Taxonomic novelties in Central African grasses (Poaceae), Paniceae 2

Marc S.M. Sosef

Meise Botanic Garden, Nieuwelaan 38, BE-1860 Meise, Belgium
Email: marc.sosef@meisebotanicgarden.be

Background and aims – Within the framework of the renewed production of the Flore d’Afrique centrale, the grasses are being studied to accomplish their treatment. Taxonomic novelties, or other information not deemed appropriate in a Flora, are published in a series of separate papers of which this is the second.

Methods – Standard herbarium techniques have been applied to material from BR, BRLU, GENT, P and WAG. Some types were studied through the JSTOR Global Plant facility.

Key results – Novelties are presented for the genera Anthephora, Cenchrus (incl. Pennisetum) and Setaria. Three new combinations are made. Lectotypes are designated for five names. Ten names are treated as new synonyms of accepted species names, with explanations of the new taxonomic concepts applied.

Keywords – Africa; Burundi; Democratic Republic of the Congo; Flora; Gramineae; nomenclature; Rwanda; taxonomy.

INTRODUCTION

Within the context of the renewed efforts to finish the Flore d’Afrique centrale (Sosef 2016a), covering the Democratic Republic of the Congo (D.R. Congo), Rwanda and Burundi, the preparation of the grass treatment has started at the end of 2013. After publishing the general part on family characteristics and higher classification along with the first ten tribes (Sosef 2017), work on the two largest tribes, Andropogoneae and Paniceae (sensu Clayton & Renvoize 1986 and Watson & Dallwitz 1992, not sensu Soreng et al. 2015), is progressing. The necessary explanation to accompany taxonomic novelties discovered within the course of this work is deemed out-of-place in a Flora treatment. The novelties also deserve to be discussed in a broader context and be made available to a wider audience. Hence, they are being dealt with in a series of separate publications. The first of such articles, treating the Paniceae genera Acroceras Stapf, Axonopus P.Beauv., Paspalum L. and Urochloa P.Beauv. (incl. Brachiaria (Trin.) Griseb.) was published in 2016 (Sosef 2016b), where also a brief history of the taxonomic study of Central African grasses was provided. The present article is the second one on Paniceae and treats novelties in the genera Anthephora Schreb., Cenchrus L. (incl. Pennisetum Rich.) and Setaria P.Beauv.

MATERIAL AND METHODS

All studies were performed using herbarium material and applying standard herbarium techniques (de Vogel 1987). Acronyms of institutes holding herbarium collections follow Thiers (continuously updated). The vast majority of material came from BR, with additions from BRLU, GENT, P and WAG. Types not available in one of these, were generally studied using the Global Plants facility (JSTOR 2000–2017).

RESULTS: TAXONOMIC NOVELTIES IN CENTRAL AFRICAN PANICEAE

Anthephora Schreb.

Anthephora cristata (Döll) Hack. ex De Wild. & T.Durand (De Wildeman & Durand 1901: 255). Anthephora elegans Schreb. var. cristata Döll (Döll 1877: 314). – Type: Brazil,
Pernambuco, *Forssell* s.n. (holotype: KR; isotype: US (fragm.)).

*Antheaphora elegans* Schreb. var. *africana* Pilg. (Pilger 1901: 119). – Type: D.R. Congo, Stanley-Pool, June 1899, Schlécher 12508 (lectotype: B [B100168252], designated here; isolectotypes: B [B100168251], BR [BR000001359157], K [K000281098], P).

There has been some doubt about the correct publication place and date of *A. cristata*. The name was published without reference to the basionym of Döll and without description by De Wildeman & Durand (1900: 60; although the title page of that journal issue gives “1901” as the year of publication, at the bottom of the first page of the article the publication date is stated to be December 29th, 1900), and therefore has to be regarded as an invalidly published *nomen nudum* (Art. 38.1, Turland et al. 2018). The same name, validly published one year later by the same authors and with reference to the basionym, is therefore not to be regarded as a later homonym (Art. 53.1, Turland et al. 2018).

