

## Genus *Kyllinga* Rottb. (Cyperaceae) in Uttar Pradesh, India

V.P. Singh

Department of Botany

Ramabai Government Womens P. G. College, Akbarpur, AmbedkarNagar

Email id: singh.drviyayprakash@gmail.com

### Abstract

The paper provides a detailed taxonomic account of 7 spp. of the genus *Kyllinga* Rottb. in Uttar Pradesh. Key to the species is also provided.

The state of Uttar Pradesh (after recent reorganisation) is situated between 77°-3' & 84°-39' N and 23°-52' & 30°-25' E. The area falls under Gangetic Plain and covers forested area of Tarai & Bhabhar tract, cultivated areas of Purvanchal, Rohilkhand Duabs and Bundelkhand. But the flora of the region is not yet published. Present study deals with the floristic diversity of the genus *Kyllinga* Rottb. in the state. The study is based on the field observations, scrutiny of literature (Uniyal *et al* 1997, Duthie 1929, Hooker 1893-94, Singh & Srivastava 2002) and herbarium specimens housed in CAL, LWG, DD, BSA, BSIP, MU (Herbarium at Merrut University) GU, (Herbarium at Gorakhpur University) DUTHIE (Allahabad University) herbaria.

### *KYLLINGA* Rottb.

Descr. *et* Icon. Nov. Pl. : 12. 1773, *nom. cons.*

*LT.*: *Kyllinga nemoralis* (J. R. & G. Forst.)Dandy ex Hutchinson & Dalziel (*Thryocephalon nemorale* J.R. & G. Forst) [=*K. monocephala sensu* Rottboell, *non* Rottboell, 1773, *nom. illeg. (typ. cons.)*]

*Notes* : Koyama (1985) cites "*Kyllinga brevifolia* Rottboell" as the type species and Mabberley (1987) lists *Kyllinga* Rottb., as a congeneric synonym of *Cyperus* L.

Stems erect, simple, leafy below only, terminated by 1-3 sessile capitate spikes. Spikes ovoid or cylindrical, dense, with numerous small compressed spikelets. Glumes 4-5, distichous, rhacheola disarticulating above the two lowest which are empty. Stamens 1-3, anterior; anthers linear-oblong, muticous or nearly so. Nut compressed laterally; style linear, base continuous with nut; branches 2, linear.

A genus of *ca* 33 species in hot and temp. regions except Europe; 7 in India; 7 in U.P.

### Key to the species in U.P.

- |     |   |                          |
|-----|---|--------------------------|
| 1a. | Inflorescence open, umbelliform with elongated rays   | ... <i>K. hyalina</i>    |
| 1b. | Inflorescence congested in a head   | ...2                     |
| 2a. | Glumes winged on keels  | ...3                     |
| 2b. | Glumes not winged   | ...4                     |
| 3a. | Keel of glumes with a narrow spinulose crest  | ... <i>K. nemoralis</i>  |
| 3b. | Keel of glumes with a broad hyaline incise-dentate erect  | ... <i>K. squamulata</i> |
| 4a. | Rhizomes not creeping   | ... <i>K. bulbosa</i>    |
| 4b. | Rhizomes creeping   | ...5                     |
| 5a. | Rhizomes slender, 1-3 mm thick. Stems triquetrous with flat sides. Leaves well developed. Stamens 1-3. Nuts yellowish-brown | ... <i>K. brevifolia</i> |

- 5b. Rhizomes stout, 3-4 mm thick. Stems sharply triquetrous with more or less concave sides. Leaves mostly reduced to sheaths. Sometimes upper with small blades; stamens 3. Nuts black ...6  
6a. Stamens 3 ...*K. melanosperna*  
6b. Stamens 2 ...*K. odorata*

**Kyllinga brevifolia** Rottb., Descr. et Icon. Pl. : 13. t. 4. f. 3. 1773; C.B. Clarke in Hook. f., Fl. Brit. India 6 : 588. 1893; Koyama in Dassan., Rev. handb. Fl. Ceylon 5 : 248. 1985. *Cyperus brevifolius* (Rottb.) Hassk., Cat. Pl. Hort. Bogor : 24. 1844; Kern in Fl. Males. Ser. I. 7 : 656. 1974.

