Typification of Dr. Tomitaro Makino’s Botanical Names (6)

Nobuyuki TANAKA* and Takashi SUGAWARA

*Corresponding author: nbtanaka@makino.or.jp

As part of a series of studies on the typification of botanical names published by Tomitaro Makino, proposals for the lectotypification, neotypification and the verification of other type material for 17 taxa in the Liliaceae are presented here.

Key words: holotype, lectotypification, Liliaceae, neotypification, nomenclature, Tomitaro Makino.

The authors have been verifying the scientific names that Tomitaro Makino gave to numerous Japanese plants and thus far several families have been treated (Tanaka 2005a, 2005b, Tanaka and Sugawara 2006, 2007, 2009). This paper is presented as the sixth in the series proposing the lectotypification, neotypification or otherwise providing verification of the status of potential type material, for 17 names, Allium fistulosum L. var. caespitosum Makino, Asparagus kiusianus Makino, Gagea nipponensis Makino, Japonolirion saitoi Makino & Tatew., Lilium callosum Siebold & Zucc. var. flaviflorum Makino, L. japonicum Thumb. var. arbomarginatum Makino, Miyoshia sakurai Makino, Ophiopogon wallichianus (Kunth) Hook. f. var. leucanthus Makino, Paris tetraphylla A. Gray var. sessiliflora Makino, Polygonatum nippicum Makino, P. silvicola Makino, Smilacina robusta Makino & Honda, Tofieldia okuboi Makino, T. yoshiiana Makino, Tricyrtis affinis Makino, T. masamunei Makino and Trillium apetalon Makino in the family Liliaceae sensu lato. Herbarium acronyms are from Holmgren et al. (1990) or from the on-line Index Herbariorum at http://sciweb.nybg.org/science2/IndexHerbariorum.asp (3 December 2010).

LILIACEAE

Allium fistulosum L. var. caespitosum


Japanese name: Wakegi.

Type: Tokyo, near Ogikubo, cult., 14 May 1905, T. Makino s.n. (MAK141434–holotype).

[Fig. 1]

Makino (1905) cited a single specimen in his original protologue, which was discovered in MAK, and newly recognized here. This specimen can be recognized automatically as holotype according to the International Code of the Botanical Nomenclature 9.1.1 (McNeill et al. 2006). This taxon is currently accepted as Allium ×wakegi Araki.

Asparagus kiusianus Makino in Bot. Mag.
Fig. 1. Holotype of *Allium fistulosum* L. var. *caespitosum* Makino (MAK 141434).
Fig. 2. Lectotype of *Gagea nipponensis* Makino (TI).
Japanese name: Hama-tamabôki.

Lectotype (designated here): Prov. Chikuzen (Fukuoka Pref.), coast, Nishi-jin, Fukuoka, 23 May 1900, N. Okada s.n. (MAK 137006).

Syntypes: Prov. Chikuzen (Fukuoka Pref.), Itohashi-gun, Yon-no-ura, 23 Sept. 1907, Y. Funabashi s.n. (MAK 137005); Fukuoka-kaigan, May 1908, S. Adzuma s.n. (MAK 137009); Fukuoka, Kaimin-sunaba, unknown dates, T. Makino s.n. (MAK 137004).

Makino (1907) cited four specimens in his original protologue. Of these three specimens were discovered in MAK. Funabashi’s specimen is bearing fruits while Okada’s specimen is bearing flowers. Other cited specimens are sterile. Okada’s specimen is chosen as a lectotype for Asparagus kiusianus Makino here. The type materials except for Adzuma’s specimen can be seen on the Makino Herbarium website (Makino Herbarium 1999).


Japanese name: Hime-amana.

Lectotype (designated here): Bushû (Tokyo Pref.), Shimura-no-hara, 14 April 1890, T. Makino s.n. (TI).

Syntype: Bushû (Tokyo Pref.), Shimura-no-hara, 14 April 1890, S. Ikeno s.n. (TI).

Two sheets of Makino’s cited specimens were housed in TI. These two specimens were apparently collected at the same time by S. Ikeno and T. Makino, because their locality and collection date are the same. However, the specimens were collected by Ikeno and Makino separately. Both specimens are bearing his handwritten labels as “Hime-amana (T. M.)” and Makino’s one (Fig. 2) is selected as lectotype here. This taxon is currently accepted as Gagea japonica Pascher.


