

Kazuaki OHASHI^a and Hiroyoshi OHASHI^b: **New Combinations of *Melanthera* (*Asteraceae*) in Japan and Taiwan**

キク科オオハマグルマとオオキダチハマグルマの新学名 (大橋一晶^a・大橋広好^b)

Summary: New combinations, *Melanthera biflora* (L.) Wild var. *ryukyuensis* (H. Koyama) K. Ohashi & H. Ohashi and *M. robusta* (Makino) K. Ohashi & H. Ohashi are proposed on the basis of *Wedelia biflora* (L.) DC. var. *ryukyuensis* H. Koyama and *W. prostrata* Hemsl. var. *robusta* Makino, respectively. *Wedelia prostrata* var. *robusta* Makino is lectotypified.

Recently Wagner and Robinson (2002) reclassified *Lipochaeta* and *Melanthera* (*Asteraceae* tribe *Heliantheae*) and transferred many species of Pacific *Lipochaeta* and *Wedelia prostrata* Hemsl. to *Melanthera*. In their study two species of *Wedelia* distributed in Japan, i.e., *W. biflora* (L.) DC. and *W. prostrata* Hemsl. were transferred to *Melanthera*: *M. biflora* (L.) Wild and *M. prostrata* (Hemsl.) W. L. Wagner & H. Rob. However, they did not treat *W. biflora* var. *ryukyuensis* H. Koyama and *W. prostrata* var. *robusta* Makino or *W. robusta* (Makino) Kitam. distributed in Japan and Taiwan. In our studies on the genera of East Asian vascular plants, we accept *Melanthera* in the broad sense and new combinations are proposed in these taxa as follow:

***Melanthera biflora* (L.) Wild var. *ryukyuensis* (H. Koyama) K. Ohashi & H. Ohashi, comb. nov.**

Wedelia biflora (L.) DC. var. *ryukyuensis* H. Koyama in Acta Phytotax. Geobot. **33**: 245 (1982) [Type. Japan, Ryukyu. Isl. Iriomote. H. Koyama & al. 177 (KYO–holotype)]; H. Koyama in K. Iwats. & al., Fl. Jap. **IIIb**: 34 (1995); Shimabuku, Check List Vasc. Fl. Ryukyu: 585 (1997); C. I. Peng & K. F. Chung in T. C. Huang & al., Fl. Taiwan ed. 2, **4**: 1093 (1998).

Distr.: Japan (Kyushu and Ryukyu) and Taiwan.

Chromosome number suggests *Melanthera biflora* var. *ryukyuensis* is a triploid ($2n = 45$), whereas var. *biflora* is a diploid ($2n = 30$) (Koyama 1995). Shimabuku (1997) recorded $2n = 30, 50$ and 75 for var. *biflora*.

***Melanthera robusta* (Makino) K. Ohashi & H. Ohashi, comb. nov.**

Wedelia prostrata Hemsl. var. *robusta* Makino in J. Jap. Bot. **1**: 23, f. 2 (1917) [Type. Japan. Shikoku. Kochi Pref. (Prov. Tosa): Kashiwa-jima in Hata-gori. T. Makino Sept. 1881 (MAK242001 lectotype designated here; MAK241999, 242000–isolectotype)]; H. Koyama in Acta Phytotax. Geobot. **33**: 27 (1982) & in K. Iwats. & al., Fl. Jap. **IIIb**: 34 (1995); Shimabuku, Check List Vasc. Fl. Ryukyu: 586 (1997); C. I. Peng & K. F. Chung in T. C. Huang & al., Fl. Taiwan ed. 2, **4**: 1094, pl. 523 (1998); H. Ohashi & al., New Makino Illust. Fl. Jap.: 766, fig. 3064 (2008); Fujikawa & al. in Fl. Kochi: 514 (2009).

Wedelia robusta (Makino) Kitam. in Mem. Coll. Sci. Kyoto Imp. Univ., ser. B. **16**: 258 (1942); H. Hara, Enum. Sperm. Jap. **2**: 279 (1952); Ohwi, Fl. Jap.: 1199 (1953), Fl. Jap. ed. Engl.: 900 (1965), & Fl. Jap. ed. rev. 1364 (1965); Kitam. & al., Col. Illust. Herb. Pl. Jap. **1**: 64 (1957); F. Maek. & al., Makino New Illust. Fl. Jap.: 640 (1961); Hatus., Fl. Ryukyus: 630 (1971); Walker, Fl. Okinawa: 1036 (1976); Kitam. in Satake & al., Wild Flow. Jap. Herb. **3**: 175 (1981); Ono & al., Rev. Makino Illust. Fl. Jap.: 766 (1989); Ohwi & Kitag., New Fl. Jap. rev.: 1513 (1992).