*Antephora elegans* var. *africana* was published citing four specimens, *Buchholz 1875*, *Dinklage 464*, *Dewèvre 120* and Schlécher 12508 which are to be regarded as syntypes. Since the author worked at B, the lectotype should preferably be located there. All except the Schlécher specimen are not present at B and were presumably lost during the 1943 fire. At B, there are two sheets of Schlécher 12508, one of which has no spikelets left, the other with a few spikelets in an envelope glued onto the sheet. The latter is here selected as the lectotype, with several duplicates elsewhere.

*Cenchrus* L.

Recent molecular and morphological studies have resulted in the merger of the genera *Cenchrus* L., *Pennisetum* Rich., *Beckeropsis* Fig. & De Not., *Odontelytrum* Hack. and *Kikuyuochloa* H.Scholz (Donadio et al. 2009, Chemisguy et al. 2010, Veldkamp 2014). *Cenchrus* had about 22 species, *Pennisetum* some 80, while the other three genera were monotypic. The oldest name being *Cenchrus*, a fair number of names have already been recombined in that genus, notably by Morrone (in Chemisguy et al. 2010). However, some additional combinations related to central African taxa are provided below. In several databases and literature sources, one may encounter the subspecific names *Pennisetum glaucum* (L.) R.Br. subsp. *sieberianum* (Schldl.) Stapf & C.E.Hubb. and *Pennisetum glaucum* (L.) R.Br. subsp. *violaceum* (Lam.) A.Rich. Being older names at subspecies level, the epithets would have priority over the ones proposed below. However, both names were never validly published in the works referred to by the various sources and have thus not been taken into account.

*Cenchrus americanus* (L.) Morrone subsp. *stenostachyus* (Klotzsch ex A.Braun & Bouché) Sosef, *comb. nov.*

*Penicillaria stenostachya* Klotzsch ex A.Braun & Bouché, *Index Seminum in Horto Botanico Berolinensi anno ... collectorum, Appendix 1855*: 25. 1855 (Braun & Bouché 1855). – *Pennisetum stenostachyum* (Klotzsch ex A.Braun & Bouché) Stapf & C.E.Hubb. (Stapf & Hubbard 1933: 270), non Peter. – *Pennisetum americanum* (L.) Leeke subsp. *stenostachyum* (Klotzsch ex A.Braun & Bouché) Brunken (Brunken 1977: 173). – Type: Senegal, prope Laybar, 1830, Leprieur in Hb. Kunth (holotype: B [B100167886]).

*Penicillaria sieberiana* Schldl. (von Schlechtendal 1852: 565). – *Pennisetum sieberianum* (Schldl.) Stapf & C.E.Hubb. (Stapf & Hubbard 1933: 270). – *Cenchrus sieberianus* (Schldl.) Verloove (Verloove 2012: 78). – Type: Egypt, prope Syene, Sieber s.n. (lectotype: B [B100167891], designated here; isolectotype: B [B100167894], L [L.1303770]).

*Cenchrus americanus* (L.) Morrone subsp. *monodii* (Maire) Sosef, *comb. nov.*

This highly variable species is thought to belong to a complex of three taxa that frequently hybridize: *C. americanus, C. sieberianus* (Schldl.) Verloove and *C. violaceus* (Lam.) Morrone; see Andrews & Kumar (2006) for an overview. Brunken (1977), who made a detailed study of the group, recognized these three taxa as subspecies of *P. americanum*. He considered the latter two taxa to be the wild forms and/or relatives of the cultivated *C. americanus* and his taxonomy is still widely used in Pearl millet crop science, where also their synonyms at subspecific level, respectively *P. americanum* subsp. *stenostachyum* (A.Braun & Bouché) Brunken and *P. americanum* subsp. *monodii* (Maire) Brunken, are regularly encountered in recent literature, for example in the authoritative Patil (2016) publication. However, while at species level the new combinations are available in *Cenchrus*, they are not for those who want to recognize the taxa at the level of subspecies. Regarding the existence of frequently occurring (partly) fertile hybrids between the three taxa, a recognition at subspecific level is probably more appropriate. Hence, to support further research related to the crop Pearl millet and for example gene banks holding accessions of *C. americanus* and its wild relatives, the correct names in *Cenchrus* for the two wild subspecies are provided below.

