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SHORT COMMUNICATION

Novitates Gabonenses 84. A new species of *Wilczekra* (Celastraceae) from Gabon

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Background and aims – *Euonymus congolensis* R.Wilczek from Kasai in D.R. Congo was recently transferred to a new monotypic genus *Wilczekra* by M.P. Simmons. Similar material from NE Gabon was classified by Villiers as *Euonymus congolensis*. However, the Gabonese collections proved to represent a distinct, undescribed species.
Methods – Normal practices of herbarium taxonomy have been applied to study all herbarium material available, mainly from BR and WAG. The distribution map has been produced using Arcview 324. The relevant collecting data are stored in the NHN (National Herbarium Nederland) database.
Key results – The new species *Wilczekra gabonica* Breteler is described and illustrated and its conservation status is assessed as Least Concerned. The morphological differences between the two species *Wilczekra congolensis* (R.Wilczek) M.P.Simmons and *W. gabonica* are given in a key and their distributions are mapped.

Key words – Celastraceae, *Wilczekra*, new species, tropical Africa, Gabon.

INTRODUCTION

Euonymus congolensis R.Wilczek (Wilczek 1959, 1960) was recently transferred to a new monotypic genus *Wilczekra* M.P.Simmons (Simmons & Cappa 2013). *Wilczekra* is, according to the author, only distantly related to *Euonymus* and is phylogenetically and morphologically distinct from its closely related genera, *Crossopetalum*, *Peripterygia*, and Siphonodon. From *Euonymus* it differs morphologically by a cupular rather than annular disc, by the stamens that are inserted on the disc margin rather than on the top of the disc, and by the anthers that open by slits lengthwise not obliquely so. From the closely related *Crossopetalum* it differs by having a 5-merous instead of a 4-merous perianth, more ovules (2–3 vs. 1) per carpel and a capsular fruit with arillate seeds. The fruit of *Crossopetalum* is drupaceous and its seeds are exarillate. The transfer of *Euonymus congolensis* has consequences for the *Flore du Gabon*.

Collections from NE Gabon, which looked very much alike the Congolese material, were therefore also classified as *Euonymus congolensis* by Villiers (1973) in his treatment of the Celastraceae s. str. for the latter *Flore du Gabon*. However, the distribution areas of the two populations are widely separated, one occurring mainly in Kasai in D.R. Congo, the other in NE Gabon. Not a single collection from the area in between could be located. Further analysis was then undertaken of all the available collections from the two areas. This revealed that in some floral and seed characters the two entities can easily be separated, and they in fact represent two distinct species. The characters of the branches, the leaves, and the inflorescences are the same for both entities which makes it comprehensible why Villiers (1973) classified the material from Gabon as belonging to the Congolese species.

MATERIAL AND METHODS

The new species was studied and delimited comparing all the available material from the herbaria BR, P, and WAG. The international herbarium acronyms used are according to the Index Herbariorum (Thiers continuously updated). The conservation status of the new species as well of the type species of *Wilczekra* are calculated according to the IUCN guidelines (2011). All available herbarium specimens are cited, those not seen (mainly duplicates) are marked with an asterisk.

TAXONOMIC TREATMENT

Wilczekra gabonica Breteler, **sp. nov.**

Differing from *Wilczekra congolensis* (R.Wilczek) M.P.Simmons by the glabrous pedicels, the disc with rudimentary lobes between the stamens and the longer seeds, (4–)4.5–5 mm vs. 3–3.5 mm with larger hilum, 2–4 mm vs. 0.5–0.8 mm. – Type: Gabon, 30 km NE of Lastoursville, 11

Apr. 1990, *Breteler, Jongkind*, *Wieringa & Moussavou* 9831 (holo-:WAG, two sheets numbered WAG 0182076 & WAG 0182089; iso-: BR, G*, LBV*, MA*, MO*, P, PRE*).

Wilczekra congolensis (R.Wilczek) M.P.Simmons (Simmons 2013: 149) partly, as regards the material investigated: *Louis, Breteler & de Bruijn* 827 (cited as *de Bruijn* 827) and *Mc. Pherson* 16037.

Euonymus congolensis sensu Villiers, non R.Wilczek (Villiers 1973: 5).