*Type* : India or. (probably Ceylon), *Koenig. s.n. (vide Koyama, l.c.)*.

Perennial herbs. Rhizomes creeping, clothed with non-fibrous, brown scale-leaves. Stems rigidulous, triquetrous. Leaves sub-basal, shorter than or as long as stems, linear, acuminate, scabrid in upper part, 1-3 mm broad. Inflorescences capitate, terminal; spikes ovoid or globose, 5-10 mm across, subtended by 3-4 foliaceous bracts, bracts 2-5 cm long; spikelets strongly compressed, lanceolate or ovate-lanceolate, 2-3 mm long, usually with one flower; glumes 4-5, lowest empty; first glume elliptic-lanceolate, second ovate, third and fourth (floral) boat shaped, concave, sub-mucronate, keel green, sides scarious, 3-4-striate, 2 mm long; stamens usually 2, anthers linear; ovaries 1-celled; styles *ca* 1.5 mm long; stigmas 2. Nuts obovoid-ellipsoid, compressed, obtuse, yellow or pale brown, 0.25-0.3 cm long.

*Fl. & Fr.* : May-Feb.

*Habitat* : Common in moist places, near streams, canal-banks, waste places, forest clearings.

*Distribution* : Tropical and warm temperate regions of the world.

*Distribution in Uttar Pradesh* : Agra, Aligarh, Allahabad, Azamgarh, Bahraich, Banda, Bulandshahar, Bijnor, Fatehpur, Ghazipur, Gonda, Gorakhpur, Kheri, Lucknow, Meerut, Pilibhit, Raibareli, Saharanpur, Sultanpur.

*Representative specimens* : **Agra** : Kitham, AKS, 525, (RBSC). **Aligarh** : Nanau, A.K. Singh, 5140 (MU). **Allahabad** : University Campus, B.K. Mishra, 72 (DUTHIE); Akorha, B.K. Mishra, 512; Garwa, B.K. Verma & R.P. Dube, 582 (DUTHIE); G. Panigrahi, 11368 (BSA); Garwa, G. Panigrahi, 11368 (CAL!). **Azamgarh** : Mahrajganj, S.N. Srivastava, 14631 (GU); Bilariyaganj, Chandra, 4681 (GU). **Bahraich** : Bachkahi, Chandra et al., 12265 (LWG!); Motipur, O.P. Mishra, 7720 (BSA). **Banda** : Manikpur, B.K. Verma, 5244 (DUTHIE). **Bijnor** : Kotwala, Chandra et al., 43822 (LWG!). **Bulandshahar** : Ambag, Kaul et al., 22929 (LWG); Canal Side, L.K. Sharma, 397 (MU). **Fatehpur** : Kishanpur, S.K. Dixit, 2234 (DUTHIE). **Ghazipur** : Bogana Tal, S.D. Singh, 12489 (GU). **Gonda** : Jarwa, Chandra et al., 25769 (GU!) (LWG). **Gorakhpur** : Ramghat Tal, A.K. Srivastava, 6893 (GU); Belandpur, T.N. Srivastava, 1413 (GU). **Jaunpur** : (cf. S.K. Singh & Dixit 1969). **Kheri** : Malani forest, G. Saran et al., 26389 (LWG!), Gola-Gokranath, S. Saran et al., 26514 (LWG!); Mailani, C.L. Malhotra, 50822 (CAL!). **Lucknow** : National Bot. Garden, Shyamlal Kapoor, 24018 (LWG!); NBG, Ram Singh, 4160 (LWG!); Itauja, Kaul et al., 23120 (LWG). **Meerut** : s.l. S.K. Narwal, 44564 (GU) (LWG!); Jani, R.S. Saxena, 532 (MU). **Pilibhit** : Gobal, C.L. Malhotra, 50822 (CAL!). **Raibareli** : Pokhani, A. Singh et al., 51504 (LWG!). **Saharanpur** : Bahadrabad, A.K. Goel, 108 (MU). **Sultanpur** : Golaghat, Om Prakash, 10179 (GU).

