

NEW ASIATIC GRASSES

BY N. L. BOR

Royal Botanic Gardens, Kew, Surrey, England

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Anthoxanthum siamense Bor sp. nov. cum *A. horsfieldii* (Kunth) Mez comparanda sed ab ea lemmatibus inferioribus dorso glabris, longioribus, lemmate superiore chartaceo, exaristato, omnino glabro satis recedit.

Gramen perenne, paludicola, culmis usque 25 cm. altis, glabris-levibusque, rhizomate fibroso. Foliorum laminae basin versus rotundatae, oblongae, in apicem acuminatum attenuatum, planae, nonnunquam complicatae, usque 12 cm. longae, 7-8 mm. latae, supra villis sparsis brevibus caducis obtectae, infra glabrae; vaginae laxae, glabrae levesque; ligulae membranaceae, 2.5 mm. longae, laceratae. Panicula simplex usque 4 cm. longa; axis ramique omnino glabri; spiculae 6 mm. longae, 3-flores; gluma inferior 4 mm. longa, ovato-acuta, glabra, 1-nervia, valde compressa; gluma superior 6 mm. longa, elliptico-acuta, 3-nervia, glabra, valde compressa. Anthoecium primum masculinum; lemma 5.5 mm. longum, 2 mm. latum, oblongo-truncatum, apici fissum, 5-nervium (fissura 2 mm. longa), dorso glabrum, marginibus media parte inferiore barbato-ciliatum, brevissime aristatum; arista 1.5 mm. longa, recta; palea angusta, lemmati aequilonga; stamina 3; antherae 3 mm. longae. Anthoecium secundum vacuum; lemma lemmati primo simillimum sed fissura lemmatis tres quadrantes aequans; arista ex fissura perfecta, 7 mm. longa; palea nulla. Anthoecium tertium hermaphroditum; lemma 3-3.5 mm. longum, 4 mm. latum, omnino glabrum leveque, explanatum late elliptico-truncatum, 5-nervium, exaristatum; palea oblongo-acuta, 2-nervia; stamina 3; antherae 3 mm. longae; styli duo; stigmata plumosa.

A perennial grass with a fibrous rhizomatose base, growing in swampy places. Culms smooth and glabrous, up to 25 cm. tall. Leaf-blades linear, ending in a long acuminate tip, rounded at the base, flat, sometimes folded, up to 12 cm. long, 7-8 mm. wide, covered on the upper surface with rather short caducous white hairs, glabrous below; sheathes lax, smooth and glabrous, striate, ciliate on one margin; ligule lacerate, membranous, 2.5 mm. long.

Inflorescence a simple panicle up to 4 cm. long; axis and branches completely glabrous; spikelets few in number, 3-flowered; lower glume 4 mm. long, ovate acute, glabrous, 1-nerved, strongly compressed; upper glume elliptic-acute, 6 mm. long, 3-nerved, glabrous, firmly compressed. Lowest floret masculine; lemma 5.5 mm. long, 2 mm. broad, elliptic-oblong, 5-nerved, split at the apex for 2 mm., 5-nerved, ciliate on the margins at the base, shortly awned in the cleft; awn 1.5 mm. long,



P.H.

TEXT-FIG. 1. *Anthoxanthum slamense* Bor. A, spikelet; B, spikelet with glumes removed; C, lower lemma; D, its palea; E, second lemma; F, androecium; G, upper lemma; H, its palea; I, gynoecium; All, $\times 60$. J, habit, $\times \frac{2}{3}$.

straight, palea elliptic, as long as the lemma; stamens 3; anthers 3 mm. long. Second floret empty; lemma similar to the lowest lemma but cleft for three quarters of its length; awn in the cleft perfect, 7 mm. long; palea absent. Third floret hermaphrodite; lemma 3-3.5 mm. long, 4 mm. broad, completely smooth and glabrous, when flattened broadly elliptic-truncate, 5-nerved, awnless; palea elliptic-acute, 3.5 mm. long; stamens 3; anthers 3 mm. long; styles 2; stigmas plumose.

Thailand.—Chiengmai, Doi Inthanond, 15-4-1960, alt. 2580 m. Smitinand and Alsterlund 6668; a common grass growing in water. Typus in Herb. Kew. (Text-Fig. 1).

