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Research Article

FAMILY CYPERACEAE JUSS. FROM THE FLORA OF SUBTROPICAL HUMID REGION OF INDIA (ETAWAH AND AURAIYA DISTRICTS) UTTAR PRADES STATE

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ABSTRACT
The paper enumerates the outcome of sedges floristic studies made into varied localities of the districts more than 5 years. The collections have been found to be spread over 5 genus and 36 species of Cyperaceae family. They are *Bulbostylis* 1 species, *Cyperus* 18 species, *Eleocharis* 2 species, *Fimbristylis* 9 species and *Scirpus* 6 species. The districts Etawah and Auraiya, which forms the south-west part at the division Kanpur of Uttar Pradesh (India), lies in parallels between 26°21 and 27°01 N latitude and between 78°45 and 79°45 E longitude. The greater length of the districts is 90.2 Kms on north-west to south- east side. The narrower south-east base measures a little more than 50 Kms. The districts occupy more or less uniform breadth of about 56 Kms, except the stretch of the tahsil Etawah, where it is under 34 Kms. It abruptly narrows further toward the boundry with Shikohabad. The entire district is spread over an area of about 4486 Sq Kms. (4367.27 Sq Kms. as per revenue records). The elevation of the district varies between 146.3 m and 147.7 m above the sea level. The boundary of the districts are formed by the district of Farrukhabad and Mainpuri on north; Kanpur Dehat on east; Jalaun on south; and Agra, Firozabad and Bhind (Madhya Pradesh) on the west.

Keywords: *Sedges, Cyperaceae, Flora, Humid Region, India*

INTRODUCTION
Geographical Position: The districts Etawah and Auraiya, which forms the south-west part at the division Kanpur of Uttar Pradesh (India), lies in parallels between 26°21 and 27°01 N latitude and between 78°45 and 79°45 E longitude. The greater length of the districts is 90.2 Kms on north-west to south- east side. The narrower south-east base measures a little more than 50 Kms. The districts occupy more or less uniform breadth of about 56 Kms, except the stretch of the tahsil Etawah, where it is under 34 Kms. It abruptly narrows further toward the boundry with Shikohabad. The entire district is spread over an area of about 4486 Sq Kms. (4367.27 Sq Kms. as per revenue records).

The elevation of the district varies between 146.3 m and 147.7 m above the sea level. The boundary of the districts are formed by the district of Farrukhabad and Mainpuri on north; Kanpur Dehat on east; Jalaun on south; and Agra, Firozabad and Bhind (Madhya Pradesh) on the west.

Topography: Geologically the districts are generally covered by a thick layer of Indo-Gangetic alluvium of plastocene to sub-recent periods. This is more so in the southern part, which has alluvial deposits of the peninsular block, carried by the rivers Chambal and Yamuna. The alluvium represents a continuous and conformable series of fluvatile and sub-aerial deposit South-west part the districts shows a bundant dissemination of impure calcaresus matter in form of irregular concretion *Kankar*. The formation of *Kankar* concretion is due to the seggregation of the alluvial deposits into lumps or cobbles. The north-eastern part of the district includes large areas under *Usar* land will high alkalinity.

Climatic Conditions: Etawah and Auraiya districts enjoys a delightfully cool and dry winter, a long and hot summer, and short rainy season. Besides these, there are two transition periods, one preceding the winter season and other after it.

Winter Season: It is spread over four months, from mid November towards.

Temperature shows sharp fall in December and January, the latter being the coldest month with average daily maximun and minimum temperature of 13.4°C and 8.5°C respectively. Towards December end or January often cold waves accompained with fog and clouds bring down temperature to the vicinity of 3-4°C. However, this happens once or twice for a few days only. Throughout February the temperature shows a rising trend but the climate remains pleasantly cool.

First Transition Period: It is of one month's duration and covers last fortnight of March and the first of April. There occurs gradual and fast increase in temperature. Towards the end of this period the temperature shoots up to a limit 32.6°C or sometimes even more.

Summer Season: From the second half of April, the temperature starts touching the high limits of 32. 6°C and above, and by the end of May summer acquired its peak fury with mercury occasionally touching up to 46°C mark. This trend continues in June, until the monsoon breaks. The summer days are characterized by hot winds. These winds mainly blow westwardly and raise the temperature by 4.5- 7.0^0 C and the mercury touches 46-48°C mark. The summers are also marred with several dust storms **(***Aandhi***),** of nearly 175 Kms per hour velocity. These storms abruptly lower the temperature to some extent.

Rainy Season: With the break of monsoon, normally in second half of June, the temperature shows a steep fall of 4.5-7.0° C. During July, August and half of September, which are the real rainy months. covering four-fifth of the annual rainfall and total rainy days, average daily mean temperature lies in vicinity of 30°C. Towards the end of September the rainy season comes to its end.

Second Transition Period: After rains comes this hot and humid period of one month duration, which exists until arrival of the winter season by the second half of November. During this period in comparison to days, the night is compratively cooler and pleasant.

MATERIALS AND METHODS

Taking into consideration the detailed political map of the districts and physiographical information about it, collection localities were chalked out so as to cover maximum geographical and topographical range. During the collection drives observations on habit and habitat, flower colour and fragrance, besides dominance and sociability of the collected plants, were entered in field books. At least five tagged specimens were pressed on spot for preparing herbarium sheets and a bundle of a few plant specimens, tagged with same field number, was also collected in polythene bag for study at laboratory. Macroscopic and microscopic studies on collected specimens, determination of their identity and preparation of the herbarium specimens were performed after Jain and Rao (1978). Duly processed herbarium specimens of sedges have been housed in the herbarium of Department of Botany, Janata Mahavidyalaya Ajitmal Etawah (U.P) India, for record and references.

Motive behind Present Study

The publication of "Flora of British India" by Hooker (l872- 1897) was followed by series of regional floras by Cooke (1901-1908) for Bombay Presidency; Prain (1903) for Bengal; Duthie (Completed by Parker and Turrill 1903-1929) for Upper Gangetic plain and adjacent Siwalik and of Sub-Himalayan tracts; Gamble (Completed by Fisher 1915-1936) for Presidency of Madras; Haines (1921-1925) for Bihar and Orissa; and Kanjilal *et al.,* (1934-1940) for Assam. With regard to the flora of Upper Gangetic plain, Duthie could complete the flora only up to Juncaceae. Parker and Turrill took up the task and described Cyperaceae, however, the family Poaceae was still left. Several decades later Raizada and associates (Raizada, 1954; Raizada *et al.*, 1961; Raizada and Jain, 1964, 1966) completed Poaceae in several instalments. Raizada (1976) compiled add addition made to the flora of Upper Gangetic plain after

Duthie (1903-1929) until then. Kanjilal (1966) published a flora of forests of the plains of Uttar Pradesh. Later Kanjilal (1982) published Forest flora for Pilibhit Oudh, Gorakhpur and Bundelkhand. Srivastava (1938, 1949) published the flora for Allahabad city and neighbourhood. Decades later a few district flora were published like Gupta (1968) for Nainital, Srivastava (1976) for Gorakhpur. However, district flora publication caught up momentum after late seventies when several such flora were published notable ones by Babu (1977) for Dehra Dun, Raizada and Saxena (1978) for Mussorie and Misra and Verma (1992) for Allahabad.