Japanese name: Teshio-sô (Makino 1931).

Type: Prov. Hokkaido, Teshio, Teshio Experimental Forest, Nobukanai, 10 June 1928, Yoshihide Saito s.n. (MAK 064100–holotype).

A single specimen was cited in the original protologue, and it was kept in MAK. The type materials consist of three sheets, and one sheet has the original label of Herbarium of Faculty of Agriculture, Hokkaido Imperial University. The type materials can be seen on the Makino Herbarium website (Makino Herbarium 1999). This species is currently accepted as Japonolirion osense Nakai.


Japanese name: Kibana-no-nohimeyuri (Yasusada Tashiro).


Makino (1913) cited a single specimen collected by Y. Tashiro in the original protologue, which is kept in TI. The sheet is bearing two labels. Makino noted on the label at the right corner bottom with the transcription “var. flaviflorum” in red ink in his handwriting. Tashiro’s label is attached above Makino’s one, and annotated as “Lilium callosum var.? Kibana-no-nohimeyuri, tentative name” by Tashiro’s handwriting. Tashiro already proposed the Japanese name on his label. Therefore it is considered that Makino cited the Japanese name as “Kibana-no-nohimeyuri (Yasusada Tashiro)” in his publication.


Japanese name: Fukurin-sasa-yuri.

Lectotype (designated here): Tosa (Kochi Pref.), Tokano-tôge (Sakawa-cho), 22 June 1889, T. Makino s.n. (MAK 139123).

Makino (1893) cited a specimen which was collected in Tokano-tôge without the collection date. There are two sheets of specimens collected
Fig. 3. Holotype of *Lilium callosum* Siebold & Zucc. var. *flaviflorum* Makino (TI).
Fig. 4. Lectotype of *Lilium japonicum* Thunb. var. *albomarginatum* Makino (MAK 139123).
Fig. 5. Lectotype of *Ophiopogon wallichianus* (Kunth) Hook. f. var. *leucanthus* Makino (MAK 190263).
by Makino in the same locality in 1889, and it matched Makino’s description. This specimen is likely the one that Makino cited in his latter publication, however, there is no conclusive evidence that it is really the cited specimen, because he did not cite the collection date in his original protologue. Therefore it could not be determined the holotype, and here it is selected as the lectotype for *Lilium japonicum* Thunb. var. *albomarginatum* Makino. This taxon is currently accepted as a part of the variation of *L. japonicum* Thunb.


Japanese name: Sakurai-sō (Makino 1903).

**Type**: Mino (Gifu Pref.), foot of Mt. Ena, 27 July 1903, H. Sakurai s.n. (MAK 024947–holotype, isotype).

Makino (1903) established the genus *Miyoshia* Makino with a single species, *Miyoshia sakuraii* Makino with the citation of a single specimen collected from Mt. Ena, Mino (Gifu Prefecture), eastern Japan. The specimens bearing Makino’s original handwritten label as “*Miyoshia sakuraii* Makino (gen. et sp. nov.)” in his handwriting were housed in MAK. They consist of two sheets, and both of them match the original protologue by Makino (1903). These are apparently the holotype and isotype according to the International Code of the Botanical Nomenclature 9.1.1 (McNeill et al. 2006). This taxon is currently accepted as *Petrosavia sakuraii* (Makino) J. J. Sm. ex Steenis. The type materials can be seen on the Makino Herbarium website (Makino Herbarium 1999).


Japanese name: Shirobana-ôba-janohige.

**Lectotype** (designated here): Kanagawa Pref., Jinmu-ji, Tsujiki, 27 June 1936, T. Makino s.n. (MAK 190263). [Fig. 5]

Makino (1919) cited a specimen collected from Jinmu-ji, Kanagawa Prefecture in his original protologue. There is a specimen of *Ophiopogon wallichianus* bearing Makino’s handwritten slip note: “27 June 1936, Jinmu-ji, Tsujiki, white flower form” in Japanese. This specimen is apparently the one that Makino recognized as var. *leucanthus* Makino, and selected as lectotype for *Ophiopogon wallichianus* (Kunth) Hook. f. var. *leucanthus* Makino. This taxon is currently accepted as a form of *O. planiscapus* Nakai.


Japanese name: Yokogura-tsukubane (Makino 1912).

