

Distribution of the Lentibulariaceae in Japan

Sadashi KOMIYA and Chiaki SHIBATA

Nippon Dental University, Tokyo 1-9-20. Fujimi, Chiyoda-ku, Tokyo, Japan

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日本産タヌキモ科植物の分布

歯 学 部 小 宮 定 志
柴 田 千 晶

概 要

著者らは、1978年に「日本産モウセンゴケ科植物の分布」(日歯大紀要7号)を発表したが、今回「日本産タヌキモ科植物の分布」を報告することで、日本に自生するすべての食虫植物の分布を明らかにすることができた。いずれも、日本および台湾の主要標本庫を隈なく調査し、標品によって確認されたもののみを収録した。従って、地方植物誌などに見受けられる自生地は一切省略した。

本報告は、KOMIYA, "Systematic studies on the Lentibulariaceae" (1972) のうち日本産種についての分類区分と分布に関する内容の一部を改訂したり追加補充したものであり、特に、その後の研究によって外国産種と共通種であることが明らかとなったものが多いため、先取権による学名の変更をも断行した。

Utricularia affinis Wight → *U. uliginosa* Vahl

Utricularia nipponica Makino → *U. minutissima* Vahl

Utricularia racemosa Wall. → *U. caerulea* L.

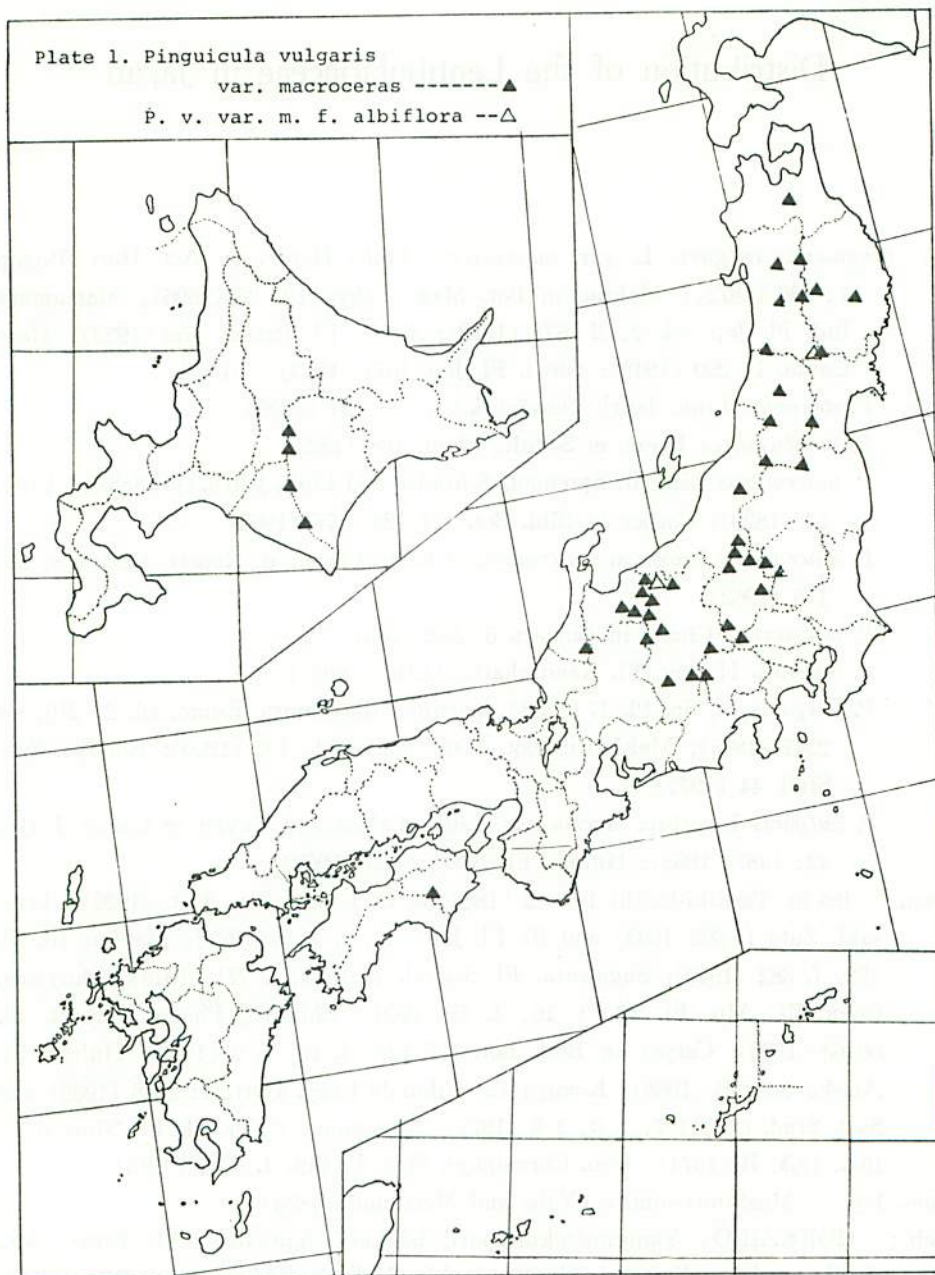
Utricularia vulgaris L., partim → *U. australis* R. Br.

著しい学名の変更は上記の4種であるが、その他にも、亜種を独立種に(*U. exoleta* R. Br.)したり、変種として細区分(*P. vulgaris* var. *macroceras*)したもの、新たに日本に自生が確認された品種(*U. minor* form. *terrestris*)などがある。更に、それら変更に伴う品種名の組換えも多く含まれる。その結果、日本固有種は *Pinguicula ramosa* Miyoshi と *Utricularia dimorphantha* Makino の2種のみとなった。但し、後者については外国産種との近縁性が論じられている。

なお、本報告における種の配列順序は、アルファベチカルではなく、KOMIYA (1972) の自然分類の系列に従った。

Distribution of the Lentibulariaceae in Japan

- 1) *Pinguicula vulgaris* L. var. *macroceras* (Link) Herder in Act. Hort. Petrop.
1: 380 (1872); Makino in Bot. Mag. Tokyo 10: 26 (1896); Matsumura,
Ind. Pl. Jap. ed. 2, 2: 578 (1912); Kudō, Fl. Param. 159 (1922); Hara,
Enum. 1: 290 (1948); Ohwi, Fl. Jap. 1071 (1953).....Pl. 1.
- Syn. *P. davurica* Link, Jahrb. Gewächskd. 1 (3): 54 (1820)
P. kamtschatica Roem. et Schult., Mant. 168 (1822)
P. macroceras Link in Sprengel, Schrader and Link, Jahrb. Gewächskd. 1 (3):
54 (1820); Casper in Bibl. Bot. 127/128: 176 (1966)
P. macroceras Link var. *microceras* (Cham.) Casper in Repert. spec. nov. 66:
116 (1962)
P. microceras Cham. in Linnaea 6: 568 (1831)
P. vulgaris Hultén, Fl. Kamtschatka (1930), non L.
P. vulgaris L., Sp. Pl. 17 (1753), partim; Matsumura, Enum. ed. 2, 216, no.
2347 (1895); Makino in Bot. Mag. Tokyo 14: 135 (1900); Komiya, Syst.
Stud. 44 (1972)
P. vulgaris L. subsp. *macroceras* (Link) Calder and Taylor in Canad. J. Bot.
43: 1387 (1965); Hultén, Fl. Alaska 829 (1968)
- Icon.: Itō in Tashiki-kaishi 1: t. 2 (1888) & in J. Jap. Bot. 3: t. (1926); Tera-
saki, Zufu f. 892 (1933) and Ill. Fl. Jap. 745, f. 2816 (1977); Makino, Ill. Fl.
128, f. 382 (1940); Sugawara, Fl. Saghal. 4: 1678, t. 771 (1940); Okuyama,
Color Ill. Alp. Fl. 32, t. 16, f. 57 (1966); Shimizu, Photogr. Insect. Pl.
60-63 (1966); Casper in Bibl. Bot. 127/128: t. 16, f. 2 (1966); Hultén, Fl.
Alaska 829, B (1968); Komiya in Seibundō Ency. Hort. 4: 2148 (1969) and
Syst. Stud. t. 1, 1-7, t. 3, 1-6 (1972); Masamune, Color Ill. Fl. Nipp. 6-I:
16A, 17A, B (1974); Icon. Cormophyt. Sini. 4: 149, f. 5711 (1975)
- Nom. Jap.: Mushitori-sumire (Yabe and Matsumura 1884)
- Hab.: HOKKAIDŌ: Yamuimetokunupuri, Ishikari, *Igarashi* TAI (1915); Mt.
Ashibetsu-dake, *Koizumi* TI (1915); Mt. Yūbari, *S. Itō* SAP (1913), *Ohwi*
KYO-5058 (1934), *Toyokuni* TNS-110607 (1954), *Kawano* MAK-131551
(1958); Mt. Poroshiri-dake, *Koyoma et al.* TNS-303224 (1971)



TŌHOKU: Mt. Hakkōda, *Faurie* KYO-476 (1897), *Ikuma* TNS-28066 (1912); Hachimantai, *Iishiba* KYO (1934), *Komiya* NDC-2033 (1957); Mt. Iwatesan, *Miyabe* SAP (1893), *Matsuda* KYO (1895), *Watanabe* TNS-53292 (1895); Mt. Akita-komagatake, *Miura* SAP (1904), *Nakamura* TNS-90941 (1905), *Komiya* NDC-2031 (1954); Okuyamadera, Akita Pref., *Shiina* TUS-5882 (1960); Mt. Chōkaisen, *Sudō* TAI-1298 (1929); Mt. Yudonosan, *Tamaki* URO-9784 (1968); Mt. Hayachine, *Faurie* KYO-13615 (1894), *Makino* MAK (1905), *Shimura* TNS-130731 (1907); Kesen-gun, Iwate Pref., *Toba* MAK (1903); Mt. Kurikoma, *Makino* MAK-3278 (1890), *Sugaya et al.* TUS-5888 (1952); Mt. Zaō, *Nakahara* TNS-23992 (1903), *Katō* KAN-25542 (1931); Mt. Asahidake, *Yūki* TNS-55134 (1931); Mt. Iidesan, *Makino* MAK (1904), *Iishiba* TAI-3866 (1909); Mt. Azumasan, *Makino* MAK (1906), *Shimizu* TNS-142709 (1959)

KANTŌ: Mt. Shibutsu, *Hoshi* KYO (1931), TNS-100700 (1931), *Okuyama* TNS-44876 (1934), *Komiya* NDC-2023 (1950); River-side of Naramata R., Oze, *Matsuda* TI (1955); Mt. Tanigawadake, *Yamazaki* and *Ono* TI-2913 (1948), *Komiya* NDC-2021 (1949); Shimizu Pass, *Ōkubo* TI (1886), *Makino* MAK (1888); Mt. Tairappyō-yama, *Okuyama et al.* TNS-261718 (1957); Mt. Nikkō-shirane, *Makino* MAK (1900); Mt. Nantai, *Ogura* TI (1921), *Nakai* TI (1931); Mt. Akagisan, *Hayata* TI (1903), *Komiya* NDC-2022 (1950), *Okuyama* TNS-131852 (1956); Mt. Arafune, *Satomi* TNS-146174 (1960); Ōtaki V., Chichibu-gun, Saitama Pref., *Nōmi* (1970), *Komiya* NDC-2526 (1972)

CHŪBU: Mt. Yakaisan, Niigata Pref., *Nakazawa* TNS-106098 (1950); Hayade-kyō, Muramatsu T., Naka-kanbara-gun, *Tsuboya* TNS-170799 (1964), *Komiya* NDC-2538 (1976); Mt. Nakadake, *Okuyama* TNS-59463 (1939); Kurobishi-daira, *Yano* TNS-142282 (1958); Mt. Asahidake, *Kanai* TI (1958), *Satomi* and *Mochizuki* KAN-70324 (1969), *Shibata* NDC-2532 (1976); Mt. Togakushi, Nagano Pref., *Yabe* and *Matsumura* TI (1884), *Nakajima* TUS-5879 (1913); Mt. Shirouma-dake, *Ichimura* KAN-3528 (1899), *Yabe* TI (1902), *Shimura* TNS-130811 (1909); Mt. Yari-gatake, *Yoneda* KAG-2538 (1910); Mt. Karamatsu-dake, *Okamoto* KYO (1935); Mt. Goryū-dake, *Murata* and *Shimizu* KYO-2119 (1957); Mt. Eboshi-dake, *Kurashima* MAK (1910); Mt. Mitsumatarenge-dake, *Matsuura* TNS-64938 (1937); Mt. Asahi-dake, *Unazuki* T., Toyama Pref., *Satomi* and *Mochizuki* TNS-255995 (1969); Mt. Tateyama, *Matsuda* KYO (1900), *Ichimura* KAN-3527 (1900), *Okuyama* TNS-304408 (1955); Kumo-ga-daira, Ōyama T., Kami-niikawa-gun, *Yamamoto* TNS-191899 A (1935); Mt. Yakushi-dake, *Hasegawa* MAK (1907); Mt. Hakusan, *Masamune* KAN-45522 (1953); Mt. Yatsugatake, *Miyake* SAP (1903), *Makino*

MAK (1907), *Faurie* KYO (1913), *Naitō* KAG-20662 (1925); Mt. Kai-komagatake, *Matsushiro* KYO (1917); *Todai-shiroiwa*, *Sugaya* TUS-5887 (1947), *Yamazaki* TI (1949), *Yamamoto* TNS-344074 (1975); Mt. Kiso-komagatake, *Okamoto* KYO (1950)

SHIKOKU: Mt. Ishidate-yama, *Abe* TNS-141796 (1959), *Kimura* TNS-223392 (1968)

Distr.: Europ. bor. et cent., Iceland, Greenland, N. Am. (Alaska, Canada, Minnesota, Rocky Mounts), Asia bor. et arc.

form. *albiflora* Komiya, Syst. Stud. 47 (1972).....Pl. 1.

Icon.: Okuyama, Color Ill. Alp. Fl. t. 16, f. 58 (1966)

Nom. Jap.: Shirobana-mushitori-sumire (Muroi 1935)

Hab.: TŌHOKU: Mt. Kurikoma, *Ikeno* and *Makino* TI (1890)

2) *Pinguicula ramosa* Miyoshi in Bot. Mag. Tokyo 4: 315, t. 11 (1890); *Matsumura*, Ind. Pl. Jap. ed. 2, 2: 578 (1912); *Hara*, Enum. 290 (1948); *Ohwi*, Fl. Jap. 1071 (1953); *Casper* in Bibl. Bot. 127/128: 129 (1966).....Pl. 2.

Syn. *P. villosa* L. var. *ramosa* (Miyoshi) *Tamura* in Act. Phy. Geo. 15: 31 (1953)

Icon.: Miyoshi in Bot. Mag. Tokyo 4: 315, t. 11 (1890), in Tennen-kinenbutsu-chōsa-hōkoku no. 3 (1919), in J. Jap. Bot. 3: t. (1926); *Makino*, Ill. Fl. 128, f. 383 (1940); *Okuyama*, Color Ill. Alp. Fl. 31, t. 16, f. 56 (1966); *Shimizu*, Photogr. Insect. Pl. 64-71 (1966); *Komiya* in Seibundō Ency. Hort. 4: 2148 (1969), Syst. Stud. t. 3, f. 7-19 (1972); *Masamune*, Color Ill. Fl. Nipp. 6-I: 16 B, 17 C (1974); *Terasaki*, Ill. Fl. Jap. 745, f. 2817 (1977)

Nom. Jap.: Kōshin-sō (Miyoshi 1890)

Hab.: KANTŌ: Mt. Nyohō, *Matsumura* TNS-46384 (1901), *Jyō* TI (1901), *Takeda* TI (1903), *Sakurai* TNS-11138 (1905), *Endō* TUS-5878 (1909); Mt. Nantaisan, *Makino* MAK (1901), *Ogura* TI (1921), *Shimada* TNS-35643 (1931), *H. Itō* TI (1934), *Komiya* NDC-2008 (1951); Mt. Kōshinzan, *Miyoshi* TI (1890), TNS-53290 (1891), *Kinashi* KYO (1891), *Sakurai* TNS-11139 (1891), *Hori* MAK (1891), *Imai* TNS-61262 (1913), *Komiya* TNS-106808, NDC-2001 (1951); Mt. Kesamaru, *Satō* TI (1940)

Distr.: Endemic in Japan

form. *albiflora*, nov.....Pl. 2.

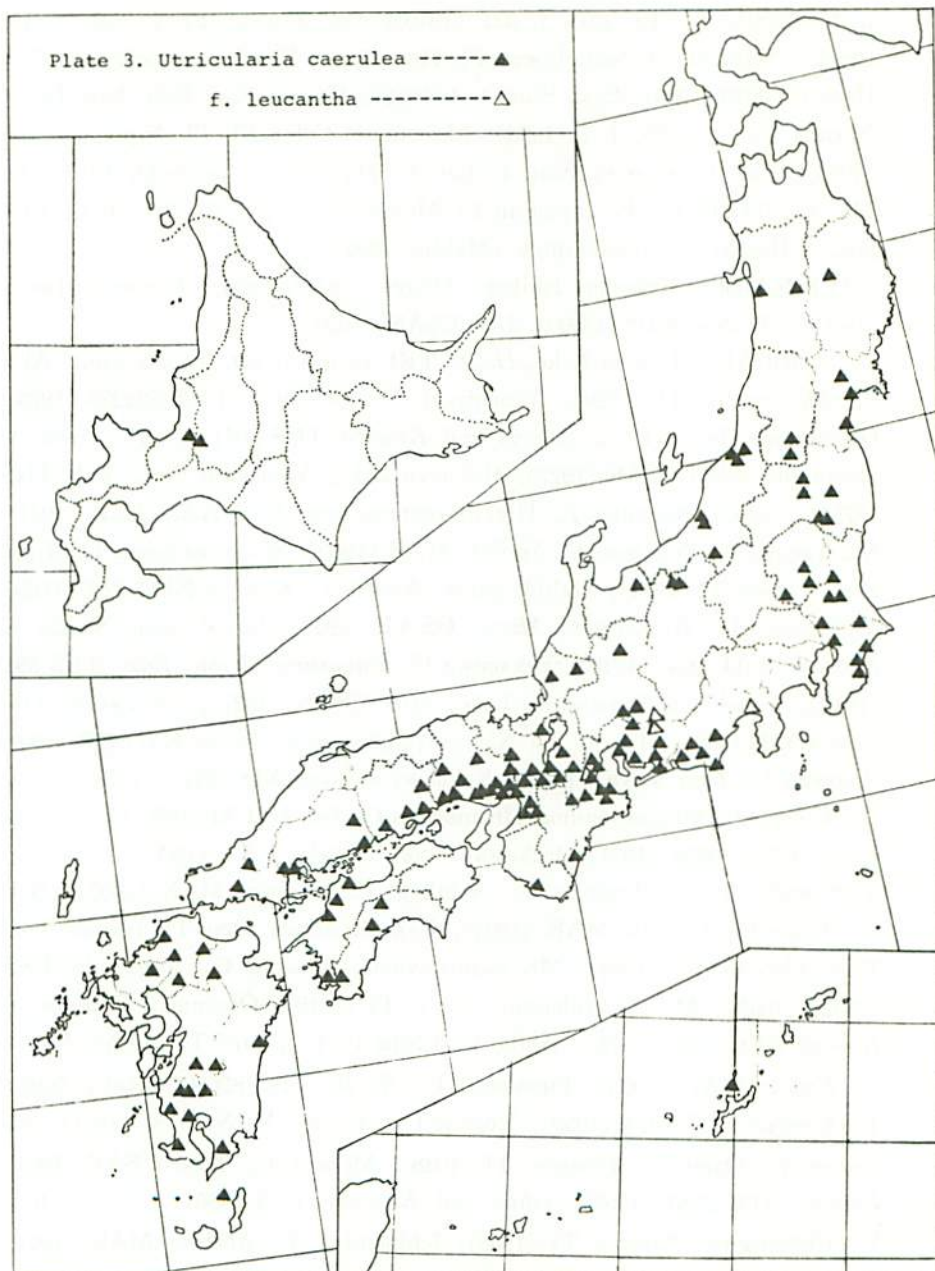
Type: Mt. Kōshinzan, *Komiya* NDC-2514 (1973)

Scapus viridis. Corolla alba. Calcar et fauces luteae.

