

## TWO NEW GRASSES FROM NEW GUINEA

by

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(with 2 figures)

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In this paper two grasses from New Guinea are described as new species. One of these is proposed as the type of a new genus, the other is referred to a hitherto supposed monotypic genus which is suggested as the type of a new tribe.

*Ancistragrostis* S. T. Blake; genus novum, e tribu *Agrostidearum*, affine *Deyeuxiae* Beauv., sed glumis atque lemmate induratis, lemmate quam glumis conspicue longiore ejus arista robusta uncinata distinguendum.

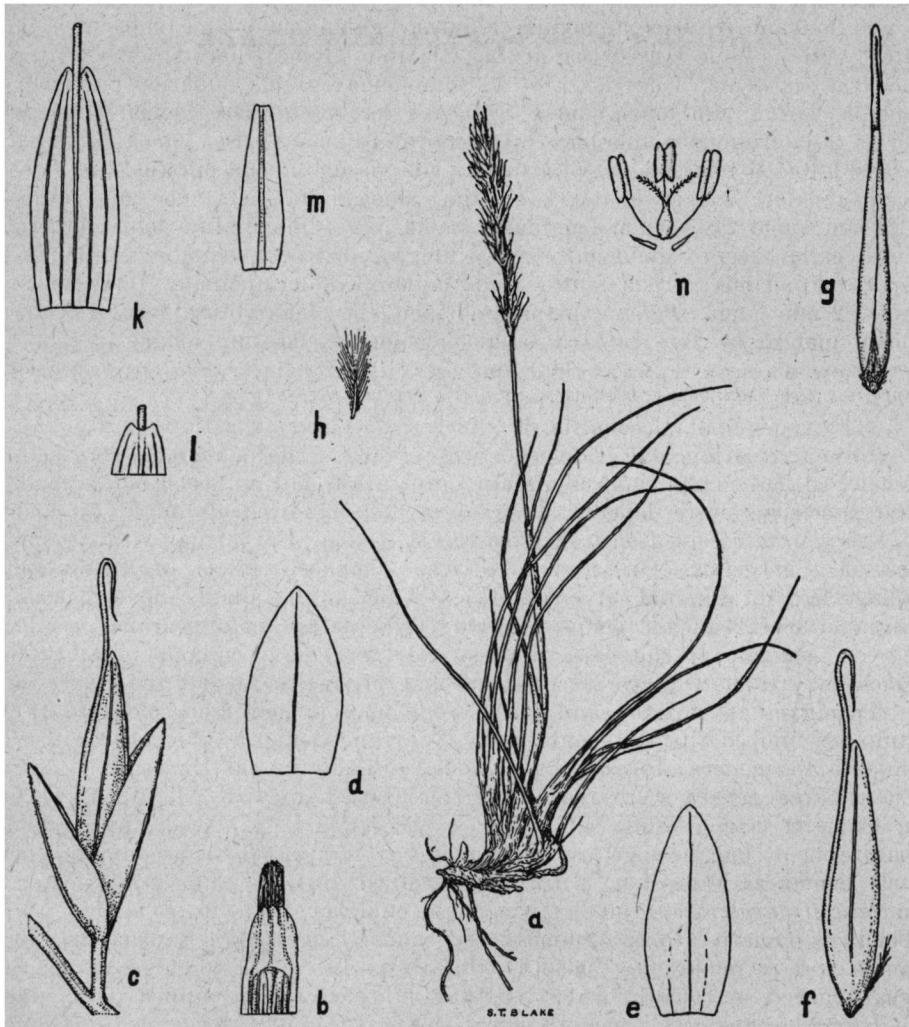
*Spiculae* uniflorae conformes hermaphroditae, in panicula contracta dispositae, lanceolatae, a latere compressae; rhachilla supra glumas articulata, ultra anthoecium in setam brevem ciliatam producta. *Glumae* 2, in pedicello persistentes, subaequales, carinatae, muticae, tenuiter cartilagineae, 1-nerves vel superior sub-3-nerves, spicula conspicue breviores. *Anthoecium* valde exsertum et spiculam aequans, lineari-lanceolatum, a latere compressum, dorso superiore leviter obtuseque carinatum, callo brevi obtuso breviter barbatum. *Lemma* marginibus superioribus convolutum, explanatum angustius ovatum bilobulatum, tenuiter cartilagineum, apice marginibusque angustissime hyalinum, valide 5-nerve nervo medio juxta apicem in aristulam robustam conspicue uncinatam abeunte, laeve. *Palea* quoad textura lemmati similis et eo  $\frac{1}{3}$  brevior, tenuiter 2-nerves, 2-carinata, laevis, explanata lanceolata obtusa. *Lodiculae* 2, hyalinae, sublanceolatae. *Stamina* 3. *Styli* 2 breves, basi coaliti; stigmata breviuscula, plumosa, lateraliter exserta. *Caryopsis* non visa. *Gramen* caespitosum, humile; innovationes intravaginales; folia setacea; ligula membranacea; spiculae parvae.

