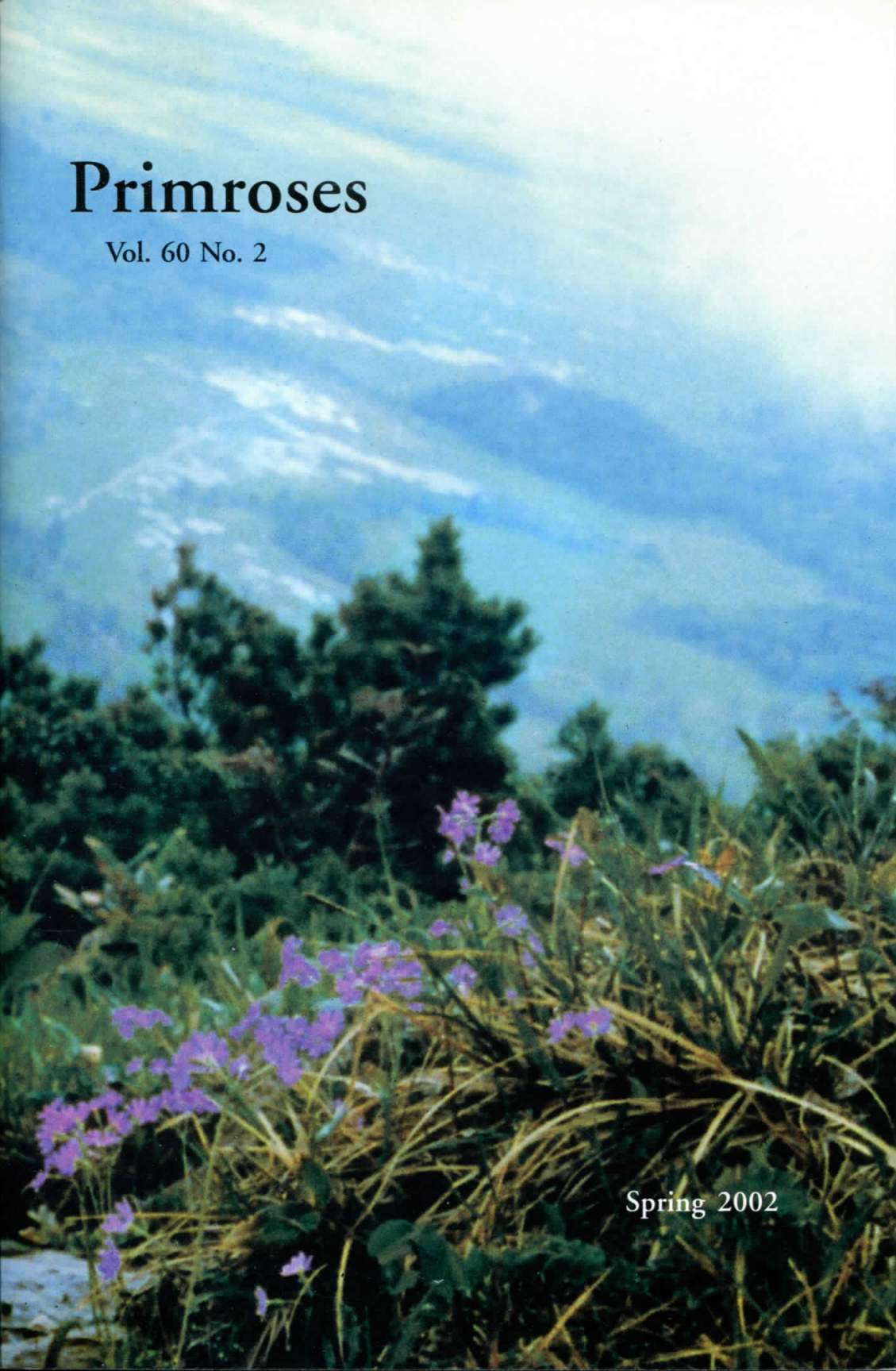


Primroses

Vol. 60 No. 2



Spring 2002

Primroses

Quarterly of the
American Primrose Society
Volume 60, Number 2, Spring 2002

The purpose of this society is to bring the people interested in *Primula* together in an organization to increase the general knowledge of and interest in the collecting, growing, breeding, showing and using in the landscape and garden the genus *Primula* in all its forms and to serve as a clearing house for collecting and disseminating information about *Primula*.

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Editors Note: All photos on pages 17, 18, 19, 20, 21, 22, and 23 are courtesy of the Matsumoto Sakurasoh & Primula Club. This article and photos are part of a manuscript gifted to the APS by the Matsumoto Sakurasoh & Primula Club at the 1992 International Primula Symposium held in Portland, Oregon. We again thank them for their generosity and are grateful that technology now allows us to share their efforts with our members and the world.

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Cover Photo: A View from Mt. Shibutsu, Japan. Photo Matsumoto Sakurasoh & Primula Club

OFFICERS & BOARD OF DIRECTORS

Ed Buyarski, President
P.O. Box 33077
Juneau, AK 99803-3077
(907) 789-2299
amprimsoc@hotmail.com

Cheri Fluck, Vice President
17275 Point Lena Loop Rd.
Juneau, AK 99801
(907) 789-0595

Robert Tonkin, Secretary
3155 Pioneer Ave.
Juneau, Alaska 99801
(907) 463-1554
primroses@gci.net

Julia Haldorson, Treasurer
P.O. Box 210913
Auke Bay, Alaska 99821
(907) 789-5860
julia-haldorson@ak.net

DIRECTORS

Through 2004
Pam Eveleigh
6520 Law Drive
Calgary, Alberta T3E 6A1
(403) 240-4417
eveleigh@shaw.ca

Elaine Malloy
P.O. Box 38
South Salem, NY 10590
elaineprim@aol.com

Through 2003
Terry Mitchell
17 Fearnley Dr.
Ossett, West Yorkshire WF5-9EU
England
(144) 1924-261-698
terry@auriculas17.freemove.co.uk

Judith C. Sellers
R.D.3 Box 233A
Unadilla, New York 13849
(607)369-9237
jsellers@mkl.com

Through 2002
Dr. Roger Eichman
223 Griffith Point Rd.
Nordland, WA 98358
(360) 379-9566
eichmanrogerdr@webtv.com

Ruby Chong
6870 Union St.
Burnaby BC V5B 1X5, Canada
(604) 298-8384
rchong@axion.net

Primroses

EDITOR/GRAPHIC DESIGN

Robert Tonkin
3155 Pioneer Ave.
Juneau, AK 99801
(907) 463-1554
primroses@gci.net

EDITORIAL COMMITTEE

Judy Sellers
Pam Eveleigh
Ed Buyarski

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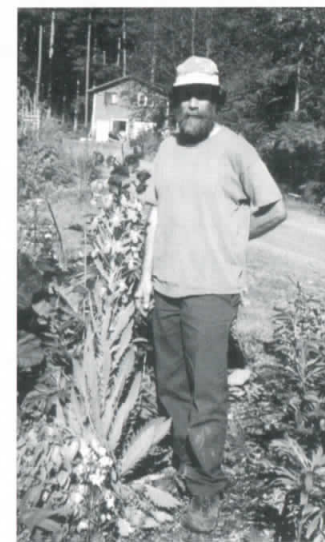
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Presidents Message

Greetings primrose lovers, is it Spring yet? We're having lots of sunshine in Juneau, Alaska as I write this just before the Vernal Equinox but it's still in the teens and 20's at night with (luckily) snow insulating our plants. I've been spreading wood ashes over my garden beds to hurry the melting process as I'm impatient to see the

new sprouts and survivors of winter. How about you; have you had enough snow and rain to get you ready for a new season of digging and planting, growing and showing? There are hundreds (thousands?) of seedlings under the lights that'll need new homes this spring and summer; do you have homes lined up for them yet?

Next year, we may not have nearly so many seedlings, if the USDA strictly enforces its existing seed and plant import regulations. They say that they will be requiring Phytosanitary Certificates for all seeds imported to the US. This may seriously affect many of those plant societies that we belong to that have seed exchanges and those members who send seeds from other countries. If you feel that these regulations now being enforced are an infringement on International Trade, may force seed companies out of business, or unduly restrict botanic gardens and international plant societies, please contact:

Michael Lidsky, APHIS-PPQ, 4700 River Road,
Unit 141, Riverdale, MD 20737.

An Invitation to The World of Japanese Primulas

In commemoration of "Primula Worldwide", the 1992 International Primula
Symposium

April 10-12, 1992 Portland, Oregon
by

K. Oogaki, T. Torii and K. Hara

Translation by K. Hara and M. Yanagisawa

Editor: K. Hara

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Yoshikawa Koya 647-51
Matsumoto, Nagano, 399 Japan

INTRODUCTION

Never have many comprehensive books or monographs on primulas of Japan been published in Japan, much less in other countries of the world. Neither Japanese nor anyone in the English speaking countries has ever published the kind of books as this in English, which is a widely used language in the world. The language barrier is so big between the two languages that large parts of various information on Japanese primulas in general that was accumulated for a long period of time has been left internationally unopened and remains only within Japan.

Here on this particular occasion of the International Primula Symposium 1992, we will unveil the mysterious world of Japanese primulas and illustrate it in three chapters as comprehensively as possible, using more than 130 color plates and a lot of line drawings as well as black and white photos; Chapter I: Wild Primulas in Japan, Chapter II: Sakurasoh and Chapter III: Primula Hybrids and Cultivars.

This English version being completed solely by us Japanese, we are afraid there are a considerable number of misuses of terms, incorrect expressions and grammatical errors to be found. Leaving this disadvantage aside, however, we are sure that a debut of this unique publication of ours will make not a little contribution to primula lovers and people in the world who are botanically and culturally interested in Japanese primulas, and that is what we believe of great significance and worth letting this known to the world.

