

**A Note of *Saxifraga nelsoniana*, with Description of  
a New Variety from Central Honshu, Japan.  
Notulae ad Plantas Japonicae IV**

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チシマイワブキの分類学的検討と本州立山で  
見出されたタテヤマワブキ

大場秀章

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A variety of *Saxifraga nelsoniana* D. Don, var. *tateyamensis*, is described from Mt. Tateyama, central Honshu, Japan. Seven new combinations of varieties are proposed in *S. nelsoniana*: var. *aestivalis* (Fisch. et C.A. Mey.), *carlottae* (Calder et Savile), *cascadensis* (Calder et Savile), *insularis* (Hultén), *pacifica* (Hultén), *porsildiana* (Calder et Savile), and *reniformis* (Ohwi).

This paper aims to describe a new variety of *Saxifraga nelsoniana* D. Don and to note on the taxonomy of the *S. nelsoniana*. There have been several species attributed to *Saxifraga nelsoniana* D. Don from NE Europe to NW region of North America through Siberia (the Ural mountains to Anadyr Range), NE China, Korea, Japan, Sakhalin, the Kuriles and the Aleutians. Hultén (1973) considered these to compose a species complex.

Recently Mr. Yukio Doi has collected an interesting Saxifragaceous plant from the alpine zone in Mt. Tateyama Range, central Honshu, Japan. The plant falls in the variation range of *Saxifraga nelsoniana* and resembles var. *reniformis* which was described as species based on the specimens collected from Hokkaido, Sakhalin (type) and South Kuriles

(Paramushir and Shumshur) by Ohwi (1938), but differs from that by the presence of persistent hairs on flowering stems and petioles, the narrow lanceolate bracts, the apparently clawed petals, and the deeply cordate leaves. This is regarded as a variety of *S. nelsoniana* geographically isolated from var. *reniformis*.

#### History and nomenclature

Hara (1952) regarded *S. reniformis* as the subspecies of *S. punctata*, and once I followed this (Ohba 1982). However, Pugsley (1936) and Webb (1964) noticed that the type of *S. punctata* was identical with the plant known as *S. davurica* Willd. (s. lat.). Webb considered *S. nelsoniana* D. Don the oldest valid name in the complex, and distinguished the European

and west Siberian populations, subsp. *aestivalis* (Fisch. et C.A. Mey.) Webb, from subsp. *nelsoniana*. Hultén (1973) followed Webb's concept, and transferred the subspecies of *S. punctata* which were described by himself and Calder and Savile (1960) to *S. nelsoniana*. Hultén regarded also *S. reniformis* Ohwi as the subspecies of *S. nelsoniana*.

Charkevicz (1989), however, considered almost all the east Siberian subspecies of *S. nelsoniana* to be separated specifically from this. He gave maps showing their allopatric pattern in Siberia: *S. aestivalis* ranges in the continental part from Amur and Sikhote Alin Range to Kamchatka through Dzhugdzhur, Kolyma and Anadyr while *S. reniformis* in the Kuriles and Sakhalin.

The circumscription of the taxa in this complex is not clear as pointed out by Hultén (1973). He regarded seven taxa attributed to the complex as the subspecies of *S. nelsoniana*. Though these subspecies are distinguishable by the combinations of several characters showing different tendencies of appearance, they do not have any proper character. That is, *S. reniformis* is different from *S. aestivalis* only in the slender, glandularly hairy peduncles and pedicels, the narrow petals and the stamens apparently longer than the petals at the male stage, and from *S. nelsoniana* in the sparse flowers of the inflorescences and the glabrous or sparsely hairy flowering stems and petioles.

In such circumstance they are better to be treated as varieties having different tendencies in several characters. There are some intermediate forms between the different taxa as discussed by Calder and Savile (1960).

### Taxonomic treatment

***Saxifraga nelsoniana*** D. Don in Trans. Linn. Soc. **13**: 355 (1821). Webb in Fedde, Repert. **69**: 153 (1964). Hultén in Bot. Not. **126**: 493 (1973). Charkevicz in Pl. Vasc. Orient. Extr. Soviet. **4**: 132 (1989).

var. ***nelsoniana***.