In several databases and literature sources, one may encounter the subspecific names *Pennisetum glaucum* (L.) R.Br. subsp. *sieberianum* (Schldl.) Stapf & C.E.Hubb. and *Pennisetum glaucum* (L.) R.Br. subsp. *violaceum* (Lam.) A.Rich. Being older names at subspecies level, the epithets would have priority over the ones proposed below. However, both names were never validly published in the works referred to by the various sources and have thus not been taken into account.

*Cenchrus americanus* (L.) Morrone subsp. *monodii* (Maire) Sosef, *comb. nov.*
Panicum geniculatum Lam. (Lamarck 1791: 169). – Panicum violaceum (Lam.) Rich. (in Persoon 1805: 72).
- Type: Senegal, 1789, Roussillon s.n. (holotype: P (in Hb. Lamarck)); isotype: MPU [MPO024574]).

Cenchrus geniculatus Thunb. (Thunberg 1794: 24). – Panicum geniculatum (Thunb.) Thunb., non Lam. (Thunberg 1813: 388). – Panicum geniculatum (Thunb.) Leeeke, non (Poir.) J.Jacq. (Leeeke 1907: 4). – Type: South Africa, s.d., s. loc., Thunberg s.n. (holotype: UPS).

Pennisetum thunbergii Kunth. (Kunth 1829: 50). – Cenchrus thunbergii (Kunth) Morrone, nom. illeg. (in Chemisquy et al. 2010: 129). – Type: South Africa, s.d., s. loc., Thunberg s.n. (holotype: UPS [S09-10632]), synon. nov.

Cenchrus geniculatus was published by Thunberg in 1794, who transferred it to Panicum in 1813, resulting in an illegitimate name since the name was already occupied by a species described from Guadeloupe in 1798 (Panicum geniculatum Lam.), now called Setaria parviflora (Poir.) Kerguélen. In 1829, Kunth wanted to transfer C. geniculatus to Pennisetum and probably correctly saw the name P. geniculatum was already occupied by Pennisetum geniculatum (Poir.) J.Jacq., published in 1820, and thus provided the new name Pennisetum thunbergii Kunth based on the same type specimen. In 1907, Leeeke, apparently unaware of the name Pennisetum geniculatum (Poir.) J.Jacq., transferred Cenchrus geniculatus to Pennisetum, creating the illegitimate name P. geniculatum (Thunb.) Leeeke, non (Poir.) J.Jacq. Finally, Chemisquy et al. (2010) pointed out that all Pennisetum had to be lumped into Cenchrus but instead of restoring the oldest name available for the species in Cenchrus, they published the new combination Cenchrus thunbergii (Kunth) Morrone, hence an illegitimate name (Art. 52.1, Turland et al. 2018). Here, the oldest and thus correct name for the species in Cenchrus has been restored.

Cenchrus macrourus (Trin.) Morrone (in Chemisquy et al. 2010: 128). – Pennisetum macrourum Trin. (Trinius 1826: 64). – Types: South Africa, Cape of Good Hope, Schwartz s.n. (syntype: not found); South Africa, Cape of Good Hope, Link s.n. (syntype: not found).

Pennisetum mildbraedii Mez (Mez 1917: 52). – Cenchrus mildbraedii (Mez) Morrone (in Chemisquy et al. 2010: 128). – Type: Rwanda, NO-Kiwu, Sabyino-Kahinga Sattel, Bergwiesen im Bambuwald, 25–2600 m, Nov. 1907, Mildbraed 1763 (holotype: B [B100167840]), synon. nov.

Pennisetum kisantuense Vanderyst (Vanderyst 1925: 685). – Type: D.R. Congo, Kisantu (Inkisi), Jul. 1914, Vanderyst 4650 (lectotype: BR [BR0000005867134], designated here).

Cenchrus macrourus is a highly variable species characteristic of lake and river shores. Where many of its forms were previously recognized as distinct species, notably Clayton & Renvoize (1982) brought together the reticulum of local seg-

regates into a single species, a view generally followed by others.

