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Research Article

## Nomenclatural novelties in Euphorbiaceae

Rajeev Kumar Singh

Botanical Survey of India, Arid Zone Regional Centre, AIIMS Road, Jodhpur, Rajasthan, India

E-mail: [rksbsiadsingh@gmail.com](mailto:rksbsiadsingh@gmail.com); ORCID: <https://orcid.org/0000-0002-0136-9243>

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**Abstract:** Replacement names *Croton lallanii* R.Kr.Singh, *C. vishwanathii* R.Kr.Singh and *Euphorbia charitontceyii* R.Kr.Singh are proposed here for the illegitimate names *Croton chevalieri* Gagnep., *C. insignis* Glaz. ex Sodré & M.J.Silva and *Euphorbia pseudoesula* Charit. respectively. In the genus *Euphorbia* L., a new name *E. sangeetae* R.Kr.Singh is proposed here for *Stenadenium spinescens* Pax. Two new combinations *Euphorbia compacta* (N.E.Br.) R.Kr.Singh and *E. compacta* var. *rubra* (S.Carter) R.Kr.Singh are made here for *Synadenium compactum* N.E.Br. and *S. compactum* var. *rubrum* S.Carter respectively. A new combination and status *Euphorbia sangeetae* var. *elegans* (S.Carter) R.Kr.Singh is made for *Monadenium elegans* S.Carter. In addition, to fix the identity and to avoid the misapplication of names, lectotypes are designated for *Synadenium compactum* N.E.Br. and *Stenadenium spinescens* Pax.

**Keywords:** Brazil, *Croton chevalieri*, *Croton insignis*, Endemic, *Euphorbia pseudoesula*, *Monadenium elegans*, *Synadenium compactum*, *Stenadenium spinescens*, Russia, Tanzania, Mexico, Vietnam

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### Introduction

The genus *Croton* L. consists of about 1130 species, distributed worldwide in tropics and subtropics regions (POWO, 2025). In Vietnam, the genus is represented by 34 species, namely *C. alpinus* A.Chev. ex Gagnep., *C. argyratus* Blume, *C. cascarilloides* Raeusch., *C. caudatus* Geiseler, *C. chevalieri* Gagnep., *C. crassifolius* Geiseler, *C. cubiensis* Gagnep., *C. delpyi* Gagnep., *C. dodecamerus* Gagnep., *C. dongnaiensis* Pierre ex Gagnep., *C. eberhardtii* Gagnep., *C. heterocarpus* Müll.Arg., *C. hirtus* L'Hér., *C. ignifex* Croizat, *C. iteophyllus* Radcl.-Sm. & Govaerts, *C. joufra* Roxb., *C. kongensis* Gagnep., *C. krabas* Gagnep., *C. lachnocarpus* Benth., *C. lamdongensis* Thin, *C. langsonensis* Thin, *C. laniflorus* Geiseler, *C. latsonensis* Gagnep., *C. persimilis* Müll.Arg., *C. phuquocensis* Croizat, *C. poilanei* Gagnep., *C. pontis* Croizat, *C. potabilis* Croizat, *C. scopuligenus* Croizat, *C. thoi* Thin, *C. thorelii*

Gagnep., *C. tigilium* L., *C. touranensis* Gagnep. and *C. vietnamensis* Radcl.-Sm. & Govaerts, of which *C. alpinus*, *C. chevalieri*, *C. cubiensis*, *C. dodecamerus*, *C. dongnaiensis*, *C. eberhardtii*, *C. ignifex*, *C. iteophyllus*, *C. lamdongensis*, *C. langsonensis*, *C. latsonensis*, *C. pontis*, *C. potabilis*, *C. scopuligenus*, *C. thoi*, *C. touranensis* and *C. vietnamensis* are endemic (POWO, 2025). However, the name *C. chevalieri* Gagnep. (Bull. Soc. Bot. France 68: 550. 1922) is illegitimate because it is a later homonym of *C. chevalieri* Beille [Bull. Soc. Bot. France (Mémoires) 8c: 123. 1910] in accordance with Article 53.1 of the ICN (Turland et al., 2018). Therefore, a replacement name is proposed here. In Brazil, the genus consists of about 340 species, of which 240 are endemic (POWO, 2025). However, the name *C. insignis* Glaz. ex Sodré & M.J.Silva (Phytotaxa 472: 223. 2020) is illegitimate because it is a later homonym of *C. insignis* Van Geert [Nursery Cat. (Auguste Van Geert) 83: 9. 1882]. Therefore, a replacement name is herein proposed.

