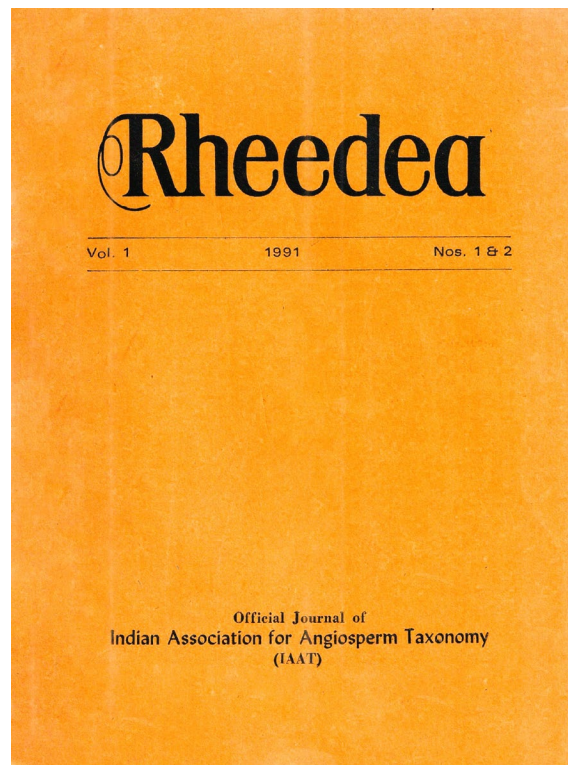




Contributions to the Flora of Southeastern China II

Hsu Ping-Sheng



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Contributions to the Flora of Southeastern China II.

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Abstract

This paper involves 20 species of which *Sedum jihuashanensis* Hsu et H. J. Wang and *S. ecalcaratum* H. J. Wang et Hsu are proposed to be new, 1 species and 2 varieties are reduced to synonymy, 8 species are reported for the first time in China, and 6 species are discussed taxonomically.

The present paper is a further report on the novelties and noteworthy plants of southeastern China. The first installment appeared in the Chinese journal *Acta Phytotaxonomica Sinica* 11 (2): 190-205, pl. 23-31, 1966. These studies cover an area consisting of the City of Shanghai, and the Provinces of Jiangsu, Anhui, Zhejiang, Jiangxi and Fujian. This paper involves 20 species belonging to 10 families, of which *Sedum jihuashanensis* Hsu et H. J. Wang and *S. ecalcaratum* H. J. Wang are proposed as new species, 1 species and 2 varieties are reduced to synonymy, 8 species are reported for the first time in China, and 6 species are discussed taxonomically. The majority of the exsiccatae cited in this paper are preserved in our herbarium. Numbers marked by an asterik denote specimens preserved in the herbarium of Shanghai Museum of Natural History.

Urticaceae

Pilea peploides (Gaud.) Hook. et Arn.,
Bot. Beech. Voy. 96. 1831.

Pilea peploides (Gaud.) Hook. et Arn.,

var. *minutissima* Hus in Acta Phytotax.
Sin. 11 (2): 190. 1966, *syn. nov.*

Anhui: Huangshan, *Fudan Univ.* 721
(Type of *P. peploides* var. *minutissima*).
Zhejiang: Zhuji, Tungpeshan, *S. Chen*
267; Jiangxi: Wugongshan, Bot. Inst.
Beij. Jiangxi Exp. 1069.

I have seen *Pilea peploides* growing side by side with *minutissima* at the foot of a moist rocky hill in Hangzhou, Zhejiang Province. The plants growing on the ground were typical *P. peploides* which were of higher stature and with branched stems. However, those growing on the vertical surface of cliff densely covered with mosses were only 2-3 cm high with unbranched stems which match var *minutissima*. But, I take these dwarf individuals to be precocious plants of *P. peploides* adapted to the aforementioned particular environmental conditions. Although similar in leaf shape to *P. swinglei* Merr., their flowers are in axillary sessile fascicles rather than on peduncles. Clearly, J. R. Chen's (Bull. Bot. Res. 2:11, 1982) treatment of *P. peploides* var. *minutissima* Hsu as

a synonym of *P. swinglei* is inappropriate.

