983). *Materiae ad floram Euphorbiacearum sinensium* (II). *Guihaia* 3: 171–176.
- Esser, H.-J. (2005). *Croton*. In: K. Chayamarit & P.C. van Welzen, Euphorbiaceae (Genera A–F), pp. 189–226. *Flora of Thailand* 8(1). The Forest Herbarium, Royal Forest Department, Bangkok.
- Forest Herbarium (2001). *Tem Smitinand's Thai Plant Names*. The Forest Herbarium, Royal Forest Department, Bangkok, 810 pp.
- Govaerts, R., Frodin, D.G. & Radcliffe-Smith, A. (2000). *World Checklist and bibliography of Euphorbiaceae (and Pandaceae)*. Royal Botanic Gardens, Kew, 1622 pp.
- Li, P.T. & Esser, H.-J. (2008). *Croton*. In: P.T. Li, H.-H. Chiu, J.S. Ma, H. Zhu, M.G. Gilbert, H.-J. Esser, S. Dressler, P. Hoffmann, L.J. Gillespie, M. Vorontsova & G. McPherson, *Flora of China* 11: Euphorbiaceae, pp. 258–264. Science Press, Beijing & Missouri Botanical Garden, St. Louis.
- Philcox, D. (1997). Euphorbiaceae. In: M.D. Dassanayake & W.D. Clayton (eds), *A revised handbook of the flora of Ceylon* 11, pp. 80–283. Balkema, Rotterdam.
- Pooma, R. & Suddee, S. (eds) (2014). *Tem Smitinand's Thai Plant Names*, Revised edition. Department of National Parks, Wildlife and Plant Conservation, Bangkok, 812 pp.
- Wallich, N. (1840). Report of Dr. Wallich on the Botanic Garden of Calcutta to G.A. Bushby. In: *Plants despatched from and received into the Calcutta Botanic Garden*. Bengal Public Proceedings, London. Available at [http://www.kew.org/sites/default/files/IOR\\_F\\_4\\_1949\\_2\\_0.pdf](http://www.kew.org/sites/default/files/IOR_F_4_1949_2_0.pdf)