

**A BRIEF NOTE ON *GENTIANOPSIS YABEI*
AND ITS INFRASPECIFIC TAXA
(SYMBOLA GENTIANOLOGICA 3**)**

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(With 1 Plate and 1 Text-figure)

Only two species of the genus *Gentianopsis* (Gentianaceae) have been reported to occur in Japan. They are *Gentianopsis contorta* and *G. yabei*: the former is a species common to the continent of Asia and Japan, while the latter is recognised by most phytotaxonomists as one of the endemics of Japan. The present paper deals with the latter species, *Gentianopsis yabei* from the phytotaxonomical viewpoint.

In the summer of the year 1902, Y. YABE botanised in some detail the top area of Mt. Shirouma (2933.1m above the sea-level), Provs. Shinano and Echigo on the Shinano side, and the results of his botanical survey were published in 1903 under the title of "Enumeratio Plantarum Alpinarum in Monte Shirouma (Prov. Shinano) collectarum". In accordance with his paper, 125 species of vascular plants collected by him from the alpine belt of this mountain were enumerated; among them the following 8 species of the Gentianaceae, *sensu lato*, were listed: they are *Halenia sibirica* (= *H. corniculata*), *Gentiana algida* var. *frigida* (= *G. algida*), *Gentiana auriculata* (= *Gentianella yuparensis* subsp. *takedae*), *Gentiana nipponica*, *Gentiana detonsa* var. *albiflora* (= *Gentianopsis yabei*), *Nephrophyllidium crista-galli* (= *Fauria crista-galli* subsp. *japonica*), *Swertia tetrapetala* (= *Frasera tetrapetala* subsp. *micrantha*) and *Swertia perennis* var. *cuspidata* (= *Swertia perennis* subsp. *cuspidata*). The names in front of the parentheses are those published in his paper of 1903 (YABE 1903), while those in the parentheses are the current ones recognised by the present author. Among those 8 species, *Gentianopsis yabei* was honoured with the name of *Gentiana detonsa* var. *albiflora* as a new variety. His original description with a diagnosis is shown in Figure 1. His taxonomic treatment of this plant had been borne out by all Japanese phytotaxonomists until 1937, when TAKEDA and HARA regarded it as a distinct good species, naming it *Gentiana* (§ *Crossopetalum*) *Yabei* TAKEDA et HARA. At the same time, HARA prepared a combination

* Part 1 J. Jap Bot. 36: 240-4. 1961, Part 2 J. Asahikawa Univ. 4: 181-3. 1976.

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* *Gentiana detonsa* Fries. var. *albiflora* var. n.

Annua. Caulis glaber subsimplex erectus 15 cm. longus. Folia radicalia subrosulata pauca oblonga v. oblongo-lanceolata 3 cm. longa $\frac{3}{4}$ cm. lata obtusa integra, caulina lineari-lanceolata v. ovato-lanceolata 3 cm. longa internodio breviora acuta. Pedunculus uniflorus soritarius elongatus. Calyx 4-fidus 2 cm. longus, laciniis lanceolatis s. lineari-lanceolatis subinaequalibus acuminatis corollae tubum subaequantibus membranaceo-marginatis. Corolla campanulata 3 cm. longa, 4-lobata, laciniis oblongis $1-1\frac{1}{2}$ cm. longis obtusis erectis nec patulis margine integris v. undulatis basi parce fimbriatis (fimbriis brevissimis), tubo cylindrico inter filamentorum basin glandulifero.

Antherae subverticales, filamentis 2 cm. longis liberis. Stylus subnullus. Stigmata 2 distincta orbiculata. Ovarium stipitatum. Capsula calycem vix superans corolla brevior, seminibus squamuloso-aculeatis.

A. G. *detonsa* Fries var. *barbata*, floribus albis, lobis erectis nec patentibus distincta!

Fig. 1 The original description of *Gentiana detonsa* var. *albiflora* YABE (YABE 1903).

under the genus *Gentianella* as *Gentianella Yabei* (TAKEDA et HARA) HARA, publishing it as a synonym attached to the original description.