Species adhuc nota unica, montium novo-guineensium incola.

*Ancistragrostis uncinoides* S. T. Blake; species nova, adhuc unica. —  
*Fig. 1.*

*Gramen* caespitosum perenne, 6—10 cm altum. *Culmi* setacei, teretes, striati, glabri, laeves, 2-nodes. *Foliorum* vaginae arctae vel a culmo secedentes, dorso herbaceae valde striatae, marginibus hyalinae minute scaberulae, omnino glabrae, inferior internodo longior vel subaequiongla; auriculae parvae incrassatae, glabrae; collum callosum; ligula membranacea, ovata, apice lacerata, scaberula, 1.1—1.5 mm longa; laminae plus minusve flexuosae, setacea, convolutae, circa 3—5 cm longae, 0.4—0.6 mm latae

sed explanatae usque ad 1.3 mm latae, coriaceae marginibus incrassatae, utrinque nervis 5 validis percursae quorum medio crassiore, supra marginibusque minute denseque scabrae, subtus plus minusve scaberulae, apice



*Fig. 1.* — *Anostragrostis uncinoides* S. T. Blake. a. part of plant,  $\times 1$ ; b. ligule, with adjacent parts of leaf,  $\times 6$ ; c. spikelet with its pedicel, side view; d. lower glume, flattened out; e. upper glume, flattened out; f. floret, side view; g. floret, front view; h. prolongation of rhachilla; k. lemma, flattened out, back view; l. apex of lemma, flattened out, front view; m. palea, flattened out, back view; n. flower, the lodicules separated. c—n,  $\times 12$ . Type material.

callosae anguste obtusae a latere compressae. *Panicula* longiuscula exserta, subspiciformis, subdensiflora, continua, viridis, 2.5—3 cm longa, 4—5 mm lata; rhachis striato-angulata, scaberula, plus minusve stricta, a spiculis partim condita; rami singuli vel bini, a basi ipsa iterum atque iterum

divisi (quam ob rem rami specie fasciculati), cum spiculis internodos rhacheos plus minusve superantes, cum ramulis pedicellisque erecti, gracieles, angulati, glabri, laeves; pedicelli 0.5—1.8 mm longi. *Spiculae* pallide virides vel purpurascentes, lanceolatae, valde compressae, cum arista 3.5—4 mm longae. *Glumae* admodum hiantes, explanatae ovatae subacutae, a latere visae oblique lanceolatae acutae, glabrae; gluma inferior dorso leviter incurva, scaberula, 1-nervis, 1.9—2.1 mm longa; gluma superior paulisper longior, 2—2.3 mm longa, dorso recta vel fere recta, fere laevia, 1-nervis nervis 2 lateralibus tenuissimis brevibus interdum additis. *Rhachilla* processus 0.4—0.6 mm longus, pilis usque ad 0.7 mm longis ciliatus. *Anthocium* a latere visum leviter obliquum, sine arista sed cum callo circa 0.25 mm longo 2.8—3 mm longum. *Lemma* laeve, bilobulatum lobis obtusis, laeve, callo excepto glabrum, nervis inter se distinctis sursum validis inferne tenuioribus; arista supra medium mox valde uncinata, fere laevis, 0.7—1.2 mm longa. *Palea* explanata oblongo-lanceolata, obtusa, circa 1.8 mm longa, glabra, laevis. *Antherae* anguste oblongae, 0.6 mm longae.

