



Supplement

The following supplementary materials are available for this article: Hsu, T.C. 2026 Taxonomic additions of the genus *Carex* (Cyperaceae) in Taiwan. *Taiwania* 71(3): 455-471. doi: [10.6165/tai.2026.71.455](https://doi.org/10.6165/tai.2026.71.455)

Appendix 1. Morphological data sources of some critical taxa discussed in the article.

Carex autumnalis Ohwi, Mem. Coll. Sci. Kyoto Imp. Univ., Ser. B, Biol. 5(3): 251, 1930. **Type:** JAPAN. Shikoku: Mt. Tsurugisan, 4 October 1926, *Z. Tashiro s.n.* (holotype: KYO n.v.).

References: Akiyama (1955: 102); Liang *et al.* (2000: 448, pl.89-11-13); Dai *et al.* (2010: 436); Hoshino and Masaki (2011: 136-137); Katsuyama (2015: 84-85); Hoshino *et al.* (2020: 250).

Carex dickinsii Franch. & Sav., Enum. Pl. Jap. 2: 581, 1878. **Type:** JAPAN. Niko, Jul 1873, *Savatier s.n.* (syntype: P00281389 image!); Omi, Jun 1875, *Rein s.n.* (syntype: P00281388 image!).

References: Akiyama (1955: 175-176, pl.176); Liang *et al.* (2000: 357-358); Dai *et al.* (2010: 403); Hoshino and Masaki (2011: 494-495); Katsuyama (2015: 353); Hoshino *et al.* (2020: 337).

Carex hattoriana Nakai ex Tuyama, Bot. Mag. (Tokyo) 49: 508, 1935. **Type:** JAPAN. Bonin Islands: Titizima, Suzaki, 1 Nov 1912, *Nishimura 91* (holotype: TI00010092 image!).

References: Tuyama (1935: 508-509, f.15); Akiyama (1955: 103, pl. 82-1); Hoshino and Masaki (2011: 140-141); Katsuyama (2015: 87); Hoshino *et al.* (2020: 337).

Additional specimens examined: TAIWAN. Taitung, Lanyu Island: Hsiaotienchih, 7 Aug 2022, *Hsu 14337* (TAIF); Langtao, 20 Sep 2021, *Hsu 13643* (TAIF); Mt. Shashe, 18 Oct 2023, *Hsu 15282* (TAIF); Wukung Cave, 10 Oct 2018, *Hsu 11000* (TAIF); Wukung Stream, 4 Aug 2010, *Hsu 3019* (TAIF); Yunghsing Farm, 24 Jul 2020, *Chang ZXC002187* (TAIF).

Carex idzuroei Franch. & Sav., Enum. Pl. Jap. 2: 583, 1878. **Type:** JAPAN. Yedo, *Savatier s.n.* (isosyntypes: P00284125, P00284126 images!).

References: Akiyama (1955: 147; pl.136); Liang *et al.* (2000: 358); Dai *et al.* (2010: 403); Hoshino and Masaki (2011: 474-475); Katsuyama (2015: 340); Hoshino *et al.* (2020: 332).

Additional specimens examined: JAPAN. Kagoshima: Toshima-mura, Sokonashi-ike Pond, 13 Apr 2003, *Naiki et al. 5291* (HAST; TAIF). Tokyo: Kita-ku, Oujji, 1906, *Makino s.n.* (HAST).

Carex orthostemon Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 389, 1911. **Type:** TAIWAN. Chiayi: Arizan, 23 Mar 1908, *Kawakami & Mori 3603* (holotype: TI00010179 image!).

=*Carex orthostemon* var. *cupulifera* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 389, 1911. **Type:** TAIWAN. Nantou/Chiayi: Mt. Morrison (Yushan), 13 Oct 1907, *Kawakami & Mori 1846* (lectotype: TI00010182 image!). Nantou: Randaizan, 9 Aug 1908, *Hayata & Mori 7061* (syntype: TI00010181 image!); Randaizan, 10 Aug 1908, *Kawakami & Mori 7058* (syntype: TI00010180 image!).