Caryophyllaceae

Stellaria apetala Ucria in Roem. Arch. 1 (1): 68. 1796.

Shanghai: Jiangwan, in waste place, *T. N. Yan* 10089;
Sichuan: Fenjie, *H. F. Zhou* 26204.

A common weed in C. and E. Europe. It is reported for the first time in China. This entity might prove to have a wide range in China when further material becomes available.

Ranunculaceae

Ranunculus sardous Crantz, Strip. Austr. 2: 84. 1763; Gleason et Cronq., Man. Vasc. Pl. Northe. U.S. & Adj. Can. 313. 1963; Tutin in Fl. Europ. 1: 230. 1964; Keener In Sida 6 (4): 272. 1976.

Shanghai: Jiangwan, Fudan University Campus, *T. N. Yan* 10494.

This species is native to Europe and naturalized in North America as a weed. Its distribution in China is reported for the first time. The plant is rarely met with in Shanghai.

Cruciferae

Lepidium campestre (L.) R. Br. in Ait., Hort. Kew. ed. II, 4:88. 1812.

Shanghai: Pengpu Railway Station, by side of railway, *S.X. Qian* 5408*.

This species is distributed throughout Europe. It is reported for the first time in China. It occurs as a casual in Shanghai.

Crassulaceae

Sedum sarmentosum Bunge in Mem. Acad. Sci. St. Petersburg. Sav. Etrang. 2:104.

1833; S. H. Fu in Fl. Reip. Pop. Sin. 34(1) 146. 1984.

Jiangsu: Suzhou, the *students* 10466; no precise locality, *W. C. Zhou* 506. Anhui: Qinpang, Jiuhuashan, *H. J. Wang* *P. X. Fu* 86109 & 86110, Jiangxi: Jinggan-shan, *S. S. Lai* 4152. Fujian: Jianou, *Fudan Univ. Fujian Exp.* 52797.

This species has a wide range from Northern to southern provinces of China. Nowadays, it is cultivated for ornamental, and medicinal purposes. It also occurs in Korea and Japan.

Sedum angustifolium Z. B. Hu et X. L. Huang in Acta Phytotax. Sin. 19(3): 311. 1981.

Anhui: Huangshan, *H. J. Wang* 544; same locality, *Fudan Univ. Fieldwork Group* 85 & 831; Qinyang, Jinhuashan, *H. J. Wang* & *P. X. Fu* 80305, 80306, 86108 & 86111. Zhejiang: Jiahua, *H. J. Wang* & *al.* 80304; Fuyang, *H. J. Wang* & *al.* 81207. Jiangxi: Xinwu, *Q. M. Hu* 1424.

This species also occurs in Sichuan (*H. F. Zhou* 26346), Beijing (*T. N. Liou* 1858) and Liaoning.

Sedum angustifolium and *S. sarmentosum* are morphologically very similar to each other and are sometimes difficult to differentiate. According to the type description of *S. angustifolium*, it differs from *S. sarmentosum* mainly in having narrower leaves and the bracts and sepals being "supra medium ferrugineo-maculata". However, many specimens of *S. angustifolium* that I have examined are not ferruginous - punctate on their bracts and sepals. On the other hand, a lot of specimens have their petals or sometimes together with sepals and carpels flecked with purplish-brown stripes.

But this character occurs occasionally in *S. sarmentosum* and *S. jiuhuashanense* (see below) too, and can hardly be regarded as useful in demarcating the species in question. As a whole, the former two species are statistically comparable in characters of vegetative and reproductive organs (Acta. Bot. Austro Sin. 1:37-50. 1983).

The above three species grow together in Mt. Jiuhua, Anhui Province, maintaining their distinct combinations of characters probably by self-pollination and vegetative reproduction.

Sedum jiuhuashanense Hsu et H. J. Wang, *sp. nov.*

[Sect. Aizoon Coch, Ser. Japonica (Maxim.) S. H. Fu]

Species *S. sarmentosum* Bunge et *S. angustifolium* Z. B. Hu et X. L. Huang similis et affinis, a duobus planta humilior, inflorescentiis minoribus paucifloribusque, foliis bracteis et partibus floris omnino minoribus differt.