New Guinea, Papua, Central Division, Mt. Victoria: W. MacGregor, in 1889 (type in herb. Melbourne, clastotype in herb. Brisbane).

The type-material consists of 3 pieces, one bearing 2 flowering culms, the others bearing one flowering culm each. The spikelets are well-developed, but in the flowering stage only; grain had not yet been formed. The specimens were labelled *Uncinia* in the handwriting of F. Mueller and they were received on loan from the Melbourne Herbarium with specimens of this genus. On account of the compact panicle of 1-flowered spikelets with exserted uncinate-awned lemmas, the plants do somewhat resemble species of the genus *Uncinia* (Cyperaceae) in appearance.

On account of the paniculate strictly 1-flowered spikelets with the rhachilla articulate above the glumes and produced beyond the floret as a densely ciliate bristle, and with the lemma awned from close to the minutely bilobed tip, this genus is to be arranged in the tribe *Agrostideae* close to the genera *Agrostis* L., *Calamagrostis* Roth and *Deyeuxia* Beauv. These three genera were recently differentiated anew by J. W. Vickery in Contrib. N. S. Wales Nat. Herb. I (2) (1940) 47. According to her arrangement, our new genus comes closest to *Deyeuxia* on account of the firm lemma and the short hairs of the callus. But the glumes and lemma in *Ancistragrostis* are much firmer and tougher than in *Deyeuxia*, the lemma is (relative to the glumes) very much longer than is usual in this genus and is remarkably smooth, while it is also more compressed, somewhat curved and more or less distinctly keeled in the upper part, and the stout hooked nearly smooth awn is quite different. *Deyeuxia Gunniana* (Nees) Benth. differs from the other species of the genus in its short glumes and from most in the nearly smooth lemma, but the texture of these organs is very different from that in *Ancistragrostis*.

Some approach to the genus *Aulacolepis* Hack. is shown in the texture and relative length of glumes and lemma, but in *Aulacolepis* the lemma is awnless, 3-nerved, and much more sharply keeled, while the palea is deeply furrowed between the keels (not merely slightly depressed) and the prolongation of the rhachilla is glabrous.

The texture of the lemma of *Ancistragrostis* suggests a relationship

with genera of the *Stipeae*, but in this tribe the lemma is compressed dorsally rather than laterally with the nerves tending to unite at or near the apex, and the rhachilla is not produced except in some aberrant cases where 2-flowered spikelets are produced; also the awn is different.

The florets of *Ancistragrostis* resemble in some ways those of some species of *Echinopogon* Beauv. — notably *E. McKiei* C. E. Hubbard and *E. phleoides* C. E. Hubbard — but they are more indurated, more compressed, much longer than the glumes and with a different awn. The two genera are quite unlike in appearance and besides *Echinopogon* has rigidly ciliate (in one species sometimes merely scabrous) keels to the usually membranous glumes, usually more nerves to the more or less scabrous lemma, and the palea distinctly furrowed between the keels; in most species the glumes and lemmas are much thinner in texture. Morris, in Ewart Fl. Vict. (1930) 109 and C. E. Hubbard in Hook. Ic. Plant. sub t. 3261 (1935) refer *Echinopogon* to the *Festuceae*, but *Ancistragrostis* appears not to be allied to any other genus in this tribe.

The outstanding characters of *Ancistragrostis* thus appear to be the paniculate 1-flowered hermaphrodite spikelets with the rhachilla articulated above the persistent glumes and produced beyond the floret as a densely ciliate bristle, the prominently exserted laterally compressed and somewhat keeled floret with a small obtuse callus, the distinctly indurated glumes, lemma and palea, and the minutely bilobed 5-nerved lemma with free nerves, the mid-nerve running out close to the apex as a short stout hooked awn. The nature of the awn suggested the generic name which is derived from the Greek *ἄγκιστρον*, to furnish with hooks, and *ἀγρωτίς*, a grass.

*Buergersiochloa macrophylla* S. T. Blake; species nova, a *B. bambusoide* Pilger (specie sola prius nota) foliis longioribus, spiculis feminineis majoribus minus pilosis, aristis longioribus praecipue differt. — Fig. 2.

