

THE CYPERACEAE OF KASHMIR—A CHECK LIST

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Bulbostylis barbata (Rottb.) Clarke in FBI 6:651. 1893. *Scirpus barbatus* Rottb. Descr. Pl. Rar. Progr. 27:1772.

Jumu (RRS 10703, 12498); Kishtwar (Clarke 24237), 1-4000'.

B. densa (Wall.) Hand. Mazz. in Karst. & Schenk. Veget. 20, Reihe, Heft 7, p. 16 in obs. 1930. *Scirpus densa* Wall. in Roxb. Fl. Ind. 231. 1820. *B. capillaris* L. var. *irifida* Clarke, l.c. 652.

Jumu-Kashmir Rd. (RRS); Tangmarg, below Gulmarg (RRS 10591), 1-7000'.

Carex acutiformis Ehrh. Beitr. 4:43. 1789; FBI 6:740. 1894. *C. paludosa* Good. in T.L.S. 2:202. 1794.

Gilgit (Tanner); Kashmir: Ganderbal (T.T.); Krahom (Osm. 10 S), 5-7000'.

C. alpina Sw. sp. aggr. in Liljeblad Svensk Fl. ed. 2, 26. 1798.

According to Marcel Raymond there are about twenty species included in this species aggregate. The Himalayan forms have been variously treated as sub-species, varieties or forms. I am following Raymond in treating "var. *erostrata*" as a species i.e. *C. pseudobicolor* Boeck. Those from our area with a beak I am calling *C. infusca* Nees.

C. alsa Raymond, Symb. Afghan. 6:23. 1965.

Chitral: bet. Turikho & Mastuj Rivers at 13000' (Sta. 2839, Type). May turn up in Gilgit.

C. atrofurfur T. Koyama, Acta Phytotax-Geobot. 16: 166. 1956.

Olthali Chish, Karakorum Mts., 2400 m (Nakao, Kyoto).

C. atrofusca Schkuhr var. *angustifructus* Kük. Pflanzenr. Heft 38:554. 1909. *C. ustulata* Clarke non Wahl.; *C. angustifructus* (Kük.) Nelmès.

Kagan Vy. (Du. 23267, 22643, as *C. cruenta*); Kashmir: Sonamarg (RRS 98506; T.T.); Deosai (Osm. 6 S); Nubra, Ladak & Rupshu (T.T.). Close to *C. nivalis* and should be rechecked.

C. borii Nelmès in Kew Bull. 1946: 18, in clavi & in adnot.

Balti.: Thalle La (RRS 20631 p.p. Kew); Central Karakorum: Laskam, Gense, Baintha (H.H.); Lahul (Bor, Type, Kew), 14-16500'.

C. borii forma *lutea* R. R. Stewart nom. nov.

A *C. borii* typica spiculis luteis non nigricantibus differt. Balti.: Thalle La (RRS 20761, 20765-a, 20631 p.p. Kew); Burji La, Deosai side (RRS 20160).

C. brunnea Thunb. Fl. Jap. 38.1784; FBI 6:705.

Murree Hills, Poonch, Jhelum Valley Rd. at Chenari (RRS 12451); Gulmarg (RRS 8711), Sonamarg (RRS 9769b), 3-9000'.

C. cardiolepis Nees in Wight, Contrib. Bot. Ind. 127.1834; FBI 6:744.

Murree Hills, common; Poonch: Alibad (Cl. 28919, 28593), Taulipir (RRS 25630); Kashmir proper: to Banihal (T.T.), Sonamarg (RRS 7182); Falc. 1163 sine loc., 7-11000'.

C. cernua Boott, Illustr. 4:171, t. 578. 1867; FBI 6:708.

Srinagar (Gammie 10791); Tangmarg (RRS 12222), 5-7000'.

C. cruenta Nees in Wight, l.c. 128; FBI 6:734 (incl. var. *aristigluma* Kük) *C. ferruginea* C. B. Clarke, FBI 6:738 non Scop.

Gilgit (Giles); Astor: Kalapani (Giles 121); Das Kirim (RRS 22188); Deosai (RRS 22188); Balti., Dras, Zaskar; Kashmir: very common, Kishen. Vy. (Winter. 601), Baltal (Du. 11622); Lidder Vy. (Drum. 14157), Khillanmarg (RRS 8594a), Rembi-ana Vy. (Cl. 27350), Kishtwar (T.T.), Gumbar, in Zoji Pass, (Jacq. 988), 8-14000' on high passes and alpine meadows.

C. curta Good. in T.L.S. 2: 145. 1794. *C. canescens* auct. non L. incl. Clarke, FBI 6:706.

Astor (RRS 18751), Rama above Astor (RRS 22896), Deosai (RRS 20066); Pahlgam (Cl. 31072A); Burzil Pass (Cl. 29630 A), Yamhar Pass (RRS 12462 A), Kamri Pass (RRS 22703), 6-12000'. Often forms hassocks.

C. curta var. *maxima* (Kük.) l.c. p. 218 nom. nov. Kashmir (Clarke 29630, Type).

C. diandra Schrank, in Acta Acad. Mogunt. 49, 1782. *C. teretiuscula* Good., T.L.S. 2: 163, 1794; FBI 6:704.

Kashmir: Nil Nag (RRS 23076); Sind Vy. (T.T.), 6-7000'.

Carex diluta M. Bieb., Fl. Taur.-Cauc. 2:388. 1808 & 3:614. 1814; FBI 6:737. *C. aitchisoni* Boeck. in Flora 456. 1880; *C. fissirostris* Boiss. non Ball.

Gilgit Agency: Chalt (RRS 26937); Balti.: Shigar: (Cl. 29666 A, 30078), Skardo (W. & N. 6586), Hushe Vy. (W. & N.), Braldo (H.H.); Skardo-Dras (Cl. 30511 A), 7500-9000'.

C. divisa Huds. Fl. Angl. 348. 1762; FBI: 6:701. 1894. *C. vulpinaris* Clarke non Nees FBI 6:702.

Gilgit (Giles), Dras (RRS); Baramulla (Jacq. 338), 5-11000'. Kitamura states that our form is var. *coarcta* (Boott), T. Koyama. See Fl. Afghan. 49. 1960. This is next to *C. vulpinaris* Nees and is close to it, and may be mixed with it.

C. duthiei Clarke, FBI 6:731. *C. atrata* L. ssp. *pul-lata* (Boott) Kük. l.c. 400. 1909.

Khillanmarg (RRS 85952), c. 10000'.

C. echinata Murr. var. *leersii*

See *C. polyphylla*

C. erostrata Boott

See *C. pseudobicolor*

C. fedia Nees in Wight l.c. 129. 1834. *C. walli-chiana* Prescott non Spreng.; FBI. 6:747.

Wular Lake (Winter. 478), Nowshera-Baramulla (Jacq. 333), 1-5200'.

C. filicina Nees in Wight, l.c. 123 var. *meiogyna* Nees Strachey, Cat. Pl. Kumaon 73, 1954; FBI 6:718.

Murree Hills (RRS); Jhelum Vy. Rd. c. 3000' (RRS 141222), Poonch (RRS), 3-7000' eastward to Kumaon.

C. foliosa D. Don in T.L.S. 14:327. 1825. *C. muricata* L. var. *foliosa* (D. Don) Clarke in FBI 6:703.

Murree Hills; Trarkhel, Poonch (RRS 25626); Kashmir (T.T.), Thajwas (Rao), 4-9000'.

C. gilesii Nelmes in Kew Bull. 1939. 306.

Tui Pass, Gilgit (Giles 475, Type); Naltar Vy. & Lakes (RRS 26935, 26928).

C. haematostoma Nees in Wight, l.c. 125; FBI 6:744. 1894.

Murree (RRS 1644); Poonch (RRS 23859, Young); Baltal (T.T.) Lidder Vy. (Du. 13359), Harnag (RRS 9385), Muz. Dt. (Du. 22649a), Apharwat (RRS 10457), 7-14000'.

C. haematostoma var. *submacrogya* Kük. l.c. 561. 1909. *C. macrogya* Boott non Turcz.

Nubra 15-17000' (T.T.); Satpura La, Balti. (RRS 20181) det Nelmes, 14-17000'.

C. hypsobates Nelmes, Kew Bull. 1940, 272. *C. ustulata* sensu Clarke, FBI 6:734.

Nubra and ascent Lanak La, Tibetan border of Ladak (T.T., 28-8-1848) Type.