The cosmopolitan genus *Euphorbia* L. consists of about 2060 species. In Russia, the genus is represented by about 650 species (POWO, 2025). However, the name *E. pseudoesula* Charit. (Vestn. Tobol'skoi Gosud. Sotsial'no-Pedagog. Akad. 3: 46. 2011) is illegitimate because it is a later homonym of *E. pseudoesula* Schur (Verh. Mitth. Siebenbürg. Vereins Naturwiss. Hermannstadt 4: 66. 1853). Therefore, a replacement name is proposed here. In Tanzania, the genus consists of about 145 species, of which *E. allocarpa* S.Carter, *E. asthenacantha* S.Carter, *E. biharamulensis* S.Carter, *E. biselegans* Bruyns, *E. bisglobosa* Bruyns, *E. caloderma* S.Carter, *E. catenata* (S.Carter) Bruyns, *E. dilobadena* S.Carter, *E. discrepans* S.Carter, *E. dumeticola* P.R.O.Bally & S.Carter, *E. elegantissima* P.R.O.Bally & S.Carter, *E. exilisipina* S.Carter, *E. eyassiana* P.R.O.Bally & S.Carter, *E. fischeri* Pax, *E. fuscolanata* Gilli, *E. gladiata* (P.R.O.Bally) Bruyns, *E. greenwayi* P.R.O.Bally & S.Carter, *E. handeniensis* S.Carter, *E. heteropodium* Pax, *E. hubertii* Pax, *E. lenewtonii* S.Carter, *E. lukoseana* S.Carter, *E. lutosa* S.Carter, *E. magnifica* (E.A.Bruce) Bruyns, *E. maritae* Rauh, *E. neoarborescens* Bruyns, *E. neococcinea* Bruyns, *E. neocrispa* Bruyns, *E. neoglauescens* Bruyns, *E. neogoetzei* Bruyns, *E. neogracilis* Bruyns, *E. neospinescens* Bruyns, *E. obconica* Bojer ex N.E.Br., *E. pilosissima* S.Carter, *E. platypoda* Pax, *E. proballyana* L.C.Leach, *E. pseudograntii* Pax, *E. pseudonudicaulis* Bruyns, *E. pseudopetiolata* Bruyns, *E. pseudoracemosa* (P.R.O.Bally) Bruyns, *E. quadrialata* Pax, *E. quadrilatera* L.C.Leach, *E. reclinata* P.R.O.Bally & S.Carter, *E. rubrispinosa* S.Carter, *E. schubei* Pax, *E. selousiana* S.Carter, *E. songweana* S.Carter, *E. specksii* Rauh, *E. spectabilis* (S.Carter) Bruyns, *E. syncalycina* Bruyns, *E. taboraensis* A.Hässl. and *E. trichiocyma* S.Carter are endemic (POWO, 2025). However, the new name *E. neospinescens* Bruyns (Bruyns et al., 2006) for *Stenadenium spinescens* Pax (Bot. Jahrb. Syst. 30: 343. 1901) is invalid according to the Article 41.5 of ICN (Turland et al., 2018). The species epithet *spinescens* is preoccupied in the genus *Euphorbia* (*E. spinescens* Pax, Bot. Jahrb. Syst. 19: 120. 1894), therefore, a new name is herein proposed. Further, a new combination and status for *Monadenium elegans* S.Carter ( $\equiv$  *Euphorbia biselegans* Bruyns) is made here because this taxon differ from *Monadenium spinescens* (Pax) P.R.O.Bally ( $\equiv$  *E. neospinescens* Bruyns, *nom. inval.*) in few marginal characters. In Kenya, the genus is represented by about 125 species, of which *E. atrofiora* S.Carter, *E. baioensis* S.Carter, *E. ballyana* Rauh, *E. brevitorta* P.R.O.Bally, *E. classenii* P.R.O.Bally & S.Carter, *E. cuprispina* S.Carter, *E. cussonioides* P.R.O.Bally, *E. dauana* S.Carter, *E. diminuta* S.Carter, *E. fluminis* S.Carter, *E. forolensis* L.E.Newton, *E. friesiorum* (A.Hässl.) S.Carter, *E. gemmea* P.R.O.Bally &