Nom. Jap.: Shirobana-kōshinsō (*Komiya* 1973)



- 3) *Utricularia caerulea* L., Sp. Pl. 19 (1753); Blum. f., Fl. Ind. 11 (1768); DC., Prodr. 8: 19 (1844); Wight, Icon. Pl. Ind. Or. 4: t. 1583 (1850); Gamble, Fl. Madras 2: 983 (1924); P. Taylor in Dansk Bot. Ark. 23: 530 (1968) and in Fl. Malesia. ser. 1, 8 (2): 287 (1977).....Pl. 3.
- Syn. *Calpidisca Takenakai* Nakai in J. Jap. Bot. 17: 193 (1941)
Pelidnia caerulea (L.) Barnhart in Mem. N.Y. Bot. Gard. 6: 55 (1916)
U. affinis Hayata ex Sasaki, List Pl. Formos. (1928), non Wight
U. albiflora Griff. in Notul. 4: 168 (1854), non R. Br.
U. albina Ridl. in Fl. Mal. Penins. 2: 493 (1923)
U. baueri R. Br., Prodr. Nov. Holl. 431 (1810)
U. bifida Macrae ex DC., Prodr. 8: 21 (1844), non L., pro. syn.
U. campestris Miq. ex C.B. Clarke in Hook. f., Fl. Brit. Ind. 4: 333 (1885)
U. capillaris D. Don, Prodr. Fl. Nep. 85 (1825)
U. cavalerii Stapf in Kew Bull. 1910: 195 (1910)
U. charnleyensis Fitzgerald in J. Roy. Soc. W. Austr. 3: 207 (1918)
U. Complanata Wall., Cat. no. 1497 (1829), nom. nud.
U. filicaulis Wall., Cat. no. 1501 (1829)
U. kerii Craib in Kew Bull. 1911: 429 (1911)
U. Kirkii Stapf in Dyer., Fl. Cap. 4(2): 428 (1904)
U. nivea Vahl, Enum. 1: 203 (1804); Wight, Icon. Pl. Ind. Or. 4: t. 1582 (1850)
U. obtusiloba Benj. in Linnaea 20: 312 (1847)
U. ophirensis Ridl. in J. Bot. 33: 10 (1895)
U. paucifolia Benj. in Linnaea 20: 309 (1847)
U. purpurea Willd. ex Benj. in Linnaea 20: 309 (1847), non Walt.
U. racemosa Wall., Cat. no. 1496 (1829); DC., Prodr. 8: 21 (1844); Oliver in J. Linn. Soc. Bot. 3: 186 (1859); Maxim. in Bull. Acad. St.-Pet. 32: 619 (1888); Makino, Ill. Fl. Jap. 1: t. 30 (1890); Matsumura, Enum. ed. 2, 304, no. 3227 (1895); Hara, Enum. 1: 293 (1948); Ohwi, Fl. Jap. 1068 (1953)
U. racemosa Wall. var. *filicaulis* Clarke in Hook. f., Fl. Brit. Ind. 4: 333 (1884)
U. racemosa Wall. form. *parva* Watase (1881), in sched., Herb. Hakkaido Univ. (SAP)
U. rosea Edgew. in Proc. Linn. Soc. London 1: 352 (1847)
U. roseo-purpurea Stapf ex Gamble, Fl. Madras 2: 983 (1924)
U. setacea Wall., Cat. no. 6398 (1829), partim
U. sootepensis Craib in Kew Bull. 1911: 430 (1911)



U. squamosa Benj. in Bot. Zeit. 3: 212 (1845)

Icon.: Wight, Icon. Pl. Ind. Or. 4: t. 1582-1584 (1850); Makino, Ill. Fl. Jap. 1: t. 30 (1890), Ill. Fl. 127, f. 381 (1940); Tei, Korean Fl. 2: 605, f. 1209 (1957); Shimizu, Photogr. Insect. Pl. 118 (1966); Komiya in Seibundō Ency. Hort. 6: 3079 (1969), Syst. Stud. t. 4 (1972); Kuo in Biol. Bull. Nat. Taiwan Normal Univ. 3: 36, f. 7 (1968); Masamune, Color Ill. Fl. Nipp. 6-I: 11A (1974); Icon. Cormophyt. Sini. 4: 149, f. 5712 (1975); Terasaki, Ill. Fl. Jap. 745, f. 2817 (1977); P. Taylor in Fl. Malesia. ser. 1, 8 (2): 288, f. 12 (1977)

Nom. Jap.: Hozaki-no-mimikakigusa (Makino 1890)

Hab.: HOKKAIDŌ: Tōbetsu, Ishikari, *Odagiri* SAP (1893); Horomui, Iwamisawa C., *Watase* SAP (1893), *Miki* OSAK (1925)

TŌHOKU: Tazawa Lake, *H. Itō* TKU (s. dat.); Mt. Tegata-yama, Akita C., *Muramatsu* TI (1929); Tsuchizaki T., *Okuyama* TNS-294228 (1926); Ōjyōjinuma, Iwate Pref., *Sugaya* and *Kimura* TUS-5911 (1954); Tonan V., Shiwa-gun, *Shōji* OSAK (1927); Hakuryū Lake, Yamagata Pref., *Yūki* TNS-137501 (1939); Komatsu T., Higashi-okitama-gun, *Katō* KAN-25541 (1941); Mt. Yagoyama, Yonezawa C., *Yoshida* MAK (1909); Shichi-ga-hama T., Miyagi Pref., *Ogura* TI (1914); Yoshida-hama, Watari T., *Komiya* NDC-2296 (1969); Yamamoto T., Watari-gun, *Murai* OSAK (1933); Gamō-numa, Sendai C., *Matsuda* TAI-3870 (1910); Sukagawa C., Fukushima Pref., *Endō* TUS-5913 (1912); Tonokuchi, Inawashiro Lake, *Miki* OSAK (1927); Akai-yachi, *Okamoto* KYO (1938); Higashi V., Nishi-shirakawa-gun, *Suzuki* KYO-208 (1932); Omotegō V., *Imai* MAK (1907); Fukaado, *Komiya* NDC-2761 (1975)

KANTŌ: Minami-ōnuma, Utsunomiya C., *Suzuki* TAI-1062 (1929), *Nakamura* TNS-90938 (1931); Isokawa Moor, *Suzuki* TAI (1930), *Nakamura* TNS-90931 (1930); Teraoka T., Ashikaga C., *Makino* MAK (1902); Naka T., Mōka C., *Okazaki* MAK (1905); Yakushi-numa, Ōgo T., Gunma Pref., *Tobe* TNS-162069 (1964); Mt. Sashiro-yama, Kasama C., *Nagamoto* TNS-123328 (1955); Mt. Tsukubasan, *Ogura* TI (1919); Ōfusuma, Tsukuba T., *Komiya* NDC-2793 (1975); Abiko C., Chiba Pref., *Fujita* TI (1935); Sawara C., *Kuboki* MAK (1903); Funabashi C., *Kotaki* TNS-82680 (1950); Narutō T., *Komiya* NDC-2274 (1950); Tōgane C., *Wakana* KAN-35498 (1951); Shirogane T., Ōami C., *Tamura* TI (1938); Mobara C., *Miura* SAP (1901), *Komiya* NDC-2281 (1952), *Ohwi* and *Koyama* TNS-106611 (1953); Chōsei V., Chōsei-gun, *Tamura* TI (1938); Ichinomiya T., *Makino* MAK (1901), *Jyō* TI (1901)

CHŪBU: Mt. Honda-yama, Kita-kanbara-gun, Niigata Pref., *Komiya* NDC-2758 (1974); Katakai T., Ojiya C., *Katagiri* NDC-2759 (1975); Tsunan

T., Naka-uonuma-gun, *Katagiri* NDC-2760 (1975); Sasagami V., Kita-kanbara-gun, *Komiya* NDC-2763 (1975); Masugata Pond, Shibata C., *Komiya* NDC-2766 (1975); Dainichi-ga-hara, Suibara T., *Shibata* NDC-2768 (1975); Mt. Yūkyūsan, Nagaoka C., *Nakamura* TNS-90936 (1911); Fukasai, Santō-gun, *Nakamura* TNS-90935 (1910); Mt. Togakushi, K. Itō TNS-13539 (s. dat.); Iitsuna Upland, Nagano Pref., *Miki* OSAK (1927); Asahi T., Toyama Pref., *Yuki* MAK (1904); Fukaya V., *Makino* MAK (1905); Ōno C., Fukui Pref., *Hori* TNS-130275 (1953); Takefu C., *Hosoi* TI (1934); Takayama C., Gifu Pref., *Honda* TI (1925); Tajimi C., *Makino* MAK (1902); Naka-ga-hira, Mizunami C., *Komiya* NDC-2795 (1976); Hiraiwa, Hiyoshi T., *Komiya* NDC-2798 (1976); Koizumi, Tajimi C., *Komiya* NDC-2801 (1976); Shinden, Kako-gun, *Komiya* NDC-2802 (1976); Mori T., Shizuoka Pref., *Komiya* NDC-2295 (1968); Seko, Fujieda C., *Komiya* NDC-2720 (1971); Hamaoka T., Ogasa-gun, *Komiya* NDC-2297 (1969); Toyooka V., Iwata-gun, *Hisamatsu* TI (1889); Minami-izu T., Kamo-gun, *Noguchi* KAG-5140 (1957); Imō Moor, Toyohashi C., *Komiya* NDC-2293 (1967); Hosoya, *Komiya* NDC-2752 (1974); Takashi-hara, *Makino* MAK (1893); Tenpaku-hara, *Komiya* NDC-2298 (1969); Naka-shinano T., Seto C., *Katō* KYO (1941); Mt. Sanage-yama, *Komiya* NDC-2746 (1972); Kōda T., Nukata-gun, *Nagura* MAK (1896); Kagiya, Chita C., *Toda* TNS-324396 (1974); Chikusa-ku, Nagoya C., *Makino* TI (s. dat.)

KINKI: Ōike, Yokkaichi C., *Komiya* NDC-2280 (1952); Kokubu T., Suzuka C., *Nakai* KYO-5637 (1951); Dōhaku Pond, *Komiya* NDC-2736 (1971); Mt. Notoyama, Kameyama C., *Fukuoka* KYO-5182 (1962); Aoyama T., Naga-gun, *Nakai* KYO-4734 (1950); Shimomura-no-ike, Matsusaka C., *Yabumoto* NDC-2719 (1967); Tsuruwaka Pond, *Komiya* NDC-2737 (1971); Meiwa T., Taki-gun, *Komiya* NDC-2733 (1971); Omata T., Ise C., *Chūma* TI (1968); Kimoto T., Kumano C., *Koide* KYO-492 (1957); Mt. Tenganzan, Shiga Pref., *Seto* OSAK-12845 (1963); Ōmi-hachiman C., *Murata* KYO-17077 (1962); Kanpū Pass, *Murata* and *Nishimura* KYO-611A (1972); Hino T., Gamō-gun, *Hashimoto* TNS-114751 (1954); Mt. Yotsu-ga-se, Kōga-gun, *Hashimoto* TNS-114767 (1952); Kokubu T., Ōtsu C., *Makino* MAK (1923); Seta-yama, *Sono* TNS-15784 (1902); Mizoro Pond, Kyōto C., *Makino* MAK (1905), *Komiya* NDC-2279 and TNS-109218 (1951); Kameoka C., *Hiroe* KYO-7200 (1951); Tanabe T., *Nakai* KYO-2924 (1946); Mt. Kannabisan, *Yamamoto* TNS-191901 (1933); Nose T., Toyono-gun, Ōsaka Pref., *Morimoto* OSAK (1936); Mt. Myōkenyama, *Kishimoto* OSAK (1933); Higashi-nose V., Toyono-gun, *Hori* OSAK (1931); Fukui T., Ibaraki C., *Kodama* OSAK-8416 (1969); Kanan T., Minami-kawachi-gun, *Kurashima* OSAK (1936); Mt. Shinodayama, H. Itō

TKU (1934); Shinke T., Sakai C., *Tashiro* TNS-51668 (1935); Fukuda T., Kishiwada C., *Nakajima* OSAK-21596 (1950); Okazaki T., Wakayama C., *Nakajima* TI (1916); Shirahama T., *Nakajima* TI (1928); Tanabe C., *Makino* MAK (1924); Nishinomiya C., Hyōgo Pref., *Murata* KYO-18607 (1964); Kabutoyama, *Seto* OSAK-12265 (1971); Shizuga-ike, Kōbe C., *Seto* OSAK-11507 (1971); Arima T., *Makino* MAK (1902); Mt. Rokkō, *Ishikawa* TAI (1935), *Kataoka* TNS-80024 (1947); Konda T., Taki-gun, *Hosomi* KYO-6090 (1967); Hosokawa T., Miki C., *Murata* and *Nishimura* KYO-282 (1968); Ono C., *Matsushima* TNS-37034 (1918); Shikata T., Kakogawa C., *Komiya* NDC-2785 (1975); Oku-ike Pond, Himeji C., *Komiya* NDC-2776 (1975); Asako T., *Fukuda* KYO-1402 (1955); Ōkawachi T., Kanzaki-gun, *Seto* OSAK-12488 (1963); Chigusa T., Shisō-gun, *Utsumi* TNS-161972 (1964); Miya-yama, Aioi C., *Fukuoka* and *Kurosaki* KYO-623 (1976)

CHŪGOKU: Senyō-ga-hara, Okayama Pref., *Tashiro* KYO (1931); Sanyō T., Akaiwa-gun, *Komiya* NDC-2794 (1976); Mimasaka T., Aida-gun, *Arimoto* SAP (1903); Mt. Abemiyama, *Nishihara* MAK (1901); Ichinomiya T., Mitsu-gun *Nikai* TNS-46391 (1902); Takamatsu T., Kibi-gun, *Nikai* TNS-46389 (1903); Mt. Yōkurayama, Hiroshima Pref., *Tashiro* KYO (1931); Ōno T., Saiki-gun, *Miyagi* URO-11256 (1971); Miyajima Isl., *Tan* KYO (1909); Aka-saka, Fukuyama C., *Tukafuji* KYO-614 (1968); Yamaguchi C., *Nikai* TNS-46390 (1898); Atō T., Abu-gun, *Miake* URO-38856 (1970)

SHIKOKU: Takamatsu C., *Taniguchi* KAG-2539 (1906); Kokubu, Maru-game C., *Miki* OSAK (1923); Yunoki, Tosa-gun, Kōchi Pref., *Makino* MAK-2124 (1889); Sagawa T., Takeoka-gun, *Makino* MAK-150973 (1883); Sukumo C., *Makino* MAK (1891); Sakurai T., Imabari C., *Ochi* TI (1939); Hatadera T., Matsuyama C., *Okudaira* TNS-53294 (1894); Takahama T., *Umemura* MAK-3282 (1897); Ipponmatsu T., Minami-uwa-gun, *Kobayashi* OSAK (1932)

KYŪSHŪ: Mt. Hachimenzan, Fukuoka Pref., *Tashiro* KYO (1921); Chōjya-baru, Kasuya-gun, *Nagano* TI (1891); Mitsusawa, Mii-gun, *Komiya* NDC-2287 (1963); Yunoso, Yame C., *Nabeshima* TNS-39499 (1920); Kanetachi-yama, Saga Pref., *Hashimoto* TI (1951); Matsuyama V., Nagasaki Pref., *Kōda* TAI-2856 (1920); Oda-no-ike, Yufuin T., Ōita Pref., *Arakane* TNS-122020 (1955), *Sako* KAG-3355 (1963); Muta, Aso T., Kumamoto Pref., *Kōzuma* MAK (1905); Taragi T., Kuma-gun, *Makino* MAK (1895); Hitoyoshi C., *Nakajima* TI (1911); Tsunō T., Koyu-gun, Miyazaki Pref., *Saida* TNS-11155 (1891); Kawaminami T., *Nagasaki* TNS-113176 (1952); Ōguchi C., Kago-shima Pref., *Hatusima* and *Sako* KAG-25337, MAK-21477 (1960); Imuta Pond, Satsuma-gun, *Imamura* OSAK (1927); Yoshimatsu T., Arita-gun, *Ha-*

tusima and *Sako* MAK-39314 (1960); Sendai C., *Hosoyamada* KAG-11055 (1926); Kaseda C., *Nakano* TNS-23409 (1913); Kanoya C., *Tashiro* TNS-28409 (1916); Umaki Isl. near Tanegashima Isl., *Ōuchiya* and *Hidaka* TNS-117713 (1954)

OKINAWA: *Ōno-yama*, *Izena* Isl., *Nakata* URO-12100 (1973)

Distr.: India, Ceylon, Indo-China, Malaya, Indonesia, Philippines, China (Shantung, Kwantong, Hongkong), Taiwan, Korea, Japan, Austr.

form. *leucantha* Komiya, Syst. Stud. 54 (1972).....Pl. 3.

Nom. Jap.: *Shirobana-hozaki-no-mimikakigusa* (Yasui 1951)

Hab.: CHŪBU: *Hara*, *Numazu* C., *Shizuoka* Pref., *Ōba* (1951); Mt. *Sanageyama*, *Komiya* NDC-2807 (1973); *Hiraiwa*, *Hiyoshi* T., *Gifu* Pref., *Komiya* NDC-2808 (1976)

KINKI: *Ōike*, *Yokkaichi* C., *Mie* Pref., *Yasui* TNS-86764, NDC-2277 (1951)

4) *Utricularia minutissima* Vahl, Enum. 1: 204 (1804); DC., Prodr. 8: 16 (1844); Oliver in J. Linn. Soc. Bot. 3: 190 (1859); Ridl., Fl. Mal. Pen. 2: 492 (1923); P. Taylor in Dansk Bot. Ark. 23: 531 (1968) and in Fl. Malesia. ser. 1, 8 (2): 286 (1977).....Pl. 4.

Syn. *U. barnesii* Lloyd, Carniv. Pl. 232 (1942), nom. nud.

U. brevilabris Lace in Kew Bull. 1915: 404 (1915)

U. calliphysa Stapf in Gibbs, J. Linn. Soc. Bot. 42: 115 (1914)

U. capillacea Wall., Cat. no. 6399 (1832), non Willd.

U. evrardii Pellegr. in Fl. Gen. I.-C. 4: 476 (1930)

U. lilliput Pellegr. in Bull. Mus. Nat. Hist. Paris 26: 181 (1920)

U. nigricalis Ridl. in J. Linn. Soc. Bot. 38: 317 (1908)

U. nipponica Makino in Bot. Mag. Tokyo 20: 95 (1906); *Hara*, Enum. 1: 292 (1948); *Ohwi*, Fl. Jap. 1068 (1953)

U. pygmaea R.Br., Prodr. Nov. Holl. 432 (1810), non Benth.

U. siamensis Ostenf. in Fedde, Rep. 2: 68 (1906)

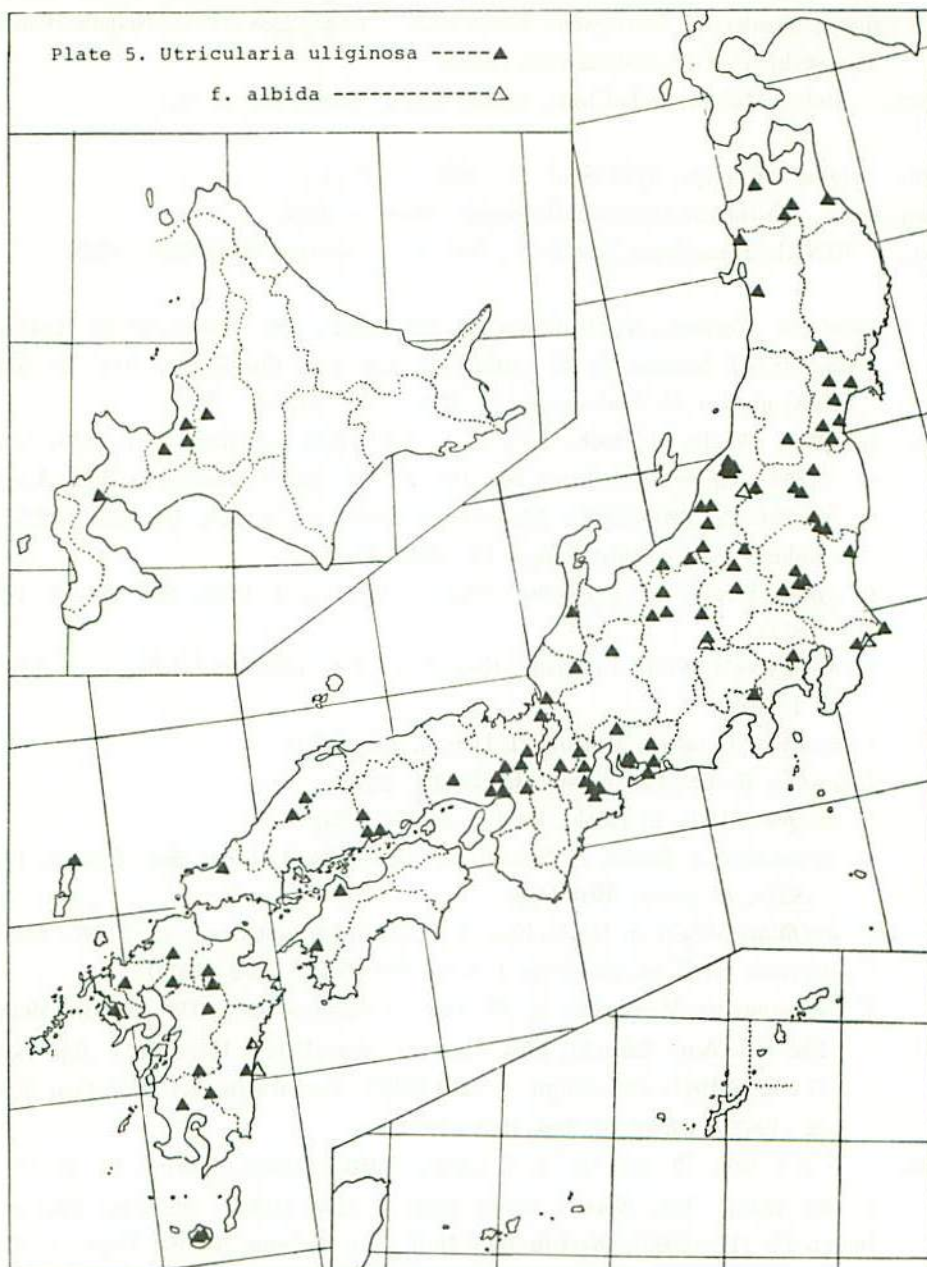
Icon.: Lloyd, Carniv. Pl. t. 33, f. 6 (1942); Shimizu, Photogr. Insect. Pl. 119 (1966); Komiya in Seibundō Ency. Hort. 6: 3078 (1969) and Syst. Stud. t. 5 (1972); P. Taylor in Fl. Malesia. ser. 1, 8 (2): 286, f. 10 (1977)

Nom. Jap.: *Hime-mimikakigusa* (Makino 1906)

Hab.: CHŪBU: *Kosai* C., *Shizuoka* Pref., *Koike* MAK-62013 (1966); *Imō Moor*, *Toyohashi* C., *Aichi* Pref., *Komiya* NDC-3119 (1979); *Hiromi*, *Tenpaku-hara*, *Komiya* NDC-2711 (1971); *Nisshin* T., *Aichi-gun*, *Hamashima* TNS-280903



- (1970); Narumi T., Nagoya C., *Hamashima* TNS-184884, MAK-58149 (1967)
KINKI: Ōike, Yokkaichi C., Mie Pref., *Yasui* NDC-2709 (1954); Kana-
shōzu, Suzuka C., *Matsuyama* KYO (1928), TNS-52288 (1931); Nodaike Pond,
Tamagaki T., *Ōta* TNS-268168 (1969)
Distr.: India, Malaya, Indo-China, China, Japan, Austr. bor. et or.
form. *albiflora* Komiya, Syst. Stud. 55 (1972).....Pl. 4.
Nom. Jap.: Shirobana-hime-mimikakigusa (Komiya 1973)
Hab.: KINKI: Kanashōzu, Suzuka C., Mie Pref., *Komiya* NDC-2194 (1953)
5) *Utricularia uliginosa* Vahl, Enum. 1: 203 (1804); DC., Prodr. 8: 15 (1844);
Gamble, Fl. Madras 2: 981 (1924); P. Taylor in Dansk Bot. Ark. 23: 532
(1968) and in Fl. Malesia. ser. 1, 8(2): 282 (1977).....Pl. 5.
Syn. *U. affinis* Wight in Hook., Kew J. 1: 373 (1849) and Icon. 4: t. 1580, f. 1
(1850); Oliver in J. Linn. Soc. Bot. 3: 178 (1859); Maxim. in Bull. Acad.
St.-Pet. 32: 620 (1888); Matsumura, Enum. ed. 2, 304, no. 3224 (1895);
Makino in Bot. Mag. Tokyo 14: 135 (1900)
U. affinis Wight var. *griffithii* (Wight) Oliver in J. Linn. Soc. Bot. 3: 179
(1859)
U. brachypoda Wight in Hook., Kew J. 1: 373 (1849) and Icon. 4: t. 1578,
f. 1 (1950)
U. caerulea L., sensu Benth., Fl. Hongk. 256 (1861)
U. cyanea R. Br., Prodr. Nov. Holl. 431 (1810)
U. decipiens Dalz. in Hook., Kew J. 3: 279 (1851)
U. graminifolia Banks et Soland. ex Oliver in J. Linn. Soc. Bot. 3: 179
(1859), in sched., Brit Mus.
U. griffithii Wight in Hook., Kew J. 1: 373 (1849) and Icon. 4: t. 1576 (1850)
U. intricata Griff. ex Oliver in J. Linn. Soc. Bot. 3: 179 (1859)
U. yakusimensis Masamune in Fl. Geo. Yakusima 409 (1934) and in Mem.
Fac. Sci. Agr. Taihoku Imp. Univ. 9: 409 (1934); Hara in J. Jap. Bot.
17: 122 (1941) and Enum. 1: 293(1948); Tamura in Act. Phy. Geo. 15:
32 (1953); Ohwi, Fl. Jap. 1068 (1953)
Icon.: Wight, Icon. Pl. Ind. Or. 4: t. 1578/1, 1580/1 (1850); Makino, Ill. Fl. 127,
f. 380 (1940); Tei, Korean Fl. 2: 603, f. 1206 (1957); Shimizu, Photogr.
Insect. Pl. 117 (1966); Kuo in Biol. Bull. Nat. Taiwan Normal Univ. 3: 36,
f. 7 (1968); Komiya in Seibundō Ency. Hort. 6: 3075 (1969) and Syst. Stud.
t. 6 (1972); Masamune, Color Ill. Fl. Nipp. 6-I: 11B, 12A (1974); Terasaki,
Ill. Fl. Jap. 745, f. 2819 (1977); P. Taylor in Fl. Malesia. ser. 1, 8(2): 282,



f. 5 (1977)