Shrub to small tree up to 8 m tall and 7 cm dbh, or (?) liana (see note). Branchlets quadrate to subalate, sparsely puberulous. Stipules minute, narrowly triangular, 0.3–1 mm long, glabrous to sparsely puberulous. Leaves: petiole semiterete, canaliculate above, 2–5 mm long, sparsely puberulous; lamina narrowly elliptic to oblong, 2.5–4 times as long as wide, (4–)6–10(–16) × (1.5–)3–5 cm, cuneate at base, acuminate for 0.5–2(–2.5) cm at apex; with (4–)5–7(–11) pairs of main lateral nerves; margin crenate, the notches provided with mostly dehiscent, salicoid teeth; glabrous on both sides except for the sparsely puberulous midrib. Inflorescence cymose up to 3 times dichotomously branched, up to c. 15-flowered, sparsely puberulous; peduncle 5–10 mm long; bracts and bracteoles triangular-ovate, 0.5–1 mm long. Flowers 5-merous; pedicel 3–6 mm long, soon elongated in fruit up to 10 mm, glabrous, articulated near base; sepals imbricate, united at base, broadly ovate, 0.6–1 mm long, glabrous, margin somewhat undulate, minutely fimbrillate, at apex, calyx persistent in fruit; petals free, imbricate, greenish-white, reflexed at anthesis, elliptic, 2.5–3.5 mm long, glabrous, margin fimbrillate; stamens 5, inserted on the cupular disc, alternating with, when present, 5 ± deltoid lobes of up to 0.3 mm long, glabrous; filaments 1–1.5 mm long, anthers ≤ 1 mm long; disc cupular, 1 mm long, glabrous; pistil 2–3 mm long, glabrous; style 1–1.5 mm long, stigma obscurely 5-lobed or not; ovary subglobose, c. 1 mm long, 4–5-locular, ovules 2(–3) per locule. Capsule obovoid in outline, 5–10 mm long, 7–10 mm in diameter, glabrous, shortly apiculate. Seed oblongoid, slightly curved, (4–)4.5–5 mm long, 1–1.5 mm in diameter, black, smooth, shining; aril white, sheath-like, c. as long as the seed; hilum 2–4 mm long. Fig. 1.

Habitat and distribution – Tropical primary or secondary rain forest or gallery forest in the North East of Gabon. Altitude 150–700 m. Fig. 2.

Additional specimens studied – **Gabon**: Ogooué-Ivindo, Achouka, 28 Jan. 1998, *Binot & Lejoly* 171 (BRLU*, WAG); Ivindo Nat. Park, 19 Mar. 2009, *Dauby et al.* 1841 (BRLU); Lopé Reserve, 19 Dec. 1996, *J.J. de Wilde c.s.* 11766 (BR, K*, LBV*, SEGC*, WAG); Lopé R., 18 Feb. 1998, *J.J. de Wilde c.s.* 11978 (BRLU*, LBV*, M*, MA*, MO*, WAG); Moyen-Ogooué, Lopé Nat. Park, 20 Apr. 2006, *Leal et al.* 1173 (MO*, WAG); Ogooué-Ivindo, Bélinga Hills, 16 Nov. 2007, *Leal et al.* 2088 (LBV*, MO*, WAG); Ogooué-Lolo, Lastoursville, 26 Mar. 1929, *Le Testu* 7094 (BR, L, P); Ogooué-Ivindo, Lopé Nat. Park, 4 Nov. 1982, *Louis* 63 (BR, E*, HUJ*, K*, LBV*, MO*, PE*, WAG); Woleu-Ntem, Oveng, 9 Nov. 1983, *Louis et al.* 527 (BR, LBV*, P, WAG); Ogooué-Ivindo, near Achouka, 10 Nov. 1983, *Louis et al.* 579 (BR, LBV*, P, WAG); Ogooué-Lolo, Lastoursville, 17 Nov. 1983, *Louis et al* 827 (BR, WAG); Ogooué-Ivindo, near Booué, 4 Mar. 1985, *Louis* 1742 (BR, K*, LBV*, P, MO*, WAG); Ogooué-Ivindo, in NE of Lopé-Okanda Reserve, 12 Jan. 1993, *Mc.Pherson* 16037 (WAG); Lopé Nat. Park, 11 Nov. 1993, *Mc.Pherson* 16179 (BR, LBV*, MO*, WAG); SE of Booué, 20 Nov. 1993, *Mc.Pherson* 16230, (LBV*, MO*, WAG); Ivindo Nat. Park, 7 Apr. 2004, *Moungazi* 1523 (BR, WAG); 10 km N of Booué, 4 Apr. 1985 *Reitsma c.s.* 619 (WAG); Moyen Ogooué, Madoumané, ENE of Ndjolé, 13 Mar. 2015, *Simons et al.* 1561 (LBV*, WAG); W of Mitendi, 21 Oct. 1999, *Sosef et al.* 597 (WAG); Lopé Nat. Park, 30 Oct. 2000, *Stone et al.* 3136 (WAG); près de l'Ogooué, Mar. 1887, *Thollon* 793 (P); Ogooué, Jul. 1887 *Thollon* 805 (P); Ogooué-Lolo, Lastoursville, 20 Nov. 1988, *van der Maesen et al.* 5685 (BR, WAG); Ogooué-Ivindo, Lopé Nat. Park, 7 Dec. 1992, *White* 642 (WAG).