C. inanis Kunth, Enum. Pl. 2:522. 1837; FBI 6:743. *C. setigera* var. *humilis* Nees in Wight l.c. 126.

Pooshana, Poonch (Winter. 88), Rattanpir (Cl. 28369); T.T. & Du. 23276 cited by Kük. p. 420.

C. inflata Huds. Fl. Angl. 354. 1762. Apparently under *C. vesicaria* sensu Clarke, FBI 6:740.

Margan Pass, (Atkinson 24169), 11500'. (In India this sp. has been confused with *C. pamirensis* syn. *C. obscuriceps* var. *pamirica*).

C. infusata Nees in Wight, Contrib. Bot. Ind. 125. 1834 p.p. excl. b. *C. alpina* Sw. var. *infusata* Boott & ssp. *infusata* Kük. and including var. *gracilenta* (Boott ex Clarke, FBI 6:730).

Shankargarh, Astor (RRS 18756), Naltar Vy., Gilgit (RRS 26926); Burzil Chowki (RRS 19784), Pahlgam (RRS 21745), Kunzalwan (Cl. 29352), Koragbal (RRS 17943), common, 8-15000'.

C. karoi Freyn. in Oesterr. Bot. Zeitschr. 40:303. 1890; Raymond in Symb. Afghan. 6:27. 1965. *C. capillaris* forma 2, major in Kük. l.c. 590.

Naltar Lakes, Gilgit (RRS 26927); Suru, Zaskar (Meebold 4631) cited.

C. kashmirensis Clarke, FBI 6:743.

Bungas, Muz. Dt. (Inay. 22648), Tragbol (Cl. 29223, Type), Gurais (Cl. 29281), Sonamarg (RRS 7177); Tolian, Lidder Vy. (Inay. 25571), Pir Panjal (Jacq. 559), Kishtwar (T.T.) etc., 8-15000'.

C. lateralis Kük. l.c. 1909.

Poonch, near Taulipir, c. 6000' (RRS 25803, Kew) Ext. of range.

C. lehmanni Drejer, Symb. caric. 13, pl. 2. 1844; FBI 6:730.

Sarsangar, Upper Kishen. Vy., 11-13500' (Inay. 23268).

C. ligulata Nees in Wight, l.c. 127; FBI 6:747. *C. hebecarpa* C. A. Mey. var. *ligulata* (Nees) Kük.; FBI 6:747.

Kashmir: (Falc. 1164; Royle 115), 5-7000' cited by Kük.

C. linearis Boott

See *Kobresia nepalensis*

C. lineariterminaris T. Koyama, Acta Phytotax. Geobot. 17:99. 1958.

Nazar Pass, Gilgit at 4300 m (Honda 249).

C. longicruris Nees in Wight l.c. 124; FBI 6:705.

Kishtwar at 4000' (Cl. 31434); (Royle 93) both cited by Kük.

Carex longicuspis Boeck. Cyper. 49. 1888; FBI 6:748.
Tsogoshong above Barolbrok, Baltistan (Schlag. 6088, Type and only collection).

C. luteo-brunnea (Kük.) Nelmes

See *C. nivalis* forma

C. maritima Gunner, Flor. Norv. 2:131. 1772. *C. incurva* Lightf., Fl. scot. 2:544 t.34, left fig. 1777; FBI 6:700.

Karak. Mts., Parang Vy. (T.T.) Shaksgam (Cliff. 11); (Clarke & Stolicka, cited by Kük.); Nubra (T.T.); Balti.: Thalle La (RRS 20749), Burji La (RRS 20013); Zaskar (T.T.); S. E. Salt Lake, Rupshu (T.T.); Burzil Pass (RRS 19025), 11-17000'.

C. melanantha C. A. Mey. in Ledeb. Fl. Alt. 4:216. 1833; FBI 6:733.

Jutial Nullah, Gilgit (RRS 29623); Skoro La, Balti. (Nakao); Deosai (Kz. 9483, RRS 19106); Das Kirim, Astor (RRS); Dras (Gammie); Debring Rupshu (Kz. 6555); Kangi La, Zaskar (Kz. 2839-b); Sonsal Nullah, Lidder Vy. (Du. 13360), Burzil Pass (RRS 19033), Tilel (Cl. 30653 A), 11-17000'.

C. melanantha f. *gracilescens* Kük. l.c. 391.

Kashmir (Levinge & Duthie 11095, 20270) cited by Kük.

C. microglochin Wahl. in Vet. Akad. Handl. Stockh. 24:140. 1803; FBI 6:711.

Naltar Lakes, Gilgit (RRS 26921); Deosai (Cl. 29826 A); Balti.: Rongdo (Winter. 806; Karpuchu Vy. nr. Dras (Du. 11973); Ladak (T.T.); Hanle, Rupshu (Kz. 2312); Kargiag, Zaskar (Kz. 5496; Tilel (Cl. 30653a); Burzil Chowki (RRS 19775 A), 11-17000'. In turf on wet meadows.

C. moorcroftii Falc. ex Boott in T.L.S. 20: 140, 1851; FBI 6:733. *C. melanantha* var. *moorcroftii* (Falc.) Kük. l.c. 391.

Hunza (H.H.); Karak. Glaciers (Conway); Balti.: Shingo-Shigar (Osm. 75), Braldo & Biafo Gl. (H.H.); Nubra (T.T.); Lanak Pass (T.T.); Rupshu (T.T., Kz. 2246, 2388, RRS); below Pensi La, Zaskar (Kz. 2937). Usually more xerophytic than *C. melanantha* and there may be hybrids. An important fodder on the high arid plains 12-17000'.

C. muricata sensu Clarke

See *C. polyphylla*

C. myosurus Nees var. *eminens* (Nees) Clarke, FBI 6:723.

Basaohli, Eastern Kashmir, 3000' (Cl. 31628 C) eastwards, 2500-7500'.

C. nigerrima Nelmes, Kew Bull. 1939, 200. *C. atrata* Clarke non L.; FBI 6:731; *C. atrata* ssp. *caucasica* Stev. in Kük. l.c. 400.

Burzil Pass (Cl. 29722, Type), Rajdani Pass (RRS 9205), Tragbol (RRS 4920), above Tragbol (Kz. 9205), Pahlgam (Col. Ward), Khillanmarg (RRS 8595a, det. Nelmes), 9-15000'.

C. nivalis Boott, T.L.S. 20:136. 1846; FBI 6:732.

Like the *C. alpina* complex in the Himalayas the *C. nivalis* complex is a very difficult one and the authorities still do not agree on the best way to handle it. The group should be studied cytologically to help disentangle the threads. Some make the taxa involved species; some make them varieties and others mere forms. In the summer of 1964 Miss Sheila Hooper went over the rich material at Kew with me and she made the following key for the *C. gilesii-griffithii-nivalis* aggregate.

Terminal spike usually entirely male; utricle distinctly but shortly beaked *C. gilesii*

Terminal spike female below, male above; beak from almost nil to distinct 2

Glumes and utricles black 3

Glumes and utricles cinnamon brown *C. nivalis* f. *cinnamomea* including *C. olivieri* Boeck.

Glumes and utricles golden, *C. nivalis* f. *luteo-brunnea*

Glumes with a conspicuous green arista which often exceeds the utricle *C. nivalis* var. or f. *griffithii*

Glumes with a short mucro; beak of utricle short *C. nivalis* var. *nivalis*

C. nivalis Boott var. *nivalis* in T.L.S. 20: 136, 1846; FBI 6:732.

Deosai (Osm. 6 S); Cent. Karak. Mts., Baltoro, Biafo & Saltoro Gl. (H.H.); Jutial Nala, Gilgit (RRS 26924); Nubra & Ladak (T.T.); Sonamarg (RRS 9850, 9905), Tulian, Lidder Vy. (RRS 8152), Burzil Vy. (RRS 22067), Kamri Vy. (RRS 18861), Gulmarg (Aitch. 114), 11-17000'. Common.

C. nivalis forma *cinnamomea* (Boott) Kük. l.c. 553. *C. olivieri* Boeck.

Karak. Mts. (Cl. 30254); Kashmir (Cl. 29921, cited); Tibet (Schlag. 5682 & T.T.). Thomson's plant was probably from Ladak or Rupshu.

C. nivalis forma *griffithii* (Boott) Kük. l.c. 553. 1909. *C. griffithii* Boott, also Raymond Symb. Afghan 6: 26.

Gilgit (Giles) also Chitral & Swat.

