A KEY TO THE IDENTIFICATION OF THE CYPERACEAE OF GUJARAT

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ABSTRACT

In order to facilitate identification, a key based on field and herbarium studies, is presented in this paper. Much importance, no doubt, has been given to the inflorescence character but other characters such as those of nut, stigma etc. have not been lost sight of. The key leads directly to the identification of the plant itself, which is a definite departure from the routine keys to genera and species.

The family Cyperaceae, because of the difficulty in identifying its members, has been utterly neglected. The author has completed the work on the sedge flora of Gujarat, based on available data and the data gathered by him during the course of various excursions to places in north, central and south Gujarat.

In order to facilitate identification, the authors present here a key based on field and herbarium studies. The clavises have been framed as practically as possible after fully taking into consideration Clarke’s (1886) remarks: “While the inflorescence is thus flexible in character, it must remain a chief character in all species; but exactly the same kind of inflorescence meets us in various (and remote) sections of the genus, so that reliance on external general characters of the inflorescence without also examination of the nut and stigmas, had led Botanists into numerous errors for the last century.”

Much importance, no doubt, has been given to the inflorescence characters (as it was inevitable) in the present key, but the other characters such as those of nut, stigma etc. have not been lost sight of.

The key leads directly to the identification of plant itself, which is a definite departure from the routine keys to genera and species.

Figures 1-14 explain some of the morphological terms used in this key.

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LITERATURE CITED


1. Inflorescence terminal,
2. A solitary spikelet (see also C. silvicolaides)
3. Hypogynous bristles absent.
4. Lower glumes of the spikelet distichous or nearly so .......... Fimbristylis monstachyae Hask.
5. Glumes not distichous, 
7. Nut obvoid with obcordate apex, minutely tuberculate .... Fimbristylis polytrichoides Vahl

3. Hypogynous bristles present,
6. Plants as the last one, bristles brown .......... Eleocharis capitate R. Br.

2. Spikelets in a sessile head or cluster,
7. Glumes of the spikelet spirally arranged,
8. Hypogynous bristles present .......... Scirpus maritimus Linn. Var. affinis C. R. Clarke
8. Hypogynous bristles 0,
9. Style bifid ................. Fimbristylis argentea Vahl
9. Style trifid,
10. Apical tumour on the nut present .......... Bulbusyllis karkata Kuntz
11. Heads white,
12. Spikelets in angular or lobed heads .......... Cyperus tricuspis (Rottb.) Endl.
13. Spikelets in glosse heads,
11. Heads otherwise. rhizomes creening. rootlets thick.
15. Rootlets not woolly .......... Cyperus arnariatus Retz.

(Inflorescence sometimes umbellate)

2. Spikelets in umbels,
16. Umbels usually simple,
17. Glumes of the spikelet spirally arranged,
18. Style bifid,
19. Spikelets 1-3, rarely up to 5, ovate, pale, glistening ...... Fimbristylis schoenoides Vahl
19. Spikelets more than 5,
20. Glumes mucronulate, glabrous; nut pale, trabeculate and ribbed ...... Fimbristylis diphylla Var. annua (Inflorescence sometimes varying.)
20. Glumes pubescent in the upper half; nut pale, smooth ...... Fimbristylis ferruginea Vahl
18. Style trifid,
21. Bristles absent; nut round, trigonus, irregularly tuberculate ........ Fimbristylis tetra R. et S.
21. Bristles retrorsely scabrid; nut smooth, black .............. Scirpus maritimus Linn.
17. Glumes of the spikelet distichously arranged,
22. Spikelet 1-flowered .......... Cyperus banicus (Rottb.) Boeck.
22. Spikelet more than 1-flowered,
23. Style bifid,
24. Stems strong and erect,
25. Spikelets few, short and reddish ........... Cyperus sanguineolentus Vahl
25. Spikelets many, pale brown, roots strongly aromatic ........ Cyperus polystachyus Rottb.
24. Stems slender,
26. Spikelets about 7-flowered; nut brown ........... Cyperus hyalinus Vahl
26. Spikelets many-flowered, parallel sided,
27. Stamen usually 1, glumes bifid with the keel cuspidately produced at the apex ........ Cyperus fumilus Linn. (Spikelets sometimes in heads)
27. Stamen 2, glumes obuse, keel greenish-yellow with brownish-red veins ............... Cyperus globosus All.
23. Style trifid,
28. Spikelets in globose heads on the rays of an umbel; glumes obtuse .......... Cyperus diformis Linn.
28. Spikelets spicate on the umbel rays,
29. Small or medium annuals,
30. Spikelets golden yellow; glumes with spurrowly recurved arista ........ Cyperus aristatus Rottb.
30. Spikelets green, compressed but with a medium ridge on each side ........ Cyperus compressus Linn.
29. Perennials,
31. Stolons 0; rhizome short and woody; glumes scarcely imbricate in fruit ........ Cyperus marea C. B. Clarke.
31. Stolons slender, soon disappearing, terminating in tunicated bulbils ...... Cyperus bulbosus Vahl
1. Inflorescence lateral, ... *Cyperus rotundus* Linn.
31. Stolons slender; glumes closely imbricate ............ *Cyperus rotundus* Linn.
31. Stolons slender, elongate; glumes not closely imbricate....... *Cyperus rotundus* Linn. sub sp. *atuberosus* (Rottb.) Kulkenthal
32. Glumes long, smooth; glumes plicate-ribbed; spikelets usually shorter and broader than those of *C. rotundus* ......... *Cyperus esculentus* Linn.