Cenchrus mildbraedii, endemic to Uganda and adjacent Rwanda, is highly similar in habit (coarse rhizomatous perennial with erect culms, sheaths coriaceous and glabrous, the lower ones flabellate), inflorescence (peduncle scabrid or puberulous below the spike-like terminal inflorescence), involucrum with some 10 to 20 bristles of which only the longest is overtopping the single spikelet, and the strongly reduced lower and upper glumes. Cenchrus mildbraedii would be distinct from the widespread C. macrourus due to its much shorter lower lemma, ½ to ¾ of the length of the spikelet, where that of C. macrourus is between ¾ of the length of the spikelet and full length of the spikelet. The type material of C. mildbraedii was studied in detail, as well as highly similar material collected in 1929 on the type locality, the saddle between the Sabyinyo and Gahinga volcanoes (Humbert 8636, 2 sheets at BR, [BR0000005866847, BR0000005866908]). It turned out that although both glumes are highly reduced, the lower lemma is in fact almost as long as the spikelet. This error probably has its origin in the protologue itself, where Mez published an otherwise highly detailed description in which he stated “gluma I. minuttissima vix reperienda,…..; gluma II. item quam maxime diminutata sed quam praecedens paullo longiore,…..; gluma III. item valde diminuta, 1–3 mm longa, squamiformi, apice rotundata, 0–1-nervia” [freely translated: lowest glume very minute, hardly visible, …..; upper glume also reduced though a little longer than the one preceding,…..; glume 3 also very much diminished, 1–3 mm long, scale-like, apex rounded, 0–1-veined”]. In Panicae, glume 3 is generally seen as the lemma of the lower floret. However, it seems that Mez either miscalculated the number of elements in the spikelet or misinterpreted the spikelet structure, because when comparing with the type material, the description of glume III clearly relates to the upper glume in this case. This observational error has been copied by Stapf & Hubbard (1934), Robyns (1934), Clayton & Renvoize (1982) and finally even in the otherwise high quality Grassbase web-service (Clayton et al. 2006–) and thus remained uncorrected for almost a century.

Pennisetum kisantuense was published rather obscurely, since it was only mentioned in the key of Vanderyst (1925: 685). No specimens were cited, but several collected by Vanderyst carry the name of the species in his handwriting. Clayton & Renvoize (1982: 690) indicated Vanderyst 5030 at K as one of several syntypes, and hence this cannot be seen as a formal lectotypification. Unfortunately, no duplicates of Vanderyst 5030 are present at BR. Hence, I deemed it better to select a syntype which I have been able to study in detail (Vanderyst 4650, Kisantu (Inkisi), Jul. 1914), accompanied by a detailed pencil drawing made by Hélène Durand.

Cenchrus nodiflorus (Franch.) Zon (van der Zon 2019: 214). – Pennisetum nodiflorum Franch. (Franchet 1895: 363). – Type: D.R. Congo, Moyen Congo, Stanleypool, roches de N’tambo, 8 Jul. 1888, Hens B-32 (lectotype: P [P00442930]); isolecotypes: BR [BR0000005871049], G [G00022556, G00022557], L [L0822667, P [P00442929])