C. nivalis f. *luteo-brunnea* Kük. l.c. 553. *C. luteo-brunnea* (Kük.) Nelmes, Kew Bull. 1939, 308. *C. lepus-aetatis* Koyama acta Phytotax. Geobot. 16: 167, 1956.

Karak. Mts. (Cl. 30448, Type); Naltar Vy., Gilgit (RRS 26930); Satpura Vy. (RRS 20299), Nanga Parbat (Troll), Mune, Zaskar (Kz. 5739), Mt. Kola-hoi (RRS 9421), 12-14000'.

Carex nubigena D. Don, T.L.S. 14:326. 1825; FBI 6: 702.

Uri, Jhelum Vy. (RRS), Poonch: Kuthnar (RRS 23889), Trarkhel (RRS 25622), Pahlgam (RRS 9292), Rajaori (Jacq.), Budrawah (T.T.), Gund, Sind Vy. (RRS 7160), Fras Nag (RRS 23117), Ferozepur Nul-lah (RRS 14769), common, 4-10000'.

C. obscura Nees in Wight Contrib. 126. 1834; FBI 6: 731.

Dras (Gammie); Pahlgam (RRS 9280, 21588), Sonamarg (RRS 9868a, 7294), Khillanmarg (RRS 8680), common, 8-13000'.

C. obscura var. **brachycarpa** Clarke, FBI 6: 731.

Pahlgam (RRS 21745 det Nelmes), Gulmarg (Du. 113720), 8-14000'.

C. obscuriceps Kük. l.c. 723. 1909.

Rama, Astor Dt. (Webster & Nasir 6441), c. 9000' det. Raymond.

C. obscuriceps var. **pamirica** Kük.

See *C. pamirensis*

C. oligocarya Clarke, FBI 6: 746, 1894. (Kük. spells *C. oligocarpa*) *C. annulata* Kük. l.c. 494. 1909. Skardo-Dras region (Cl. 30533, 30436 cited by Kük.) 11-13000'.

C. oligocarya var. **websteri** Raymond in Webst. & Nasir, Veg. Hushe Vy., Pak. Journ. For. 15 (3) 220. 1965.

Hushe Vy., Karak. Mts., Baltistan (W. & N. 6249, Type; 6257, Kew).

C. orbicularis Boott, Proc. Linn. Soc. 1:254. 1845. *C. vulgaris* Clarke non Fries, FBI 6: 711; *C. rigida* Boeck. p.p. *C. rigida* Good. in FBI 6: 711.

Gilgit (Giles); Naltar Vy. (RRS 26925); Deosai (Kz. 9486); Astor: Rondu (Winter 807), Das Kirim (Winter. 662); Ladak: Fotu La (Osm. 22 S), nr. Shushal (Kz. 2647); Rupshu: Tsokar (Kz. 6572; Rangdum-Pensi La, Zanskar (Kz. 2941); Suru; Kashmir: common, Burzil Pass, Kamri Pass, Zoji La etc. etc. 10-15000'. I am omitting pro tem. the five vars. proposed by Kük.

C. pakistanica T. Koyama in Acta Phytotax. Geobot. 17:100. 1958.

Diwangal-Ghizar, 3900 m, W. Gilgit (Honda 214). also in Swat.

C. pamirensis Clarke ex B. Fedt. in Journ. Bot. St. Petersb. 1:19. 1906. *C. obscuriceps* Kük. var. *pamirica* (O. Fedt.) Kük. l.c. p. 724. *C. rostrata* Clarke, FBI 6: 740 non Stokes; *C. vesicaria* var. *pamirica* O. Fedt.

Pamirs (Alcock); Deosai (RRS 20019, Kz. 9493,

clumps in marshes); Rama in Astor (Cl. 29822 A); Paiju, Balti. (Nakao), Braldo (H.H.); Shushal, Ladak (Kz. 2433); Rangdum, Zanskar (Osm. 24 S; Kz. 5895), Matayan (Du. 11728), Zoji La (T.T.), Gurais (Cl. 29484 A), 2-14000'.

C. parva Nees in Wight, l.c. 120; FBI 6: 712.

Nanga Parbat (Troll); Chillam Astor Dt. (RRS 22015); Skardu Rd. (Winter. 635, cited by Kük.); Hanle, Rupshu (Kz. 2313), Burzil Chowki (RRS 19789), Burzil Pass (RRS 19908), Yamhar Pass (RRS 12443), Sonamarg (RRS 9700a); To Gadsar, Tilel Dt. (RRS 18311), 10-15000'.

C. philocrena V. Krecz. in Fl. URSS 3:393. 1935.

C. oederi (non Retz.) auct. var. *philocrena* Koyama. *C. flava* Clarke, non L., FBI 6: 739.

Dras (T.T.); Sonamarg (RRS 9801, 23085), Ganderbal (Drum. 14377), near Ramu (Jacq. 436), Nil Nag (RRS 23049), Gurais (Osm. 2 S), Keran-Reshna, Kishen Vy. (RRS 17692, 17704), 5500-11000'.

C. plectobasis V. Krecz. in Not. Syst. Herb. Inst. Bot. Acad. Sci. URSS 9:192. 1946. *C. hirtella* Drejer of FBI 6: 744; *C. tenuis* Nees.

Ascent Deosai (Cl. & Winter.); Balti.: Above Skardo (Kz. 9631), Central Karakorum (H.H.); Naltar Lakes, Gilgit (RRS 26934); Tog, Ladak (Kz. 2643; Pensi La, Zanskar (Kz. 2943e); Poonch: Bedori (RRS 24009), Kuthnar (RRS 23901); Sonamarg (RRS 6730, 7356), Khillanmarg (RRS 10520), Pir Panjal (Jacq. 554), Kishtwar (T.T.) etc. Common, 9-15000'.

C. polyphylla Kar. & Kir. in Bull. Soc. Nat. Mosc. 859. 1841. *C. muricata* Clarke non L., FBI 6: 703; *C. leersii* F. Schultz; *C. pairaei* (F. Schultz) Kük.; *C. echinata* Murr. var. *leersii* (F.S.) Kük.

Alibad, Poonch (Cl. 28644); Pahlgam (RRS 21528), Gulmarg (RRS in 1926), Sonamarg (RRS 7217), Ramoo (Cl. 28533), 7-9000'.

C. pseudobicolor Boeck., Cyper. Nov. 1:44. 1888. *C. alpina* Sw. var. *erostrata* Boott; *C. infuscata* Nees var. *erostrata* (Boott) Koyama in Acta Phytotax. Geobot. 18:97, 1958.

Widespread from Chitral eastwards at high alts. Niltar Vy. Gilgit (Du. 12404); Hushe Vy., Balti. (W. & N. 6121); Mitsahoi, Zoji La (RRS); Astanmarg, Lidder Vy. (Drum. 14297), Kishtwar (T.T. etc.).

C. pseudocyperus L. Sp. Pl. 978. 1753.

Kashmir at 6000' (T.T.), Dal Lake, K. Vy. (RRS 3260, Kz. 8967), Nil Nag (RRS 23085), Pir Panjal (Lev. 27347), 5-11000'.

Carex pseudofortida Kük, ex Ostenf. in Bot. Tidskr. 28: 225, f. 1. 1907.

Common at high alts. in the inner Himalaya. Pamirs (*Alcock* 17766), Rupal Nullah, Astor (RRS), Chota Deosai (RRS 19940); Balti.: Hispar Glacier (*Naka*), Burji La (*Cl.* 29842), Thalle La (RRS 20749); Chortren Chen, Ladak (Kz. 2663); Rupshu (Kz. 2247); Zaskar : Kargiag (Kz. 5841), Pensi La (Kz. 5928), Rangdum (Kz. 5911), 11-17000'.

C. psychrophila Nees in Wight l.c. 127. 1834; FBI 6: 732.

Common. Naltar Vy., Gilgit (RRS 26922); Zaskar (T.T.); Hajipir, Poonch (RRS 13964); Srinagar (*Cl.* 29099 B), Gulmarg (*Du.* 11417), Pahlgam (RRS 21508), Tolian, Lidder Vy. (*Inay.* 25570); Khillanmarg (RRS 10407), Sonamarg (RRS 9743) etc. 6-10000'.

C. remota L. ssp. *alta* (Boott) Kük. in Pflanzenr. l.c. 234. 1909. *C. remota* L. var. *rochebruni* (non Fr. & Sav.) Clarke FBI 6: 706.

