

(2497) Proposal to reject the name *Plantago indica* (Plantaginaceae)

Alexander B. Doweld¹ & Alexey Shipunov²

¹ National Institute of Carpology (Gaertnerian Institution), 21 Konenkowa Street, 127560, Moscow, Russian Federation

² Minot State University, 500 University Ave W, Minot, North Dakota 58707, U.S.A.

Author for correspondence: Alexander B. Doweld, nicar-sekretariat@yandex.ru; sekretariat@doweld.pro

DOI <https://doi.org/10.12705/661.25>

(2497) *Plantago indica* L., Syst. Nat., ed. 10: 896. 7 Jun 1759 [*Angiosp.: Plantagin.*], nom. utique rej. prop.

Typus (hic designatus): [Europe] Herb. Linnaeus No. 144.27 (LINN).

Plantago arenaria Waldst. & Kit. (Descr. Icon. Pl. Hung. 1: 51, t. 51. 1801) with its competing species name, *Plantago indica* L. (l.c. 1759), applies to a widely used medicinal plant species of considerable economic importance. Over many years, a general consensus became dominant that *P. indica* L. was a nomenclaturally superfluous and therefore illegitimate renaming of *P. psyllium* L. (Sp. Pl.: 115. 1753) (Chater & Cartier in Tutin & al., Fl. Eur. 4: 43. 1976; Rauschert in Feddes Repert. 88: 313. 1977; Rahn in Bot. J. Linn. Soc. 120: 183. 1996; Applequist in Taxon 55: 235. 2006). When Linnaeus (l.c., 1759) published *P. indica*, he adopted the original diagnosis of *P. psyllium* with the addition of “herbaceo” and placed *P. indica* under the number used for *P. psyllium* in his *Species Plantarum*. This was understood by most later researchers as a demonstration that *P. indica* was an illegitimate nomen novum for *P. psyllium* (cf. Panigrahi in Kew Bull. 30: 670. 1975; Chater & Cartier, l.c.; Rauschert, l.c.). There was also general agreement that *P. psyllium* referred to the species currently known as *P. arenaria* (Pilger in Engler, Pflanzenr. IV. 269 (Heft 102): 422–426. 1937; Verdcourt in Kew Bull. 23: 509. 1969; Panigrahi, l.c.; Chater & Cartier, l.c.; Rauschert, l.c.; Rahn, l.c.). In this context, being treated as an illegitimate name, *P. indica* did not threaten the legitimate species name *P. arenaria*, which is in current use in numerous checklists and floras (Li in Fl. Reipubl. Popularis Sin. 70: 318–345. 2002; Pedrol in Castroviejo & al., Fl. Iber. 13: 4–40. 2009; and many others).

However, *P. indica* cannot be treated as an illegitimate and nomenclaturally superfluous name for *P. psyllium* as explicitly prescribed by Art. 52.2 and exemplified in particular by Ex. 12 of the ICN (McNeill & al. in Regnum Veg. 154. 2012). In publishing these names in 1753 and 1759 Linnaeus did not indicate a single element that might be a holotype, nor cite any specimens so there are no syntypes, and, of course, no lectotype for *P. psyllium* was designated prior to 1759. As a result, only citation of the name itself would establish the definite inclusion of the type of the previously validly published name, *P. psyllium*, in *P. indica*. But the name was not mentioned, only its *Species Plantarum* number. Moreover, as noted by Brummitt (in Taxon 58:

281. 2009), in 1759 Linnaeus omitted from *P. indica* the synonyms cited under *P. psyllium* in 1753 (transferring one of them to his “new” *P. psyllium*) but added a new synonym “*An Kali III. Alp. ægypt. 128?*”, referring to an illustration in Alpino, *De plantis Ægypti liber* ed. 2, 1640. In this context, an informal vote in 2008 by the Nomenclature Committee for Vascular Plants concluded by a majority of 10–8 that *P. indica* is a legitimate name. For all these reasons we also conclude that *P. indica* is a legitimate name.

Applequist (l.c.) published a formal proposal to reject the name *P. psyllium* under Art. 56 because it has been treated as a nomen ambiguum, and, if typified in accordance with its Linnaean definition in 1753, would have to replace *P. arenaria*. The proposal was recommended for acceptance (Brummitt, l.c.) and *P. psyllium* is now listed as a nomen utique rejiciendum in App. V of the ICN (Wiersema & al. in Regnum Veg. 157. 2015). Thereby the barrier to the legitimate use of the later species name, *P. arenaria*, was thought to be eliminated. Unfortunately, the accepted proposal of Applequist (l.c.) intended to provide stability in the current use of *P. arenaria* did not achieve the entire desired effect because *P. indica*, for long erroneously considered nomenclaturally superfluous, persists to cause instability in the species nomenclature of *Plantago*, resurrecting the old problem of the correct species name between the established *P. arenaria* and now ambiguous *P. indica*.