References: Akiyama (1955: 187-188, pl.190-2); Koyama (1978: 333); Koyama *et al.* (2000: 223) Dai *et al.* (2010: 325); Hsu and Chung (2017: 265).

Additional specimens examined: TAIWAN. Chiayi: Alishan National Forest Recreation Area, 7 Jun 2015, *Hsu 7762* (TAIF); Shuiyang Forest, 18 Jul 2015, *Hsu 7954* (TAIF); Yushankou, 6 Jun 2015, *Hsu 7761* (TAIF). Hsinchu: Jenschan Trail, 4 Sep 2016, *Lu 29953* (TAIF); Lan Lake, 29 Mar 2021, *Hsu 13401* (TAIF); Mt. Yaopai, 27 Mar 2021, *Hsu 13362* (TAIF). Miaoli: Leshan Logging Trail, 8 May 2022, *Lu 35342* (TAIF); Matala Stream - Chiuchiu Shelter, 21 Jul 2012, *Hsu 6042* (TAIF); Talu Logging Trail West Line, 6 Aug 2020, *Lu 33579* (TAIF). Nantou: Luantashan, 9 Aug 1908, *Kawakami & Mori 7069* (TAIF); Luantashan, 9 Aug 1908, *Kawakami & Mori s.n.* (TAIF); Mt. Chinkanshu, 22 Jul 2016, *Lu 29637* (TAIF); Mt. Shuishe, 17 Jun 2010, *Hsu 2831* (TAIF); Shanlinhsi Logging Trail - Mt. Luchu, 26 Jul 2015, *Lu 28485* (TAIF); Shuanglung Logging Trail - Luanan Temple, 8 Nov 2023, *Hsu 15319* (TAIF); Tsuifeng, 8 Jun 2018, *Hsu 10658* (TAIF); Yushan, 13 Oct 1906, *Kawakami & Mori s.n.* (TAIF). Pingtung: Chinshuiying, 23 Aug 2008, *Hsu 1623* (TAIF); Chinshuiying, 23 Aug 2008, *Hsu 1624* (TAIF); Chinshuiying, 16 Mar 2022, *Lu 35197* (TAIF); Chinshuiying Ancient Trail, 28 Apr 2024, *Liu 0366* (TAIF); Mt. Chiatanai, 7 Feb 2013, *Hsu 6310* (TAIF); Mt. Kutzulun, 15 Apr 2012, *Hsu 5597* (TAIF); Mt. Peitawu - Mt. Payusen, 2 Jun 2014, *Hsu 7158* (TAIF); Raai, 1 Jan 1918, *Matsuda s.n.* (TAIF). Taichung: Black Forest, 10 May 2017, *Chen 1467* (TAIF); Lishan Guesthouse - Fushoushan Farm, 9 May 2017, *Chen 1465* (TAIF); Mt. Pahsien, 24 Nov 1922, *Sasaki s.n.* (TAIF); Taichung Branch, Soil and Water Conservation Bureau, 27 Sep 2017, *Chen 1591* (TAIF). Taitung: Katapola Stream, 16 Feb 2015, *Hsu 7459* (TAIF); Katapola Stream - Hsiaokuei Lake, 5 Feb 2013, *Hsu 6276* (TAIF); Mt. Talili, 1 Mar 2014, *Hsu 6922* (TAIF).

Carex rhynchaenium C.B. Clarke, Publ. Bur. Sci. Gov. Lab. 35: 5, 1906. **Type:** PHILIPPINES. Luzon, Bataan: Mount Mariveles, A.D.E. Elmer 6983 (isosyntypes: E00393407 image!, K000291283!, K000999221!, MICH1109209 image!, NY00011584 image!).

=*Carex hatuimana* Ohwi, Jap. J. Bot. 7: 196, 1934. **Type:** TAIWAN. Pingtung ("Takaoshu"): Daijurin, *J. Ohwi 329* (holotype: KYO0022174 image!).

