

A FEW NOMENCLATURAL CHANGES IN THE ALPINE  
FLORA OF HOKKAIDO, JAPAN<sup>1)</sup>

By

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(With 4 Text-figures)

In order to offer students of the alpine flora up-to-date taxonomically and nomenclaturally correct names of plants indigenous to the *regio alpina* of Hokkaido, the present author, while attempting to make taxonomic comparisons of the component taxa with corresponding taxa of foreign alpine regions on the world-wide basis, has indexed all the *alpicolae* reported to be met with in the alpine belt of that island (TOYOKUNI 1974-1978) with a few later additions and corrections (TOYOKUNI 1980).

In this paper, the writer publishes two nomenclatural changes and an explanation on the nomenclatural combination made by the writer with Dr. Shiro NOSAKA in 1977 as regards the alpine flora of Hokkaido.

1. *Lastrea limbosperma* (ALLIONI) HEYWOOD, Catal. Pl. Vasc. Hisp. 1 : 7. 1961. subsp. *fauriei* (CHRIST) TOYOKUNI, comb. et stat. nov.

Syn. -

*Nephrodium montanum* var. *Fauriei* CHRIST in Bull. Herb. Boiss. 4 : 671. 1896.

*Dryopteris oreopteris* var. *Fauriei* (CHRIST) MIYABE et KUDO in Trans. Sapporo

Nat. Hist. Soc. 6 : 119. 1916. *Thelypteris limbosperma* var. *fauriei* (CHRIST) TOYOKUNI in Jour. Fac. Liberal Arts, Shinshu Univ. Nat. Sci. 15 : 88, 1981, *in adnota.*

*T. limbosperma* subsp. *fauriei* (CHRIST) TOYOKUNI, mss.

*Dryopteris quelpaertensis* CHRIST in Acad. Géogr. Bot. Mans. 20 : 7. 1910. *Thely-*

*pteris quelpaertensis* (CHRIST) CHING in Bull. Fan. 6 : 328. 1936. *Ctenitis quelpa-*

*ertensis* (CHRIST) H. ITO in Nova Fl. Jap. 4 (Polypod. -Dryopter.) : 81. 1939. *Lastrea*

*quelpaertensis* (CHRIST) COPELAND, Gen. Fil. 139. 1947. *Oreopteris quelpaertensis*

(CHRIST) HOLUB in Folia Geobot. Phytotax. 4 : 48. 1969.

*Dryopteris kamtschatica* KOMAROV in Fedd. Repert. 13 : 84. 1914.

*D. Christiana* KODAMA ex KOIDZUMI in Bot. Mag. Tokyo 38 : 107. 1924.

There are three main opinions concerning the systematic position of the Pacific type of the *Lastrea limbosperma*-Complex : (1) HULTÉN (1941, 1964, 1969) finds no difference between the typical phase and the Pacific phase of this species, making

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no infraspecific subdivisions. (2) NAKAI (1934), H. ITO (1939), OHWI (1957), TAGAWA (1959), IWATSUKI (1965), HOLUB (1969), HOLTUM (1981) and others regard this fern in the Pacific region as a distinct good species, using the specific epithet *quelpaertensis* under various genera (*Dryopteris*, *Ctenitis*, *Thelypteris*, *Lastrea*, *Oreopteris*, etc.). (3) MIYABE and KUDO (1916, 1930), HULTÉN (1927), TOYOKUNI (1981), *et al.* look upon it as a variety of the typical phase.

