

NEW SPECIES AND NEW COMBINATIONS IN *ANREDERA* JUSS.
(BASELLACEAE)

Calvin R. Sperling¹

National Germplasm Resources Laboratory, Room 402, Building 003, Barc-West,
Beltsville, Maryland 20705 U.S.A.

ABSTRACT

Two new species of *Anredera*, *A. aspera* Sperling and *A. densiflora* Sperling, are described, and four new combinations, *A. brachystachys* (Moq.) Sperling, *A. floribunda* (Moq.) Sperling, *A. krapovickasii* (Villa) Sperling, and *A. tucumanensis* (Lillo & Hauman) Sperling, are made. These new species and new combinations are from the unpublished Ph.D. dissertation of Calvin R. Sperling.

KEY WORDS: *Anredera*, Basellaceae, taxonomy

FORWARD

[J. W. Nowicke, Botany Dept., NHB 166, Smithsonian Institution, Washington D.C.
20560 U.S.A.]

In the course of a palynological study that included *Anredera*, I discovered that two new species and four new combinations established by the late Calvin Sperling (1987) are heretofore unpublished. The Latin descriptions of the two new species, *Anredera densiflora* from Ecuador and Perú, and *A. aspera* from northern Bolivia, and the synonymy of the remaining four new combinations, *A. tucumanensis* (Lillo & Hauman) Sperling, *A. floribunda* (Moq.) Sperling, *A. krapovickasii* (Villa) Sperling, and *A. brachystachys* (Moq.) Sperling, have been taken from Spelling's dissertation. Before his death, he approved publication of these names.

Two more new combinations, *Anredera diffusa* (Moq.) Sperling and *A. marginata* (H.B.K.) Sperling, were recently published (Brako & Zarucchi 1993, p. 1253). In addition to the twelve species of *Anredera*, Sperling treated the remaining three genera that comprise Basellaceae, *Basella* L. (5 species), *Tournonia* Moq. (1 species), and *Ullucus* Caldas (1 species). Although his study concentrated on *Ullucus tuberosus* Caldas, Spelling's dissertation has keys, descriptions, distribution maps, and

¹ Deceased 20 May 1995.

discussions for the remaining eighteen species. His revision of Basellaceae as a family is the first since 1849, when it was treated by Moquin-Tandon. Spelling's discussions of relationships among genera and species provided new information that was integrated with the pollen data (Nowicke, in press). It is unfortunate that his dissertation has not been published in its entirety.

The species are taken up in the same sequence as they are in the dissertation. Abbreviations for authors follow Brummitt & Powell (1992).

Anredera Juss.

ANREDERA FLORIBUNDA (Moq.) Sperling, *comb. nov.* BASIONYM: *Boussingaultia floribunda* Moq. in DC., *Prodr.* 13(2):229. 1849. TYPE: COLOMBIA. Ibaque, *Goudot s.n.* (HOLOTYPE: P, F-fragment!; Photo: GH!).

ANREDERA DENSIFLORA Sperling, *spec. nov.* TYPE: PERU. Lima, San Buenaventura, 2700-2800 m, 17 June 1925, *Pennell 14508* (HOLOTYPE: F!; Isotypes: GH!, NY!).

Folia ovata vel depresso-ovata, 4.0-7.7 cm longa, 2.0-9.5 cm lata, base cordata vel reniformia, apice acuta (foliis ovatis) vel rotundata (foliis depresso-ovatis). Inflorescentia terminales aut laterales, fasciculato-racemosae, inflorescentibus axillaribus pedunculo plerumque robusto portatis. Bractee subter pedicellum triangulares, 1.1-1.8 mm longae, 0.5-0.8 mm latae, persistentes; bractee pedicellorum depresso-ovatae vel perdepresso-ovatae, 1.0-1.2 mm longae; 0.5-0.8 mm latae, persistentes. Sepala late ovata vel latissime ovata, alburnea vel alba, siccitate atrobrunnea. Petala obovata vel elliptica, 1.9-2.6 mm long, 1.0-1.3 mm lata, alburnea vel alba, siccitate atrobrunnea, petaliis interioribus tribus tenuioribus quam petaliis exterioribus duobus, fructu ad maturitatem includentibus. Ovarium globosum; stylus singularis, 0.8-1.2 mm longus; stigma obscure trilobatum.