*Gramen* perenne, laxe caespitosum, rhizomate brevi ramoso. *Culmi* dimorphi, 60—70 cm alti, basi breviter obliqui cataphyllis pallidis nitidulis coriaceis striatis obtecti, sursum suberecti, teretes, striati ceterum laeves, paucinodes, internodis fistulosi; culmi steriles foliati glabri, folia evoluta circa 4 gerentes; culmi floriferi graciliores, pubescentes, aphylli, foliis ad vaginas 2 subelaminatis reductis. *Foliorum* vaginae internodis tandem breviores, arctae, virides, firmae, striatae, marginibus rigide ciliatae (eae culmorum floriferorum basin versus etiam pubescentes), auriculis brevibus barbatae; ligula rigide membranacea, fimbriata, circa 0.25 mm longa; laminae glaucescentes, a vagina demum disarticulantes, vernatione involutae, mox planae sed admodum plicatulae, haud carinatae, 17—23.5 cm longae, 2.5—3.5 cm latae, tenues, rigide chartaceae sed flexiles, lanceolatae, apicem versus acute acuminatae, basi rotundatae in pseudopetiolum 4—6 mm longum abruptius contractae, subtus et marginibus superioribus scaberulis exceptis laeves et glabrae, permultinerves nervis omnibus parallelis parum prominentibus, nervo medio quam ceteris crassiore. *Panicula* longe exserta, continua, coarctata, spiciformis, linear-lanceolata, circa 10 cm longa et 2 cm lata (aristis inclusis), purpurascens; rhachis subteres, pubescens; rami ramulique itaque pubescentes, erecti; pars mascula paniculae partem inferiorem dimidiata vel fere dimidiata occupans, ramis usque ad 3 cm longis a basi

