



## Supplement

The following supplementary materials are available for this article: Lu, C.T., Wang, W.Y. 2023. *Sedum matsuense* (Crassulaceae), a new stonecrop from Matsu Islands. *Taiwania* 68(2): 135-142. doi: 10.6165/tai.2023.68.135

**Table S1.** Taxa included in the present study with locality, voucher information, deposit herbarium and GenBank accession numbers for the sequences of internal transcribed spacer (ITS) of nuclear ribosomal DNA.

**INGROUP: *Sedum actinocarpum*** Yamam. Taiwan *Ito* 1612 (TNS) LC229263, *Ito* 1732 (TNS) LC229264. ***S. alfredii*** Hance China: Guangdong *Kokubugata* 17190 (TNS) AB930259; *Kokubugata* 17191 (TNS) AB930260, *Kokubugata* 17192 (TNS) AB930261. ***S. arisanense*** Yamam. Taiwan: *Ito* 1836 (TNS) LC229272. ***S. boninense*** Yamam. ex Tuyama Japan: Kanto *Ito* 2371 (TNS) LC229242. ***S. brachyrhinchum*** Yamam. Taiwan *Ito* 1359 (TNS) LC229274, *Ito* 3118 (TNS) LC 229277. ***S. bulbiferum*** Makino Japan: Kyushu *Ito* 416 (TNS) LC229234. ***S. danjoense*** Takuro Ito, H.Nakan. & Kokub. Japan: Kyushu *Ito* 3658 (TNS) LC260127. ***S. emarginatum*** Migo China: Zhejiang *Ito*1062 (TNS) LC530833. ***S. erythrospermum*** Hayata Taiwan *Tsutsumi* 1504 (TNS) AB906473. ***S. formosanum*** N.E.Br. Taiwan *Ito* 1260 (TNS) LC229279, *Ito* 1921 (TNS) LC229280. ***S. formosanum*** subsp. ***miyakojimense*** Takuro Ito, Yokota & Kokub. Japan: Ryukyu *Ito* 1115, (TNS) LC530813, *Ito* 1120 (TNS) LC530814. ***S. hakonense*** Makino Japan: Chubu *Ito* 623 (TNS) AB930278. ***S. hangzhouense*** K.T.Fu & G.Y.Rao China: N. Zhejiang *Ito* 2604 (TNS) LC229236. ***S. japonicum*** Siebold ex. Miq. subsp. ***japonicum*** var. ***japonicum*** Japan: Shikoku *Ito* 723 (TNS) LC229237. ***S. japonicum*** subsp. ***japonicum*** var. ***senanense*** (Makino) Makino Japan: Tohoku *Ito* 2200 (TNS) LC229238. ***S. japonicum*** subsp. ***oryzifolium*** (Makino) H.Ohba var. ***oryzifolium*** Japan: Kyusyu *Ito* 2285 (TNS) LC229239. ***S. japonicum*** subsp. ***oryzifolium*** (Makino) H.Ohba var. ***pumilum*** (H.Ohba) H.Ohba Japan: Kanto *Ito* 2287 (TNS) LC229240. ***S. jiulongshanense*** Y.C.Ho China: Zhejiang *CMQ20150076* (TNS) LC229243. ***S. kiangnanense*** D.Q.Wang & Z.F.Wu China: Zhejiang *Ito* 1030 (TNS) LC229244. ***S. kwanwuense*** H.W.Lin, J.C.Wang & C.T.Lu Taiwan *Ito* 2440 (TNS) LC229293. ***S. lineare*** Thunb. Japan *Ito* 667 (TNS) LC229245. ***S. lungtsuanense*** Fu China: Zhejiang *Ito* 3563 (TNS) LC260131. ***S. makinoi*** Maxim. Japan: Kansai *Umemoto* 2325 (TNS) LC229264. ***S. matsuense*** C.T.Lu & W.Y.Wang Taiwan, Matsu Islands *CT* 2919 TAIF OQ658619. ***S. mexicanum*** Britton Japan *Ito* 647 (TNS) LC229247. ***S. microsepalum*** Hayata Taiwan *Ito* 1965 (TNS) LC229281. ***S. morrisonense*** Hayata Taiwan *Ito* 1265, (TNS) LC229284, *Kokubugata* 17029 (TNS) LC229283, *Ito* 1663 (TNS) (TNS) LC229286. ***S. multicaule*** Wall. ex Lindl. China *Ito* 625 (TNS) LC229248. ***S. nagasakianum*** (Hara) H.Ohba Japan: Kyushu *Ito* 2064 (TNS) LC229249. ***S. nokoense*** Yamam. Taiwan *Ito* 3296 (TNS) LC229294. ***S. oligospermum*** Maire China: Zhejiang *Ito* 74 (TNS) LC229250. ***S. polytrichoides*** Hemsl. subsp. ***polytrichoides*** var. ***polytrichoides*** Japan: Kyushu; China *Ito* 2247 (TNS) LC229252, *CMQ1057* (TNS) LC229251. ***S. polytrichoides*** subsp. ***yabeabum*** (Makino) H.Ohba var. ***setouchiense*** (Murata et Yuasa) H.Ohba Japan: Shikoku *Ito* 2298 (TNS) LC229253. ***S. rupifragum*** Koidz. Japan: Sanin *Ito* 2070 (TNS) LC229254. ***S. sarmentosum*** Bunge Japan: Tohoku *Ito* 978 (TNS) LC229255. ***S. satumense*** Hatus. Japan: Kyushu *Ito* 2295 (TNS) LC229256. ***S. sekiteiense*** Yamam. Taiwan *Ito* 1456 (TNS) LC229295. ***S. subtile*** Miq. Japan: Kyusyu *Ito* 2259 (TNS) LC229257. ***S. taiwanalpinum*** H.W.Lin, J.C.Wang & C.T.Lu Taiwan *Ito* 1823 (TNS) LC229278. ***S. taiwanianum*** S.S.Ying Taiwan *Ito* 2523 (TNS) LC229296. ***S. tarokoense*** H.W.Lin & J.C.Wang Taiwan *Ito* 2025 (TNS) LC229298. ***S. tetractinum*** Fröd. China: Zhejiang *Ito* 3623 (TNS) LC260135. ***S. tianmushanense*** Y.C.Ho & F.Chai. China: Zhejiang *LP67* (TNS) LC229261. ***S. tosaense*** Makino Japan: Shikoku *Kokubugata* 16726 (TNS) AB906483. ***S. triangulisepalum*** T.S.Liu & N.J.Chung ex T.C.Hsu & S.W.Chung Taiwan *Ito* 2508 (TNS) LC229299. ***S. tricarpum*** Makino Japan: Kyusyu *Ito* 2269 (TNS) LC229259, *Ito*2274 (TNS) LC229260, *Ito* 3597 (TNS) LC260134. ***S. truncastigium*** T.S.Liu & N.J.Chung Taiwan *Ito* 1630 (TNS) LC229301. ***S. uniflorum*** Hook. & Arn. Japan: Ryukyu *Ito* 447 (TNS) LC229241.