S.Carter, *E. guentheri* (Pax) Bruyns, *E. iloitaii* Powys & S.Carter, *E. invenusta* (N.E.Br.) Bruyns, *E. joyae* P.R.O.Bally & S.Carter, *E. laikipiensis* S.Carter, *E. lavicola* S.Carter, *E. marsabitensis* S.Carter, *E. mbutinzaensis* N.Wei, Mwachala, G.W.Hu & Q.F.Wang, *E. neorubella* Bruyns, *E. neostolonifera* Bruyns, *E. neovirgata* Bruyns, *E. odontophora* S.Carter, *E. pervittata* S.Carter, *E. petricola* P.R.O.Bally & S.Carter, *E. pseudotrinerivis* Bruyns, *E. renneyi* (S.Carter) Bruyns, *E. rhizophora* (P.R.O.Bally) Bruyns, *E. ritchiei* (P.R.O.Bally) Bruyns, *E. samburuensis* P.R.O.Bally & S.Carter, *E. saxorum* P.R.O.Bally & S.Carter, *E. scarlatina* S.Carter, *E. serendipita* L.E.Newton, *E. subscandens* P.R.O.Bally & S.Carter, *E. sumati* S.Carter, *E. tanaensis* P.R.O.Bally & S.Carter, *E. taruensis* S.Carter, *E. turkanensis* S.Carter, *E. vittata* S.Carter, *E. vulcanorum* S.Carter, *E. wakefieldii* N.E.Br. and *E. yattana* (P.R.O.Bally) Bruyns are endemic (POWO, 2025). However, the new name *E. bicompecta* Bruyns (Bruyns et al., 2006) for *Synadenium compactum* N.E.Br. (Fl. Trop. Afr. [Oliver et al.] 6: 465. 1911) is superfluous because the species epithet '*compactum*' should have been used. The species epithet *compactum* is available in the genus *Euphorbia* and therefore, a new combination is herein proposed. In addition, lectotypes are designated here for the names *Synadenium compactum* N.E.Br. and *Stenadenium spinescens* Pax to fix the identity and to avoid the misapplication of names.

## Nomenclature

***Croton lallanii*** R.Kr.Singh, *nom. nov.*

≡ *Croton chevalieri* Gagnep., Bull. Soc. Bot. France 68: 550. 1922, *nom. illeg., non* Beille, Bull. Soc. Bot. France (Mémoires) 8c: 123. 1910.

Holotype: Vietnam, Biên Hòa, Trảng Bom forest reserve, 28 March 1914, [A.J.B. Chevalier] *F. Fleury* 32048 (P00120309!, Figure 1); isotypes A00105626!, M0241963! (Figure 2).

Distribution: Endemic to Vietnam.

Etymology: Named after my father late Shri Lallan Singh.

***Croton vishwanathii*** R.Kr.Singh, *nom. nov.*

≡ *Croton insignis* Glaz. ex Sodré & M.J.Silva, Phytotaxa 472(3): 223. 2020, *nom. illeg., non* Van Geert, Nursery Cat. (Auguste Van Geert) 83: 9. 1882.

Holotype: Brazil, Goiás, Fazenda da Cova, chez M. Simeão, 26 November 1894, *A.F.M. Glaziov* 22102 (P00623599!, Figure 3); isotypes BR0000005848553!, K000574190! (Figure 4), MPU014832!, P00623598!, S-R-10531!,

Distribution: Endemic to Brazil.

Etymology: Named after my grandfather late Shri Vishwanath Singh.

***Euphorbia charitontcevi*** R.Kr.Singh, *nom. nov.*

≡ *Euphorbia pseudoesula* Charit., Vestn. Tobol'skoi Gosud. Sotsial'no-Pedagog. Akad. 3: 46. 2011,

*nom. illeg., non* Schur, Verh. Mitth. Siebenbürg. Vereins Naturwiss. Hermannstadt 4: 66. 1853.

Holotype: Russia, West Siberia, Regio Thjumen, ad septentriones 2 km u. Ischim, pratum inudatum, 28 July 2010, *B.S. Charitoncev s.n.* (herb. Univ. Thjumensis).

Distribution: Endemic to West Siberia, Russia.

Etymology: Named after Boris Stepanovich Charitontcev, Russian Botanist.