Nom. Jap.: Murasaki-mimikakigusa (Matsumura 1884)

Hab.: HOKKAIDŌ: Urausu, Sunagawa C., *Kawakami* SAP (1890); Ebetsu C., *Tashiro* SAP (1891), TI (1891); Sapporo C., *Faurie* KYO-3063 (1888); Shizukari, Oshamanbe T., *Tatewaki* SAP-42241 (1951)

TŌHOKU: Goshogawara C., Aomori Pref., *Narita* TI (1948); Mt. Hakkoda, *Murai* OSAK (1933); Hachinohe C., *Yamazaki* MAK (1901); Iwatate Shore, Akita Pref., *Kurosawa* TI (1959); Akita C., *Muramatsu* TI (1928); Mt. Nahira-yama, Yamagata Pref., *Koizumi* TI (1914); Hakuryū Lake, Nanyō C., *Yūki* TNS-137503 (1939); Mt. Kagobō-yama, Tōda-gun, Miyagi Pref., *Ueno* Ueno-1440, NDC-2046 (1966); Ōno, Furukawa C., *Ueno* Ueno-1318 (1966); Ōjyōji-hara, Kami-gun, *Sugaya* and *Kimura* TUS-5894 (1954); Sendai C., *Yasuda* KYO (1900); Kawasaki T., Shibata-gun, *Ueno* Ueno-1235 (1966); Narumori T., Iga-gun, *Ueno* Ueno-1257 (1966); Mt. Kurikoma, *Miki* OSAK (1927); Mt. Nobuoyama, Fukushima C., *Nemoto* TNS-23481 (1887); Tono-kuchi, Inawashiro Lake, *Miki* OSAK (1927); Akai-yachi, *Okamoto* KYO (1938); Nanko Lake, Shirakawa C., *Satomi* KAN-10225 (1950); Omotegō V., Nishi-shirakawa-gun, *Suzuki* MAK (1906); Fukaado, *Komiya* NDC-2435 (1975)

KANTŌ: Oze, Gunma Pref., *Hoshi* TNS-100701 (1932), *Komiya* NDC-2038 (1950); Mt. Mitsuminesan, Tone-gun, *Makino* MAK ((1904); Mt. Ōminesan, *Utsumi* TNS-284241 (1958); Takayama V., Agatsuma-gun, *Masuda* TNS-160637 (1964); Nasu, Tochigi Pref., *Sakurai* TNS-11146 (1905); Utsunomiya C., *Nakamura* TNS-90929 (1931); Isogawa Moor, *Furuse* KAG(1959); Kamimikawa T., Kawachi-gun, *Satō* TNS-250680 (1964); Noda C., Chiba Pref., *Makino* MAK (1904); Chōshi C., *Komiya* NDC-2040 (1951); Iwane, Tama C., Tokyo Pref., *Hasegawa* TNS-214865 (1964)

CHŪBU: Hondayama, Kita-kanbara-gun, Niigata Pref., *Katagiri* NDC-2419 (1972); Dainichi-ga-hara, *Shibata* NDC-2443 (1975); Sasagami V., *Shibata* NDC-2438 (1975); Masugata Pond, Shibata C., *Shibata* NDC-2444 (1975); Tochibori, Higashi-kanbara-gun, *Shibata* NDC-2441 (1975); Sugisawa T., Mitsuke C., *Katagiri* NDC-2431 (1975); Nagaoka C., *Nakamura* TNS-90928 (1910); Mt. Yūkyūzan, *Nakamura* TNS-90933 (1911); Katakai T., Ojiya C., *Katagiri* NDC-2432 (1974); Tsunan T., Naka-uonuma-gun, *Katagiri* NDC-2433 (1975); Mt. Myōkō, *Yoshikawa* KAN-10742 (1947); Mt. Togakushi, Nagano Pref., *Sakurai* TNS-11145 (1892), *Okuyama* TNS-304518 (1960); Iiyama C., *Mizushima* MAK-4729 (1953); Ōoka V., Sarashina-gun, *Minemura* MAK-5202 (1957); Karuizawa T., *Satō* TI (1954); Tomuro-yama, Kanazawa C., Ishikawa Pref., *Yoshimoto* KAN-10764 (1922); Ōno C., Fukui Pref., *Hori*

TNS-130273 (1953); Tsuruga C., *Koyama* KYO-1071 (1961); Takayama C., Gifu Pref., *Honda* TI (1925); Gotenba C., Shizuoka Pref., *Makino* MAK (1904); Tsukude V., Minami-shitara-gun, Aichi Pref., *Murata* KYO-13177, MAK-52266 (1959); Imō Moor, Toyohashi C., *Komiya* NDC-2047 (1967); Tenpaku Moor, *Komiya* NDC-2053 (1969); Mt. Sanage-yama, *Katō* TNS-82743 (1940); Kōda T., Nukata-gun, *Nagura* MAK (1896); Toyosaka, *Miki* OSAK (1934)

KINKI: Mt. Mikuniyama, Shiga Pref., *Tan* KYO (1927); Makino T., Takashima-gun, *Nagai* KYO (1967); Kanpū Pass, Shiga T., *Murata* and *Nishimura* KYO-613 (1972); Mt. Iimichiyama, Kōga-gun, *Hashimoto* TNS-85778 (1949); Ōike, Yokkaichi C., Mie Pref., *Yasui* TNS-109217 (1950); Mt. Gozaisho, *Fukuoka* KYO-5397 (1962); Dōhaku Pond, Suzuka C., *Nakai* KYO-5636 (1951), *Komiya* NDC-2408 (1971); Matsusaka C., *Komiya* NDC-2413 (1971); Meiwa T., *Komiya* NDC-2416 (1971); Mizoro Pond, Kyōto C., *Koizumi* KYO (1920); Kameoka C., *Tagawa* KYO-3754 (1950); Senō T., Ōsaka Pref., *Kodama* OSAK-9279 (1961); Muroike Pond, Kita-kawachi-gun, *Seto* OSAK-7355 (1957); Mt. Ikomayama, *Komiya* NDC-2426 (1974); Kōyō-en, Nishinomiya C., *Murata* KYO-18606, TI (1964); Mt. Rokkō, *Ishikawa* TAI (1938); KYO (1955); Konda T., Taki-gun, *Hosomi* KYO-8863 (1969); Ōuchi V., Kanzaki-gun, *Seto* OSAK-12489 (1963)

CHŪGOKU: Akagi T., Iishi-gun, Shimane Pref., *Kishino* KAN-3532 (1911); Mizuho T., Ōuchi-gun, *Miyamoto* MAK-62090 (1966); Ihara C., Okayama Pref., *Takebayashi* MAK (1935); Abemiyama, Kawakami-gun, *Nishihara* MAK (1901); Mt. Yōkurayama, Hiroshima Pref., *Tashiro* KYO (1931); Hagi C. Yamaguchi Pref., *Nikai* TNS-46394 (1917)

SHIKOKU: Miyoshi T., Sukuwa-gun, Ehime Pref., *Ochi* TI (1939); Uwa T., Higashi-uwa-gun, *Nomura* KYO (1960)

KYŪSHŪ: Mitsusawa, Asakura-gun, Fukuoka Pref., *Ishizu* NDC-2042 (1962); Yame C., *Nabeshima* KYO (1920); Mt. Kurokamiyama, Saga Pref., *Nabeshima* KYO (1919); Tsushima Isl., Nagasaki Pref., *Sasa* SAP (1895); Seihi T., Nishi-sonogi-gun, *Chiba* TI (1936); Oda-no-ike Pond, Yufuin T., Ōita Pref., *Satō* KAG-3351 (1963); Oguni T., Aso-gun, Kumamoto Pref., *Tashiro* KYO (1921); Aso T., *Kōzuma* MAK (1905); Hitoyoshi C., *Kōzuma* TNS-212316 (1909); Kawaminami T., Miyazaki Pref., *Hatusima* and *Karwanabe* KAG-22768 (1958); Mt. Kirishima, Kagoshima Pref., *Sako* KAG-4261, MAK-36431 (1962); Imuta Pond, *Imamura* OSAK (1927); Hanano-egawa, Yakushima Isl., *Asuyama* TNS-40809 (1929); Shikano-sawa, *Sako* MAK-89668 (1967)

Distr.: India, Malaya, China aust., Taiwan, Korea, Japan, Austr., New Caledonia

form. *albida* (Makino), comb. nov. Pl. 5.

Syn. *U. affinis* Wight form. *albida* Makino in Bot. Mag. Tokyo 26: 246 (1912)

U. uliginosa Vahl var. *alba* Erickson, Pl. Prey 75 (1968)

U. yakusimensis Masamune form. *albida* (Makino) Hara in J. Jap. Bot. 17: 123 (1941) and Enum. 1: 293 (1948)

Nom. Jap.: Shirobana-mimikakigusa (Makino 1912)

Hab.: KANTŌ: Narutō T., Chiba Pref., *Shikata* NDC-2037 (1935)

CHŪBU: Muramatsu T., Naka-kanbara-gun, Niigata Pref., *Shibata* NDC-3120 (1979); Yatsugatake, Nagano Pref., *Tanaka* MAK (1902)

KYŪSHŪ: Kawaminami T., Koyu-gun, Miyazaki Pref., *Nagasawa* TNS-102176 (1949)

6) *Utricularia bifida* L., Sp. Pl. 18 (1753); DC., Prodr. 8: 21 (1844); Oliver in J. Linn. Soc. Bot. 3: 182 (1859); Makino, Ill. Fl. Jap. 1: t. 29 (1890); Matsu-mura, Enum. ed. 2, 304, n. 3225 (1895); Hara, Enum. 1: 291 (1948); Ohwi, Fl. Jap. 1068 (1953); Masamune, Enum. Trach. 7: 71 (1955) Pl. 6.

Syn. *U. antirrhinoides* Wall., Cat. no. 1498B (1829)

U. biflora Wall., Cat. no. 1498 (1829), non Lam.

U. biflora Hayata in Matsum. and Hayata, Enum. Pl. Formos. 286 (1906), in J. Coll. Sci. Imp. Univ. Tokyo 30: 210 (1911), Ic. Pl. Formos. 2: 125 (1913)

U. brevicaulis Benj. in Linnaea 20: 303 (1847)

U. diantha DC., Prodr. 8: 21 (1844)

U. diantha Roem. et Schult. sensu Miqul, in Ann. Mus. Lugd. Bot. 3: 204 (1867), conf. *U. exoleta*

U. hirta Klein ex Link, Jahrb. 1: 55 (1820)

U. humilis Vahl, Enum. 1: 203 (1804)

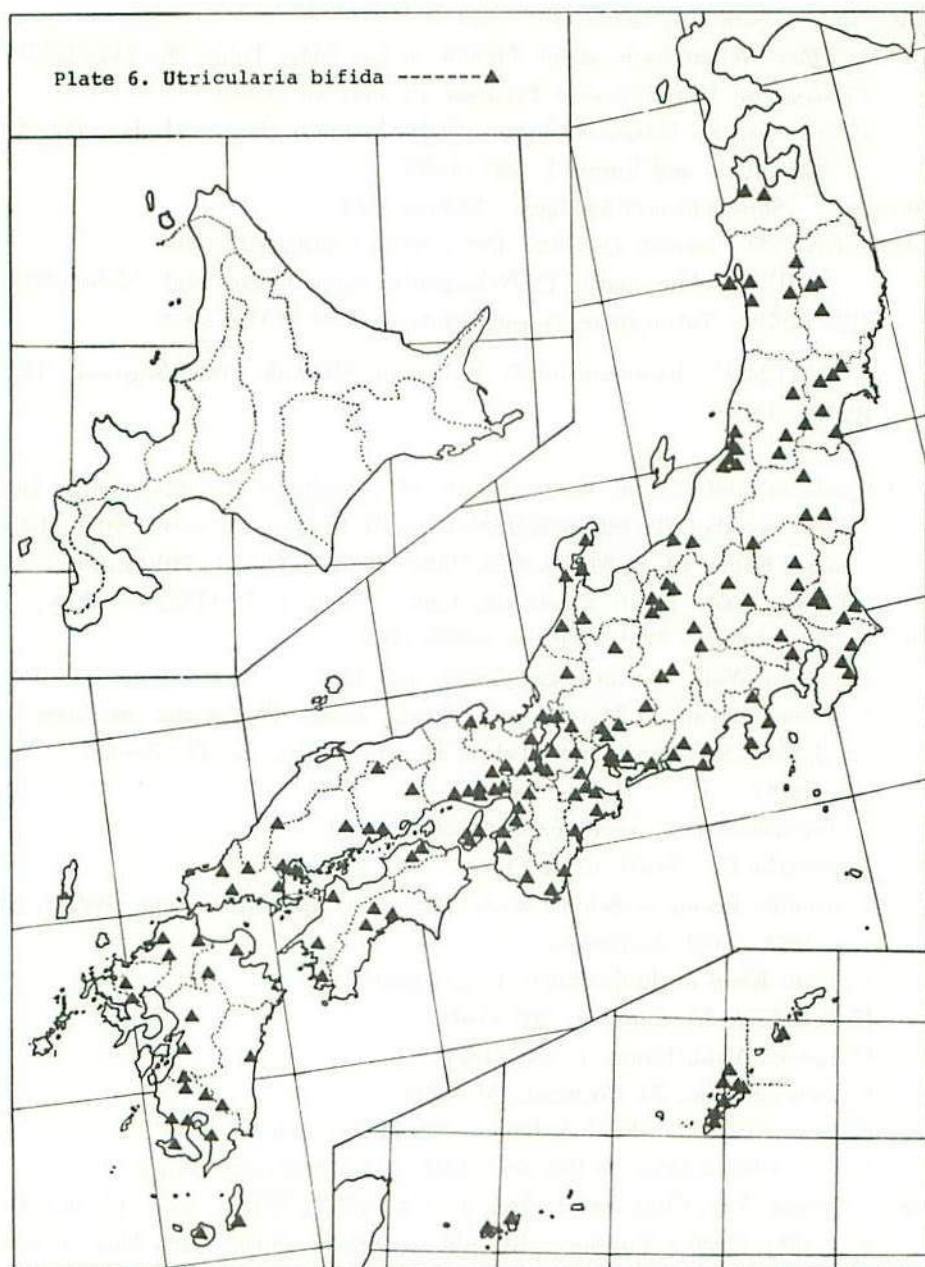
U. ramosa Vahl, Enum. 1: 204 (1804)

U. recurva Lour., Fl. Cochinch. 26 (1790)

U. sumatrana Miq., Fl. Ind. Bat. 2: 998 (1859), p.p.

U. Wallichiana Benj. in Bot. Zeit. 1845: 213 (1845), non Wight

Icon.: Osbeck, Voy. Chin. and E. Ind. 1: t. 3 (1771); Wight, Icon. Pl. Ind. Or. 4: t. 1584 (1850); Fujisawa, Kisō-shō-zu (1854); Curtis, Bot. Mag. t. 6689 (1883); Makino, Ill. Fl. Jap. 1: t. 29 (1890); Endō in Bot. Mag. Tokyo 12: t. 1 (1898); Hayata, Ic. Pl. Formos. 2: 125 (1913); T. Itō, Taiwan-zusetsu 1: 623, f. 633 (1926); Makino and Tanaka, Shokubutsu-shi f. 198 (1928); Tera-



saki, Zufu f. 973 (1933) and Ill. Fl. Jap. 744, f. 2820 (1977); Makino, Ill. Fl. 127, f. 379 (1940); Tei, Korean Fl. 2: 604, f. 1207 (1957); Shimizu, Photogr. Insect. Pl. 114-116 (1966); Kuo in Biol. Bull. Nat. Taiwan Normal Univ. 3: 34, f. 5 (1968); Komiya in Seibundō Ency. Hort. 6: 3076 (1969) and Syst. Stud. t. 7 (1972); Masamune, Color Ill. Fl. Nipp. 6-I: 12B (1974); Icon. Cormophyt. Sini. 4: 150, f. 5713 (1975); P. Taylor in Fl. Malesia. ser. 1, 8 (2): 281, f. 4 (1977); Hsiao in Fl. Taiwan 4: 695, f. 1161 (1978)

Nom. Jap.: Mimikaki-gusa

Hab.: TŌHOKU: Aomori C., *Kinashi* KYO (1904), SAP (1910); Kizukuri T., Nishi-tsugaru-gun, *Inoue* TNS-280821 (1970); Wakimoto, Oga C., Akita Pref., *Mochizuki* KAN-44807 (1964); Tazawa Lake, *H. Itō* TKU (s. dat.); Akita C., *Faurie* KYO-13829 (1894), *Chiba* SAP (1902), *Muramatsu* TI (1930); Ogo-numa, Iwate Pref., *Sugaya* and *Ogura* TUS-5927 (1951); Yanaka T., Shiwa-gun, *Shōji* OSAK (1927); Hachimantai, *Makino* MAK (1927); Mt. Iwatesan, *Nakahara* MAK (1903); Ishidoriya T., Hienuki-gun, *Toba* MAK (1904); Yusawa-numa, Murayama C., Yamagata Pref., *Inoue* MAK (1913); Mt. Zaō, *Ichimura* KAN-3536 (1897); Hakuryū Lake, Nanyō C., *Yuki* TNS-137502 (1939); Kawanishi T., Higashi-okitama-gun, *Katō* KAN-25543 (1941); Ōjyōji-numa, Kami-gun, Miyagi Pref., *Sugaya* and *Kimura* TUS-5928 (1954); Naganuma, Tome-gun, *Komiya* NDC-2080 (1969); Hazama T., *Ueno* Ueno-697 (1964); Kejyo-numa, Furukawa C., *Ueno* Ueno-1321 (1966), *Komiya* NDC-2078 (1969); Sendai C., *Endō* TI (1897); *Ichimura* KAN-3533 (1897); Iwanuma T., Natori-gun, *Murai* OSAK (1933); Mt. Nobuoyama, Fukushima C., *Nemoto* TNS-23480 (1887); Nakayama, Kōriyama C., *Makino* MAK (1904); Omotegō V., Nishi-shirakawa-gun, *Imai* MAK (1907); Fukaado, *Komiya* NDC-2663 (1975)

KANTŌ: Oze-numa, Gunma Pref., *Makino* MAK-96899 (1929); Takayama V., Agatsuma-gun, *Masuda* TNS-160636 (1964); Utsunomiya C., Tochigi Pref., *Suzuki* TAI (1928), *Makino* MAK (1930), *Nakamura* TNS-90930 (1931); Mōka C., *Okazaki* MAK (1905); Ajiki, Tsukuba T., Ibaraki Pref., *Komiya* NDC-2694 (1975); Ōfusuma, *Komiya* NDC-2695 (1975); Mt. Tsukubasan, *Muramatsu* TI (1922); Kamisu T., Kashima-gun, *Suzuki* MAK (1902); Urawa C. Saitama Pref., *Takayanagi* TAI (1913); Yoyogi, Tōkyō Pref., *Ōnuma* TI (1911); Sawara C., Chiba Pref., *Kuboki* MAK (1903); Kujiyūkuri T., Sanbu-gun, *Wakana* MAK (1902); Narutō T., *Komiya* NDC-2056 (1950); Mobara C., *Miura* SAP (1910), *Ohwi* and *Koyama* TNS-106610 (1953); Yatsumi, Chōsei-gun, *Okuyama* TNS-52289 (1936); Ichinomiya T., *Makino* MAK (1901)

CHŪBU: Asahi V., Iwafune-gun, Niigata Pref., *Katagiri* NDC-2661

(1975); Sasagami V., Kita-kanbara-gun, *Komiya* NDC-2666 (1975); Dainichi-ga-hara, Suibara T., *Komiya* NDC-2669 (1975); Mt. Hondayama, *Katagiri* NDC-2646 (1972); U-no-ike Pond, *Katagiri* NDC-2654 (1973); Masugata-ike Pond, Shibata C., *Komiya* NDC-2670 (1975); Tsunan T., Naka-uonuma-gun, *Katagiri* NDC-2662 (1975); Nagamine Pond, Kakizaki T., Naka-kubiki-gun, *Iwano* TNS-223755 (1968); Mt. Yūkyūzan, Nagaoka C., *Nakamura* TNS-90934 (1911); Murakami C., *Makino* MAK (1936); Mt. Togakushi, Nagano Pref. *Sakurai* TNS-11149 (1892); Tamogi-daira, Shimo-minōchi-gun, *Mizu-shima* MAK-4722 (1953); Ōmachi C., *Makino* MAK (1906); Iyari Moor, *Okuyama* and *Utsumi* TNS-275179 (1959); Ōgemi, Ōoka V., Sarashina-gun, *Mine-mura* MAK-5200 (1957); Omaki-hara, Kita-saku-gun, *Makino* MAK (1910); Mt. Yatsu-gatake, *Muramatsu* TI (1924); Minowa T., Kami-ina-gun, *Miya-shita* TNS-126657 (1939); Mt. Kiso-koma-gatake, *Yabe* MAK (1903); Oyabe C., Toyama Pref., *Mihataya* KYO (1930); Matsunami, Suzu-gun, Ishikawa Pref., *Yoshikawa* KAN-35157 (1943); Wakura T., Kashima-gun, *Kawada* NDC-2064 (1963); Takahama T., Hakui-gun, *Masamune* KAN-45520 (1960); Mukaiyama, Kanazawa C., *Ichimura* KAN-3537 (1910); Ōno C., Fukui Pref., *Hori* KYO (1934); Hozue, Takayama C., Gifu Pref., *Honda* TI (1925); Nakatsugawa C., *Matsui* MAK (1911); Shinden, Kani-gun, *Komiya* NDC-2701 (1976); Koizumi, Himeji T., *Komiya* NDC-2702 (1976); Hiraiwa, Hiyoshi T., Mizunami C., *Komiya* NDC-2697 (1976); Naka-ga-hira, *Komiya* NDC-2698 (1976); Gotenba C., Shizuoka Pref., *Makino* MAK (1904); Itō C., *Uchida* SAP (1926); Minami-izu T., Kamo-gun, *Noguchi* KAG-5488 (1957); Nita, Haibara-gun, *Komiya* NDC-2083 (1969); Hamaoka T., Ogasa-gun, *Komiya* NDC-2082 (1969); Toyooka V., Iwata-gun, *Hisamatsu* TI (1889); Gotō, Hamana-gun, *Hashimoto* TNS-43890 (1932); Mikata-ga-hara, *Komiya* NDC-2068 (1965); Imō Moor, Toyohashi C., Aichi Pref., *Kitamura* KYO (1952); Futagawa T., *Koike* NDC-2063 (1963); Tenpaku Moor, *Komiya* NDC-2084 (1969); Mt. Sanageyama, *Komiya* NDC-2655 (1973); Seto C., *Matsuda* TAI-3869 (1910); Kōda T., Nukata-gun, *Nagura* MAK (1896); Forest Park, Kasugai C., *Okamoto* TNS-241072 (1950); Agui T., Chita-gun, *Toda* TNS-324397 (1969); Higashiura T., *Toda* TNS-324399 (1969); Tōji-ike Pond, Chita C., *Toda* TNS-324400 (1974); Toyoake T., Aichi-gun, *Gotō* NDC-2067 (1963); Narumi T., Nagoya C., *Komiya* NDC-2074 (1967)