In 1951, MA separated *Gentianopsis* not only from *Gentiana* but from *Gentianella* as a distinct genus, mentioning a lot of distinguishing characters between these genera, and SATAKE (1955) upheld MA's view of recognising the Crosso-petalum group of *Gentianella* or *Gentiana*, s.l. as an independent genus when he reported the discovery of *Gentianopsis contorta* in Japan. One year earlier than SATAKE's paper, YAMAZAKI, UEMATSU and MATSUDA (1954) reported the occurrence of *Gentiana Yabei* (misprinted as *Yatabei*) var. *akaisiensis* YAMAZAKI (*nom. nud*) on the Akaishi Range or the South Japanese Alps. When the author published his *Conspectus of Japanese Gentianaceae* (*Conspectus Gentianacearum Japonicarum*) in 1963, he considered that the specimens from Mt. Shirouma and those from the South Japanese Alps were not separable from each other, looking upon them as being within a single taxon more or less with a pronounced range of variation.

In 1971, TAKAHASHI published *Gentianopsis furusei*, a new species, basing it on the specimens collected by M. FURUSE on Mt. Jizo-dake, Pref. Nagano, and this treatment was followed by not a few authors. In 1982, YAMAZAKI reduced the plants on the South Japanese Alps to a variety of *Gentianopsis yabei* as *G. yabei* var. *akaisiensis* YAMAZAKI, *nom. nov.* As annual or biennial species of *Gentianella* and related genera vary a good deal (TOYOKUNI 1979), the author agrees with the view proposed by YAMAZAKI in 1982, because the

distinction between *G. yabei* and the so-called *G. furusei* only lies in the characters in the coloration of plant bodies and corollae, elongated or unelongated peduncles and the number of flowers.

On Mt. Shirouma-yarigatake, there occurs a form of *G. yabei* with reddish-purple or violet corollae (Fig. 2, right), to which the writer wishes to propose a new name, *Gentianopsis yabei* f. *violacea*, f. nov. Although OHBA and TAKAHASHI (1985) uniformly regard a form with reddish-purple or violet flowers as *G. furusei*, so far as the specimens from Mt. Shirouma-yarigatake are concerned, they appear to express the characteristics of the typical phase of *Gentianopsis yabei* other than corolla-colour. And, in conclusion, *Gentianopsis yabei* in Japan is to be divided into the following infraspecific taxa.

Gentianopsis yabei (TAKEDA et HARA) MA in Acta Phytotax. Sinica 1 (1): 19. 1951, *comb. nud.* -HONDA, Nom. Pl. Jap. (ed. em.) 207. 1957, *comb. nud.* -TOYOKUNI in Jour. Fac. Sci. Hokkaido Univ. Ser. V (Bot.) 7 (4): 201. 1963 et Symb. Asahikaw. 2: 68. 1967, *excl. specim. nonn. ex Alpibus Japoniae austr. et fig.* -OHWI, Fl. Jap. (ed. rev.) 1096. 1965. -ILTIS in Sida 2 (2): 134. 1965. -TAKAHASHI in Bull. Kanagawa Pref. Mus. 1 (4): 20. 1971.

var. *yabei* [forma *yabei*]

Stems and leaves usually pale green, peduncles often elongated with a few flowers, corolla white, but slightly reddish-purplish or violaceous at throat.

Nom. Jap. Takanerindo, Shiroumarindo

Specim. exam. Pref. Nagano: Mts. Shirouma; Mt. Shirouma (Aug. 1902, Y. YABE, TI 'holotypus'), Mt. Shirouma to Mt. Hakubayari, alt. 2500-2800m (Aug. 10, 1972, T. SHIMIZU, No. 23862-SHIN; Aug. 30, 1986, H. TOYOKUNI, SHIN), Mt. Koyari to Tengugoya alt. 2800-2900m (Aug. 5, 1978, T. SHIMIZU, No. 27357-SHIN; H. TOYOKUNI, SHIN), Mt. Shirouma-yarigatake, alt. 1970m (Aug. 31, 1986, H. TOYOKUNI, SHIN).

forma *violacea* TOYOKUNI, *forma nov.*

Corolla rubescentipurpurea tenus violacea, ceteris ut in forma *yabei*.

Nom. Jap. Murasaki-shiroumarindo (nom. nov.)