References: Koyama (1978: 329-330, pl.1354); Kern and Nooteboom (1979: 150, f.120-30); Koyama *et al.* (2000: 229, pl.89); Dai *et al.* (2010: 318); Hoshino and Masaki (2011: 272-273); Katsuyama (2015: 183); Hsu and Chung (2017: 269); Hoshino *et al.* (2020: 284).

Additional specimens examined: TAIWAN. Nantou: Lienhuachih, 3 Sep 2008, *Chen 1097* (TAIF); Lienhuachih, 2 Sep 2008, *Hsu 1665* (TAIF); Mt. Nantungyen, 29 Mar 2011, *Chen 1292* (TAIF); Pihu, 2 Sep 2009, *Hsu 2272* (TAIF). New Taipei: Hsianeipinglingshan



Trail, 7 Mar 2017, *Chen 1383* (TAIF); Huangtitten, 19 Apr 2015, *Lu 28023* (TAIF); Hutung Ancient Trail, 28 Aug 2017, *Chen 1548* (TAIF); Leikungpo, 14 Jul 2017, *Chen 1517* (TAIF); Mt. Chiuchiungken, 2 Jul 2016, *Lu 29605* (TAIF); Mt. Chiuchiungken, 20 Nov 2016, *Hsu 8771* (TAIF); Mt. Erhke, 2 May 2015, *Hsu 7659* (TAIF); Mt. Hsin & Meng Pond, 22 Nov 2008, *Lu 17344* (TAIF); Peii Highway, 24 Jan 2018, *Chen 1693* (TAIF); Tamsui-Kavalan Trails, 8 Sep 2017, *Chen 1577* (TAIF). Pingtung: Chinshuiying, 23 Aug 2008, *Chen 1078* (TAIF); Chinshuiying, 23 Aug 2008, *Chen 1080* (TAIF); Chinshuiying, 23 Aug 2008, *Hsu 1622* (TAIF); Chinshuiying - Chushuipo, 23 Aug 2008, *Hsu 1648* (TAIF); Kaoshihfo, 19 Sep 2008, *Hsu 1772* (TAIF); Mt. Chachayatun, 23 Jan 2018, *Hsu 10144* (TAIF); Mt. Chiapuan, 17 Apr 2016, *Hsu 8398* (TAIF); Mt. Chichouliao, 18 Jan 2014, *Hsu 6821* (TAIF); Mt. Peihulu, 21 Dec 2021, *Hsu 13778* (TAIF); Shouchia, 10 Apr 2010, *Chen 1263* (TAIF); Shouka, 25 Jan 2016, *Hsu 8214* (TAIF); Shouka, 20 Oct 2025, *Hsu 16414* (TAIF); Tungyuan, 14 Oct 2021, *Hsu 13680* (TAIF); Taitung: Changjenmu, 15 Mar 2018, *Hsu 10265* (TAIF); Mt. Chushih, 21 Jul 2019, *Jung 6173* (TAIF); Tupan, 18 Nov 2012, *Hsu 6109* (TAIF). Yilan: Mt. Sanchiaolun, 28 Dec 2017, *Chen 1662* (TAIF); Mt. Sanchiaolun, 15 May 2009, *Hsu 2211* (TAIF); Paoma Historic Trail, 31 May 2017, *Chen 1477* (TAIF).

Carex rhynchophylla Fisch., C.A. Mey. & Ave-Lall., Index Seminum (LE, Petropolitanus) 9(Suppl.): 9, 1844. **Type:** RUSSIA. Siberia: Dahuria, 1842, *Meyer s.n.* (lectotype: LE01006986 image!).

References: Akiyama (1955: 175, pl. 174–175); Liang *et al.* (2000: 354–356, pl.74-1–4); Dai *et al.* (2010: 403, f.358-1–4); Hoshino and Masaki (2011: 500–501); Katsuyama (2015: 355); Hoshino *et al.* (2020: 337).

