NOVITATES AGROSTOLOGICAE, IV.
ADDITIONAL SEGREGATES FROM PANICUM INCERTAE SEDIS

JOSÉ RAMÓN GRANDE ALLENDE
Facultad de Ciencias, Postgrado en Botánica
Universidad Central de Venezuela
Correspondence address:
Fundación Instituto Botánico de Venezuela Dr. Tobias Lasser
Jardín Botánico de Caracas
Universidad Central de Venezuela
Apartado 2156, Caracas 1010-A, Distrito Capital
VENEZUELA
jose.r.grande@gmail.com

ABSTRACT

In order to contribute to an updated classification of the species hitherto included in Panicum incertae sedis, the new genera Aakia J.R. Grande, gen. nov. (syn = Panicum sect. Tuerckheimiana), Aconisia J.R. Grande, gen. nov. (syn = Pan. [infragen. unranked] Grandia), and Osvaldoa J.R. Grande, gen. nov. (syn = Panicum sect. Valida) are described and ten new combinations in Dallwatsonia and Coleataenia are proposed. Panicum hemitomon is confirmed in Hymenachne, and consequently Panicum sect. Hemitoma is reduced to synonymy under that genus. Altogether, three new genera and 14 new combinations at the rank of species are proposed, while six infrageneric entities previously included in Panicum incertae sedis are formally synonymized. A lectotype is designated for Panicum validum Mez.

Recent systematic works dealing with the tribe Paniceae s.l. (tribe Paniceae plus tribe Paspaleae sensu Morrone et al. 2011) have been using the provisional taxon Panicum L. incertae sedis (i.s.) to group 158 species originally described under Panicum but excluded from that genus based on cladistic evidence (Aliscioni et al. 2003). Thenceforth, several new genera have been established, grouping species with more or less similar morphology, anatomy, and physiological type and with a hypothetical common ancestor including all its descendants. These studies, based on cladistic analyses using the molecular markers ndhF, rpoA and rpoC2 and/or morphoanatomical data have been looking for a consensus between cladistic insights and previous classifications (see Morrone et al. [2011] and the subsequent Zuloaga et al. [2011] and Scataglini & Zuloaga [2013], for a review of this line of active research). Despite this, several well-defined species groups have been left behind in Panicum L. i.s., a clearly polyphyletic group (Gómez-Martínez 1998; Gómez-Martínez & Culham 2000; Zuloaga et al. 2000; Aliscioni et al. 2003; Morrone et al. 2011, etc.).

As a result of the comparative analysis of the general exomorphology, upper anthercium micromorphology, foliar anatomy, and geographical distribution pattern, and with the aim to further contribute to solve the present taxonomic confusion, the following new taxa previously included in Panicum i.s. are here described. Altogether, three new genera, 14 new combinations at the rank of species, and six new infrageneric synonyms previously included in Panicum i.s. are here proposed. The taxonomical novelties follow a strict alphabetical order and include only the basionyms and all its homotypic synonyms.

Grande Allende: *Panicum segregates*

Perennials with erect culms. Panicles more or less contracted. Spikelets lanceolate, acuminate, sparsely pilose to glabrous. Lower glume small, scalelike, nerveless. Upper glume and lower lemma pointed, 5-nerved. Lower palea reduced or absent, lower flower absent. Upper anthecium cartilaginous, papillate, pilose toward the apex.

**Etymology and distribution**

*Aakia* is a latinization of *aak*, a word commonly employed by the Maya people to refer to grasses (Bastarrachea Manzano 2011). Southern Mexico, Guatemala and Belize.


*Aakia* belongs to subtribe Paspalinae, part of tribe Paspaleae, while *Panicum* is the type genus of true Paniceae. Endemic to Mesoamerica but phylogenetically near to the South American endemic *Anthaenantiopsis* Mez ex Pilg. (Aliscioni et al. 2003), although they apparently do not share any diagnostic morphological character. For further discussion, see under Osvaldoa.


Robust and perennial gregarious grasses, producing extensively creeping or floating leafy stolons. Leaves with conspicuous lacunae in the mesophyll and superposed vascular bundles in vertical rows toward the center of the blade. Panicles with the lower primary branches whorled. Spikelets tightly disposed toward the end of terminal branches, supported by adpressed pedicels 1-2 mm long. Upper anthecium indurate with bicellular microhairs toward the apex.

**Etymology and distribution**

The generic name is derived from classical greek *akone*, a grindstone, which derive verb *akonizo* produces, in passive preterite participle *akonismenos*, sharp-edged. *Aconisia* is proposed as an abbreviated and easily pronounceable form, alluding equally to the cutting borders of the leaf blades. Brazil, Panama, Trinidad & Tobago, and Venezuela.


*Aconisia* is loosely similar to *Coleataenia*, with which it shares scarce prickly hairs and more or less abundant bicellular microhairs toward the apex of the upper lemma. It can be distinguished from that genus, however, by the closed sheaths (vs. widely open), wide leaf blades, panicle structure (see above), straight (vs. oblique) insertion of the spikelet into the pedicel, elliptic upper anthecium (vs. narrowly fusiform), and the anatomical characteristics cited above.


Etymology and distribution
Presumably derived from Classical Greek colea (sheath) and taenia (flat band), in allusion to the widely open leaf sheaths, which resemble a band or strip (B. Manara, pers. comm.). Tropical, subtropical and temperate America (commonly reported as “New World” in taxonomic literature).