RESULTS AND DISCUSSION

The paper enumerates the taxa (sedges) collected during floristic studied into varied localities of Etawah and Auraiya districts more than 5 years. After a thorough study on over 2000 field numbers, the identified taxa (sedges) have been found to be spread over 5 genera and 36 species of sedges. In the present enumeration the species have been arranged in alphabetical order.

Genus Key

1.+Flowering glumes all 2-stichous…….*Cyperus*
- Flowering glumes spiral, sometimes a few lowest 2-stichous……2
2+ Style base dilated, constricted or articulated above the nut ……. 3
- Style base continuous with the nut ……*Scirpus*
3.+ Hypogynous bristles present. Leaves absent .. ……*Eleocharis*
- Hypogynous bristles absent. Leaves usually present……4
4+ Style base deciduous, leaving a tumoz on the nut ……..*BuIbostylis*
- Style base persistent, if deciduous then not leaving a tumor on the nut……..*Fimbristylis*

Bulbostylis

Kunth, Enum. PI. **2**: 205, 1837. Type: *B. densa* (WalL) Hand.-Mazz.

B. barbata (Rottb.) C.B. Clarke in FBI. 6: 651; FUGP. 3: 358; Kern in Fl. Males. ser. 1. **7**: 539, 1974; Koyana in Rev. Handb. Fl. Ceylon **5**: 327, 1985.-*Scirpus barbatus* Rottb., PI. Hort. Univ. Rar , 27,1773. Vern.: *Piaza, Piazi*.

A fibrous rooted, tufted sedge 5-25 cm high. Stems setaceous. Leaves capilIary , ligulate, much shorter than stem. Spikelets linear- oblong, up to 8.O x 1.5 mm, 1-many, in terminal heads. Involucral bracts 1-3, variable in length, up to 2 cm long. Glumes ovate, up to 5 mm long, rusty-brown with prominent, green keel, sides nerveless. Stamen 1. Stigmas 3, shorter than style. Nut 3-quetrous, broadly obovate, smooth , whitish or yellow-white, up to 0.6 x 0.5 mm.

Paleotropic. Frequent-in moist sandy places, fallow fields: on ridges; along pools.

FI. & Fr. : August- October.

Samarathpur, DS : 792.

Cyperus

L., SP. PI. 44, 1754. Lectoype : *C. esculentus* L.

1.+ Glumes few (up to 14 in *C. compactus*) ……..2
- Rachilla of spikelets deciduous ……..…….14
2.+Stigma 3, nut 3-quetrous ……..…….3
- Stigma 2, nut flattened ……..……..13
3.+Spikelets spicate, sometimes very shortly spicate, rarely subracemose ……4
-Spikelets digitate or clusturect ……..9
4.+Inflorescence compound umbel , Perennial with rhizomes and stolons……..5
- Inflorescence spicate. Tufted annuals without rhizomes and stolons……6
5.+Spikelets numerous in elongated spikes……..*C. exaltatus*
-Spikelets 3-8 in short spike……*C.rotundus ssp.rotunodus*

6.+ Spikelets very shortly spicate ……..7
-Spikelets on elongated spikes ……..8
7+Spikelets not more than 7.5 mm long, squarrose due to strongly excurved mucros of the glumes. Stamens solitary …….. *C.squarrosus*
- Spikelets, 1.25-3.0 cm long, strongly compressed, glumes not
or scarcely mucronate. Stamens 3 ……*C. compressus*
8.+ Rachilla of spikelets pubescent. Dorsal glume 7-nerved ……..*C. alutatus*
- Rachilla of spikelets glabrous. Dorsal glume 3 or 5 nerved .. ……..*C. iria*
9.+ Stout, rhizomatous perennials …… *C. niveus*
-Slender, tufted annuals, without rhizome …… 10
10.+ Spikelets in compact heads. Nut smooth, as long as the glume, stramineous or pale brown …… *C. difformis*
- Spikelets on rays of simple or compound umbel. Nut minutely marble-white, 1/3 as long as the glume ……..…… *C. tenuispica*
11.+ Flowering glumes with long recurred mucros ……. *C. cuspidatus*
- Flowering glumes obtuse ……..12
12.+Spikelets in solitary head. Nut dorsally compressed, i.e. more of its width tangential to rachilla …… 13
-Spikelets in umbel. Nut compressed, i.e. more of its width radial to rachilla …… .*C. pumilus*
13.+Leaf-blade short or obscure. Inflorescence pseudolateral because of a bract looking like the continuation of stem. Spikelets terete ……*C. laevigatus*
- Leaf blade will developed. Inflorescence terminal: bracts leafy. Spikelets
strongly compressed …….. *C. pygmaeus*
14. + Stigmas 3. Nut 3-quetrous ……15
- Stigmas 2. Nut flattened ……16
15+Spikelets in long, cylindric spikes, on rays of simple umbel.....*C. cyperoides*
- Spikekelets very shortly spicate or in heads, on the rays of compound umbel……*C. compactus*
16.+ Rhizome short, tuned. Heads normally with 3-5 subequal clusters of spikelets, though a few stems may bear a single spike ……*C. triceps*
- Rhizome long, creeping. Heads normally of a single cluster of spikelets, though a few stems may have smaller a jditional lateral-clusters ……..17
17+ Spikes straw-coloured. Spikelets ellipsoid-ovoid. Keel of glume distintly winged …… *C. kyllingia*
Spikes green, spikelets ovoid-lanceolate. Keel of glume wingless ……*C. brevifolius*

C. alulatus Kern, Reinwardtia **1** 463, 1952; Suppl. FUGP. 293.- *Cyperus rectangularis* (Kiik.) Bennet, Indian Forester **95** 692, 1969.- *Cyperus iria var. rectangularis* Kiik. in Pflanzenr **101** 152, 1935.