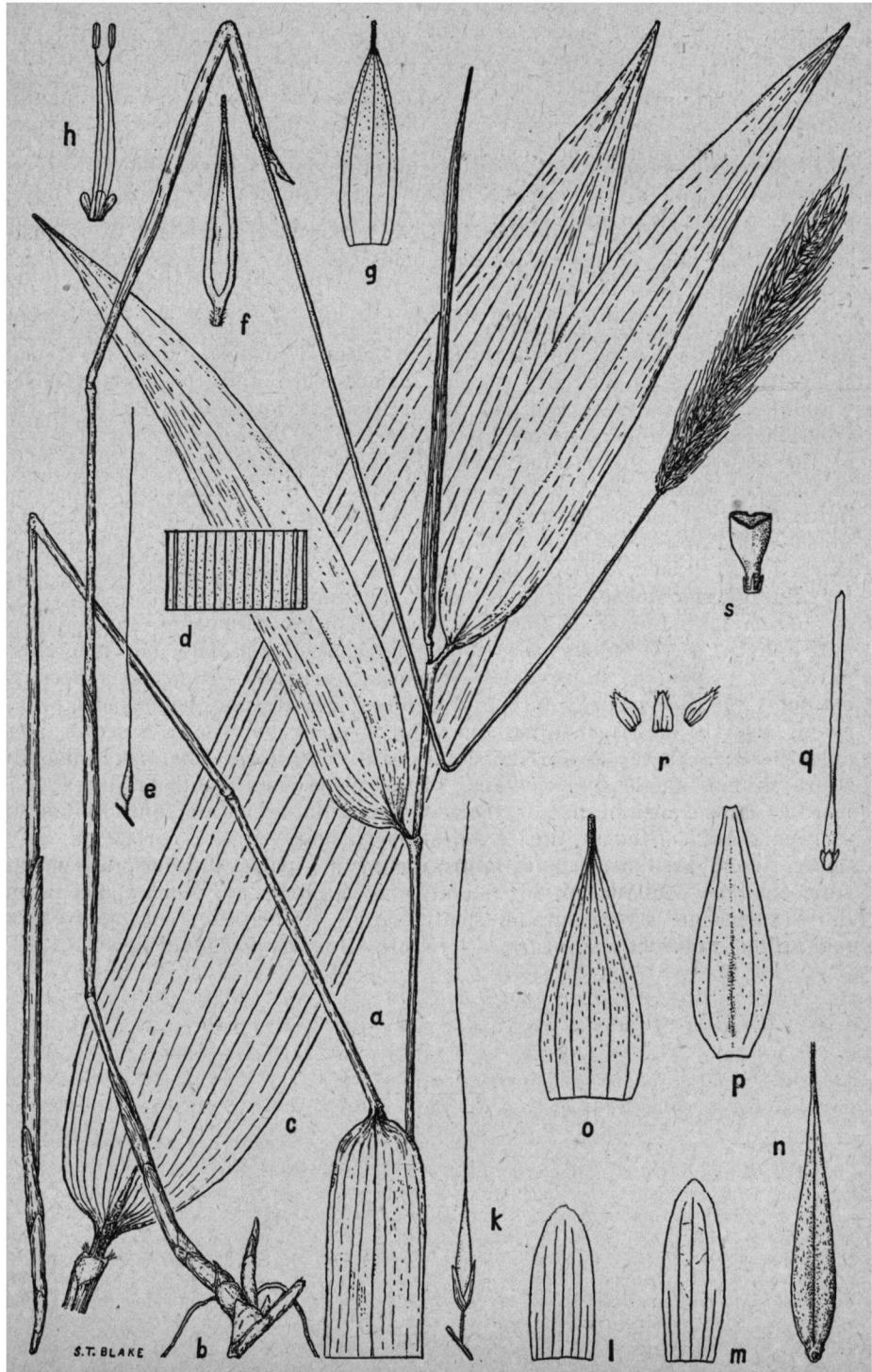
copiose ramulosis, pedicellis 0.7—2 mm longis; pars feminea minus ramosa, ramis usque ad 7 mm longis, pedicellis 1—3 mm longis. *Spiculae masculae* lanceolatae, sine arista 3.3—4 mm longae; *glumae* 0; *lemma* spiculae magnitudini formaeque simile, marginibus incurvum, minime scabridum, explanatum lanceolatum acutum, membranaceum, 3-nerve, in aristam gracillimam scabridam plerumque 2.2—2.5 cm longam abeuns; *palea* lemmate paullo brevior, suboblonga (explanata), apice anguste lacerata, tenuiter 2-nervis, dorso minime scabrida; *lodiculae* 3; *filamenta* coalita; *antherae* 2, anguste oblongae, 0.5 mm longae. *Spiculae* femineae lanceolatae, pallidae, circa 9 mm longae. *Glumae* membranaceae,  $\frac{1}{3}$ — $\frac{1}{2}$ , spiculae adaequantes, oblongae admodum ovatae, apice obtusae obscure denticulatae minutissime ciliolatae, ceterum glabrae laevesque, nervosae nervis sub apice evanescentibus; inferior ovato-oblonga, 7-nervis, 3—3.7 mm longa; superior angustior longiorque, 5-nervis, 4—4.5 mm longa. *Anthoecium* lanceolatum dorso compressum, antice sulcatum, eum callo obtuso pubescenti circa 0.5 mm longo sed arista exclusa 9 mm longum; *lemma* tenuiter coriaceum, marginibus incurvum, explanatum lanceolatum, acutum, nervis 5 tenuibus percursum, dorso pilis albis tenuissimis brevibus appressis haud dense pilosulum, in aristam scabram rectam vel fere rectam circa 2.5—3 cm longam abeuns; *palea* 6.5—7.5 mm longa, tenuiter coriacea, 2-nervis, marginibus incurva, lemmate fere obtecta, sicut lemma pilosula, explanata lanceolata subacuta bidentula. *Lodiculae* 3, ovatae, sparse ciliolatae, 3-nerves, 0.5 mm longae. *Staminodia* 3, minima. *Stylus* complanatus, ligulatus, integer; stigmata in speciminibus delapsa. *Caryopsis* non visa.

New Guinea, Papua, Eastern Division, Milne Bay, above Mapo on a spur leading up to the main divide, alt. about 525 m, in light rain forest containing scattered oaks (*Pasania* sp. and *Castanopsis acuminatissima*), not common, March 1945, L. S. Smith NG. 166 "a loosely tufted grass with erect culms about 1½—2 ft. high, leaf-blades somewhat glaucous" (type in herb. Brisbane).