Additional specimens examined: FINLAND. South Hame, Hameenlinna, 31 Jul 1999, *Lampinen 9696* (TAIF). RUSSIA. Altai, Ust-Kansky, the Katunskiy Range, 4 Aug 1999, *Wakabayashi et al. 9280619* (TAIF).

Carex stipitinox C.B. Clarke ex Franch., Bull. Annuel Soc. Philom. Paris, sér. 8, 7: 31, 1894. **Type:** CHINA. Hubei (“Hu-peh”): A. *Henry 5838* (isosyntypes: K000960983!, LE01042606 image!); A. *Henry 5971* (syntype: K000960982!); A. *Henry 6610* (syntype: K002941823!).

References: Liang *et al.* (2000: 447–448, pl.91-11–14); Dai *et al.* (2010: 436, f.574-11–14).

Additional specimens examined: CHINA. Anhui: Shitai, Qijing Township, 27 Aug 2006, *Liu et al. A160090* (TAIF). Hunan: Xinning, Mt. Ziyun, 4 Sep 1984, *Ziyunshan Exp. 612* (TAIF).

Carex vesicaria L., Sp. Pl.: 979, 1753. **Type:** EUROPE. *Anonymous s.n.* (lectotype: LINN1100.74 image!).

References: Akiyama (1955: 173–174, pl.172); Liang *et al.* (2000: 356–357); Dai *et al.* (2010: 403); Hoshino and Masaki (2011: 496–497); Katsuyama (2015: 354); Hoshino *et al.* (2020: 337).

Additional specimens examined: FRANCE. Loir-et-Cher, Lake of la Harpe, 3 Jun 1974, *Sotiaux s.n.* (TAIF); Oost Cappel, Oost houck, 13 June 1985, *Vanhecke 7867* (TAIF).