Stem 3-quetrous, up to 70 cm tall. Leaves as long as or longer than stern. Inflorescence panicled; rays up to 15 cm long; bracts 6-8, unequal, the longest up to 25 cm long. Spikelets greenish-yellow, 7 x 2 mm. Glumes ovate, up to 1.75 x 1.75 mm, keel winged, with serrulate margin in the upper part. Stamens 2. Style cleft nearly to base . Nut up to 1. 5 x 0.8 mm, dark brown, shortly apiculate.

Indo-Malaysia. Very common-in agricultural fields; near ponds, ditches or canal banks; in gardens especially near drains and taps, and waste places.

FI. & Fr.: August-December.

Etawah, DS: 1279.

C. brevifolius (Rottb.) Hassk., Cat. Horto Bogor. 24, 1844; Kern in Fl. Males. ser. 1. **7** 656, 1974.-*Kyllinga brevifolia* Rottb., Descr. Icon. Rar. PI. 13, 1773; FBI. **6** 588; FUGP. **3** 343; Koyama in Rev. Handb. FI. Ceylon **5** 248, 1985.
Low fast spreading sedge up to 30 cm tall. Leaves shorter or as Iong as the stern. Bracts short, seldom reaching more than 10 cm. Spike globose, up to 5 mm long. Spikelets up to 2.5 x 1.0 mm; 1st and 2nd glumes up to 1 mm long; 3rd and 4th strongly 2-3 nerved on sides, 2 mm and 2.5 mm long respectively, spinulose on keel in upper half. Nut 1.5 x 0.75 mm, brown, obovate, shortly apiculate.
Paleotropic and Subtropics. Common- in moist grassy or shady places.
Fl. & Fr.: August-December.
Jaitpur, DS: 176; Etawah, DS: 448.
C. compactus Retz., Obs. Bot. **5** 1, 1788; Kern in Fl. Males. ser, 1. **7** 638, 1974. - *Mariscus dilutus* (Vahl) Nees ex Wight, Contr. Bot. India 90, 1834; FUGP. **3** 345 - *Mariscus microcephalus* J. & C. Presl , Reliq. Haenk. **1** 182,1828; FBI. **6** 624. - *Mariscus compactus* (Retz.) Boldingh, Zakfl. Handb. Java 77, 1966; Koyama in Rev. Handb. FI. Ceylon **5** 228, 1985.
Stout, attactive sedge up to 1 m tall. Stem obscurely 3-gonous, striate. Leaves rigid, strongly canaliculate, scabrid on margins and on midrib in upper part. Umbel compound or decompound, up to 20 cm across. Spikelets squarrose stellately aggregated in spikes up to 2 cm across, usually 4-8- flowered. Glumes oblong, obtuse, rounded or scarcely keeled on back, 2.0 x 1.2 mm long; the lowest 2 glumes empty and half or less than half as long as the upper glumes. Nut 2.0 x 0.5 mm, apiculate, pale-brown.
India, China, Malaya. Common-in paddy field, ditches or low land.
FI. & Fr.: August-October.
Etawah, DS: 1285.
C. compressus L., Sp. PI. 46, 1753; FBI. **6** 605; FUGP. **3** 328; Kern in Fl. Males. ser. 1. **7** 617, 1974; Koyama in Rev. Handb. Fl. Ceylon. **5** 194, 1985. Vern. : Mothi.
Prostrate to erect, polymorphic sedge up to 35 cm. Leaves basal. variable in length, tips acuminate. Spikelets 3-10 on rays of umbels, rarely solitary in plants with stunted growth. Glumes 3 x 2 mm, chartaceous , rigid, silvery on margins. Nut 1. 6 x 1. 0 mm, obscurely apiculate, brown or dark brown.
Pantropic. Common-in agricultural field, waste places; along railway tracks; near ponds and ditches.
FI. & Fr.: August-November.
Asta, DS: 170.
C. cuspidatus Kunth in H.B.K., Nov. Gen. Sp. **1** 204, 1816; FBI. **6** 385; Kern in FI. males, ser. 1. **7** 629. 1974; Koyama in Rev. Handb. FI. Ceylon **5** 208, 1985. -*Cyperus uncinatus* ouct. non Poir. 1806; FUGP. **3** 325.
Stems many, longer than leaves. Inflorescence simple, clusters rayed and sessile, bracts much longer than inflorescence. Spikelets 2.5 x 6.5 mm, reddish-brown; rachllla scarcely winged. Glume oblong obtuse 1.0 x 0.8 mm, brown,slightly apiculate.
Pantropic. Rare in moist places and open country.
FI. & Fr. August-November.
Etawah, DS: 1276.
C. cyperoides (L.) O. Ktze., Rev. Gen. **3**(2) 333. 1898; Kern in FI. Males, ser. 1. **7** 642, 1974; Suppl. FUGP. 296.- *Scirpus cyperoides* L., Mant. Alt, 181, 1771. - *Mariscus sieberianus* Neee ex C.B. Clarke in FBI. **6** 622.- *Muriscus sumatrensis* (Retz.) Raynal, Adansonia **15** 110, 1975; Koyama in Rev. Handb. FI. Ceylon **5** 232, 1985.
A grass like sedge up to 75 cm tall. Leaves exceeding the stems. Involucral bracts several, lower much longer than inflorescence. Spikes 5-10, up to 4 x 1 cm, rays variable in length.