KINKI: Mt. Mikuniyama, Shiga Pref., *Hashimoto* KYO (1927); Kutsukake, Ika-gun, *Watanabe* KYO (1964); Mt. Ibukiyama, *Makino* MAK (1893); Tenganzan, Takashima-gun, *Seto* OSAK-12849 (1963); Mt. Hirasen, Shiga-gun, *Kodama* OSAK-6377 (1955); Mt. Bunagatake, *Miki* OSAK (1927),

Koyama KYO (1960), TNS-245481 (1960); Kagamiyama, Ōmi-hachiman C., Murata KYO-17078 (1962); Ōtsu C., Makino MAK (1923), Hashimoto TI (1941); Mt. Gozaisho, Mie Pref., Fukuoka KYO-5398 (1962); Kanashōzu, Magofuku KAN-34074 (1950); Dōhaku-ike Pond, Komiya NDC-2638 (1971); Shimomura, Matsusaka C., Yabumoto NDC-2633 (1967); Tsuruwaka-ike Pond, Komiya NDC-2640 (1971); Aoyama T., Naka-gun, Fukuoka KYO-6466 (1963); Ureshino T., Itsushi-gun, T. Itō KAG (1907); Nansei T., Watari-gun, T. Itō TNS-61273 (1893); Obarano, Owase C., Tagawa KYO-7547 (1956), H. Itō and Kobayashi TKU (1959); Kihō T., Minami-muro-gun, Satake and Okuyama TNS-100694 (1942); Goka, Naka-gun, Kyōto Pref., Nakai KYO (1950); Kameoka C., Tagawa KYO-3753 (1950); Mizoro Pond, Sono TNS-15773 (1908), Kitamura and Murata KYO-2285 (1963); Ariga Pond, Koidzumi KYO (1920); Mukō, T. Otokuni-gun, Yamamoto TNS-199412 (1938); Tanabe T., Tsuzuki-gun, Kitamura KYO (1954); Mt. Kannabisan, Yamamoto TNS-191900 (1933), Nakai KYO-4509 (1950); Mt. Kenbisan, Osaka Pref., Kodama OSAK (1950); Fukui, Ibaraki C., Kodama OSAK-8417 (1969); Tahara, Kita-kawachi-gun, Seto OSAK (1949); Shinodayama, Izumi C., Seto OSAK (1952); Kōmyō Pond, Seto OSAK-9438 (1970); Shinge, Sennan-gun, Tashiro TNS-51667 (1935); Okazaki, Wakayama C., Nakajima TI (1916); Tanabe C., Ushō TAI-4295 (1916); Shirahama T., Nishi-murō-gun, Nakajima TI (1928); Ōshima Isl., Kushimoto T., Tsukamoto KYO (1940); Shingū C., Makino MAK (1924); Konda T., Taki-gun, Hyōgo Pref., Hosomi KYO (1967); Toyochi, Miki C., Naruhashi *et al.* KYO (1971); Kabutoyama, Nishinomiya C., Seto OSAK-12298 (1971); Mt. Rokkō, Kuriyama MAK (1928); Seto OSAK-12583 (1971); Ono C., Matsushima TNS-37035 (1918); Aono-ga-hara, Seto OSAK-9293 (1970); Zenbō-ike Pond, Kasai C., Komiya NDC-2690 (1975); Ōsawa Pond, Himeji C., Komiya NDC-2689 (1975); Oku-ike Pond, Komiya NDC-2675 (1975); Mihara T., Awaji Isl., Miki OSAK (1934)

CHŪGOKU: Mt. Taisayama, Shimane Pref., Furuwa KAG (1917); Mimasaka T., Aida-gun, Okayama Pref., Takayama TNS-152567 (1961); Kamokata T., Asaguchi-gun, Nishina MAK (1910); Ihara C., Komiya NDC-2086 (1969); Mt. Yōkurayama, Hiroshima Pref., Tashiro KYO (1931); Goryō, Ashina-gun, Ichimura KAN-3534 (1903); Utsuno, Mitsugi-gun, Sasaki MAK (1903); Miyajima Isl., Satō KAN-8587 (1932); Yasaka-kyō, Saeki-gun, Miyagi URO-11257 (1971); Iwakuni C., Yamaguchi Pref., Okabayashi MAK (1906); Ōuchi, Yamaguchi C., Nikai TNS-46393 (1898); Hagi C., Nikai TNS-46392 (1917); Atō T., Abu-gun, Miake URO-38857 (1968)

SHIKOKU: Miki T., Kita-gun, Kagawa Pref., Miki OSAK (1923); Yasu-

hara, Kagawa-gun, *Fujisawa* MAK (1909); Yunoki, Tosa-gun, Kōchi Pref., *Makino* MAK-524, 2125 (1889); Sagawa T., Takaoka-gun, *Makino* MAK-2115 (1887); Kuwahara, Matsuyama C., Ehime Pref., *Nagasawa* TNS-53295 (1897); Uwa T., Higashi-uwa-gun, *Nomura* KYO (1960); Jyōhen T., Minami-uwa-gun, *Kobayashi* OSAK (1932)

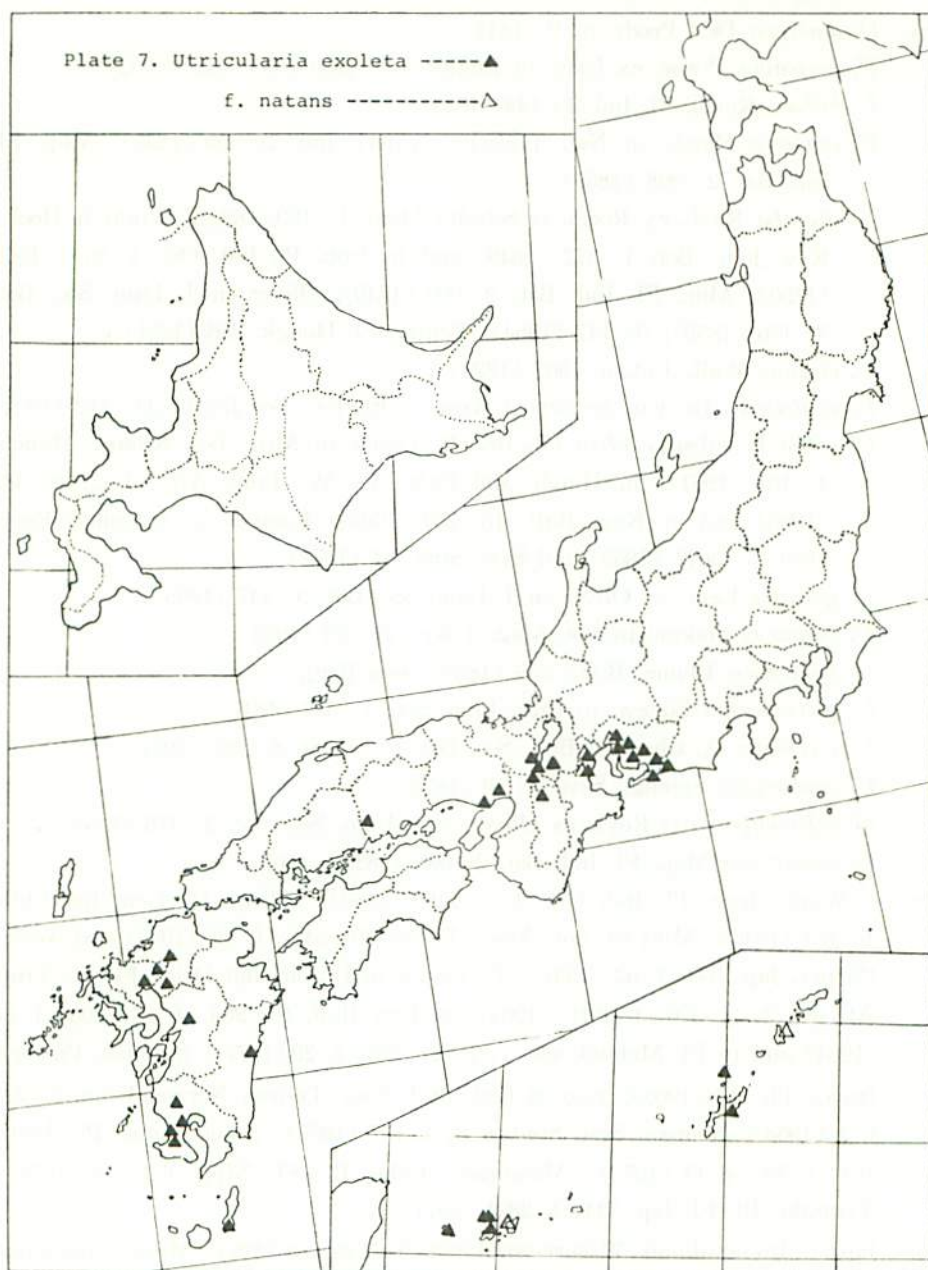
KYŪSHŪ: Chōjyabaru, Kasuya-gun, Fukuoka Pref., *Nagano* TI (1891); Mitsusawa, Asakura-gun, *Komiya* NDC-2066 (1963); Mt. Kurokamiyama, Saga Pref., *Hashimoto* TI (1949); Toyotsu C., Ōita Pref., *Nakano* SAP (1895); Kusu T., Kusu-gun, *Ikebe* KYO (1928); Oda-no-ike Pond, Yufuin T., *Satō* KAG-3360 (1963); Aso T., Kumamoto Pref., *Kōzuma* MAK (1905), TNS-188098 (1915); Takuma T., Hōtaku-gun, *Kōzuma* MAK (1905); Yatsuihiro C., *Nakajima* TI (1909); Hitoyoshi C., *Nakajima* TI (1911); Taragi T., Kuma-gun, *Makino* MAK (1905); Tsunō T., Koyu-gun, Miyazaki Pref., *Saida* TNS-11148 (1891); Kawaminami T., *Hatusima*, *Sako* and *Kawanabe* KAG-22770 (1958); Ōguchi C., Kagoshima Pref., *Hatusima* and *Sako* KAG-25319 (1960); Nishitara, Ōguchi C., *Hatusima* and *Sako* MAK-21476 (1960); Yoshimatsu, Aira-gun, *Hatusima* and *Sako* KAG-25557 (1960); Mt. Kirishima, *Tashiro* KYO (1931); Imuta Lake, Satsuma-gun, *Sako* KAG-1435 (1957); Higashi-ichiki T., Hioki-gun, *Makino* MAK (1909); Kagoshima C., *Hatusima* and *Sako* KAG-27340 (1962); Kaseda C., *Makino* MAK (1900), *Nakano* TKU (1913); Tanegashima Isl., *Ohwi* and *Okamoto* TNS-105980 (1953); Yakushima Isl., *Hatusima* KAG-14808 (1950), *Tagawa* and *Konta* KYO (1964); Tokunoshima Isl., *Ōba* KYO (1928)

OKINAWA: Iheya Isl., *Suzuki* TAI (1935); Kunigami V., Okinawa Isl., *Tomoyori* KYO (1923); Haneji V., *Kaneshiro* TNS-221998, URO-26025 (1937); Nago C., *T. Itō* TNS-60189 (1894); Ishikawa C., *Nakamine* TNS-114329 (1954), *Niiri* URO-18996 (1957); Izena Isl., *Nakata* URO-12101 (1973); Ishigaki Isl., *Takamine* TNS-220882 (1938); Inaba, Iriomote Isl., *Fukuyama* TAI-7086 (1938)

Distr.: India, Ceylon, Malaya, Java, Borneo, Philippines, Indo-China, China, Taiwan, Korea, Japan, New Guinea, Australia sept.

- 7) *Utricularia exoleta* R. Br., Prodr. Nov. Holl. 430 (1810); DC., Prodr. 8: 7 (1844); Benth., Fl. Austr. 4: 526 (1869); C.B. Clarke in Hook. f., Fl. Brit. Ind. 4: 329 (1884); Matsumura and Hayata in Enum. Pl. Formos. 286 (1906); Matsumura, Ind. ed. 2: 579 (1912); Kudō and Sasaki in Ann. Rep. Bot. Gard. Taih. 1: 45 (1931); Miki in Bot. Mag. Tokyo 49: 847, f. 11 (1935); Masamune in Trans. Nat. Hist. Formos. 30: 413 (1940); Hara,

- Enum. 1: 291 (1948); Ohwi, Fl. Jap. 1069 (1953); Masamune, Enum. Trach. 7: 72 (1955); Walker, Fl. Okinawa 949 (1976).....Pl. 7.
- Syn. *U. ambigua* DC., Prodr. 8: 9 (1844)
U. amphibia Welw. ex Kam. in Engler, Bot. Jahrb. 33: 112 (1902)
U. biflora Roxb., Fl. Ind. 1: 144 (1820)
U. conferta Hassk. in Nat. Tijdschr. Nederl. Ind. 10: 90 (1855); Miq., Fl. Ind. Bat. 2: 998 (1859)
U. diantha Roxb. ex Roem. et Schult., Mant. 1: 169 (1822); Wight in Hook., Kew Jour. Bot. 1: 372 (1849) and in Icon. Pl. Ind. Ori. 4: 9, t. 1569 (1850); Miq., Fl. Ind. Bat. 2: 999 (1849); Oliver in J. Linn. Soc. Bot. 3: 176 (1859), 9: 147 (1864); Benth., Fl. Hongk. 256 (1861)
U. elegans Wall., Cat. n. 1502 (1829)
U. exoleta R. Br. var. *lusitanica* Kam. in Engler, Bot. Jahrb. 33: 112 (1902)
U. gibba L. subsp. *exoleta* (R. Br.) P. Taylor in Mitt. Bot. Staatss. Münch. 4: 101 (1961), in Hutch. and Dalz., Fl. W. Trop. Afr. ed. 2, 2: 381 (1963) and in Kew Bull. 18: 204 (1964); Komiya in Seibundō Ency. Hort. 6: 3077 (1969) and Syst. Stud. 64 (1972)
U. gracilis Lepr. ex Oliver in J. Linn. Soc. Bot. 9: 147 (1865)
U. Nagurai Makino in Bot. Mag. Tokyo 27: 59 (1913)
U. pauciflora Blume, Bijdr. 739 (1826), non Benj.
U. pterosperma Edgew. in Proc. Linn. Soc. 1: 352 (1847)
U. riccioides A. Chev. in Bull. Soc. Bot. Fr. Mém. 8: 187 (1912)
U. roxburghii Spreng., Syst. 1: 52 (1825)
U. saharunporensis Royle ex Oliver in J. Linn. Soc. Bot. 3: 176 (1859)
U. sumatrana Miq., Fl. Ind. Bat. 2: 998 (1859), p.p.
- Icon.: Wight, Icon. Pl. Ind. Ori. 4: t. 1569 (1850); Pelleg., Fl. Gen. Ind.-Chin. 4: 473 (1930); Miki in Bot. Mag. Tokyo 49: 847, f. 11 (1935) and Water Phaner. Jap. 108, f. 62 (1937); P. Taylor in Hutch. and Dalz., Fl. W. Trop. Afr. ed. 2, 2: 376, f. 291C (1963), in Kew Bull. 18: 203, f. 83, 205, f. 84 (1964) and in Fl. Malesia. ser. 1, 8 (2): 295, f. 20 (1977); Shimizu, Photogr. Insect. Pl. 113 (1966); Kuo in Biol. Bull. Nat. Taiwan Normal Univ. 3: 32, f. 4 (1968); Komiya, Syst. Stud. t. 8, f. 1-7 (1972); Aston, Aqua. Pl. Austr. 104, f. 39, K-O (1973); Masamune, Color Ill. Fl. Nipp. 6-I: 13 (1974); Terasaki, Ill. Fl. Jap. 744, f. 2821 (1977)
- Nom. Jap.: Ito-tanukimo, Wasure-tanukimo (Y. Tashiro 1895), Mikawa-tanukimo (Makino 1900), Shima-hime-tanukimo (Kawakami 1910)
- Hab.: CHŪBU: Ōta, Hamana-gun, Shizuoka Pref., *Komiya* NDC-2147 (1964); Futagawa T., Toyohashi C., Aichi Pref., *Umemura* MAK (1904); Kami-



hosoya, *Komiya* NDC-2163 (1971); Toyoake T., Aichi-gun, *Inami* TNS-79827 (1948); Okazaki C., *Ichikawa* KYO (1912); Kōda T., Nukata-gun, *Nagura* MAK-4723 (1899); Nagoya C., *Mori* TI (1906), *Kume* MAK-4829 (1911); Narumi T., *Hamashima* TNS-223755 (1968)

KINKI: Rittō T., Shiga Pref., *Hashimoto* OSAK-5343 (1938); Ōike Pond, Yokkaichi C., Mie Pref., *T. Itō* TNS-90926 (1950), *Komiya* NDC-2131 (1952); Mt. Takaokayama, *Kobayashi* MAK (1904); Kanashōzu, Suzuka C., *Nakanishiki* MAK-4724 (1910), *Matsuyama* KYO (1925); Mizoro Pond, Kyōto C., *Miki* OSAK (1923), *Komiya* TNS-106809, NDC-2128 (1951); Mt. Kanna-bisan, *Nakai* KYO-4508 (1950); Ogura Pond, *Miki* OSAK (1925), *Ishikawa* KYO (1940); Mt. Rokkō, Kōbe C., *Ishikawa* TNS-91666, KYO (1935); Ōkubo, Akashi C., *Miki* OSAK (1935), Nara C., *Seto* OSAK (1965), *Komiya* NDC-2556 (1972)

CHŪGOKU: Ihara C., Okayama Pref., *Takebayashi* MAK (1935)

KYŪSHŪ: Mitsusawa, Asakura-gun, Fukuoka Pref., *Komiya* NDC-2139 (1963); Hainuzuka T., Chikugo C., *Nakajima* KYO (1932); Nakabaru T., Miyaki-gun, Saga Pref., *Yamashita* TI (1965); Kawakubo, Saga C., *Kuranari* KYO (1967); Toyooka, Nishi-sonogi-gun, Nagasaki Pref., *Ōba* KYO (1912); Akitsu, Kumamoto Pref., *Shimada* KYO-12648 (1958), *Yamashiro* TNS-159448 (1963); Kawaminami T., Koyu-gun, Miyazaki Pref., *Nagasawa* TNS-102177 (1949); Imuta Pond, Satsuma-gun, Kagoshima Pref., *Imamura* OSAK (1927); *Hatusima* and *Sako* KAG-25211 (1960); Tabuse, Hioki-gun, *Doi* KYO (1927); Fukiage T., *Hosoyamada* OSAK (1934); Kagoshima C., *Kawagoe* KAG-2542 (1912), *Hatusima* and *Sako* KAG-27338 (1962); Tanegashima Isl., *Ohwi* and *Okamoto* TNS-108361 (1953), *Hatusima* KAG-28296 (1964)

OKINAWA: Izena Isl., *Satomi* KAN (1971); Gushi V., Okinawa Isl., *Nakamine* TI (1956); Iriomote Isl., *H. Itō* TI (1936), *Amano* TNS-109090, URO-26026 (1953); Kanpirē Fall, *Yamazaki* TI (1971); Funauki, *Koyama et al.* TNS-314389 (1973); Yonakuni Isl., *Hatusima* KAG-24431 (1959)

Distr.: Portugal, Africa, Madagascar, Asia trop., Japan, Austr. sept.

form. *natans* (Komiya) Komiya, Syst. Stud. 68 (1972).....Pl. 7.

Syn. *U. gibba* L. subsp. *exoleta* (R. Br.) P. Taylor form. *natans* Komiya, Syst. Stud. 68 (1972)

Nom. Jap.: Nagare-ito-tanukimo (Komiya 1972)

Hab.: CHŪBU: Nagoya C., *Katō* KYO (1927)

KINKI: Ōike Pond, Yokkaichi C., Mie Pref., *Komiya* NDC-2133 (1953); Kanashōzu, Suzuka C., *Matsuyama* KYO (1939)

KYŪSHŪ: Tokunoshima Isl., Kagoshima Pref., *Sako* KAG-4025 (1961)

OKINAWA: Kawahara, Ishigaki Isl., *Furuse* URO-15360 (1973)

- 8) *Utricularia minor* L., Sp. Pl. 18 (1753); DC., Prodr. 8: 7 (1844); Oliver in J. Linn. Soc. Bot. 3: 176 (1859); Matsumura, Enum. ed. 2, 304, n. 3226 (1895); Makino in Bot. Mag. Tokyo 22: 28 (1914); Tatewaki in Bull. Biogeo. Jap. 4: 298 (1934); Komiya in Seibundō Ency. Hort. 6: 3078 (1969).....Pl. 8.