Panicum beyeri Hitchc. & Ekman shows the characteristic leaf type of Coleataenia, including widely opened sheaths grading into the filiform blades, these with a conspicuous central nerve, panicles with adpressed pedicels and spikelets obliquely inserted on them, often with the first glume gaping at maturity, and with a narrowly fusiform upper antherium. This species is very similar to Coleataenia prionitis (Nees) Soreng and C. petersonii (Hitchc. & Ekman) Soreng, which form a well-defined monophyletic unit within the genus (Hitchcock 1936; Morrone et al. 2011). Panicum beyeri was included neither in Panicum i.s. by Aliscioni et al. (2003) nor in Coleataenia by Soreng (2010) or Weakley et al. (2011).


Etymology and distribution
Named for Michael Dallwitz, formerly of CSIRO Division of Entomology, and Leslie Watson, formerly of RSBS, Australian National University (Simon, 2013). Nine species in tropical America (commonly referred as “Neotropics” in taxonomic literature), plus two additional species in southeastern Asia (Dallwatsonia aurita (J. Presl ex Nees) J.R. Grande) and Australia (D. felliana B.K. Simon).


4g. *Dallwatsonia pilosa* (Sw.) J.R. Grande, **comb. nov.** *Panicum pilosum* Sw., Prodr. 22. 1788. **TYPE:** JAMAICA. O.P. Swartz s.n. (holotype: S; isotype: US-80916! (fragm. ex S)).


*Dallwatsonia* was originally described as monotypic, with a single species from Australia (*D. felliana* B.K. Simon). It is here expanded, however, to include the American species left as *incertae sedis* in *Panicum* sect. *Laxa* by Aliscioni et al. (2003), plus *Panicum auritum* Presl ex Nees, a species from southeastern Asia formerly included in that section by Zuloaga et al. (1992). Phenotypic characters that may be considered diagnostic include hollow culms, secund spikelets disposed in two parallel rows along the branches of the panicle, and upper antherium pointed, membranous to more or less indurate, with conspicuous, basally thickened prickles toward the apex, and with the apex of the palea covered by the lemma (Watson & Dallwitz 1992 onwards; Simon 2013; Zuloaga 1987; Zuloaga et al. 1992; Morrone et al. 2011). As noted in previous works (Amaya Worm 2001; Morrone et al. 2011), fusoid cells are somewhat variable in their pattern of distribution and are also present in other genera of subtribe Otachyrinae, like *Hymenachne* (e.g., *H. grumosa* (Nees) Zuloaga) and *Steinchisma* (e.g., *S. laxa* (Sw.) Zuloaga).

Although *Dallwatsonia aurita* has been considered a member of the closely related *Hymenachne*, its hollow culms are characteristic of *Dallwatsonia* (vs. filled with aerenchyma in *Hymenachne*; see Pohl & Lersten 1975). Monophyly (as well as an ambiguous holophyly) of the genus is supported by recent cladistic analyses (Morrone et al., 2011).


*Panicum* sect. *Hemitoma* is here synonymized because of the clear assignment of *P. hemitonum* to *Hymenachne*. That species, however, was included as *Panicum* i.s. by Aliscioni et al.
Grande Allende: Panicum segregates

(2003). The diagnostic characters were noted first by Hsu (1965), who made the appropriate combination.

**Etymology and distribution**

From Classical Greek *hymen-* (a membrane) and *-achne* (palea; Palisot de Beauvois 1812). Tropical America, Southeastern Asia, Australia and the Pacific Islands.

Although the first species designated as the type (i.e., lectotype) of *Hymenachne* was *Hymenachne myuros* (Lam.) P. Beauv. (Pfeiffer 1873), the basionym of that name (*Panicum myuros* Lam., cited as “*Agrostis myuros* Lam.” in the protologue) corresponds to *Sacciolepis myuros* (Lam.) Chase, a species not intentionally cited by Beauvois in his work, as has been shown by Niles (1925) and Panigrahi & Dubey (1986), who designated *H. monostachya* (Poir.) P. Beauv. (actually *H. amplexicaulis* (Rudge) Nees), another species’ name available in the protologue, as the type of the genus.


Caespitose, short-rhizomatous perennials. Similar to *Aakia* but differing in the linear-lanceolate leaf blades and the first glume 3/4 the length of the spikelet.

**Etymology and distribution**

This genus is dedicated to Osvaldo Morrone (1957-2011), a renowned Argentinian agrostologist whose studies in the Paniceae s.l. have helped to clarify many generic boundaries. Argentina, Brazil, and Uruguay.


Based on the morphological particularities of this species, Zuloaga et al. (1989) created *Panicum* sect. *Valida* Zuloaga & Morrone. More recently, however, Aliscioni et al. (2003) have shown that both *Panicum validum* and *P. tuerckheimii* are closely related to the genus *Anthaeantioptis*, an endemic of southern Brazil, Paraguay, and Argentina. There is not any reliable morphological synapomorphy shared by these three genera.

**ACKNOWLEDGEMENTS**

I am grateful to Bruno Manara (VEN) for his expertise in classical languages and to Fernando Zuloaga (SI) for providing advice and literature.

**LITERATURE CITED**