Spikelets patent, 3.0 x 0.5 mm, rachilla broadly winged; glumes oblong-ovate, 3.0 x 1.4 mm, lower 2 empty, less than half as long as the upper ones. Nut 2.0 x 0.75 mm, yellow brown.
Paleotropic and into subtropics. Occasional-marshy land, sunny grassland; under tree shade.
Fl. & Fr.: July-December.
Jasbantnagar, DS: 1232.
C. difformis L., Cent. PI. **2** 6, 1756; FBI. **6** 599; FUGP. **3** 325; Kern in Fl. Males. ser. 1. **7** 629, 1974; Koyama in Rev. Handb. FI. Ceylon **5** 206, 1985.
Polymorphic sedge up to 25 cm, prostrate to erect in habit. Leaves shorter than sterns. Inflorescence simple or compound, up to 7 cm across, of few sessile and 3-6 rayed clusters of spikelets; bracts overtopping the inflorescence, often 1 suberect and looking like the continuation of the stem. Spikelets 3.0 x 1.25 mm. glumes ovate or broadly ovate, 0.8 x 0.5 mm. Nut. 0.5 x 0.4 mm obvoid, pale-brown.
Paleotropic. Occasional-fallow field especially of paddy; along marshy banks of ponds and ditches; gardens.
Fl. & Fr.: August-April.
Etawah, DS : 932.
C. exaltatus Retz., Obs. Bot. **5** 11, 1789; FBI. **6** 617; FUGP. **3** 331; Kern in FI. males. ser. 1.**7** 602, 1974: Koyama in Rev. Handb. Fl. Ceylon **5** 173, 1985. Vern.: *Nagarmotha.*
Stems robust smooth, 3-gonous, up to 1.5 m tall. Leaves variable in length, often over-topped by longest bracts. Spikes 5.0 x 1. 4 cm, on rays of variable length. Spikelets patent, 8.0 x 1.6 mm, yellow to brown; rachilla narrowly winged. Glumes ovate-oblong, mucronated, 6 x 1.4 mm. Stamens-3. Nut tapering at ends, 0.75 x 0.50 mm, yellow or yellow-brown.
Paleotropic and Subtropic. Occasional-along canal and river banks ; in water logged places; on field bands of paddy fields.
Fl. & Fr.: August-Decembar ,
Bidhoona, DS: 873; Etawah, DS: 933.
C. iria L., Sp. PI. 45, 1753; FBI. **6** 606; FUGP. **3** 329; Kern in Fl. Males. ser. 1. **7** 616, 1974; Koyama in Rev. Handb. FI. Ceylon **5** 196, 1985. Vern.: *Galmotha.*
Stern tufted, 3-gonous, up to 60 cm tall. Leaves equalling or exceeding stems. Umbel compound, up to 20 cm across. Spikelets 5 x 2 mm, oblong-linear, erectopatent or patent. Rachilla wingless. Glumes obovate , retuse, 3 or 5-nerved; keel smooth. Stamens 2-3. Nut 1.25 x 0.60 mm, broadly stipitate, shortly apiculate, dark brown.
Paleotropic. Common-in moist places in gardens; along banks of ponds and ditches; in paddy fields.
Fl. & Fr. August-December-,
Jaitpur, DS: 252.
C. kyllingia Endl., Cat. Horti. Vindob. **1** 94, 1842; Kern in Fl. Males. ser. 1. **1** 659, 1974. - *Kyllinga monocephala* Rottb., Descr. Icon. Rar. PI. 13, 1773; FBI. **6** 588; FUGP. **3** 344; Fl. W. Trop. Africa **2** 486. 1936; Koyama, Gard. Bull. Singapore **30** 163, 1977 6 in Rev. Handb. Fl. Ceylon **5** 249, 1985. Vern.: *Nirbishi*.
Stem up to 30 cm tall. Leaves basal, as long as or longer than stems. Heads 1.2 x 1.0 cm. Bracts 3-4, lowest up to 25 cm. Spikelets 3.0 x 1.25 mm, Ist and 2nd glumes narrow, up to 1.25 mm long; 3rd glume 2.5 x 3.0 mm; 4th glume 3 x 3 mm. Nut 1.25 x 0.8U mm, stipitate, apiculate.
Hot and warm temperate regions of Old World except Mediterranean. Common-in moist-grassy or shady places.
Fl. & Fr.: August-Decmber.
Ajitmal, DS: 1287.
C. laevigatus L., mant. Alt. 179, 1771; Kern in n. males. ser. 1. **7** 661, 1974, in obs. - *Juncellus laevigatus* (L.) C.B. Clarke in FBI. **6** 596; FUGP. **3** 341.

Rhizome short or Iong, creepmg, covered with papery sheath; stems distant, solitary or in tuft of 2-4, up to 35 cm high. Spikelets 1- 10, straw coloured 12.0 x 2.5 mm. Bracts 2, with dilated bases, one obscure (up to 8 mm) and the other Ions, erect (up to 3.5 cm). Stamens 3. Glumes broadly ovate-3-angular, slightly mucronate; keel broad, green and densely spotted with brown, sides hyaline. Nut obvoid or ellipsoid 1.00 x 0.75 mm, broadly stipitate, shortly apiculate.
Pantropic and into Subtropics. Rare-along moist sandy beds of river.
FI. & Fr.: October-February.
Etawah, DS: 1288.

C. niveus Retz., Obs. Bot. **5**: 12, 1788; FBI. **6** 601; FUGP. **3** 327; Kern, Reinwardtia **6** 60, 1961.
Stems tufted, 3-gonous, up to 45 cm tall, clothed at base with leaf sheath. Leaves basal, shorter or as long as the stems. Inflorescence up to 4 cm across. Bracts 2-3, leafy, the longest up to 6 e-n long. Spikelets Ianceolatej z i O x 0.5 cm. Glumes ovate-acute, 3.7 x 2.0 mm, 3- 5••nerved on hyaline sides, slightly mucronate. Anthers bearded at apex. Nut oblong, 1. 25 x 1. 40 mm, yellow to brown, distinctly stipitate.
India, Afghanistan, China. Rare-in sandy-loamy banks of rivers and drying marshes.
Fl. & Fr.: August-October.
Sahar, DS: 810.

C. pumilus L., Cent. PI. **2**: 6, 1756; Kern in Fl. males. ser, 1. **7** 660, 1974. *Pycreus nitens* (Retz.) Nees, Nov. Act. Leop.-Carol. Nat. Cur. 19, Suppl. **1** 53, 1843; FBI. **6** 591. *Pycreus pumilus* (L.) Nees ex C.B. Clarke in FBI. **6** 591, quadbasion., excl. descr., FUGP. **3** 339; Koyama in Rev. Handb. Fl. Ceylon **5** 224, 1985.
Caespitose sedge up to 15 cm high. Leaves narrow-linear, variable in length. Rays 3-5, slender, up to 5 cm long. Bracts much overtopping inflorescence. Spikelets divergent, oblong to linear, 12.0 x 2.5 mm. Glumes 1.3 x 1.3 mm, ovate, sharply keeled, notched at apex, sides neverless. Nut oblong-ovate, slightly notched at apex, brown, 0.6 x 0.4 mm.
Paleotropics and into Subtropics. Common-in agricultural fields and moist waste places.
Fl. & Fr.: July-November.
Bharthna, DS: 883.

C. pygmaeus Rottb., Descr. Icon. Rar. PI. 20, 1773; Kern in Fl.Males. ser. 1. **7** 634, 1974; Koyama in Rev. Handb. Fl. Ceylon **5** 214, 1985. - *Juncellus pygmaeus* (Rottb,) CB. Clarke in FBI. **6** 596; FUGP. **3** 341.
Prostrate or erect, tufted sedge up to 15 cm. Leaves canaliculate, scabrid on margin in upper part, up to 10 cm long. Heads lobed, up to 2 cm across. Bracts several, leafy, dilated at base, largest up to 10 cm long. Spikelets ovate to lanceolate, 4.5 x 2.0 mm. Glumes 2.0 x 0.7 mm, lanceolate, keel obscurely spinulose on back , 5- nerved, excurrent as a small apicule, sides pale-brown, hyaline. Stamen 1 or 2. Style 2-fid. Nut planoconvex, oblong,1.0 x 0.4 mm.
Cosmopolitan on Tropics. Occasional-river beds; open grasslands; drying marshy places.
Fl. & Fr.: July-February.
Auraiya, DS: 1143.