*S. punctata* var. *nelsoniana* (D. Don) Macoun, Cat. Canad. Pl. **1**: 153 (1883).

*S. punctata* subsp. *nelsoniana* (D. Don) Hultén, Fl. Alaska & Yukon **5**: 929 (1945). Calder et Savile in Canad. J. Bot. **38**: 425 (1960).

Distr. Far eastern Siberia (Dzhugdzhur, Kolyma, Anadyr, northern Kuriles, Kamchatka) to Mackenzie River Delta through Alaska and Yukon.

var. ***aestivalis*** (Fisch. et C.A. Mey.) H. Ohba, stat. nov.

*S. aestivalis* Fisch. et C.A. Mey. in Ind. Sem. Hort. Bot. Petropol. **1**: 37 (1835). Charkevicz in Pl. Vasc. Orient. Extr. Soviet. **4**: 131 (1989).

*S. nelsoniana* subsp. *aestivalis* (Fisch. et C.A. Mey.) D.A. Webb. in Fedde, Repert. **69**: 154 (1964).

*S. punctata* auct. non L.: Engl. et Irmscher in Engl., Pflazenr., Heft **117**: 9 (1916).

Distr. Far eastern part of Siberia including Kamchatka.

var. ***cascadensis*** (Calder et Savile) H. Ohba, stat. nov.

*S. punctata* subsp. *cascadensis* Calder et Savile in Canad. J. Bot. **38**: 425 (1960).

*S. nelsoniana* subsp. *cascadensis* (Calder et Savile) Hultén in Bot. Not. **126**: 494 (1973).

Distr. Canada: British Columbia.

var. ***carlottae*** (Calder et Savile) H. Ohba, stat. nov.

*S. punctata* subsp. *carlottae* Calder et Savile in Canad. J. Bot. **38**: 423 (1960).

*S. nelsoniana* subsp. *carlottae* (Calder et Savile) Hultén in Bot. Not. **126**: 494 (1973).

Distr. Canada: Queen Charlotte Island and the adjacent mainland in British Columbia.

var. ***insularis*** (Hultén) H. Ohba, stat. nov.

*S. punctata* subsp. *insularis* Hultén in Sven. Bot. Tidskr. **30**: 524 (1936).

*S. nelsoniana* subsp. *insularis* (Hultén) Hultén in Bot. Not. **126**: 494 (1973).

*S. insularis* (Hultén) Sipliv. in *Novosti Sist. Vyssh. Rast.* **13**: 139 (1976). Charkevich in *Pl. Vasc. Orient. Extr. Soviet.* **4**: 135 (1989).

Distr. Far eastern Siberia (Kamchatka and northern Kuriles), St. Paul Island and Aleutian Islands.

var. ***pacifica*** (Hultén) H. Ohba, stat. nov.

*S. punctata* subsp. *pacifica* Hultén, *Fl. Alaska & Yukon* **5**: 928 (1945).

*S. nelsoniana* subsp. *pacifica* (Hultén) Hultén in *Bot. Not.* **126**: 494 (1973).

Distr. Southern Alaska.

var. ***porsildiana*** (Calder et Savile) H. Ohba, stat.