Herba perennia glabra. Caules decumbentes 5-15 cm alta. Radices fibрилatae. Caules floriferi simplices graciles erecti vel ascendentes. Folia 3-verticillata, anguste oblata vel lineari-oblata 8.5-13.5 mm longa 1.8-3.1 mm lata, plerumque medio latissima, apice obtusiuscula, basi in calcarum latum truncatumve producta. Inflorescentia laxa cymosa, 2-5 cm lata 2-3-ramosa. 5-17-flora; flores breviter pedicellati 9-10 mm diametro; bractae lineari-lanceolatae, 3-4 mm longae, c. 1 mm latae, apice obtusae; sepala 5, anguste lanceolata c. 5.5-7.2 mm longa 1.3-2 mm lata, apice acuminata et mucro satis longo producta, basi paulo connata; stamina 10 petalis breviora;

squamae nect. quadrato-cuneatae, apice paulo emarginatae; carpella 5 leviter divergentia, 3 mm longa, stylis gracilis. Semina immatura.

Anhui: Qinyang, Mt. Jiuhua, alt. 610 m, among grasses by side of stone steps, decumbent herb 10-15 cm high, flowers yellow, *H. J. Wang & P. X. Fu* 86112, 1986. V. 25 (Type); same locality, in crevices of stone steps on the way to Baisuigon, alt. 750 m, decumbent herb 10-15 cm high, flowers yellow, *H. J. Wang & al.* 80308a, 1980. VI. 6.

Key to the species of *Sedum sarmentosum* Complex

1. Flowers small, with petals 5.5-7.2 mm long; cyme 5-7-flowered; leaves small, 8.5-13.5 mm long.....
.....**S. jiuhuashanense**
1. Flowers larger, with petals 6-9 mm long; cyme 11-42-flowered; leaves larger, 15-30 mm long.
2. Leaves oblanceolate to oblong, (4-) 5.5-7 (-9.5) mm broad, usually broadest above the middle.....
.....**S. sarmentosum**
2. Leaves linear lanceolate or linear, 3-5 mm broad, usually broadest at or below the middle.....
.....**S. angustifolium**

Sedum ealcaratum H. J. Wang et Hsu, *sp. nov.* (Fig.1)

[Sect. Aizoon Koch, Ser. Japonica (Maxim.) S. H. Fu]

Haec species proxima *S. kiangnanensis* D. Q. Wang et R. F. Wu (Bull. Bot. Res. 10(3): 45-46, pl. 1. 1990), a qua differt foliis ealcaratis vel subealcaratis, epice mucronatis, floribus minoribus, squamis nect. apice obtusis. Subsamilis tamen *S.*

jiulongshanensi Y. C. Ho (Bull. Bot. Res. 9(4) : 31-35, pl. 1. 1989) quod foliis caulis sterilis monomorphis, 3-verticillatis vel sumis oppositis, staminibus interpetalis brevioribus differt. Haud dissimile etiam *S. lineori* Thunb. quod differt foliis 3-verticillatis monomorphis linearibus.

Herba perennis glabra caespitosa, 8-15 cm alta. Radices fibrillosae. Caules steriles decumbens, ad nodos radicibus adventitiae praediti, supra basin adscendentes, foliis dimorphis, supremis 4-verticillatae, obovato-spathulatis vel obovato-lanceolatis 1-2.8 cm longis 5-10 mm latis, apice emarginatis mucronatis, basi attenuatis plerumque ecalcaratis, inferioribus 3-4 verticillatis linearibus vel oblanceolato-linearibus, 0.5-2.8 cm longis 2-5 mm latis, apice obtusis mucronatis. Caules floriferi erecti, foliis sparse suffulti, plerumque 3-4-verticillatis raro summis alternatis vel oppositis linearibus, 1-1.5 cm longis 2-2.5 mm latis, apice obtusis mucronatis. Inflorescentia cymosa 2-4-ramosa laxa 10-20-flora vel ultra plus quam. Flores subsessiles, bracteis linearibus foliaceis; sepala 5 inaequalia lineararia, 1.2-3.2 mm longa c. 0.5 mm lata, apice acutiuscula; petala lutea lanceolata 5-5.5 mm longa 1.2-1.4 mm lata; stamina 10, interpetala petalis aequilonga epipetala, petalis parum breviora, supra basin petali inserta, antheris oblongis 0.6 mm longis; squamae nect. late cuneatae vel subquadratae, c. 4 mm longae; carpella 5 oblongo-lanceolata leviter divergentia, c. 4 mm longa, basi c. 1 mm connata, apice in stylum c. 1 mm longum abrupte contracta, multiovulata. Folliculi fusci. Semina oblonga c. 0.6 mm longa.