C. rotundus ssp. rotundus; Kern in Fl, Males. ser. 1. **7** 604, 1974. _ *Cyperus rotundus* L., Sp. PI. 45, 1753; FBI. **6** 614; FUGP. **3** 332; Koyama in Rev. Handb. Fl. Ceylon **5** 181, 1985. Vern.: *Motha*.
Polymorphic sedge up to 60 cm tall. Rhizome emitting long, slender, wiry stolons ending in a fleshy, blackish tuber. Leaves shorter than stems. Inflorescence simple or compound, up to 12 cm across. Involucral bracts 2-4, variable in size, the largest often overtopping the inflorescence. Spikelets linear, acute, 30 x 2 mm; rachilla broadly winged. Glumes 3.5 x 1.4 mm, ovate, keeled, 5-7-nerved over 1/3 to 1/2 on either side, rest portion hyaline. Stamens 3. Nut 1.5 x 0.7 mm, narrowed at apex.
Cosmopolitan. Very common-In almost every sort of terrestrial habitats.

FI. & Fr.: July-March.
Etawah, DS: 1277.
C. squarrosus L., Cent. PI. **2** 6, 1756; Kern in Fl. Males, ser. 1. **1** 611, 1974. - *Cyperus aristatus* Rottb., Descr. PI. Rar. Progr. 22, 1773; FBI. **6** 606; FUGP. **3** 328; FBI. **6** 623, 1893, concerning the basionym; Koyama, Gard. Bull. Singapore **30** 621, 1974 6 in Rev. Habdb. FI. Ceylon **5** 229, 1985.
Stems up to 15 cm tall. Leaves shorter to as long as the stems. Umbel simple or compound, Bracts unequal, over-topping the inflorescences. Rays unequal, up to 6 cm long, frequently a few spikes sessile. Spikelets 10 x 3 mm. Glumes ovate 1.1. x 0.8 mm, 7-9 nerved. Nut variable in shape, 0.8 x 0.3 mm, broadly stipitate, shortly apiculate, pale to dark brown.
Pantropic. Commnon-in agricultural fields, gardens and open country.
Fl.& Fr. Agusut - November.
Jaitpur, DS: 262.
C. tenuispica Steud., Syn. Pl. Glum. **2** 11, 1855; Kern in Fl. Males ser. 1. **7** 625, 1974; Koyama in Rev. Handb. Fl. Ceylon **5** 205, 1985.- *Cyperus flavidus* auct. non. Retz. 1788; FBI. **6** 600; FUGP. **3** 326.
Polymorphic sedge up to 50 cm high, Leaves sub-basel, as long as, or longer than the stams. Rays slender, pendent, ending in spike of 5-20 stellately spreading spikelets, 1-2 bracts much over tapping inflorescence. Spikelets 20.0 x 2.5 mm. Glumes 2.25 x 1.10 mm. Chartaceous oblong-ovate, muticous; keel green, 3-nerved, sides nerveless. Stamens 3, Nut 07 x 0.4 mm, ellipsoid, with a prominent rib on lateral faces apiculate.
Paleotropical. Frequent- in moist or marshy places in open country or gardens, along lakes or ponds.
Fl. & Fr.: August – March.
Bidhuna, DS: 871.
C. triceps Endl. Cat. Horti. Vindob. **1** 94, 1842; Kern in Fl. Males. ser. 1. **7** 659, 1974.- *Kyllinga triceps* Rottb., Descr. Icon. Rar. Pl. 14, 1773; FBI. **5** 587; FUGP. **3** 343.-*Kyllinga bulbosa* Beauv., Fl. D. Owase & Benin **1** 11, 1804, Vern. : *Nirbisi*.
Stem up to 30 cm tall, 3-gonous and clothed with sheath at base. Leaves basal, variable in size. Head 1 cm across. Spikes ovoid cylandric, 8 x 5 mm, central one the largest. Bracts 3-4, up to 10 cm long. Spikelets oblong, strongly compressed, 1-flowered. 1.9 x 0.8 mm. Ist and 2nd glumes small; 3rd 1.7 mm long, 7-nerved; 4th 1.9 mm, 5- nerved. Stamens 2. Nut oblong, apiculate, 1.25 x 0.50 mm, yellowish- brown.
Paleotropic. Common-along moist banks of ponds and ditches; under trees; in lawns and gardens.
F1. 6 Fr. : July- November
Ajitmal, DS : 1286.
Eleocharis
R. Br., Prodr. 224, 1810. Type: non designatus
+Spikelets solitary, terminalt up to 1-2.5 cm long …… *E. palustris*
-Spikelets ovoid or conical, up to 4 mm long … ……*E. atropurpurea*
E. atropurparea (Retz.) J. & C. Presl, Reliq. Haenk. **1** 196, 1828, excl. specimen cit.: FBI. **6** 627; FUGP. **3** 348; Kern in Fl. Males. ser. 1. **7** 536, 1974. - *Scirpus atropurpureus* Retz., Obs. Bot. **5** 14, 1789.
Weak sedge up to 15 cm high. Culms terete, striate. sheath appressed, brownish at base, oblique or attenuate at apex. Spikelet ovoid or conical , up to 4 mm long. Glumes elliptic, obtuse, keeled, 1- nerved. Stamens 1-2. Style 2-fid. Nut biconvex, smooth, black; style base minute, disciform.
Pantropic and Subtropics. Occasional-in moist banks of ponds and ditches and paddy fields.
FI. & Fr.: September - December

Etawah, DS: 1038.
E. palustris R. Br., Prodr. 224. 1810, in obs.; FBI. **6** 343. 628; FUGP. **3** 343.
An erect, marshy, tufted sedge with a creeping rhizome, up to 45 cm high stems terete, longitudinally striate. Leaves absent, sheath truncate. Spikelet solitary, terminal, 1-2.4 cm long, ellipsoid or cylindric, yellow or brown, broader than the stem. Glumes closely imbricate, ovate-lanceolate or elliptic. Bristles brown, retrorsely scabrid. Nuts broadly or ovoid, biconvex, tipped with the broad style base.
Common-Marshy places sometimes near the temporary pond.
FI. & Fr.: July - August
Bidhoona, DS: 858.
Fimbristylis
Vahl, Enum, PI. 2: 285, 1805 (Sero)-1806. Type : *F. dichotoma* (L.) Vahl
1.+Stigma 2-fid. Nut. biconvex ……2
- Stigma 3-fid. Nut 3-quetrous ……6
2.+ Nut smooth ……..3
- Nut not smooth ……4
3.+Inflorescence of 1-3, sometimes up to 5 spikelets. Glumes glabrous …….. *F. schoenoides*
-Inflorescence of may spikelets. Glumes pubescent in upper half ……..*F. ferrugina*
4.+Spikelets over 2 mm broad, terete. Glumes rounded on back ….....5