Although a perfectly sound species, Pennisetum nodiflorum Franch. was not mentioned by Lebrun & Storck (1995),
implying it was already regarded as a synonym by another authoritative work. According to me, and my colleague Ton van der Zon (van der Zon 2019), that is an error. The latter recently published the correct name for the species in the genus *Cenchrus*, but it seems appropriate to add some explanation on the confusion of names. The species was treated as a synonym of *P. divisum* (J.F.Gmelin) Henrard (= *C. divisus* (J.F.Gmelin) Verlooove, Govaerts & Butlter; Verlooove et al. 2014) by the African Plant Database (2019), which is based on Lebrun & Storch (1995). That database correctly regards *P. dichotomum* (Forssk.) Delile as a synonym of *P. divisum*. However, Robyns (1934) gave *P. dichotomum* Klatt, non Delile as a synonym of *P. nodiflorum*. That same year, Stapf & Hubbard (1934) cited *P. dichotomum* Klatt ex Durand & De Wildeman below *P. nodiflorum*, referring to Durand & De Wildeman (1897: 91) where these authors erroneously cited the specimen *Hens B-32*, now chosen as the lectotype of *C. nodiflorus* by van der Zon (2019), below *P. dichotomum* (Forssk.) Delile. Possibly, this situation has caused confusion and the error to occur. Otherwise, *C. nodiflorus* has sufficient diagnostic morphological features, and is characteristic of *P. nodiflorum* to nodes, relatively shorter inflorescences, upper glume C. nodiflorus*. The epithet would translate to “with knotty flowers” and is often used for species having their flowers in tight glochules. Since this does not really apply to this species, but rather its culms with swollen nodes are a fairly striking feature, one wonders if Franchet may have made a mistake and wanted to name it *‘nodiferum’*. This is not overly clear from the protologue though, and it is certainly not a correctable error in the sense of the *International Code of Nomenclature for algae, fungi, and plants* (Art. 60, Turland et al. 2018). So, this rather strange epithet is the correct one to be used for this species. *Cenchrus nodiflorus* has a superficial resemblance (many swollen nodes, relatively short inflorescences, upper glume with 5 to 7 nerves, at least ⅔ as long as the spikelet) to *C. divisus* but is a much coarser species. The plants are up to 2.5 m high, with leaves up to 40 cm long, all bristles of the involucre glabrous (scabrous) and spikelets 3.5–4.5 mm long, while *C. divisus* reaches up to 1.5 m, with leaves up to 15 cm long, internal bristles plumose, and spikelets 6.5–8.5 mm long.

The epithet would translate to “with knotty flowers” and is often used for species having their flowers in tight glochules. Since this does not really apply to this species, but rather its culms with swollen nodes are a fairly striking feature, one wonders if Franchet may have made a mistake and wanted to name it ‘*nodiferum’*? This is not overly clear from the protologue though, and it is certainly not a correctable error in the sense of the *International Code of Nomenclature for algae, fungi, and plants* (Art. 60, Turland et al. 2018). So, this rather strange epithet is the correct one to be used for this species. *Cenchrus nodiflorus* has a superficial resemblance (many swollen nodes, relatively short inflorescences, upper glume with 5 to 7 nerves, at least ⅔ as long as the spikelet) to *C. divisus* but is a much coarser species. The plants are up to 2.5 m high, with leaves up to 40 cm long, all bristles of the involucre glabrous (scabrous) and spikelets 3.5–4.5 mm long, while *C. divisus* reaches up to 1.5 m, with leaves up to 15 cm long, internal bristles plumose, and spikelets 6.5–8.5 mm long.

The epithet would translate to “with knotty flowers” and is often used for species having their flowers in tight glochules. Since this does not really apply to this species, but rather its culms with swollen nodes are a fairly striking feature, one wonders if Franchet may have made a mistake and wanted to name it ‘*nodiferum’*? This is not overly clear from the protologue though, and it is certainly not a correctable error in the sense of the *International Code of Nomenclature for algae, fungi, and plants* (Art. 60, Turland et al. 2018). So, this rather strange epithet is the correct one to be used for this species. *Cenchrus nodiflorus* has a superficial resemblance (many swollen nodes, relatively short inflorescences, upper glume with 5 to 7 nerves, at least ⅔ as long as the spikelet) to *C. divisus* but is a much coarser species. The plants are up to 2.5 m high, with leaves up to 40 cm long, all bristles of the involucre glabrous (scabrous) and spikelets 3.5–4.5 mm long, while *C. divisus* reaches up to 1.5 m, with leaves up to 15 cm long, internal bristles plumose, and spikelets 6.5–8.5 mm long.