“*Wedelia biflora*” auct. non (L.) DC.:

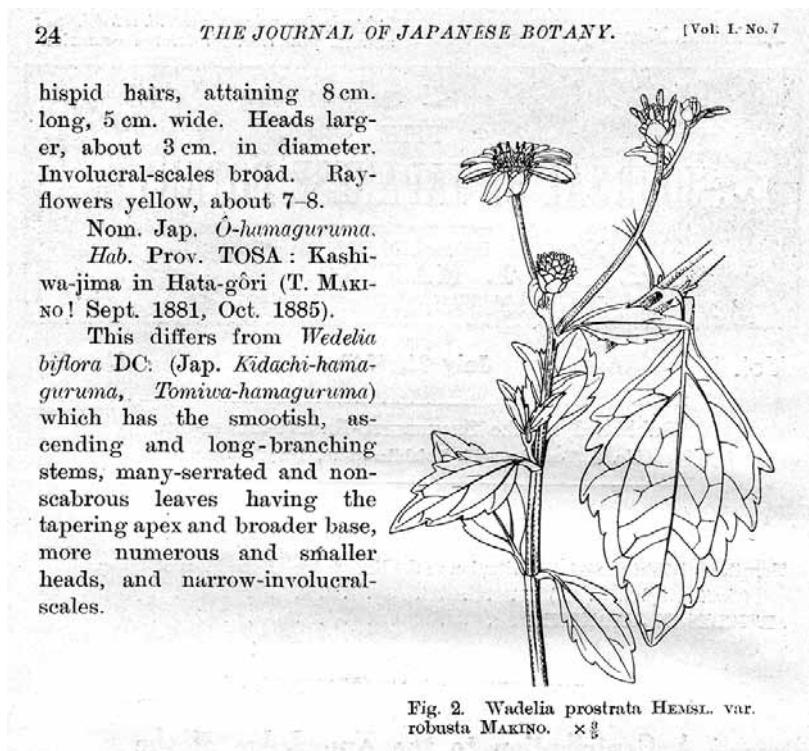


Fig. 1. Part of the original publication of *Wedelia prostrata* Hemsl. var. *robusta* Makino.

Makino in Bot. Mag. (Tokyo) 4: (87) (1890), excl. syn.

Distr.: Japan (Honshu: Shizuoka and Wakayama Prefs., Shikoku, Kyushu and Ryukyu) and Taiwan.

Makino recorded this species first as *Wedelia biflora* (L.) DC. in 1890, but later regarded it as a new variety of *W. prostrata* Hemsl. in 1917. Kitamura (1942) considered it as a distinct species, *W. robusta* (Makino) Kitam., based on differences in shape, size and texture of leaves, number of capitula, and size of achenes from *W. prostrata*. It had usually been recognized as a distinct species in Japan as shown in the bibliography above, though Koyama (1982) pointed out continuous variation of the characters between the two species and regarded *W. robusta* as a variety of *W. prostrata*. Peng and Chung (1998) suspected *W. prostrata* var. *robusta* to be a hybrid between *W. prostrata* and *W. biflora*. Wagner and Robinson (2002)

followed Peng and Chung (1998) on var. *robusta* as the hybrid. Although resemblance has been known with *W. biflora* (Maekawa et al. 1955), no evidence nor reason that *W. prostrata* var. *robusta* is the hybrid has been shown. We follow the concept of Kitamura (1942) and treat *Wedelia prostrata* var. *robusta* at the specific rank. We think that this species is possibly a hybrid as suggested by Peng and Chung (1998), because the plant shows a wide range of morphological variation between the parental species.

Makino (1917) described *Wedelia prostrata* var. *robusta* Makino based on two specimens: Kashiwa-jima. Sept. 1881 and loc. cit. Oct. 1885 (Fig. 1). These two specimens were collected by Makino himself and are syntypes of var. *robusta* Makino. Kitamura (1942) cited a specimen: "Tosa: Kashiwajima (T. Makino M.)—typus dupl." when he raised the rank of the variety to species. The note means that there is a duplicate type collected by Makino in TNS (M indicates



Fig. 2. *Wedelia prostrata* var. *robusta* Makino (TNS 12614). Courtesy of Dr. Y. Kadota.