It should be noted that almost all contemporary treatments of this species accept *P. arenaria* (e.g., Feinbrun-Dothan, Fl. Palaestina 3: 230. 1978; Czerepanov, Vasc. Pl. Russia: 337. 2007; Li & al. in Wu & al., Fl. China 19: 503. 2011). *Plantago indica* was preferred mostly in older literature and in some modern pharmacological texts (e.g., Youngken, Text-book Pharmacogn., ed. 5: 802. 1943; Patzak & Reching, Fl. Iranica 15: 20. 1965; Kazmi in Nasir & Ali, Fl. W. Pakistan 62: 19. 1974; Leung, Encycl. Comm. Nat. Ingrid.: 272. 1980; Pignatti, Fl. d'Italia 2: 636. 1982; Habermacher in Thesaurus Agric. Organisms 1: 932. 1990; Evans, Trease and Evans' Pharmacognosy, ed. 14: 215. 1996; World Health Organization Monogr. Select. Med. Pl. 1: 202. 1999; Edwards & al., Phytopharmacy: 224. 2015; etc.), which do not always pay serious attention to nomenclatural status of widely used names, but, in this case, following the literal requirements of the Code.

Plantago arenaria is the most widespread taxon of *P.* sect. *Psyllium* (Mill.) Lam. & DC., which includes several species of medicinal

and economic value due to their high mucilage content. These species are grown for pharmaceutical use as bulk laxatives, the mucilage from the husk of which is used as a thickener in some food products (Leung, l.c.) and in pharmacy as “*semen psyllii*” (Schöpke, Bot. Pharm.: <http://www.medizinalpflanzen.de/index.htm> – accessed on 10 May 2016). Being morphologically unusual among plantains of the Northern Hemisphere, *P. arenaria* is widely collected in Eurasia and Africa. In addition, it is a highly invasive species and therefore frequently collected also in North America, Australia and New Zealand. Total numbers of its herbarium samples could be estimated as tens of thousands. While uncertainty about *P. indica* persists from earlier erroneous treatment of it as a nomenclaturally superfluous name, most specimens are identified under the name *P. arenaria*. That process was reflected in almost all databases of plants, online and offline (Euro+Med, 2006–; The PLANTS Database [USDA]; Biota of North America Program [BONAP]; Australian Plant Name Index; and many others). *Plantago arenaria* is clearly the most commonly used name for the species; and most pharmacognostic and medicinal literature also usually treat *P. indica* as a synonym of *P. arenaria* (e.g., Chater & Cartier, l.c.; Trease, Pharmacognosy: 523. 1952; Tierra, Way Herbs: [212]. 1998; Mars, Desktop Guide Herbal Med.: 18. 2009; Steinegger & Hänsel, Lehrb. Pharmakogn. Phytopharm.: 129. 2013).

In light of the decision to reject *P. psyllium* in favour of *P. arenaria*, it is clear that a further step towards nomenclatural stability in *Plantago* is necessary, because if *P. indica* is not an illegitimate name, then *P. arenaria*, the name in current use, should be treated as

a synonym on account of priority and the species name changed back to *P. indica*. This would significantly destabilize the nomenclature of this species of taxonomic and economic importance, and contribute additional confusion in species naming in applied biological and medical disciplines. Consequently, in accordance with Art. 56 for the names that would cause disadvantageous nomenclatural change, we propose the rejection of *P. indica* L. as a further logical step towards stabilization of species nomenclature in *P. sect. Psyllium*, supplementing the already accepted proposal by Applequist (l.c.) to suppress the analogous ambiguous species names, *P. psyllium* and *P. cynops* L. (l.c. 1753: 116).

While the holotype of *P. arenaria* was found in PR (No. 155784/766) (Chrtek & Skořdoplová in Sborn. Nár. Mus. Praze, Řada B, Přír. Vědy 38: 211. 1982), the Linnaean name *P. indica* has not yet been lectotypified. We follow the established custom and designate above the Linnaean specimen Linn. No. 144.27 (LINN: <http://linnean-online.org/1892/>), once thought and properly labelled as *P. indica*, as a lectotype of *P. indica*. This specimen is no more than *P. arenaria* in the modern sense. Preservation of the name *P. arenaria* for this important species, as proposed here, would serve stability in modern botanical nomenclature and systematics.

Acknowledgements

We thank John McNeill and John Wiersema for very helpful suggestions and valuable comments, and herbarium curators of G, PR and UPS for their assistance.