Syn. *U. Bremii* Heer ex Koelliker, Verz. Phan. Gew. Zuer. 142

U. gibba Le Conte in Ann. Lyc. N.Y. 1: 76 (1824), non L.

U. macroptera G. Brückn. ex Garcke, Fl. Deutschl. ed. 3, 274 (1849)

U. minor L. var. *multispinosa* Miki in Bot. Mag. Tokyo 48: 337 (1934)

U. multispinosa Miki, Water Phaner. Jap. 109, f. 63 (1937); Hara, Enum. 1: 292 (1948); Ohwi, Fl. Jap. 1069 (1953)

U. pulchella C.B. Lehm. in Flora 26: 786 (1843)

U. punctata (non Wall. ex DC.) P. Taylor in Dansk Bot. Ark. 23: 531 (1968), partim

U. rogersiana Lace in Kew Bull. 1915: 405 (1915)

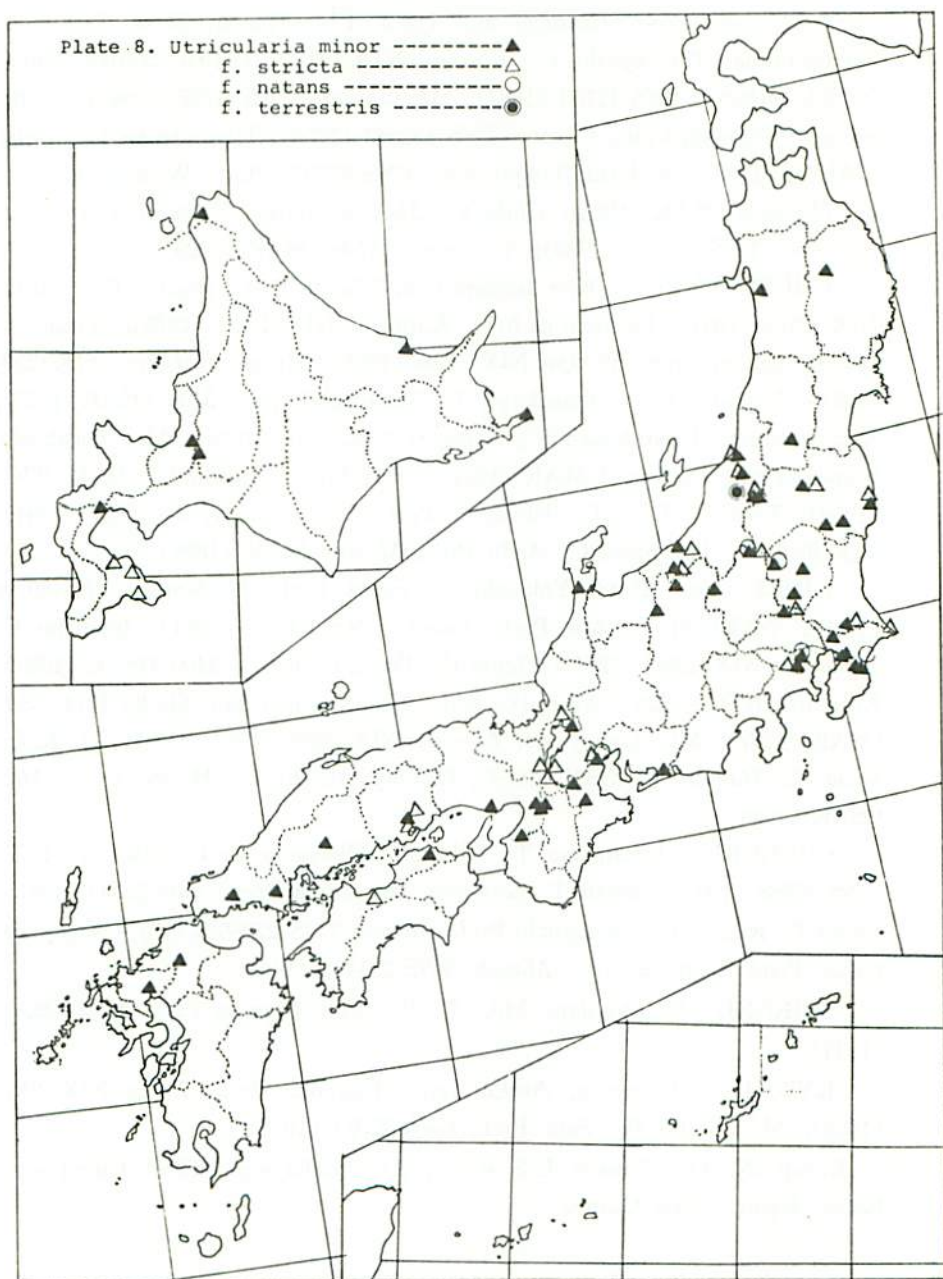
U. sacciformis Benj. in Linnæa 20: 302 (1847)

- Icon.: Buchenau in Bot. Zeit. 23: t. 3C, f. 8-11, t. 4B, D (1865); Britt. and Br., Ill. Fl. U. Stat. Canad. 3: 192, f. 3353 (1898); Glück, Biol.-morph. Untersuch. Wasser-Sumpf. 2: t. 1, f. 6, 8a, 9a, t. 2, f. 10-11, 14, 18-20, t. 3, f. 21-26, t. 5, f. 49-55 (1906); Hegi, Ill. Fl. Mitt.-Eur. 6: 168, t. 244, f. 6, f. 97 (1918); Miki in Bot. Mag. Tokyo 48: 337 (1934) and Water Phaner. Jap. 109, f. 63 (1937); Makino, Ill. Fl. 126, f. 378 (1940); Mason, Fl. Marsh. Calif. 736, f. 326 (1957); Hultén, Fl. Alaska 831A (1968); Hotchkiss, Comm. Marsh Underw. Float. Pl. US and Canad. 42 (1972); Komiya, Syst. Stud. t. 8, f. 8-14 (1972); P. Taylor in Fl. Malesia. ser. 1, 8 (2): 300, f. 26 (1977)

Nom. Jap.: Hime-tanukimo (Matsumura 1903)

- Hab.: HOKKAIDŌ: Sarobetsu. Toyotomi T., Teshio-gun, *Yoshida* SAP (1953); Abashiri C., *Faurie* KYO-8625 (1892); Nosappu, Nemuro C., *Sugaya* and *Tōda* TUS-5921 (1957); Ebetsu C., *Miyabe* SAP (1895); Horomui, Iwamisawa C., *Tokubuchi* SAP (1892), *Kudō* TAI-4750 (1918); Shizukari, Oshamanbe T., *Tatewaki* SAP-42244L (1951)

TŌHOKU: Me-gata, Akita C., *Ueno* Ueno-5814, NDC-2581 (1971); Akayu, Nanyō C., Yamagata Pref., *Miki* OSAK (1927); Yanagisawa, Iwate-gun, Iwate Pref., *Fukuda* KYO (1935); Akai-yachi Moor, Aizu-wakamatsu C., *Komiya* NDC-2403 (1956); Omotegō V., Nishi-shirakawa-gun, Fukushima Pref., *Imai* TNS-50902 (1935); Fukaado, *Komiya* NDC-2593 (1975); Naraha,



Futaba-gun, *Usuba* Usub-411372-13, NDC-2618 (1973)

KANTŌ: Oze, Gunma Pref., *Yagi* Ikeg-19113 (1949); *Komiya* NDC-2184 (1950), Nozori Pond, *Hisauchi* and *Hara* TNS-114595, *Hara* TI (1952); Tatara-numa, Tatebayashi C., *Komiya* NDC-2177 (1949); Senjyō-ga-hara, Nikkō, *Sakurai* TNS-11153 (1884), *Mizushima* MAK-4727 (1956); Tenjin-numa, Shimo-tsuga-gun, *Ogawa* TNS-132863 (1956); Utsunomiya C., *Suzuki* TAI-519 (1928); Shakujii, Tokyō, *Satō* TNS-37707 (1924); Wadayama, Tama C., *Hisauchi* OSAK (1925); Chiba C., *Makino* (1905); Yatsumi, Chōsei-gun, *Okuyama* TNS-280127 (1936); Teganuma, *Miki* OSAK (1926)

CHŪBU: Seiro V., Kita-kanbara-gun, Niigata Pref., *Ikegami* Ikeg-21612, NDC-2579 (1952); Dainichi-ga-hara, *Katagiri* NDC-2592 (1975); Tochibori, Higashi-kanbara-gun, *Komiya* NDC-2596 (1975); Hirose, *Katagiri* NDC-2591 (1974); U-no-ike Pond, Yoshikawa T., Naka-kubiki-gun, *Miki* OSAK (1925); Sasa-ga-mine, Myōkō-kōgen T., *Katagiri* NDC-2606 (1976); Mt. Togakushi, Nagano Pref., *Takahashi* MAK (1904); Iyari Moor, Ōmachi C., *H. Itō* TKU (1959); Teraya, Hakui C., Ishikawa Pref., *Yamamori* KAN-51987 (1964); Takashi-hara, Toyohashi C., Aichi Pref., *Makino* MAK (1899)

KINKI: Fuse Pond, Yōkaichi C., Shiga Pref., *Hashimoto* TNS-80790 (1938); Yokkaichi C., Mie Pref., *Inami* TNS-106802 (1951); Iga-ueno C., *Yabumoto* NDC-2582 (1971); Ogura-ike Pond, Kyōto C., *Miki* OSAK (1926); Kitamura KYO (1929); Muro-ike Pond, Kita-kawachi-gun, Ōsaka Pref., *Seto* OSAK (1957); Mt. Ikomayama, *Komiya* NDC-2586 (1974); Ushitaki, Kishi-wada C., *Hamatani* OSAK (1968); Ōkubo, Akashi C., Hyōgo Pref., *Miki* OSAK (1935)

CHŪGOKU: Takamatsu T., Kibi-gun, Okayama Pref., *Nikai* TI-1177, TNS-46388 (1903); Kōzan T., Sera-gun, Hiroshima Pref., *Satō* KYO (1931); Shutō T., Kuga-gun, Yamaguchi Pref., *Mazaki* TNS-272502 (1970); Nagasawa-no-ike Pond, Yamaguchi C., *Mazaki* TNS-251458 (1969)

SHIKOKU: Uchiku-dani, Miki T., Kita-gun, Kagawa Pref., *Miki* OSAK (1934)

KYŪSHŪ: Mitsusawa, Asakura-gun, Fukuoka Pref., *Ishizu* NDC-2189 (1962); Mt. Suginodake, Saga Pref., *Baba* KAG (1958)

Distr.: Europ., N. Am. (Canada, U.S. sept.), Asia (India sept., Tibet, China sept., Korea, Japan), New Guinea

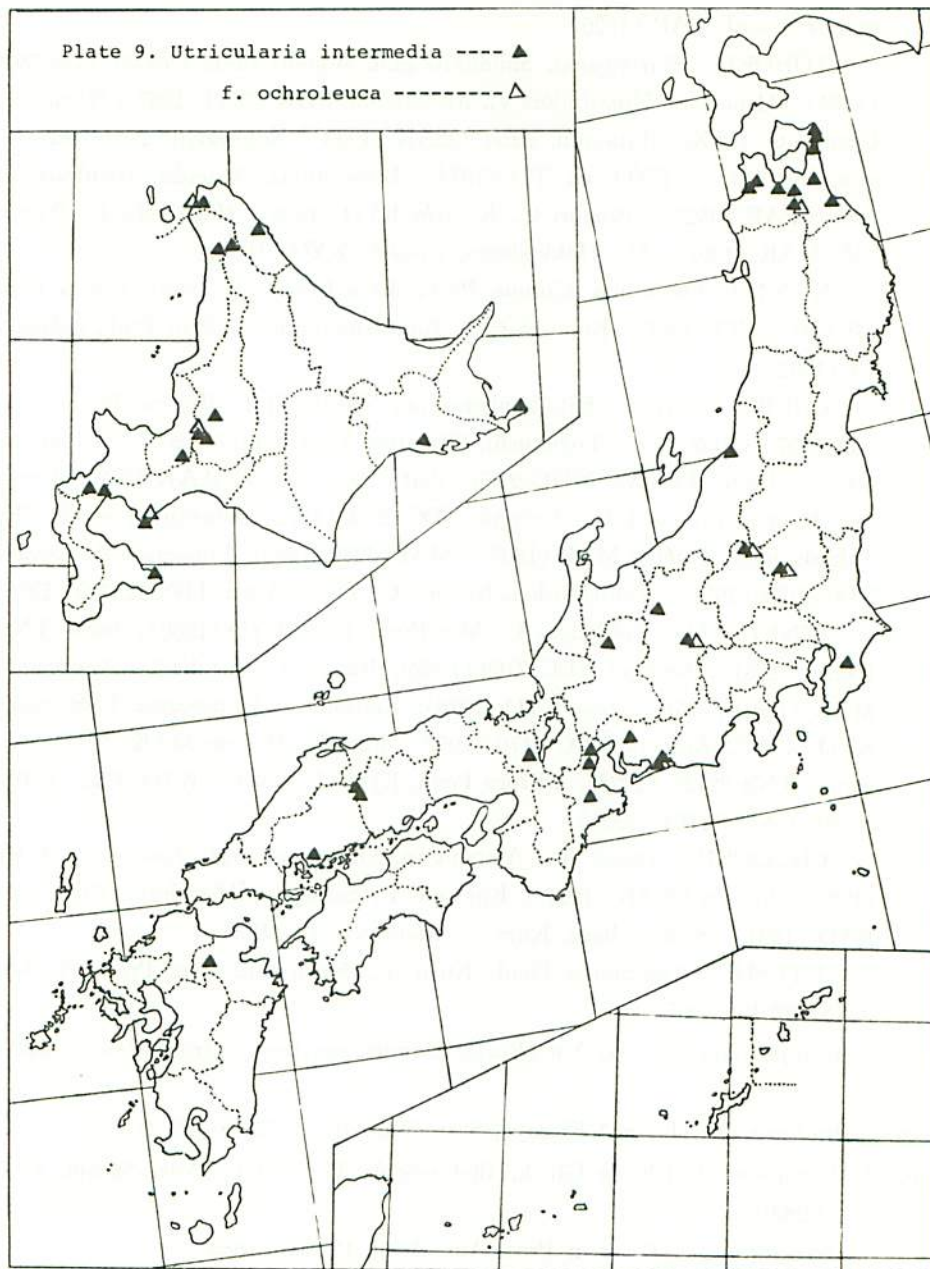
form. *stricta* Komiya, Syst. Stud. 72 (1972).....Pl. 8.

Syn. *U. Bremii* Heer form. *platyloba* Meister in Mem. l'Herbier Boiss. 12: 23 (1900)

- U. Bremii* Heer form. *terrestris* Glück, Biol.-morph. Untersuch. Wass.-Sumpf. 2: 54, t. 3, f. 25, 26 (1906)
- U. minor* L. form. *platyloba* Meister in Mem. l'Herbier Boiss. 12: t. 2, f. 59 (1900), partim
- U. multispinosa* Miki, Water Phaner. Jap. 109, f. 63 (1937), partim
- Nom. Jap.: Futo-hime-tanukimo (Komiya 1972)
- Hab.: HOKKAIDŌ: Ōnuma Kameda-gun, Yamazaki TI (1956); Hakodate C., Yamamoto TAI-142 (1922)
- TŌHOKU: Naraha, Futaba-gun, Fukushima Pref., Usuba Usub (1973)
- KANTŌ: Tatara-numa, Gunma Pref., Miki OSAK (1926); Azuma V., Inashiki-gun, Ibaragi Pref., s. coll. KYO (1929); Shakujii, Tokyō, Makino MAK (1934); Chōshi C., Chiba Pref., Komiya NDC-2186 (1950); Chiba C., Komiya NDC-2179 (1949)
- CHŪBU: Hirose, Kamikawa V., Higashi-kanbara-gun, Niigata Pref., Katagiri Katag (1974); Hirokami V., Kita-uonuma-gun, Iwata MAK (1915)
- KINKI: Fuse Pond, Yōkaichi C., Shiga Pref., Hashimoto TI-10211 (1942); Kutsukake, Ika-gun, Watanabe KAN-66145 (1964); Ōike, Yokkaichi C., Mie Pref., Yasui TNS-90927, TI (1950); Mizoro Pond, Kyōto C., Miki OSAK (1935); Ogura Pond, Miki OSAK (1925), Tashiro KYO (1929), Kitadani OSAK-7972 (1929)
- CHŪGOKU: Taga, Akasaka T., Akaiwa-gun, Okayama Pref., Komiya NDC-2632 (1976); Nichiōji, Okayama C., Obatake NDC-2631 (1975)
- form. *natans* Komiya, Syst. Stud. 73 (1972).....Pl. 8.
- Nom. Jap.: Nagare-hime-tanukimo (Komiya 1972)
- Hab.: HOKKAIDŌ: Baba-numa, Mori T., Kayabe-gun, Miki OSAK (1925)
- TŌHOKU: Inawashiro Lake, Fukushima Pref., Komiya NDC-2619 (1975)
- KANTŌ: Oze-ga-hara, Gunma Pref., Nakajima OSAK-13422 (1965); Oze-numa, Komiya NDC-2181 (1950); Senjyō-ga-hara, Nikkō, Tochigi Pref., H. Itō TI (1933); Narutō T., Chiba Pref., Wakana TNS-139101 (1951); Shakujii, Tokyō, H. Itō TKU (1929); Wadayama, Tama C., Hisauchi OSAK (1925)
- CHŪBU: Seiro V., Kita-kanbara-gun, Niigata Pref., Ikegami Ikeg-21612 (1952); Dainichi-ga-hara Suibara T., Katagiri NDC-2621 (1976); Sasa-ga-mine, Myōkō-kōgen T., Katagiri NDC-2620 (1976)
- KINKI: Ōike, Yokkaichi C., Mie Pref., Komiya NDC-2188 (1952); Mizoro Pond, Kyōto C., Miki OSAK (1923)

form. *terrestris* Glück, Biol.-morph. Untersuch. Wass.-Sumpf. 2: 47, t. 2, f. 20a

- (1906); Katagiri in J. Insect. Pl. Soc. 80: 2, 7, f. 3 (1977).....Pl. 8.
 Syn. *U. minor* L. form. *natans* Komiya, Syst. Stud. 73 (1972), partim
 Nom. Jap.: Chibi-hime-tanukimo (Komiya 1979)
 Hab.: CHŪBU: Hayade-kyō, Muramatsu T., Naka-kanbara-gun, Niigata Pref.,
Komiya NDC-2622 (1976)
- 9) *Utricularia intermedia* Hayne in Bot. Bilderbuch 3: t. 17 (1798) and in Schrad.
 J. Bot. 1: 18, t. 5 (1800); DC., Prodr. 8: 7 (1844); A. Gray, Bot. Jap. 401
 (1859); Makino in Bot. Mag. Tokyo 14: 135 (1900); Matsumura, Ind. ed.
 2, 2: 579 (1912); Hara, Enum. 1: 292 (1948); Ohwi, Fl. Jap. 1069 (1953)
Pl. 9.
 Syn. *U. Grafiana* Koch in Flora 30: 265 (1847)
U. intermedia Hayne var. *Grafiana* Koch, Synop. Fl. Germ. Helvet. ed. 2,
 665 (1843)
U. media Schum., Enum. Pl. Saell. 1: 9
U. millefolia Nutt. ex Tuckerm. in Am. J. Sci. ser. 1, 45: 28 (1843)
U. minor Tuill., Fl. Par. ed. 2, 12, non L.
 Icon.: Hayne in Bot. Bilderbuch 3: t. 17 (1800) and in Schrad. J. Bot. 1: 18, t.
 5 (1800); Reichb., Icon. Fl. Germ. 20: t. 1824 (1862); Britt. and Br., Ill. Fl.
 3: 192, f. 3351 (1898); Glück, Biol.-morph. Untersuch. Wass.-Sumpfl. 2: t. 3,
 f. 27-31, t. 5, f. 57-60 (1906) and in Ann. Bot. 27: 607-620, t. 47, 48 (1913)
 and in Hegi, Ill. Fl. Mitt.-Eur. 6: 169, f. 97, 98 (1918); House, Wild Fl.
 N.Y. 2: t. 206 (1918); Fitch and Smith, Ill. Brit. Fl. ed. 5, f. 669 (1924);
 Komar. and Alisov., Key East USSR 2: t. 280, f. 3-5 (1932); Miki, Water
 Phaner. Jap. 106-107, f. 60-61 (1937); Makino, Ill. Fl. 126, f. 377 (1940);
 Satō, Mansyū-suisō-zufu t. 5 (1942); Mason, Fl. Marsh. Calif. 735, f. 325
 (1957); Shimizu, Photogr. Insect. Pl. 110-111 (1966); Hultén, Fl. Alaska 831A
 (1968); Komiya in Seibundō Ency. Hort. 6: 3078-3079 (1969) and Syst. Stud.
 t. 9 (1972); Hotchkiss, Comm. Marsh. Underw. Float Pl. US and Canad. 44
 (1972); Masamune, Color Ill. Fl. Nipp. 6-I: 14A (1974); Terasaki, Ill. Fl.
 Jap. 746, f. 2822 (1977)
 Nom. Jap.: Ko-tanukimo (Matsumura 1912)
 Hab.: HOKKAIDŌ: Sarobetsu, Toyotomi T., Teshio-gun, *Yoshida* SAP (1953),
Komiya NDC-2174 (1971); Horonobe T., *Hara* TI (1934); Toikanbetsu, *Hara*
 TI (1956); Nosappu, Nemuro C., *Sugaya* and *Tōda* TUS-5929 (1957); Bibai
 C., *Hoshino* SAP (1937); Horomui, Iwamisawa C., *Miyabe* SAP (1885), *Toku-*
buchi TI (1887), *Kudō* TAI-4364 (1918); Otanoshige, Kushiro C., *Hara* TI
 (1936); Muroran C., *Iwamoto* SAP (1932); Shizukari, Oshamanbe T., *Makino*



MAK-2484 (1903), *Kudō* and *Yoshii* TAI-8227 (1921), *Koizumi* and *Tatewaki* TAI-8393 (1922), *Tatewaki* SAP-42244R (1951); Todohokke V., *Kameda-gun*, *Tatewaki* SAP (1926)

TŌHOKU: *Shiriyazaki*, *Shimokita-gun*, *Aomori Pref.*, *Ōhashi* TUS-5940 (1964); *Odanosawa*, *Higashidōri V.*, *Mizushima* MAK-23711 (1957); *Numazaki*, *Uranodate T.*, *Kamikita-gun*, *Miki* OSAK (1933); *Kokeyachi*, *Nishi-tsugaru-gun*, *Hara et al.* KYO (ex TI) (1974); *Bense-numa*, *Tateoka*, *Kizukuri T.*, *Miki* OSAK (1927); *Aomori C.*, *Kinashi* KYO (1908); *Hachinohe C.*, *Yamazaki* MAK (1902); *Mt. Hakkōdasan*, *Kinashi* KYO (1908)

KANTŌ: *Oze-numa*, *Gunma Pref.*, *Mizushima* TI (1950); *Oze-ga-hara*, *Mizushima* TI (1951); *Kobu-ga-hara*, *Kamitsuga-gun*, *Tochigi Pref.*, *Sekimoto* TI (1932)

CHŪBU: *Seiro V.*, *Kita-kanbara-gun*, *Niigata Pref.*, *Ikegami* Ikeg-21611, NDC-2573 (1952); *Mt. Togakushi*, *Okuyama* TNS-304517 (1960); *Kirigamine*, *Nagano Pref.*, *Komiya* NDC-2165 (1951), *Kobayashi* MAK-52525 (1960); *Imō Moor*, *Toyohashi C.*, *Komiya* NDC-2574 (1972) naturalized artificially; *Takashi-hara*, *Makino* MAK (1893), MAK-3280 (1899); *Futagawa T.*, *Komiya* NDC-2175 (1971); *Tenpaku-kei*, *Nagoya C.*, *Hamashima* TNS-223309 (1968)

KINKI: *Ōike*, *Yokkaichi C.*, *Mie Pref.*, *Yasui* KYO (1950), *Inami* TNS-106810 (1951), *Komiya* NDC-2169 (1952); *Kanbe T.*, *Suzuka C.*, *Nakanishiki* MAK (1901), *Matsuyama* KYO (1928); *Kanashōzu*, *Matsuyama* TNS-34569, KYO (1928), *Komiya* NDC-2170 (1952); *Iino T.*, *Makino* MAK (1902), *Kumagai* TNS-82135 (1928); *Mizoro Pond*, *Kyōto C.*, *Nakai* KYO-3832 (1948), *Komiya* NDC-2164 (1951)

CHŪGOKU: *Tessei T.*, *Atetsu-gun*, *Okayama Pref.* *Kanamaru* KYO (1925), *Kosaka* OSAK (1927); *Kōyama T.*, *Sera-gun*, *Hiroshima Pref.*, *Satō* KYO (1931); *Sada-ga-hara*, *Kure C.*, *Mackawa* TI (1935)

KYŪSHŪ: *Oda-no-ike Pond*, *Kusu T.*, *Kusu-gun*. *Ōita Pref.*, *Arakane* TNS-122019 (1955)

Distr.: Europ., Asia sept., N. Am. (Rocky Mounts, northwards from Massachusetts)

form. *ochroleuca* (R. Hartm.) *Komiya*, Syst. Stud. 76 (1972).....Pl. 9.