**Kyllinga bulbosa** P. Beauv., Fl. d'Oware & Benin. 1 : 11, t. 8, f. 1. 1804; Koyama in Dassan., Rev. Handb. Fl. Ceylon 5 : 245. 1985. *Kyllinga tenuifolia* Steud., Syn. Pl. Glum. 2 : 69. 1855; Fl. Hassan. : 638. 1976. Karthikeyan et al., op. cit. : 61. 1989. [*Kyllinga triceps* Rottb., Descr. et Icon. Pl. : 14, t. 4, f. 6. 1773, *nom. superfl.*; C.B. Clarke in Hook. f., Fl. Brit. India 6 : 587. 1893. *Cyperus triceps* Endl., Cat. Hort. Acad. Vindob. 1: 94. 1842. Mishra & Verma, Fl. Alld. 392. 1992.

*Vern. Name:* Nirbishhi (Hindi).

Erect perennial herbs. Rhizomes short. Stems thickened at base, covered with fibrous leaf-sheaths. Leaves basal, shorter than or as long as stems, linear, flat or slightly conduplicate, 2-4 mm broad. Inflorescence capitate, consisting of 1-3, dense spikes, ovoid-oblong, pale, 4-8 mm across; bracts 3-4 upto 7 cm long; spikelets compressed, obliquely lanceolate or oblong, 1.5-2 mm long; glumes 4, hyaline, ovate-oblong; lowest 2 empty, third (floral) ovate or lanceolate, keel green, slightly excurrent, 3-4-veined, 1-1.5 mm long, fourth glume membranous empty; stamens 2, anthers oblong-linear; ovaries 1-celled; styles *ca* 1 mm long; stigmas 2. Nuts oblong-ellipsoid, obtuse, compressed, yellowish-brown, 1.5-2 mm long.

*Fl. & Fr. :* July-April

*Habitat :* Common in moist grassy places, roadsides.

*Note :* Hara *et al.*, (1978) consider *Kyllinga triceps* Rottb., as the correct name but state “excluding the plate of Rheede and the relevant synonym”. Rottb. *l.c.* included the validly described species viz. *Scirpus tuberosus*, *N. Burm.* 1768; in its synonyms (= *Scirpus glomeratus* L.) thus *Kyllinga triceps* Rottb., is to be rejected as *nom. illeg.* (Art. 63. 1. ICBN, 1988). While S. Hooper. (1976) considers *Kyllinga tenuifolia* Steud. (1840) as the correct name, Koyama (1985) accepts *Kyllinga bulbosa* Beauv. (1804) as correct; he however, does not refer to *Kyllinga tenuifolia* Steud. as a synonym of *Kyllinga bulbosa* Beauv. Karthikeyan *et al.*, (1989) violate the rule of priority without any comment. If *Kyllinga* Rottb. (1773) is merged in *Cyperus* L., the correct name for *Kyllinga bulbosa* P. Beauv., would be *Cyperus triceps* Endl. (1842), *non Cyperus bulbosus* Vahl.

*Distribution :* Paleotropics and subtropics.

*Distribution in Uttar Pradesh:* Agra, Aligarh, Allahabad, Azamgarh, Bijnor, Bulandshahar, Fatehpur, Ghazipur, Gorakhpur, Hamirpur, Jalaun, Kanpur, Lucknow, Mahoba, Meerut, Mirzapur, Moradabad, Muzaffarnagar, Shahjahanpur, Sultanpur, Unnao.