**OUTGROUP: *Aeonium castello-paivae*** Bolle Canary Islands *M.E. Mort* 1519 (WS) AY082127. ***A. gomerense*** (Praeger) Praeger Canary Islands *M.E. Mort* 1454 (WS) AY082133. ***A. lancerottense*** (Praeger) Praeger Canary Islands *M.E. Mort* 1518 (WS) AY082143. ***A. viscatum*** Webb ex Bolle Canary Islands *M.E. Mort* 1432 (WS) AY082154

**Table S2.** Four related species specimen examined.

### *Sedum hangzhouense*:

**CHINA. Zhejiang Prov.:** Hangzhou, Mt. Lianghuangshan, 16 May 1980, *Hang-Zhi-Biao* 1445 (HHBG); Hangzhou, 10 May 1980, *Hang-Zhi-Biao* 1425 (HHBG); Hangzhou, 9 May 1959, *Yao X.M. s.n.* (HTC); Hangzhou, elev. ca. 80 m, 12 May 1987, *C. Tsai s.n.* (HTC); Hangzhou, Mt. Hupaoshan, 15 May 2005, *Kim M.L. s.n.* (HTC); Hangzhou, Ling Yin, 28 April 1990, *H. Wang s.n.* (ZM).

### *Sedum leptophyllum*:

**CHINA. Zhejiang Prov.:** Lihui City, Fengping Township, elev. ca. 742.69 m, 24 Jul. 2018, *Ge B.-J. GBJ07285* (CSH); Mt. Tien-mu-shan, 2 Sept. 1957, *He H.Y. 25705* (IBSC); Mt. Hsi-tien-mu-shan, 28 Aug. 1935, *Migo, H. s.n.* (PE); Hsi-tien-mu, Xian-ren-ding, elev. ca. 1,400 m, 29 May 1987, *F. Chai 0020* (HTC); Hsi-tien-mu, Xian-ren-ding, elev. ca. 1,500 m, 1 Jun. 1987, *F. Chai 0022, 0028* (HTC); Mt. Hsi-tien-mu-shan, elev. ca. 1,100 m, 11 Jul. 2004, *H. Wang 454* (ZM). **Anhui Prov.:** Hong-shan, *Chien S.S. 1233* (PE, isotype!); Huangshan, 29 Jul. 1926, *Chien S.S. 1233* (NAS, isotype!); Mt. Huangshan, 14 Jul. 1986, *Wu 8261* (NAS). **Jiangxi Prov.:** Lianhua County, Gao-tian-yan, Ma-zi-po, elev. ca. 600 m, 26 Jun. 2007, *Than et al. 07456* (JJF); Ganzhou City, Wu-zhi-feng, 1 Jun. 2015, *Chao et al. LXP-13-12315* (SYS); Wuning County, Luoxi, elev. ca. 1,300 m, 2 Jul. 2002, *Chang 1218* (JJF).

### *Sedum lineare*:

**JAPAN. Yamanashi Pref.:** Minamitsuru-gun, Oshino-mura, Uchino, 21 Jun 1984, *M. Togashi s.n.* (IBSC); **Saitama Pref.:** Tosaki Matsubushi-choo, Kita-kitsushita-gun, elev. ca. 8 m, 29 May 1983, *M. Furuse 51817* (PE); **Fukuoka Pref.:** Sawara-gun, 7 Jun. 1936, *K. Nakasima 10120* (NAS).

**CHINA. Jiangxi Prov.:** Jiujiang County, Minshan, elev. ca. 140 m, 23 May 1993, *Tan 93142* (IBSC, PE, SN); Wuning County, Luoxi, elev. ca. 1300 m, 28 Jul. 1999, *Chang 99890* (SZG); Nanfeng County, 24 Apr. 1957, *Nie 2310* (LBG); Pingxiang, 17 May 1954, *Xiong 8326* (LBG); Ji'an City, elev. ca. 983 m, 24 May 2016, *Liu et al. LXP-13-17970* (SYS); Ganzhou City, 1 Jun. 2015, *Chao et al. LXP-13-*



12224 (SYS); Ganzhou City, 28 May 2017, *Tang 170528016* (GNNU); Ji'an, Gao-Tian-Yan, 25 Aug. 2012, *Chen ZB120825231* (JIU); **Sichuan Prov.:** Yongchuan County, 19 May 1982, *Du 91* (PE); Tsang-hsi County, Mt. Lao-chih-shan, elev. ca. 