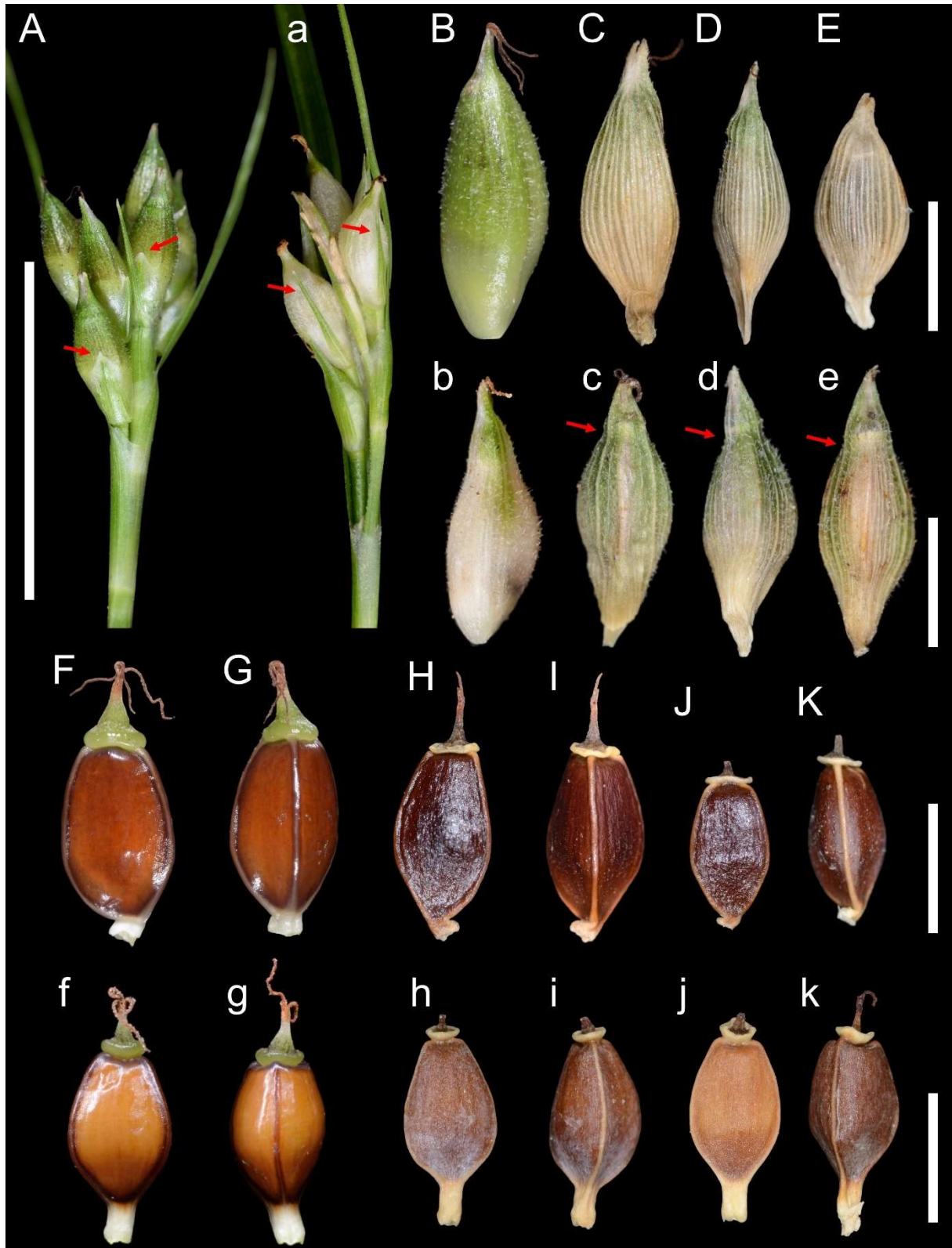


Fig. S1. Comparison of *Carex chamaecyparicola* T.C. Hsu (A–K) and *C. orthostemon* Hayata (a–k). A from *Hsu* 13546 (TAIF); B–C & F–I from *Hsu* 8469 (holotype, TAIF); D–E & J–K from *Hsu* 9293 (TAIF); a–b & f–g from *Hsu* 7761 (TAIF); c & j–k from *Hsu* 7762 (TAIF); d–e & h–i from *Lu* 28485 (TAIF). **A & a.** Fruiting culms. Note the absence and presence of pistillate scale awns indicated by red arrows. **B & b.** Fresh utricles. **C–E & c–e.** Dried utricles. Note the weak constriction below the beaks in *C. orthostemon*. **F–G & f–g.** Fresh nutlets. **H–K & h–k.** Dried nutlets. Scale bars: A & a = 1 cm; B–K & b–k = 2 mm.



Fig. S2. Habitats and habits of *Carex leongii* T.C. Hsu. **A.** Plants from the type locality, Mt. Tulan, Taitung. **B.** Plants with broader leaves, shorter culms and rather brownish staminate spikes from Lanyu Island, Taitung. **C.** Plants with generally longer culms from Lailaipei, New Taipei.

