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***Rubus lindebergii* (Rosaceae) – new species for the flora of Poland**

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Abstract: *Rubus lindebergii* P.J. Müll. (*Rubus* sect. *Rubus*, ser. *Discolores*), widely distributed in northwestern Europe, is recorded for the first time from northwestern Poland. Its locality is separated from the closest stands of this species in northern Germany by a distance of about 200 km. The species has been observed mainly in moderately fertile habitats of fresh mixed broadleaf forests, usually in fairly sunny places, along forest margins, by forest roads, in clearings, and in wayside thickets.

Additional key words: taxonomy, variability, ecology, distribution

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Introduction

The genus *Rubus* in Poland seems to be generally well known. However, during the past decade, the list of species occurring in the country significantly increased. Since the publication of the monograph of Polish brambles (Zieliński 2004), in which 92 species were discussed, records on the occurrence of 12 additional species in Poland have been published. Four species (*R. ambrosius* Trávn. & Oklej., *R. bohemico-polonicus* Trávn. & Ziel., *R. limitaneus* Maliński & Ziel., and *R. lucentifolius* Ziel. & Kosiński) have been described as new species for science (Zieliński et al. 2004; Trávníček et al. 2005; Maliński et al. 2014). The others (*R. clusii* Borbás, *R. flos-amygdali* Trávn.

& Holub, *R. guttiferus* Trávn. & Holub, *R. maximus* T. Marsson, *R. occidentalis* L., *R. parthenocissus* Trávn. & Holub, *R. pericrispatus* Holub & Trávn., and *R. portae-moravicae* Holub & Trávn.) were noted in Poland for the first time (Kosiński and Bednorz 2003; Zieliński et al. 2004a; Zieliński et al. 2004b; Zieliński and Trávníček 2004; Kosiński and Oklejewicz 2006; Kosiński 2006; Kosiński 2010; Oklejewicz 2013; Kosiński and Zieliński 2013; Kosiński et al. 2014). The aforementioned list is to be supplemented by *R. lindebergii*, which recently was found during our field studies in northwestern Poland. Its localities in Poland are separated from the closest stands in northern Germany by a distance of about 200 km.