Astor (RRS 18751); Aliabad, Poonch (RRS 13980); Pahlgam (RRS 21508 & 5329), Gulmarg (RRS 8620a), Keran, Kishen. Vy. (RRS 17600), Sharda (RRS 17768), Rajdani Pass (RRS 17955), Srinagar (*Gammie*), 5-10000'.

C. sanguinea Boott

Transferred to *Kobresia* by M. Raymond.

C. setigera D. Don var. *schlagintweitiana* (Boeck.) Kük. l.c. 419. 1909; FBI 6: 743; *C. schlagintweitiana* Boeck., Cyper. Nov. 1: 48. 1888. (Kern suggests that the correct name for this var. may be var. *minor* Boott, Ill. 1: 2. 1858).

Poonch : Rattanpir (*Cl.* 28365), Taulipir (RRS 25627); Jumu (*Brandis*), Astanmarg, Lidder Vy. (*Drum.*), Sonamarg (RRS 9443), Banahal Pass (*Henderson* 249), 6-10000'.

C. setosa Boott, Ill. 3: 108, t. 327-9. 1862; FBI 6: 745. 1894.

Naltar Vy., Gilgit (RRS 26931, 26933); Bantara Gali, Poonch (RRS 24117), Baltal (*Du.* 11585), Sonamarg (RRS 9810), Bangas, Muz. (*Du.* 22645), near Burzil Pass (*Inay.* 23280), Fras Nag (RRS 23243), Harnag, Upper Lidder (RRS 9443, *Cl.* 28883), Pir Panjal (*Cl.* 30994) etc. 9-13000'.

C. songorica Kar. & Kir., Bull. Soc. Nat. Mosc. 15: 525. 1842; FBI 6: 739.

Paskyum, Balti. (*Osm.* 19 S); Dras Vy., below Matayan (*Du.* 13702, cited), Gurez-Burzil, Upper Kishen. Vy. (*Cl.* 29484, 29605, cited by Kük.).

C. stenophylla Wahl. in Vet. Akad. Stockh. 24: 142. 1803; FBI 6: 700.

Nanga Parbat (*Troll*), Naltar Vy., Gilgit (*Du.* 12435); Balti.: Guleri (RRS 22224), Ashkoley (*Cl.* 30419 B); Nubra (T.T.), Leh, Ladak (T.T.), Salt Lake, Rupshu (T.T.); Zaskar (Kz. 2972); Dras to Mitsahoi (RRS 22350), 10-14000'.

C. stenophylla var. *longepedicellata* (Boeck.) Kük. l.c. 121.

Taklang Pass, Ladak (*Schlag.* 1642, Type); Puga, Rupshu (Kz. 2189), Kugzil La, Rupshu (Kz. 2327), 11-16000'.

C. stenophylla var. *interrupta* Litw., Trav. Mus. Bot. St. Petersb. 7: 85. 1910. *C. stenophylla* var. *duriuscula* (non Trautv.) B. Fedtsch. Act. Hort. Petrop. 38: 189, 1925.

Hindu Kush, Karakorum, Himalaya and Tibet teste M. Raymond in Symb. Afghan 6: 33. 1965. As Raymond does not cite any collectors I suppose that Raymond would put all or most of my citations under *C. stenophylla* in this var.

C. tristis M. Bieb., Fl. Taur.-Cauc. 3: 615. 1819; FBI 6: 738. *C. sempervirens* Vill. ssp. *tristis* (M. Bieb.) Kük.

Nanga Parbat (*Troll*); Maylaree, Astor (*Winter.* 771); Central Karak. Mts., Braldo & Biafo Glaciers, Skoro La (*H.H.*); Dras (*Du.* 13797); Tog, Ladak (Kz. 2626b); Rangdum, Zaskar (Kz. 2905c); Bungal, Muz. (*Inay.* 22649a), Apharwat (*Aitch.* 115, RRS 10457), Upper Lidder Vy. (*Du.* 13390), Kamri Pass (RRS 18660) etc., 11-18000'.

C. vesicaria L. Sp. Pl. 979. 1753 excl. var. b; FBI 6: 740. *C. pinguipes* Clarke, Kew Bull. add. ser. 8, 55. 1908.

Margan Pas (*Atkinson*, 11500'). Only collection so far reported.

C. vulpinaris Nees in Wight, l.c. 121. 1834; FBI 6: 702. *C. henningsiana* Boeck.; *C. divisa* Clarke non Huds teste Kük. Including *C. henningsiana* f. *angustifolia* Kük. l.c. 117, 1909; *C. curaica* (non Kunth) Clarke, FBI 6: 702.

Gilgit teste?; Purig (Kz. 6090); Shushal, Ladak (Kz. 2444); Apharwat (RRS 8891a), Baramulla (*Jacq.* 338, 362); Burzil Pass (*Clarke* 29626 at 10,500') is the type of f. *angustifolia* Kük.

C. wallichiana Prescott

See *C. fedia* Nees

C. wendelboi Nelmes in Nytt for Bot. 1: 20, f.o. 1952.

Chitral. May be found in Gilgit or Swat.

Cladium mariscus (L.) Pohl, Tent. Fl. Bohem. 1: 32. 1809.

Shigar, Baltistan (RRS 20483; Kz. 9659); Srinagar (Falc.), Dal Lake, K. Vy. (Jacq. 645, Cl. 27352), Nil Nag (RRS 23060) 5-8000' Swamps and borders of lakes.

Cyperus allulatus Kern, Reinwardtia 1:463. 1952.
C. iria auct. p.p. & sensu Clarke Ill. t. 14, f. 1;
C. iria var. *rectangularis* Kük. Cyper. 4-20 Heft. 101.152.

Jumu (Gammie; Schlag. 3060), Chale Bagh, Kashmir (Jacq. 873) in rice fields.

C. atkinsoni Clarke, J.L.S. Bot. 21: 109. 1884; FBI 6: 603.

Bimbur, E. Pakistan (W. S. Atkinson 24196, Type).

C. brevifolius (Rottb.) Hassk. Cat. Hort. Bogor 24. 1844. *Kyllinga brevifolia* Rottb.; FBI 6: 588; *K. colorata* (L.) Druce.

Hazara, Kashmir, Pir Kalanjar, Muz. Dt. (I. Khilji). A plains species.

C. compressus L. Sp. Pl. 46.1753; FBI 6:605.1893.
 Saidobad, E. Kashmir (Gammie), 0-4000'.

C. cuspidatus Kunth in H.B.K. Nov. Gen. & Sp. 1:204.1815; FBI 6:598. *C. uncinatus* auct. non Poir.; *C. squarrosus* auct. non L.

Gupis, Hindu Kush (Ogino 583); Basaoli, Kashmir (Clarke 31570 at 4000'). Another tropical plains species.

C. cyperinus (Retz.) Valck-Sur, Gesl. Cyperus Mal. Arch. 154, t. 6, f. 10. 1898. *Kyllinga cyperina* Retz.; *Mariscus cyperinus* (Retz.) Vahl; FBI 6: 622.

To be expected in Jumu.

C. cyperoides (L.) O. Ktze., Rev. Gen. Pl. 3(2): 333, 1898. *Scirpus cyperoides* L.; *Mariscus sieberianus* Nees; FBI 6:622.

Poonch (Jan Mohd., collector for Rashid); Tawi Vy. (Gammie), Kad on Jumu-Kashmir Rd. (RRS 13408), 0-5000'.

C. difformis L. Cent. Pl. 2: 6. 1756; FBI 6: 599, 1893.

Kashmir (Jacq. 827), Mamur (RRS 6929), Kangan-Gund (RRS 23011), Tsrar-Ramoo (Drum. 15084), nr. Banihal Village (RRS 13406), 0-8000'. Very common in rice fields.

C. esculentus L. Sp. Pl. 45.1753; FBI 6:616.

To be expected in Jumu. Kotli teste?

C. flavescens L. Sp. Pl. 46. 1753. *Pycnus flavescens* (L.) Reichb.; FBI 6: 589.

Skardo, Balti. (RRS 20407a); Baltal-Sonamarg, Sind Vy. (RRS 21293); Yusimarg, Pir Panjal (RRS 23262), 5-8000'.

C. flavidus Clarke

See *C. tenuispica* Steud.

