

Taxonomic Description of *Elytrophorus spicatus* (Willd.) A. Camus (Poaceae: Arundinoideae, Arundineae) from the Shiwaliks of Northern India

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Abstract: *Elytrophorus spicatus* (Willd.) A. Camus is a rare grass species in the foothills of the Shiwalik range in Northern India. It belongs to tribe Arundineae and subfamily Arundinoideae of the family Poaceae. It bears a close resemblance to its congeneric sister species *Elytrophorus globularis* Hack. It has a sporadic occurrence in rice fields and wetplaces.

Key words: Compression • Congeneric • Panicle • Shiwaliks • Spikelet

INTRODUCTION

Elytrophorus spicatus (Willd.) A. Camus commonly known as spike grass belongs to Arundineae, a tribe in the subfamily Aundinoideae of the grass family Poaceae. It is a C₃ grass that prefers a subtemperate climate [1, 2] reported the species from India but the author did not provide its taxonomic description or illustrations for identification. The species does not find mention in taxonomic compilations of the region [3-10]. However, the species has been reported from several parts of India including Bihar, Gujrat, Karnataka, Kerala, Maharashtra [11] Madhya Pradesh [12] Manipur, Meghalaya, Nagaland, Orissa, Rajasthan, Sikkim, Uttar Pradesh and West

Bengal [13, 14] reported the species from Chengalpattu, Cuddalore, South Arcot Thanjavur in Tamil Nadu and North-Eastern parts of the country [15].

MATERIALS AND METHODS

Occurrence and Type Location: The species was found growing sporadically in the rice fields of some parts of district Kangra (Himachal Pradesh), in the Shiwalik range of the outer Himalayas. The species was collected from a village named Solda in the hemlet of Kotla in the district Kangra. The site of collection has a subtemperate climate. It is located at 32°15' N to 76°2' E at an elevation of 425m asl. The species was collected on November 11, 2011.

Collection and Identification: The regular occurrence of species was confirmed at the site of collection for three consecutive years. Herbarium sheets of the preserved specimens have been deposited in the Herbarium of the Department where the work was carried out. The paper presents taxonomic description of the species for the first time from the region. The species was identified with the help of [2] and [15]. Online information available on the website of Online Grass Flora was also utilized in identification as also for knowing the distribution of the species. The floral formula has been written in the format and notation proposed by [16]. The spikelet diagram has been drawn by using the symbols proposed and improvised from time to time [17-21]. We have introduced some modifications. In the diagram, lateral compression of the spikelets has been shown by drawing wedge shaped glumes and lemmas. In the spikelet diagram, florets of only the lower most pair have been shown in full in all the parts. Fertile florets above this pair have been indicated by small horizontal lines. In the spikelet diagram, reduced florets have been represented by broken lines.

Elytrophorus Spicatus (Willd.) A. Camus, in Lecomte, Fl. Gén de l' Indo-Chine 7, 547 (1923). In Clayton and Renvoize, Genera Graminum [22].

Synonyms: (cf. [2] *Dactylis spicata* Willd., in Ges. Naturf. Freunde Berlin Neue Schrift 3, 416 (1801); *Elytrophorus articulatus* P. Beauv., Ess. Agrost. 67 (1812); *Sesleria*