16. Umbels usually compound,
32. Stigmas 2,
33. Plants tall and robust; glumes distichous .......... *Cyperus alopecurosus* Rottb. (rarely stigmas 3)
39. Plants short, not at all robust; glumes spirally arranged.
44.46.52.
34. Nut dark, smooth or slightly rough ............ *Fimbristylis spathacea* Rottb.
35. Nut ribbed and trabeculate ............ *Fimbristylis dichotoma* Vahl

32. Stigmas 3,
35. Plants not robust,
36. Glumes distichously arranged,
37. Spikelets yellowish brown in globose heads; glumes with a continuous glistening wing at the back .......... *Cyperus esculentus* Linn.
38. Spikelets greenish yellow not in head ......... *Fimbristylis cordata* Kunth.
46. Glumes spirally arranged,
39. Nut obovoid, smooth ............ *Fimbristylis junciformis* Vahl
38. Nut faintly ribbed and trabeculate ............ *Fimbristylis woodrowii* C. B. Clarke.

55. Plants robust, 2-6 ft. high,
39. Secondary rays of the umbels terminated by spikes or corymb of less than 10 spikelets,
40. Glumes close; stems more or less articulate when dry, stolons long ............ *Cyperus esculentus* Rottb.
41. Glumes remote, scarcely imbricating in fruit; stolons 0 .......... *Cyperus rigidus* Roxb.

16. Umbels usually decompound,
43. Hypogynous bristles absent,
44. Glumes distichous, obtuse, golden yellow ............ *Cyperus eria* Linn. (in Var. *pacificus*, the spikes are drawn out into almost linear racemes.)
45. Glumes spirally arranged,
49. Stems triquetrous above; spikelets sub-globose ............ *Fimbristylis mililacea* Vahl
46. Stems 4-5 angled, spikelets longer and more acute than the last one ............ *Fimbristylis quinquangularis* Kunth.
50. Stems flattened above; spikelets longer than both the above ones ............ *Fimbristylis complanata* Linn.

1. Inflorescence lateral,
46. Spikelets in sessile heads,
47. Heads near the base of the stem; bristles 0 ............ *Scirpus articulatus* Linn.
48. Bristles present ............ *Scirpus muricronesus* Linn.
49. Bristles absent,
50. Glumes spirally arranged; nut triquetrous,
51. Spikelets green; glumes not loose ............ *Scirpus supinus* Linn.
49. Glumes distichously arranged, not dorsally compressed ............ *Cyperus laxiglatus* Linn.

46. Spikelets on the rays of an umbel,
51. Spikelets in pedunculate clusters; bristles 0 ............ *Scirpus esculentus* Heyne.
52. Spikelets on drooping rays of an umbel; bristles plumose with moniliform hairs .......... *Scirpus litonalis* Schrad.

1. Inflorescence terminal and/or axillary,
52. Plants leafy throughout their length,
53. Spikelets many-flowered in dense clusters; petals (hypogynous bristles) quadrate and clawed .......... *Fimbristylis scirpea* (Linn.) Roxb.
54. Spikelets in pedicelled spikes,
55. Nuts cancellately tessellate with square depressions; puberulous with reddish hairs .......... *Scleria tessellata* Willd.
54. Nuts shallowly coriaceous, shining white with subumbonate apex .......... *Scleria stockiana* Baccell.