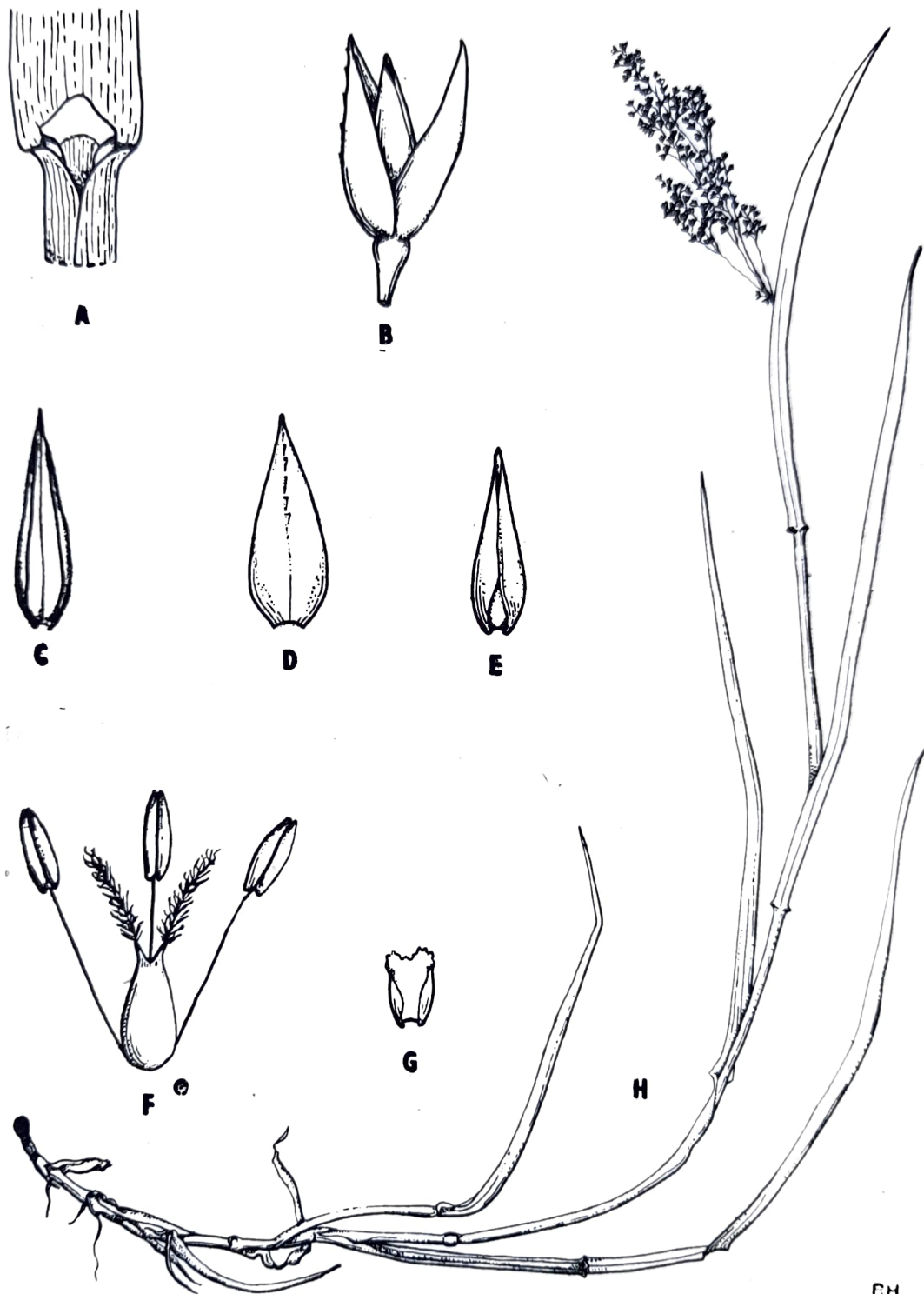
Agrostis clemensorum Bor sp. nov. ab aliis speciebus hujus ditionis Asiae austro-orientalis spiculis minutis (1.5-2 mm. longis) acuminati. distincta.

Gramen perenne (?) basi repens, radicans. Culmi usque 45 cms alti, vaginis obtecti, erecti, basin versus sparse ramosi, glabri levesque. Foliorum laminae usque 16 mm. longae, 5 mm. latae, lineari-acuminatae, utrinque scabridae, glabrae, valide nervatae, planae, rigidae; culmorum vaginae arcte complectentes, glabrae levesque, inferiores a culmis solutae; ligulae membranaceae, truncatae, circa 1 mm. longae, demum laceratae. Panicula erecta, densa, stricta, usque 6 cm. longa, 10 mm. lata, multi-spiculata; rami ramulique scaberuli. Spiculae ambitu lanceolatae, purpureae, 1.5-2 mm. longae. Glumae aequales, elliptico-acuminatae, 1.5 mm. longae, 1-nerviae, post anthesin hiantes, glabrae, inferior carina apicem versus scabra, superior levis; lemma 1.4 mm. longum, elliptico-acutum, haud truncatum, hyalinum, 5-nerve, callo glabro; palea bractea hyalina circa 0.7 mm. longa; stamina 3; antherae 0.75-0.9 mm. longae; styli 2, breves; stigmata brevia, plumosa.