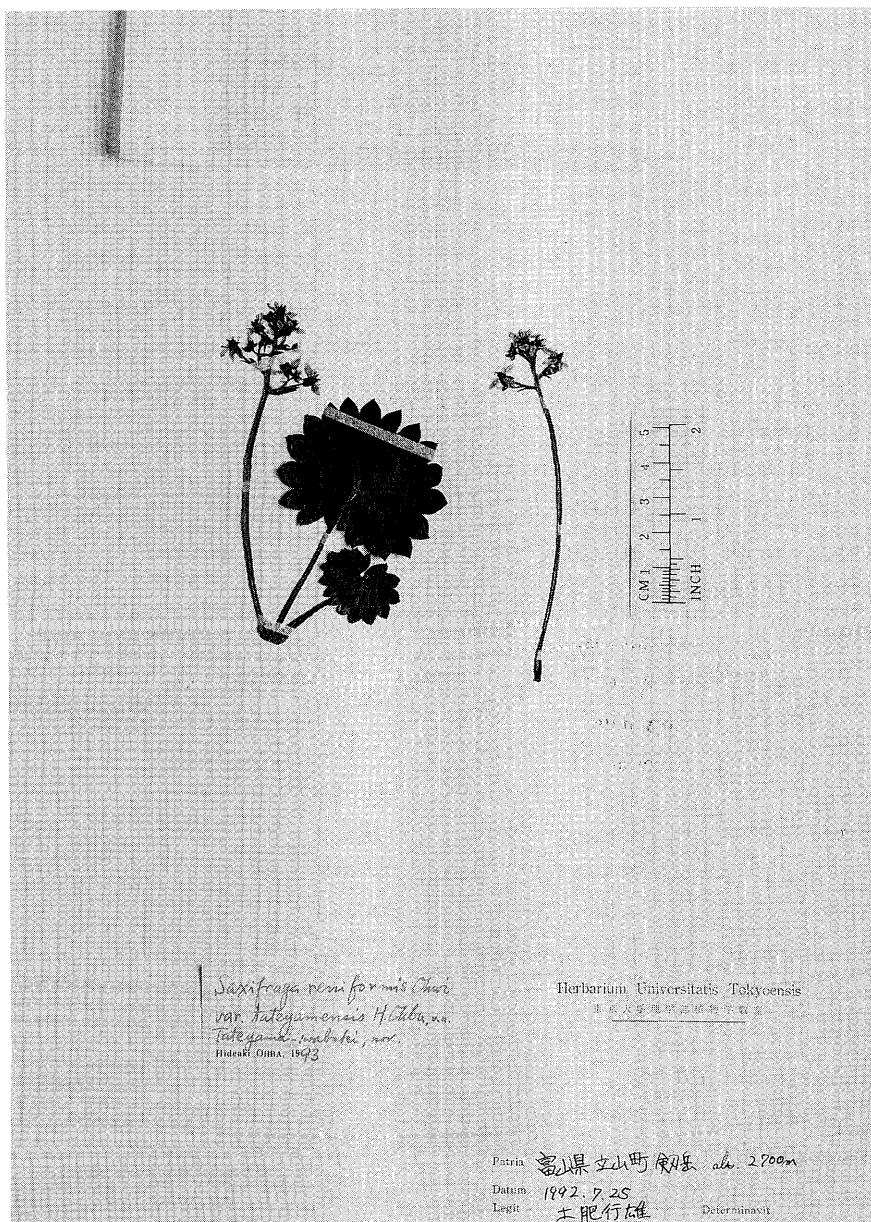


Fig. 1. Holotype of *Saxifraga nelsoniana* var. *tateyamensis* H. Ohba.

nov.

*S. punctata* subsp. *porsildiana* Calder et Savile in Canad. J. Bot. **38**: 429 (1960).

*S. nelsoniana* subsp. *porsildiana* (Calder et Savile) Hultén in Bot. Not. **126**: 494 (1973).

*S. porsildiana* (Calder et Savile) Jurtzev et V.V. Petrovsky in Bot. Zhurn. **58**: 1339 (1973). Charkevitz in Pl. Vasc. Orient. Extr. Soviet. **4**: 132 (1989).

Distr. Far eastern Siberia (Anadyr and Kamchatka), Alaska and Yukon.

var. **reniformis** (Ohwi) H. Ohba, stat. nov.

*S. reniformis* Ohwi in Act. Phytotax. Geobot. **2**: 25 (1922). Charkevitz in Pl. Vasc. Orient. Extr. Soviet. **4**: 135 (1989).

*S. punctata* subsp. *reniformis* (Ohwi) Hara in Nakai et Honda, Nova Fl. Jap. **3**: 70 (1939), pro syn.; J. Fac. Sci. Univ. Tokyo, Bot. **6**: 66 (1952). H. Ohba in

Satake et al., Wild Flow. Jap. Herb. **2**: 171, pl. 160-4 (1982).