*Representative specimens :* **Agra :** Agra College Campus, Prof. Sinha, 125709 (DD!); Poiyaghat, AKS, 770 (RBSCH). **Aligarh :** Chherut, A.K. Singh, 260A (MU). **Allahabad :** Handia, B.K. Mishra, 567 (DUTHIE!); Ramnathpur, B.K. Mishra, 598, Garwa, B.K. Verma & R.P. Dube, 511 (DUTHIE!). **Azamgarh :** Band Tal, Kaul *et al.*, 54348 (LWG!); Madhuban, S.N. Srivastava, 14321 (GU); Atraulia, Chandra, 4690 (GU). **Bijnor :** Amangarh, Chandra *et al.*, 44097 (LWG!). **Bulandshahar :** Khan Garden, L. K. Sharma, 881 (MU). **Fatehpur :** Naubasta, S.K. Dixit, 2280 (DUTHIE). **Ghazipur :** Gahmar, S.D. Singh, 13382 (GU). **Gorakhpur :** Madhauria forest, A.K. Srivastava, 6948 (GU); Ramgarh Tal, T.N. Srivastava, 1441 (GU). **Hamirpur :** s.l., Kumari Mukherjee, 61460 (LWG!). **Jalaun :** Kotra, G. Shukla, 7421 (DUTHIE). **Jaunpur :** (cf. S.K. Singh & Dixit 1969). **Kanpur :** Botanic Garden, Janki Prasad, 2707 (LWG!). **Lucknow :** Banarasibag, R.C. Bhardwaj, 22603 (LWG!); s.l., G.S. Puri, 79 (DD!); s.l., Ram Singh, 34098 (LWG!); Near Carlton Hotel, R.P. Patil, 1220 (CAL). **Mahoba :** s.l., Kumari Mukherjee, 61460 (LWG!). **Meerut :** Hastinapur, R.S. Saxena, 1919 (MU); s.l., N.P. Saxena, (LWG-44490). **Mirzapur :** s.l., O.P. Mishra, 9943 (CAL); s.l., U.C. Bhattacharya, 17648 (CAL!); Chopan, M.A. Rao, 6184 (BSD). **Moradabad :** s.l., Paliwal & Singh, 118 (Hindu College Herb.). **Muzaffarnagar :** s.l., R.C. Bhardwaj (LWG-8442). **Shahjahanpur :** Badshahibagh, A.K. Goel, 856 (MU). **Sultanpur :** Amethi, Om Prakash, 10967 (GU). **Unnao :** s.l., N.N. Sen (LWG-3422).

**Kyllinga hyalina** (Vahl) T. Koyama, J. Jap. Bot. 51 (10) : 313. 1976; Koyama, Gard. Bull. Singapore 30 : 161, f. 10. 1977. *Cyperus hyalinus* Vahl, Enum. Pl. 2 : 329. 1806; Trimen, Handb. Fl. Ceylon 5 : 19. 1900; Kuentz. in Pflanzner. 4 (20), 101 Heft : 498. 1936; Kern, Fl. Males. I, 7 (3) : 655. f. 68. 1974. *Cyperus pumilus* L. : *sensu* Nees in Wight, Contr. Bot. India 74. 1834. *Pycneus pumilus* Clarke in Hook. f., Fl. Brit. India 6 : 591. 1893, concerning description. *Pycneus hyalinus* (Vahl) Domin, Biblioth. Bot. Heft 85 : 417. 1915, in obs. *Queenslandiella mira* Domin, Biblioth. Bot. Heft 85 : 416, t. 11, f. 7-13. 1915. *Mariscopsis suaveolens* Chermeson, Bull. Mus. Hist. Nat. (Paris) 25 : 60. 1919. *Mariscopsis hyalinus* (Vahl) Ballard, Kew Bull. 1932 : 457. 1932. *Queenslandiella hyalina* (Vahl) Ballard in Hook., Ic. Pl. 33 : t. 328. 1933.