***Euphorbia compacta*** (N.E.Br.) R.Kr.Singh, *comb. nov.*

≡ *Synadenium compactum* N.E.Br., Fl. Trop. Afr. [Oliver et al.] 6(1): 465. 1911. *Euphorbia bicompecta* Bruyns, Taxon 55(2): 412. 2006, *nom. superfl.*

Lectotype (designated here): Kenya, Machakos, 7 June 1902, *T. Kassner* 956 (BM000911306!, Figure 5); isolectotypes K000237846! (Figure 6), Z000019772! (Figure 7).

Distribution: Eritrea, Ethiopia, Kenya and Rwanda.

Notes: Two specimens (BM000911306 and K000237846) was examined by N.E. Brown while describing the name *Synadenium compactum*. Of these, the best one BM000911306, is designated here as the lectotype as it agrees well with the protologue.

***Euphorbia compacta*** var. ***rubra*** (S.Carter) R.Kr.Singh, *comb. nov.*

≡ *Synadenium compactum* var. *rubrum* S.Carter, Kew Bull. 42(3): 669. 1987. *Euphorbia bicompecta* var. *rubra* (S.Carter) Bruyns, Taxon 55(2): 412. 2006, *nom. superfl.*

Holotype: Kenya, Lake Naivasha west rift, 6200 ft., 27 November 1965, *E. Polhill* 152 (K000237841!, Figure 8).

Distribution: Endemic to Kenya.

***Euphorbia sangeetae*** R.Kr.Singh, *nom. nov.*

≡ *Stenadenium spinescens* Pax, Bot. Jahrb. Syst. 30: 343. 1901. *Monadenium spinescens* (Pax) P.R.O.Bally, Candollea 17: 34. 1959. *Euphorbia neospinescens* Bruyns, Taxon 55(2): 414. 2006, *nom. inval.*

Lectotype (designated here): Tanzania, Rukwa, Ilonia-Berg, trockene Abhänge um 1500 m ü. M., 17 July 1899, *W. Goetze* 1099 (BM000911319!, Figure 9); isolectotypes BR0000006243463! (Figure 10), K000253470!, P00576985! (Figure 11), P00576986!.

Distribution: Endemic to Tanzania.

Etymology: Named after my wife Sangeeta Singh for her continuous help and support in my Botanical studies.



Figure 1: Holotype of *Croton chevalieri* Gagnep. (P00120309, © Muséum National d'Histoire Naturelle, Paris)



Figure 2: Isotype of *Croton chevalieri* Gagnep. (M0241963, © Botanische Staatssammlung München)



Figure 3: Holotype of *Croton insignis* Glaz. ex Sodré & M.J.Silva (P00623599, © Muséum National d'Histoire Naturelle, Paris)

