

Masami MIZUSHIMA*: Notes on some Caryophyllaceous
plants from Sikkim Himalaya

(Critical studies on Japanese plants 10)**

水島正美*: シッキムヒマラヤ産ナデシコ科植物の記
(日本植物寸評 10)**

Out of 20 species of the Caryophyllaceae collected by the members of the Indo-Japanese Botanical Expedition to eastern India in 1960, the following 9 species are worthy of note taxonomically or nomenclaturally. All the specimens are kept in the herbarium of the University of Tokyo (TI).

I wish to express my gratitude to Prof. H. Hara of the University of Tokyo for his criticism and generosity in placing the specimens concerned at my disposal.

1) **Cerastium holosteoides** Fries, Nov. Fl. Succ. **4**: 52 (1817), s. amplific. Hylander, Nomencl. u. Syst. Stud. Nord. Gefässpfl. 150 (1945).

C. caespitosum Gilibert, Fl. Lithuan. Coll. **5**: 159 (1781), nom. illegit.

var. **hallaisanense** (Nakai) Mizushima, comb. nov.

C. vulgatum L. var. *hallaisanense* Nakai in Fedde. Repert. **13**: 268 (1914).

C. vulgatum L. var. 2. *triviale* (Link) Edgew. & Hook. f. in Hook. f., Fl. Brit. Ind. **1**: 228 (1874), quoad pl. Ind.

C. ianthes Williams in Bull. Herb. Boiss. **7**: 131 (1899)—Hara in Journ. Jap. Bot. **17**: 18 (1941).

C. caespitosum Gilib. var. *ianthes* (Will.) Hara, ibid. 19 (1941) pro syn.—Ohwi, Fl. Jap. 494 (1953).

Hab. Darjeeling, 2100 m alt. (Apr. 1, 1960); Palmajua-Rimbick (May 5, 1960); Rimbick, 2200 m alt. (May 5, 1960); Penlong La, Gangtok, 2000 m alt. (June 16, 1960).

Distr. N. e. India (from Nepal eastwards), China, Korea, Japan, the Bonins, the Ryukyus, and Formosa.

These specimens appear to be annual or very short-lived perennial. The bracts

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are never scarious-margined. Specimens from the warm-temperate regions of eastern Asia always show these characters, and therefore the population there is recognizable as a geographical race.

2) **Drymaria cordata** (L.) Willdenow ex Roemer et Schultes, Syst. Veg. 5: 406 (1819)—Mizushima in Journ. Jap. Bot. 32: 78 (1957)—Duke in Ann. Missouri Bot. Gard. 48: 251, fig. 18, A-C (1961).

subsp. **diandra** (Bl.) I. Duke, ibid. 253, fig. 18, D-E (1961).

D. diandra Blume, Bijdr. Fl. Nedrl. Ind. 62 (1825)—Mizushima, ibid. 79, fig. A (1957).

“*D. cordata* Will.”: Edgeworth & Hooker fil. in Hook. f., Fl. Brit. Ind. 1: 244 (1874), excl. syn. *Cerastium cordifolium* Roxb.

Hab. Rayang, 250 m alt. (Apr. 20, 1960); Yoksam, 1700 m alt. (May 17, 1960, no. 611).

Distr. Throughout tropical and subtropical India and Ceylon, Indo-China, Malaysia, s. & w. China, Formosa, the Ryukyus; n.e. Australia, trop. Africa.

Subsp. *diandra* is separated from subsp. *cordata* in its herbaceous, densely glandular-papillate, opaque, tricarinate sepals; while the Pacific population of subsp. *cordata* has nearly glabrous sepals scarious and dully lustrous especially in the fruiting period.

Though Oceania and the Hawaiian Islands are included in the range of subsp. *diandra* by Duke in his Revision of *Drymaria* (1961), H. St. John kindly informed me that the specimens in the herbarium of the Bishop Museum at Honolulu from these areas do not belong to the *diandra*-type but to *D. cordata* var. *pacifica* Mizush. (l. c. 78, 1957).

3) **Drymaria villosa** Chamisso et Schlechtendal in Linnaea 5: 232 (1830).

subsp. **villosa**: Duke in Ann. Missouri Bot. Gard. 48: 226, fig. 11, D-E (1961).