Soft annual herbs. Growing in small tufts. Roots purplish fibrous. Culms triquetrous, (3-) 6-20 cm tall, 0.5-1 mm wide, smooth throughout, soft. Leaves 2 or 3 to a culm, shorter than to slightly overtopping the culm; blades narrowly linear, (2-) 5-20 cm long, 1-3.5 mm wide, gradually acuminate, 3-costate, flattish, soft, thinly herbaceous; sheaths 1-5 cm long, pale-stramineous and tinged with light brown or red-brown-striate. Anthela simple, open and lax or more or less congested into a head-like cluster, 2-7 cm long and as wide; bracts 3-6, patent, most of them surpassing the anthela, the longest 10-25 cm long; rays 2 to 6, patent, slender, up to 6, patent, slender, up to 6 cm long; spikes subloosely bearing 5 to 20 spikelets, the rachis glabrous, 4-winged, the internodes 2-3 mm long. Spikelets eventually spreading, ovate to elliptic, strongly flattened, subacute, 4-8 mm long, 2-3 mm wide, 7- to 10-flowered, pale greenish; rachilla flexuous, jointed at base above the prophyll, the internodes c. 1 mm long, widely winged. Glumes  $\frac{1}{2}$ -imbricated, ovate to ovate-oval, folded with an acute keel, 2-3 mm long, 2.25-2.5 mm wide, the green keel distinctly 3-nerved, serrulate-scabrous, the side hyaline pale or yellowish, strongly 3-nerved on each side, somewhat reticulate. Achenes elliptic to broadly elliptic, often asymmetric, bilaterally lenticular, 1.25-1.75 mm long, 1-1.25 mm wide, truncate or shallowly emarginate at apex, maturing brown to black-brown, punctulate with isodiametrical epidermal cells; style 2.5-3 mm long, 2-cleft to  $\frac{1}{2}$  to  $\frac{3}{5}$  from apex. Stamens 2; anthers 0.5-1 mm long.

*Fl. & Fr.* : Sept.-Nov.

*Habitat* : in wetlands.

*Distribution* : Tropical East Africa, Mascarena Is., India, Indo-China, Malesia and Northern Australia.

*Distribution in Uttar Pradesh* : Basti.

Representative specimen: Basti: Saini, s.n. (GU)

**Kyllinga melanosperma** Nees in Wt., Contrib. Bot. India 91. 1834; Clarke in Hook. f., Fl. Brit. India 6 : 588. 1893. *Kyllinga bifolia* Miq., Fl. Ind. Bot. 3: 293, 1856; Verma & Mishra, Ind. Jor. For. Vol. 5(3), 226-238, 1982.

Perennials, 0.4-1.2 m high. Rhizomes short, thick, woody, creeping up to 5 cm long. Stems few to many, triquetrous above. Leaves much shorter than the stem. 3-5 mm broad. Inflorescence a solitary, terminal, greenish, ovoid or subglobose head, up to 1 cm long and 5-7 mm broad head; bracts 3-4, foliaceous, up to 15 cm or more long. Spikelets numerous, congested in the head, ca 3 mm long, usually bearing one, rarely 2 nuts. Glumes ovate, acute; keel green, excurrent, smooth; sides fuscous, 3-4 striate. Stamens often 3. Stigmas 2. Nuts ultimately black, obovoid-long, about  $\frac{2}{3}$  as long as glume.

*Fl. & Fr.* : July-Dec.

*Habitat* : marshy banks of pools.

*Distribution* : South India and upper Gangetic Plains.

*Distribution in Uttar Pradesh* : Allahabad, Bahraich, Etawah.

*Representative specimens* : **Allahabad** : Garwa, B.K. Mishra, 731 (DUTHIE); University Campus, B.K. Mishra, 1389 (DUTHIE). **Bahraich** : Abdullaganj, Rampher, 16620 (LWG!). **Etawa** : s.l., Kaul et al., 24606 (LWG!).