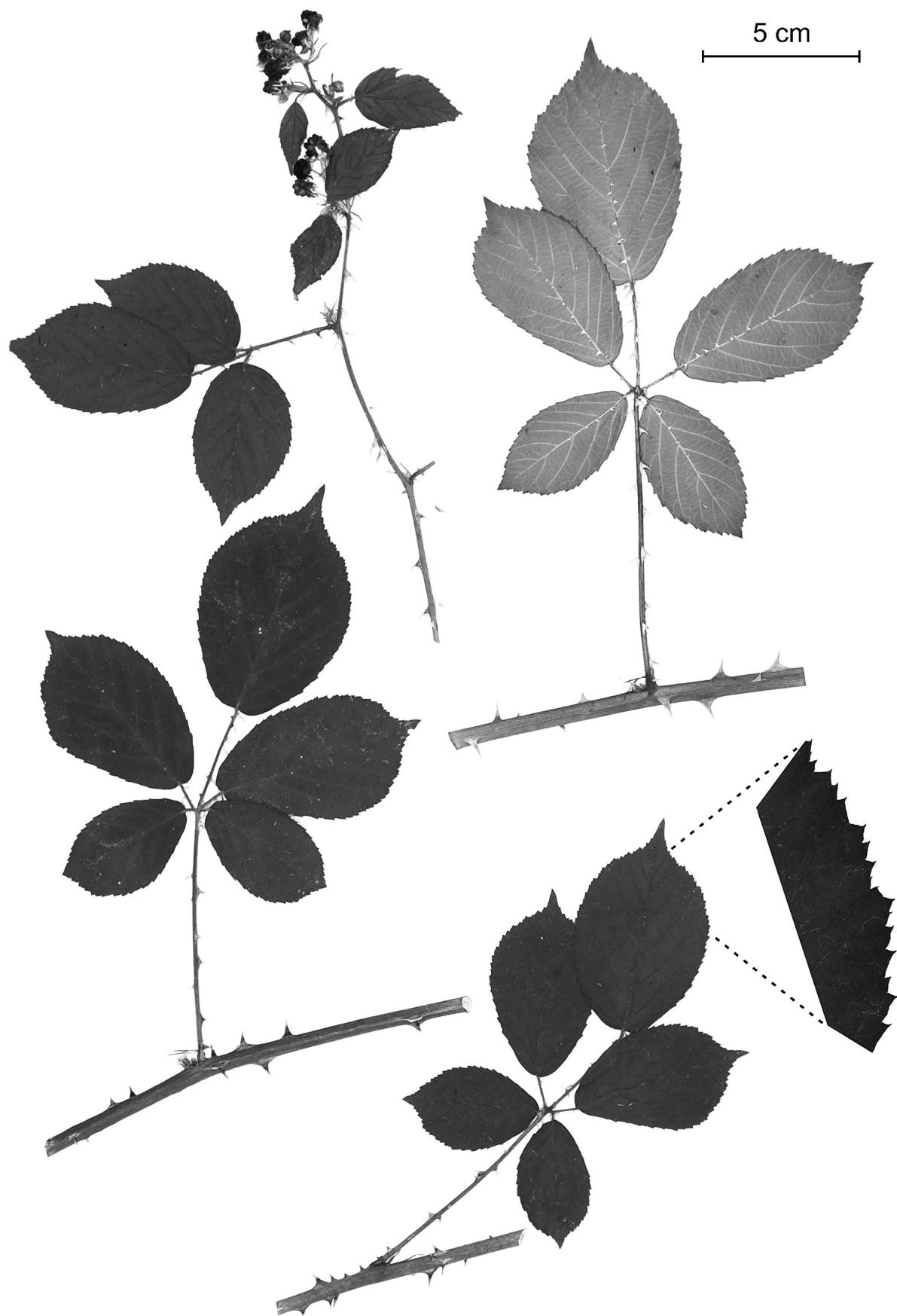


Fig. 1. *Rubus lindebergii* (the vicinity of Sosny village, KOR 51212)



Fig. 2. *Rubus lindebergii* – fragment of vegetative stem (4.09.2013, in the vicinity of Sosny village, phot. P. Kościński)

Methods

Field studies were conducted during 2003–2014. All collected plant specimens were deposited in the Herbarium of the Institute of Dendrology, Kórnik (KOR). The map, detailing the distribution of the new species, was compiled using grid squares in ac-

cordance with the principles presented in the Atlas of Distribution of Vascular Plants in Poland (Zajac 1978).

Results and discussion

Description of the species based on collected material (Figs. 1–3)

Rubus lindebergii P.J. Müll. 1859, Jahresber. Pollichia 16/17: 292

Stems high-arching, angulate, with flat or furrowed sides, often flushed violet-brown, distinctly hairy with tufted and simple hairs, with numerous sessile and sub-sessile glands. Prickles uniform, on angles, 5–9 per 5 cm, (6–)7–8(–9) mm long, broad-based, laterally strongly compressed, straight or curved, patent or usually declining, pale yellow throughout or red at base, often hairy. Leaves normally 5-foliate, usually digitate, rarely indistinctly pedate, not contiguous, with scattered to rather numerous hairs above, grey or green-grey beneath, with appressed stellate hairs and longer, patent simple hairs, especially on the veins, soft to the touch. Terminal leaflets with exceptionally long petiolules (40–)45–65(–70)%, obovate to elliptic, rounded to retuse at the base, with an acuminate apex 10–12(–15) mm long, evenly serrate; the serrations