D. stylosa Backer in Bull. Jard. Bot. Buitenz. 2 (12): 15 (1913).

Hab. Darjeeling, 2100 m alt. (Apr. 1, 1960); Happy Valley, 1900 m alt. (Apr. 10, 1960); Kurseong, 1500 m alt. (Apr. 12, 1960); Takdha, 1600 m alt. (Apr. 18, 1960, no. 1975); Rayang, 250 m alt. (Apr. 20, 1960); Siliguri-Kurseong (Apr. 29, 1960); Maneybhanjan-Batasssi, 2000-2100 m alt. (May 1, 1960); Gangtok, 1700 m alt. (June 13, 1960).

Distr. C. America, south along the pacific coast of S. America to Peru; introduced widely in Indonesia, and perhaps recently in India.

This species is new to the Indian flora and is marked by rather hirsute indu-

mentum in the vegetative parts. In the specimens cited above, the sepals are glabrous to thinly villous with nearly glandular, uniseriate, curly hairs. Since the hairs are predominantly villous, according to J. Duke, in the Mexican population, the Indian plant is introduced with high probability from Indonesia. In this case, the introduction can be later than the last decades of the 19th century, because "*D. cordata*" cited in the Fl. Brit. India **1**: 244 (1874) is clearly described to be glabrous.

4) ***Polycarpon indicum*** (Retz.) Merrill in Philipp. Journ. Sci. **10**: 302 (1915)-Masamune, Fl. Kainan. 77 (1944)—How et al., Fl. Canton (Kuang-chou) 128 (1956).

Loeflingia indica Retzius, Obs. Bot. **4**: 8 (1786).

Hapalosia Loeflingiae Wallich, Cat. 6962 ex Wight et Arnott, Prodr. Fl. Ind. Orient. 358 (1834).

Polycarpon Loeflingiae (Wall. ex Wight et Arn.) Benth. et Hooker fil., Gen. Pl. **1**: 153 (1862)—Edgeworth & Hooker fil. in Hook. f., Fl. Brit. Ind. **1**: 245 (1874)—Pax u. Hoffmann in Engl. u. Pr., Nat. Pfl.-fam. 2 Aufl. **16**c: 308 (1934) in textu et nota.

Hapalosia Loeflingiae (Wall.) Edgew. et Hook. f., l. c. (1874), nec. Ascherson et Graebner ac Pax et Hoffm.

Hab. Rayang, 250 m alt. (Apr. 20, 1960).

Distr. Throughout the hotter parts of India, tropical Asia, and Africa.

Either Edgeworth & Hooker fil. or Merrill wrongly cited the page of basionym appearing in Retzius' *Observationes Botanicae* **4** as p. 38, it should be corrected as the above. Besides the nomenclature is so intricated because of the various magnitude of meanings that it is safe to adopt the name *Polycarpon indicum* (Retz.) Merrill apparently based on the Indian plant. Since *P. depressum* (L.) Rohrbach (1872) based on *Pharneckum depressum* L. (1771), an east Indian plant, is antedated by *Polycarpon depressum* Nuttall (1838) named to a Californian plant, *P. prostratum* (Forsk.) Ascherson et Schweinfurth (1889) should be adopted, if *Alsine prostrata* Forsk. (1775) is the same as Retzius' plant.

5) ***Pseudostellaria cashmiriana*** Schäftlein in Phyt. **7**: 195 (1957).

'*Stellaria bulbosa* Wulfen': Edgeworth & Hooker fil. in Hook. f., Fl. Brit. Ind. **1**: 231 (1874), pro parte et auctt. fl. Ind. bor.

S. Davidi (Franch.) Hemsley var. *himalaica* Franchet in Bull. Soc. Bot. France **33**: 434 (1886), pro parte; Pl. Delavay. 100 (1889), pro parte.

Pseudostellaria heterantha (Maxim.) Pax var. *himalaica* Ohwi in Jap. Journ. Bot. **9**: 102 (1937).

Hab. Phalut, 3000–3500 m alt. (June 5, 1960, no. 666); Phalut-Sandakphu, 3500 m alt. (June 6, 1960, no. 672).

Distr. N. India (Kashmir and Sikkim!), Afghanistan.