**Kyllinga nemoralis** (J.R. & G. Forst.) Dandy ex Hutch., & Dalz., Fl. West Trop. Afr. 2 : 486 (in Key) & 487. 1936; Koyama in Dassan., Rev. Handb. Fl. Ceylon 5 : 249. 1985. [*Kyllinga monocephala sensu* Rottb., non Rottb., Descr. et Icon. Pl. : 13. t. 4. 1773, *nom. superfl.*; C.B. Clarke in Hook. f., Fl. Brit. India 6 : 588. 1893. *Thryocephalon nemorale* J. R. & G. Forst., Char. Gen. Pl. : 130. 1776. *Cyperus kylingia* Endl., Cat. Hort. Acad. Vindob. 1 : 94. 1842; Kern in Fl. Males. Ser. I. 7 : 639. 1974. Type : Same as for *Kyllinga monocephala* Rottb., *nom superfl.*

*Vern. Name* : Nirbishi-Badamutha.

Erect herbs. Rhizomes creeping, stoloniferous, covered with brown scale-leaves. Stems rigidulous, triquetrous. Leaves basal, as long as or longer than stems, scabrid on margins in upper part, acuminate, 3-5 mm broad. Heads terminal, usually solitary, white globose-ovoid, 5-10 mm long, occasionally 1-3 smaller heads below the terminal one, subtended by 3-4, foliaceous bracts; spikelets obliquely ellipsoid-ovoid, strongly compressed, 3 mm long, usually with one flower; glumes 4, ovate, acuminate with reddish glands, lowest glume hyaline, keeled, 3-5-veined, 1-1.5 mm long, third glume (floral) 3 mm long, enclosing a bisexual flower; fourth glume enclosing a male or bisexual flower, sometimes barren; stamens 3, anthers linear; ovaries 1-celled; styles *ca* 1.5 mm long; stigmas 2. Nuts oblong-obovoid, compressed, yellowish-brown, *ca* 1.5 mm long.

*Fl. & Fr.* : July-Mar.

*Habitat* : in grassy moist places. Common.

*Distribution* : Tropical and subtropical regions of the world.

*Distribution in Uttar Pradesh* : Aligarh, Allahabad, Azamgarh, Bahraich, Bareilly, Bijnor, Bulandshahar, Etah, Faizabad, Fatehpur, Ghazipur, Gonda, Gorakhpur, Jaunpur, Kheri, Lucknow, Meerut, Mirzapur, Moradabad, Muzaffarnagar, Pilibhit, Raibareli, Saharanpur, Sultanpur.

