

CRITICAL STUDIES ON SOME *BEGONIA* FROM TAIWAN**

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Abstract: *Begonia randaiensis* and *B. hayatae* described from Taiwan are found to be synonyms. *Begonia randaiensis* is conspecific with the widely distributed *B. laciniata*, and *B. hayatae* with *B. aptera*. *Begonia formosana* is not considered to be related to *B. laciniata*.

Begonia species are tropical diverse, and especially abundant in northern South America. In Southeastern Asia the genus is best represented in the Philippines, Malaysia and Java. It is totally absent from the temperate Japanese Archipelago. Seven species were reported from Taiwan (Liu & Lai 1977). Of the two species which extend north to the Ryukyus, *B. formosana* is also common to Taiwan and *B. fenicis* is common to Botel Tobago, Green Island and the Philippines. There is no species in common between Taiwan proper and the Philippines, providing another example of how the distinct floras of these two areas have been derived from divergent origins.

While most of the species in Taiwan have been described as endemics, our present knowledge indicates that the bulk of the Taiwan flora has close affinities with Mainland China. It is better, therefore, to make some comparisons of floristically related plant elements. For example, the Mainland Chinese species were studied by Irmscher (1927, 1939) and Yu (1948), but no attempt to compare them with species from Taiwan has previously been undertaken.

1. *Begonia aprera* Bl., Enum. Pl. Jav. 97. 1827-28.

B. brachyptera Hayata in Kawakami, List Pl. Form. 45. 1910. *nom. nud.* -*B. aptera* Hayata in Journ. Coll. Sci. Univ. Tokyo 30 (1): 122. 1911 & Icon. Pl. Form. 2: 43. 1912, 6: 21. 1916. *hom. illeg.* -*B. hayatae* Gagnep. in Bull. Mus. Hist. Nat. Paris 25: 282. 1919. *syn. nov.*

Type from Celebes.

The epithet *aptera* has been used for many *Begonia* species with wingless capsules. It is a remarkable coincidence that Blume and Hayata gave the same name to the same species. Gagnepain (1919) renamed Hayata's species as *B. hayatae*.

Widely distributed in Java, Indo-China and western China (Yunnan and Hainan).

2. *Begonia laciniata* Roxb., Hort. Beng. 68. 1814.

(Plate I)

B. randaiensis Sasaki, List Pl. Form. 301. 1928 & in Trans. Nat. Hist. Soc. Form. 19: 212. 1929. *syn. nov.* -*B. ferruginea* Hayata in Journ. Coll. Sci. Univ. Tokyo 30(1): 123. 1911 & Icon. Pl. Form. 2: 44. 1912, 6: 22. 1916. *hom. illeg.*

Type from India.

The present species is characterized by having a 2-celled ovary and ciliate leaf margins. The whole plant is covered with rusty-tomentose hairs. Hayata described it as *B. ferruginea* and Sasaki gave it a new name, *B. randaiensis*, since it was a later homonym. When describing the species, Hayata had already pointed out its close relationship to *B. bowringiana* Champ. ex

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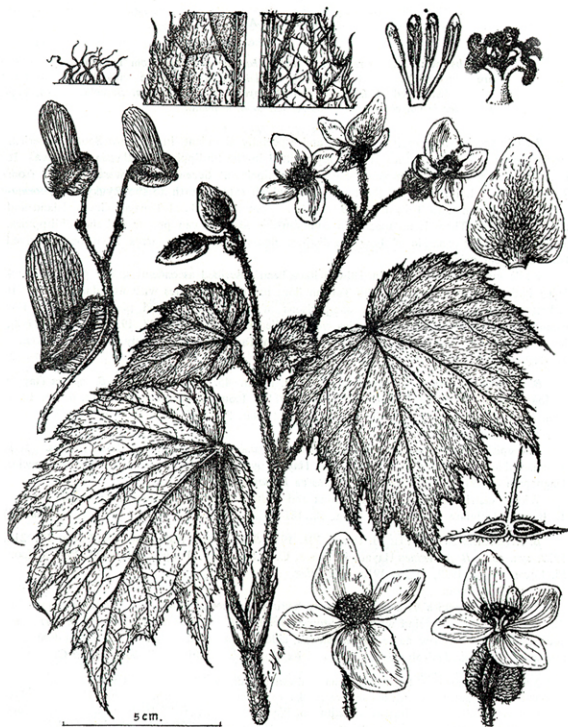


Plate I. *Begonia laciniata* Roxb.