Zhejiang : Mt. West Tienmu, near Daishwang, alt. 1020 m, roadside, in crevices of rock, herb about 15 cm high,

flowers yellow, *F. Lu* 17, 1987 V. 9. (Type); same locality, *L. C. Li* 90611; same locality, near Quiliting, alt. 800 m, in woods, in crevices of stone steps by side of stream, *L. C. Li* 9060, 1990. VI. 1. Shanghai: Fudan Univ., cultivated, introduced from Mt. West Tienmu, *H. J. Wang* 89200, 1989. IV. 10.

Polygalaceae

Polygala arvensis Willd., Sp. Pl. 3: 876. 1803; S. K. Chen in Fl. Yunnan. 3:283. 1983.

Polygala telephioides Willd. l. c.

Polygala kinii Courtois in Mem. Hist. Nat. Emp. Chin. 6: 34, pl. 13. 1920; Belval in Mus. Heude, Notes Not. Chin. no, 2, p. 11. 1933.

Jiangxi : Nashan, alt. 400m, *S. S. Lai & al.* 4846.

This species occurs in southeastern (incl. Taiwan) to southwestern China. It is frequently used as a medicinal plant in China.

Both the description and the figure of *P. kinii* agree with *P. arvensis*. *Polygala kinii* Courtois was first reduced by S. K. Chen as a synonym of *P. arvensis*, But Chen has not given the literature citation of the synonym.

Euphorbiaceae

Euphorbia chamaesyce Linn., Sp. Pl. 455. 1753.

Shanghai : in shady place, *P. S. Hsu* 200.

This species is native to South Europe, extending northwards to E. C. Russia. It is reported for the first time in China. The plant occurs as a weed in Shanghai.

Euphorbia serpens Kunth in Humb.,
Bonpl. & Kunth, Nov. Gen. Sp. 2:52.
1817.

Shanghai: *P. S. Hsu* 929. Jiangsu:
Suzhou, Mt. Huqiu, *X. W. Kong s. n.*;
Wuxi, W. Xue 92.

This species is native of America,
and occurs frequently as a casual in
western Europe. Its distribution in China
is reported for the first time. The plant
occurs as a weed of open places in
Shanghai and Jiangsu Province.