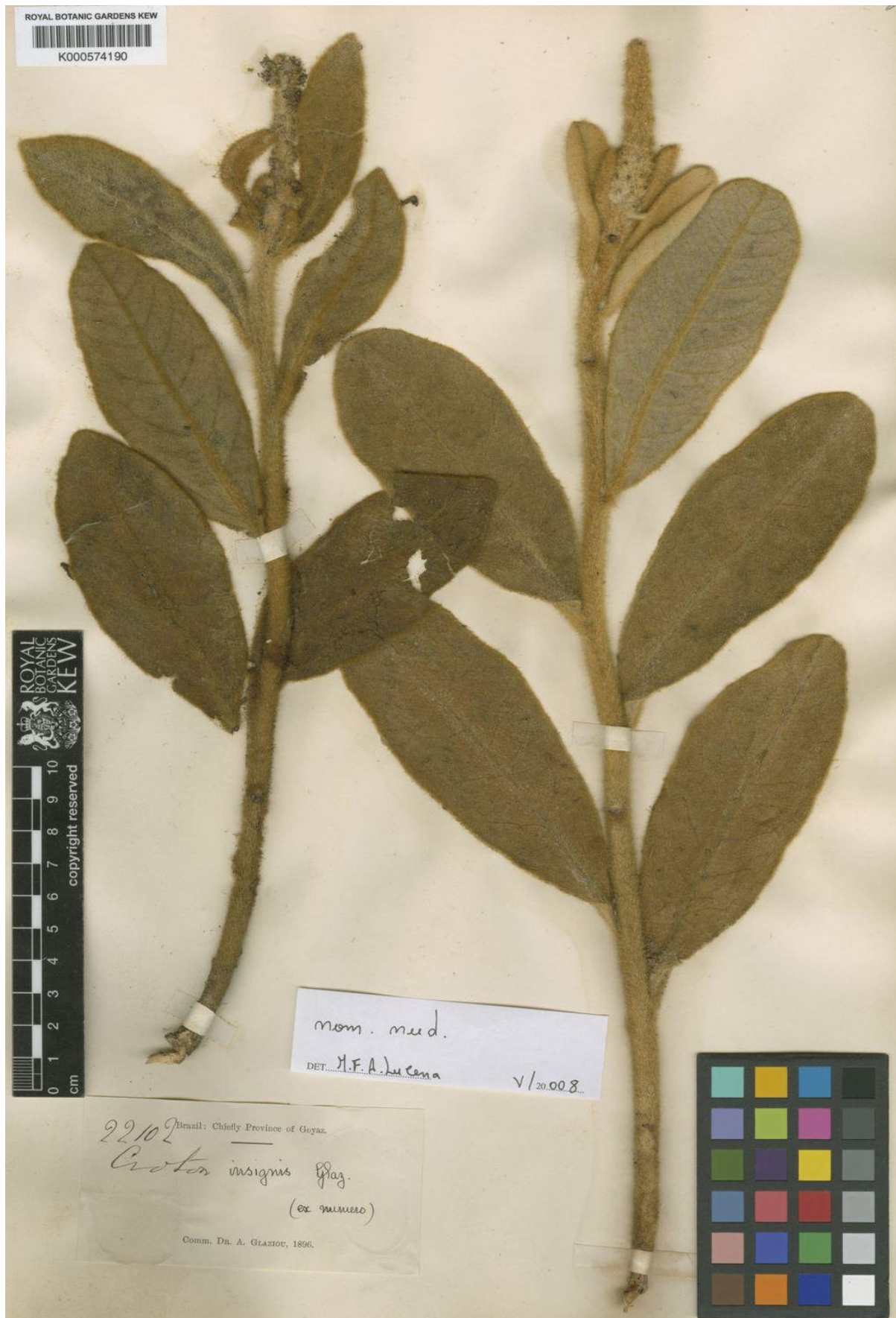


Figure 4: Isotype of *Croton insignis* Glaz. ex Sodr  & M.J.Silva (K000574190,   The Trustees of the Royal Botanic Gardens, Kew)



Figure 5: Lectotype of *Synadenium compactum* N.E.Br. (BM000911306, © The Natural History Museum, London)



Figure 6: Isolectotype of *Synadenium compactum* N.E.Br. (K000237846, © The Trustees of the Royal Botanic Gardens, Kew)



Figure 7: Isolectotype of *Synadenium compactum* N.E.Br. (Z000019772, © Herbarium of the University of Zürich)



Figure 8: Holotype of *Synadenium compactum* var. *rubrum* S. Carter (K000237841, © The Trustees of the Royal Botanic Gardens, Kew)



Figure 9: Lectotype of *Stenadenium spinescens* Pax (BM000911319, © The Natural History Museum, London)