The epithet would translate to “with knotty flowers” and is often used for species having their flowers in tight glochules. Since this does not really apply to this species, but rather its culms with swollen nodes are a fairly striking feature, one wonders if Franchet may have made a mistake and wanted to name it ‘*nodiferum’*? This is not overly clear from the protologue though, and it is certainly not a correctable error in the sense of the *International Code of Nomenclature for algae, fungi, and plants* (Art. 60, Turland et al. 2018). So, this rather strange epithet is the correct one to be used for this species. *Cenchrus nodiflorus* has a superficial resemblance (many swollen nodes, relatively short inflorescences, upper glume with 5 to 7 nerves, at least ⅔ as long as the spikelet) to *C. divisus* but is a much coarser species. The plants are up to 2.5 m high, with leaves up to 40 cm long, all bristles of the involucre glabrous (scabrous) and spikelets 3.5–4.5 mm long, while *C. divisus* reaches up to 1.5 m, with leaves up to 15 cm long, internal bristles plumose, and spikelets 6.5–8.5 mm long.

The epithet would translate to “with knotty flowers” and is often used for species having their flowers in tight glochules. Since this does not really apply to this species, but rather its culms with swollen nodes are a fairly striking feature, one wonders if Franchet may have made a mistake and wanted to name it ‘*nodiferum’*? This is not overly clear from the protologue though, and it is certainly not a correctable error in the sense of the *International Code of Nomenclature for algae, fungi, and plants* (Art. 60, Turland et al. 2018). So, this rather strange epithet is the correct one to be used for this species. *Cenchrus nodiflorus* has a superficial resemblance (many swollen nodes, relatively short inflorescences, upper glume with 5 to 7 nerves, at least ⅔ as long as the spikelet) to *C. divisus* but is a much coarser species. The plants are up to 2.5 m high, with leaves up to 40 cm long, all bristles of the involucre glabrous (scabrous) and spikelets 3.5–4.5 mm long, while *C. divisus* reaches up to 1.5 m, with leaves up to 15 cm long, internal bristles plumose, and spikelets 6.5–8.5 mm long.
Two other names, previously treated as synonyms of *S. seriata* Stapf (S. gracilipes C.E.Hubb., see also the discussion on *S. kagerensis* below) and of *S. homonyma* (Steud.) Chiov. (*Panicum bongaensis* Pilg.), the types of which show high similarity with the type of *S. thollonii*, are also to be regarded as synonyms of *S. barbata* rather than of the other two species.

*Setaria kwamouthensis* was treated as a synonym of *S. thollonii* by Robyns (1934) but was placed amongst the doubtful and excluded names by Morrone et al. (2014). Two synatypes (*Vanderyst 4607 & 4619*) were located at BR. Since the first was collected at Lekanu, and the second at Kvamouth, the latter was chosen as the lectotype.

*Setaria kagerensis* Mez (Mez 1917: 58). – Type: Tanzania, am Kagera, 8 Apr. 1891, Stuhlmann 1946 (holotype: B [B100168820]; isotype: K [fragm., K000281859]).

*Setaria microprolepis* Stapf (Stapf & Hubbard 1930: 849). – Type: Angola, Golongo Alto, Cungulungulo, Montalegra, Feb. 1855, Welwitsch 7176 (holotype: BM [BM000923244]; isotypes: K [fragm.], LISU [LISU226933]), synon. nov.

*Setaria seriata* Stapf (Stapf & Hubbard 1930: 853). – Type: D.R. Congo, Katanga, M’Pueto, Mar. 1896, Deschamps s.n. (holotype: BR [BR0000008801166]; isotype: K [fragm., K000281918]), synon. nov.

According to the revision of the Old World species of *Setaria* by Morrone et al. (2014), the presumed annual species *S. seriata* appears to be a rare but relatively widespread species, occurring from Ivory Coast to Zambia, with *S. gracilipes* C.E.Hubb. as a synonym. Upon closer examination of the holotype specimen of *S. seriata*, the leaf morphology and spikelet structure proved highly similar to that of the perennials species *S. kagerensis*. Both have plicate but comparatively narrow leaf blades, a paniculate inflorescence with spikelets in ± unilateral racemes, a lower glume of up to ½ of the length of the spikelet while the upper glume is ½ or more of this length, and a smooth to papillose upper lemma and palea. In the protologue, Stapf remarked that the species was “probably annual”, because the only material available consisted of an inflorescence and a single leaf. Later, Clayton (1989) erroneously treated the annual *S. gracilipes* C.E.Hubb. as a synonym of *S. seriata*, which was probably the start of a complicated confusion of names and mixing of species descriptions (see also above, the discussion below *S. barbata*). This situation is now clarified, at least for Central Africa.