K. Hara, Matsumoto, Nagano, Japan
and M. Yanagisawa, Ichikawa, Chiba, Japan April 1992

Primula nipponica

Japanese name: "Hinazakura" Meaning: Tiny, lovely primrose like a doll. (from Nippon=Japan)

DISTRIBUTION: On the very snowy mountains in the Tohoku District of Honshu. Mostly on the mountains included in the Ohu mountain range running in the center of the Tohoku District like a spine. Mt. Hakkohda, Mt. Iwate, Mt. Yakeyama, Mountains of Hachimantai, Mt. Kurikoma, Mt. Zaoh, Mt. Azuma, and others on the mountains on the side of Japan Sea. The Asahi Mountains, Mt. Gassan, and Mt. Chokai on the side of Japan Sea. Endemic to Japan.

ALTITUDINAL RANGE: 1300-2000m.

HABITAT: Occurring in snowbeds and in damp meadows up in the sub alpine zone. The environments of *P. nipponica* and *cuneifolia* are quite similar, but they never occur in the same habitat together.

LEAF: Spatulate and obovate in shape, 2-4cm. long, 5-15mm. wide; slightly fleshy; with no hair; tip rounded but serrate with 5-9 teeth, side margins entire; blade tapering to a petiole cuneately; efarinose

PEDUNCLE: 10-15cm. tall; the upper part covered in fine glandular hairs

UMBEL: Spreading; 1-8 flowered

BRACTS: Linear; 2-5mm. long; covered in small glandular hairs

PEDICELS: 5-15mm. long; lengthening to 1.5-2cm. in fruit

CALYX: Campanulate; 4mm. long; 5-ridged; cut to the middle into obtuse lobes; minutely glandular at the base

COROLLA: White; about 1cm.; limb shallow funnel shaped; lobes emarginate; with a yellow eye

CAPSULE: globose; 4mm. long

Primula cuneifolia

Japanese name: "Ezo Kozakura" Meaning: Small primrose native to Hokkaido

DISTRIBUTION: Only in Hokkaido in Japan: the Chuoh heights in the center of Hokkaido including Mt. Daisetsu: and Mt. Rishiri, Mt. Shari, Mt. Rausu, Mt. Shokanbetsu; On the Chishima islands (Kuril Islands), from Eastern Siberia, Kamtchatka, the Aleutian Islands, the coasts of Western and Southern Alaska, and reaching a part of Canada.

ALTITUDINAL RANGE: As low as the coastal regions very close to the sea shore in the Sub arctic regions like Alaska, up to 2000m. On high mountains in Hokkaido

HABITAT: Occurring mainly in snow beds, in the upper areas of the sub alpine zone in Hokkaido in an altitude of 1200-2200m. on mountains in very snowy regions where a lot of snow remains unmelted even in summer

RHIZOME: Very short and relatively stout

LEAF: Spatulate and obovate; blade 1.5 - 4.5 cm. long, 5 - 15mm. wide: relatively fleshy: minutely glandular at the margin: round tipped: coarsely dentate in the upper half; tapering gradually into the petiole in the shape of a wedge.

PEDUNCLE: 2-15cm. long: minutely glandular

UMBEL: Spreading; 1-6 flowered

BRACTS: Linear; 3-6mm. long; covered in fine glandular hairs.

PEDICELS: 3-10mm. long

CALYX: Campanulate; 4-6mm. long: deeply 5-ridged: cut to 1/2-1/3 into lanceolate lobes

COROLLA: Rose; heteromorphic: limb 2-2.5cm. in diameter, flat; corolla tube 6-8mm. long; lobes emarginate, triangular, about 1cm. long; with a yellow eye: minutely glandular

CAPSULE: Globular-ovoid; 4mm. long

var. hakusanensis

P.c.var. heterodonta (French.) Makino, *P.c.var. tanigawaensis* Tatew.

Japanese name: "Hakusan Kozakura." Meaning: Small primrose native to Mt. Hakusan

DISTRIBUTION: Only in Honshu; Mt. Hakusan in the Ryohaku mountains; Mt. Shirouma, Mt. Tateyama, Mt. Asahi, Mt. Nagatsuga in the northern part of the Northern Japanese Alps; Mt. Hiuchi, Mt. Yakeyama, Mt. Amakazari in the Kubiki mountains; Mt. Iwasuge on the Shiga heights; Mt. Tanigawa; Mt. Shibutsu, Mt. Aizu-koma in the Echigo mountain range; Mt. Dainichi in the Iide mountains; Mt. Iwaki, Aomori Pref; on very snowy mountains on the side of Japan Sea. ALTITUDINAL RANGE: 2000-2900m.

LEAF: Thin textured; blade 1.5-5cm. long, 7-25mm. wide; somewhat double serrate at the margin with 9-25 lobes

PEDUNCLE: 5-15cm. tall

REMARKS: This primula has been long known because it grows in masses on Mt. Hakusan, which is the object of popular worship as a holy mountain. It is a little larger than *P. cuneifolia var. cuneifolia*. The regional form indigenous to Mt. Iwaki is sometimes classified as *P.c. var. heterodonta*.

Primula jesoana

(From jeso=Ezo=an old name for Hokkaido)

P. yesomontana Nakai et Kitagawa, *P. jesoana var. glabra* Takeda et Hara

Japanese name: "Oosakurasoh." Meaning: Large primrose

DISTRIBUTION: Mostly on the very snowy mountains. In Honshu, Mt. Hakusan, mountains of the Northern, Southern and Central Japanese Alps, the Sado island in Japan Sea, the Echigo mountains, the Iide mountains, Asahi mountains, the Oga peninsula Mt. Iwaki, Mt. Hakkohda. In Hokkaido, the Oshima

peninsula, the Iburi region. Korea and China.

ALTITUDINAL RANGE: 1500-2300m. in the central Honshu, 300 -1400m. in the Tohoku district and Hokkaido.

HABITAT: Occurring in somewhat damp deciduous forests of the sub alpine zone, especially in open woodland and shady slopes by streams and along snow valleys.

RHIZOME: Short and extending horizontally

LEAF: Petiole 10-18cm.; glabrous or thinly hairy; blade orbicular, deeply cordate at the base and shallowly lobed; 4-11cm. wide; 7-9 palmate veins impressed above; 7-9 lobed at the margin; finely, sparsely hairy upper surface, glabrous lower; glandular hair covering on the veins

PEDUNCLE: Single, 13-40cm. tall; upper half covered with fine hairs

UMBEL: Spreading with 2-6 flowers

BRACTS: Linear; 5-9mm. long; obtuse at the tips; sparsely covered with glandular hairs

PEDICELS: 3-8mm. long; lengthening to 1-2cm. in fruit; densely covered with glandular hair

CALYX: Campanulate; 6-8mm. long; irregularly cut to 1/2-3/4 into narrow lanceolate lobes; each lobe truncate or obtuse lobes; covered with glandular hairs

COROLLA: Rose; heteromorphic; limb flat; emarginate lobes cut to 1/3; with a yellow eye

CAPSULE: 7-12mm. long; a little longer than the calyx

var. pubescens

(Takeda) Takeda et Hara (hairy) *P. yesomontana var. nudiuscula*

Japanese name: "Ezo Oosakurasoh." Meaning: Large primrose native to Ezo, an old name for Hokkaido

DISTRIBUTION: Endemic to Hokkaido. The Teshio mountains, the Mashike mountains, the Chuoh heights in the center of Hokkaido, the Hidaka mountains, the Kitami mountains, the Kushiro mountains and the Nemuro region. The entire plant is somewhat larger than *P. j. var. jesoana*. The lower leaf, petiole and scape are all covered with crisped hairs. But the density varies from habitat to habitat, and even an intermediate type between the two sometimes occurs.

Primula kisoana

(From the Kiso region)

Japanese name: "Kakkosoh." Meaning: Unknown (some say that the name represents its flower color; red being superior, others say that it implies "Kakko", the drum used for the Japanese court music "Gagaku".)

DISTRIBUTION: Only on mountains of Paleozonic Strata. In Honshu; Mt. Narukami of the Ashio mountains, the Kiso area of Central Highland (uncertain and unidentified at present). On the Shikoku island; the Shikoku mountains, particularly, the area on the side of and closer to Setonai Kai, the Inland Sea. Endemic to Japan

ALTITUDINAL RANGE: 500-1000m.

HABITAT: Occurring on forest floors of somewhat damp humus soil in bright deciduous forests and open woodland.

LEAF: Orbicular-reniform; round at the tip; somewhat thick textured; deeply cordate at the base; palmate and shallowly lobed; margins unevenly dentate; blade (7cm. in diameter, lengthening to 5-10cm. after flowering: upper leaf surface covered with short pubescence, and petiole and lower leaf surface densely covered with long pubescence.

PEDUNCLE: 10-20cm long; densely covered with pubescence

UMBEL: Spreading; verticillate

PEDICELS: Densely covered with pubescence

CALYX: 1-1.2cm. long

COROLLA: Rose, heteromorphic; flat limb 2-3cm. in diameter; with a yellow eye

CAPSULE: Ovoid-globular; 5mm. long; longer than the calyx

OTHER: This is a beautiful primula which has been long known since the Edo era, but its distribution is extremely limited.

Primula sieboldii

(Commem. von Siebold, a German doctor)

Japanese name: "Sakurasoh." Meaning: Herb bearing flowers in the shape of "Sakura" cherry blossoms

DISTRIBUTION: From Hokkaido, through Honshu, down south to Kyushu. Excluding the Shikoku Island. Not in very snowy areas. Also in northeastern China, Korea and Siberia.