*Representative specimens* : **Aligarh** : Chherut, *A.K. Singh*, 260 (MU). **Allahabad** : Alfred Park, *B.K. Mishra*, 533 (DUTHIE). **Azamgarh** : Dubari, *S.N. Srivastava*, 14379 (GU); Bada Pul, *Chandra*, 4691 (GU). **Bahraich** : Kakradari, *Chandra et al*, 12048 (LWG!); Kasang, *N. Gill*, 592 (CAL!); Motipur, *Harsukh*, 22862 (DD!). **Bareilly** : *s.l.*, *R.B. Mathur*, 110924 (DD!). **Bijnor** : Jafrabad, *Chandra et al.*, 43632 (LWG!). **Bulandshahar** : NREC-College, Khurja, *L.K. Sharma*, 439 (MU). **Etah** : Sakit, *T. Hussain & B. Dutt*, 10461 (LWG!). **Faizabad** : Safedabad, *J.A. Chowdhery*, 82641 (LWG!). **Fatehpur** : Kishanpur, *S.K. Dixit*, 2475 (DUTHIE). **Ghazipur** : Gahmar, *S.D. Singh*, 12281 (GU). **Gonda** : Birpur block, DFO, Gonda, 14/3528 (DD!). **Gorakhpur** : Lucchipur, *A.K. Srivastava*, 6980 (GU); Ramgarh Tal, *T.N. Srivastava*, 1439 (GU). **Jaunpur** : (cf. *S.K. Singh & Dixit* 1969); Mariyahoon, *J.N. Dwivedi*, 78 (T.D.C.). **Kheri** : Mailani, *C.L. Malhotra*, 23531 (CAL!). **Lucknow** : N.B.G., *Santa Devi*, 96554 (LWG!), NBG, *J.G. Srivastava*, 16970 (LWG!); Luck. University Campus, *G.S. Puri*, 78 (DD!); NBG, *Chunnoo*, 3531 (LWG!); Near Anausi acrodrum, *R.P. Patil*, 1702 (CAL). **Meerut** : Daural, *R.S. Saxena*, 746 (MU), **Mirzapur** : Dudhi, *O.P. Mishra*, 9910 (CAL!). **Moradabad** : *s.l.*, *Paliwal & Singh*, 434 (Herb. Hindu College). **Muzaffarnagar** : *s.l.*, *Tayal & Lalita*, 382 (DAV-College). **Pilibhit** : Danar Ghat, *C.L. Malhotra*, 50477 (CAL!). **Raibareli** : Inhaina Village, *Jamal Asraf Chowdhery*, 71815 (LWG!). **Saharanpur** : *s.l.*, *s.n.* 41 (DD!); Badshahibag, *A.K. Goel*, 73 (MU). **Sultanpur** : Devarrh, *Om Prakash*, 10194 (GU).

*Uses* : Decoction of aromatic rhizomes used as a diuretic, refrigerant, demulcent, tonic; also given in fevers and diabetes to relieve thirst. Rhizomes yield an essential oil used for the same purpose as the decoction. (cf. CSIR 1986).

*Notes* : Farr *et al.* (1979) considers for *Kyllinga monocephala* Rottb., *nom. superfl.* [=*Kyllinga colorata* (L.) Druce (*Schoenus coloratus* L.)] as the correct name, but against item No. 462, Appendix III A (ICBN, 1988) *Kyllinga monocephala* Rottb., *nom. superfl.*, is shown as a taxonomic (=) synonym of *Kyllinga nemoralis*.

**Kyllinga odorata** Vahl, Enum. Pl. 2 : 382. 1806. *Cyperus sesquiflorus* (Torr.) Matf. & Kuenthal, Pflanzenr. Heft 101 : 591-593, f. t E-J, 1936; Kern in Fl. Males (Ser. 1) 7(3) : 658, 1974. *Kyllinga sesquiflora* Torr. Ann. Lyc. N. York 3 : 287, 1836 var. *subtriceps* (Nees). Koyama, Quart. J. Taiwan Mus. 14 : 191, 1961; *Kyllinga cylindrica* Nees in Wight. Contr 91, 1834, incl. var. *subtriceps* Nees; Clarke in Hook. *f.*, Fl. Brit. India 6 : 588, 1893, excl. Specim. malacc; Murty & Singh in Proc. Nat. Inst. Sci. 27(B) 1 : 16, 1961. *Cyperus cylindricus* Champn. 1878; *Cyperus sesquiflorus* var. *cylindricus* Kuk., Pflanzenr. 101 : 593, 1936; Bot. Jahrb. 70. 463, 1940; Kernin, Reinwardtia 3. 65, 1954. *Cyperus kernianus* Ohwi & Koyama, J. Jap. Bot. 30 : 126, 1955;

Koyama. Act. Phytotax. Geobot. 16 : 55, t. 4. f. B-C, 1955; *Cyperus sequiflorus* ssp. *cylindricus* (Nees ex Wight) Koyama, Bot. Mag. Tokyo 83 : 187, 1970.