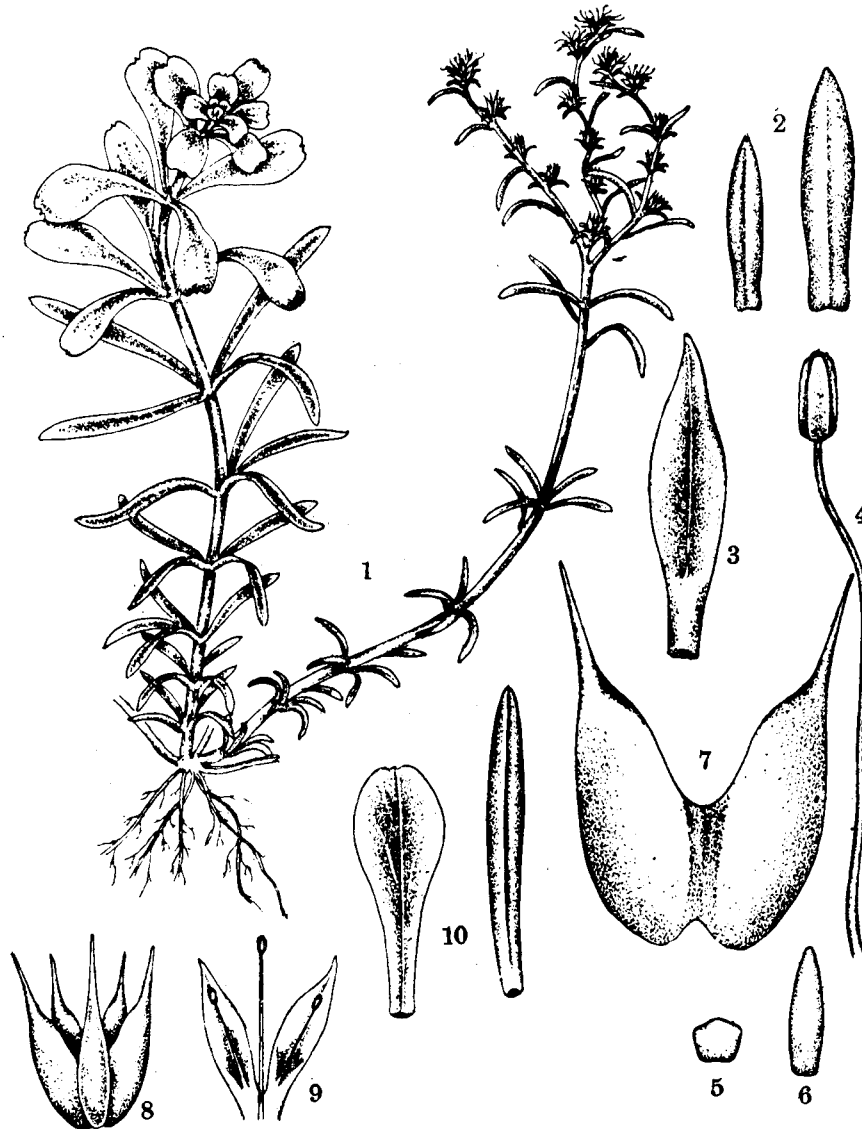


Figure 1. *Sedum ealcaratum* H. J. Wang et Hsu (H. J. Wang 89200): 1. habit, $\times 1$; 2. sepal, $\times 12$; 3. petal, $\times 10$; 4. stamen, $\times 24$; 5. nectariferous squama, $\times 5$; 6. ovule, $\times 30$; 7. carpel, $\times 15$; 8. follicle (immature), $\times 7.5$; 9. petals and stamens, $\times 5$; 10. leaves, $\times 15$.

Euphorbia nutans Leg., Gen. Sp. Nov. 17. 1816.

Euphorbia preslii Guss. Fl. Sic. Prod. 1: 539. 1827.

Shanghai: Jiangwan, near the airport, roadside, *P. S. Hsu* 696. Zhejiang: Hangzhou, *H. J. Wang* 553.

This species is native to North America, and naturalized in South and South-central Europe. Its distribution in China is reported for the first time.

Onagraceae

Oenothera laciniata Hill, Hort. Kew 172: 4, tab 6. 1768; Dietrich in Ann. Missouri Bot. Gard. 64 (3): 612. 1977; Osada, Colored Illus. Natural. Pl. Jap. 177. 1980.

Shanghai: the Beijiao Railway Station, on grassland by the railway *S. X. Qian s. n.*

This species is native to Andes and North America. It is naturalized in Japan. It appears as a casual and reported for the first time in China.

Plantaginaceae

Plantago virginica Linn. Sp. Pl. 113. 1753; Britt. et Brown, Illus. Fl. N. U. S. & Can. 3: 210. 1898; Osada, Colored Illus. Natural. Pl. Jap. 97, pl. 18. 1980.

Shanghai: Nanxiang, near the railway station, *Z. Y. Gao* 286; same locality, Huangjia Garden, *X. W. Ye & al. s. n.*; same locality, in the field, *B. W. Lo & al.* 587.

This species is native to North America. It is naturalized in Japan. It is reported for the first time in China.

Liliaceae

Liriope muscari (Decne.) Bailey, Gentes Herb. 2: 35. 1929; Hsu et L. C. Li in Acta Phytotax. Sin. 19(4): 459. 1981.

Ophiopogon spicatus Ker - Gawl. var. *communis* Maxim. in Bull. Acad. Sci. Petersb. 15:85. 1978.