Syn. *U. brevicornis* Čelak. ex Glück, Biol.-morph. Untersuch. Wass.-Sumpf. 2: 63 (1906)

U. occidentalis A. Gray in Proc. Am. Acad. 19: 95 (1883)

U. ochroleuca R. Hartm. in Bot. Notiser. 1857: 30 (1857); *Miki*, Water Phaner. Jap. 107, f. 61 (1937); *Hara*, Enum. 1: 292 (1948); *Ohwi*, Fl. Jap. 1069 (1953)

Nom. Jap.: Yachi-ko-tanukimo (Miki 1937)

Hab.: HOKKAIDŌ: Sarobetsu, Toyotomi T., Teshio-gun, *Komiya* NDC-2228 (1969); Hamatonbetsu T., Esashi-gun, *Ohwi* KYO-4546 (1934); Horomui, Iwamisawa C., *Miki* OSAK (1925); Sanwa, Rankoshi T., Isoya-gun, *Kuwahara* TNS-108736 (1953); Chiribetsu, Muroran C., *Iwamoto* OSAK-1236 (1934)

TŌHOKU: Mt. Hakkōda, Aomori Pref., *Kinashi* KYO (1908), *Murai* OSAK (1933), *Takano* KAN-25975 (1957), *Sugaya* and *Ōmiya* TUS-5915 (1960)

KANTŌ: Oze-ga-hara, Gunma Pref., *Makino* MAK (1902), *Hara* TI (1929), *Hoshi* TNS-100702 (1932), *Miki* OSAK (1933), *Okuyama* TNS-44877 (1934), *Ohwi* and *Tagawa* KYO-8997 (1935), *Imahori* KAN-7328 (1948), *Komiya* NDC-2198 (1948), *Mizushima* TI (1950); Oze-numa, *H. Itō* TKU (1910), *Endō* TUS-5920 (1910), *Komiya* NDC-2201 (1950); Kobu-ga-hara, Tochigi Pref., *Sugaya* TUS-5919 (1933)

CHŪBU: Kirigamine, Nagano Pref., *Makino* MAK (1905), *Miki* OSAK (1927), *Tobita* TI (1936), *Komiya* NDC-2208 (1950), *Hara* TI (1953)

- 10) *Utricularia aurea* Lour., Fl. Cochinch. 26 (1790); DC., Prodr. 8: 8 (1844); Yamamoto in Trop. Agr. 6: 563 (1933); Tamura in Act. Phy. Geo. 15: 32 (1953); Erickson, Pl. Prey 68 (1968); Komiya in Seibundō Ency. Hort. 6: 3076 (1969).....Pl. 10.

Syn. *U. Blumei* Miq., Fl. Ind. Bat. 3: 997 (1859)

U. calumpitensis Blanco, Fragm. 11 (1851)

U. confervifolia Jacks. ex D. Don, Prodr. Fl. Nep. 84 (1825)

U. extensa Hance in Walp. Ann. 3: 3 (1852)

U. fasciculata Roxb., Hort. Beng. 4 (1814), nomen; Fl. Ind. 1: 143 (1820)

U. flexuosa Vahl, Enum. 1: 198 (1804); DC., Prodr. 8: 25 (1844); Oliver in J. Linn. Soc. Bot. 3: 175 (1859); Benth., Fl. Hongk. 255 (1861) and Fl. Austr. 4: 525 (1869); Matsumura and Hayata, Enum. Pl. Formos. 285 (1906)

U. flexuosa Vahl var. *Blumii* DC., Prodr. 8: 24 (1844)

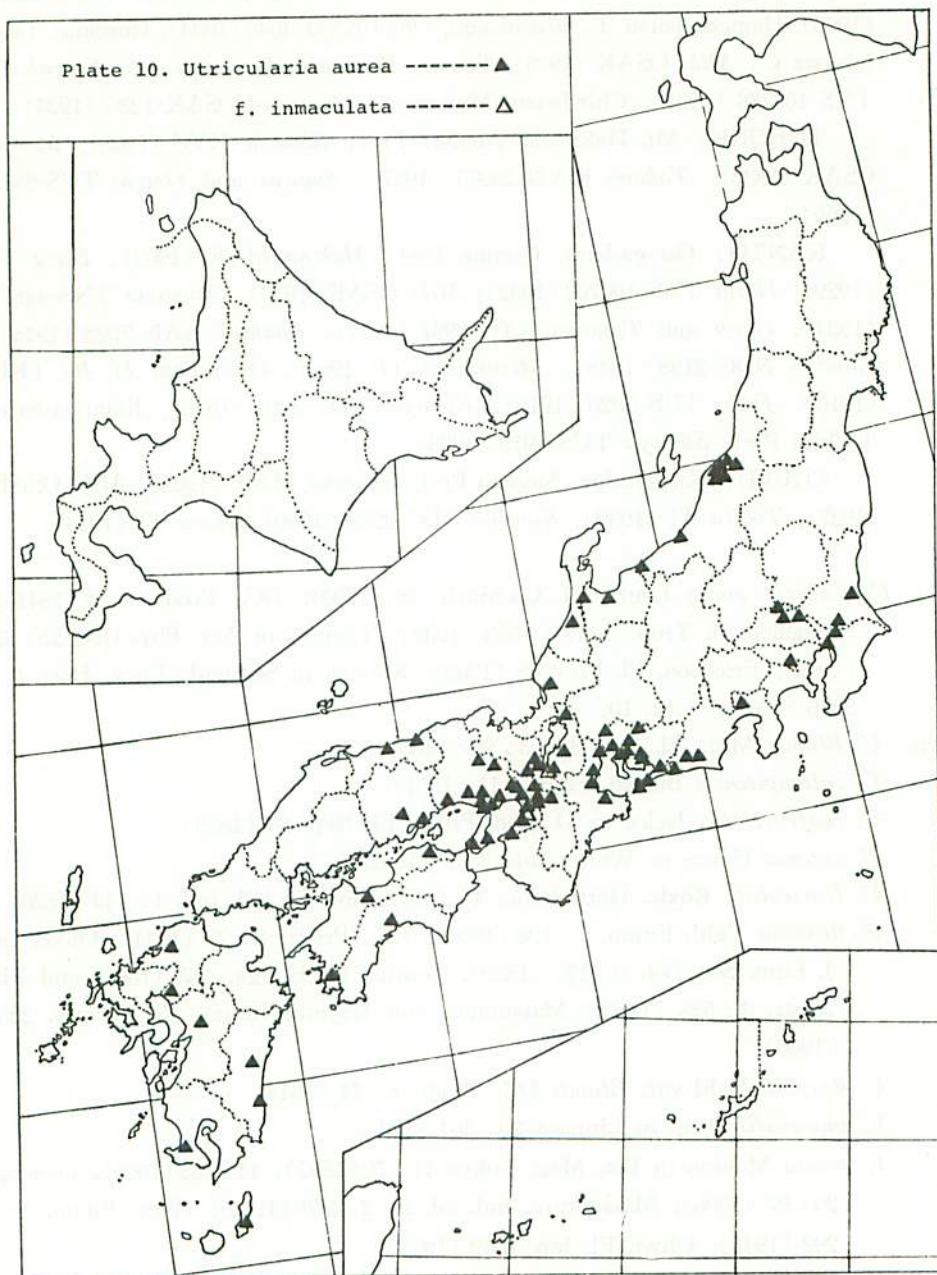
U. inaequalis Benj. in Linnaea 20: 304 (1847)

U. pilosa Makino in Bot. Mag. Tokyo 11: 70 (1897), 14: 135 (1900), nomen, 20: 97 (1906); Matsumura, Ind. ed. 2, 2: 579 (1912); Hara, Enum. 1: 292 (1948); Ohwi, Fl. Jap. 1069 (1953)

U. reclinata Hassk., Versl. Med. Kon. Ak. Wet. A'dam 4: 161 (1855)

U. vulgaris Buch.-Ham. ex D. Don, Prodr. Fl. Nep. 84 (1825), non L.

U. vulgaris L. var. *pilosa* Makino in Bot. Mag. Tokyo 9: 111 (1895)



Icon.: Wight, Icon. Pl. Ind. Ori. 4:t. 1568 (1850); T. Itō, Taiwan-zusetsu 1:634, f. 632 (1926); Miki, Water Phaner. Jap. 110, f. 64, A-N (1937); Shimizu, Photogr. Insect. Pl. 112, f. 1 (1966); Kuo in Biol. Bull. Nat. Taiwan Normal Univ. 3: 29, f. 7 (1968); Komiya in Seibundō Ency. Hort. 6: 3076 (1969) and Syst. Stud. t. 10, f. 1-9 (1972); Masamune, Color Ill. Fl. Nipp. 6-I: 14B (1974); Icon. Cormophyt. Sini. 4: 148, f. 5710 (1975); Terasaki, Ill. Fl. Jap. ed. 2, 746, f. 2823 (1977); P. Taylor in Fl. Malesia. ser. 1, 8 (2): 295, f. 21, 296, f. 22, 297, f. 23 (1977)

Nom. Jap.: No-tanukimo (Makino 1895)

Hab.: KANTŌ: Tataru-numa, Tatebayashi C., Gunma Pref., *Sekimoto* KYO (1930), *Komyia* NDC-2250 (1949); Asahi V., Kashima-gun, Ibaraki Pref., *Tsurumachi* OSAK (1932); Hebi-numa, Ryūgasaki C., *Komiya* NDC-2462 (1972); Hanyū C., Saitama Pref., *Maruyama* TNS-87610 (1950), *Komiya* NDC-2252 (1950); Satte T., Kita-katsushika-gun, *Nagasu* TNS-137339 (1958); Hidaka T., Iruma-gun, *Okuyama* TNS-285140 (1958); Tega-numa, Chiba Pref., *Furusawa* MAK-4728 (1951); Ichikawa C., *Watanabe* TNS-61268 (1895), *Makino* MAK-64952 (1895), *Matsushima* TNS-37033 (1897)

CHŪBU: Seiro V., Kita-kanbara-gun, Niigata Pref., *Ikegami* Ikeg-21581, NDC-2455 (1952); Shiunji T., *Ikegami* Ikeg-21648 (1952); Hyōko Lake, Suibara T., *Katagiri* Katag (1974); Masugata-ike Pond, Shibata C., *Komiya* NDC-2489 (1975); Ajikata V., Nishi-kanbara-gun, *Makino* MAK (1903); Kawato, Niigata C., *Yagi* Ikeg-18688 (1947), *Ikegami* NDC-2454 (1948); Ōgata T., Naka-kubiki-gun, *Ikegami* Ikeg-37043 (1957), *Ishizawa* NDC-2460 (1972); Mt. Kurohimeyama, Nishi-kubiki-gun, *Ishizawa* Katag (1968); Kureha T., Toyama C., *Makino* MAK (1905); Mt. Goishi-ga-mine, Hakui C., Ishikawa Pref., *Yamamori* KAN-51988 (1964); Kanazawa C., *Ichimura* KAN-70442 (1906); Kayatani T., Takefu C., Fukui Pref., *Mimura* KAN-28343 (1960); Fukuroi C., Shizuoka Pref., *Muramatsu* TI (1922); Okegaya, Iwata C., *Komiya* NDC-2490 (1975); Shirosuga T., Hamana-gun, *Ōmura* TNS-143922 (1957); Toyohashi C., Aichi Pref., *Makino* MAK (1893); Mt. Sanageyama, *Komiya* NDC-2471 (1973); Tahara T., Atsumi-gun, *Miki* OSAK (1934); Atsumi T., *Makino* MAK (1893); Okazaki C., *Ichikawa* KYO (1912); Toyoake T., Aichi-gun, *T. Itō* Ikeg-7468 (1940); Kōda T., Nukata-gun, *Miki* OSAK (1934); Agui T., Chita-gun, *Toda* TNS-296816 (1971); Nagoya C., *T. Itō* TNS-61266 (1891), *Makino* MAK (1926); Tatsuta V., Ama-gun, *Inami* TNS-106804 (1951)

KINKI: Fuse-ike Pond Yōkaichi C., Shiga Pref., *Hashimoto* TNS-80369 (1942); Ōike, Yokkaichi C., Mie Pref., *Komiya* NDC-2458 (1971); Kanashōzu,

Suzuka C., *Matsuyama* KYO (1928); Inao, *Nakai* MAK-45513 (1951), *Murata* KYO-5655 (1951); Iino, *Matsuyama* KYO (1928); Mizoro Pond, Kyōto C., *Makino* MAK (1905), *Takagi* KYO (1921), *Miki* OSAK (1922); Kamigamo, *Makino* MAK-2504 (1905), *Kinashi* KYO (1920); Hirosawa-no-ike Pond, *Miki* OSAK (1925); Yawata T., Tsuzuki-gun, *Yamamoto* TNS-191897 (1938); Mt. Takakumayama, Kameoka C., *Tsugaru* TNS-339563 (1964); Ogura Pond, *Miki* OSAK (1923), *Tan* KYO (1927), *Nakai* KYO-3864 (1948); Minoo C., Ōsaka Pref., *Tashiro* KYO (1927); Muro-ike Pond, Kita-kawachi-gun, *Seto* OSAK-1749 (1965); Kisaichi, *Nakai* KYO-4238 (1949); Itami C., *Ichikawa* KYO (1936); Toyonaka C., *Ui* OSAK (1934); Mt. Ikomayama, *Komiya* NDC-2472 (1974); Mihara T., Minami-kawachi-gun, *Miki* OSAK (1934); Mt. Shino-dayama, Izumi C., *Seto* OSAK (1952), *Murata* KYO-10291 (1956); Shinge, Sennan-gun, *Tashiro* TNS-51664, KYO (1935); Nara C., *Miki* OSAK (1934), *Seto* OSAK-1749 (1965); Mt. Ninnikusan, *Murata* TNS-200204, MAK-80819 (1967); Shingū C., Wakayama Pref., *Takahashi* OSAK (1934); Kasuga T., Hikami-gun, Hyōgo Pref., *Hosomi* TNS-51665 (1935); Sasayama T., Taki-gun, *Tashiro* TNS-45334 (1934); Jyōtō T., *Hosomi* KYO-7721 (1968); Mt. Kōsenjisan, *Ishikawa* TAI (1940); Kasai C., *Tagawa* KYO-4897 (1952); Uzurano-minami T., *Komiya* NDC-2492 (1975); Hōten-ike Pond, *Komiya* NDC-2497 (1975); Zenbō-ike Pond, *Komiya* NDC-2501 (1975); Arima, Kōbe C., *Makino* MAK (1931); Akashi C., *Ishikawa* KYO (1936); Ōkubo, *Miki* OSAK (1935); Kamishō T., Kakogawa C., *Kurosaki* TNS-310781 (1970); Ōike Pond, *Komiya* NDC-2504 (1975); Tsubaki Pass, Aioi C., *Fukuoka et al.* TNS-370987 (1976); Seitan T., Awaji Isl., *Nozu* TI (1915); Goshiki T., Tsuna-gun, *Nozu* TI (1919); Sumoto C., *Nozu* TI (1919)

CHŪGOKU: Koyama-ike Pond, Tottori C., *Miki* OSAK (1934); Tōgō T., Tōhaku-gun, *Miki* OSAK (1934); Oku T., Oku-gun, Okayama Pref., *Shussha* OSAK (1934); Takamatsu T., Kibi-gun, *Nikai* TNS-46386 (1902)

SHIKOKU: Miki T., Kita-gun, Kagawa Pref., *Miki* OSAK (1935); Kōchi C., *Makino* MAK (1891), *Yoshinaga* TNS-228875 (1938); Funaya, Saijō C., Ehime Pref., *Ochi* KYO (1940); Mishō T., Minami-uwa-gun, *H. Itō* TKU (1923)

KYŪSHŪ: Chōjya-baru, Kasuya T., Kasuya-gun, Fukuoka Pref., *Nagano* TI (1891); Ōkawa C., *Nagano* TAI (1891); Mt. Hikumayama, Kanzaki-gun, Saga Pref., *Baba* KYO, TI (1941); Mifune T., Kami-mashiki-gun, Kumamoto Pref., *Makino* MAK (1905); Kijyō V., Koyu-gun, Miyazaki Pref., *Hirata* TNS-249994 (1960); Miyazaki C., *Bandō* KYO (s. dat.); Kita-tabuse, Hioki-gun, Kagoshima Pref., *Doi* KYO (1926); Tanegashima Isl., *Hidaka* KYO (1913);

Higashi-Nakama, Amami-ōshima Isl., *Miki* OSAK (1927)

Distr.: India or., Ceylon, Indo-China, Malaya, Indonesia, Philippines, Taiwan, China aust., Korea aust., Japan, Australia sept.

form. *inmaculata* Tamura in Act. Phy. Geo. 15: 32 (1953).....Pl. 10.

Nom. Jap.: Mon-nashi-no-tanukimo (Tamura 1953)

Hab. KINKI: Zeze, Ōtsu C., Shiga Pref., *Tamura* KYO-149 (1952); Mt. Shinodaya, Izumi C., Ōsaka Pref., *Seto* OSAK-10284 (1960)

11) *Utricularia dimorphantha* Makino in Bot Mag. Tokyo 20: 96 (1906) and in Inuma, Sōmoku-zusetsu ed. Mak. 1: 56 (1907); Matsumura, Ind. ed. 2, 2: 570 (1912); Hara, Enum. 291 (1948); Ohwi, Fl. Jap. 1070 (1953); Komiya in Seibundō Ency. Hort. 6: 3077 (1969).....Pl. 11.

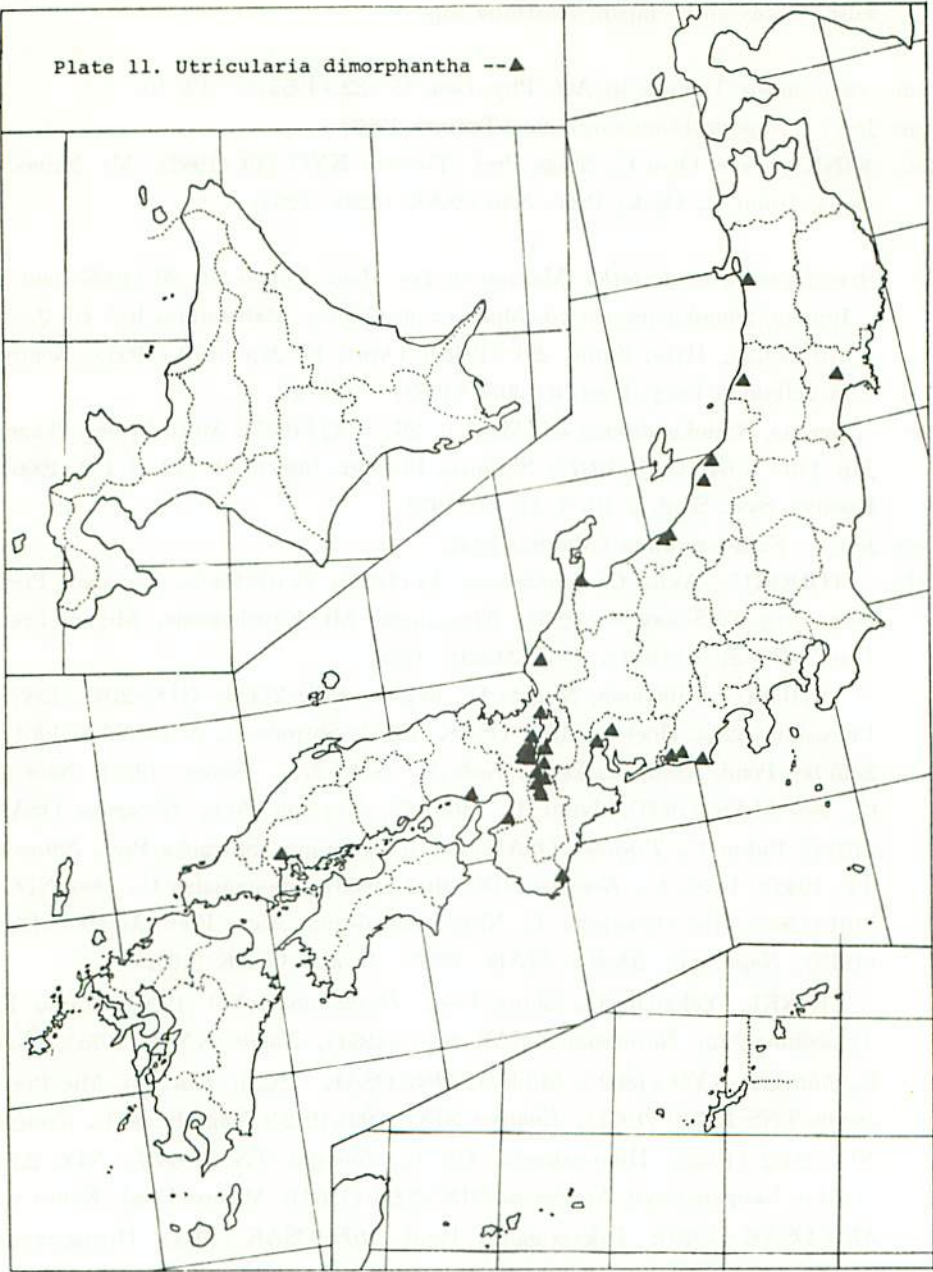
Icon.: Inuma, Sōmoku-zusetsu ed. Mak. 1: 56, f. 42 (1907); Miki, Water Phaner. Jap. 110, f. 64, O-Q (1937); Shimizu, Photogr. Insect. Pl. 112, f. 1-2 (1966); Komiya, Syst. Stud. t. 10, f. 10-15 (1972)

Nom. Jap.: Fusa-tanukimo (Makino 1906)

Hab.: TŌHOKU: Akita C., *Muramatsu* TI (1928); Tsuruoka C., Yamagata Pref., *Nagasawa* TNS-306898 (1893); Aino-numa, Mt. Kagobōyama, Miyagi Pref., *Ueno* NDC-2109 (1969), TNS-292994 (1972)