*Setaria microprolepis* Stapf has long been treated as a synonym of *S. homonyma* (Steud.) Chiov., probably because of its presumed transversely rugose upper lemma and an upper glume almost equaling the spikelet. However, *S. homonyma* is an annual species with narrowly elliptic leaf blades, while the type material of *S. microprolepis* shows a perennial plant with linear leaves. Upon closer inspection the upper lemma was not rugose, as mentioned in the protologue, but only papillose. Both features then referred the material to *S. kagerensis*.

In its present circumscription, *S. kagerensis* has a distribution centred in East Africa, occurring from Sudan and Ethiopia to eastern D.R. Congo, Rwanda, Burundi, Uganda, Kenya and Tanzania, with a single record from Angola and a doubtful record from Zambia.

*Setaria nigrirostris* (Nees) T.Durand & Schinz (Durand & Schinz 1894: 774). – *Panicum nigrirostre* Nees (Nees von Esenbeck 1841: 55). – Type: South Africa, in altioribus ad Omsamwubo, locis graminosis, alt. 1000. 11 Feb. 1832, J.F. Drège 4254 (holotype: B†; isotypes: P [P00442213], S [S14-19805]).

*Panicum acromelaenum* Hochst. (Hochstetter 1855: 198). – *Setaria acromelaena* (Hochst.) T.Durand & Schinz (Durand & Schinz 1894: 772). – Type: Ethiopia, Agow, Dscha Dscha, s.d., Schimper in Hb. Buchinger 1514 (in the protologue erroneously cited as #1513) (holotype: STR; isotypes: BR [BR000000826385], L [L.1340544], W [W0021507]), synon. nov.

For several decades, authors have been more or less copying the same remark about the weakness of the distinction between *S. acromelaena* and *S. nigrirostris* (incl. *S. incrassata* (Hochst.) Hack.; see for example Clayton & Renvoize 1982: 527; Cope 1995: 234; Phillips 1995: 238). Most authors stated the first is the annual counterpart of the second. The recent revision by Morrone et al. (2014) stated the same, but gave an additional difference, namely the fact that *S. acromelaena* would have a sparsely to densely pilose inflorescence axis mixed with the dense short-hispid indumentum, while that of *S. nigrirostris* only bears a short-hispid indumentum. The latter difference does, unfortunately, not hold, since for example the specimens *Bos* 9081 from Ethiopia and Comité Spécial du Katanga 10 from south-eastern D.R. Congo clearly represent annual plants but without any pilose hairs on the axis. I have argued before (Sosef 2016b, on the distinction between *Urochloa mosambicensis* (Hack.) Dandy and *U. trichopus* (Hochst.) Stapf) that in grasses annual habit alone cannot be used as a taxonomic distinctive character at species level, and hence the two taxa are to be united and their names to be regarded as synonyms.

*Setaria abyssinica* Hack. var. annua Chiov. (Chiovenda 1908: 311). – Type: Eritrea, Saraæ, Terammi, alt. 1900 m., 9 Oct. 1902, Pappi 569 (holotype: FT [FT000304]; isotypes: G [G00022649], K [fragm., K000281908]), synon. nov.

ACKNOWLEDGMENTS

I am grateful to the curators of the following herbaria, for providing access to their collections and/or assisting in tracing specific materials: BR, BRLU, GENT, P, WAG. Constructive remarks to an earlier manuscript version were received from three reviewers and the Editor, for which I want to thank them.
Soreng R.J., Peterson P.M., Romaschenko K., Davidse G., Zuloaga F.O., Judziewicz E.J., Filgueiras T.S., Davis J.I., Morrone O. (2015) A worldwide phylogenetic classification of the Poaceae (Gramineae). Journal of Systematics and Evolution 53(2): 117–137. https://doi.org/10.1111/jse.12150

Sosef M.S.M. (2016a) Producing the Flore d’Afrique centrale, past, present and future. Taxon 65(4): 937–939. https://doi.org/10.12705/654.54

Sosef M.S.M. (2016b) Taxonomic novelties in Central African grasses (Poaceae), Paniceae 1. Plant Ecology and Evolution 149(3): 356–365. https://doi.org/10.5091/plecevo.2016.1221

Sosef M.S.M. (2017) Gramineae. Introduction, Tribu I. Phareae à X. Bambuseae. In: Sosef M.S.M. (ed.) Flore d’Afrique centrale: 1–81. Meise, Jardin botanique Meise.