Liriope platyphylla Wang et Tang in Acta Phytotax. Sin. 1:332. 1951, et in Fl. Reip. Pop. Sin. 15(2):128. 1978; Ohwi, Fl. Jap. new ed. 378. 1978.

Liriope muscari (Decne.) Bailey var. *communis* (Maxim.) Hsu et L. C. Li in op. cit., *syn. nov.*

Jiangsu: Nanjing, *J. J. Gong* 514*; Gaoji, *H. Y. Long* 7800-46* & 7800-117*; without precise locality, *Z. Q. Zhang* 1369*. Anhui: Jinzhai, East China Working Station 6804*; Huangshan, East China Working Station 6192*; Chuxian, Mt. Langya, East China Working Station 3092*; same locality, Fudan Univ. 3023; Zhejiang: Lingan, Shanghai Mus. Nat. Hist. 8239*; *Fuyang, H. J. Wang* 80301 & 80302; same locality, Shanghai Mus. Nat. Hist. 7057*; Mt. Tiantai, *L. Q. Qiu* 1914* & 1915*; Hangzhou, *H. J. Wang* 97; Mt. West Tienmu, Fudan Univ. 10325; same locality, *S. S. Chien & W. C. Cheng* 830; same locality, *M. B. Deng* 3842; Changhua, Hangzhou Univ. Taxonomy Group 1963; Lequin, *S. G. Chen* 62. Jiangxi: Yushan, *M. X. Nie & S. S. Lai* 6420 & 6498; Qianshan, *S. S. Lai & M. Y. Nie* 4335; Dexing, *M. X. Nie & S. S. Lai* 5377*; Yongxing, *S. S. Lai & al.* 4952; Lichuan, *M. X. Nie & S. S. Lai* 2669 & 3060*; Xiushui, *S. S. Lai* 3258* & 3447*; Boyang, *Q. H. Li & C. Chen* 1059*; Dayu, *M. X. Nie & al.* 9543*; Yongxiu, *Y. G. Xiong* 7385*; Lushan, *M. X. Nie* 6681*; same locality, *Fudan Univ. Fieldwork Group* 1553; Quipui, *M. X. Nie & S. S. Lai*

3702; Ruijin, *Q. M. Hu* 4311. Fujian: Nanping, *Fudan Univ. Fujian Exp.* 21616, 56204, 60322, 62072* 72024; & 80406 same locality, *L. G. Fu* 1165*; same locality, *Amoy Univ. Fujian Exp.* 18063; Longqi, *Fudan Univ. Fujian Exp.* 51414; Jianou, *Fudan Univ. Fujian Exp.* 50616, 52918, 56534, 58928, 62662 & 61740; Shaxian, *Fudan Univ. Fujian Exp.* 61046, 61095 & 61119; Yongtai, *Fujian Coll. Forest.* 35537; Fuen, *Fujian Coll. Forest.* 32852, 68176 & 68305; Ninghua, *Fudan Univ. Fujian Exp.* 53708 & 93013; Changting, *Fudan Univ. Fujian Exp.* 53831; Youqi, *Fudan Univ. Fujian Exp.* 62722; Ningde, *Fujian Coll. Forest.* 30164.

Just as Bailey (*l. c.*) remarked, "..... probably the very large-spiked, fasciated and cockscombed forms are the results of cultivation". Upon an observation of the living material of *Liriope muscari*, it has been found that both the length of scapes and the length and width of leaves are very variable in correlation with particular ecological conditions, and can hardly be regarded as characters valid for splitting the species.

Ophiopogon intermedius D. Don, *Prodr.* Fl. Nepal. 48. 1825; Wang et Dai in *Fl. Reip. Pop. Sin.* 15 (2): 158, tab. 53, fig. 1-2. 1978.

Anhui: Huangshan, *Fudan Univ.* 482 & 1073. Jiangxi: Chongyi, *M. X. Nie & al.* 8630*.

This species is widely distributed in the south of Yangtze River and Shaanxi, Honan and Taiwan. It also occurs in the Himalayas and southeastern Asia.

Ophiopogon umbraticola Hance in *Journ. of Bot.* 6:115. 1868; Wang et Dai in *Fl. Reip. Pop. Sin.* 15(2): 160, tab. 55, fig. 1-2. 1978.