C. fuscus L. Sp. Pl. 46.1753; FBI 6:599.

Kashmir (Meebold, Schlag. & Clarke cited by Kük.); near Srinagar (Gollan 9108), Kishtwar (Cl. 31383; T.T.), Sreenugger (Schlag. 4310, 4473), 5-8000'.

C. globosus All. Fl. Pedem. Auct. 49. 1789. *Pycnus globosus* (All.) Reichb.; *P. capillaris* Nees, FBI 6: 591.

Throughout; from plains to 8000'. Gilgit, Shigar, Skardo, Poonch, Kashmir Vy., Kishtwar, Jumu. 0-8000'.

C. globosus var. *stricta* (Roxb.) C. B. Cl. in J. L. S. 20: 280. 1883. *Pycnus capillaris* var. *stricta* Clarke in FBI 6: 592.

Kashmir (Jacq. 819).

C. glomeratus L. Cent. Pl. 2:5.1756; FBI 6:607.

Sumbal (Meebold 2499); to Sonamarg, Sind Vy., 7000' (T.T.). Both cited.

C. haspan L. Sp. Pl. 45. 1753; FBI 6:600.

Gilgit (RRS 26517a); Srinagar (RRS 8966), Ganderbal (RRS 7492) and Shalimar rice fields (RRS), 0-6000'.

C. iria L. Sp. Pl. 45. 1753; FBI 6: 606.

Kangan-Gund, Sind Vy. (RRS 13418), near Atchibal (RRS 3194), Sopor (Kz. 9016), Dal Lake (RRS 3275), near Udampur, Jumu (RRS). Common at the edge of ditches and rice fields and may be confused with *C. allulatus* Kern which was formerly considered to be a var. of *C. iria*. (These specimens were named before I knew of the segregate.)

C. kyllinga Endl. Cat. Hort. Acad. Vindob, 1:94. 1842. *Kyllinga monocephala* Rottb.; FBI 6:588; *K. cephalotes* (Jacq.) Druce.

Pirkot in Poonch (Rashid). (Should be checked again?).

C. laevigatus L. Mant. 2:179. 1771. *Juncellus laevigatus* (L.) Clarke, FBI 6:596; *Pycnus laevigatus* (L.) Nees.

Kashmir (Du.), Bhimbar, E. Kashmir (J.L.S. 799).

C. metzii (Hochst.) Mattf. & Kük., Pflanzenr. Heft. 101, 612. 1936. *Kyllinga squamulata* (Vahl) Clarke, FBI 6:588.

Serimang, Poonch (RRS), Basaoli (Cl. 31569), Jumu-Kashmir Rd. (RRS), sine loc. (T.T. 1258). Plains to 6000'.

C. michelianus (L.) Link, Hort. Berol. 1:303. 1827. *Scirpus michelianus* L. Sp. Pl. 52. 1753. FBI 6: 662.

- Kashmir (*Meebold* 2542 & *T.T.*). Probably in the valley.
- Cyperus** ssp. **B. pygmaeus** (Rottb.) Aschers. & Graeb., Synops. 2(2):273. 1903 *C. pygmaeus* Rottb. 1773; *Juncellus pygmaeus* Clarke, FBI 6:596. 1893. Wular Lake (*Jacq.* 1087), Srinagar (*RRS* 5037); Kashmir to Burma & Ceylon in FBI 6: 596.
- C. niveus** Retz. Obs. 5:12.1791; FBI. 6:601. Poonch (*RRS*); Domel, Jhelum Vy. Rd. (*RRS*), Bimbur (*Clarke* 24197), Kishtwar, common, 0-6000'.
- C. nutans** Vahl var. **eleusinoides** (Kunth) Haines, Bot. Bihar & Orissa 5:898. 1924. *C. eleusinoides* Kunth; FBI 6:608. Kashmir (*Jacq.* 410; *T.T.* 1588; *Royle* 94, all cited by Kük.), Rajaorie (*Schlag.* 12541) also cited. A sp. of the plains.
- C. pangorei** Rottb. Descr. & Icon. 31, t. 7, f. 3.1773. *C. tegetum* Roxb. Fl. Ind. 1:208.1832.; FBI 6: 613. Kashmir to 1800 m (FBI).
- C. pumilus** L. Cent. 2:6. 1756. *C. nitens* Retz.; *Pycnus nitens* (Retz.) Nees, FBI 6:591. Below Jumu (*T.T.*). To be expected along the foothills in rice fields.
- C. rotundus** L. Sp. Pl. 45.1753; FBI 6:614. A pest in cult. soil, 0-8000'. Gilgit, Kishtwar, Padar, Srinagar etc.
- C. sanguinolentus** Vahl, Enum. Pl. 2:351. 1806. *C. eragrostis* auct. non Lamk.; *Pycnus sanguinolentus* Nees; FBI 6:590. Plains to 10000'. Gilgit: Imit-Ishkuman (*Honda*), Minipin-Chalt (*RRS* 26912); Balti.: Kapalu (*Schlag.*), Skardo-Shigar (*RRS* 20472); Poonch: Raja-ooree-"Puch" (*Schlag.* 12182); Kashmir: Dal Lake (*RRS* 3274), Pahlgam (*RRS* 13416), Tangmarg (*RRS* 10584), Kishtwar (*Schlag.* 5112) etc.
- C. serotinus** Rottb. Progr. 1772 & Descr. Nov. Pl. 31.1773. *Juncellus serotinus* (Rottb.) Clarke in FBI 6:594. Nawal Nadi, Poonch (*RRS*); Dal Lake (*RRS* 3332), Ganderbal (*RRS* 7491), in rice fields (*Jacq.* 1138), common, 1-5000'.
- C. squarrosus** L. (non C. B. Clarke) Cent. Pl. 2:6. 1756. *C. aristatus* Rottb.; FBI 6:606 (teste Kern). Leh, Ladak (Kz. 2593, f. *alpina* sensu Kük.); Skardo (*Schlag.*), Dras (*Stoliczka*); Balti.: Bagicha-Olding (*RRS*); Pechana (*Poosiana*) in Poonch (*Jacq.* 1278), Upper Lidder Vy. (*RRS* 9410), Pahlgam (*RRS* 9464), common, 1-9000'.
- C. tenuispica** Steud., Syn. Pl. Cyp. 2:11. 1855. *Cyperus flavidus* Clarke non Retz.; FBI 6:600. In rice fields (*Jacq.* 1140).
- C. triceps** (Rottb.) Endl. Cat. Hort. Vindob. 1:94. 1842. *Kyllinga triceps* Rottb.; FBI 6:587. Poonch (*Jacq.* 345); Jumu-Kashmir Rd., 10 miles out (*RRS* 12500).
- Eleocharis atropurpurea** (Retz.) Presl Rel. Haenk. 1: 196. 1828; FBI 6: 627. *Scirpus atropurpureus* Retz. Bandipur (Kz. 9041), Jhelum Vy. Road at 3000' (*J.L.S.*), 0-5200'.
- E. congesta** D. Don, Prodr. Nepal 41. 1825; FBI 6:630. *E. afflata* Steud.; *E. pellucida* Presl.; *E. sub-vivipara* Boeck. Badrawah (*Clarke* 31504 A), Bawan-Aishmakam, lower Lidder Vy. (*Drum.* 13991); Sonamarg (*RRS* 9732a, vel aff), 3-9000'.
- E. dulcis** (Burm. f.) Henschel, Vita Rumph. 186. 1833. *Andropogon dulce* Burm. f.; *E. plantaginea* (Retz.) R. & S.; FBI 6: 625. Hunza, Gilgit Agency (*Schmid*).
- E. mitracarpa** Steud. Syn. Pl. Cyp. 77. 1855. Rupal-Gurikot in Astor (*RRS* 18920); Chalt, Gilgit Agency (*RRS* 26918).
- E. obscura** T. Koyama in Acta Phytotax. Geobot. 17: 102. 1958. Hindu-Kush: Diwangal-Ghizar, 3200 m (*Ogino* 247), (Gilgit near Swat border). Marsho, Ladak (Kz. 6375); Padam, Zaskar (Kz. 5759); Kashmir: common in the valley, Srinagar, Bandipur, Shalimar, etc.; Nil Nag (*RRS* 23035); Yusimarg (*RRS* 23261), etc., 0-15000'.
- E. cf. oxylepis** (Meinsh.) B. Fed. Rast. Turkest. 165. 1915. Pensi La, Zaskar (Kz. 2934f); Sakti, Ladak (Kz. 2519, N. Y. det. Svenson).
- E. palustris** (L.) R. Br. Prodr. 224, 1810 emend. R. & S., Syst. Veg. 2:151.1817 sp. aggr.; FBI 6:628. Balti.: Ashkoley (*Cl.* 30405); Nubra (*Schlag.* 2065); Pensi La, Zaskar (Kz. 2934f), (also cited under *E. oxylepis* above with?); Shupien on Srinagar-Poonch Rd. (*Jacq.* 444) Note. More than one entity may be included here.
- E. quinqueflora** (Hartm.) O. Schwarz in Mitt. Thüring. Bot. Ges. 1:89. 1949. *Scirpus pauciflorus* Light f.; FBI 6: 654; *S. quinqueflorus* Hartm. *Eleocharis pauciflora* (Light f.) Link. Astor (*RRS* 22943); Shigar Vy. (*H.H.*); Rupshu (*T.T.*, Kz. 2311); Zaskar: Rangdum (*Osm.* 26 S; *T.T.*); Gurais Vy. (*Winter.* 551), Bangla, Pir Panjal

(Cl. 29523), 8-14000'. According to Raymond, Symb. Afghan. 6: 11. 1965 our form is var. *meridionalis* (Zinserl.) Raymond.