A perennial grass, creeping and rooting at the base. Culms up to 45 cm. tall, erect, smooth and glabrous, covered by the sheaths, sparsely branched towards the base. Leaf-blades linear-acuminate, up to 16 cm. long, 5 mm. wide, glabrous, scabrous on both surfaces, flat, rigid, strongly nerved; culm-sheaths closely clasping, smooth and glabrous, the lower falling away from the base; ligules membranous, truncate, about 1 mm. long, lacerate with age.

Inflorescence an erect, strict, dense panicle up to 6 cm. long, 10 mm. broad, of many spikelets; branches and branchlets scaberulous. Spikelets lanceolate in outline, purplish in colour, 1.5 mm. long. Glumes equal, elliptic-acuminate, 1.5 mm. long, 1-nerved, gaping after flowering, glabrous, the lower scabrid on the back in the upper half, the upper smooth and glabrous. Lemma 1.4 mm. long, elliptic-acute, not truncate, hyaline, 5-nerved, glabrous on the callus; palea a hyaline scale about 0.7 mm. long; stamens 3; anthers 0.75-0.9 mm. long; styles 2, short; stigmas short, plumose.

Java; Mt. Gedeh, circa 3,000 m., 7-9-1932, J. and M.S. Clemens 30438; under the structure (sic) on the summit; leaves and stem rigid. Typus in Herb. Kew. (Text-Fig. 2).



TEXT-FIG. 2. *Agrostis clemensorum* Bor. A, ligule, $\times 6$; B, spikelet; C, lower glume; D, upper glume; E, lemma; all, $\times 16$; F, floret, $\times 20$; G, palea, $\times 16$. H, habit, $\times \frac{1}{2}$.

R.H.

This species has been confused with *Agrostis infirma* Buese, under which name it was received at Kew. It is, however, an altogether much more robust plant with a very dense panicle and minute spikelets. I have named it in honour of the two collectors whose travels in Melanesia have done so much to elucidate the remarkable flora of those parts.

Tripogon siamensis Bor sp. nov. cum *T. wardii* comparanda sed partibus spiculae antherisque minoribus recedit. Gramen perenne, caespitosum. Culmi graciles, teretes, simplices, leves glabrique, usque 45 cm. alti. Foliorum laminae angustissimae, lineares, filiformes, usque 25 cm. longae, convolutae, 2–3 mm. latae, supra scaberulae, infra leves; vaginae culmos complectentes, leves glabrique, pilis paucis longis instructae; ligulae angustae, membranaceae, ciliatae.

Inflorescentia spica terminalis, usque 20 cm. longa. Spiculae 8–10-flores, sessiles vel brevissime pedicellatae, rhachin continuam secus 2-seriatim dispositae; rhachilla supra glumas et inter flores articulata, floribus inferiore vacuo excepto hermaphroditis. Gluma inferior 5 mm. longa, 1-nervia, subulata lobo laterale instructa; gluma superior 4·5 mm. longa, lanceolato-acuta, 1-nervia, glabra. Lemma inferius vacuum, oblongum, 1-nervium, brevissime aristatum; palea nulla. Lemma secundum 4·45 mm. longum, 3-nervium, apici bilobatum, inter lobos aristatum; arista 3 mm. longa, recta; palea 2·5 mm. longa, bicarinata; stamina 3; antherae 1 mm. longae; styli 2; stigmata longa, plumosa; caryopsis non visa.