CHŪBU: Kitayama, Niigata C., *Ikegami* Ikeg-21455, NDC-2703 (1952); Fukushima-gata, Hōei C., *Miki* OSAK (1925); Shirone C., *S. Itō* SAP (1904); Satō-ike Pond, Kashiwazaki C., *Katagiri* NDC-2707, Katag (1973); Naoetsu C., *Abe* MAK (1903); Jyūni T., Himi C., Toyama Pref., *Hatagoya* OSAK (1936); Fukui C., *Tsujioka* OSAK (1935); Ogasa-gun, Shizuoka Pref., *Shimizu* TI (1930); Iwata C., *Komiya* NDC-2102 (1968); Hamamatsu C., *Ono* NDC-2101 (1965); Nishi-biwajima T., Nishi-kasugai-gun, Aichi Pref., *Makino* MAK (1912); Nagoya C., *Makino* MAK (1912), *Wakita* OSAK (1952)

KINKI: Yōkaichi C., Shiga Pref., *Hashimoto* KYO (1926); Imazu T., Takashima-gun, *Hashimoto* OSAK-2416 (1934), *Nagai* KYO (1975); Ōtsu C., *Matsuda* KYO (1892); Miidera, *Miki* OSAK (1925); Kisozaki, Mie Pref., *Inami* TNS-106801 (1951), *Komiya* NDC-2093 (1952); Nagashima T., *Komiya* NDC-2092 (1952); Hino-yakushi, Uji C., *Komiya* TNS-106807, NDC-2087 (1951); Kangetsu-kyō, *Sugiyama* NDC-2096 (1952); Mizoro Pond, Kyōto C., *Miki* OSAK (1926); Takara-ga-ike Pond, *Miki* OSAK (1934); Hirosawa-no-ike Pond, *Miki* OSAK (1925); Fushimi-ku, *Nakai* KYO-1467 (1942); Ogura Pond, *Miki* OSAK (1929); Jyōyō T., Kuze-gun, *Miki* OSAK (1934); Gojyō T., Nara Pref., *Nunofuji* TNS-114846 (1950); Saidaiji T., Nara C., *Miki*



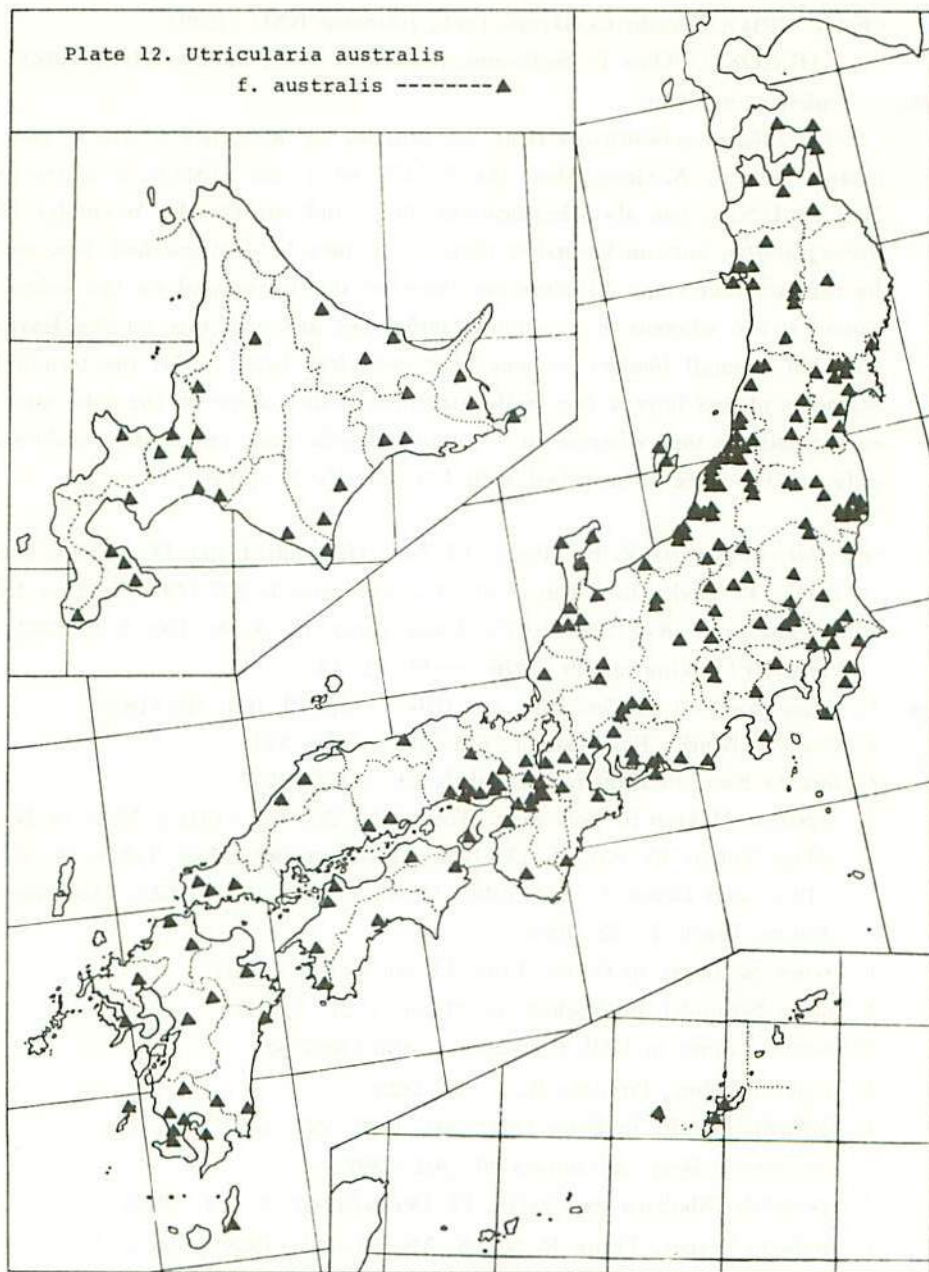
OSAK (1934); Minakami-ike Pond, Miki OSAK (1934); Mita, Kishiwada C., Ōsaka Pref., Makino MAK (1896); Shingū C., Wakayama Pref., Takahashi OSAK (1934); Akashi C., Hyōgo Pref., Ishikawa KYO (1936)

CHŪGOKU: Ōno T., Saiki-gun, Hiroshima Pref., Makino MAK (1933)

Distr.: Endemic in Japan

Utricularia geminiscapa Benj. [in Linnaea 20:305 (1847); Syn. *U. clandestina* Nutt ex A. Gray, Man. Bot. N. US. ed. 1, 287 (1848)], a native of N.E. of U.S.A., has also cleistogamous fruits and superficially resembles *U. dimorphantha*, but much smaller than it. It may be distinguished, however, by the fact that many bladders are borne on the leaves and on the subterranean stems, whereas in *U. dimorphantha* they are very rare on the leaves only but a small bladder is borne near each leaf base. Also the terminal segments of leaf have a few teeth furnished with a spine on the sides alternately and the top, whereas in *U. dimorphantha* they are usually glabrous only but the apex is furnished with 1-3 (usually 2) spines.

- 12) *Utricularia australis* R. Br., Prodr. Fl. Nov. Holl. 430 (1810); DC., Prodr. 8:6 (1844); P. Taylor in Tutin *et al.*, Fl. Europaea 3: 297 (1972) and in Fl. Malesia. ser. 1, 8 (2): 299 (1977); Aston, Aqua. Pl. Austr. 100, f. 38 (1973); Walker, Fl. Okinawa 949 (1976).....Pl. 12, 13.
- Syn. *U. dubia* Rosellini ex Ces. Pass. and Gib., Comp. Fl. Ital. 416 (1869)
U. flexuosa Benth., Fl. Austr. 4: 525 (1869), non Vahl
U. incerta Kam. in Engler, Bot. Jahrb. 33: 111 (1902)
U. japonica Makino in Bot. Mag. Tokyo 28: 28, f. 3 (1914); Miki in Bot. Mag. Tokyo 49: 851, f. 13 (1935); Hara in Bot. Mag. Tokyo 51: 639 (1937) and Enum. 1: 292 (1948); Ohwi, Fl. Jap. 1070 (1953); Masamune, Enum. Trach. 7: 72 (1955)
U. major St. Lager in Cariot. Etud. Fl. ed. 8, 646 (1880)
U. major Schmidel. in Bischoff, Ic. Pl. 80, t. 21, f. a-1
U. mutata Leiner in Döll, Fl. Baden 2: 645 (1857-62)
U. neglecta Lehm., Pugillus Pl. 1: 38 (1828)
U. Pollichii Schultz in Flora 1871: 390; 1873: 237, 247 (1871, 73)
U. sacciformis Benj. in Linnaea 20: 302 (1897)
U. spectabilis Madauss ex Garcke, Fl. Deutschl. ed. 3, 274 (1849)
U. stellaris Wager, Trans. R. Soc. S. Afr. 16: 204 (1928), non L. f.
U. shikokuensis Nakajima in Tokyō Ryokuchi-keikaku Chōsa-ihō 9: 90, t. 2 (1937); Hara, Enum. 1: 293 (1948); Ohwi, Fl. Jap. 1070 (1953)
U. tenuicaulis Miki in Bot. Mag. Tokyo 49: 847, f. 12 (1935); Hara, Enum.



- 1: 293 (1948); Ohwi, Fl. Jap. 1070 (1953)
- U. vulgaris* L., Sp. Pl. 18 (1753), partim; Hooker, Brit. Fl. 9 (1830); Miq., Prol. Fl. Jap. 383 (1867); Franch. et Sav., Enum. Pl. Jap. 1: 298 (1875); Matsumura, Enum. ed. 2, 304, n. 3228 (1895); Makino in Bot. Mag. Tokyo 14: 135 (1900); Nakai, Fl. Korea 2: 132 (1911); P. Taylor in Kew Bull. 18: 171 (1964); Komiya in Seibundō Ency. Hort. 6: 3080 (1969) and Syst. Stud. 83 (1972)
- U. vulgaris* L. var. *formosana* Kuo in Biol. Bull. Nat. Taiwan Normal Univ. 3: 24, f. 2 (1968) and in Fl. Taiwan 4: 698, t. 1162 (1978)
- U. vulgaris* L. var. *japonica* (Mak.) Tamura in Act. Phy. Geo. 15: 32 (1953)
- U. vulgaris* L. var. *neglecta* (Lehm.) Meister in Mem. l'Herbier Boissier 12: 33 (1900)
- Icon.: Glück, Biol.-morph. Untersuch. Wasser-Sumpfl. 2: t. 1, f. 1-5, 7; t. 2, f. 15-17; t. 4, f. 34-40 (1906) and in Hegi, Ill. Fl. Mitt.-Eur. 4: 167, f. 97 a-c (1918); Makino in Bot. Mag. Tokyo 28: 28, f. 3 (1914); Terasaki, Zufu f. 1108 (1933) and Ill. Fl. Jap. 746, f. 2824 (1977); Miki in Bot. Mag. Tokyo 49: 849, f. 12, 851, f. 13 (1935) and Water Phaner. Jap. 111-112, f. 65, 66 (1937); Nakajima in Tōkyō Ryokuchi-keikaku Chōsa-ihō 9: 90, t. 2 (1937); Makino, Ill. Fl. 126, f. 376 (1940); Sugawara, Fl. Saghal. 4: 1682, t. 773 A (1940); Tei, Korean Fl. 2: 604, f. 1208 (1957); P. Taylor in Kew Bull. 18: 173, f. 71 (1964) and in Fl. Malesia. ser. 1, 8(2): 299, f. 25 (1977); Shimizu, Photogr. Insect. Pl. 98-109 (1966); Hultén, Fl. Alaska 830 B (1968); Kuo in Biol. Bull. Nat. Taiwan Normal Univ. 3: 30, f. 2, 31, f. 3 (1968); Komiya in Seibundō Ency. Hort. 6: 1080 (1969) and Syst. Stud. t. 11, 12 (1972); Aston, Aqua. Pl. Austr. 101, f. 38 (1973); Masamune, Color Ill. Fl. Nipp. 6-I: 15 (1974); Hsiao in Fl. Taiwan 4: 697, f. 1162 (1978)
- Nom. Jap.: Tanuki-mo
- Hab.: HOKKAIDŌ: Takinoue, Monbetsu-gun, *Okamoto* KYO (1952); Shibetsu C., *Miyabe* SAP (1884); Tokoro T., Kitami-tokoro-gun, *Iwamoto* OSAK-1386 (1932); Kutcharo Lake, *Miyabe* SAP (1915); Tomochi, Nemuro C., *Hoshi* SAP (1912); Nokke-zaki, K. *Itō* SAP (1963); Kaya-numa, Tokachi-kawakami-gun, *Tatewaki* SAP (1951); Onbetsu, Shiranuka-gun, *Nakamura* SAP (1890); Kimon-numa, Ikeda T., Nakagawa-gun, *Miki* OSAK (1932); Sarabetsu V., Kasai-gun, *Ohki* TNS-269417 (1958); Shoya, Horoizumi-gun, *Hara* TI (1933); Urakawa T., *Faurie* KYO-10577 (1893); Ebeotsu, Shintotsukawa T., Kabatogun, *Miki* OSAK (1930); Shinshinotsu V., Ishikari-gun, *Matsumura* KYO (1959); Mukawa, Yūfutsu-gun, *Takahashi* SAP (1964); Yūfutsu, *Tokubuchi* SAP (1892); Horomui, Iwamisawa C., *Miyabe* SAP (1885), *Kudo* TAI-4788

(1919); Sapporo C., *Takenobu* SAP (1880), *Faurie* KYO-3059 (1888); Yoichi T., *Kawakami* SAP (1892); Nagato-numa, Chitose-gun, *Tokubuchi* SAP (1893); Usu T., Abuta-gun, *Miyabe* SAP (1890); Baba-numa, Mori T., Kayabe-gun, *Miki* OSAK (1925); Ōnuma, Kameda-gun, *Greatrex* SAP (1917); Hakodate C., *Tokubuchi* SAP (1888); Matsumae T., *Kawakami* SAP (1892)

TŌHOKU: Ōmazaki, Ōma T., Shimokita-gun, Aomori Pref., *Koyama* and *Fukuoka* TNS-272027 (1970); Shiriyazaki, *Ōhashi* TUS-5940 (1964); Sakyō-numa, Higashi-dōri V., *Nakajima* OSAK (1939); Saruga-mori, *Yoshioka* and *Sugaya* TUS-5901 (1964); Oda-no-sawa, *Ōhashi* TUS-5908 (1964); Numazaki, Kamikita T., Kamikita-gun, *Miki* OSAK (1933); Tako-numa, Inazaki V., Nishi-tsugaru-gun, *Furuse* TNS-128304 (1955); Natsudomari, Higashitsugaru-gun, *Takeuchi* TUS-15246 (1960); Aomori C., *Kinashi* KYO (1901), *Hosoi* KAN-12389 (1949); Yotsuwa, Towada C., *Narita* TI (1948); Wakimoto, Oga C., Akita Pref., *Mochizuki* KAN-44808 (1963); Koikawa, Minami-akita-gun, *Matsuda* TNS-115080 (1951); Iijima, *Muramatsu* KYO (1932); Akita C., *Muramatsu* TI (1928); Me-gata Pond, *Ueno* Ueno-5724, NDC-2835 (1971); O-gata Pond, *Komiya* NDC-2876 (1973); Tazawa Lake, *Komiya* NDC-2865 (1973); Jindai, Tazawako T., Senpoku-gun, *Suzuki* SAP (1902); Ōura-numa, Kamioka T., *Ueno* Ueno-5784 (1971); Yuzawa C., *Satake* TI (1932); Yahata T., Akumi-gun, Yamagata Pref., *Satō* MAK (1910); Higashine C., *Okuyama* TNS-281263 (1946); Hakuryū Lake, Nanyō C., *Doi* TNS-181180 (1965); Amarume T., Higashi-tagawa-gun, *Katō* KAN-25545 (1957); Haguro T., *Nagasawa* TNS-53293 (1894); Morioka C., Iwate Pref., *Yamada* MAK (1903); Karakuwa T., Motoyoshi-gun, Miyagi Pref., *Ueno* Ueno-1278 (1966); Utatsu T., *Odajima* MAK (1906); Tsukidate T., Kurihara-gun, *Ueno* and *Kimura* Ueno-13038, NDC-2829 (1971); Izu-numa Pond, *Sugaya et al.* TUS-5905 (1966), *Ueno* NDC-2832 (1971); Ishigoshi T., Tome-gun, *Ueno* Ueno-13032, NDC-2833 (1971); Hazama T., *Ueno* Ueno-1379 (1966); Yoneyama T., *Ueno* Ueno-1916 (1966); Furukawa C., *Ueno* Ueno-1233 (1966); Aino-numa Pond, Tōda-gun, *Komiya* NDC-2863 (1972); Goshiki-numa, Sendai C., *Komiya* NDC-2903 (1973); Zaō T., Karita-gun, *Komiya* NDC-2387 (1969); Watari T., *Komiya* NDC-2383 (1969); Marumori T., Igu-gun *Ueno* Ueno-1260 (1966); Akaiyachi, Fukushima Pref., *Kurosawa* TI (1957); Aizuwakamatsu C., *Yamazaki* TI (1962); Dake, Nihon-matsu C., *Ogura* TUS-5905 (1958); Sukagawa C., *Matsushima* TAI (1928); Tōnoko, Hirata V., Ishikawa-gun, *Usuba* Usub (1973); Nanko Lake, Shirakawa C., *Sugiyama* NDC-2317 (1953); Naraha T., Futaba-gun, *Usuba* NDC-3002 (1973); Yoshima T., Iwaki C., *Usuba* Usub (1972); Miwa T., *Usuba* Usub (1972); Uchikura, Ogawa T., *Usuba* Usub

(1972), *Komiy* NDC-2938 (1975); Naka-hirakubo, *Komiy* NDC-2972 (1975); Yotsukura T., *Usuba* *Usub* (1973); Ishimori-yama, *Usuba* *Usub* (1973)

KANTŌ: Agatsuma T., Gunma Pref., *Masuda* MAK-60192 (1965); Ni-haru V., Tone-gun, *Masuda* MAK-60191 (1965); Nozori Lake, *Hara* and *Kurosawa* TI (1952); Mt. Mitsuminesan, *Utsumi* TNS-113179 (1954); Isobe, Annaka C., *Nakajima* MAK (1906); Tatebayashi C., *Shimano* TNS-147065 (1961); Tatara-numa, *Miki* OSAK (1926), *Shiobara* TNS-40250 (1931); Numanoi, Nasu T., Tochigi Pref., *Kitamura* KYO (1969); Utsunomiya C., *Suzuki* TAI-1061 (1929); Akama-numa, Fujioka T., *Sugaya* TUS-5906 (1933); Hanyū C., Saitama Pref., *Komiy* NDC-2351 (1955), *Ōtaki* TNS-147884 (1961); Kazo C., *Komiy* TNS-196806 (1951); Satte T., *Nagasu* TNS-137340 (1958); Kuki T., Minami-saitama-gun, *H. Itō* TKU (1964); Iwatsuki C., *Komiy* NDC-2923 (1974); Kasumi-ga-ura, Ibaraki Pref., *Suzuki* MAK (1901); Hebi-numa, Ryūgasaki C., *Komiy* NDC-2905 (1973); Kita-ibaraki C., *Ryūzaki* TNS-162698 (1965); Tega-numa, Chiba Pref., *Miki* OSAK (1926); Inba-numa, Sakura C., *Miki* OSAK (1933); Ichikawa C., *Matsuda* KYO (1893); Sanbu T., Sanbu-gun, *Wakana* TNS-184365 (1967); Mobara C., *Miura* SAP (1911), *Komiy* NDC-2338 (1949); Yatsumi, Chōsei V., *Tamura* TI (1938); Nishimisaki, Tateyama C., *Asano* TNS-114849 (1953); Ayase, Tōkyō Pref., *Hattori* TI (1920); Koiwa, *Watanabe* SAP (1894); Koishikawa, *Matsuda* KYO (1889); Shakujii, *Miyake* TNS-44451 (1932); Hachiōji C., *Kurogami* TNS-152860 (1962)

CHŪBU: Asahi V., Iwafune-gun, Niigata Pref., *Katagiri* NDC-2932 (1975); Kanbayashi V., *Kudō* Ikeg-34036 (1959); Sekikawa V., *Katagiri* NDC-2933 (1975); Seiro V., Kita-kanbara-gun, *Komiy* NDC-2850 (1972); Suibara T., *Ikegami* Ikeg-21695, NDC-2824 (1952); Dainichi-ga-hara, *Ikegami* Ikeg-49918, NDC-2827 (1961); Honda-yama, Toyoura V., *Yoshihara* Ikeg-70458 (1961); Masugata-ike Pond, Shibata C., *Ikegami* Ikeg-25302 (1953), *Komiy* NDC-2847 (1972); Fukushima-gata, Toyosaka C., *Miki* OSAK (1925), *Ikegami* NDC-2823 (1952); Akatsuka, Niigata C., *Ikegami* Ikeg-17612 (1951); Kawato-junsai-ike, *Katagiri* NDC-2921 (1974); Toriyano-gata, *Ozaki* Ikeg-19425 (1951); Kami-tokorojima, *Yagi* Ikeg-18181 (1946); Tsugawa T., Higashi-kanbara-gun, *Katagiri* NDC-2987 (1976); Tohibori, Kamikawa V., *Komiy* NDC-2997 (1976); Hirose, *Katagiri* Katag (1974); Kurosaki V., Nishi-kanbara-gun, *Yoshihara* Ikeg-37660 (1910); Yoshida T., *Sasaki* Ikeg-51988 (1952); Shirone C., *Makino* MAK (1903); Maki T., *Ikegami* Ikeg-28432 (1954); Shimoda V., Minami-kanbara-gun, *Ikegami* Ikeg-26206, NDC-2825 (1954); Sugisawa T., Mitsuke C., *Katagiri* NDC-2929 (1975); Yūkyūsan, Nagaoka C.,