Eleocharis uniglumis (Link) Schultes Mant. 2:88: 1824. *E. palustris* ssp. *uniglumis* Hartm.

Rama, Astor (RRS 22943); Mitsahoi near Dras (RRS 22346); Spituk, Ladak (Kz. 2681, 6341); anle, Rupshu (T.T. & Kz. 2310); Kashmir: Fras Nag (RRS 23129), Sonamarg (RRS 9732a), Ferozepur Nullah (RRS 14765).

Eriophorum comosum (Wall.) Wall. ex Nees in Wight, Contrib. Bot. Ind. 111. 1834. *Scirpus comosus* Wall. ex Roxb. Fl. Ind. 1: 324. 1820.

Uri, Jhelum Vy. Rd. (Schlag. 12151); Poonch (RRS); Kishtwar (RRS 3037); Lower Kishen. Vy. (RRS); common on steep banks and cliffs to 6000'.

E. scheuchzeri Hoppe, Taschenb. 104. 1800, App. pl. 7; FBI 6: 664.

Yamhar Pass, Kashmir (RRS 13407), Tilail (Cl. 30674 A), Har Nag, near Mt. Kolahoi (RRS), high alpine meadows, 13-14000'.

Fimbristylis bisumbellata (Forsk.) Bub. Dodec. 30. 1850. *Scirpus bisumbellatus* Forsk. Fl. Aeg. Arab. 1:15. 1775. *Fimb. dichotoma* Clarke in FBI 6:635 non Vahl.

Common in rice fields. Gilgit (RRS 26915, Winter. 921); Jhelum Vy. Rd. (Lev. 27355), Naoshera (Cl. 28163), Shalimar (RRS 23004). Plains to 5500'.

F. dichotoma (L.) Vahl, Enum. 2:287. 1806 p.p. *Scirpus dichotomus* L. Sp. Pl. 50. 1753; *S. diphyllus* Retz. 1779-91; *F. diphylla* (Retz.) Vahl; FBI 6: 636; *F. annua* R. & S.

Common to 7000'. Gilgit (Winter. 921)?; Kashmir Vy., Dal Lake, Sopor, Srinagar etc., Naoshera (Clarke). A rice field plant. Variable and Koyama has divided into varieties and forms.

F. falcata (Vahl) Kunth, Enum. 2:239. 1837. *F. junciformis* (Nees) Kunth, l.c. 239; FBI 6: 647. Palandari, Poonch (Gordon College student), Jumu: Kad (Kz. 8897), Naoshera (Cl. 28140), Common to c. 5000'.

F. ferruginea (L.) Vahl Enum. 2: 291. 1806; FBI 6:638. *Scirpus ferrugineus* L. Sp. Pl. 50. 1753. Gilgit (RRS 26346); Ramban, Jumu Rd. (RRS 10743), 0-4000'.

F. miliacea (L.) Vahl, l.c. 287; FBI 6: 644. *Scirpus miliaceus* L.; Syst. Veg. ed. 10, 868. 1759.

Kashmir (T.T.), Dal Lake (RRS 3280b); Aishmakam, Lidder Vy. (RRS 8441), 0-6000'.

F. monostachyos (L.) Hassk. P. Jav. Rar. 61. 1848; FBI 6:649. *Cyperus monostachyos* L. Mant. 2: 180. 1771.

Tawi River, Jumu (Gammie), 0-3000'.

F. quinquangularis (Vahl) Kunth, Enum. 2:229. 1837; FBI 6:644. *Scirpus quinquangularis* Vahl, Enum. 2:279. 1806.

Poonch (RRS), 0-4000'.

F. schoenoides (Retz.) Vahl, Enum. 2: 286. 1806; FBI 6:634. *Scirpus schoenoides* Retz. Obs. 5:14. 1789.

Bandipur, Kashmir (RRS 22518), 0-6500'.

F. squarrosa Vahl, Enum. 2:289. 1806; FBI 6:635.

Common in rice fields and stream banks. Kashmir: banks of Jhelum (Jacq. 1119), Lower Kishen. Vy.: Keran (RRS 17617), Keran-Reshna (RRS 17660); below Wangat (RRS 18091), Tangmarg (RRS 10583), Aishmakam, Lower Lidder Vy. (RRS 8102), 4-7000'.

Kobresia bellardii (All.) Deglund in Loisel. Fl. Gall. 2:626. 1807.

Nanga Parbat (Troll); Hispar Glacier, Karak. Mts., 4500 m (Nakao).

K. capillifolia (Dcne.) Clarke in J.L.S. 20:378. 1883; FBI 6:697. *Elyna capillifolia* Dcne. in Jacq. Voy. Inde 4:173. t. 174. 1844. *K. capillifolia* var. *filifolia* (Turcz.) Kük.; *K. filifolia* (Turcz.) Meinsh. Deosai (RRS); Balti.: Marpu Nullah (Du. 11851); Braldo & Biafo Glaciers; Skoro La (H.H.); Tog, Ladak (Kz. 2627b); Kangi La, Zaskar (Kz. 2861); Poonch (Cl. 28918 B); above Gulmarg (Du. 11341), above Tragbol (Kz. 9213), Kajnag Range (Du. 10041), 10-16000'.

K. cercostachys (Franch.) Clarke in J.L.S. 36:267 p.p.; Kük. Pflanzenr. Cyper. 43. 1909. *Carex cercostachys* Franch.

Lal Pir on Deosai Plains, 13,500' (Kz. 9512).

K. caricina Willd.

See *K. simpliuscula*

K. duthiei C. B. Clarke in Hk. f. FBI 6:697. *K. rostrata* Clarke ex Ivonova, Journ. Bot. Russ. 1939, 500.

Sonamarg, Kashmir, 13000' (RRS 7378, N. Y.) det. N. Ivanova.

K. koelzii Kük. ex Ivanova

See *K. pygmaea* Clarke

K. laxa Nees in Wight, Contrib. Bot. Ind. 119. 1834; Boeck. in 1875; FBI 6:698. *K. pseudolaxa* Clarke; *Schoenoxiphium laxum* (Nees) Ivanova. Common. Gilgit (Giles, Nakao); Balti.: Skardo (Clarke), Nubra; Astor: Kalapani (Giles) Rattu

(RRS), Suru, Zaskar; Pir Panjal (*Drum.* 13912), Kishen. Vy. (*Winter.* 574), Taobat (RRS 17913); Shish Nag, Upper Lidder Vy. (RRS), above Pahlgam (RRS 21850), Alibad (*Cl.* 29693), 5-12000'.

Kobresia macrantha Boeck. *Cyper. nov.* 39. 1888. FBI 6: 699. *K. filifolia* Clarke; *Elyna filifolia* Turcz.

Godai-Chillam, Astor Dt. (RRS 18975); Naltar Lakes, Gilgit (RRS 26917); Nubra (*Schlag.* 2424, Type); Balti.: Marpo La (RRS 22274), Upper Braldo Vy. (*H.H.*), Himis, Ladak (*Kz.* 2557), 10-12000'.

K. nepalensis (Nees) Kük. l.c. 40. 1909. *Carex linearis* Boott, FBI 6:712. 1894.

Tragbol (*Cl.* 29266); Pir Panjal Range (*Lev.* 25026); Margan Pass (*Meebold* 2493; *Cl.* 27344), 11-14000' eastward to Nepal.