450 m, 21 May 1930, *Hopkinson 218* (PE); Sichuan, elev. ca. 1040 m, 13 May 1964, *Yin & Chen 0105* (CDBI); Shizhu County, Huangshui District, elev. ca. 1300 m, 16 May 1975, *Wang 613* (CDBI). **Shaanxi Prov.:** Pingli County, Qianjiaping Forest Farm, elev. ca. 19,00 m, 6 Jul. 2004, *Chen et al. 936* (WUK); Huayin City, Huashan, elev. ca. 607 m, 13 Jun. 2013, *Tian XH873* (KUN). **Jiangsu Prov.:** Langshan, 1 Jun. 1951, *East China Workstation colleagues 1625* (PE). **Hunan Prov.:** Yizhang, 18 May 1942, *Chen 1054* (IBK); Yizhang County, Mt. Mangshan, elev. ca. 550 m, 20 May 2005, *Xiao 4145* (PE); Sangzhi County, Taiping Mountain, Huanglian Terrace, 27 Aug. 1988, *Beijing Team 4202* (PE); Yuanling, elev. ca. 75 m, 18 May 2011, *Chang & Zhou 1105046* (CSFI); Xiaoxi Township, elev. ca. 537 m, 9 Apr. 2015, *Lei 4331271504091583* (JIU); Yongshun County, Xiaoxi, elev. ca. 250 m, 10 May 2008, *Chang 080510117* (JIU); Rucheng County, Sishui Mountain, elev. ca. 1100 m, 28 Aug. 2017, *Lo & Liu 757* (CSFI); Yueyang City, Pingjiang County, Mt. Fenghuangshan, elev. ca. 480 m, 23 May 2015, *Zhan & Peng LXP4241* (LBG). **Hubei Prov.:** Yingshan, elev. ca. 300 m, 3 Jun. 2007, *Ma 07HS5030* (HENU); Yingshan, elev. ca. 300 m, 29 May 2006, *Diao 050205026* (HENU); Yidu City, Osmanthus Tree House, elev. ca. 285.8 m, 16 Jun. 2017, *Hou et al. 20170616144-1~7* (QFNU); Sangzhi County, Badagong Mountain, elev. ca. 1,323 m, 27 Apr. 2019, *Chang SZ 20190427\_0039* (JIU); Baojing County, Maogou Town, elev. ca. 1,012 m, *Chang & Chang BJ20170325040\_0040* (JIU). **Anhui Prov.:** Jinpan County, 29 Jul. 1959, *Jinpan County Census Team 60547* (PE). **Zhejiang Prov.:** Hangzhou, 28 May 1957, *Chang 781* (PE); Zhoushan City, Panzhi Island, 24 Jun. 2012, *Hua BYK1322* (CSH). **Fujian Prov.:** Fukien, Kushan, 2 Jul. 1937, *H. Migo s.n.* (PE); Amoy University garden, 15 Apr. 1923, *H.H. Chung 1460* (AU, NAS). **Kwangtung Prov.:** Tsengshing District, Mt. Naam-Kwan-Shan, 4 May 1932, *W.T. Tsang 20424* (PE). **Kwangsi Prov.:** Guangxi Zhuang Autonomous Region, 8 May 1936, *Huang 39144* (IBK); Guangxi Zhuang Autonomous Region, 8 May 1050, *Chung 808100* (IBK). **Guizhou Prov.:** Longli County, Mt. Leigongshan, elev. ca. 750 m, 17 Jun. 1970, *Qiannan Team 2377* (PE); Huagangping, 1 Jun. 2016, *Lei KKS1604290* (ZY); Mt. Doulianshan, elev. ca. 1,200 m, 28 May 2011, *Song BPS-2011-4-3-018* (QNUN); Yuping County, Bingxi Village, elev. ca. 335.9 m, 3 May 2015, *Chang 52223150503058LY* (GZTM); Zhijin County, Qimo Township, elev. ca. 1,416.8 m, 7 Aug. 2015, *Chen 522425150807008LY* (GZTM). **Yunnan Prov.:** Ping-Pien County, elev. ca. 1350 m, 20 May 1934, *H.T. Tsai 55280* (PE).