ALTITUDINAL RANGE: 400-1500m. around 10m. only in the Kanto district.

HABITAT: Occurring in meadows on mountains, on the forest borders and in open woodland and slopes by rivers and streams, in flood plains and low swampy places.

RHIZOME: Short and extending horizontally

LEAF: Obovate, or triangularly obovate; blade 4-10cm. long, 3-6cm. wide; the

margin regularly lobed; irregularly dentate and shallowly lobed; petiole 4-12cm.

Long petiole and the lower leaf surface covered with white long pubescence

PEDUNCLE: 15-40cm. long; pubescent

UMBEL: Spreading; bearing 5-15 flowers

BRACTS: Linear-lanceolate; 4-10mm. long

PEDICELS: 5-40mm. long; somewhat erect

CALYX: Campanulate; 8-10mm. long; divided into lanceolate lobes; funnel shaped in fruit

COROLLA: Rose; heteromorphic; limb 1-2cm. in diameter; with deeply emarginated lobes; with a white eye; corolla tube 9-13mm. long

CAPSULE: Conoid-spheroidal; 5mm. in diameter

OTHER: This is a typical Japanese primula with a long history of cultivation. A great many beautiful varieties have been raised from it to date.

Primula hidakana

(From Hidaka, Hokkaido)

Japanese name: "Hidaka Iwazakura." Meaning: Primrose growing on rock from the Hidaka region, Hokkaido

DISTRIBUTION: Mt. Apoi and other mountains in southern part of the Hidaka mountain range and Date city in the Iburi region. Endemic to Japan

HABITAT: Occurring on serpentine and peridotite rocks of the sub alpine zone, in rock fissures, on rock cliffs and ledges, in gritty area

RHIZOME: Long and extending horizontally; woody; covered with bud scale

LEAF: Petiole 2-5cm. lengthening to 15cm. In fruit; the upper leaf surface sparsely crispy hairs; blade obovate-cordate and hard textured, 2-5.5cm. wide; 7-9 palmate veins impressed above; 7-9 lobed at the margin; acute at the tips, each

tip with 1-2 acute teeth on both sides, sparsely covered with fine hairs

PEDUNCLE: 4-12cm. long; hairless or only upper portion covered with crispy hairs

UMBEL: Bearing single flower

BRACTS: 4-8mm. long; ciliate

PEDICELS: 1-2cm. long

CALYX: Cylindrical; 6-7mm. long; cut to 2/3 into incised lobes

COROLLA: Rose; heteromorphic; limb 2-2.5cm. in diameter; opening simultaneously with unfolding of leaves; with a yellow eye

CAPSULE: Cylindrical; 13mm. long; twice the length of the calyx

OTHER: This is a quite rare primula. Some scientists classify it in another section of their own "Section Takedana".

var. kamuiana

(Miyabe et Tatew.) Hara (From Mt. Kamuiekuuchikaushi, Hokkaido)

Japanese name: "Kamui Kozakura." Meaning: Small primrose native to Mt. Kamuiekuuchikaushi

DISTRIBUTION: Only in Hokkaido; Mt. Kamui in the Hidaka mountain range; mountains of the Ishikari mountains. Endemic to Japan

HABITAT: Occurring in dry stony alpine meadows.

LEAF: Pubescent on petiole and the lower leaf surface

PEDUNCLE: Very pubescent

COROLLA: Lobes covered with fine hairs at margins

Primula reinii

Japanese name: "Ko Iwazakura." Meaning: Small primrose growing on rock. (Commen. Rein, a botanist)

DISTRIBUTION: The Domine mountains on the Kii peninsula, Mt. Hakone, Mt. Ashitaka, The Tanzawa mountains, Mt. Arafune, the Mikura island of the Izu islands. Mainly on volcanoes on the Pacific side in the central Honshu. Endemic to Japan.

ALTITUDINAL RANGE: 800-1500m.

HABITAT: Occurring on moist rocks and mossy rocks. Sometime cohabiting with plants of the genus Gramineae

RHIZOME: Short

LEAF: Petiole 1.5-12cm.; blade reniform or orbicular and cordate at the base; 1-3cm. wide, lengthening to 5-7cm. in fruit; 7-9 lobed at the margin, each lobe dentated; the upper leaf surface densely covered with short hairs, which falling off after anthesis; the lower and petiole covered with long hairs, which remaining after flowering.

PEDUNCLE: 5-10cm. tall; covered with crispy hairs

UMBEL: 1-5 flowered

BRACTS: Linear; 5-7mm. long; glabrous

PEDICELS: 1.2-2cm. long; glabrous or covered with crispy hairs

CALYX: Long paniculate; 5-8mm. long; 5-ridged, cut into lanceolate lobes, obtuse at tips.

COROLLA: Pale rose; heteromorphic; limb 2-3cm. in diameter; opening before unfolding of leaves; limb shallow funnel-shaped, the lobes emarginate, each about 1cm. long; with a yellow eye

CAPSULE: Ellipsoid; 5-15mm. long; almost as long as, or a little longer than the calyx; slightly curved at the tip to one side

var. kitadakensis

(Hara) Ohwi (From Nt. Kitadake) *P. kitadakensis* Hara

Japanese name: "Kumoi Kozakura" Meaning: Small primrose native to cloud-touching high peak

DISTRIBUTION: Only in Honshu; the Southern Japanese Alps, Mt. Yatsugatake, the Chichibu mountains. Endemic to Japan.

ALTITUDINAL RANGE: 1300-2500m.

LEAF: 5-7 lobed deeply at the margin; the upper surface less hairy than *P. r. var. reinii*;

COROLLA: limb a little smaller than *P. r. var. reinii*; 1.6-2cm. in diameter

CALYX: 6-7mm. long

CAPSULE: 8-9mm. long

var. myogiensis

Japanese name: "Myohgi Iwazakura" Meaning: Primrose growing on rocks of Mt. Myohgi

DISTRIBUTION: Only on Honshu; Mt. Myohgi, Gunma Pref., Karuisawa, Nagano Pref. Endemic to Japan

LEAF: blade round and cordate at the base; 2-5cm. in diameter; almost entire; hairs on the upper surface becoming conspicuous in bloom

COROLLA: limb 1.5-2.5cm. in diameter

CALYX: 5-6mm. long

CAPSULE: 1 cm. long; twice the length of the calyx

Primula tosaensis

Japanese name: "Iwazakura". Meaning: Primrose growing on rock

DISTRIBUTION: The southern part of the Ryohaku Mountains, the Suzuka mountain range and the Kii mountains, in Honshu. The Shikoku Mountains on the Shikoku Island. The Kyushu Mountains in Kyushu. Endemic to Japan.

ALTITUDINAL RANGE: 300m or higher

HABITAT: Occurring mostly in limestone area, where soils and humus are thickly accumulated, in deciduous forests by streams, in rock fissures, on mossy rocks, in shrubs of *Sasa sp.* All these places are shady more than a half day.

RHIZOME: Short

LEAF: Blade orbicular or obovate; 4-7cm. long, 4-7cm. wide; finely lobed at the margin; lobes unevenly dentate; on the upper surface glabrous, on the lower covered with long hairs on the veins; petiole 2.5-10cm. long; covered with long hairs.

PEDUNCLE: 5-15cm. tall;

UMBEL: 2-5 flowered
 BRACTS: Hairless
 PEDICELS: 1.5-2.5 cm. long
 CALYX: 6-8mm. long; 5-ridged; cut into lanceolate-obtuse lobes;
 COROLLA: Rose; heteromorphic; limb 2.5-3cm. in diameter; lobes obliquely patent; slender tube; with a yellow eye
 CAPSULE: Cylindrical; 1.5-2.5cm. long; lengthening conspicuously after flowering; slightly curved at the tip to one side.

var. *brachycarpa*

(Hara) Ohwi (With short fruit) *P. senanensis* (Koidz.)

Japanese name: "Shinano Kozakura." Meaning: Small primrose native to Shinano, an old name for Nagano Pref.

DISTRIBUTION: Only on the Southern Japanese Alps; in the valleys of the Kamanashi rivers, the Shiokawa river, the Koshibu river, the Mibu river. It is said that another distribution is along the Sawara valley in the Chichibu Mountains. Endemic to Japan.

ALTITUDINAL RANGE: 1000-2200m.

HABITAT: Occurring only in limestone area; mainly in fissures of wet mossy rocks, sometimes by streams, in sandy soils under rock cliffs, where the direct sunlight hardly reaches.

LEAF: More orbicular than *P. t. var. tosaensis*, or some clones are almost similar to *P. t. var. tosaensis*.

BRACTS: Lanceolate; 1cm. long

CALYX: 5-6mm.

COROLLA: Limb around 2 cm. in diameter; tube around 1cm. long

CAPSULE: 5-13mm. long

var. *rhodotricha*

(Nakai et Maekawa) Ohwi *P. rhodotricha* Nakai et Maekawa, *P. reinii* var. *brachycarpa* (With rosy hair)

Japanese name: "Chichibu Iwazakura." Meaning: Primrose growing on rock native to Chichibu (old name for the western part of Saitama Pref.)

DISTRIBUTION: Indigenous to Mt. Bukoh in the Chichibu mountains, Saitama Pref. Another distribution is in the Southern Japanese Alps. Endemic to Japan.

ALTITUDINAL RANGE: 650-1100m.

HABITAT: Mainly on limestone rocks or in fissures under deciduous trees

LEAF: Blade orbicular; 2-4cm. long; palmately lobed; round and unevenly dentate at the tips; on the upper surface densely covered with fine, short hairs; margin, lower surface and petiole are densely covered with magenta hairs

PEDUNCLE: 3-5cm. tall

CALYX: 6-9mm. long

COROLLA: Limb 2.5 - 3.5cm. in diameter; tube 1.4 - 1.8 cm. long

CAPSULE: 1 cm. long

REMARKS: The distribution being extremely confined, this species is in danger of total extinction by limestone mining. Now the habitat area is protected by the Government. There is another view that it is classified as a variety of *P. reinii*.