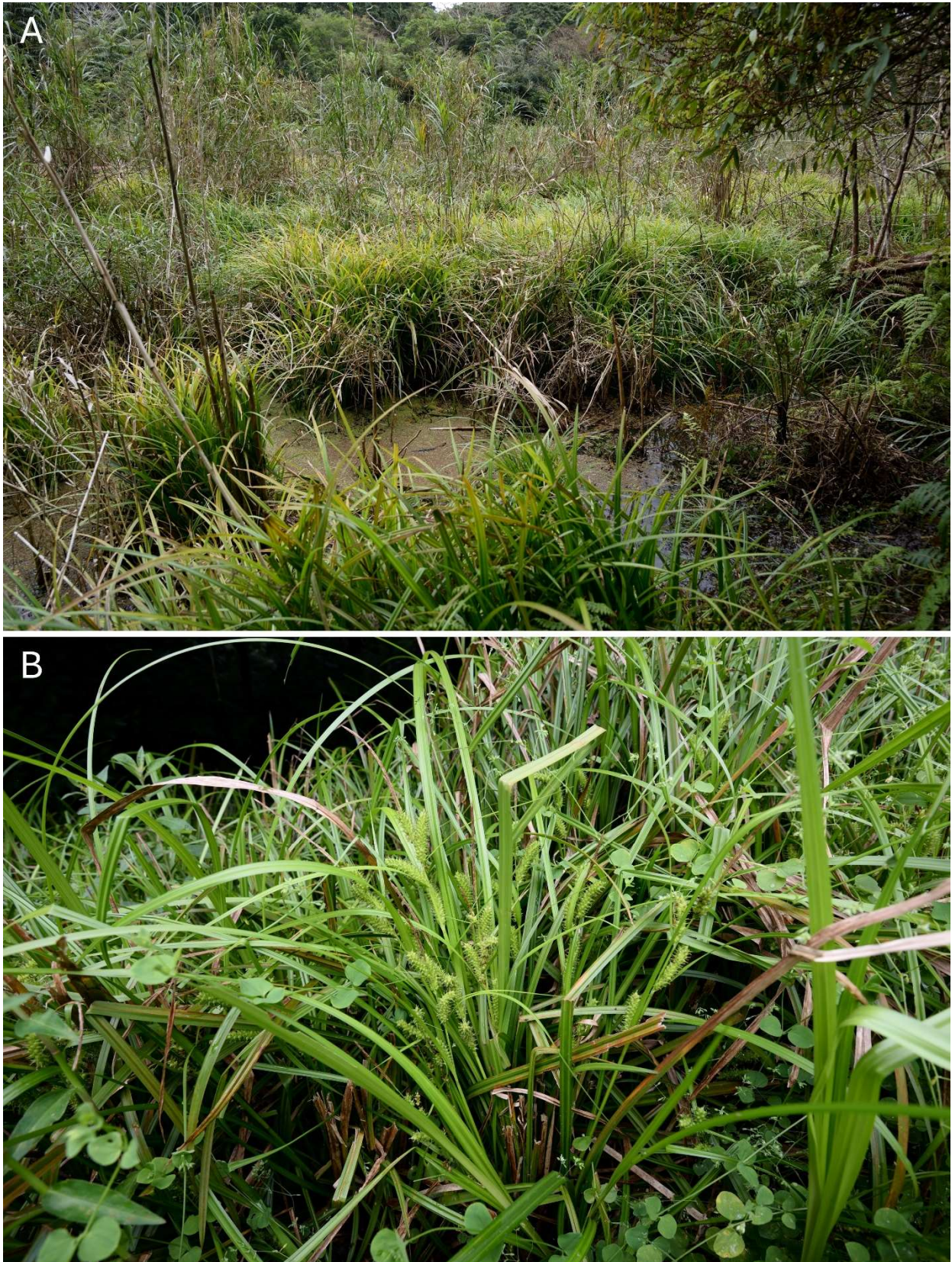


Fig. S3. Habitats and habits of *Carex orthorhyncha* T.C. Hsu. **A.** Plants forming large clumps on the swampy area in Tashuiku, Taitung, the type locality. **B.** Flowering and fruiting plants at pondside of Siaopi, Yilan.