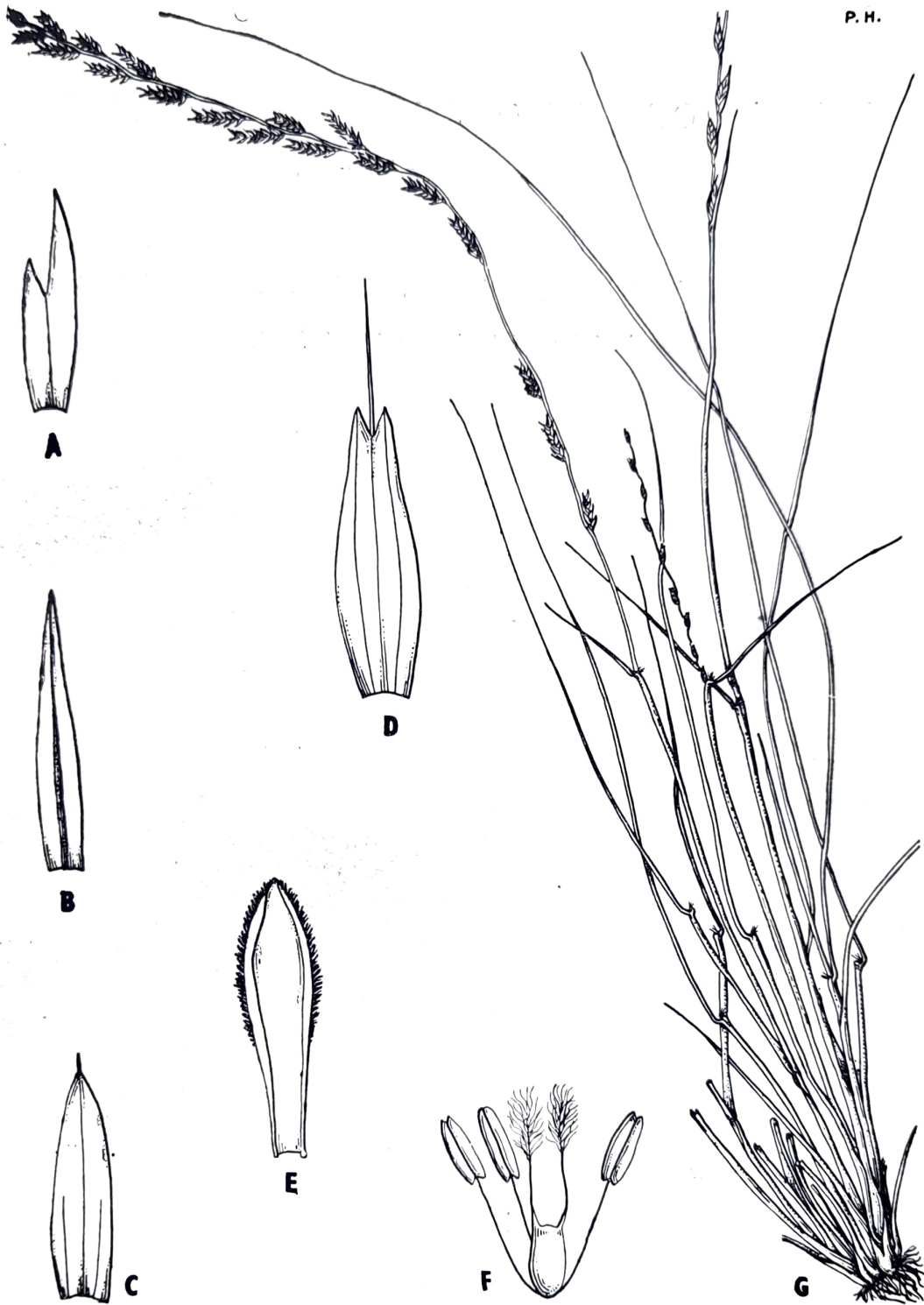
A caespitose perennial grass. Culms slender, terete, simple, smooth and glabrous, up to 45 cm. tall. Leaf-blades very narrow, linear, filiform, convolute, up to 25 cm. long, 2–3 mm. wide, scaberulous on the upper surface, smooth below, erect, overtopping the inflorescence; sheaths clasping the culms, smooth and glabrous, except for a few long hairs at the mouth; ligule narrow, membranous, ciliate.

Inflorescence a terminal spike of spaced spikelets up to 25 cm. long. Spikelets 8–10-flowered, sessile or very shortly pedicelled, seated on a continuous rhachis in two rows; rhachilla disarticulating above the glumes and between the florets; with the exception of the lowest, the florets hermaphrodite. Lower glume 5 mm. long, 1-nerved, with a lateral tooth on one margin; upper glume 4·5 mm. long, lanceolate-acute, 1-nerved, glabrous. Lowest lemma empty, oblong acute, shortly awned, 1-nerved, without a palea. Second and succeeding lemmas 4–4·5 mm. long, 3-nerved, 2-lobed at the tip, with a 3 mm. long awn issuing from the cleft; palea 2·5 mm. long, 2-keeled; stamens 3; anthers 1 mm. long; styles 2; stigmas plumose; caryopsis not seen.

Thailand.—Loei, Phu Krading, 14–7–1959, 1300 m.; *Tem Smitinand* 6074; tufted grass, common on rocky ground, along edge of evergreen forest. Typus in Herb. Kew. (Text-Fig. 3).

This species is distinguished from the other species of *Tripogon* so far described, with one exception, by the presence of an empty lowest lemma. The exception is *Tripogon wardii* Bor, which also has the lowest

P. H.



TEXT-FIG. 3. *Tripogon siamensis* Bor. A, lower glume; B, upper glume; C, lowest lemma; D, second lemma; E, its palea; all, $\times 8$; F, floret, $\times 10$; G, habit, $\times \frac{1}{2}$.

lemma empty without a palea, but in that species the spikelets are closely crowded along the rhachis.