

THREE NEW SPECIES OF GRAMINEAE FROM THE MIDDLE EAST

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Parapholis gracilis Bor, sp. nov. cum *P. incurva*, *P. pycnantha* et *P. filiforme* comparanda, sed a prima spicis rectis, gracilibus, glumis acuminatis, a secunda antheris minoribus, culmis basi tantum ramosis, et a tertia antheris minoribus, glumis haud alatis recedit.

Gramen annuum; culmi erecti, interdum basi geniculatim adscendentes, graciles, leves, glabri. Foliorum laminae anguste lineares, usque 6 cm. longae, 1.5 mm. latae, utrinque praecipue nervis marginibusque scaberulae, flaccidae; vaginae culmos arcte complectentes, striatae, glabrae, inferne marcescentes; ligulae membranaceae, lacerato-truncatae, 1 mm. longae.

Spicae 6–18 cm. longae, rectae in culmo ramisque terminales; rhachis fragilis; spiculae 1-flores, ad quemvis nodum rhacheos solitariae, articulis paulo longiores; articuli leves, glabri, excavati, cum spicula accumbente recte disjungentes; glumae collaterales florem tegentes, glabrae, acuminatae, paululo obliquae, 3-nerves, 4.5–5.5 mm. longae; lemma 4–4.5 mm. longum, oblongo-ellipticum, acutum, hyalinum, trinerve, nervis lateralibus brevibus; palea lemmati aequilonga, 2-nervis; styli 2, obsoleti; stamina 3; antherae 0.5–0.8 mm. longae; caryopsis 3 mm. longa, oblonga, apici appendice truncato praedita; embryo brevis; hilum breve, lineare.

IRAQ. in ditione urbis Mossul, 20.5.1910, c. 250 m., *Handel-Mazetti* 256; in declivitate prope Ain Kebrid; ibidem, 23.5.1910, c. 250 m., *idem* 261; in graminosis opimis in valle versus Seiramun. Mosul liwa, 6 km. east of Beled Sinjar, 25.5.48, c. 500 m., *J. B. Gillett* 11075. Jarmo, along wadi west of camp, 30.4.55, *H. Helbaek* 1261; ibidem, 1.5.55, *idem* 1293; (Typus in Herb. Kew.). Jarmo, near Chemchemical, 13.5.55, *R. Wheeler-Haines* 346A; damp grassy streamside.

The species of *Parapholis* already described are very close to one another and this newcomer to the genus is no exception. Closely related they may be but nevertheless, they can be separated by definite morphological characters and their separation endorsed and confirmed by different chromosome numbers and restriction to separate geographical areas. The common Iraqi representative of the genus is the unmistakable taxon called *Parapholis incurva* (L.) C. E. Hubb., which incidentally has quite a different habit from the species so called in Europe.

The *Parapholis incurva* of Iraq and *P. gracilis* can be separated at a glance by the shape of the glumes which are acuminate in the latter and oblong-acute in the former. On the whole *P. incurva* is a much more robust plant with a tendency for the spikes to become strongly incurved. On the other hand *P. gracilis* has slender spikes which tend to be strictly erect.

Alopecurus davisii Bor, sp. nov. cum *A. lanato* comparanda sed ab ea vaginis basalibus emarcidis in fibras reticulatim intertextas solutis, foliorum laminis haud lanatis, lemmatis arista gracile satis distincta.

Gramen perenne basibus crassissimis caespites formans, radice repente, lignosa. Culmi graciles, leves glabrique, usque 20 cm. alti, plerumque multo breviores. Foliorum laminae vaginarum culmorum redactae, brevissimae, glabrae, leves interdum abortivae vel nullae; eae radicales glabrae levesque, usque 2.5 cm. longae, 2.5 mm. latae, plicatae, crassae, glaucae, lineares, in apicem obtusum productae, marginibus ciliatae; vaginae culmorum glabrae levesque, ventricosae, laminis brevibus vel nullis instructae, striatae, glaucae; eae basales per laxae, breves, demum in fibras reticulatim intertextas solutae; ligulae 0.5 mm. longae, membranaceae. Panícula oblonga, ovato-oblonga raro globosa, densa. Spiculae poculiformes, 4.5 mm. longae. Glumae aequales, spiculae aequilongae, basi connatae, valde compressae, carinatae, apici mucrone breve coronatae, lateribus pilosae; carina longe ciliatae. Lemma 3.5 mm. longum, explanatum 2.5 mm. latum, apici truncatum, apiculatum, carina brevissime ciliatum, aristatum; palea nulla; arista 7–10 mm. longa, basalis; styli duo; stigmata longa, plumosa; stamina 3; antherae 2.5–3 mm. longae.