Yoshihara Ikeg-50315 (1949); Takanashi, Ojiya C., *Katagiri* NDC-2931 (1975); Nishiyama T., Kariha-gun, *Katagiri* NDC-2894 (1973); Kariha V., *Katagiri* NDC-2884 (1973); Yoshii, Kashiwazaki C., *Katagiri* NDC-2886 (1973); Iizuka, *Katagiri* NDC-2888 (1973); Muikamachi T., Uonuma-gun, *Katagiri* NDC-2928 (1975); Tsuan T., Naka-uonuma-gun, *Katagiri* NDC-2936 (1975); Kumoga-ike Pond, Ōgata T., Naka-kubiki-gun, *Ikegami* Ikeg-37059, NDC-2826 (1957); Nagamine-ike Pond, Yoshikawa T., *Katagiri* NDC-2896 (1973); Mt. Kurohimeyama, Nishi-kubiki-gun, *Ishizawa* Katag (1968); Aikawa T., Sado Isl., *Nakada* TUS-5902 (1933), *Komiya* NDC-2365 (1964); Shirouma V., Nagano Pref., *Seto* OSAK-28418 (1975); Iyari Moor, Ōmachi C., *Mizushima* MAK-4725 (1957); Kita-mimaki T., Kita-saku-gun, *Makino* MAK (1909); Nakagome, Saku C., *Satō* TI (1958); Karuizawa T., *Satō* TI (1954); Matsubara Lake, Minami-saku-gun, *Ohwi* TI (1926); Kamisuwa, Suwa C., *Miki* OSAK (1925); Shirasu T., Kita-takuma-gun, Yamanashi Pref., *Yamazaki* TI (1957); Kureha T., Toyama Pref., *Makino* MAK (1905); Matsunami, Suzu-gun, Ishikawa Pref., *Terashita* KAN-45519 (1953); Yoshiura, Fugeshi-gun, *Amai* OSAK (1934); Notojima T., *Ichimura* KAN-70443 (1910); Tsubata T., Kahoku-gun, *Yamamori* KAN-51986 (1953); Mt. Iōsen, Kanazawa C., *Fuha* KAN-30655 (1961); Mt. Utatsuyama, *Hara* KAN-21248 (1957); Mt. Kuragatake, *Ichimura* KAN-3539 (1899); Komatsu C., *Nakasawa* OSAK (1934); Shiratori T., Gujyō-gun, Gifu Pref., *Shioda* KYO (1922); Takawashi V., *Kaneko* TNS-280380 (1970); Nakatsugawa C., *Matsui* MAK (1910); Tabara, Kani-gun, *Shioda* OSAK (1933); Shinden, *Komiya* NDC-2990 (1976); Hime, Kani T., *Komiya* NDC-2992 (1976); Hiyoshi T., Mizunami C., *Komiya* NDC-2994 (1976); Gotenba C., Shizuoka Pref., *Makino* MAK (1905); Amagi-yugashima T., *Noguchi* KAG-6123 (1958); Fukuroi C., *Muramatsu* TI (1923); Toyooka V., Iwata-gun, *Hisamatsu* TI (1875); Okegaya, Iwata C., *Komiya* NDC-2376 (1968); Hamamatsu C., *Shimizu* TI (1930); Washizu, Kosai C., *Koike* NDC-2368 (1965); Futagawa T., Toyohashi C., *Miki* OSAK (1934); Kami-hosoya, *Komiya* NDC-2846 (1972); Tenpaku, *Komiya* NDC-2401 (1971); Okazaki C., *Uchida* MAK (1910); Kōda T., Nukata-gun, *Miki* OSAK (1934); Tōgō T., Aichi-gun, *Torii* KYO (1958); Nagoya C., *Amano* MAK (1910)

KINKI: Ōtsu C., Shiga Pref., *Akatsuka* KYO (1915); Nagashima T., Kuwana-gun, Mie Pref., *Inami* TNS-106803 (1951), *Komiya* NDC-2345 (1952); Ōike, Yokkaichi C., *Yasui* TI (1950), *Komiya* NDC-2349 (1954); Suzuka C., *Matsuyama* KYO (1925); Ueno C., *Tsuyama* TI (1934); Mizoro Pond, Kyōto Pref., *Sono* TNS-15769 (1908), *Miki* OSAK (1925); Ogura Pond, *Miki* OSAK (1923), *Hosoyamada* KAG-10997 (1926); Uji C., *Kawagoe* KAG (1907);

Tanabe T., Tsuzuki-gun, Yamamoto TNS-191903 (1933); Nose T., Ōsaka Pref., Hori OSAK (1960); Shōzuku, Mishima-gun, Miki OSAK (1934); Toyonaka C., Koyama OSAK (1958); Jyūso, Ōsaka C., Tashiro KYO (1933) Muro-ike Pond, Kita-kawachi-gun, Seto OSAK-6939 (1957); Mt. Ikomayama, Komiya NDC-2914 (1974); Yao C., Kodama OSAK-8864 (1960); Shinodayama, Izumi C., Komiya NDC-2955 (1975); Mt. Takayasuyama, Kodama TNS-146829 (1960); Izumi-sano C., Nakanishi OSAK (1952); Yamanaka-kei, Sennan C., Miki OSAK (1934); Saidaiji, Nara C., Saitō OSAK (1956); Iwanohime-nomikoto, Komiya NDC-2843 (1972); Futakami V., Kodama OSAK-9180 (1961); Tanabe C., Wakayama Pref., Makino MAK (1904); Aogaki T., Hikami-gun, Hyōgo Pref., Hosomi KYO (1936); Konda T., Taki-gun, Hosomi KYO (1969); Hosokawa T., Miki C., Nishikawa OSAK-12834 (1972); Seidō T., Ashiya C., Yamamoto TNS-191895 (1927); Nishinomiya C., Ichikawa KYO (1932); Kabuto-yama, Seto OSAK-20189 (1971); Mt. Rokkō, Kuriyama MAK (1928); opposite of Hōten-ike Pond, Kasai C., Komiya NDC-2962 (1975); Kamino-ike Pond, Shikata T., Komiya NDC-2963 (1975); Sara-ike Pond, Kakogawa C., Komiya NDC-2967 (1975); Ōike Pond, Himeji C., Komiya NDC-2950 (1975)

CHŪGOKU: Koyama-ike Lake, Tottori C., Miki OSAK (1934); Ōta C., Shimane Pref., Takagi TNS-56521 (1936); Mt. Sanbesan, Komiya NDC-2909 (1973); Mimasaka T., Aida-gun, Okayama Pref., Takayama TNS-153483 (1961); Takayama, Kurashiki C., Obatake NDC-2983 (1975); Akasaka T., Obatake NDC-2984 (1976); Ihara C., Yamamoto NDC-2828 (1968); Yamaguchi C., Nikai TNS-80365 (1889); Higashi-atsuho T., Mine C., Oda OSAK-3696 (1934); Kikukawa T., Toyoura-gun, Nikai TNS-46385 (1919)

SHIKOKU: Shioe T., Kagawa-gun, Kagawa Pref., Fujisawa MAK (1911); Tatsue, Komatsujima C., Tokushima Pref., Miki OSAK (1934); Tōyō T., Aki-gun, Kōchi Pref., Tamura OSAK (1934); Kōchi C., Makino MAK (1892); Kōnotani, Inō T., Agawa-gun, Yano MAK-3960 (1889); Tamagawa T., Ochi-gun, Ehime Pref., Jinno OSAK (1934); Nakajima T., Onsen-gun, Hiramatsu KAG (1916); Uwa T., Higashi-uwa-gun, Nomura KYO (1960); Uchiumi V., Minami-uwa-gun, Yamamoto KYO (1944); Mishō T., Makino MAK (1922)

KYŪSHŪ: Okagaki T., Onga-gun, Fukuoka Pref., Yoshida KAG (1916); Toyotsu T., Miyako-gun, Nakano SAP (1896); Saga C., Baba KAG (1960); Tokitsu T., Nishi-sonogi-gun, Nagasaki Pref., Chiba TI (1938); Kumamoto C., Kōzuma MAK (1906); Nobeoka C., Miyazaki Pref., Yoshie TI (1936); Miyazaki C., Nagatomo KYO (1924); Nichinan C., Hattori TI (1946); Nishitara, Ōguchi C., Kagoshima Pref., Hatusima and Sako KAG-25357 (1960); Ijūin T., Iwakawa KAG (1928); Kagoshima C., Tanaka KAG (1918); Kamime

Pond, *Hatusima* and *Sako* MAK-48436 (1962); Tabuse, Kinpō T., Hioki-gun, *Doi* TNS-220679 (1926); Kaseta C., *Nakano* TNS-23408 (1913); Tarumizu C., *Nakano* TKU (1910); Tanegashima Isl., *Tashiro* KYO (1920); Okinoerabu Isl., *Ōba* KYO (1924); Yoron Isl., *Uehara* KAG-6273 (1920)

OKINAWA: Nago C., Okinawa Isl., *Tanaka* TI (1891); Onna V., *T. Itō* TNS-60188 (1892); Ishikawa C., *Niuro* URO-18997 (1957); Shimajiri, Kumejima Isl., *Hatusima* KAG-17918 (1955)

Distr.: Europ. occ., Afr. trop. et aust., Asia (India, Ceylon, Indonesia, Philippines, China, Korea, Japan), New Guinea, Austr. ori. et aust., New Zealand

form. *tenuicaulis* (Miki), comb. nov. Pl. 13.

Syn. *U. tenuicaulis* Miki in Bot. Mag. Tokyo 49: 847, f. 12 (1935), partim

U. vulgaris L. form. *tenuicaulis* (Miki) Komiya, Syst. Stud. 89 (1972)

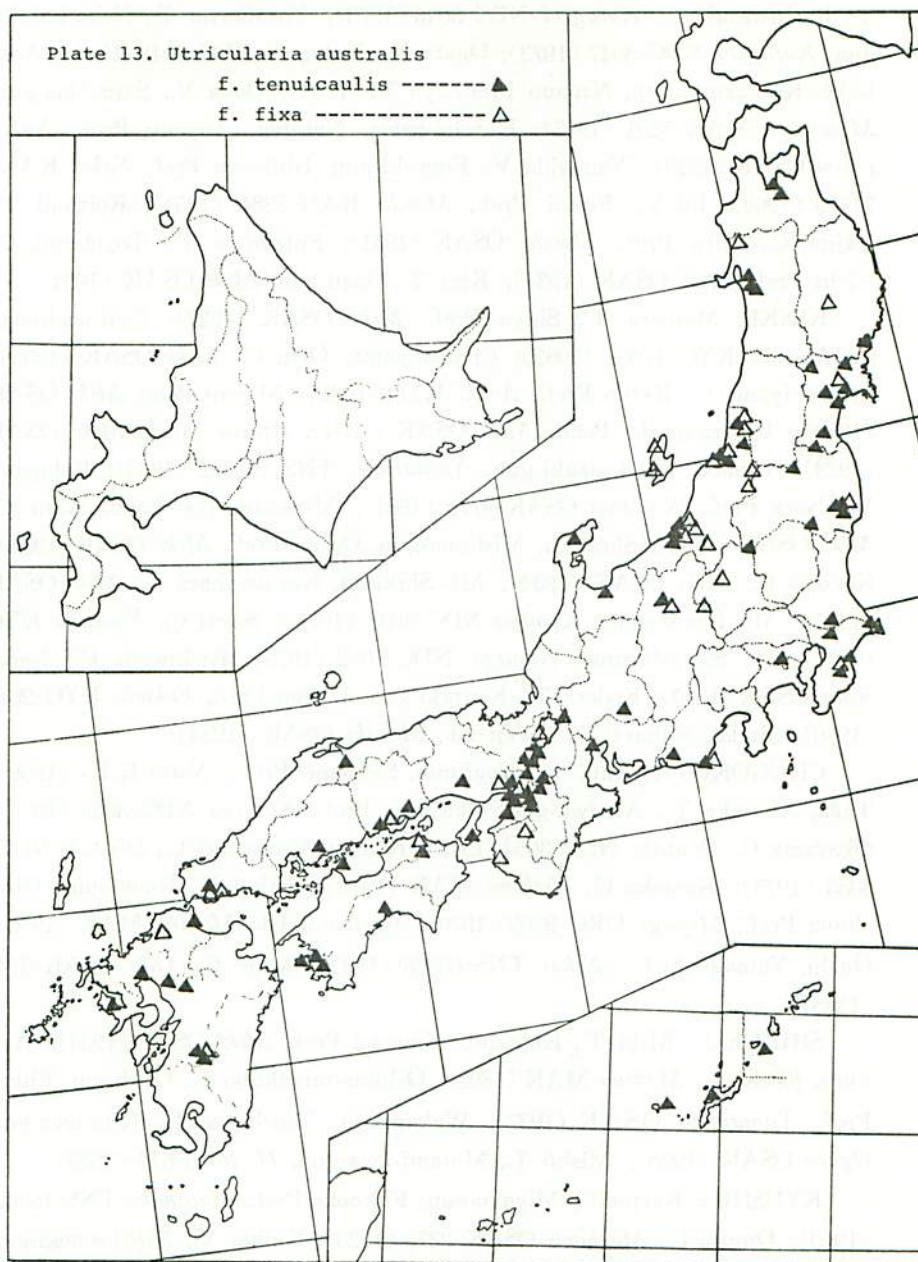
U. vulgaris L. var. *tenuicaulis* (Miki) Kuo in Biol. Bull. Nat. Taiwan Normal Univ. 3: 31, f. 3 (1968)

Nom. Jap.: Inu-tanukimo (Miki 1935)

Hab.: TŌHOKU: Mt. Hakkōdasan, Aomori Pref., *Murai* OSAK (1933); Tashiro T., Kita-akita-gun, Akita Pref., *Matsuda* TNS-115079 (1951); Asahikawa, Akita C., *Takamura* SAP (1902); Me-gata, *Ueno*-5792 (1971); Otomo T., Rikuzen-takada C., Iwate Pref., *Toba* OSAK (1934); Naruko T., Tamatsukuri-gun, Miyagi Pref., *Murai* OSAK (1933); Motoyoshi-gun, *Ueno* NDC-2329 (1966); Mt. Kagobō-yama, Tōda-gun, *Ueno* NDC-2330 (1969); Aino-numa, Wakuya T., *Komiya* NDC-3041 (1973); Furukawa C., *Ueno* Ueno-1250 (1966); Sendai C., *Endō* TUS-5903 (1913); Gamō, *Murai* OSAK (1933); Funaoka T., Shibata-gun, *Sugaya et al.* TUS-5890 (1954); Marumori T., Igu-gun, *Ueno* NDC-2374 (1966); Zaō T., Kurita-gun, *Ueno* Ueno-1246 (1966); Goshiki-numa Lake, Fukushima Pref., *Sugiyama* NDC-2318 (1953); Sukagawa C., *Endō* TUS-5904 (1912); Nanko Lake, Shirakawa C., *Usuba* Usub (1973); Naka-hirakubo, Iwaki C., *Usuba* Usub (1973); Sashishio, Miwa T., *Usuba* Usub (1973); Ogawa T., *Usuba* Usub (1973)

KANTŌ: Oze, Gunma Pref., *Makino* MAK (1904), *Komiya* NDC-2302 (1950); Tatara-numa, *Komiya* NDC-2301 (1949); Hanyū C., *Sekiya* NDC-2304 (1950); Kazo C., *Komiya* NDC-2309 (1951); Hebi-numa Pond, Ryūgasaki C., Ibaraki Pref., *Komiya* NDC-3036 (1972); Usui T., *Sakura* C., *Ichihara* OSAK (1934); Chōshi C., *Komiya* NDC-2306 (1950); Narutō T., *Komiya* NDC-2308 (1951); Mobara C., *Komiya* NDC-2320 (1960); Ichikawa C., *Makino* MAK (1890); Wada-yama, Tama C., Tōkyō, *Hisauchi* OSAK (1925)

CHŪBU: Asahi V., Iwafune-gun, Niigata Pref., *Katagiri* NDC-3050



(1974); Seiro V., Kita-kanbara-gun, *Katagiri Katag* (1974); Kurokawa V., *Ishizawa Katag* (1971); Mishiro, Shibata C., *Komiya* NDC-3031 (1972); Kotobuki T., Kashiwazaki C., *Katagiri* NDC-3046 (1973); Yoshikawa T., Naka-kubiki-gun, *Katagiri* NDC-3047 (1973); Ōgata T., *Katagiri* NDC-3048 (1973); Aoki Lake, Kita-azumi-gun, Nagano Pref., *Jyō* TI (1903); Ōoka V., Sarashina-gun, *Minemura* MAK-5201 (1957); Kureha-yama, Nei-gun, Toyama Pref., *Nakagawa* OSAK (1929); Yanagida V., Fugeshi-gun, Ishikawa Pref., *Sakai* KAN-71719 (1969); Itō V., Fukui Pref., *Maeda* KAN-8281 (1951); Koizumi T., Tajimi C., Gifu Pref., *Shioda* OSAK (1931); Futagawa T., Toyohashi C., Aichi Pref., *Miki* OSAK (1934); Kira T., Hazu-gun, *Miki* OSAK (1934)

KINKI: Maibara T., Shiga Pref., *Miki* OSAK (1927); Ōmi-hachiman C., *Murata* KYO-17062 (1962); Chausu-yama, Ōtsu C., *Miki* OSAK (1935); Fukuchiyama C., Kyōto Pref., *Araki* KYO (1931); Mizoro Pond, *Miki* OSAK (1923); Takara-ga-ike Pond, *Miki* OSAK (1934); Ogura Pond, *Miki* OSAK (1923); Tanabe T., Tsuzuki-gun, *Yamamoto* TNS-191902 (1933); Futagami V., Nara Pref., *Kodama* OSAK-9179 (1961); Minakami-ike Pond, Nara C., *Miki* OSAK (1934); Shōzuku, Mishima-gun, Ōsaka Pref., *Miki* OSAK (1934); Kadoma C., *Miki* OSAK (1934); Mt. Shikisan, Kashiwahara C., *Miki* OSAK (1935); Mt. Ikomayama, *Komiya* NDC-3033 (1974); Sakai C., *Yamada* KYO (1914); Mt. Shinodayama, *Komiya* NDC-3052 (1975); Kishiwada C., *Nakajima* OSAK (1950); Koderu T., Kanzaki-gun, Hyōgo Pref., *Fukuda* KYO-2019 (1956); Jindai, Mihara T., Awaji Isl., *Masaki* OSAK (1934)

CHŪGOKU: Hakuta T., Nogi-gun, Shimane Pref., *Naitō* KAG (1959); Taga, Akasaka T., Akaiwa-gun, Okayama Pref., *Komiya* NDC-3055 (1976); Okayama C., *Obatake* NDC-3054 (1975); Kamoji, Kurashiki C., *Obatake* NDC-3053 (1975); Kasaoka C., *Nishina* MAK (1910); Saijyō T., Kamo-gun, Hiroshima Pref., *Miyagi* URO-9269 (1970); Iwaizumi Isl., *Makino* MAK (1936); Ōuchi, Yamaguchi C., *Nikai* TNS-80366 (1892); Mine C., *Oda* OSAK-3743 (1935)

SHIKOKU: Miki T., Kida-gun, Kagawa Pref., *Miki* OSAK (1934); Asakura, Kōchi C., *Makino* MAK (1892); Ōshima-miyakubo T., Ochi-gun, Ehime Pref., *Yamamoto* OSAK (1937); Wakamatsu, Tsushima T., Kita-uwa-gun, *Ogata* OSAK (1928); Mishō T., Minami-uwa-gun, *H. Itō* TKU (1923)

KYŪSHŪ: Karita T., Miyako-gun, Fukuoka Pref., *Hatanaka* TNS-150028 (1960); Ōmuta C., *Maehara* OSAK-2275 (1923); Kinkai V., Nishi-sonogi-gun, Nagasaki Pref., *Chiba* KYO (1936); Yamaga C., Kumamoto Pref., *Tashiro* KYO (1932); Menda T., Kuma-gun, *Maehara* KYO-2092 (1933); Nishise V., *Maehara* OSAK-2274 (1927); Okino-erabu Isl., *Tagawa* and *Iwatsuki* KYO-

2233 (1958)

OKINAWA: Naha C., Okinawa Isl., *Koidzumi* KYO (1923); Shimajiri, Kume-jima Isl., *Hatusima* TI-17472 (1955)

form. *fixa* Komiya), comb. nov. Pl. 13.

Syn. *U. neglecta* Lehm. form. *platyloba* Meister in Mem. l'Herbier Boiss. 12: 33, t. 2, f. 54, 55 (1900)

U. vulgaris L. form. *fixa* Komiya, Syst. Stud. 90 (1972)

U. vulgaris L. form. *platyphylla* Glück ex Hegi, Ill. Fl. Mitt.-Eur. 6: 166 (1918), partim

U. vulgaris L. var. *chosiensis* Komiya in J. Insect. Pl. Soc. 9: 16, 21-J (1952), nom. nud.

Nom. Jap.: Chōshi-tanukimo (Komiya 1952)

Hab.: TŌHOKU: Shiwa T., Shiwa-gun, Iwate Pref., *Toba* OSAK (1933); Iwatate, Yamamoto-gun, Akita Pref., *Hara* TI (1959); Naganuma Pond, Tome-gun, Miyagi Pref., *Komiya* NDC-2391 (1969); Uchikura, Ogawa T., Iwaki C., Fukushima Pref., *Usuba* Usub (1973), *Komiya* NDC-3018 (1975)

KANTŌ: Hara T., Agatsuma-gun, Gunma Pref., *Masuda* MAK-8500 (1959); Chōshi C., Chiba Pref., *Komiya* NDC-2306 (1950); Mobara C., *Komiya* NDC-3006 (1972)

CHŪBU: Asahi V., Iwafune-gun, Niigata Pref., *Katagiri* NDC-3016 (1975); Seiro V., Kita-kanbara-gun, *Katagiri* Katag (1974); Tochibori, Kamikawa V., Higashi-kanbara-gun, *Komiya* NDC-3023 (1975); Hirose, *Katagiri* NDC-3015 (1973); Kawato-junsai-ike, Niigata C., *Komiya* NDC-3004 (1972); Kariha V., Kariha-gun, *Katagiri* NDC-3014 (1973); Yoshii, Kashiwazaki C., *Katagiri* NDC-3013 (1973); Kotobuki T., *Katagiri* Katag (1973); Tsunan T., Naka-uonuma-gun, *Katagiri* NDC-3017 (1975); Aikawa T., Sado Isl., *Shibata* NDC-3009 (1972); Kanai T., *Ishizawa* Katag (1937); Ōoka V., Sarashina-gun, Nagano Pref., *Minemura* MAK-5201 (1957); Karuisawa T., *Satō* TNS-308639 (1924); Hamaoka T., Ogasa-gun, Shizuoka Pref., *Komiya* NDC-2332 (1969)

KINKI: Ōtsu C., Shiga Pref., *Hashimoto* TNS-80883 (1938); Bunagatake, Hirasano, Takashima-gun, *Miki* OSAK (1927); Kadoma C., Ōsaka Pref., *Miki* OSAK (1934); Shinodayama, Izumi C., *Komatsu* NDC-3021 (1975); Kudoyama T., Ito-gun, Wakayama Pref., *Seoka* OSAK (1934); Kahosaka Moor, Hyōgo Pref., *Komatsu* NDC-3028 (1976)

CHŪGOKU: Kamo Pass, Okayama C., *Komiya* NDC-3029 (1976); Nishiatsuho, Mine C., Yamaguchi Pref., *Oda* OSAK (1935); Higashi-atsuho, *Oda*

OSAK (1922)

SHIKOKU: Miki T., Kida-gun, Kagawa Pref., *Miki* OSAK (1923)

KYŪSHŪ: Kashii, Fukuoka C., *Fujimoto* NDC-2369 (1966); Ichimoku, Kamoto-gun, Kumamoto Pref., *Shimizu* OSAK (1939); Menda T., Kuma-gun, *Maehara* OSAK-2092 (1933)