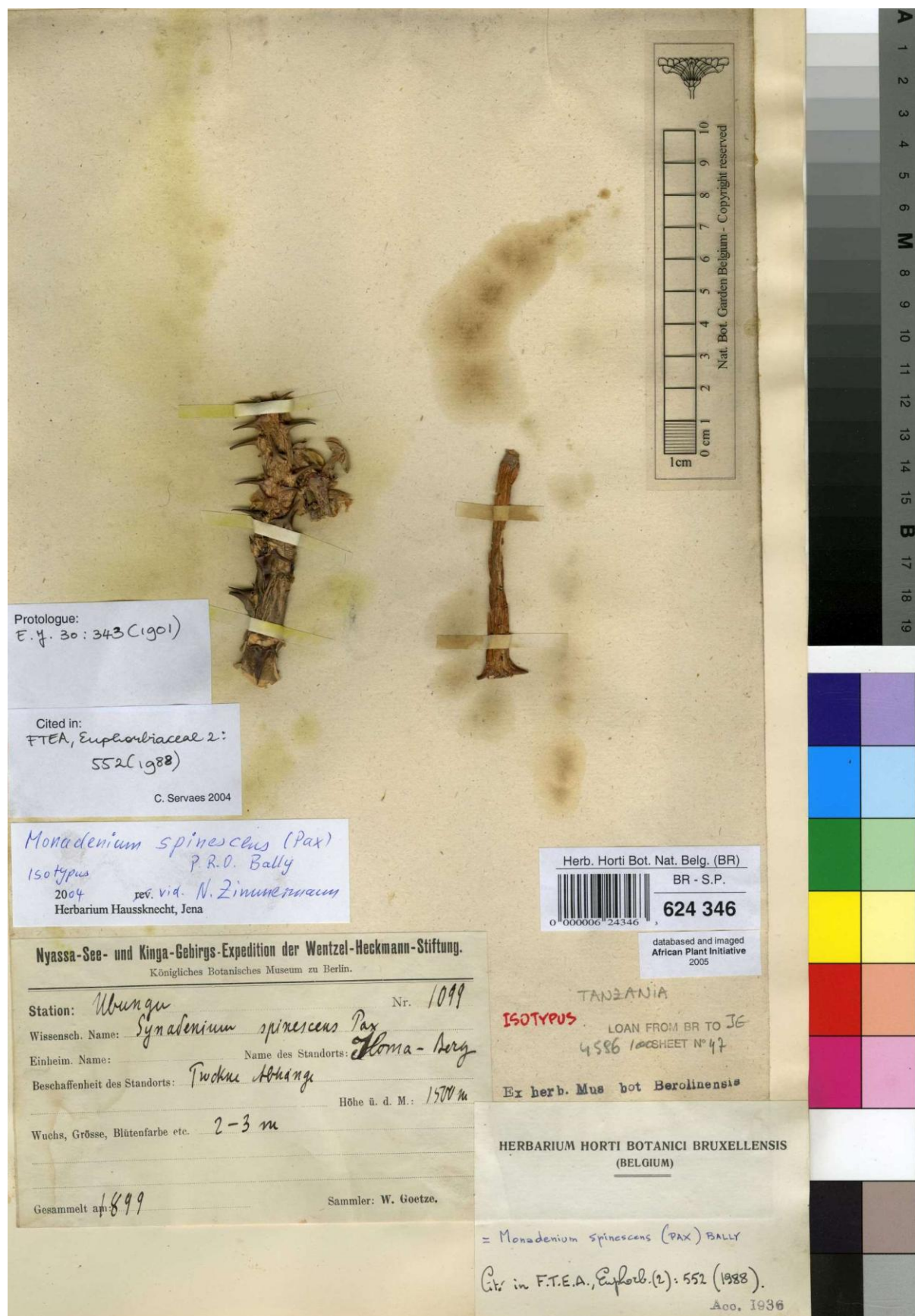


Figure 10: Isolectotype of *Stenadenium spinescens* Pax (BR0000006243463, © Herbarium of National Botanic Garden of Belgium)



Figure 11: Isolectotype of *Stenadenium spinescens* Pax (P00576985, © Muséum National d'Histoire Naturelle, Paris)



Figure 12: *Euphorbia sangeetae* R.Kr.Singh ( $\equiv$  *Stenadenium spinescens* Pax, MICH1303230, © Herbarium of the University of Michigan)