SAMOS. In monte Kierki, 6.5.1887, *Forsyth Major* 532; in saxosis calcareis. In monte Kerkis, 15.4.1934, *K. H. et F. Rechinger* 4112; in saxosis calcareis cacuminis caespites densos formans, c. 1400 m. Mount Kerkis, on Vigla, 2.5.40, *P. H. Davis* 1688; a tufted perennial on open stony slopes, 4,000–5,000 ft. (Typus in Herb. Kew.)

This remarkable plant seems to be confined to the upper slopes of the mountain variously called Kierki, Kirki or Kerkis, on the Greek island of Samos off the coast of Turkey, at an altitude of about 1,400 m. It is obviously closely related to *Alopecurus lanatus* Sibth. et Sm. which was first found on Mount Olympus but has since been collected in the mountainous areas of Asia Minor. Both these species possess woody rootstocks and gradually become thicker at the base owing to the persistence of the basal sheaths. In *A. lanatus* these turn brown, lose their hairy covering, do not disintegrate but remain as thin membranous coverings of the perennating parts of the plant. On the other hand in *A. davisii* the basal sheaths do disintegrate into a complicated mass of interlacing fibres which obviously perform the same function as the withered sheaths of *A. lanatus*. The most striking difference between the two, however, is the coarse flocculent white wool covering the leaves and sheaths of *A. lanatus* and which is completely absent in *A. davisii*.

I have named this plant in honour of Dr. P. H. Davis whose exploration and research have added so much to a better knowledge of the flora of Turkey and the Middle East.

***Colpodium gillettii* Bor, sp. nov.** cum *C. fibroso* comparanda sed ab eo lemmatibus omnino glabris distincta.

Gramen perenne rhizomatousum, radice repente. Culmi usque 30 cm. alti, erecti, basi vix decumbentes, teretes, leves glabrique, striati, nodis glabri, basi vaginis vetustis obtecti. Foliorum laminae lineares, abrupte in apicem acutum productae, usque 15 cm. longae, 2 mm. latae, flaccidae, leves glabraeque; vaginae culmos complectentes, leves glabraeque; ligulae membranaceae, hyalinae, usque 4–5 mm. longae. Panícula angusta, longa, pauci-spiculata, laxa vel densa, purpurea vel purpurascens; rami

adscendentes, 2-3 spiculas gerentes, breves, leves glabrique. Spiculae 1-2-flores. Gluma inferior aciculata, hyalina, 1-nervia, 4 mm. longa; gluma superior 5 mm. longa, lanceolato-truncata, 2-nervia, levis glabra, hyalina. Lemma 5-6.5 mm. longum, purpurem vel albo-purpureum, oblongo-ellipticum, acutum, 3-nervium, hyalinum, dorso omnino glabrum; palea lemmati aequilonga, 2-nervia, bicarinata; styli duo; stigmata plumosa; stamina 3; antherae 3-4 mm. longae; lodiculæ 2, lanceolato-obtusae; rhachilla filiformis, glabra.

IRAQ. Erbil liwa; Eastern slopes of Arl Gird Dagħ, 3,100 m., 5.8.47, *J. B. Gillett* 9605; on igneous or slaty soil. Ser Kurawa, 3,100 m., 11.8.47, *J. B. Gillett* 9727; on igneous or slaty rocks, inflorescence green and purple. Arl Gird Dagħ, 3,500 m., 24.8.48, *J. B. Gillett* 12372; on igneous or metamorphic rocks, subalpine, inflorescence purple (Typus in Herb. Kew.)