Distribution. Southern Ecuador to southern Perú. 2100-2800 (3900) m.

ADDITIONAL SPECIMENS EXAMINED. ECUADOR. Azuay: Between Molleturo and Toreador, 2590-3900 m, 14 June 1943, *Steyermark 53002* (NY). Loja: Loja, 2200 m, 15 April 1946, *Espinosa 137* (NY).

PERU. Lambayeque: Prov. Lambayeque, Abra de Porculla, 45 km E of Olmos on the road to Pucara, 1920 m, 13 July 1986, *Plowman et al. 14290* (F). Cajamarca: Prov. Cajabamba, Nunubabamba[?], 2600 m, 13 Aug. 1985, *Mostacero & Guerra 0059* (F). Huanuco: San Rafael, 8500 ft., 4 April 1923, *Macbride 3143* (F); Acomayo, 2100 m, 24 April 1946, *Woytkowski 34245* (F,G,MO,UC,USM). Junin: Paucartambo, 2800 m, 23 July 1969, *Woytkowski 6719* (GH,MO).

Anredera densiflora can be recognized by the dense inflorescence and flowers in which the sepals and outer two petals spread in fruit. It is similar to *A. baselloides* Baill. but differs by the ovate leaves, flared petiole, dense inflorescence, smaller flowers, broader sepals, and trilobed stigma (not divided). This species lacks

mammillose cells at the sepal base but does form a very low keel due to contraction of the sepal during drying as in *A. baselloides*.

ANREDERA TUCUMANENSIS (Lillo & Hauman) Sperling, *comb. nov.*
 BASIONYM: *Boussingaultia tucumanensis* Lillo & Hauman, *Anales Mus. Nac. Buenos Aires* 33:353. 1925. (Hauman & Irigoyen, *Anales Mus. Nac. Buenos Aires* 32:159, 449. 1923, *nom. nud.*). LECTOTYPE (here chosen): BOLIVIA: Prov. of Larecaja, Sorata, between Cochipata and Milipaya along the Ulcumarini River, 3200 m, March-May 1858, *Mandon 1028* (LECTOTYPE: K!; Isolectotypes: BM!, F!, G!, GH!, K!, NY!, P; Photos: F!, GH!, MO! of G). SYNTYPE: ARGENTINA: Prov. of Tucuman, Sierra de Garabatal, 2000 m, 22 March 1922, *Schreiter s.n.* (LIL).

ANREDERA KRAPOVICKASII (Villa) Sperling, *comb. nov.* BASIONYM: *Boussingaultia krapovickasii* Villa, *Lilloa* 32:305, fig. p. 306. 1966. TYPE: ARGENTINA: Salta, km 28, road between Salta and Jujuy, 31 Jan. 1947, *C.A. O'Donnell 4723* (HOLOTYPE: LIL).

ANREDERA BRACHYSTACHYS (Moq.) Sperling, *comb. nov.* BASIONYM: *Tandonia brachystachys* Moq. in DC., *Prodr.* 13(2):227. 1849. LECTOTYPE (here chosen): COLOMBIA. Bogota, *Goudot 1* (P-Herb. Moq., det. by Moq.; Photo: GH!). SYNTYPE: ECUADOR. west side of Pichincha, 8500 ft., [without collector] (K!, P-fragment ex. Herb. Hook.; photo GH!).

ANREDERA ASPERA Sperling, *spec. nov.* TYPE: BOLIVIA. Prov. La Paz, Dept. Larecaja, Sorata, 68° 40' W 15° 45' S, 2530 m, 8 Dec. 1981, *Sperling & King 5412* (HOLOTYPE: GH!; Isotype: LPB!, others not distributed).