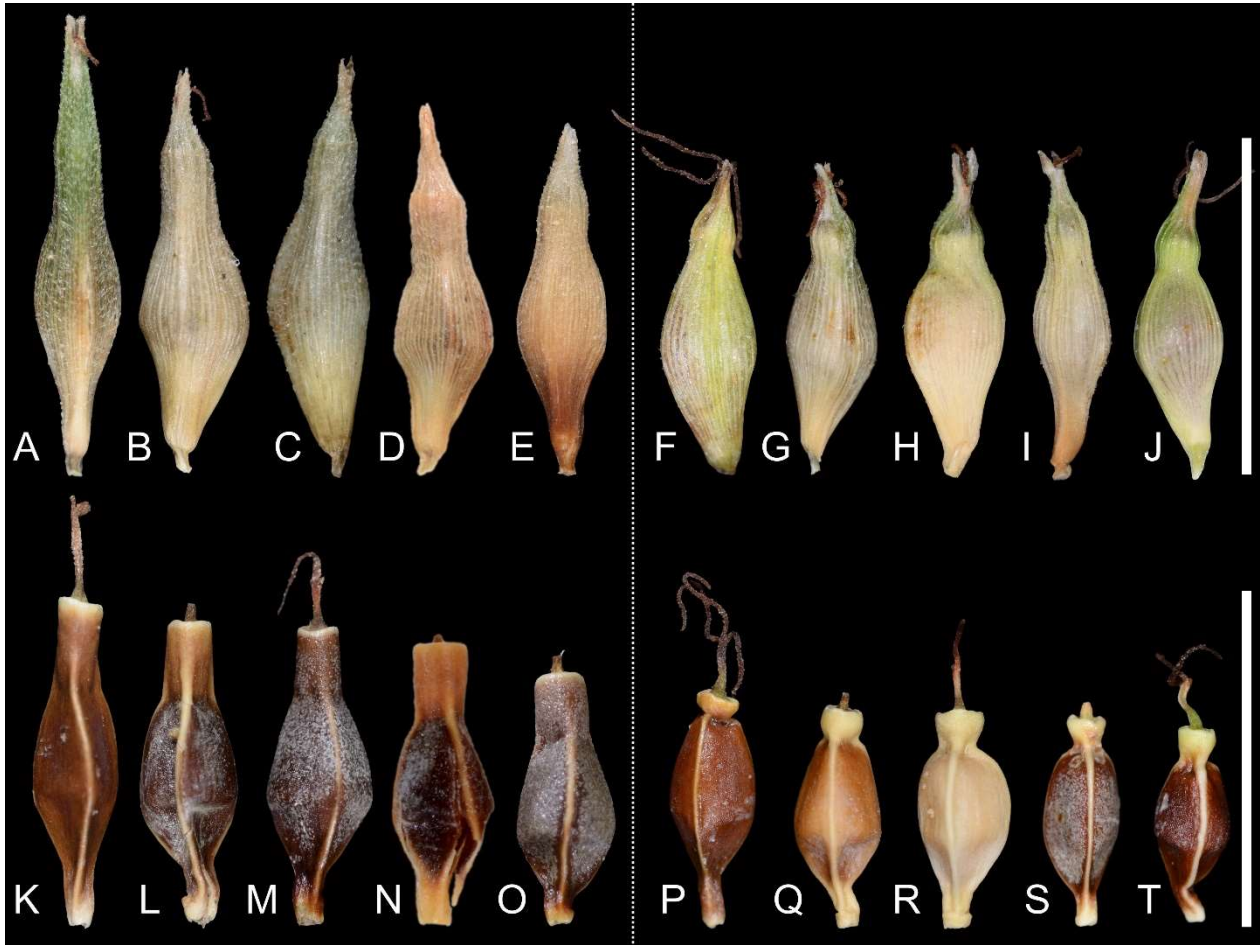


Fig. S4. Comparison of *Carex rhynchachaenium* C.B. Clarke (A–E & K–O) and *C. pseudorhynchachaenium* T.C. Hsu (F–J & P–T). A & K from *Hsu 16414* (TAIF); B & L from *Hsu 2211* (TAIF); C & M from *Hsu 10265* (TAIF); D & N from *Elmer 6983* (type, K); E & O from *Hsu 8214* (TAIF); F & P from *Hsu 16580* (TAIF); G & Q from *Hsu 8450* (TAIF); H & R from *Hsu 2835* (TAIF); I & S from *Hsu 2753* (TAIF); J & T from *Hsu 13136* (type, TAIF). **A–J.** Dried utricles. **K–T.** Dried nutlets. Scale bars = 5 mm.