--Spikelets not more than 1.5 mm broad, angled due to sharp keels of glumes ……....*F.bis-umbellate*
5.+Nut trabeculate; epidermal cells in 5-10 prominent vertical rows on either face of nut …….. *F. dichotoma*
- Nut scarly-verruculose; epidermaI cells not impressed in 10-16 verticol rows ……. ……*F. alboviridis*
6.+Inflorescence a solitary, strongly laterally compressed spicalete …….. *F. ovata*
- Inflorescence of many terete spikelete ……7
7.+ Lower glumes distichous …….. *F. tenera Var. oxylepis*
- Glumes all spiral …… 8
8.+ Spikelets subglobose, obtuse at apex. Basal leaves equitant, laterally compressed, midnerve obscure ……...*F. littoralis*
- Spikelets lenticular, subacute at apex. Basal leaves, when present, not equitent , dorsiventrally compressed. Midnerve prominent……. *F. miliacea*
F. alboviridis C. B. Clarke in FBI. **6** 638, 1893; Singh & Dixit, Indian Forester **98** 126, 1972; Kern in Fl. Males. ser. 1. **7** 580, 1974.
Tufted, fibrous-rooted sedge up to 35 cm tall. Stem compressed obtusangular , Leaves half as long as the stems; ligule a fringe of white hairs. Inflorescence up to 7 cm across, simple or compound umbel of few to many spikelets. Bracts several, the longest overtopiing the inflorescence; secondary bracts small, setaceous. Spikelets oblong ovoid, srevrsn-green, 10.0 x 2.5 mm. Glumes subcartaceous, broadly ovate 1. 7 x 1. 8 mm; keel green, 3-nerved; sides brown, nerveless. Stamen 1. Nut obate, shortly stipitate, umbonulate 1.0 x 0.8 mm.
Old World Tropics. Occasional-in paddy fields; along river beds; near ponds and ditches.
FI. & Fr.: July-August.
Achhalda, DS: 905.
F. bis-umbellata (Forssk.) Bubani, Dodecanthea 30, 1850; Kern in Fl. Males. ser. 1. **7** 579, 1974; Koyama in Rev. Handb. FI. CeyIon **5** 312, 1985. - *Scirpus bis-umbellatus* Forssk., FI.

Aegypt. - Arab. 15, 1775. - *Fimbristylis dichotoma* (non Vahl) Kunth, Enum. PI. **2** 225, 1837; FBI. **6** 6;35; FUGP. **3** 351.
Stems tufted, fibrous-rooted, up to 30 cm high. Leaves basal, falcate-linear, pubescent, half as long as the stems. Inflorescence a compound umbel, rays not exceeding 4.5 cm. Involucral bracts 2-3, unequal, leafy. Spikelets up to 10 mm long. Rachilla narrowly winged, Glunes 1.5 x 1.1 mm, keel 3-nerved; sides brownish; margins hyaline. Stamen 1. Nut obovoid, shortly stipitate, tr'abeculate , rugose, 0.70 x 0.55 mm.
Paleotropic, extended up to Temperate. Common-along river beds ;near ponds and ditches; in paddy fields and open country.
FI. & Fr.: August-April.
Auraiya, DS: 1144.
F. dichotoma (L.) Vahl, Enum. Pl. **2** 287, 1806, excl, var.: Kern in Fl. Males. ser. 1. **7** 575, 1974; Koyama in Rev. Handb. Fl. Ceylon **5** 306. 1985.-*Scirpus dichotomus* L., Sp. Pl. 50, 1753.-*Fimbristylis diphylla* Vahl, Enurn, PI. **2** 289, 1806; FBI. **6** 636, excl. var. *pluristriata* C.B. Clarke; FUGP. **3** 351.
Polymorphic, tufted sedge up to 60 cm tall. Leaves mostly shorter than stems; ligule a dense fringe of short hairs. Inflorescence a compound umbel, very short to 20 cm long, spikelets a few to numerous, sometimes reduced to a solitary spikelet. Primary rays up to 10 cm long. Spikelets ovoid, up to 10 mm long; rachilla narrowly winged. Glumes broadly ovate, obtuse, shortly mucronate, 2.2 x 1.6 min. Nut obovate 0.8 x 0.8 mm in a few specimens up to 1.1 x 0.9 mm, shortly stipitate, umbanulate.
Cosmopolitan. Frequent-along ponds, ditches and river beds; on ridges; in marshy land.
Fl. & Fr.: July-May.
Jaitpur , DS: 274, Asta, DS: 572.
F. ferruginea (L.) Vahl, Enum. PI. **2** 291, 1806; FBI. **6** 638; FUGP. **3** 354; Kern in Fl. Males. ser. 1. **7** 572, 1974; Koyama in Rev. Handb. Fl. Ceylon **5** 305, 1985. - *Scirpus ferrugineus* L., Sp. Pl. 50, 1753.
Stems rigid, striate, compressed, up to 75 cm high, arising in tuft from a short woody rhizome. Cauline leaves membranous-margined, much shorter than the stems. Umbel simple or subcompound, up to 9 cm across. Involucral bracts 2-3, the lowest suberect, up to 8 cm long. Spikelets 8 x 4 mm, ovoid, acute, rachilla narrowly winged , Glumes 3.5 x 3.2 mm, subcartaceous, ovate to oblong. obtuse; keel green, 1-nerved excurrent as short aptculaee ; sides nerveless, brown. Nut obovate, shortly stipitate, 1.6 x 1.2 mm.
Pantropical. Occasional-grassy ridges of irrigation channels; banks of pools; marshy land; open grassy localities; river beds.
Fl. & Fr.: September-December.
Etawah, DS: 1277.
F. littoralis Gaud. in Freyc, Voy. Bot. 413. 1826; Napper, Kew Bull. **25** 439, 1971; Kern in FI. Males. ser 1.**7** 551, 1974.-*Fimbristylis miliacea* Vahl, Enum. PI. **2** 287, 1806, excl. basion. FBI. **6** 644; FUGP. **3** 356; Kern in Fl. Java **3** 463, 1968: Koyama in Rev. Handb. FI. Ceylon **5** 236, 1985.
Stems tufted, angular or winged, up to 1 m tall. at base covered with shortly laminate laterally compressed sheath. Inflorescence conpound or decompound, rays unequal, up to 10 cm long; ultimate branches with 2 slender-stalked spikelets on either side of a sessile one. Involucral bracts 2-3, much shorter than inflorescence. Spikelets 3.5 x 1.8 mm. Glumes 1.1 x 0.7 mm, membranous, ovate, obtuse muticous, scarcely keeled, margins hyaline. Nut obovoid, umbanulate, verruculose, 0.5 x 0.4 mm.
Pantropic. Frequent-in paddy fields, shallow ponds, ditches.
F. & Fr.: September-October.
Etawah, DS: 939.