Primula takedana

Japanese name: "Teshio Kozakura" Meaning: Small primrose native to the Teshio region, Hokkaido (Commem. Dr. Takeda, a botanist)

DISTRIBUTION: Only in Hokkaido; Horonobe in Teshio-gun. Endemic to Japan

HABITAT: Occurring in sub alpine meadows or rocky places along the valley; on the exposed slopes of degraded serpentine rocks; in moist and oligotrophic areas. Endemic to Japan.

RHIZOME: Short and extending horizontally; becoming woody; covered with bud scales.

LEAF: Orbicular-reniform; pilose on the upper surface; lanate on the lower surface when young, and at maturity somewhat coriaceous, glabrate on both surfaces, sometimes pilose mixed with brownish hairs on the lower surface, ciliate on the margin, about 4.5-6cm. wide, 3.5-4cm. long, palmately 9-11 lobed; lobes except the lower ones, oblong-elliptical, mostly trifid, acute or obtuse, and callose at the apex; petiole 6-12cm. long, silky-villose, pale reddish brown toward the base when young, and at maturity hirsute with brownish hairs.

PEDUNCLE: about 15mm. tall; silky pilose at first, becoming glabrate later on the upper portion.

UMBEL: One-sided: usually 2-3, rarely 5 flowered

BRACTS: Linear-lanceolate; 3-7mm. long; 0.6-2mm. wide

PEDICELS: Patent; erect-patent or erect; longer than the bract

CALYX: Campanulate; 5-7mm. long; cut to 2/3 into lanceolate lobes;

COROLLA: White; limb about 1cm. in diameter; limb infundibuliform funnel-shaped; lobes emarginate, 6mm. long each; erect-patent, obovate-oblong, deeply notched at the apex, slightly shorter than the tube, heteromorphic;

CAPSULE: Cylindrical; about 1.2cm. long; slightly curved at the tip to one side

REMARKS: According to Mr. Shinichiro Saitoh, density of hair on the plant seems to be loosely related to emargination of corolla lobes. If a clone is very hairy on leaves and peduncle, the lobes are deeply notched with the tips deeply emarginated. On the contrary, if less hairy, the lobes are shallowly lobed with no emargination at the tips. Some botanists classify this species in another section of their own "Section Takedana" together with *P. hidakana*.

Primula japonica

Japanese name: "Kurinsoh" Meaning: From Japan; Primrose bearing an umbel like 9 rings on the top of Buddhist pagoda

DISTRIBUTION: Through out Japan; in mountains of the southern Kyushu, on the Shikoku Island; the Kinki, the Chubu, the Kantoh and the Tohoku districts in Honshu; in mountains of Hokkaido. Endemic to Japan.

ALTITUDINAL RANGE: 800-1800m. in Honshu. 500m. in some other areas.

HABITAT: Occurring in swamps of deciduous forests, in sunny moist meadows, and by streams in mountains.

RHIZOME: Short

LEAF: Glabrous, efarinose; soft textured; blade obovate-oblong or Spatulate; round or obtuse at the apex; 15-40cm. long, 5-13cm. wide; irregularly sharp toothed at the margin with triangular acute lobes; gradually tapering at the base; petiole winged.

PEDUNCLE: 30-80cm., sometimes 100cm., tall; hairless and efarinose

UMBEL: Bearing 2-5 whorls of flowers

BRACTS: Linear

PEDICELS: 2-3cm. long; elongating to 3cm. or more in fruit

CALYX: Campanulate; 6-8mm. long; 5-ridged; cut to 2/5-1/2 into acute-triangular lobes; lengthening to 7-10mm. in fruit; glabrous, efarinose

COROLLA: Rose; limb 2-2.5cm. in diameter; heteromorphic; corolla tube 1.2-1.7cm. long; slightly thin lobes patent; with a yellow eye

CAPSULE: globose; 7-8mm. long; a little shorter than, or as long as, the calyx; farina

Primula modesta

P. farinosa L. ssp. *modesta* (Biss. et Moore) Pax, *P. farinosa* var. *modesta* (Biss. et Moore) Makino, *P.m. var. macrantha* (Murata), *P.m. var. shikoku-montana* Miyabe et Tatew.

Japanese name: "Yukiwarisoh" Meaning: Herb breaking out of snow

DISTRIBUTION: All through Japan. Mt. Ishizuchi, Mt. Tengu, and Mt. Higashi - Akaishi of the Ishizuchi mountains on the Shikoku Island; Mt. Hakusan. Mt. Shirouma, Mt. Asahi, Mt. Gaki and others of the Northern Japanese Alps, Mt. Kai-Koma of the Southern Japanese Alps, Mt. Amakazari in the Kubiki mountains, Mt. Iwasuge on the Shiga heights, Mt. Naeba, Mt. Togakushi, Mt. Asama, Mt. Hirashibe, Mt. Tanigawa, Mt. Shibutsu, and the Nikkoh volcanic mountains including Mt. Nyohoh, Mt. Shirane, Mt. Kohshin, Mt. Akagi, Mt. Kesamaru and others in Honshu; Mt. Kirigishi. Mt. Yuparo of the Yuparo mountain region and Mt. Satsunai in Hokkaido. On the island of Chejudo and on the Korean peninsula.

ALTITUDINAL RANGE: 1000 - 2400m.

HABITAT: Occurring in sunny, dry meadows and on rocks of peridotite, limestone, serpentine, volcanic rock, or granite. The habitat is sometimes very close to that of *P. cuneifolia* var. *hakusanensis*, but they will never share one mutually. Mainly in sub alpine zone.

RHIZOME: Short and stout

LEAF: Blade spatulate oblanceolate; 1.5-8.5cm. long, 4-20mm. wide; round at the tip; margin revolute and unevenly dentate into short lobes; on the upper surface glabrous, on the lower densely covered with yellow farina; gradually tapering to a petiole at the base

PEDUNCLE: 5-15cm. tall

UMBEL: 3-12 flowered

BRACTS: Linear; 4-6mm. long

PEDICELS: 5-20mm. long; lengthening to 1-3cm. in fruit

CALYX: Campanulate; 3.5-5mm. long; 5-ridged; cut into narrow triangular or oblong lobes with obtuse tips

COROLLA: Pale rose; heteromorphic: limb 1cm. in diameter; lobes flatly patent; tube 9-12mm. long; with a yellow eye

CAPSULE: Cylindrical; 5-8mm. long; longer than the calyx

var. fauriae

(French.) Takeda *P. fauriae* French, (Commem. Faurie, a French plant hunter)
Japanese name: "Yukiwari Kozakura" Meaning: Small primrose breaking out of snow.

DISTRIBUTION: Mt. Iwaki, the Ohu Mountain range including Mt. Zaoh, Mt. Yakeishi, Mt. Iwate, and Mt. Hakkohda, on the Shimokita peninsula in the Tohoku District of Honshu. In the mountainous regions and plains of the Nemuro, Hidaka, Ishikari and Oshima regions in Hokkaido. Endemic to Japan.
ALTITUDINAL RANGE: 1000 - 2000m.

LEAF: Blade obovate; tapering rapidly to a long petiole

COROLLA: Tope 5-6mm. long

CAPSULE: 6-12mm. long

var. matsumurae

(Petitm.) Takeda *P. matsumurae* Petitm. (Commem. Dr. Matsumura, a botanist)
Japanese name: "Rebun Kozakura" Meaning: Small primrose native to the island of Rebun

DISTRIBUTION: Only in Hokkaido; the island of Rebun, the Teshio region and the Shiretoko peninsula. Endemic to Japan

LEAF: Blade spatulate, oblong or obovate; teeth not inconspicuous at margin:

gradually tapering to a petiole

PEDUNCLE: 6-10cm. and sometimes 23cm. long

UMBEL: 7-10 flowered, sometimes 17 flowered

CALYX: 5-9mm. long

COROLLA: Limb 1-1.5mm in diameter

CAPSULE: 1.5 or 2 times as large as the calyx

REMARKS: There is another view that *P. farinosa* var. *xanthophylla* Trautv. et Mey. is classified into this species, and some scientists classify "Uryuh Yukiwarin", a regional form of *P. modesta* var. *modesta*, into this species. The coastal fields on the island of Rebun to the north of Hokkaido are filled with a mass of pinkish flowers of *P.m.* var. *matsumurae* all over every spring. It is a very beautiful scene really worth viewing.

Primula yuparensis

P. farinosa L. subsp. *yuparensis* (Takeda) Kitamura

Japanese name: "Yuhbari Kozakura" Meaning: Small primrose native to Mt. Yuparo

DISTRIBUTION: Confined to Mt. Yuparo, Hokkaido. Endemic to Japan.

ALTITUDINAL RANGE: 1400-1500m.

HABITAT: Occurring only in serpentine area, particularly in moist places of degraded serpentine rocks.