***Sedum polytrichoides* Hemsl. ssp. *polytrichoides*:**

**JAPAN. Tochigi Pref.:** Minagawa-jounai Tochigi-shi, cult., 9 Jul. 1971, *M. Furuse 51175* (PE); same loc., 5 Jul. 1970, *M. Furuse 49981* (PE).

**CHINA. Jilin Prov.:** Antu County, Mt. Changbai, elev. 2,000–2,600 m, 15 Jul. 2001, *Cao et al. 201* (PE); **Shaanxi Prov.:** Fehping County, 9 Aug 1938, *T.N. Liou & P.C. Tsoong 3125* (PE); Shaanxi, 23 Aug. 1951, *Guo 578* (PE). **Shangxi Prov.:** Lishan Reserve, elev. ca. 2,200 m, 3 Aug. 2014, *Yan & Wu ZTS* (BNU). **Anhui Prov.:** Mt. Jiuhua, 26 Sept. 1983, *Xue & Wang 1105* (IBSC); Jing County, Mt. Huanglong, elev. ca. 1,000 m, 9 Jun. 2006, *Liu et al. A80062* (PE; KUN); Hwangshan, near Yunkunze, 10 Aug. 1935, *T.N. Liou & F.C. Tsoong 2463* (PE); same loc., 11 Aug. 1935, *T.N. Liou & F.C. Tsoong 2533* (PE); Hwangshan, Chui-shihlin to Tze-kwangsze, 7 Aug. 1935, *T.N. Liou & F.C. Tsoong 2300* (PE); Shitai County, Kunianjiang Nature Reserve, elev. ca. 520 m, 10 Jun. 2018, *Xiong et al. 699* (NAS). **Jiangsu Prov.:** Nanjing, Mt. Zijinshan, 28 May 1954, *Yang 683* (NAS). **Zhejiang Prov.:** Pan'an, An-Wen-Ling, 11 Jun. 1988, *Hung 2041* (HHBG); Taohua Island, Mt. Duizhi, elev. ca. 440 m, 15 May 2007, *Tian & Chang TZ0015* (CSH); same loc., 24 May 1987, *Chang & Xu 0466* (ZM); Mt. Dapanshan, elev. ca. 490 m, 5 Jun. 2005, *Chang DPS 181* (ZM); Zhejiang, elev. ca. 167.96 m, 28 Jun. 2012, *Hua et al. BYK1808* (CSH); Zhoushan City, Taohua Island, elev. ca. 38.2 m, 16 May 2012, *Ge et al. GBJ01757* (CSH); Dinghai County, Oxbow Island, elev. ca. 4 m, 5 Jul. 2016, *Guo et al. 16CS212520* (KUN).