These specimens are hardly distinguished from the Japanese specimens of *P. heterantha* in the terrestrial parts, but the subterranean part of the stem is quite different. It is creeping and bears at nodes small turnip-shaped roots, while *P. heterantha* has no creeping subterranean stem but nearly always a solitary, rather elongate, tuberous root. Thus the present collection belongs doubtlessly to *P. cashmiriana* allied to the southeastern European *P. europaea* Schäftlein (= *Stellaria bulbosa* Wulf.). Since Schäftlein stated clearly the occurrence of the true *P. heterantha* in Sikkim (op. cit. 193, 1957), the geographical area of both species may be overlapped in this area.

6) ***Sagina japonica*** (Sw.) Ohwi in Journ. Jap. Bot. **13**: 438 (1937), excl. syn. A. Gray; in Act. Phytotax. Geobot. **11**: 252 (1942), in textu—Mizushima in Journ. Jap. Bot. **35**: 257 (1960).

Spergula japonica Swartz in Gesellsch. Nat. Freunde Berl. Neue Schrift **3**: 164, t. 1, fig. 2 (1801).

Hab. Darjeeling, 2100 m alt. (Apr. 1, 1960); Senchal-Takdah, 1700–2400 m alt. (Apr. 17, 1960); Kalimpong, 1300 m alt. (Apr. 23, 1960); Gangtok, 1650 m alt. (Apr. 26, 1960); Palmajue, 2300 m alt. (May 4, 1960); Chiabangan-Dentam (May 11, 1960); Pamionchi-Tingling Bridge, 1000–2000 m alt. (May 15, 1960); Penlong La, Gangtok 2000 m alt. (June 16, 1960).

Distr. Temperate e. Asia; the s. Kuriles, s. Saghalien, Ussuri, Korea, China (w. to Tibet), n.e. India (Sikkim and e. Assam), Formosa, the Ryukyus, Japan, and the Bonins.

S. japonica, an anthropochorous plant, is distributed widely in China west to eastern Tibet. This fact suggests its introduction to Sikkim via eastern Tibet.

7) ***Sagina procumbens*** Linnaeus, Sp. Pl. ed. 1, **1**: 128 (1753), excl. var.—Steinberg in Fl. URSS **6**: 474 (1936)—Mizushima in Journ. Jap. Bot. **35**: 193 (1960).

Hab. Darjeeling, 2100 m alt. (Apr. 1, 1960).

Distr. Subcosmopolitan.

Inasmuch as *S. procumbens* in the sense of Flora of British India **1**: 242 (1874) is corrected to be *S. saginoides* (L.) Karsten, most reports of the former name

from India need confirmation. Since this plant grows, according to the collectors, on the pavement, it may be considered to be an alien weed recently introduced.

8) ***Stellaria reticulivena*** Hayata, Icon. Pl. Formos. **7**: 1, fig. 1 (1918).

S. micrantha Hayata, Mater. Fl. Formosa 36 (1911); Icon Pl. Formos. **1**: 72, pl. 14 (1911), non Spruce ex Rohrbach 1871-73.

Hab. Batassi-Palmajua, 2300-2600 m alt. (May 3, 1960, no. 74); Chiabanjan-Dentam (May 11, 1960); Yoksam-Bakkim, 1700-2200 m alt. (May 18, 1960).

Distr. Formosa (subalpine), Sikkim!

The specimen from between Batassi and Palmajua is very thinly pubescent with curly hairs: the stems are shining below and pubescent upwards, and the leaves are also pubescent on the midrib beneath and ciliate on crisped margins: the sepals are 3 mm long and larger than those of the other two specimens having the sepals 2 mm long and glabrous vegetative parts.

This is a new record for the flora of India.

9) ***Stellaria vestita*** Kurz in Journ. Bot. **11**: 194 (1873).

S. saxatilis Buchanan-Hamilton ex D. Don, Prodr. Fl. Nep. 215 (1825)—Edgeworth & Hooker fil. in Hook, f., Fl. Brit. Ind. **1**: 232 (1874)—Mizushima in Journ. Jap. Bot. **32**: 251 (1957), non Scop. 1772.

S. laxa Merrill in Philipp. Gov. Lab. Bur. Bull. **29**: 12 (1905), nec F. Behm. 1887 nec Muschler 1911.

S. stellato-pilosa Hayata, Fl. Mont. Formos. 58, pl. 2 (1908); Mater. Fl. Formosa 37 (1911); Icon. Pl. Formos. **1**: 71 (1911).