Perennial herbs. Rhizomes very short. Stems tufted, triquetrous, smooth, 10-30 x 0.1 mm. Leaves rigidulous, flat, gradually acuminate, scabrid on the margins in the upper part, 2-4 mm wide. Inflorescence capitate, whitish, finally straw-coloured, consisting of a terminal cylindrical head 10-12 x 4-5 mm, and 0-2 lateral, subglobose, sessile heads, much smaller than the terminal one. Invol. Bracts 3-5, finally reflexed, upto 10 cm. Spikelets numerous, strongly compressed, though somewhat turgid, maturing 1 nut, 2-2.5 by 1-1.25, falling off as a whole; rachilla cylindric, disarticulating at the base. Glumes hyaline, 2-2.5 mm long broadly ovate, acute or apiculate, with smooth or hardly spinulose sharp keel, strongly 9-11- and 5-7-nerved. Stamens 2; stigmas 2. Nuts, biconvex, laterally compressed, obovate, or broadly obovate, obtuse, shortly apiculate, black, ca 1.5 x 1 mm.

*Fl. & Fr.* : July-Sept.

*Habitat* : moist roadsides, wastelands, sandy loam or gravely substratum.

*Distribution* : Trop. Africa, S.E. Asia, Sri Lanka and India to Yunan, Formosa and Malesia.

*Distribution in Uttar Pradesh* : Aligarh, Bulandshahar, Meerut.

*Representative specimens* : **Aligarh** : Chherut, A.K. Singh, 256 (MU). **Bulandshahar** : Canalside, Delhiroad, L.K. Sharma, 1605 (MU). **Meerut** : Hastinapur, Murty & Singh, 194 (MU).

**Kyllinga squamulata**, Vahl. Enum. Pl. 2 : 381. 1806. *Kyllingia metzii*, Steud. Syn. Pl. Cyp. 70. 1855. *Kyllinga monocephala*, Strachey Herb. Kumaon, 74 (*non* of Rottb.).

Plants sub-glabrous. Roots fibrous. Stems annual, tufted, 5-30 cm high. Leaves often longer than stem, ca 3.2 mm broad. Heads ca 4.3 cm in diam., green or brown; spikelets ca 3.2 mm long; spikes 1-3 ovoid; glumes scarcely acute its keel winged by a broad hyaline incise toothed crest. maturing 1. Nuts only, brown.

*Fl. & Fr.* : Oct.-July.

*Distribution* : Tropical Africa, Asia.

*Distribution in Uttar Pradesh* : Bulandshahar. (**Rare**)

*Representative specimens* : **Bulandshahar** : Narora, L.K. Sharma, 1970 (MU).

#### ACKNOWLEDGEMENTS

Author is grateful to Principal, Ramabai Government Womens P. G. College, Akbarpur, Ambedkarnagar, Dr. Arvind Kumar Singh, Head, Department of Botany, T.D.P.G. College, Jaunpur for suggestions and facilities.

#### REFERENCES

- C.S.I.R. 1986 *Useful Plants of India*, New Delhi.
- Duthie, J.F. 1929 *Flora of Upper Gangetic Plains and of the Adjacent Siwalik & Sub-Himalayan tracts*. Calcutta.
- Hooker, J.D. 1893 *Flora of India* Vol. V., London
- Singh, V.P. and R.C. Srivastava 2002 *Diversity of Cyperaceous taxa of Uttar Pradesh State of India*, Proc. Nat. Symp. on Science & Ethics of Env. Care & Sustainability, 2: 336-340.
- Singh, V.P. and R.C. Srivastava 2003 Economic importance of Sedges of Uttar Pradesh *Jorn. Econ. Tax. Bot.* 27 (4): 978-981.
- Uniyal, S.K., A. Swami and Uniyal, B.P. 1997 *Cyperaceae of U.P.* – A checklist, Bishen Singh Mahendra Pal Singh, Dehradun. (includes Uttaranchal State also)