*S. nelsoniana* subsp. *reniformis* (Ohwi) Hultén in Bot. Not. **126**: 494 (1973).

Distr. Hokkaido, Sakhalin and the Kuriles.

var. **tateyamensis** H. Ohba, var. nov. [Figs. 1, 2]

A var. *reniformis* (Ohwi) H. Ohba differt pilis caulibus floriferis et petioli persistentibus, bracteis angustis lanceolatis et petalis apparente unguiculatis.

Leaves 10–13 cm long, petiole 5–9 cm long, hairs 1–1.5 cm long, white, dense to sparse, persistent; blade circular or transversely broadly elliptic, 4–5 cm long, 5–6.5 cm wide, glabrous to sparsely hairy, apex rounded, base deeply cordate, margin crenulate with (16–)18 teeth, teeth ovate with triangular apex, to 12 mm long.

Flowering stem 10 cm long in flowering, to 20 cm



Fig. 2. Flowers and fruits of *Saxifraga nelsoniana* var. *tateyamensis* H. Ohba. Scale: 1 cm.

long later, hairs 1–1.5 mm long, white, dense to sparse, persistent. Bracts narrow lanceolate to linear, to 11 mm long, persistent. Flowers ca. 11 mm wide, calyx lobes narrow oblong, apex rounded, ca. 3 mm long, reflexed at flowering. Petals white, spreading, elliptic, ca. 5 mm long and 2 mm wide, apex rounded, base clawed. Stamens apparently shorter than petals at male stage, 2 mm long; filament clavate, white; anthers ca. 0.5 mm long, circular, orange-coloured before dehiscence. Gynoecium surrounded pale green disc, free part 3 mm long at male stage, style cylindrical with orange-coloured stigma. Follicle 7–9 mm long.

Type. Japan, central Honshu: Toyama Pref., Tsurugi in Mt. Tateyama Range, alt. 2700 m. Yukio Doi s.n. on 25 July 1992 (TI).

Other specimen. The same locality as the type. Y. Doi on 18 Aug. 1983 (TI).

Var. *tateyamensis* is thought to be the remnant of the former extension of var. *reniformis* during the latest glacial period from the distribution pattern.

No chromosome information is available to var. *tateyamensis*, though Sokolovskaya (1960) reported  $2n=26$  and 28 from var. *reniformis*. Zhukova and Peterovsky (1987) found  $2n=56, 60, 64, 70$  and various aneuploids in *Saxifraga nelsoniana* and revealed high cytological diversity in the species-complex.

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#### 要 旨

チシマイワブキとその近縁種からなるチシマイワブキ複合体は、周北極地域に広く分布し、かつ広い変異を示す。北海道に分布するチシマイワブキは、樺太から大井次三郎博士により記載された *Saxifraga reniformis* に当たる。

1989年に本州立山に、チシマイワブキが産することを山崎敬博士が本誌64巻32ページの高等植物分布資料(124)に報告している。これは土肥行雄氏によって発見され、太田道人氏を經由して最近研究することができた。

北海道、樺太、南千島に分布するチシマイワブキと比べ、花卉は基部に爪をもつ、花茎と葉柄には果実期まで残存する目立つ毛がある、長さ1 cmになる狭披針形の苞がある、などの違いがあった。

標本によってチシマイワブキ複合体に帰属させられた分類群を検討した結果、極東から北アメリカ北西部にかけて分布する分類群の多くは、固有な形質を有せず、いくつかの変異の傾向を異にする形質の組合せによってのみ異なる、同一種内の変種であると考えられた。学名は *Saxifraga nelsoniana* D. Don で、チシマイワブキは var. *reniformis* (Ohwi) H. Ohba とする。立山産も1変種とし、var. *tateyamensis* と命名・記載した。タテヤマワブキの和名を提唱したい。

貴重な資料を提供された土肥行雄氏、ならびに富山市科学文化センター太田道人学芸員にお礼申し上げる。なお、本研究には平成4年度環境庁地球環境総合推進費試験研究委託費を用いた。