Hab. Kurseong, 1500 m alt. (Apr. 12, 1960).

Distr. N. & s. India (Nepal, Sikkim, Bhutan, Assam, and w. Madras), w. & c. China (Szechwan, Yunnan, and Hupeh), Indo-China, Java, Philippines, and Formosa.

The well established name, *S. saxatilis* Buch.-Ham. ex D. Don, must be rejected because of the presence of Scopoli's earlier homonym (1772), and *S. vestita* Kurz is thus resurrected. Judging from Kurz's description, his plant seems to be a larger grown, thinly stellate-tomentose form, while the nomenclaturally typical form of *S. saxatilis* is smaller and densely stellate-tomentose.

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東京大学インド植物調査隊が持ち帰った標本の中にナデシコ科植物が 20 種ある。其の中の 9 種に就いての知見を述べた。

1) ミミナグサ 日本を含む東亜の暖温帯に産する個体群は歐洲の母種よりも短命(1年生が多い)と見られ、包葉は全く草質で膜質縁ではない。これを北半球に於ける地方的変種と考え学名を整理した。中間形の存在は原教授が既に 1941 年に記しておられる。

2) ヤンバルハコベと 3) *Drymaria villosa* Cham. et Schlecht. インドで今日まで *D. cordata* Willd. として扱われて来た植物は上記の 2 種を含むことが分った。但し後者は恐らくインドネシア地域を経て 19 世紀末尾の頃に移入されたものであろう。

4) *Polycarpon indicum* Merr. 従来 *P. Loeflingiae* Benth. et Hook. f. と呼ばれ、旧熱帯広布種と目されて来た。然し少くともインド産のものに関する限り *P. indicum* Merr. の学名を当てて置くのが良い。新熱帯にも似た種類を産するので、全熱帯地方からの資料を集めての再検を必要とする。

5) *Pseudostellaria cashmiriana* Schaeftl. ワチガイソウに似た本種はカシュミール以東に未報告であったが、今回シッキム産を報告する。然しシッキムにワチガイソウがあるとされているので、両者は此の地域で重複分布をすることにならう。

6) ツメクサ シッキムに広く分布するらしい本種はチベット東部から移入したものであろう。アッサム東部にも産するがこれは雲南、四川省の辺から入ったと想像する。

7) トヨハラツメクサ 筆者の 1960 年の発表に用いたインド北部高地産のものはすべてチシマツメクサであった。然しダージーリン市内での採集品に真のトヨハラツメクサがあった。街路の敷石のすき間に生えていた由で、比較的近時の移入品であらう。

8) ヒメコハコベ(一名アミバハコベ) 半世紀の間台湾特産と考えられて来た本種がシッキムに見出された。採集品には 2 つの形を区別出来るが、これは恐らく変異の両端を示すものかと思う。

9) ナガサワハコベ 長年使われて来た *S. saxatilis* Buch.-Ham. (1825年)の名には Scopoli の先行名(1772年)があるので、*S. vestita* Kurz (1873年)を起用する。これは大きく生育した少毛形に対する名であり、*S. saxatilis* は小形の密毛形に対する名である。

□Dodd, J. D. : **Form and function in plants**, pp. 233. The Iowa State University Press, Iowa, U.S.A. (1962) \$6.50. アイオワ州立大学で植物形態学を講義している淡水藻類の著者が 20 年の経験を生かした教科書。緑藻からコケを経て高等植物という形態進化を基礎にした一貫性で一般植物学のすじをわかり易くさせようと試み成功している。「Green cell」でクラミドモナスから入り、細胞の構造をのべ、「生殖」で再びクラミドモナスへもどって配偶体上に次第に座を占める孢子体という見方で高等植物へ及ぼし、種子の発芽で終る。次の「減数分裂、遺伝及進化」は短かいが、次の「陸上の生物」で瓦斯交換とそれに伴う構造の進化として原始高等植物に入り、「植物体の生長と分化」で高等植物の内外の器官と構造を論ずる。そのあとつけ足し的に菌類の形態を添え、最後に Tippo と Bold との分類系を比較して終る。写真が美しいしそれも発生という眼で用意されているのはよい。(前川文夫)