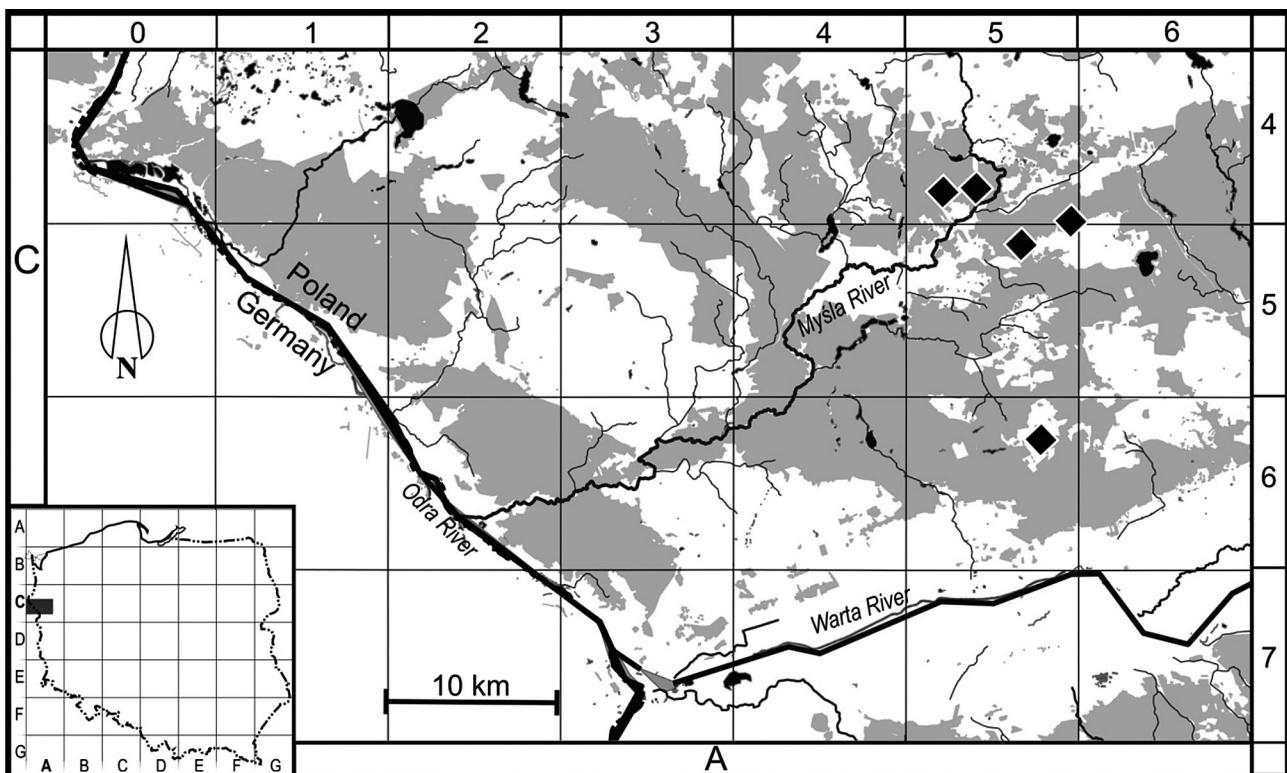


Fig. 3. Localities of *Rubus lindebergii* in Poland

about 1 mm deep. Petiole much longer than basal leaflets, with 10–15 hooked or curved pale prickles. Stipules filiform. Inflorescence paniculate, narrowly cylindrical or narrowly conical, congested, usually leafy almost to the apex, with 3-foliate leaves below and simple leaves above. Rachis zigzag, angulate, often furrowed, olive-green or reddish-brown, rather loosely hairy, with stellate and tufted hairs and numerous sub-sessile glands; prickles 4–7(–8) mm long, curved to hooked, broad-based, yellowish, often hairy. Pedicels 0.5–2.5 cm long, covered with stellate and patent tufted hairs, with several slightly curved, thin prickles up to 2 mm long. Sepals short-pointed, densely hairy with appressed stellate hairs and patent tufted hairs, usually with short prickles, reflexed after anthesis. Petals 10–13 mm long, not contiguous, white. Stamens exceeding styles, anthers glabrous. Carpels glabrous. Receptacle slightly hairy.

Rubus lindebergii is easy to recognise by angulate hairy stems, uniform curved to hooked broad-based prickles, grey stellate-hairy lower leaf surface, and, especially, by exceptionally long-petiolulate, obovate terminal leaflets, narrow, congested inflorescences, and large hooked prickles on its zigzag axis. The species was recently included in the series *Discolores* (Weber 1995; Henker and Kiesewetter 2009; Kurtto et al. 2010), but, earlier, it was placed in the series *Rhamnifoliae* (Weber 1972; Edees and Newton 1988; Pedersen and Schou 1989), the species of which it resembles by its greyish lower leaf surface and numerous sessile and sub-sessile glands.

Species range

Rubus lindebergii is a northern European species occurring mainly in Great Britain (England and Scotland), Denmark, and southern Sweden. South of these countries, it has been noted in scattered localities in the Netherlands and in northern Germany (Kurtto et al. 2010). Its Polish stands are about 200 km from the nearest locations in Mecklenburg.

List of localities in Poland (Fig. 4)

(1) AC-45: ca 3.5 km E of the Smoliny village, oak-pine forest, 52°49'50" N – 14°59'E, 23 September 2005, coll. T. Maliński & J. Zieliński in Maliński 58/05 (KOR 51038). (2) AC-45: 1 km E of the Staw village, mixed forest, by the fire line, 52°49'N – 14°56'30" E, 26 July 2006, coll. T. Maliński & P. Kiciński in Maliński 23/06 (KOR 51039). (3) Ibidem, pine forest, 52°50'40" N – 14°54'E, 26 July 2006, coll. T. Maliński & P. Kiciński in Maliński 27/06, 28/06 (KOR 51041, 51042). (4) Ibidem, pine forest, 52°50'30" N – 14°52'20" E, 26 July 2006, coll. T. Maliński & P. Kiciński in Maliński 30/06, 32/06 (KOR 51040,



Fig. 4. *Rubus lindebergii* in the undergrowth of post-agricultural pine monoculture (4.09.2013, in the vicinity of Sosny village, phot. P. Kosiński)

51043). (5) AC-65: 1 km E of Sosny, mixed forest margin, 52°42'58"N – 14°58'04"E, 4 September 2013, coll. P. Kosiński, T. Maliński & J. Zieliński in Maliński 125/13 (KOR 51212).

Ecology

Rubus lindebergii have been observed mainly in moderately fertile habitats of fresh mixed broadleaf forests, on brunic arenosols developed on fluvial sands, gravels and mud (four from six stands). Single stands have been found also in habitats of fresh broadleaved forest (on haplic luvisols) and fresh mixed coniferous forest (on sands). It grows in thickets of forest margins, in clearings, along forest roads, usually in sunny places, but not uncommonly have single, usually sterile specimens been observed also under the canopy of pine forests planted on richer soils (Fig. 4). It is accompanied by *Rubus idaeus* L., *R. gracilis* J. Presl & C. Presl., *R. plicatus* Weihe & Nees, *Crataegus monogyna* Jacq., *Prunus spinosa* L., etc.

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