Fig. 3. One of MAK 104746, a syntype of *Wedelia prostrata* var. *robusta* Makino (MAK). Courtesy of Dr. H. Kato.

the abbreviation of present TNS), but did not indicate the original type. Probably, Kitamura thought there must be the original type of var. *robusta* Makino in Makino's house, because neither syntypes nor Makino's collection of var. *robusta* Makino are kept in TI. There are, however, no syntypes in TNS. Dr. Yuichi Kadota found only a specimen collected by Makino at the type locality in TNS (Fig. 2). However, the specimen was collected in August 1889 and has no annotation labels by Kitamura.

On the other hand, presumable corresponding specimens to the syntypes are found by Dr. Hidetoshi Kato in MAK: MAK 104746 (two sheets shown here as a and b; Fig. 3), MAK 241999, MAK 242000, and MAK 242001 (Fig. 4). Although these specimens lack original labels by Makino, they are specified by the locality of collection, "Kashiwa-jima" or "Hata-gori Kashiwa-jima" hand-written in Japanese on a small piece of paper pasted on the

herbarium sheet together with each specimen. Makino's handwritings of the locality are considered that Makino himself collected these plants. We regard these specimens are syntypes of var. *robusta* Makino.

Of the four syntypes in MAK the first one (MAK 104746) and the remaining three (MAK 241999, MAK 242000, and MAK 242001) are apparently belonging to different collections: the plant of the former with the label "Hata-gori Kashiwa-jima" was collected in later season than the plants of the latter specimens with "Kashiwa-jima" judging from degree of development of flowers, especially ray flowers. Probably the former might be corresponding to the syntype collected in October 1885 (Fig. 3), while the latter to that collected in September 1881 (Fig. 4). Makino (1917) described and illustrated clearly the ray flowers of the variety in the original description (Fig. 1). Of the syntypes MAK 242001 matches most to the lectotype of



Fig. 4. Lectotype of *Wedelia prostrata* Hemsl. var. *robusta* Makino, MAK 242001 (MAK). Courtesy of Dr. H. Kato.

the variety. We select this specimen as lectotype of *Wedelia prostrata* Hemsl. var. *robusta* Makino.

We are much indebted to Dr. H. Kato

of MAK who found the syntypes of *Wedelia prostrata* var. *robusta* Makino in MAK, Dr. Y. Kadota of TNS who confirmed Makino's collection of *W. biflora* and *W. prostrata* var. *robusta* in TNS, Dr. H. Nagamasu of KYO and

Dr. J. Murata of TI who searched the type of the variety in their herbaria for their invaluable help to this study.

References

- Kitamura S. 1942. Compositae Japonicae. Pars Tertia. Mem. Coll. Sci. Kyoto Imperial Univ., ser. B. **16**(3): 155--292.
- Koyama H. 1982. *Wedelia prostrata* Hemsl. and *W. prostrata* var. *robusta* Makino. Act. Phytotax. Geob. **33**: 27 (in Japanese).
- Koyama H. 1995. 144. *Wedelia* Jacq. In: Iwatsuki K., Boufford D. E. and Ohba H. (eds.), Flora of Japan **IIIb**: 33--34. Kodansha, Tokyo.
- Maekawa F., Hara H. and Tuyama T. 1955. Makino's Illustrated Flora of Japan 1955 (Supplement). Hokuryukan, Tokyo.
- Makino T. 1890. Notes of Japanese plants. Bot. Mag. (Tokyo) **4**: 86--91 (in Japanese)
- Makino T. 1917. A contribution to the knowledge of the Flora of Japan. J. Jap. Bot. **1**: 23--26.
- Peng C.-I., and Chung K.-F. 1998. *Wedelia* Jacq. In: Huang T.C. et al. (eds.), Flora of Taiwan, ed. 2, **4**: 1091--1097. Editorial Committee of the Flora of Taiwan Second Edition, Taipei.
- Shimabuku K. 1997. Check List of Vascular Flora of the Ryukyu Islands. Revised edition. Kyushu University Press, Fukuoka.
- Wagner W. L. and Robinson H. 2002. *Lipochaeta* and *Melanthera* (Asteraceae: Heliantheae subtribe Ecliptinae): establishing their natural limits and a synopsis. Brittonia **53**: 539-561.
- キク科ハマグルマ *Wedelia prostrata* Hemsl. の学名が Wagner and Robinson (2002) によって *Melanthera prostrata* (Hemsl.) W. L. Wagner & H. Rob. に変更されたことを受けて、オオハマグルマとオオキダチハマグルマの学名を *Wedelia* から *Melanthera* に変更した。牧野富太郎 (1890) は「土佐幡多郡柏島ノ海濱」で明治 14 年 9 月と同 18 年 10 月に自身で採集したキク科の一品を *Wedelia biflora* DC. に当て、これをオオハマグルマと新称した。後に Makino (1917) はオオハマグルマをハマグルマの変種として *W. prostrata* (Hook. & Arn.) Hemsl. var. *robusta* Makino と命名した (Fig. 1)。このタイプ標本として Hab. Prov. TOSA: Kashiwa-jima in Hata-gori (T. Makino ! Sept. 1881) および (T. Makino ! Oct. 1885) を挙げた。これらの標本は var. *robusta* Makino のシントタイプであり、*W. biflora* として 1890 年に引用された標本と同じものである。Kitamura (1942) は TNS に var. *robusta* Makino のタイプ重複標本があるとしているが、門田裕一博士に調べていた