Specim. exam. Pref. Nagano: Mts. Shirouma; Mt. Shirouma-yarigatake, alt. 1790m. (Aug. 31, 1986, H. TOYOKUNI-holotypus SHIN).

var. *furusei* [forma *furusei*] (H. TAKAHASHI) TOYOKUNI, *comb. nov.*

Syn. -

Gentiana Yabei var. *akaisiensis* YAMAZAKI in YAMAZAKI, UEMATSU & MATSUDA in Yamanashi-Kyoiku 6: 13. 1954, *sphalmate* 'Yatabei', *nom. nud.* -H. TAKAHASHI in Bull. Kanagawa Pref. Mus. 1 (4): 21. 1971, *pro syn.* *Gentianopsis furusei* H. TAKAHASHI in Bull. Kanagawa Pref. Mus. 1 (4): 21, f. 1. 1971. *Gentianopsis yabei* var. *akaisiensis* YAMAZAKI in Jour. Jap. Bot. 57 (6): 192. 1982.

Stems and leaves often purplish, peduncles not so elongated, with few to many flowers and corolla reddish-purplish to violaceous. The varietal epithet '*akaisiensis*' is contrary to the Articles 33. 1 and 34. 1 of the current code of nomenclature; we must, therefore, use the validly published oldest epithet '*furusei*'.

Nom. Jap. Akaishirindo

Specim. exam. Pref. Nagano: Mt. Kita-dake, alt. 3000m (Sept. 4, 1954, T. YAMAZAKI, TI et SHIN; Sept. 16, 1979, M. WAKAHARA, SHIN), between Mt. Kamanashi and Mt. Shiraiwa, alt. 2100m (Aug. 14, 1977, T. SHIMIZU, No. 26542, SHIN). Pref. Shizuoka: between Mt. Senmai and Mt. Arakawa, alt. 2700m (Sept. 19, 1959, H. TOYOKUNI, SHIN).

forma *albiflora* YAMAZAKI in Jour. Jap. Bot. 57 (6): 192. 1982.

Nom. Jap. Shirobana-akaishirindo

Flowers white.

Specim. exam. Pref. Yamanashi: Mt. Kita-dake; Kitadakegoya-happonba, alt. 2800m (Sept. 1981, K. FUKAZAWA 3087, TI '*holotypus*').

References

- (1) HARA, H. 1937. Observationes ad Plantas Asiae Orientalis XIV. Jour. Jap. Bot. 13 (8): 600-607.
- (2) OHBA, T. & H. TAKAHASHI 1985. "Flowers of the Japan Alps" (in Jap.)
- (3) SATAKE, Y. 1955. Discovery of a Himalayan species of the Gentianaceae in Chichibu Mts. Bull. Chichibu Mus. Nat. Hist. 6: 1-3.
- (4) TAKAHASHI, H. 1971. Notes on Japanese Alpine Plants (1). Bull. Kanagawa Pref. Mus. 1 (4): 18-24, pls. 10-13.
- (5) TOYOKUNI, H. 1963. Conspectus Gentianacearum Japonicarum. Jour. Fac. Sci. Hokkaido Univ. Ser. V (Bot.) 7 (4): 137-259.
- (6) TOYOKUNI, H. 1967. Notes on *Gentianopsis* with special reference to Japanese species (1). Symb. Asahikaw. 2: 57-72.
- (7) TOYOKUNI, H. 1968. Notes on *Gentianopsis* with special reference to Japanese species (2). Symb. Asahikaw. 3: 137-146.
- (8) TOYOKUNI, H. 1979. Notes on the alpine flora of Hokkaido, together with a few topics on the critical groups. Bull. Bot. Soc. Nagano 12: 6-11.
- (9) VOSS, E.G. *et al.* (ed.) 1983. International Code of Botanical Nomenclature Adopted by the 13th Intern. Bot. Congr. Sydney, Aug. 1981.
- (10) YABE, Y. 1903. Enumeratio Plantarum Alpinarum in Monte Shirouma (Prov. Shinano) collectarum. Bot. Mag. Tokyo 17: 15-27.
- (11) YAMAZAKI, T. 1982. On *Gentianopsis furusei* H. Takahashi. Jour. Jap. Bot. 57 (6): 191-192.
- (12) YAMAZAKI, T., H. UEMATSU & H. MATSUDA 1954. "A list of angiosperms on the Akaishi Range I" (in Jap.)



PLATE I

Fig.2 *Gentianopsis yabei* var. *yabei* f. *yabei* (left and middle), *G. yabei* var. *yabei* f. *violacea* (right).