K. nepalensis var. **vaginos**a (Clarke) Kük. l.c. 40. 1909. *K. vaginosa* Clarke in FBI 6:695.

Musa, Muz. Dt. (*Inay.* 23279, 20639a); Sonsal Nullah, Lidder Vy. (*Du.* 13364); above Kainmul near Pahlgam (*Du.* 13133), 10-14000'.

K. nitens Clarke, J.L.S. 20:379. pl. 30, f. 7. 1883; FBI 6:697.

Hunza (*H.H.*); Barpu Vy., Nagir (*Biscoe* 58); Lal Pir, Deosai (*Kz.* 9508); Naltar Vy., Gilgit (*Du.*); Balti.: Rongdo (*Winter.* 790), Braldo & Biafo Glaciers (*H.H.*); Pangong Lake, Ladak (*Boss.*); Tsokar Lake, Rupshu (*Kz.* 6600); Alibad, Poonch (*Cl.* 28918 bis); Kashmir, abundant, Sonamarg, Yamhar Pass, Burzil & Kamri Passes, Gulmarg, Sonsal Nullah etc., 10-16500'.

K. pamiroalaica Ivanova, *Journ. Bot. Russ.* 1939, 24. 481. *K. schoenoides* (non Steud.) Aitch.; C. B. Clarke non Boeck., FBI 6:697.

Balti.: Burji La (*Cl.* 29840), Marpo Nullah (*Du.* 11852); Deotsu (i.e. Deosai) (*Winter.* 733); Gilgit: Naltar Vy. (RRS 26914; *Du.* 12387); Ladak: Leh (*T.T.*), Gia-Upshi (*Schlag.* 1421), Bod Kharbu (*Osm.* 21 S); Bok, Zaskar (*Kz.* 5829), Suru (*Osm.* 27 S); Apharwat (RRS 8806), Kolahoi (RRS 9450), Musjid Vy. (*Du.* 12252) etc., 11-16500'. Often abundant.

K. persica Kük. & Bornm. in *Oesterr. Bot. Zeitschr.* 47:133, pl. 2. 1897. *K. royleana* (Nees) Boeck. var. *humilis* Kük. *Pflanzenr. Caric.* l.c. 46. 1909. Khillanmarg, Kashmir (RRS 13413, N. Y.) mixed with *K. pamiroalaica* det. Ivanova.

K. pygmaea (C. B. Clarke) C. B. Clarke, FBI 6: 696. 1894. *Hemicarex pygmaea* C.B.Cl. in J.L.S. 20:383. 1883; *K. koelzii* Kük. ex Ivanova; *K. pusilla* Ivanova, *Journ. Bot. Russ.* 24:496. 1939.

Lanak La, Ladak (*T.T.* cited by C.B.Cl.). Also Chitral, Kagan & Lahul.

K. royleana (Nees) Boeck. in *Linnaea* 39: 8. 1875; FBI 6:698. *Trilepis royleana* Nees; *K. stenocarpa* C.B.Cl. in J.L.S. 20:380. 1883 p.p.

Pamirs (*Alcock*); Gilgit: Naltar Vy. & Hunza (RRS); Nubra (*T.T.*); Balti.: Marpo La, Satpura La, Thalle La (RRS); Kargil, Ladak (*Osm.* 95); Zaskar (*Drum.* 24141); Bedori, Poonch (RRS 24020), Apharwat, Pir Panjal (RRS 8598), Pir Panjal (*Cl.* 28863, 28870) etc., 10-16000'.

K. royleana var. **parvinox** Koyama in *Acta Phytotax.* Geobot. 16:168. 1956.

Skoro La, Karak. Mts., 3700 m (*Nakao*).

K. royleana var. **kokanica**

See *K. stenocarpa*

K. sanguinea (Boott) Raymond, *Symb. Afghan.* 6:19. 1965. *Carex sanguinea* Boott, T.L.S. 20: 137. 1846; FBI 6:720.

Hazara; Murree; Trarkhel, Poonch (RRS 25628, 25621), Nakial in Kotli (RRS 25741), 5-6000'. Local on cliffs.

K. simpliuscula (Wahlenb.) Mackenzie in *Bull. Torr. Club.* 1923. 349. *Carex simpliuscula* Wahl.; *K. caricina* Willd.

Nanga Parbat (*Troll*); Kenaoots, W. of Skardo (*Winter.* 790).

K. stenocarpa (Kar. & Kir.) Steud. *Synops. Cyper.* 1855. *Elyna stenocarpa* Kar. & Kir.; *E. kokanica* Regel; *Kobresia paniculata* Meinsh.; *K. royleana* Kük. (teste Raymond)? *K. deasyi* Clarke in *Kew Bull. Add. ser.* 8; 68. 1908.

Khusomik, Baltistan (RRS 20826a); Spituk, Ladak at 10500' (*Kz.* 2685) Rupshu (*Kz.* 2286); Apharwat, Pir Panjal (RRS 8894). See Raymond's key for distinction between this and *K. royleana*. *Symb. Afghan.* 6:19.

K. tibetica Maxim. *Mélang. biolog.* 11:864. 1883; *Bull. Acad. Petersb.* 29:19. 1884. *K. capillifolia* var. *tibetica* (Maxim.) Kük. l.c. 36, 1909. *K. littledalei* C. B. Cl., *Kew Bull. Add. ser.* 8, 67. 1908. *K. schoenoides* (non Steud.) Pamp. *Fl. del Carac.* 82. 1930.

Chitral; Ghondokoro Gl., Hushe Valley, Balti. (*Webster & Nasir* 6182) det. Raymond, 13-14000'.

K. trinervis (Nees) Boeck. in *Linnaea* 39:4. 1875 in nota; FBI 6:595.

Kishtwar; Kashmir (*Schlag.* 3840), cited by Kük.

K. vaginosa Clarke

See *K. nepalensis* var. *vaginos*a

Kyllinga, **Mariscus** and **Pycnus** have been left in **Cyperus**. **Blysmus**, **Isolepis** and **Schoenoplectus** have been left in **Scirpus**. **Schoenoxiphium** has been left is **Kobresia**.

Scirpus affinis Roth in R. & S. Syst. Veg. 2:140. 1817. *S. strobilinus* Roxb.; *S. maritimus* L. var. *affinis* (Roth) Clarke, FBI 6: 659. 1884.

Poonch, teste?; to be expected in Jumu. Water-logged areas in the Punjab.

S. caricis Retz.

See *S. planifolius*

S. erectus auct. non Poir.

See *S. juncoides*

S. juncoides Roxb. Fl. Ind. 1:216. 1820. *S. erectus* sensu auct. plur. non Poir.; FBI 6:656.

Lower Kishen. Vy. (RRS 17335), Gund-Kangan, Sind Vy. (RRS 6933), Kashmir Vy.: Shalimar (RRS 3196), Bandipur rice field (RRS or Kz. 9051), Sopor etc., 0-7000'.

S. lacustris L. Sp. Pl. 48. 1753; FBI 6:658. *Schoenoplectus lacustris* (L.) Palla.

A very common large bulrush. Balti.: Shigar (RRS 20549); Shushal, Ladak (Kz. 2443 & Schlag. 1631); K. Vy.: Nil Nag, 6 ft. tall (RRS 23051), Nasim Bagh (RRS 3264) etc., 0-14000'.

S. lacustris × **triqueter** *S. lacustris* var. *carinatus* Clarke, FBI 6:658 in obs. *Schoenoplectus* × *carinatus* (Sm.) Palla.

Hunza in Gilgit Agency; Shigar, Baltistan, Manasbal, Kashmir Vy. (I have lost the authorities for these localities).

S. lacustris var. **tabernaemontani** (Gmel.) Doell. Rheinh. Fl. 165. 1843. *S. tabernemontani* Gmel.; under *S. lacustris* L. in FBI 6:658. *S. lacustris* L. ssp. *glaucus* (Smith) Hartm. 1846.

Skardo-Shigar (RRS 20497); Spituk, Ladak (Kz. 2678, 6334), She (Kz. 5359); Shalimar, K. Vy. (RRS 22425). Too close to *S. lacustris*? See discussion in Symb. Afghan. 6:13. 1965. The authorities differ about the best way to treat the *S. lacustris* complex.