RHIZOME: Short

LEAF: Blade spatulate, oblong-obovate; round or obtuse at the tip; minutely dentate at the margin; not revolute; on the upper surface sparsely covered with glandular hairs or hairless, on the lower sparsely covered with farina and glandular hairs; 1-3cm. long, 5-7mm. wide; gradually tapering to a petiole

PEDUNCLE: 3-10cm. tall; densely glandular

UMBEL: 1-6 flowered

BRACTS: Linear; 4-7mm. long; lanceolate; glandular; becoming broader at the base

PEDICELS: 5-7mm. long; lengthening in fruit, becoming longer than the bracts; glandular

CALYX: Short cylindrical; 5-7mm. long; 5-lobed, cut into oblanceolate; tips obtuse; glandular at the margin; with farina inside

COROLLA: Rose; the only homomorphic primula in Japan; limb about 1-2cm.; lobes flat patent and emarginate; with a yellow eye

CAPSULE: Ellipsoid-Cylindrical; longer than the calyx

Primula sorachiana

Japanese name: "Sorachi Kozakura" Meaning: Small primrose native to the Sorachi river, Hokkaido

DISTRIBUTION: Only in Hokkaido. In the valleys of the Hidaka mountain system and the eastern side of the Yuparo mountain system; the Tomamu river, the Sorachi river, the Saru river, the Shizunai river and the Niikappu river, the Mitsuishi river. Endemic to Japan.

ALTITUDINAL RANGE: 200-800m.

HABITAT: Occurring only in serpentine area, particularly on moist rock cliffs along valleys and in rock fissures by streams.

RHIZOME: Short

LEAF: Blade 3-3.5cm. long, 1-1.5cm. wide; elliptic and cuneate at the base; slightly revolute and dentate at the margin; dense farina on the lower surface; the farina varying from white to yellow among clones; thin textured;

PEDUNCLE: 3-9cm. tall; covered with farina sparsely or densely

UMBEL: Spreading; 2-10 flowered

BRACTS: Linear; 5-6mm. long; becoming somewhat broader at the base

PEDICELS: 4-5mm. long

CALYX: 4-5mm. long

COROLLA: Rose; heteromorphic; limb 0.8-1.3cm.; lobes obcordate and widely emarginate, cut to 1/3, 3-7mm. long; tube about 7mm. long; with a pale yellow eye

CAPSULE: Cylindrical; about 5mm. long

Primula macrocarpa

Japanese name: "Rime Kozakura" Meaning: Small tiny primrose

DISTRIBUTION: Confined to Mt. Hayachine and Mt. Tenguiwa of the Kitakami mountains in Iwate Pref. Endemic to Japan

ALTITUDINAL RANGE: 1300-1800m.

HABITAT: Occurring only in serpentine area, particularly on sunny, moist gritty or rocky places in the upper alpine zone.

LEAF: 1.5-3cm. long including petiole; blade 7-15mm. long; 0.5-1cm. wide; obovate; rapidly tapering to a petiole; sharply and unevenly dentate at the margin; white farina on the leaf while unfolding but disappearing later; on the upper surface hairless or sparsely glandular and on the lower much glandular

PEDUNCLE: 3-10cm. tall; sparsely glandular

UMBEL: Spreading; 1-4 flowered

BRACTS: Linear-lanceolate; 3-4mm. long; obtuse at tips; glandular

PEDICELS: About 1cm. long; elongating to 1-1.5cm. in fruit; glandular

CALYX: Cylindrical-campanulate; 4-6mm. long; sparsely glandular; 5-lobed,

lobes cut into lanceolate lobes, obtuse at tips; margins particularly densely covered with glandular hairs

COROLLA: White; heteromorphic; limb 8-9mm. in diameter; lobes deeply emarginate; tube 3-4mm. long; with a yellow eye

CAPSULE: Cylindrical; 6-8mm. long; twice as long as the length of the calyx

REMARKS: The smallest primula in Japan. A quite rare species. It had been long considered that it was indigenous only to Mt. Hayachine, but another habitat was discovered recently on Mt. Tenguiwa about 40km. south of Mt. Hayachine.

ECOLOGY of JAPANESE NATIVE PRIMULAS

By Koichi Oogaki

Plant Environment

The Japanese Archipelago is long and slender in shape, running from the north down to the south, with the altitude of a little over 3,000 m. at a maximum. The habitats of plants range within the limits. These conditions satisfy the requirements for the formation of forests, which cover 67% of the land. This forest zone extending mainly along the mountainous regions is characterized in Japan by rich vegetation, the various spatial distribution patterns into which the species of plants link up showing the effects of weather conditions, of temperature, rainfall and humidity, as well as the effects of geographical and geological factors.

In the mountainous zone of the Central District of Honshu the areas over 2500 m. in altitude are occupied by plants of the alpine zone. This zone descends gradually in altitude as one goes north. In Hokkaido the alpine vegetation occurs in lowland areas adjacent to the coastal line.

The geographical distribution of plants in Japan is often shown in six or seven areas or zones, but not all of the actual boundary lines among them are clear. In general it is divided into two main zones, namely the one on the side of the Japan Sea and the other on the side of the Pacific Ocean, with the central mountain range lying as a boundary in between.

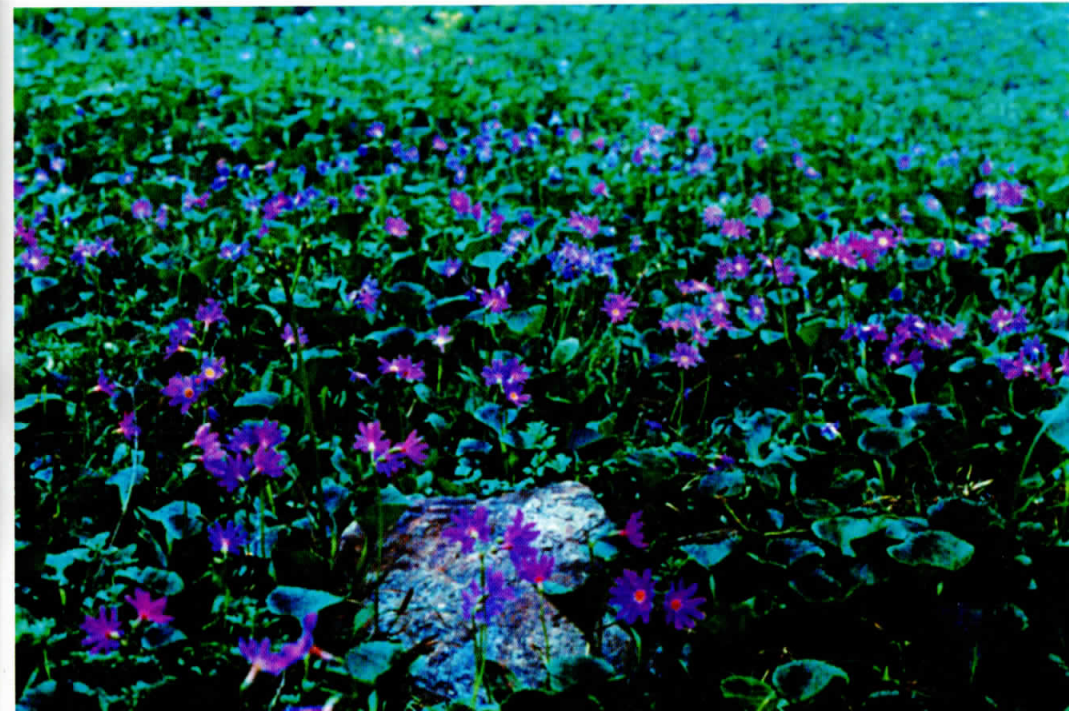
There is a view that the Genus *Primula* occurred originally in the Himalayas, and it is considered to have been widely distributed to many parts of the world from there, with continuous variations in the species. It appears that there were two ways of entry into Japan; one, the route from the south through China and the Korean Peninsula, which Section *Reinii* and Section *Cortusoides* took, and the other from the north across through Siberia, which was taken by Section *Farinosae*. Various species of those seem to have settled where the environments proved to be comfortable.

The details of the distribution are determined by the requirements of each species.



Above: *P. cuneifolia* 'alba'

Below: *P. cuneifolia* var. *hakusanensis* Mt. Shirouma, Northern Japan Alps





Above: *P. modesta* (var. *fauriae*) 'Alba' collected in Hokkaido
Below: a stock of *P. modesta* Mt. Sibutsu

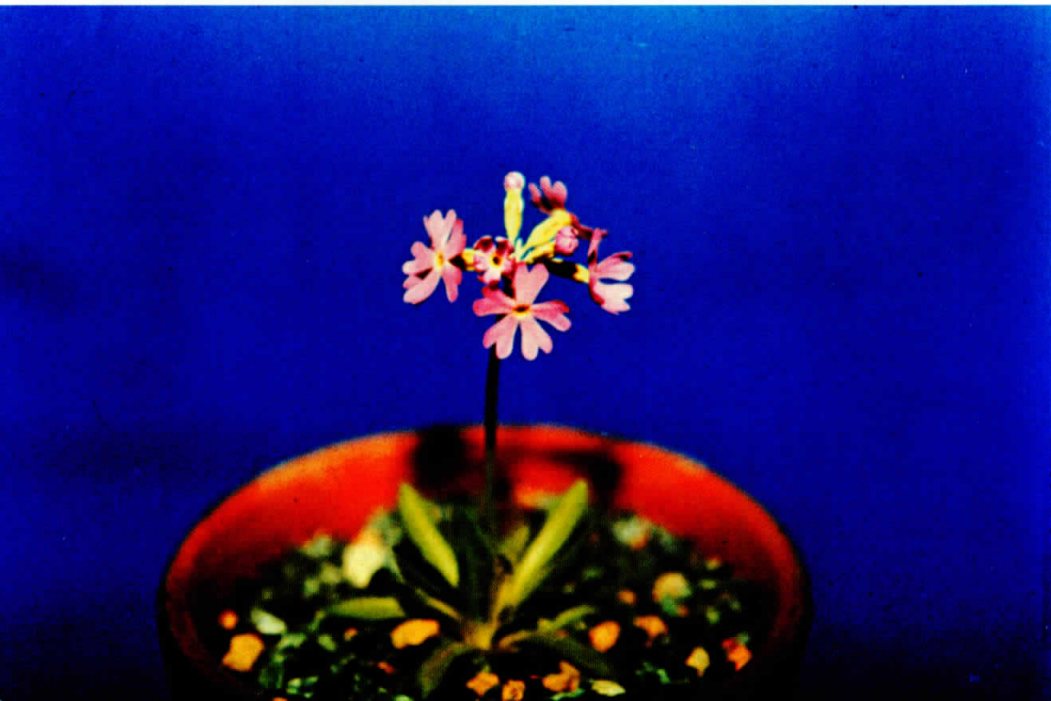


Above: *P. kisoana* 'Alba'
Below: *P. kisoana* 'Iyo kurenai'