Conservation status (IUCN 2011) – The IUCN red list category for *Wilczekra gabonica* is Least Concern (LC). The extent of occurrence (EOO) of *Wilczekra gabonica* is estimated to be over 32,398 km^2 (exceeding the 20,000 km^2 upper limit for vulnerable status), whereas its area of occupancy (AOO) is estimated (using a grid cell of 2 km) to be 88 km^2 (which falls within the limits for endangered status). The species is known from many subpopulations that represent at least ten different locations (the upper limit for vulnerable status). The species is growing in forest and has two important subpopulations in National Parks (Lopé and Ivindo). Its habitat is not facing important threats and the species is quite frequent throughout much of its large range. It does not appear to be threatened, even in the future.

The IUCN red list category of *Wilczekra congolensis* is vulnerable [VU B2ab(i,ii,iii,iv,v)]. The EOO of *Wilczekra congolensis* is estimated to be 110,481 km^2 which falls outside the upper limit of Vulnerable status under criteria B, and its AOO is estimated about 32 km^2, which falls within the limits for endangered status under criterion B. *Wilczekra congolensis* is known from eight subpopulations, none of them within protected areas. These eight subpopulations represent a total of eight locations, and thus the species qualifies for vulnerable status under both criteria B2a. The main threat to the species is destruction of habitat due to human activities. We anticipate that this pressure will continue in the future. The projected ongoing loss of its habitat leads us to

Key to species of *Wilczekra*

1. Pedicels puberulous, often soon glabrescent; disc distinctly lobed between the stamens, the lobes nearly as long as the filaments; seeds sickle-to kidney-shaped 3–3.5 mm long; hilum 0.5–0.8 mm long; D.R. Congo.....*W. congolensis*
1'. Pedicels glabrous; disc not or scarcely lobed between the stamens, when present the lobes at most ¼ as long as the filaments; seeds slightly curved (4–)4.5–5 mm long; hilum 2–4 mm long; Gabon.....*W. gabonica*