Benth. (= *B. laciniata*). The specimen collected by Henry (110 in NY) from Taiwan was determined as *B. laciniata* but with a query on the label. It is actually the correct name. Hara (1966) referred this plant to *B. palmata* D. Don (1825, the type from Nepal). The variation and distribution of *B. laciniata* have been discussed by Irmscher (1939).

Widely distributed in western and southern China, Vietnam, Burma and India.

3. *Begonia formosana* (Hay.) Masam. in Journ. Geobot. 9 (3, 4): frontis, pl. 41. 1961.

B. laciniata Roxb. var. *formosana* Hayata in Journ. Coll. Sci. Univ. Tokyo 30(1): 124. 1911 & Icon. Pl. Form. 2: 44. 1912, 6: 22. 1916.

Type from Taiwan.

Previous reports of *B. laciniata* in Taiwan (Forbes & Hemsley 1888, Henry 1896, Matsuura & Hayata 1906) are incorrect and plants so named may be referred to *B. formosana*. Forbes & Hemsley (1888: 322) noticed that the specimens from Taiwan are all perfectly glabrous, while *B. laciniata* is actually a rusty-tomentose species. Consequently, Hayata (1911) proposed the varietal name *formosana* for the Taiwanese plant. Although it is similar to *B. laciniata* in the lacinate leaf outline, it differs significantly from *B. laciniata* in having a 3-celled ovary and ciliate leaf margins. The combination *Begonia formosana* is available at the species rank.

Begonia formosana is widely distributed from 300 to about 1,000 m elevation, while *B. laciniata* is normally found in warm forest zones at higher altitudes.

Distributed in Taiwan and the Ryukyus (Walker 1976, as *B. laciniata* var. *formosana*).

REFERENCES

- FORBES, F. B. & W. B. HEMSLEY, 1886-1888. An enumeration of all the plants known from China proper, Formosa, Hainan, Corea, the Luchu Archipelago, and the Island of Hongkong, together with their distribution and synonymy. Journ. Linn. Soc. Bot. 23: 1-521.
- GAGNEPAIN, F., 1919. Nouveaux *Begonia* d'Asie; quelques synonymes. Bull. Mus. Hist. Nat. (Paris) 25: 194-201, 276-283.
- HARA, H., 1966. The Flora of Eastern Himalaya. Univ. of Tokyo Press.
- HAYATA, B., 1911. Materials for a Flora of Formosa. Journ. Coll. Sci. Imp. Univ. Tokyo, Japan 30: 1-471.
- HENRY, A., 1896. A List of Plants from Formosa. Trans. Asiatic Soc. Japan 24: 1-118.
- IRMSCHER, E., 1927. Beiträge zur Kenntniss der ostasiatischen Begonien. Mitt. Inst. Bot. Hamburg 6: 343-360.
- , 1939. Die Begoniaceen Chinas und ihre Bedeutung für die Frage der Formbildung in polymorphen Sippen. *Ibid.* 10: 427-557. f. 1-17.
- LIU, T. S. & M. J. LAI, 1977. Begoniaceae. In Flora of Taiwan, vol. 3. p. p. 791-798. Epoch Publ. Co., Taipei.
- MATSUMURA, J. & B. HAYATA, 1906. Enumeratio Plantarum Formosanarum. Journ. Coll. Sci. Imp. Univ. Tokyo, Japan 22: 1-702.
- WALKER, E. H., 1976. Flora of Okinawa and the Southern Ryukyu Islands. Smithsonian Institution Press.
- YU, T. C., 1948. An enumeration of begonias of southwestern China. Bull. Fan Mem. Inst. Biol. n. ser. 1: 113-130.