Above: *P. reinii* var. *myogiensis* col. on Mt. Myohgi, Gunma Pref.
Below: *P. sorachiana* endemic to Sorachi area, Hokkaido



Above Left: *P. jesoana* Mt. Shirouma
Below: *P. yuparensis*

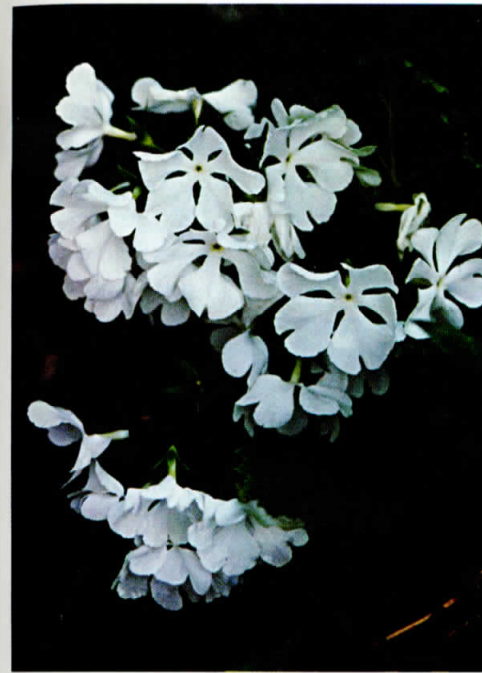


Above Right: *P. tosaensis* var. *brachycarpa*





Above: Yokohama Sakurasoh Show Paul Held Photo
Below: Yokohama Sakurasoh Show Paul Held Photo



Above: ASA#75



'My Love Jane' Both photos Paul Held

Below: Paul Held's Garden in Connecticut mid May. Connie Pappas photo



The American Primrose Society

ARGS China 2000 Expedition

Primrose Photo Contest



The Quarterly will conduct a photo contest of those primrose plants resulting from the seed returned by the Alaska Rock Garden Society 2000 China Expedition. Photos may be submitted through October 31st 2002, the last day seed can be donated for the 2003 seed exchange. Photos will be published in the Winter 2003 issue.

The contest is open to A.P.S. members only. Any China seed PRIMULA plant is eligible for consideration. Membership prizes for first, second, and third place and five honorable mentions will be awarded. Photos may be submitted in print, slide, or electronic file format. All photos or slides will be returned to sender if accompanied by a self-addressed return envelope. If an entry is submitted by electronic means it must be at least 300 dpi, 5 by 3.5 inches for wide orientation and 2.25 by 3.3 inches for tall orientation, or 1600 X 1200. Electronic photos may be larger than these dimensions, but NOT smaller, and MUST be at least 300 dpi. The TIFF file format would be appreciated by the Editor, but not mandatory. Please ensure each photo is properly labeled. Each photo must be accompanied by the name of the A.P.S. member grower, the location it was grown, the A.R.G.S. or A.P.S. 2000 seed list reference number, and the date the photo was taken. Mail photos to Robert Tonkin, APS Editor, 3155 Pioneer Ave., Juneau, AK 99801, or email primroses@gci.net. Please feel free to email the Editor with any questions regarding the entry requirements or photo file format requirements prior to submitting an entry. We will publish as many photos as we have room for in the Winter 2003 issue, so start taking those pictures!

In terms of vertical distribution, they are distributed from areas of approximately 0m. in altitude to high mountain areas of 2800m. - so the difference in altitude is remarkable. This distribution almost fully conforms to the life range for other common plants. The horizontal distribution is equally diverse from one species from another, since they occur all over Japan, from Hokkaido to Kyushu.

Environment of Habitat (Edaphic Factor)

The plants of Section Cuneifolia form the snow bed vegetation in the acid mire accumulated by organic substance that has not yet been decomposed. The plants of Section Farinosae mainly occur in the area where some humic substance has been piled up in or on a rock and gravel talus. The plants in Section Candelabra prefer an environment where they are supplied with sufficient water and humidity; as for instance by the streams in the deep mountains, whether there be rocks and gravels or soil. The plants of Section Reinii are classified into two; namely, those igneous rock-loving species like *P. reinii* and *P. reinii* var. *myogiensis*, and the others, like *P. tosaensis* and *P. tosaensis* var. *rhodotricha*, occurring in limestone areas. Although a few of these are sometimes seen in some other places, they are, on the whole, the species growing on the basic bedrock. *P. takedana* is also closely connected with serpentines. Other than those in Section Reinii, there are the species like *P. macrocarpa* and *P. yuparensis* occurring in intensely ultra basic serpentine areas as if they had selected these on purpose.

Conditions of Light

The amount of sunshine and the intensity of radiation required during the growing period vary a lot, depending on the nature of plant species. Generally speaking, the plants of Genus Primula are inclined to need more intense light from germination in spring and unfolding of the foliage until bloom, and after going through that period they can continue their life under less intense light, in symbiosis with other plants. Laying stress on the influence of light and surrounding vegetation on the growth of Genus Primula, Mr. Tsuneo Saitoh, the president of Tokyo Sansoh Kai (Alpine Plant and Wildflower Society of Tokyo), classified the species into three groups:

1.) Formation of the species living under trees. These are the species of which habitats are mainly on the forest floors or around the margins of forests. *P. jesoana*, *P. jesoana* var. *pubescens*, *P. kisoana*.

2.) Formation of the species living in the grasslands. These are the species of which love intense sunshine but are partly shaded by other cohabiting grasses after anthesis. *P. reinii*, *P. cuneifolia*, *P. cuneifolia* var. *hakusanensis*, *P.*

cuneifolia var. *heterodonta*, *P. nipponica*, *P. modesta*, *P. modesta* var. *fauriae*, *P. modesta* var. *matsumurae*, *P. yuparensis*, *P. sieboldii*, *P. japonica*.

3.) Formation of the species living on the rocks. These are the species living in the environment where sunlight is intense until the anthesis and thereafter the sun shines on them only in the morning. These habitats are in the beechwood zones, on the grasslands, and occasionally in the valleys. The duration of sunshine varies depending on the circumstances. The number of species in this formation is the largest of the three. *P. reinii*, *P. reinii* var. *myogiensis*, *P. reinii* var. *kitadakensis*, *P. tosaensis*, *P. tosaensis* var. *brachycarpa*, *P. tosaensis* var. *rhodotricha*, *P. hidakana*, *P. hidakana* var. *kamuiana*, *P. takedana*, *P. modesta*, *P. modesta* var. *fauriae*, *P. sorachiana*, *P. yuparensis*, *P. macrocarpa*.

This classification, however, is not definitive because the actual habitat chosen by any species depends on the congeries of a number of factors working together. For instance, *P. reinii* occurs both on the grasslands (Formation-2) and on the rocks (Formation-3), and there are some cases where the other species of Section *Reinii* have much to do with the forests.

The factors in the environment which determine the species that will live there are complicated by such elements as the bedrock, the soil, the amount of water supply, the amount of sunshine, and the structural state of the plant community. In this study I have classified primulas into four sections, according to the edaphic conditions of the habitats.

1. The Species Occurring in the Serpentine Area

Serpentine weathers so slowly that it remains in most cases exposed on the surface of the earth. Such land often shows an intense alkaline pH, and it is often characterized by a much sparser accumulation of soil and organic matters. So the soil is sterile. In the oligotrophic place like this the life of plants is not easy, only those kinds with the ability to live and cope with this difficulty are able to thrive. They are mainly composed of quite limited kinds of perennial herbs such as plants of Compositae, Gramineae and Cyperaceae. These are plants that have the ability to store up the nutrients of the year in the underground tissues. They have the advantage of utilizing them to grow in the next year. As for annual herbs, which cannot carry over vital nutrients in this way, it is hard for them to continue their life on sterile serpentine areas. The following are the species occurring in the serpentine areas;

P. takedana

The habitat of this species is mostly in the degraded area along a stream, shared by a deciduous forest of tall trees. Although the species normally lives on the floor

of the forest, I included it here, taking the bedrock into serious consideration. The rhizome is short and usually one winter bud is formed by autumn, but if the plant has a good year, or a particularly congenial site, there are some cases where it bears a few axillary buds and shoots out a lot of leaves and scapes to become a large stock, and forms a small community.

P. hidakana

The ridge, running from the south to the north, adjacent to the top of Mt. Apoi of the Hidaka Mountains, Hokkaido, is the well-known habitat of *P. hidakana* where the plant spreads deep roots into a crack of the rock in the naked serpentine rock area, unfolds its foliage in the shade of the rock, and comes into flower. In this case the amount of sunshine on a fine day is approximately halved. Added to this is the period of time when the area is enveloped in the fog, which characterizes the cape of Erimo. Consequently, although this species is classified into Formation -3 of the species living on the rock, the actual quantity of direct rays of the sun is relatively small. This condition of light is supported by the case in which the species occurs in a habitat composed of the rocks on the riverbanks of the Saru River in the system of the Hidaka Mountains, where the upper stratum is covered with trees and the herbaceous layer is thickly covered with such kinds of broad leaved herbs as *Hostas* and *Allium victorialis* var. *platyphyllum*. The energy of radiation in that area is as feeble as that of the oblique sunlight coming in through the branches of trees to the open area on the side of the rocks.