S. lateriflorus Gmel. Syst. Veg. 1:127. 1791. *S. supinus* L. var. *lateriflorus* (Gmel.) T. Koyama 1958. *S. supinus* L. p.p. var. *uninodis* (Del.) Clarke, FBI 6:656.

Nasim Bagh, K. Vy. (RRS 22429a), 0-5000'.

S. litoralis Schrad. Fl. Germ. 1:142. 1806; FBI 6: 659. *S. litoralis* Schrad. var. *subulatus* (Vahl) Chiov. Fl. Nov. Aethiop. 16. 1928; *S. pectinatus* Roxb. Fl. Ind. 1:220. 1820; FBI 6:659. Kashmir, 3500' (FBI); K. Valley (RRS 3263).

S. maritimus L.

See *S. tuberosus*

S. michelianus L.

See *Cyperus michelianus*

S. mucronatus L. ssp. **robustus** (Miq.) T. Koyama in Quart. Journ. Taiwan Mus. 14:194. 1961. *S. triangulatus* Roxb.; *S. triangulatus* Roxb. var. *brevibracteatus* T. Koyama 1958. *S. mucronatus* sensu auct. Asiat. non L. (teste Koyama); FBI 6: 657.

A rice field plant. K. Vy. (Jacq. 1133, 667, 2294), Waterworks (RRS 3367); Kishtwar (Schlag. 5115) (*S. mucronatus* L. is used at Kew).

S. pauciflorus Lightf.

See *Eleocharis quinqueflora*

S. planifolius Grimm in Nova Acta Cur. 3: app. 259. 1767. *Blysmus compressus* (L.) Panzer; *Scirpus caricis* Retz. FBI 6:660. *Schoenus compressus* L., *Scirpus compressus* (L.) Pers.

Astor (RRS 22820 B); Balti.: Baltoro & Braldo Gl. (H.H.); Shushal, Ladak (Kz. 2434), Bragnag (Kz. 2774, 2775), Leh; Hanle Plain, Rupshu (Kz. 2164); Zaskar (Schlag. 6689); Kashmir:Kunzlwani (Cl. 29454), Kamri-Pass (RRS 22701), Burzil Chowki (RRS 19975), 8-15000'. Wet meadows.

S. pumilus Vahl, Enum. 2:243. 1806; FBI 6:654.

S. alpinus Schleich. Cat. Pl. Helv. ed. 4, 32.1821.

Rupal Nullah (Troll) in Astor; Gilgit (Giles 64); Shigar & Skardo (T.T.); Bod Kharbu, Ladak (Osm. 20 S); Hanle, Rupshu (T.T.); Rangdum, Zaskar (Kz. 2895); Kashmir:Sonamarg (RRS 13415), Gurais (Winter. 551), below Baltal (Du. 11537), 8-14000'.

S. roylei (Nees in Wight) Parkar ex Duthie, Fl. Gang. Pl. 3(3) 361. 1929. *S. quinquefarius* Ham ex Boeck., FBI 6:657.

Isolepis roylei Nees in Wight, Contrib. 107. 1834. Sind, Punjab and to be expected in Jumu.

S. rufus (Huds.) Schrad. Fl. Germ. 1:133, pl. 1, f. 3. 1806, FBI 6:661. *Blysmus rufus* (Huds.) Link, Hort. Berol. 1:278.1827-33.

Banks of Salt Lake, Rupshu (T.T. 24-9-1847 & Kz. 6600), 0-15500'.

S. setaceus L. Sp. Pl. 49. 1753; FBI 6:654. *Isolepis setacea* (L.) R. Br.

Astor (Schlag. 6414); Balti. (Schlag. 5867), Skardo (Cl. 30028 & T.T.); Doghoni-Sailing (W. & N. 5924); Timisgam, Ladak (RRS), Leh (T.T.); Kashmir: Sonamarg (C.B.Cl.; RRS), Gulmarg (Aitch. 157), Nil Nag (RRS 23076a) etc. common, 7-13000'.

Scirpus supinusSee *S. lateriflorus***S. triangulatus** Roxb.See *S. mucronatus***S. triquetus** L. Mant. 29.1767; FBI 6:658. *Schoenoplectus triquetus* (L.) Palla

Shigar, Balti. (RRS 20549), Skardo (RRS 20405 & Cl. 30023 A & W. & N. 6587); Chalt in Gilgit Agency (RRS 26916); Leh, Ladak teste?; Ganderbal, K. Vy. (RRS 9690); Aishmakam (RRS 14101), 68000'.

S. tuberosus Desf. Fl. Atlant. 1:50. 1798. *S. maritimus* C.B.Cl. (non L.), FBI 6:658; *S. maritimus* var. *tuberosus* (Desf.) Roem. & Schult. Syst. Veg. 2:139.1817.

Kashmir Vy. (Jacq. 357); Wular Lake (Winter.) in rice fields, 0-10000'. The authorities differ about the best way to handle the *S. maritimus* complex. I am following Raymond here.

Note. In the case of abundant species I have omitted mention of many of the collections I have made or seen or noted in the literature, but have only aimed at indicating the distribution pattern. As the determinations have been made by a good many different people and some species are hard to discriminate errors have no doubt crept in. Many collectors avoid the grasses and sedges so that it will be noticed that the collectors mentioned in this paper are largely the more important contributors to our flora. I do not think that many more sedges are to be found in the main valley but Jumu is not very well represented and a number of species from the Punjab plains probably grow in the Lower Tawi Valley or along the foothills toward the west. Poonch and Mirpur probably contain a few more species. Some species are only represented by a few collections in herbaria and good material with basal portions intact is still needed to help make better, more usable keys.

DUBIAE

Kobresia septatonodosa T. Koyama Acta Phytotax. Geobot. 16:168. 1956.

Hispar Glacier, Karak. Mts., 3000 m (*Nakao*). Is it *K. stenocarpa* (Kar. & Kir.) Steud.?

K. seticulmis Boeck., Linnaea 39: 3. 1875.

My Khillanmarg 8681 may belong here. To be expected.

SUMMARY

Although it will be a long time before we can feel that we have an accurate and fairly complete

list of our Kashmir sedges we know enough at present to have a general view of what we have to work with. Some identifications are still doubtful and there may be some duplication, so that too much importance should not be given to the actual numbers in this list. It is a list of taxa, not of species as subspecific entities have been counted. As the catalogue stands at present 162 taxa have been included. *Carex* is much the largest and most important genus with 75 names. *Cyperus* including *Juncellus*, *Pycneus* and *Kyllinga* has 29 representatives and *Kobresia* comes third with 20. The complete list is as follows.

Bulbostylis 2; *Carex* 75; *Cladium* 1; *Cyperus* 29; *Eleocharis* 9; *Eriophorum* 2; *Fimbristylis* 9; *Kobresia* 20; *Scirpus* 15.

Dr. Marcel Raymond has just published in Dansk Botanisk Arkiv 23(2) 311-374. 1966 an account of the *Cyperaceae* of Thailand and it is interesting to note the great difference between the sedges of this tropical country and those of Kashmir which has a very different assemblage because of the fact that most of Kashmir has a temperate or alpine climate. There are 19 genera in Thailand instead of nine in Kashmir and three, i.e. *Cladium*, *Eriophorum* and *Kobresia* seem to be entirely missing in Thailand. Six genera are in common but in stead of *Carex* being most important it has only 32 species in Thailand while *Cyperus* has 55 and *Fimbristylis* 59. There are 23 Sclerias in Thailand while there are none in Kashmir. At high altitude in Kashmir *Carex* and *Kobresia* are abundant.

Spelling notes and a few abbreviations

Alibad = Aliabad	Poonch = Puch = Punch
Badrawah = Budrawah	Poosiana = Pooshana =
Balti. = Baltistan	Pechana
Basaoli = Basohli	Rajaori = Rajaoree =
Bimbura = Bhimbar	Rajaoree
Gl. = Glacier	Shupien = Shupiyan
Jumu = Jammu = Jammu	Skardo = Skardu
Kapalu = Khapalu	Spitug = Spituk
Karak. = Karakorum Mts.	Sreenugger = Srinagar
Kishen, Vy. = Kishenganga	Taklang = Takalang
or Kishengunga Vy.	Taolipir, Tolipir =
Masjid = Musjid	Taulipir
Muz. = Muzaffarabad	Tilel = Tilail
Nowshera = Naoshera	Tragbal = Tragbol
Niltar = Naltar	