Although HULTÉN (1964) describes "There seems, however, not to be any essential difference between the European and the Pacific populations.", the author wishes to propose here the view that the Pacific population should better be regarded as a geographical race from the typical phase, *Lastrea limbosperma* subsp. *limbosperma*. HOLTUM (1981) upheld HOLUB's new genus *Oreopteris* and enumerated three species, *O. limbosperma*, *O. quelpaertensis* and *O. elwesii* under the genus. In that work he keyed out the difference between *O. limbosperma* and *O. quelpaertensis* as follows :

Yellow glands present on all parts of the lower surface and usually abundant;

acicular hairs, not scales, on lower surface of costae.....*O. limbosperma*

Glands on lower surface very few, small, colourless; narrow pale scales present on lower surface of costae, rarely acicular hairs.....*O. quelpaertensis*

Density of hairs, scales, or glands on the lower surface of fronds or on costae is much variable both in the typical phase and in the Pacific phase. In general appearance, our plant is eglandulose and almost smooth on the lower surface of frond as compared with the typical European one, but sometimes individuals more or less glandular or rather densely glandular on the lower surface are met with in materials in our boundary. On the other hand, among European materials, individuals with almost eglandular fronds beneath are from time to time found. HULTÉN (1941) pointed out that in nearly all description of *L. limbosperma* (*Dryopteris oreopteris* in HULTÉN's paper) this plant was said to be glandular underneath, but that what were taken to be glands were in reality the spores of the plant, which adhered to the surface and formed a false indumentum. In the light of such findings, our materials are not separable as a distinct species, and the writer proposes to give it the rank of geographical subspecies of *L. limbosperma*. The author here upheld the genus name *Lastrea* in accordance with the opinion proposed by PICHISERMOLLI (1953, 1965, 1977), TAGAWA (1959) and RAUSCHERT (1982).

Figure 1 shows the habit of the typical *Lastrea limbosperma*.

2. *Bupleurum ranunculoides* LINNAEUS, Sp. Pl. (ed. 1) 1: 237. 1753.

var. *alpinum* (RUPRECHT) TOYOKUNI, stat. nov.

Syn. -

*Bupleurum triradiatum* ADAMS ex HOFFMANN, Gen. Umbell. 114, 1816, *pro parte*. - HIROE et CONSTANCE, Umbell. Jap. 55. 1958, *pro maj. parte*.

*B. triradiatum* var. *alpinum* RUPRECHT, Beitr. Pfl. Russ. Reich. 11: 26. 1859.



Fig. 1 Habit of *Lastrea limbosperma* subsp. *limbosperma* (between Index and le Lac Blanc, near Chamonix, France)

Figs. 2 and 3. Specimens of *Bupleurum ranunculoides* var. *ranunculoides* : 2. Specimens from the Alps, 3. Those from the Pyrenees (Herbarium, University of Zürich, Z)





Fig. 4 Habit of *Bupleurum ranunculoides* var. *alpinum* (Mt. Yupari, Prov. Ishikari, Hokkaido)

*B. ranunculoides* var. *triradiatum* f. *alpinum* (RUPRECHT) RUPRECHT ex WOLFF in Pflanzenreich Ht. **43** (IV 228) : 117. 1910.

*B. ranunculoides* subsp. *triradiatum* f. *alpinum* (RUPRECHT) TOYOKUNI in Jour. Asahikawa Univ. **4** : 175. 1976.

*B. ranunculoides* LINNAEUS-emend. WOLFF, l. c. 113. 1910, *pro min. parte.*—HIROE, Umbell. Asia **1** : 87. 1959, *pro maj. parte.*; Umbell. World 960. 1979, *pro min. parte.*

Recently, HIROE (1959, 1979) reunited the Eastern Asiatic entity with the typical European *B. ranunculoides* without making infraspecific taxa, and SHIMIZU (1982) followed this treatment. The author considers that it is right to unite *B. triradiatum* (type locality “ex fluvium Lenam Sibiriae”) with *B. ranunculoides* (type locality “in Helvetia & Pyrenaeis”). However, the Japanese entity is an Eastern Asiatic alpine form differing from the typical phase. The stems are much lower than those of the typical phase and 5–15cm in height; the radical leaves are in general not linear or linear-oblong, but broad spatulate and much shorter and the cauline ones are very broad, orbicular and often curved. HULTÉN (1929) already pointed out this fact. Based on these characteristics, this small *Bupleurum* found in the alpine belt of Hokkaido and on the island of Rebun had better be treated as a variety of *B. ranunculoides* based on RUPRECHT’s view (type locality “Kamtschka”) (RUPRECHT 1859).