Stapf O. (1927) Notes on African grasses, V. Bulletin of Miscellaneous Information, Kew 1927: 264–305. https://doi.org/10.2307/4107602

Stapf O., Hubbard C.E. (1930) Order CLVII. Gramineae, part 5. In: Prain D. (ed.) Flora of Tropical Africa, vol. IX: 769–944. Ashford, L. Reeve & Co. Ltd.

Stapf O., Hubbard C.E. (1933) Notes on African Grasses: XIII. Bulletin of Miscellaneous Information, Kew 1933: 269–302. https://doi.org/10.2307/4115451

Stapf O., Hubbard C.E. (1934) Order CLVII. Gramineae, part 6. In: Prain D. (ed.) Flora of Tropical Africa, vol. IX: 945–1132. Ashford, L. Reeve & Co. Ltd.

Thiers B. (continuously updated) Index Herbariorum: a global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. Available at http://sweetgum.nybg.org/ih/ [accessed 15 Jan. 2019].

Thunberg C.P. (1794) Prodomus plantarum capensium, quas in Promontorio Bonae Spei Africis, annis 1772–1775, collegit Carol. Pet. Thunberg. Uppsala, Joh. Edman.

Thunberg C.P. (1813) Flora capensis, sistens plantas Promontorii Bonae Spei Africis, ..., vol. 1(3). Uppsala, Joh. Fr. Edman.

Trinius C.B. (1826) De Graminibus paniceis. St Petersburg (Petropolis), Academia Imperialis Scientiarum.

Turland N.J., Wiersema J.H., Funk V.C., Zizka W., Per perennial T.S., Herendeen P.S., Wurdack K.J., Herendeen S., editors (2019) International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. Regnum Vegetabile 159. Glashütten, Koeltz Botanical Books. https://doi.org/10.12705/Code.2018

Vanderyst H. (1925) Aide-mémoire pour faciliter la recherche des Paniceae. Bulletin Agricole du Congo Belge 16: 652–689.

Veldkamp J.F. (2014) A revision of Cenchrus incl. Pennisetum (Gramineae) in Malesia with some general nomenclatural notes. Blumea 59(1): 59–75. https://doi.org/10.3767/000651914X684376

Verloove F. (2012) New combinations in Cenchrus (Paniceae, Poaceae) in Europe and the Mediterranean area. Willdenowia 42(1): 77–78. https://doi.org/10.3372/wi.42.42108

Verloove F., Govaerts R., Butler K.P. (2014) A new combination in Cenchrus (Poaceae: Paniceae), with lectotypification of Panicum divisum. Phytotaxa 181(1): 59–60. https://doi.org/10.11646/phytotaxa.181.1.5

Vogel E.F. de (1987) Manual of herbarium taxonomy: theory and practice. Jakarta, UNESCO.

Watson L., Dallwitz M.J. (1992) The grass genera of the world. Wallingford, CAB International.

Webster R.D. (1993) Nomenclature of Setaria (Poaceae: Paniceae). SIDA, Contributions to Botany 15(3): 447–489.

Zon A.P.M. van der (1992) Graminées du Cameroun, volume II, Flore. Wageningen Agricultural University Papers 92-1: 1–557.

Zon A.P.M. van der (2019) New combinations in Cenchrus and Urochloa (Gramineae). Blumea 64: 214–215. https://doi.org/10.3767/blumea.2019.64.03.02

Communicating Editor: Elmar Robbrecht

Submission date: 21 Mar. 2019
Acceptance date: 24 Jun. 2019
Publication date: 28 Nov. 2019