SCROTOCHLOA, A NEW GENUS OF PALEOTROPICAL PHAROID GRASSES

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The anomalous bamboo-like grass tribe Phareae Stapf (Poaceae) has long been known to include two genera, Pharus P. Browne (7 species) in the Neotropics and Leptaspis R. Br. in the Paleotropics. During the course of a biosystematic study of the tribe (a revision of Pharus has been completed and is being prepared for publication), examination of abundant material of the Old World genus on loan from major herbaria (AAU, BOGOR, BM, BR, BRI, GH, L, LE, M, NY, PNH, TAI, U, US, Z) soon showed that Leptaspis, despite its small size (5 species), should be split into two quite distinct and well-differentiated genera. The following new taxon is therefore proposed:

SCROTOCHLOA Judziewicz gen. nov.

(Poaceae: Bambusoideae (?): Phareae)

Gramen perenne monoecium sylvarum umbrosarum. Culmi cavi vel solidi, herbacei, erecti vel decumbentes. Folia pseudopetiolis prominentibus, laminis inversis, et venis lateralibus oblique divergentibus. Inflorescentia panicula umbelliformis nodo principali 1, ramis primariis 4-8, sub nodo principali disarticulans. Spiculae 1-florae, unisexuales, dimorphae, sine lodiculis. Spicula ♀ pedicello clavato, grandis, solitaria vel spicula ♂ pedicellata concomitata; glumae 2, ovatae, caducae, 5- ad 7-nervatae, spadiceae, apicis acutis; lemma urceolata-scrotiforme, marginibus connatis et poro terminali, indurescens, inflatum, dense uncinato-pubescens; palea linearis, 2-nervata; staminodia 6; stigmata 3, subplumosa. Spicula ♂ pedicello longo, parva, membranacea; glumae 2; flosculus caducus; stamina 6.

Perennial monoecious grasses of shaded forest understories; culms hollow (or apparently solid in S. tararaensis), herbaceous, erect or in age becoming decumbent and rooting at the nodes; leaves with open sheaths; ligule membranous, minute; pseudopetioles

prominent, twisted 180° at summit, inverting the blades; leaf blades narrow to broad, the lateral veins diverging obliquely from the midrib; minute longitudinal striations (intercostal bands) present between adjacent pairs of adaxial secondary lateral veins; inflorescence long-pedunculate, an umbelliform panicle with 1 principal node and 4-8 primary branches, the entire structure disarticulating just below the principal node; spikelets 1-flowered, unisexual, dimorphic, apparently lacking lodicules; pistillate spikelets borne on clavate pedicels, relatively large, solitary or more frequently accompanied by a pedicelled staminate spikelet; glumes 2, ovate, about as long as the lemma, caducous, 5-7-nerved, purplish-brown, their apices acute; lemma urceolate-scrotiform, with connate margins and a terminal pore through which the style exits, indurated, inflated, inconspicuously ribbed, densely uncinate-pubescent; palea linear, 2-nerved; staminodes 6, minute; stigmas 3, subplumose; staminate spikelets borne on long pedicels, much smaller than the pistillate spikelets, lanceolate; glumes 2, nearly as long as the floret; floret caducous; stamens 6; chromosome number unreported.

Type species: Scrotochloa urceolata (Roxburgh) Judziewicz comb. nov. (Basionym: Pharus urceolatus Roxb., Hort. Beng. [104]: Fl. Ind., ed. 2, 3: 611. 1832). Other known species: Scrotochloa tararaensis (P. Jansen) Judziewicz comb. nov. (Basionym: Leptaspis tararaensis Jansen, Reinwardtia 2: 304. 1953).

Scrotochloa is easily distinguished from all other grasses by its combination of inverted, obliquely-veined leaf blades and a detachable umbelliform panicle bearing densely uncinately hairy, pouch- or urn-shaped pistillate spikelets; the genus name was suggested by the latter feature. S. urceolata, with 3-7 cm wide glabrous leaf blades and 6-9 mm long pistillate spikelets, is widespread from Ceylon and Southeast Asia to New Guinea and the Solomon Islands; there is an excellent color photograph of this species on page 46 of Ayensu (1980). S. tararaensis, a rare endemic of western Papua, New Guinea, has leaf blades 1-1.5 cm wide and pistillate spikelets 4-5 mm long.