The type material consists of 2 complete leafy culms and 2 complete flowering culms, one of the latter showing a piece of the rhizome. The spikelets are just past the flowering stage with the stigmas and nearly all the anthers fallen away.

The specimens represent the second species to be found of the peculiar genus *Buergeriachloa* described by Pilger in Engl. Bat. Jahrb. LII (1914) 167-9, fig. 1, based on *B. bambusoides* Pilger; i.e., p. 118. To judge from this description and figure (I have seen no specimens), *B. macrophylla* differs from *B. bambusoides* in that the leaves are longer and relatively much narrower (6 to 8 times as long as broad in *B. macrophylla*, about 4 times as long as broad in *B. bambusoides*) with their margins nearly parallel for a considerable part of their length, in the continuous narrower

*Fig. 2.* — *Buergeriachloa macrophylla* S. T. Blake. a. leafy culm; b. flowering culm; c. leaf; d. portion of underside of leaf; e—h, male spikelet: e. spikelet, side view; f. spikelet, front view, greater part of awn removed; g. lemma, flattened out, back view; h. flower; k—s, female spikelet: k. spikelet, side view; l. lower glume, flattened out; m. upper glume, flattened out; n. floret, front view, greater part of awn removed; o. lemma, flattened out, back view, greater part of awn removed; p. palea, flattened out, back view; q. flower, stigmas broken away; r. lodicules; s. base of ovary, showing stipes and staminodes. a, b,  $\times \frac{1}{2}$ ; c,  $\times 1$ ; d, f, g, h, l, m, n, o, p, q,  $\times 6$ ; e, k,  $\times 2$ ; r, s,  $\times 12$ . Drawn from type.



panicle, in the much longer awns of the male spikelets, the much longer female spikelets with longer awns, relatively shorter glumes and less hairy lemma and palea, the three lodicules and the style not divided at the base; also there appear to be only two anthers.

The outstanding features of this genus are the distinct leaf-bearing and flowering culms, the broad pseudo-petiolate leaves, the 1-flowered unisexual spikelets with awned lemmas, the females borne in the upper part of a narrow panicle with 2 glumes and a thinly coriaceous lemma convex on the back and incurved at the margins, and the males borne in the lower part of the same panicle without glumes and with the staminal filaments united.

Pilger suggested an affinity to *Olyra* L., with which it agrees in the pseudo-petiolate leaves, the unisexual 1-flowered spikelets with the female spikelets in the upper part of the inflorescence and the male spikelets without glumes in the lower part of the same inflorescence. But it differs from this genus and its immediate allies (tribe *Olyreae*) in that the veins of the leaves are all parallel and very close together without cross-veins, in that the lemmas of the female spikelets are long-awned, scarcely at all indurated and much longer than the glumes, and in the united filaments in the male spikelets. The differences from this and other tribes are so marked that a new tribe is here proposed to accomodate the genus.

**Buergersiochloae** S. T. Blake, tribus novus.

*Gramina* perennia. *Culmi* internodis fistulosi, dimorphi, fertiles vaginati aphylli. *Folia* culmorum sterilium lata, pseudopetiolata, nervis omnibus parallelis. *Spiculae* unisexuales, monoicae, aristatae, parvulae. *Spiculae masculae*: glumae nullae; anthoecium dorso compressum; lemma membranaceum, 3-nerve, longe aristatum, marginibus incurvum; palea 2-nervis; lodiculae 2—3; antherae 2—3, filamentis coalitis. *Spiculae femineae*: rhachilla supra glumas facile disarticulans, supra anthoecium haud producta; glumae 2, obtuse, membranaceae, nervosae, spicula breviores; anthoecium exsertum, dorso convexum, antice sulcatum; lemma tenuiter coriaceum, 5—9-nerve, longe aristatum, marginibus incurvum; palea 2-nervis, a lemmate fere obtecta; lodiculae 2—3; staminodia minuta; ovarium pedicellatum, dorso sulcatum; stylus sursum complanatus; stigmata 2; caryopsis ignota sed hilum, ut videtur, lineare. — Genus: *Buergersiochloa* Pilger.