**Lectotype** (designated here): Prov. Tosa (Kochi Pref.), Mt. Yokogura, S. Oda s.n. (MAK 139454). [Fig. 6]

Makino (1912) cited a single specimen collected by Oda in Mt. Yokogura, Kochi Prefecture without the collection date. Only one specimen of this taxon collected by Oda in Mt. Yokogura was discovered in MAK, and it was also not noted the collection date. Therefore it could be a type material which Makino cited in his original protologue. However it could not be decided to be the holotype because it does not bear the date and here it is selected as the lectotype for *Paris tetraphylla* A. Gray var. *sessiliflora* Makino. Hara (1938) changed its taxonomic rank to the form, and it is currently accepted as *Paris tetraphylla* A. Gray f. *sessiliflora* (Makino) H. Hara.


Japanese name: Midori-yôraku.

**Lectotype** (designated here): Prov. Iwashiro (Fukushima Pref.), K. Nemoto s.n. (MAK 65634). [Fig. 7]

Makino (1903) cited Nemoto’s specimen collected from Iwashiro (Fukushima Prefecture) without collection date. There is a Nemoto’s
Fig. 6. Lectotype of *Paris tetraphylla* A. Gray var. *sessiliflora* Makino (MAK 139454).
Fig. 7. Lectotype of *Polygonatum nipponicum* Makino (MAK 65634).
Fig. 8. Neotype of *Polygonatum silvicola* Makino (MAK 65670).
Iwashiro specimen that is considered to be type material of this taxon in MAK. Although Makino did not cite the collection date, the morphological characteristics of this specimen match Makino’s original description of this taxon. Makino described as “Flowers pedicellate, the buds included within the involucres”, and this description represents the condition of the specimen well. It is considered that he apparently based his description of *Polygonatum nipponicum* Makino on this specimen. Although it could not be conclusively determined as the one he cited, it is apparently one of Makino’s materials, and here it is selected as the lectotype for *P. nipponicum* Makino. Jeffrey (1980, 1982) cited *P. nipponicum* Makino as a synonym of *P. involucratum* (Franch. & Sav.) Maxim. with question mark. After careful morphological investigation of this specimen, we came to the conclusion that this plant is identical with *P. inflatum* Kom. Therefore *P. nipponicum* Makino should be treated as a synonym of *P. inflatum* Kom.


Japanese name: Yama-naruko-yuri.

Neotype: Prov. Hitachi (Ibaraki Pref.), Mt. Tsukuba, October 1933, T. Makino s.n. (MAK 65670). [Fig. 8]

Makino (1926) cited his own specimen collected from Mt. Tsukuba without collection date. Two sheets of the specimens collected in the same locality by T. Makino in 1933 were discovered in MAK. Since its collection date is later than the publication date, it is apparently different from the original cited specimen. No other cited specimens have been discovered at either MAK or TI, the herbaria likely to be hold Makino’s type collections. Therefore one of these topotype specimens should be proposed as neotype for *P. silvicola* Makino. This taxon is currently accepted as *P. macranthum* (Maxim.) Koidz.


Japanese name: Haruna-yuki-zasa.

**Type**: Honshu, in Mt. Haruna, 1934, T. Sakai 321 (TI—holotype). [Fig. 9]

Makino and Honda (1935) published this taxon with the citation of a single specimen collected by T. Sakai from Mt. Haruna (Gunma Prefecture), and it was discovered in TI. This automatically becomes the holotype according to the International Code of the Botanical Nomenclature 9.1.1 (McNeill et al. 2006).

**Tofieldia okuboi** Makino in Bot. Mag. (Tokyo) 12: 42 (1898).

Japanese name: Hime-iwa-shōbu (Makino 1898).

**Lectotype (designated here)**: Yamagata Pref., Gassan, 23 July 1887, S. Okubo 196 (TI). [Fig. 10]

**Syntype**: Shinano (Nagano Pref.), Komagatake, 2 Aug. 1894, Kanô Watanabe s.n. (MAK 151142).

The type materials for *Tofieldia okuboi* Makino are housed in TI and MAK. Yamagata specimen collected by Okubo is deposited in TI and Komagatake specimen collected by Watanabe is kept in MAK. Makino annotated new name for this species and its Japanese name as “*Tofieldia okuboi* Makino (sp. nov.)” and “Hime-iwa-shōbu” on the label of TI specimen in his handwriting. Okubo’s specimen in TI is selected as lectotype.