Planta scandens vix volubilis succulenta mucliaginae. Caules rubelli asperi praesertim ad nodos. Folia obovata, 2.1-4.2 cm longae, 1.4-2.0 cm latae, base cuneata vel acuta, apice obtusa vel rotundata. Inflorescentia laterales racemosae simplices aut base unifurcatae, pedicellis minutis, 0.5-0.7 mm longis. Bractae subter pedicellum deltatae, 0.9-1.0 mm longae?, 0.8 mm latae?, adnatae decursivaeque; bractae pedicellorum rhombicae vel perdepresse trullatae, 0.7-0.9 mm longae?, 0.8-1.0 mm latae, apice acutae, base truncatae, lobis lateralibus sagittiformibus, adnatae decursivaeque. Sepala perdepresse-ovata, 2.0-2.4 mm longa, 2.3-2.4 mm lata, apice acuta, viridulo-alba, erecta et per anthesin patentia. Petala obovata, 3 mm longa, 1.5-1.6 mm lata, alba, erecta et per anthesin urceolata. Ovarium globosum vel obovoideum; stylus singularis, 1 mm longus, super basin ad stigma expansus; stigma obscure trilobatum capitatum. Fructus adhuc ignoti.

Distribution. Known only from the type collection in northern Bolivia.

Anredera aspera can readily be distinguished by its asperous stem and greatly flared style. The flowers are nearly sessile but upon close inspection the very short pedicel is evident. The flowers are erect at anthesis and not spreading like many species of *Anredera*. The pedicellar bracts are decurrent down the pedicel and continuous with it, forming a cuplet on which the flower is borne.

This species is similar to *Anredera marginata*, from which it differs in having always obovate leaves (even in the flowering portion of the stem), nearly sessile flowers that are slightly larger than *A. marginata*, and flared styles.

Unlike most species of *Anredera* this plant is scarcely twining, a character which is constant when the plant is cultivated in the greenhouse. In the greenhouse it is more difficult to propagate, being much slower in forming adventitious roots from cuttings than any other species of *Anredera*.

The species was collected growing alongside *Anredera ramosa* (Moq.) Eliasson and in the same general area where the type specimen of *A. tucumanensis* was collected by Mandon. The type collection was observed being visited by flies, which are the presumed pollinators.

One collection from Bolivia may be this species: BOLIVIA. near La Paz, 10,000 ft., Oct. 1885, *Rusby 2570* (NY two sheets, F). It has a similar pedicel and pedicellar bracts, but the leaves are lacking. Fruits are present in this specimen (enclosed in the nigrescent perianth); because the type collection lacks fruits a comparison can not be made. The petals of the Rusby collection are slightly smaller, and most of the flowers on the sheets are in poor condition.

ACKNOWLEDGMENTS

I thank David Lellinger for editing the two Latin descriptions and reviewing the paper, and Dan Nicolson for his review and suggestions.

LITERATURE CITED

- Brako, L. & J.L. Zarucchi. 1993. Catalogue of the Flowering Plants and Gymnosperms of Peru. Monogr. Syst. Bot. Missouri Bot. Gard. 45: i-xl, 1-1286.
- Brummitt, R.K. & C.E. Powell (Eds.). 1992. *Authors of Plant Names*. Royal Botanic Gardens, Kew, Great Britain.
- Moquin-Tandon, C.H.B.A. 1849. Basellaceae in Alph. de Candolle, *Prodromus Systematis Naturalis Regni Vegetabilis* 13(2): 220-230.
- Nowicke, J.W. In press. Pollen morphology, exine structure and the relationships of Basellaceae and Didiereaceae to Portulacaceae. Syst. Bot.
- Sperling, C.R. 1987. Systematics of the Basellaceae. Ph.D. Dissertation, Harvard University. UMI Dissertation Information Service, Ann Arbor, Michigan.