Leptaspis sensu stricto differs most obviously from the new genus in having cochleate pistillate lemmas and many-noded panicles in which the branches do not disarticulate from the rachis. It contains three species: L. angustifolia Summerhayes & Hubbard, endemic

TABLE 1. COMPARISON OF THE GENERA OF THE PHAREAE

Character	Pharus	Leptaspis	Scrotochloa
1. Culms	Solid	Solid	Hollow to solid
2. Intercostal bands between secondary lateral veins on adaxial (lower) leaf blade surface	Absent to prominent	Present but inconspicuous	Prominent
3. Principal nodes in inflorescence	(1-) 3-8	(2-) 3-7	1
4. Number of branches at each principal node of the inflorescence	1 (3 in one sp.)	1-3	4-8
5. Inflorescence and/or its branches disarticulating at maturity?	Yes	No	Yes
6. If yes to #5, where does disarticulation occur?	Between main branches and the rachis	---	Below the single principal node
7. Axis of inflorescence prolonged into a bristle?	Yes	No	No
8. Length of pistillate pedicel	0-1 mm	0-1 mm	Ca 5-10 mm
9. Summit of pistillate pedicel	Filiform	Filiform	Clavate
10. Sex ratio (staminate/ pistillate spikelets)	Ranging from about 0.5: 1 to about 1:1	1:1	Ranging from about 0.5: 1 to about 1:1

TABLE 1 (CONT.)

Character	Pharus	Leptaspis	Scrotochloa
11. Bract subtending spikelet branchlet	Absent	Often present	Absent
12. Number of pistillate glumes	2 (sometimes 3)	2 or often 3	2
13. Condition of pistillate gls.	Persistent	Persistent	Caducous
14. Number of nerves, pistillate glumes	3-7 (-11)	1-3	5-7
15. Apex of pistillate glumes	Acute	Cuspidate	Acute
16. Shape of pistillate lemmas (in profile)	Linear to sigmoid	Cochleate	Urceolate-scrotiform
17. Where does the style exit from the pistillate lemma?	Terminally	Laterally	Terminally
18. Margins of pistillate lemma	Free (fused in one species)	Fused	Fused
19. Stigmas	Hispid	Subplumose	Subplumose
20. Length of staminate pedicel	Ca 10 mm	1-5 mm	5-10 mm
21. Condition of staminate floret	Persistent	Caducous	Caducous
22. Staminate lodicules	Well-developed in one species only	Well-developed in at least one species	Absent
23. Range	Neotropical	Paleotropical (Africa to Fiji Islands)	Paleotropical (Ceylon to the Solomon Islands)

to the Fiji Islands; L. banksii R. Br., ranging from Indonesia and Taiwan south and east to Queensland (Australia) and New Caledonia; and L. cochleata Thwaites, widespread from western Africa to New Guinea. T.R. Soderstrom (pers. comm.) has found that an older specific epithet applies to the last taxon, and its nomenclature will be discussed in his forthcoming treatment of the genus in the "Grasses of Ceylon."

The three genera of the Phareae are compared in Table 1. Although relationships among them are far from clear, it appears that Leptaspis s.s. retains more unspecialized characters (especially the non-disarticulating panicle branches, the frequent presence of three pistillate glumes, and the frequent presence of a bract subtending the spikelet pair branchlet) than either Pharus or Scrotochloa. Considering its solid culms, the occasional presence of a third glume, and the persistence of the glumes in both sexes, Pharus may be more closely related to Leptaspis s.s. than it is to Scrotochloa. Anatomical research is in progress which has as its goal the elucidation of the intergeneric and intra-familial relationships of the Phareae. A taxonomic revision of Leptaspis and Scrotochloa is also under way.

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LITERATURE CITED

Ayensu, Edward S. 1980. Jungles. Marshall Editions Ltd. 199 pp.

Figure 1. Herbarium specimen of SCROTOCHLOA URCEOLATA from Sumatra (Jacobs 8275, A).


Photographed at the University of Wisconsin-Madison