Japanese name: Yakushima-chabo-zekishō.


Makino cited the specimens collected by Yoshii and Makino in his original protologue. Yoshii specimens did not found in MAK. There is a Yoshii specimen in TI, however, it was not clear that it was the specimen which Makino
Fig. 9. Holotype of *Smilacina robusta* Makino & Honda (TI).
Fig. 10. Lectotype of *Tofieldia okuboi* Makino (TI).
Fig. 11  Holotype of Tricyrtis masamunei Makino (MAK 228036).
cited because it did not bear the collection date. Lectotype has been already chosen by Yahara (Yahara 1987).

**Tricyrtis affinis** Makino in Bot. Mag. (Tokyo) 17: 70 (1903).

Japanese name: Yamajino-hototogisu.


*Syntypes*: Shimoosa (Tochigi Pref.), Sept. 1901, T. Makino s.n. (MAK 139793); Shimoosa, Nikko, Sept. 1901, T. Makino s.n. (MAK 139797); Shinano (Nagano Pref.): Sept. 1888, T. Makino s.n. (MAK 139808); Tosa (Kochi Pref.), Sakawa, 1889, T. Makino s.n. (MAK139831); Tosa (Kochi Pref.), Kusugami-mura, Oct. 1892, T. Makino s.n. (MAK 139833).

*Other syntypes* (not found): Tebako, 1885, T. Makino; Mt. Takao, April 1903, T. Makino.

The specimens cited in the original protologue were found in MAK. Tebako (Kochi Prefecture) and Mt. Takao (Tokyo) specimens have not been found. Lectotype was selected for *Tricyrtis affinis* Makino among the cited specimens as above.


Japanese name: Satsuma-hototogisu (Makino 1912).


Makino (1912) gave the Japanese name, Satsuma-hototogisu, to this species, and he proposed only a botanical name, *T. satsumensis* Makino at that time. Then Makino described this species fourteen years later and he gave *T. masamunei* Makino to this taxon. Makino (1912) cited a single specimen in his original protologue cited above. Therefore this automatically becomes the holotype according to the International Code of the Botanical Nomenclature 9.1.1 (McNeill et al. 2006). This taxon is currently accepted as *T. hirta* (Thunb.) Hook. var. *masamunei* (Makino) Masamune.


The sheet of a specimen collected from Fukushima Prefecture (Iwashiroy Prov., Nobeuo Co., Watarai village, 15 April 1894, K. Tamura s.n., MAK 62858) is sealed as “?Syntype of *Trillium apetalon* Makino”, however, Makino did not cite any specimens in his original protologue (Makino 1910), and simply cited an illustration of Iinuma’s Somoku-Dzusetsu VII. fol. 83. The specimen, MAK 62858, is not the type material. Therefore the illustration in Iinuma’s Somoku-Dzusetsu is selected as lectotype for *Trillium apetalon* Makino.

We are grateful to the curators of MAK and TI for permission to study their collections. We would like to thank Ms. Akiko Shimizu of TI for providing us the images of the specimens to use for this study.

**References**


牧野富太郎博士の発表学名のタイプ検討（6）

牧野富太郎博士は日本の植物分類学の基礎を築いた一人として知られ、多くの日本産植物の学名を発表した。しかし、発表学名に対するタイプ標本の把握、検討、特に潜在するタイプ関連標本の調査、レクトタイプの選定などはほとんど行われていない。この一連の研究は牧野富太郎博士が発表した日本産植物の学名について、タイプ標本およびその関連資料を調査し、必要があればレクトタイプ、ネオタイプの選定を行い、分類群ごとにそれらを整理しようとするものである。


var. albomarginatum Makino, Miyoshia sakuraii Makino, Ophiopogon wallichianus (Kunth) Hook. f. var. leucanthus Makino, Paris tetraphylla A. Gray var. sessiliflora Makino, Polygonatum nipponicum Makino, P. silvicola Makino, Smilacina robusta Makino & Honda, Tofieldia okuboi Makino, T. yoshiiana Makino, Tricyrtis affinis Makino, T. masamunei Makino, Trillium apetalum Makino について MAK, TI に潜在する多数のタイプ関連標本を発掘し、レクトタイプの選定、ネオタイプの選定を含めて整理・検討を行った。

（a 高知県立牧野植物園,
b 首都大学東京牧野標本館）