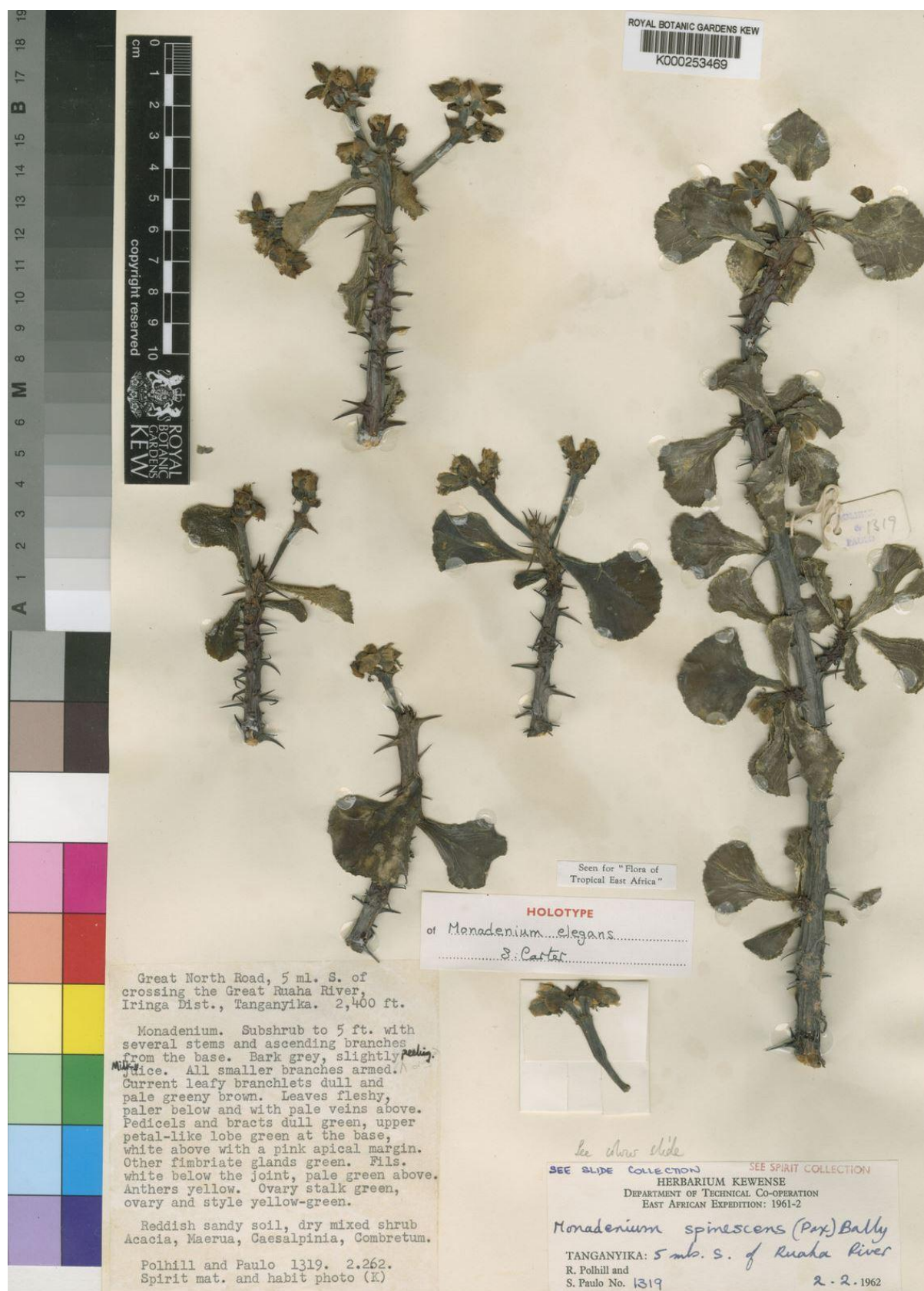


Figure 13: Holotype of *Monadenium elegans* S.Carter (K000253469, © The Trustees of the Royal Botanic Gardens, Kew)



Figure 14: Isotype of *Monadenium elegans* S.Carter (P00576987, © Muséum National d'Histoire Naturelle, Paris)

Notes: Presently, the holotype specimen of *Stenadenium spinescens* Pax is not extant at Berlin herbarium (B). Five duplicate specimens (isotypes) were traced for the name *S. spinescens* Pax (BM000911319, BR0000006243463, K000253470, P00576985 and P00576986) and the better-preserved specimen BM000911319, is designated here as the lectotype as it agrees well with the protologue. This species is 'Critically Endangered' as per IUCN (<https://www.iucnredlist.org/species/47348627/47348634>) and one better-preserved herbarium specimen with leaves and inflorescence is traced at MICH (MICH1303230, Figure 12).

***Euphorbia sangeetae* var. *elegans* (S.Carter) R.Kr.Singh, *comb. et stat. nov.***

≡ *Monadenium elegans* S.Carter, Kew Bull. 42(4): 909. 1987. *Euphorbia biselegans* Bruyns, Taxon 55(2): 412. 2006.

Holotype: Tanzania, Iringa district, Great North road, 8 km south of crossing the Great Ruaha river, 2400 ft., 2 February 1962, R. Polhill & S. Paulo 1319 (K000253469!, Figure 13); isotype P00576987! (Figure 14).

Distribution: Endemic to Tanzania.

Notes: Earlier, the type specimens of *Monadenium elegans* are identified as *M. spinescens* (Pax) P.R.O.Bally by R. Polhill and S. Paulo (K000253469 and P00576987). Later, Carter (1987) described the specimen K000253469 as a new species in the name *M. elegans* and differentiated it from *M. spinescens* in some quantitative characters. After the study of type specimens, I found no qualitative characters to differentiate *M. elegans* and *M. spinescens*, except in the size of flower parts and colour. Therefore, I relegated here the status of *M. elegans* from species to variety of *Euphorbia sangeetae* (≡ *Monadenium elegans* S.Carter).

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