F. miliacea (L.) Vahl, Enum. PI. **2** 287, 1806, quad. baston .; Kern in Fl. Males. ser. 1. **7** 552, 1974. -*Scirpus mlliaceus* L., Syst. Nat. ed. 10. 868, 1759.-*Fimbristylis quinquangularis* Kunth, Enum. PI. **2** 229, 1837: FBI. **6** 644: FUGP. **3** 356: Koyama in Rev. Handb. FI. Ceylon **5** 295, 1985.

Stems densely tufted, acutely 4-5-angle.j, striate, up to 40 cm high. Umbels simple 0: compound, up to 10 cm long. Involucral bracts much shorter than inflorescence. Spikelets in forks of branches, sessile, other spikelets with capillary stalks, 4.5 x 1.5 mm. Glumes ovate, obtuse, apiculate, 1.4 x 1.2 mm, one brown streak prominent on either side of the 3-neved centre. Stamens solitary. Nut subglobose 0.6 x 0.4 mm, verruculose.

Tropics of Old World. Common – near ponds, ditches or pools; in paddy fields, wet places in gardens; along river beds.

Fl. & Fr.: July – December.

Jaitpur, DS: 263.

F. ovata (Burm. f.) Kern, Blumea **15** 126, 1967 & in Fl. Males ser. 1. **7** 565, 1974; Koyama in Rev. Handb. Fl. Ceylon **5** 273, 1985.-*Carex ovata* Burm. f., Fl. Indica 194, 1768.- *Fimbristylis monostachya* (L.) Hassk., Pl. Jav Rar. 61, 1848; FBI. **6** 649; FUGP. **3** 355.

Caespitose sedge up to 25 cm high; stems densely tufted, compressed-3-gonous, arising from a very shorter than stems. Spikelet 1.0 x 0.5 cm, ovate, acute. Bracts 1 leafy, and a few glumaceous, with cusp longer than glumes. Glumes 5 x 5 mm, broadly ovate, sharply mucronulate. Nut 2.2 x 1.4 mm, spherical, lonstipitate, umbanulate, white-verruculose.

Pantropic. Frequent- along ponds, ditches, river beds and other moist-grassy situations.

Fl. & Fr.: July – October.

Jaitpur, DS: 269.

F. schoenoides (Retz.) Vahl, Enum. Pl. **2** 286, 1806; FBI. **6** 634; FUGP. **3** 350; Kern in FI. Males, ser. 1. **7** 573, 1974; Koyama in Rev. Handb. Fl. Ceylon **5** 315, 1985. - *Scirpus schoenoides* Retz., Obs. Bot. **5** 14, 1789.

Stems tufted, slender, up to 35 cm high. Leaves filiform, shorter than stems; ligule a dense fringe of short hairs. Spikelets whitish ferrugineous, globose-ovoid or oblong-ovoid, up to 8 mm long. Glumes 3.5 x 3.6 mm, subcartaceous, broadly ovate, scarcely keeled, nerved throughout. Stamens 3. Nut 1. 7 x 1.6 mm, obovate, umbonulate, distinctly stipitate.

Pantropic and into Subtropics. Occasional-along moist-grassy or marshy banks of ponds, pools and irrigation channels; in paddy field.

FI. & Fr.: August-October.

Etawah, DS: 1280.

F. tenera var. oxylepis (Steud.) C.B. Clarke in FBI. **6** 642; FUGP. **3** 355, in obs. - *Fimbristylis oxylepis* Steud., Syn. PI. Glum. **2** 110, 1855.

Stems tufted, slender, up to 25 cm high, 4-5-angled. Leaves shorter than stems. Inflorescence 1-2 anthelate, rays up to 3 cm long. Involucral bracts much shorter than the inflorescence. Spikelets lanceolate 1. 0 x 2.5 mm, in external appearance much like those of *Bulbostylis barbata* (Rottb.) C.B. Clarke. Glumes 1.7 x 1.6 mm, ovate, acute, shortly apiculate; keel sharp, green, scabrid. Nut 0.7 x 0.55 mm, obovate, turgid, shortly stipitate, obscurely apiculate, densely verruculose, yellow-brown to dark brown.

India, Ceylon. Occasional-in sandy soil along roads of railway tracks.

FI. & Fr. : August - December.

Etawah, DS : 1282.

Scirpus

L., Sp. PI. 47, 1753. Lectotype : *S. sylvaticus* L.

1.+ Inflorescence with all or majority of spikelets in rayed clusteres (often a few or ell spikelets in sessile clusters in *S. maritimus*). Hypogynous bristles present ……2

-Inflorescence sessile (a few spikelets stalked in *S. lateriflorus*) Hypogynous bristles absent.....3
2.+ Inflorescence terminal. Involucral bracts foliaceous ……*S. maritimus*
- Inflorescence seemingly lateral due to a large terminal bract, looking like continuation of stem.....*S. litoralis*
3.+Inflorescence a terminal head of spikelets. Bracts leafy ……...*S. microcephalus*
- Inflorescence seemingly lateral due to a large terminal bract, looking like continuation of stem.....4
4.+ Spikelets strongly squarrose by long recurved mucros of the glumes , Glumes up to 0.70 mm long. Nut up to 0.45 mm long……*S. sauarrosus*
- Spikelets terete, glumes acute or shortly mucronate, above 2 mm long. Nut above 1 mm long.....5
5.+Stems terete or slightly compressed. Glumes multistriate, 3.5 mm long.....*S. roylei*
- Stems obtusely 3-quetrous. Glumes smooth, up to 2.5 mm long……*S. lateriflorus*

S. lateriflorus Gmelin, Syst. Nat. **1** 127, 1791; Kern in Fl. Males.ser. 1. **7** 514, 1974.-*Scirpus supinus var. uninodis* C.B. Clarke in FBI. **6** 656, quad spec. cit, non *Isolepis uniloidis* Delile. - *Schoenoplectus supinus* (L.) Palla, Sitz ber Zool. - Bot. Ges. Wien. **38** 49, 188; Koyama in Rev. Handb. Fl Ceylon **5** 158, 1985.

