

Isolepis tenella, a New Combination in Cyperaceae

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ABSTRACT. Since the publication of a monograph on *Isolepis* (Cyperaceae) in 2002, further data on the genus have been collected, necessitating additional nomenclatural change. *Isolepis* is a predominantly southern hemisphere genus with high species diversity in South Africa and Australia. A new combination is made here: *Isolepis tenella* (L.f.) Muasya & D. A. Simpson, transferring an aberrant annual previously named *Cyperus tenellus*.

Key words: Cyperaceae, *Cyperus tenellus*, *Isolepis tenella*.

Recent systematic studies in the genus *Isolepis* R. Brown in Cyperaceae have led to the publication of a monograph and phylogeny reconstructions at supra- and infrageneric levels (Muasya & Simpson, 2002; Muasya et al., 1998, 2000, 2001, 2002). *Isolepis* comprises 70 species, which are most commonly found in the temperate southern hemisphere, especially in South Africa and Australia. *Isolepis* is sister to *Ficinia* Schrader and, together with three other genera (*Desmoschoenus* J. D. Hooker, *Hellmuthia* Steudel, and *Scirpoides* Scheuchzer ex Séguier), it forms a clade sister to *Cyperus* L. s.l. The *Isolepis* and *Cyperus* s.l. clades are placed in tribe Cypereae, diagnosed by presence of a *Cyperus*-type of embryo (Goetghebeur, 1998). *Isolepis* is distinguished from *Cyperus* on the basis of spikelet morphology, having terete spikelets with spirally arranged glumes versus flattened spikelets with a distichous glume arrangement. However, flattened spikelets and semi-distichous glumes are observed in *Isolepis* (e.g., *I. venustula* Kunth), thus blurring generic boundaries.

Also, typical *Cyperus*-like spikelets are observed in *Ficinia*, but the latter genus is diagnosed by the presence of a hypogynous disk.

A phylogenetic study of *Cyperus* s.l. (Muasya et al., 2002), utilizing plastid (*rbcL*, *rps16* intron, *trnL* intron, and *trnL-F* intergenic spacer) sequence data resolved *Cyperus tenellus* L.f. embedded within the *Isolepis-Ficinia* clade and sister to *Isolepis cernua* (Vahl) Roemer & Schultes. This position has been confirmed by an expanded analysis of Cyperaceae incorporating *rbcL* sequence data (Simpson et al., in press). We are convinced that this taxon belongs to *Isolepis* and make a new combination below.

Isolepis tenella (L.f.) Muasya & D. A. Simpson, comb. nov. Basionym: *Cyperus tenellus* L.f., Suppl. Pl.: 103 (1782). TYPE: South Africa, *Linnean Herbarium no 71/2* (lectotype, designated here, LINN).

Isolepis tenella is a tufted annual to ca. 10 cm tall, that has a pseudolateral inflorescence, spikelets that are flattened with a distichous glume arrangement, and papillose nutlets. *Isolepis tenella* shares its flattened spikelet morphology with *I. venustula* Kunth and has glume and nutlet features that are similar to *I. cernua* (Vahl) Roemer & Schultes. We interpret the presence of flattened spikelets in *I. tenella* to be a character derived from a terete spikelet morphology and consider the taxon to belong to the *I. cernua-I. venustula* clade, members of which have overall morphological and habitat similarity and are phylogenetically most closely related.

A similar interpretation of spikelet morphology was used to transfer *Isolepis leucoloma* (Nees) Archer from *Cyperus* (Archer, 1998). Both species occur in the Western Cape flora of South Africa and were the only annual species of *Cyperus* in that flora. Given that *Isolepis* is the only genus of Cyperaceae that has evolved an annual life form in the Cape flora, the placement of these species within *Cyperus* was inappropriate. We classify *Isolepis tenella* and *I. leucoloma* in *Isolepis* subg. *Isolepis* sect. *Cernuae* (C. B. Clarke) Muasya (sensu Muasya & Simpson, 2002). The three species in this section with flattened spikelets can be separated on gross morphological characters.

KEY TO THE SPECIES IN *ISOLEPIS* SECT. *CERNUAE* WITH FLATTENED SPIKELETS

- 1a. Rhizomes horizontal; glumes 1.7–2.5 mm, nutlets 1.0–1.4 mm long; restricted to sandy beaches in South Africa. *I. venustula*
- 1b. Rhizomes absent or ascending; glumes 1.1–1.7 mm, nutlets 0.6–1.0 mm long; widespread in inland seasonally wet areas, in South Africa and Australia. 2
- 2a. Plants taller, to 10 cm; glumes 1.5–1.7 mm long, pale green; nutlets 0.8–1.0 mm long; in South Africa and Australia. *I. tenella*
- 2b. Plants minute, to 3 cm; glumes 1.1–1.2 mm long, dark brown with white margins; nutlets to 0.6 mm long; in South Africa *I. leucoloma*

While carrying out this work, it became apparent that no type had been designated for *Isolepis tenella*. In the protologue given in *Species Plantarum Supplementarum* (Linnaeus f., 1782), there is no reference to any source of material. However, in the Linnean Herbarium (LINN), there is a single specimen annotated as “*tenella*.” This material is instantly recognizable as *I. tenella*. No material corresponding to this species that may have been seen by the younger Linnaeus has been found elsewhere, and it is quite possible that the protologue was based on this

specimen. Therefore, we designate *Linnean Herbarium no 71/2* as the lectotype.

Acknowledgments. AMM is a visiting postdoctoral fellow of the Fund for Scientific Research-Flanders (FWO-Vlaanderen, Belgium) and of the K. U. Leuven (grant F/02/052).

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