P. hidakana var. **kamuiana**

This species is said to form some communities around the xeric alpine meadows in the central part of the Hidaka Mountains. Its habitat is similar to the dry environment of *P. hidakana* itself on the ridge of Mt. Apoi.

P. yuparensis

Although the soil of the habitat of this species is the same as the former (in that they both grow in the degraded serpentine areas) its distribution altitude is as high as about 1400-1500m. It belongs to the species forming the snow bed vegetation, which develops around the top of the mountain.

P. sorachiana

This species always occurs on a steep rock wall of serpentine or limestone as if it had chosen its habitat in a place like that. Some of the inclined places, which I observed, all faced to the south or the east, where the plants took advantage of the

oblique light and did not have to suffer much from the direct rays of the sun. Judging from the soil on the rock walls, it showed high dryness and the plants growing there were taking deep root into the cracks of the rocks. *Saxifraga fortunei* var. *incisaolobata* and *Allium victorialis* var. *platyphyllum* were seen growing symbiotically with this species. Some of the plants of *P. sorachiana* were in bloom, but they didn't show good results in fructification as of August.

P. macrocarpa

The bare rock face of serpentine and the small gravel space provide beds for this species. Since the habitat is open geographically, it might be associated with an environment totally exposed to the direct rays of the sun. On the contrary, it prefers the district along the Pacific coast where weather conditions provide much rain and fog and the duration of direct sunshine is relatively short. This species together with plants like *Erigeron thunbergii* var. *glabratus* and *Leontopodium hayachinense* forms the alpine meadow from 1500m. above sea level to the top of the mountain. It occurs where the amount of vegetation cover is from 30 to 70%. The low height of the plant enables it to shelter itself from the strong sunshine under other plants during the summer. But, when the surrounding plants grow over 30cm., they cannot provide an ideal habitat for *P. macrocarpa*. Also, this species is rarely seen growing in places where *Geum pentapetalum* is thriving. For some reason a rocky habitat seems to cause excellent results in propagation. A single stock will shoot out a few or, in some cases, ten-odd offspring from itself. This way of propagation is hardly ever observed in the species of Section *Reinii* and Section *Cuneifolia*.

2. The Species Occurring in the Limestone Area

P. tosaensis

This is the most typical of all the species in Genus *Primula* that grow in the low mountain zone. Although the greater part of the distributed area is composed of more or less bare limestone, there are some cases where the surface has accumulated some soil. The plant also occurs in places not composed of limestone at all. The natural habitat I observed in Kanzaki, Gifu Prefecture, was in a forest consisting chiefly of *Quercus serrata* together with *Deutzia crenata* and *Rhododendron* sp. I also once observed a good community of the species within the plantation of *Cryptomeria japonica*. This fact shows the high adaptability of this species when it comes to habitat.

P. tosaensis var. brachycarpa

The habitat is limited to the limestone rock at the altitude of 1000-2000m. in the Akaishi Mountains. The arboreal canopy is usually formed by *Quercus mongolica* ssp. *crispula* and *Betula* sp., which are 8 to 13m. tall. The rate of vegetation cover is 70 to 100%. *Deutzia gracilis* in the bush, and herbs like *Saxifraga fortunei* var.

incisolobata and *Dennstaedtia wilfordii* in the herbaceous layer are the dominant species that occur typically in the limestone area. Since the habitat is under the canopy of deciduous trees, unfiltered sunlight comes down onto the forest floor in the growing season of this species - from the germination and the anthesis through unfolding of the foliage. From June when the sunshine becomes intense, trees are covered with green leaves and the direct rays of the sun are so intercepted that the intensity of radiation is limited to as about much as that of the oblique light coming to the rock wall.

As to humidity, there is often some occurring in such a circumstance as the spray of a waterfall, on the plant, or water dripping constantly from the mosses growing around it. It can, therefore, survive even in a humid place if the habitat meets its requirements.

In a higher distribution area of the sub alpine zone there are some places where the species grows mixed with *Dennstaedtia wilfordii* on the forest floor, where the rate of vegetation cover of *Tsuga diversifolia* is 100%. Even in this case it was observed to be taking root into the cracks of a limestone bed with a rate of vegetation cover of only 1 to 14%. In some parts of the area the amount of the plants' sheer vegetative growth was remarkable for the dim light and such an individual could be seen with its petioles and flower stalks touching the ground surface under their own weight. This fact shows that it can survive even with little light. In this case there was no other plant cohabiting within a 1 meter radius. This indicates the strong shade resistance of this species. In another place, a large overhanging rock 10 to 20m. high makes naturally an environment of high dryness. Without trees and with only sparsely growing shrubs, the rays of the sun were so intense in the area that the individual taking root into the cracks of this rock apparently became dwarf in its form, showing its resistance to intense light and dryness.

P. tosaensis var. rhodotricha

The habitat of this plant is limited to an area composed of limestone, a little less alkaline than the above mentioned serpentine. This is where the species flourishes. The limestone here weathers so slowly that rock walls remain exposed everywhere. The lack of the soil has prevented much accumulation of mold. This oligotrophic circumstance is like that of the above mentioned serpentine areas. Mt. Bukoh in Saitama Prefecture, to which this species is endemic, has been designated a precious natural area by the Government, and includes *P. tosaensis* var. *rhodotricha* and the whole neighboring area under the name of "The Special Plant Community Indigenous to the Limestone Area on Mt. Buko." The area is dominated by plants like *Hosta longipes* and *Dennstaedtia wilfordii* linked up with limestone which never allow any other common plants to enter (just as in the case of serpentine).

3. The Species Vegetating in the Snow Bed

P. cuneifolia

It snows so heavily in winter on the high mountains on the west side of Japan that the unmelted snow in early summer enables hygrophilous plants to thrive. This we call the snow bed vegetation, of which this species is typical. On top of Mt. Daisetsu in Hokkaido a vegetation unit called "Phyllodoce caerulea *Primula cuneifolia* Community" has been formed. The alpine grassland near is composed of low growing sorts, so the rays of the sun come down directly onto the ground. The plants there, however, maintain their lives quite comfortably thanks to the cool climate.

P. cuneifolia var. *hakusanensis*

Fauria crista galli/Primula cuneifolia var. *hakusanensis* Community occurs either in the snow bed formed mainly on the gentle slope of the broad mountain ground or in the mire filled humic substance situated on the snow covered slope, where in most cases plants like *Carex blepharicarpa* and *Sphagnum* sp. cohabit with them. In the upper area a little away from these, the habitat of xeric plants like *Pinus pumila* and *Sasa kurilense* occur. The top of the mountain slopes grow *Pinus pumila* and *Sasa kurilense* where snow melts the earliest. *Geum pentapetalum* in the area a little lower from there, and then *Phyllodoce* sp. appears still lower. *Fauria crista-galli* and *P. cuneifolia* var. *hakusanensis* appear at the wet bottom of the valley.

P. nipponica

The habitat is in the wet environment where humus or grits have been piled up. Usually a *Fauria crista galli Primula nipponica* Community occurs on the accumulated humus, and a *Fauria crista galli Carex blepharicarpa* Community occurs on the gritty area. But the distinction by soil condition between the two is sometimes difficult. For instance, on an area rich with humus occurring on Mt. Yakeishi in Iwate Pref., there exists a fine *Carex blepharicarpa/Primula nipponica* Community. Furthermore, on Mt. Chokai in Akita Pref. peaty ground thick with humus on one side of the mountain ridge, and gritty ground on the other.

4. The Species Occurring in the Xeric Grassland

P. modesta

At the Happo Ridge on Mt. Shirouma in Nagano Prefecture the tall herb grassland spreads out with plants like *Adenophora triphylla* var. *japonica* f. *alpina* and *Veronicastrum japonicum* and on both sides of the path. Up the mountain *P. modesta* is observed growing sparsely. There are some places where the rate of vegetation

cover is approximately 30%. In this case this species becomes a member forming the grassland. It can survive and grow even in the tall herb grassland if it is in open vegetation. It also occurs on the steep slope of a wet bare rock near the top of Mt. Ishizuchi on Shikoku Island. In this case, different from the case with the grassland, the habitat is in a deciduous forest zone, and the species cohabits with plants like *Filipendula multijuga* and *Schizocodon soldanelloides*.

P. modesta var. *fauriae*

The geographical difference between the areas inhabited by this species in Honshu and those in Hokkaido is extremely large. The former is alpine, and the latter is coastal. In terms of the soil conditions both show a tendency to be dry, forming haploid societies, consisting vegetatively of only grasslands. But the environment of this species is unlike that of the species of Section *Cuneifolia* in the snow bed society, even though the plants in both environments are blended categorized as grassland herbs.

The alpine habitat is in the gritty area along the mountain ridge. *Pinus pumila* appears in the adjacent area. This is where some of the species grow on almost bare ground. It is imagined that the ground is fanned by strong winds all through winter and that snowfall is very sparse. *P. modesta* var. *fauriae* sometimes forms a community, according to the districts it belongs to. It was once reported that in one part of Mt. Yakeishi in Iwate Pref. the plants were too densely clustered to leave any space to plant a foot on during the anthesis from early to late June.

The coastal habitat is in a sandy soil on the peneplain eroded by the sea. This species forms an herb community over the broad area approximately 10 m. above the sea level. At an area the writer observed in Nemuro, Hokkaido, some cohabited with *Rhododendron parvifolium* and others with plants like *Lysichiton camtschatcense* and *Corydalis ambigua*. The average height of plants in the grassland was about 20 to 30cm. and the rate of vegetation cover in the whole area was 50 to 85%, out of which *P. modesta* var. *fauriae* occupied 10% or so. The upside of the grassland was open and sunny.