Polymorphic, tufted, fibrous-rooted sedge up to 50 cm tall. Sheath membranous, glabrous, punctate, often with a short leaf blade. Spikelets 4-12 together, 6.5 x 2.5 mm, oblong-ovoid, subacute, plae- brown or green, rays up to 3 cm long. Involucral bracts 2, lower up to 15 cm and upper up to 4 cm long. Glumes 2.5 x 2.0 mm, ovate, uniformly keeled, sharply mucronate; sides nerveless. Stamens 3, connective produced; papillose and bristly at top. Nut 1.3 x 1.1 mm, unequally 3-sided, obovate, shortly apiculate, conspicuously transversely wavy-ridged, black; style cleft into 3-stigmas.

Paleotropic. Common-in paddy fields, ponds, ditches or marshy lands.

Fl. & Fr.: October-March.

Etawah, DS: 1283.

S. litoralis Schrader, Fl. Germ. 142, 1806; FBI. **6** 659; FUGP. **3** 362; Kern in Fl, Males. ser. 1. **7** 510, 1974. - *Schoenoplectus littoralis* (Schrad.) Palla, Sitzber. Zool.-Bot. Ges. Wien. **38** 49, 188; Koyama in Rev. Handb. Fl. Ceylon **5** 157, 1985.

Robust rhizomatous, sometimes also stoloniferous sedge up to 2 m tall. Culms terete below and 3-gonous above. Leaves submerged, deciduous. Umbel paniculate, up to 6 cm across; spikelets solitary on slender stalks, sometimes seemingly clustered in yound specimens, reddish brown , 8 x 4 mm, oblong-ovoid. Glumes elliptic to oblong, midnerve rigid, excurrent as a short thick apicule from in between apical notch; sides nerveless. Stamens 3. Nut c. dorsiventrally compressed, elliptic-ovate, apiculate 2 x 1.2 mm. Style cleft into 2 stigmas.

Paleotropic. Rare-in shallow water of rivers.

FI.: September-April. (mature nuts not seen).

Asta, DS: 586.

S. maritimus L., Sp. PI. 51, 1753, incl. var. *affinis* C.B. Clarke; FBI. **6**: 658; FUGP. **3**: 363; Kern in FI. Males. ser. 1. **7** : 499, 1974.

A polymorphic sedge up to 80 cm high; rhizome creeping, tuberiferous; stems 3-quetrous, approximate. Leaves cauline, tips 3- quetrous; upper overtopping stems. Inflorescence highly variable from a single spikelet to all possible combinations of sessile and stalked spikelets, in simple or compound umbels; rays when present, up to 8 cm. Involucral bracts overtopping the inflorescence, one often erect. Spikelets 1.5 x 0.9 cm, ovoid to oblong-ovoid, terete. Glumes 8

x 5 mm, ovate or elliptic, not kealed, midrib ecurrent as a short a wan from inside the apical notch of the glume; sides hyaline, yellowish and spotted with purple. Nut 2.5 x 1.5 mm, biconvex, obovate, shortly apiculate.
Tropics and Temperates of the whole world. Common-along river beds, nullahs; in paddy fields; ponds and ditches.
FI. & Fr.: October-March.
Auraiya, DS: 528.
S. microcephalus (Steud.) Dandy in F. W. Andrews, Fl. Sudan **3** 366, 1956.-*Kyllinga microcephala* Steud., Flora **25** 597,1842.-*Scirpus kyllingioides* (A. Rich.) Boeck., Linnaea **36** 733, 1870; FBI. **6** 622; FUGP. **3** 361.
Slender sedge with swollen base; stems up to 15 cm tall, solitary or a few together. Leaves shorter than stems. Head up to 8 mm across, broadly ovate. Involucral bracts 1-3, up to 7 cm long. Spikelets up to 15, closely packed, ovoid-lanceolate 3.5 x 0.8 mm. Glumes 1.6 x 0.5 mm, ovate-lanceolate, subacute; keel sharp. many nerved. Stamens 2- 0.5 mm. Nut 0.6 x 0.3 m m, obovoid-oblong, shortly apiculate. Style cleft into 3-stigmas.
India, Tropical Africa. Rare-in grassy banks of pools.
Fl. & Fr.: September-November.
Asta, DS: 571.
S. roylei (Nees) Parker in FUGP. **3** 361. 1929; Mahesh., Sci. & Cult. **31** 195, 1965; Hepper in Fl. W. Trop. Africa (Rev. ed.) **3** 310, 1972. - *Isolepis roylei* Nees in Wight, Contr. Bot. India 107,1834.- *Scirpus quinquefarious* F. Ham. ex. Boeck., Linnaea **36** 701, 1870; FBI. **6** 657.
Tufted fibrous rooted sedge up to 50 cm tall. CuIms terete, slender. Head up to 2.5 cm across. Spikelets 1.9, 1.5 x 0.8 cm. oblong or ovoid, golden-yellow. Glumes 3.5 x 1.0 m.n, ovate, keeled, striate on sides, very shortly mucronate. Nut 1.4 x 0.8 mm, sharply 3-angled, sulcate and deeply-transversely ridged, shortly apiculate, yellow-brown to black. Style cleft into 3 stigmas.
India, Africa. Occasional-in low-land fields; along banks of pools and ponds.
Fl. & Fr.: September-December.
Etawah, DS: 1075.
S. squarrosus L., mant. Alt. 181, 1771; FBI. **6**: 663; FUGP. **3**: 361; Kern in Fl. Males, ser. 1. **7**: 516, 1974. - *Rikliela squarrosa* (L.) Raynal , Adansonia **13**: 154, 1973; Koyama in Rev. Handb. FI. Ceylon **5**: 254, 1985.
Very slender tufted sedge up to 15 cm tall. Leaves 1-2, filiform, with inflated sheath. Spikelets 1-4, clustered in a pseudolateral head. Involucral bracts 1-3, the lowest erect, largest and culm like, Spikelets 4.5 x 3.5 mm, ovoid-globose. Glumes 0.70 x 0.45 mm, obovate. Style cleft to base into 3 stigmas.
South Asia, rare in Malaysia. Occasional-in paddy fields; irrigation channels, marshy land.
Fl. & Fr.: July-February.
Etawah, DS: 1281.

Conclusion

The 3 dominant genus (sedges) of family Cyperaceae of the districts are *Cyperus*: 18 species, *Fimbristylis*: 9 species and *Scirpus*: 6 species .

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