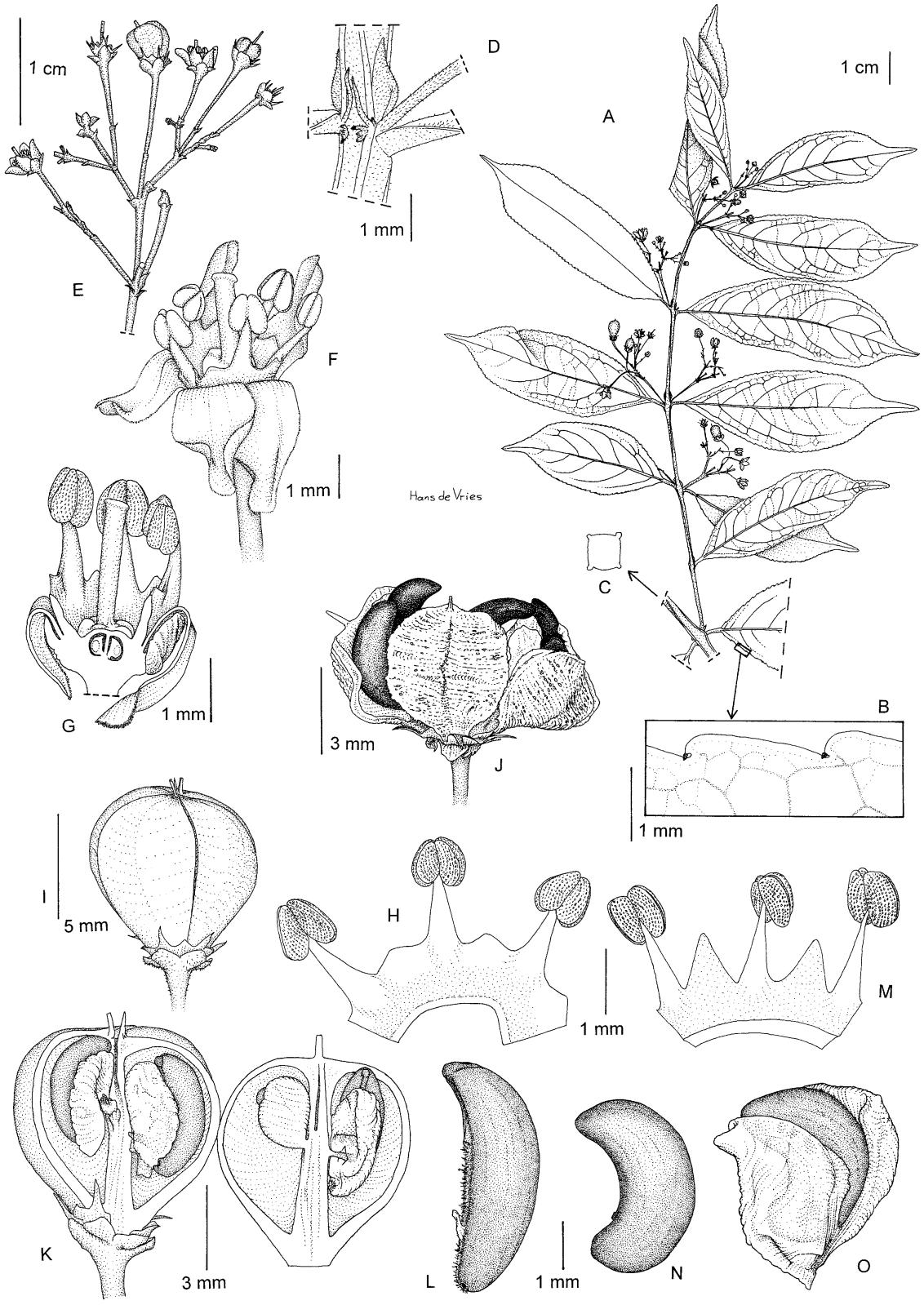

Figure 1 – *Wilzcekra gabonica*: A, flowering branchlet; B, detail of leaf margin; C, transverse section of branchlet; D, node showing stipules; E, inflorescence; F, flower; G, flower cut lengthwise; H, part of disc with stamens; I, fruit; J, dehisced fruit; K, open fruit showing seeds with aril; L, seed. *Wilzcekra congolensis*: M, part of disc with stamens; N, seed; O, seed with aril. A–L from *Breteler et al.* 9831 (WAG); M from *Dumont* 224 (BR); N–O from *Vanderyst* 2907 (BR). Drawn by H. de Vries.

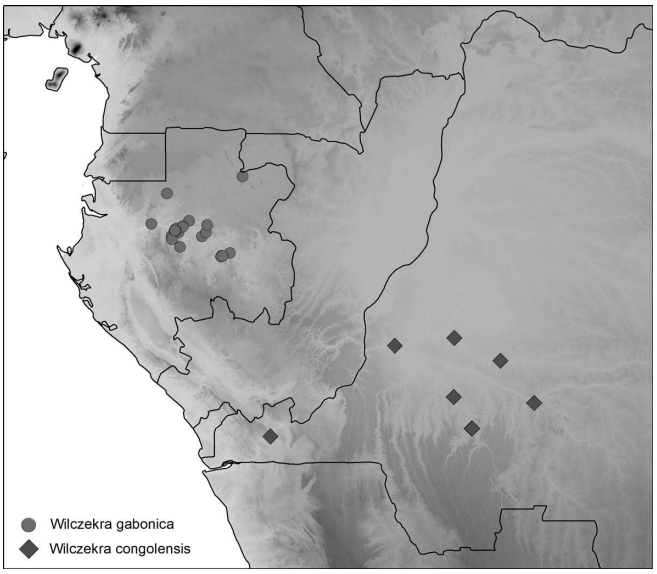

Figure 2 – Distribution of *Wilzcekra* species: *W. gabonica* (dots), *W. congolensis* (diamonds).

predict a continuous decline in the number of subpopulations and mature individuals and thus, also of its EOO and AOO.

Specimens studied of *Wilczekra congolensis* (their locations are mapped on fig. 2) – **D.R. Congo**: **Bas-Congo**, Kinsona, s.d., *Vanderyst* 6172 (BR); **Kasai**, Mapangu 21 Mai 1978, *Dumont* 224 (BR, WAG); Lubani, Oct. 1942, *Flamigny* 6222 (BR); Lukenie, Mar. 1946, *Flamigny* 6464 (BR); Bokoro, 20 Oct. 1947, *Jans* 595 (BR); Mushie, Dec. 1932, *Lebrun* 6716 (BR); Kikwit, 21 Nov. 1990, *Masens* 544 (BR, WAG); Lukombe, Dec. 1910, *Sapin* s.n. (BR); Kikwit, 1914, *Vanderyst* 2907 (BR); ibid., Jan. 1914, *Vanderyst* 2982 (BR); ibid., s.d., *Vanderyst* 3023 (BR); ibid., Oct. 1920, *Vanderyst* 8204 (BR); ibid., s.d. *Vanderyst* 8336 (BR); ibid., Apr. 1921, *Vanderyst* 9250 (BR).

Note – *A.M.Louis* 63 and *Stone et al.* 3163 reported *Wilczekra gabonica* as a liana. All other collectors noted it as a shrub, shrubby tree or small tree.

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