だいた限りではこのタイプは見付からなかった。TNS には 1989 年に柏島で牧野富太郎によって採集された標本 (Fig. 2) が 1 点あることが確認できたが、これはシントタイプではなかった。

今回首都大学東京・牧野植物標本館の加藤英寿博士によってこのシントタイプと思われる標本が MAK で見出された。それらは 4 点 (MAK 104746 (2 枚), MAK 241999, MAK 242000, MAK 242001) あり、MAK 104746 に小紙片で「幡多郡柏島」が貼り付けられている (Fig. 3)。一方、MAK 241999, MAK 242000, MAK 242001 (Fig. 4) の 3 枚にはそれぞれ「柏シマ」の小紙片が貼り付けられており、加藤博士はおそらく同時に採集された重複標本と思われるのことで、われわれも同意見である。以上の 4 点にはいづれも採集日の記載はない。MAK 104746 は 1969 年に北村四郎によって、他の 3 点は 1986 年 棚山泰一によって *W. robusta* と同定されている。これらの標本が var. *robusta* Makino のタイプと認められなかったのは恐らく採集年月日の記述を欠くためであったのではないと思われる。しかし、これらの標本をシントタイプではないとする根拠はなく、標本の状態と Makino (1917) の原発表とを併せて検討すると、MAK 104746 は明治 18 年 10 月に、MAK 241999, MAK 242000, MAK 242001 は明治 14 年 9 月に採集されたシントタイプに当たると考えて矛盾しないと思われる。これらの中で、最も原記載に一致する MAK 242001 (Fig. 3) がレクトタイプとして適当であると考えられる。

なお、ハマグルマの学名の著者名は「(Hook. & Arn.) Hemsl.」とされることが多いが、小山 (1982) の扱いのように、正しくは「Hemsl.」である。*Wedelia prostrata* Hemsl. in J. Linn. Soc. **23**: 434 (1988) は、*Wollastonia prostrata* Hook. & Arn., Bit. Beechey Voy. 195 (1837) に基づいて発表されたが、この基礎異名は *Wollastonia prostrata* DC., Prodr. **5**: 549 (1836) の後続同名であり、非合法である。しかし国際植物命名規約 (ウィーン規約) 第 58 条によれば、非合法である *Wedelia prostrata* (Hook. & Arn.) Hemsl. は「同じランクで優先権をもつ他の学名に由来する使用可能な形容語がないので、同じランクで、異なる組み合わせにおいて使用してもよい」(日本植物分類学会国際植物命名規約邦訳委員会 2007) 場合に当たり、*Wedelia prostrata* Hemsl. として 1888 年に発表された新名と見なされることになる。

^aSchool of Pharmacy, Iwate Medical University, Yahaba, Iwate, 028-3694 JAPAN

^a岩手医科大学薬学部

E-mail: kazuaki@iwate-med.ac.jp

^bBotanical gardens, Tohoku University, Sendai, 980-0862, JAPAN

^b東北大学植物園津田記念館)