Mondo n. sp.? Bailey, *Gentes Herb.* 2:27, fig. 14. 1929. Jiangxi: Lushan, *P. S. Hsu* 1420.

Bailey's undescribed new species, which was also collected from Lushan (Kuling), matches *O. umbraticola* well both in description and in photo.

This species also occurs in northern Guangdong and Taiwan.

Ophiopogon bodinieri Level., *Liliac. etc.* *Chine* 15. 1905; Wang et Dai in *Fl. Reip. Pop. Sin.* 15(2): 162, tab. 54, fig. 1-2. 1978.

Jiangxi: Mt. Jinggang, *S. S. Lai & al.* 3977.

This species, which is a Chinese endemic, occupies a wide range in China including the central, southeastern and northwestern (Shaanxi and Gansu) provinces and Taiwan.

Ophiopogon chekiangensis K. Kimura et H. Migo in *Journ. Jap. Bot.* 57 (10): 313, fig. 1. 1982.

This species was described as recently as 1982 from plants introduced and cultivated in Japan. The original plant was said to have been growing wild in the woods of Lingyin Temple of Hangzhou of Zhejiang Province. However, I was unable to find any specimen that matches the species, and has not to my knowledge too been recorded in any Chinese literature.

Ophiopogon japonicus (Linn. f.) Ker-Gawl. in *Curtis's Bot. Mag.* 27, tab. 1063. 1807; Wang et Dai in *Fl. Reip. Pop. Sin.* 15 (2): 163, tab. 55, fig. 3-5. 1978; Ohwi, *Fl. Jap. new ed.* 379. 1978.

Jiangsu: Suzhou, Mt. Tianping *G. F. Xie s. n.*; Yangzhou, East China Working

Station 2759*; Gaoyou, East China Working Station 2555*. Anhui: Chaocheng, East China Working Station 3941*. Zhejiang: Fuyang, *B. M. Miao* 7082*; Hangzhou, *E. S. Yan s. n.*; Hangzhou, *T. Q. Lu* 27; Longquan, *Zhejiang Coll. Agr.* 75*; same locality, *S. Y. Zhang* 6900. Jiangxi: Lushan, *M. J. Wang* 651*; Mt. Jinggan, *S. S. Lai* 4300; Lichuan, *M. X. Nie & al.* 3013* & 3058*; Yushan, *M. X. Nie & S. S. Lai* 6480; Wunig, *S. S. Lai* 2828*; Shangrao, *M. X. Nie & S. S. Lai* 4339 & 5058*; Dexing *M. X. Nie & S. S. Lai* 5337* & 5408*. Fujian: Changting, *Fudan Univ. Fujian Exp.* 84345; Nanping, *Fudan Univ. Fujian Exp.* 60101 & 70042; Chongan, *East China Normal Univ, Fujian Exp.* 4856.

This species has a wide distribution in the south of Yangtze River and also in Honan, Hopei and Shaanxi province. The plant is widely cultivated for ornamental and medicinal purpose especially in southeastern China. It also occurs in Japan, Vietnam and India.

Key to the Species of *Ophiopogon* in Southeastern China

1. Plant without stolons.
 2. Pedicels 4-6 mm long; styles cylindrical, not enlarged at the base; leaves 2-5(-8) mm broad.....**O. intermedius**
 2. Pedicels slender, up to 1 cm long; styles more or less conical, gradually enlarged towards the base; leaves very narrow, 1-1.5 mm broad.....**O. umbraticola**
1. Plant with stolons.
 3. Styles cylindrical, not enlarged at the base; perianth segments more or less expanded or reflexed at anthesis.
 4. Flowers larger, perianth segments 4-6 mm long; scapes 14-23 cm long, slightly shorter or as long as the leaves.....**O. bodinieri**
 4. Flowers smaller, perianth segments 2.5-3 mm long, much shorter than the leaves.....**O. chekiangensis**
 3. Styles more or less conical, distinctly enlarged at the base; perianth segments c. 5 mm long, not much expanded at anthesis; scapes usually much shorter than the leaves**O. japonicus**

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