



## ***Amaranthus bengalense* (Amaranthaceae) a new species from India, with taxonomical notes on *A. blitum* aggregate**

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### **Abstract**

*Amaranthus bengalense* from lower Gangetic plain of West Bengal (India) is proposed and described as new species for science. It belongs to *Amaranthus* subgen. *Albersia*, and is part of the *A. blitum* aggregate (also including *A. blitum* s.l., and *A. emarginatus* s.l.). A morphometric analysis of specimens collected in Europe and India is performed. The new species is clearly distinct from the others being characterized by the following combination of characters: leaves with apex obtuse or slightly emarginate, bracts long as well as the tepals (ratio bract/tepal about 1), tepals acuminate, seed with diameter 0.7–1.0 mm. Finally, a key of the taxa belonging to the *Amaranthus blitum* aggregate is provided.

**Keywords:** *Amaranthus emarginatus*, infraspecific taxa, new species, subgen. *Albersia*

### **Introduction**

*Amaranthus* Linnaeus (1753: 989) is a genus of about 70 annual monoecious and dioecious species with worldwide distribution. Approximately 40 species are native to the Americas, the remaining ones to the other continents (Costea *et al.* 2001, Iamónico 2012).

The genus is critical from the taxonomic point of view due to the high morphological variability and the frequent out-crossing that caused nomenclatural problems and misapplication of names (see e.g., Mosyakin & Robertson 1996, Costea *et al.* 2001, Iamónico 2012).

Mosyakin & Robertson (1996) recognized three subgenera, *Amaranthus* subgen. *Acnida* (Linnaeus 1753: 1027) Aellen ex K.R. Robertson (Robertson 1981: 283), *A.* subgen. *Amaranthus*, and *A.* subgen. *Albersia* (Kunth 1838: 144) Grenier & Godron (1856: 3) on the basis of the inflorescence structure and the floral features.

The subgenus *Albersia* comprises several polymorphic taxa with taxonomic problems at section and species levels (Mosyakin & Robertson 1996).

The *Amaranthus blitum* aggregate belongs to this subgenus and includes four taxa: *A. blitum* Linnaeus (1753: 990) var. *blitum*, *Amaranthus blitum* var. *oleraceus* (Linnaeus 1763: 1403) Hooker filius (1885: 721), *A. emarginatus* (Moquin-Tandon ex Uline & Bray 1984: 319) var. *emarginatus*, and *A. emarginatus* var. *pseudogracilis* (Thellung 1914: 321) Iamónico (in press).

As part of the revision of the genus *Amaranthus* by D. Iamónico in the projects Euro+Med plantbase, new edition of the Flora of Italy, new Checklist of the Italian vascular flora, the Compendium Programme CAB International, nomenclatural study of the world *Amaranthus* names, *Italian Loci Classici Census* (see e.g., Iamónico, 2010a, 2010b, 2012, 2013, 2014a, 2014b, 2014c), and the investigations on the genus in India (by S. Das, see e.g., Das 2013), we here presented a contribution to the knowledge of the genus *Amaranthus* in India focused on the aggregate of *A. blitum*.

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#### APPENDIX. Other selected specimen seen.

***Amaranthus emarginatus* Moq. ex Uline & Bray var. *emarginatus***: ITALY. **Abruzzo**: Lungo il fiume Liri presso Civitella Roveto, 05 June 1900, leg. *Pappi*, det. *Cacciato*, rev. *Iamónico s.n.* (RO). **Campania**: Salerno, Marina di Camerota, marciapiedi, 9 m a.s.l., 11 August 2009, *Iamónico* (HFLA). **Lazio**: Roma, quartiere Appio-Claudio, via dell'Arco di Travertino, marciapiede, 40 m a.s.l., 23 July 2007, *Iamónico* (HFLA). **Lombardia**: Mantova, Bosco Fontana, limite dei prati ai margini del bosco, 04 October 1977, *Barini* (sub *A. ascendens*), rev. *Iamónico* (FI). GERMANY. Schutt beiden Wollkämmerci am Reiherstieg, August 1896, *Schmidt* (sub *A. emarginatus*), rev. *Iamónico* (FI). FRANCE. **Carnac**: October 1862, *Thomson* (FI). Haut-Rin: Sundhoffen, lit à sec de l'III, près du pont au-dessus de la rivière, à l'est du village, 191 m a.s.l., 22–27.IX.1991, *Rastetter* (sub *A. blitum* var. *polygonoides*), rev. *D. Iamónico* 09 June 2009 (FI). SPAIN. **Canaries**: Gran Canaria, au nord de Mogan, embalse de la cueva de las Niñas, vases exondées, 24 December 1975, *Duvigneaud* (sub *Amaranthus lividus* subsp. *polygonoides*), rev. *Iamónico* (FI).

***Amaranthus emarginatus* var. *pseudogracilis* (Thell.) Hügin**: FRANCE. **Pyrénées-Bayonne**: Bouvier de la volle a Hardog, 10 September 1963, *coll. illeg.* (sub *A. ascendens* Lois.), rev. *Iamónico* (RO); **Marne, Champagne**: Champigny, terrain inculte en bord de champ, près d'une rivière, October 1991, leg. *Worms*, det. *Lambinon* (FI). ITALY. **Emilia-Romagna**: Alfonsine (Ravenna), Strada Provinciale Destra Senio-Molinazza (S.P.105), Riserva Naturale e SIC "stagno di Fornace Violani", lato NE, verso gli edifici della cooperativa muratori, prato umido a margine di stagno (ex cava d'argilla) e canneto, 14 July 2012, leg. *Rossi*, det. *Ardenghi s.n.* (FI). **Lazio**: Ciampino, via Guidoni, 31 July 2009, *Iamónico s.n.* (HFLA). HUNGARY. Hungaria orientalis, in cultis et ruderatis circum oppidum Arad, 180–200 m a.s.l., *sine die* (ante 1886), *Simkovics* (sub *A. commutatus*), rev. *Iamónico* (FI). PORTUGAL. RS-Mun. Caxias do Sul-Vila Cristina-Sebastopol, em lavoura de al face, 100m a.s.l., 13 May 2000, leg. *Scur*, det. *Stephen* (sub *A. viridis*), rev. *Iamónico* (FI).