Figures 2 and 3 show specimens of the typical form of *B. ranunculoides* collected from the Alps and the Pyrenees, respectively (the Herbarium, University of Zürich, Z), and Figure 4 shows *B. ranunculoides* var. *alpinum* on Mt. Yupari.

3. *Campanula dasyantha* MARSHALL-BIEBERSTEIN, Fl. Taur.-Cauc. **3** : 147. 1819. subsp. *chamissonis* (FEDOROV) TOYOKUNI et NOSAKA ex TOYOKUNI in Jour. Asahikawa Univ. **5** : 225. 1977.

Syn.—

*Campanula dasyantha* (non MARSHALL-BIEBERSTEIN) sensu CHAMISSO in Linnaea **4** : 37. 1829.—DE CANDOLLE, Prodr. **7** : 461. 1839.—LEDEBOUR, Fl. Ross. **2** : 877. 1845.—HULTÉN, Fl. Kamtchat. **4** : 149, t. 3 (a, b). 1930.; Fl. Alaska & Yuk. **9** : 1456. 1949.—TAKEDA in Bot. & Zool. **3** : 1226, f. 38. 1935.—TATEWAKI, Phyto-

geogr. Midd. Kuril. 212, 237, 258. 1933. ; in Acta Hort. Gotob. 21 : 111. 1957. – HARA, Enum. Spermat. Jap. 2 : 94. 1952. – OHWI, Fl. Jap. (ed. 1) 1129. 1953. – KITAMURA et MURATA et HORI, Col. III. Herb. Pl. Jap. (ed. 1) 1 : 96. 1957.

*C. pilosa*  $\beta$ . *dasyantha* (MARSHALL-BIEBERSTEIN) HERDER in Acta Hort. Petrop. 1 : 288. 1872, *excl. basion*.

*C. Chamissonis* FEDOROV in Fl. URSS 24 : 279, t. 15 (2). 1957. – OHWI, Fl. Jap. (ed. rev.) 1283. 1965. – SHIMIZU, New Alp. Fl. Jap. in Col. 1 : 56. 1982. *C. dasyantha* var. *chamissonis* (FEDOROV) TOYOKUNI et NOSAKA in Acta Phytotax. Geobot. 18 : 193. 1960.

In Hokkaido, two types of this *Campanula* appear to be met with: the one (Mt. Rishiri, Mt. Shari, Mts. Taisetsu, etc.) has orbicular to oblong leaves which abruptly narrow into short petioles and is identical with the typical form of FEDOROV's *C. Chamissonis*, while the other (Mt. Yupari, Mt. Tokushunbetsu, etc.) has oblanceolate to linear-oblanceolate basal leaves which gradually narrow towards the base and seems to be akin to *C. dasyantha*. Namely, the latter is an intermediate form connecting *C. Chamissonis* with *C. dasyantha*; it may be honoured with a new name after careful examination. HULTÉN (1967) already recognised this fact. The above is the reason why Dr. NOSAKA and the author made *C. Chamissonis* a subspecies of *C. dasyantha* in 1977.

Besides the three plants enumerated here, there are yet not a few plants that must be received further taxonomic examinations. *Anaphalis alpicola* must be called *A. lactea* in the view proposed by SHIMIZU (1982) and the writer agrees with this.

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### Summary

Concerning the alpine flora of Hokkaido, Japan, two new names, *Lastrea limbosperma* subsp. *fauriei* (CHRIST) TOYOKUNI and *Bupleurum ranunculoides* var. *alpinum* (RUPRECHT) TOYOKUNI were proposed, and an explanation was made for the combination *Campanula dasyantha* subsp. *chamissonis* (FEDOROV) TOYOKUNI et NOSAKA ex TOYOKUNI (1977).

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