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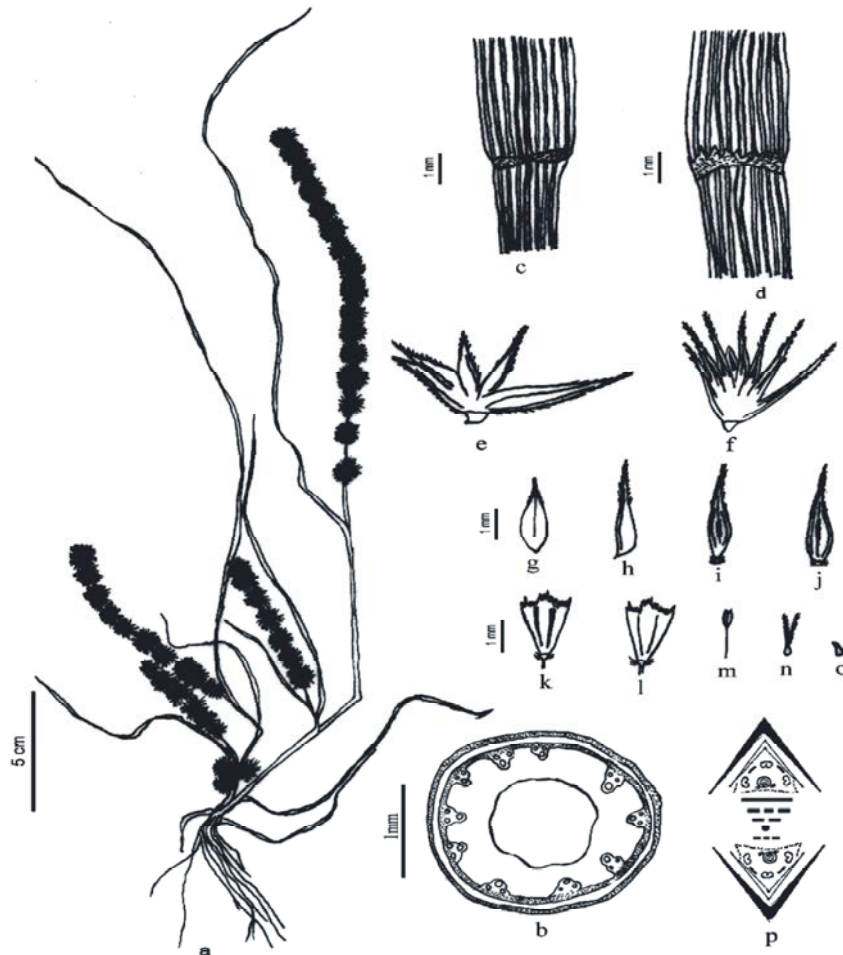


Fig. 1: (a-p): Habit (a); Cross section of internode (b); collar (c); ligule (d); involucre (e); fertile spikelet (f); lower glume, dorsal view (g); upper glume, lateral view (h); lemma, dorsal view (i); lemma, ventral view (j); palea, dorsal view (k); palea, ventral view (l); anther (m); stigmas (n); lodicules (o); fertile spikelet diagram (p). [Bar: 5cm (a); 1mm (b-o)].

spicata (Willd.) Spreng., Pl. Min. Cogn. Pugill. 2, 21 (1815); *Echinalysium articulatum* and *Echinalysium strictum* Trin. Fund. Agrost. 142 (1820).

Etymology: The generic name has been derived from two Greek words ‘elytron (ελυτρον) = cover’ and ‘phoreis (φορευς) = bearer’ possibly referring to the cover of spikelets on the central axis. The specific epithet, ‘spicatus = provided with spikes’ alludes to the presence of scabrid awns on glumes and lemmas.

Taxonomic Description: Annual, culm erect sometimes geniculate, 10–40 cm (Fig. 1a). Leaf blade linear 5–20 cm and 1–2 mm wide. Leaf sheath, loose glabrous. Ligule, membranous. Inflorescence, a cylindrical condensed panicle bearing clusters of spikelets on the central axis,

5–11cm in length. Each spikelet cluster comprises of 6 fertile and 3–5 sterile spikelets. Spikelets, laterally compressed, 2–3.5 mm long. Each fertile spikelet consists of 6 fertile florets with 3 reduced florets at the distal end. Both fertile and sterile spikelets, subtended by a pair of glumes. Lower glume, 1.5–2 mm acuminate, 1-veined, 1-awned. Upper glume, 1 length of the lower glume, lanceolate, 1-veined, 1-keeled; Lemma twice the length of upper glume and 1 length of spikelet, 3-veined with a short apical awn. Palea truncate, winged, 2-veined. Lodicules 2, Anther 1, Stigmas 2.

Spikelet Formula:

${}^1R^{2-3}$: 2-3 upper florets reduced, 1-awned
 ${}^1F_3^6$: 6 fertile florets, 3 veined, 1-awned

¹G² : 2 glumes, each 1-awned
--- : Disarticulation below the glumes
Pan : Inflorescence a panicle

Flowering & Fruiting: September–December

Distribution

Africa: North Tropical Africa: Ethiopia and Sudan; East tropical Africa; Tanzania; West central Tropical Africa, Cameroon; West Tropical Africa: Cote D' Ivoire, Ghana, Mali, Nigeria, Senegal; South Tropical Africa; Zimbabwe, South Africa: Botswana, Namibia;

Asia Temperate: China-Guangdong, Yunnan and *Asia Tropical:* Indian Subcontinent; India, Nepal, Sri Lanka; *Australia.*

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