P. modesta var. *matsumurae*

On the Island of Rebun, Hokkaido, the main habitats of this species are on the steep slope formed along the coastline, and sometimes on flat ground with some ups and downs, where visibility is very good. Most of the land on the island is owned by the Government and so is free of the threat of development. At the end of the Meiji Era (around the year 1900) forest fires attacked this island one after another and they are said to have caused changes in the vegetation there. The habitat is in a haploid community consisting of only herbs. If the height of the grasses around this species is up to 20cm., it thrives comfortably, but fewer individuals are seen if the grasses grow up to 30cm. There are none of the species apparent if the grasses grow taller than that.

“Sakurasoh” by Paul Held

“Sakurasoh” was the name first given to the primula that grows wild on the floodplains and riverbanks in the mountains of Japan. It was first written about 500 years ago. There is only one place that you can now see it in its natural habitat at the Sakurasoh Park at Tajimagahara field outside the city of Urawa. This area is now sacred because so much of the cultivation of Sakurasoh is woven into the very fabric of everyday life of people in all levels of society in Japan. Sakurasoh, the word, means cherry blossom. But the plant is not a tree blossom, thus “soh” is added, to indicate it is an herb. The emphasis when speaking the word – Sakurasoh, is on the “soh”. When first discussed, it was referred to as *Primula sakurasoh*, but because the people in Japan use and refer to the plant so often, it is merely – Sakurasoh.

The species “*sieboldii*” was given to the plant by the Western World when a renowned botanist visited Japan. Japan did not allow foreign visitors for 400 years. During this time when the doors were closed, the Japanese people in general became steeped in the cultivation of plants and flowers. So when Dr. Siebold arrived, much work had been done on the part of the Japanese people to develop hybrids of native plants. Thus, when he brought his “discoveries” back to Europe, he was honored by having his name attached to genus names, i.e. *Primula sieboldii*, *Hosta sieboldii*, and many others.

When I refer to this primula that grows wild and the hundreds of variations that have been discovered or intentionally hybridized, I will refer to these as “Sakurasoh” as the Japanese people do. I could also follow the rules of naming and take the first written reference of this plant which is *Primula sakurasoh* (with or without the “h”), and all the ensuing variations of the plant, the name given by consensus, like *Primula sakurasoh* ‘Italian Lace’. In short, P.s. ‘Italian Lace’ or even more simply, since we all know what genus and what family we are talking about, just ‘Italian Lace’. Thus, the primula that Maedythe Martin, a previous APS Editor, selected to adorn the cover of the ‘Fall 1993’ Primroses is now named by me ‘Cover Girl’.

I try to check first to make sure whether the flower is a Pin or Thrum. For *Primula* enthusiasts, this needs no explanation but for the newbie, it is the relationship between the stigma (female part) and the anther (male, pollen bearing part) within the tube of a flower which determines whether the plant is predominately going to be a mom or a pop. All primula flowers have both female and male parts, but, so they don’t self pollinate and make for weaker progeny, one part matures at a slightly different time than the other. What will they think of next! Well, one can force the issue and this is what hybridizers do; intentionally upset Mother Nature to achieve a human made concept. I have found a beautiful Sakurasoh with no style (the usually thin portion of the pistil) and have named this flower ‘Bar None’. From one flower to another on any variant, even though its petals may have differences sometimes within one or

more flowers, this arrangement of stigma and anther does not change! This is a crucial part to consider when identifying or naming plants that may have similar external appearances. When one has to cope with thousands of variants, this key is critical and necessary.

Over the 400 years of intense sorting and selection of thousands of forms of Sakurasoh, 500 may still be in cultivation. Almost every homestead in Japan has its collection. Collections began when families from the city, like Edo (Tokyo) ventured out to have a picnic. What better spot than a sunny flat space near some water to spread their mat! Growing around the picnickers were masses of *Primula sakurasoh*. They appear naturally as carpets, not unlike *Phlox stolonifera*. After enjoying the beautiful day, they might have dug up a plant in flower and brought it back to their small allotted space in the city to put into a pot.

In the wild, there are minor differences in the flowers. On some, the petals are rounded like a tongue; on others, heart shaped. Some plants bear deeper or lighter reds and yes, there is the occasional white. There are even variations in the form of the flower; most are flat but some lean their petals forward, and some even backwards like a shooting star. Slight were the differences back then and still are now in the wild.

Over the 350 years of collecting, people began to organize their collections and trade became popular. They would proudly set up temporary theatres or stages to show their collection and invite their neighbors over for tea parties to admire the plants. It became and still is a customary thing to do when the Sakurasoh is in bloom. During these early times, the country was governed by Samurai warriors who also had collections. This trading could become a way for the warrior to rise socially in the ranks if he had a form of Sakurasoh his superior wanted.

You can believe there were intensive efforts to magnify the minute differences by experimentation and hybridization. The genes are under so much stress to perform now, when one takes the 50 seeds developed by one flower that has been manipulated so much over the years, the 50 seedlings may eventually develop 50 flowering plants that have radically different flower and petal forms.

Each city in Japan has its own Sakurasoh society; Tokyo’s has about 600 members. During the winter months, especially February, conventions are held where people who want to trade come with pockets and boxes full of their named forms, to wheel and deal. No money is exchanged, unlike years past when Sakurasoh went through a speculative market, as is happening with *Hepatica* now.

When the Sakurasoh are in bloom, there are masses of displays, rows and rows of theatres for everyone to admire. Every railroad station has a table with a collection of 40 forms, neatly identified and to be seen as soon as you come through the turnstile. There are tables or theatres in the lobbies of hotels and public buildings, all with 40 forms for each theatre. The rule if possible is to have eight brown pots of six inch

diameter on five shelves. To better view the forms, downward facing flowers are placed on the topmost shelves, and upward lifting flowers are situated on the bottom shelves.

You get the picture of people enjoying and celebrating Sakurasoh. This Primula is cast as patterns into iron manhole covers, room dividers and textiles. The symbol of its usually 5 heart shaped leaves are carved into walls, fashioned into metal sculptures, portrayed as mosaics on shops and printed onto postal stamps. On one day in the city of Urawa, after a month during which 9x18foot billboards display close-ups of this little flower, buses have their sides painted with them, and posters advertise Sakurasoh Day; the girl scouts and boy scouts, students and families all gather together and take special buses to the Tajimagahara fields, the preserve of Sakurasoh.

The field is fenced in now and picnickers are not allowed into the preserve. In fact there are 16 people hired by the board of education to manage the field in its pristine state, complete with bulrush, euphorbia, horsetail and other weeds, all treasured as they are.

Children take field trips to draw and study them but on Sakurasoh Day, there is a festival of dance with women wearing kimonos with Sakurasoh patterns on the cloth, food vendors, and rock bands singing Sakurasoh. You can purchase a tin decorated with Sakurasoh pictures and the butter cookies inside are in the shape of Sakurasoh flowers. What a delight!

It was soon after Maedythe Martin published the list of the only Japanese members of the APS (10), that I corresponded with them and tried to obtain seed. I was politely informed that they don't deal with Sakurasoh seed, which doesn't come true, but only with the offshoots of the rhizome of their selected and named forms. One seed company, Sakata, which didn't carry Sakurasoh seed, gave me the addresses of just three Sakurasoh Societies. I wrote to all three, in English unfortunately, but found one whose president could speak English. I received a response saying that he had introduced me to one of his members who had a collection of 400 of the 500 possible forms. Within a day or two I received a parcel containing 75 packets of seed, each handmade and with the Japanese character for the name of the flower and the English transliteration, a word that I could read in English that had the phonetic sound of the character, written on each.

After years of hoarding the seed selfishly to try to get more forms of Sakurasoh, I felt I had all I needed to complete the genetic pool I was seeking and decided to start the American Sakurasoh Association, a society to foster the education and dissemination of Sakurasoh here in the West. All those seeds I so gratefully received were planted immediately but none germinated, though the ones I sent did. Mr. Kaneko, who was being so appreciated by me, sent fresh seed when they were ripe and all germinated! Gratefully I sent him, in the fall, a "bud", as they like to call the creeping rhizomes, of the best selection I had. He thanked me and said he would send some of his later. He did, 300 of them! Until this time, there were but 8 available through Siskiyou Rare Plant nursery. I was in heaven and a rich man indeed.

As of this writing, Mr. Kaneko has lost his entire collection of 400 forms due to a lack of watering during a summer when his home was being renovated. I have sent him the 100 or so forms that I have selected and named and about 100 other forms only numbered so far. He will be trying to introduce my selections to Japan. Since receiving Mr. Kaneko's generous contributions, I myself have lost more than I care to say of his forms due to sickness, lack of experience in dealing with the care of Sakurasoh in pots in the Northeast, incessant attacks by the black vine weevil, and New England's weather where sudden sharp freezes happen after copious rains. Heartless computers have deleted many weeks worth of scans of flower forms and membership lists, to add to the spectrum of miseries that plants people have to deal with. More, later, on the solutions I am undertaking to these problems. I have a sizeable collection growing and still have the mission of spreading Sakurasoh from coast to coast. I love the plant and the generous people who are making it all possible.

To see and learn more, please read the book written by prize winning author and photographer, Starr Ockenga, American Gardeners with Bold Visions. Her photographs are exquisite and her writing is sensitive! The book features 10 pages about myself and the Sakurasoh collection and includes descriptions of the activities of many other collectors. It is available from Clarkson Potter/ Publishers, New York. www.randomhouse.com For membership in the America Sakurasoh Association, please contact Paul Held at AmSakuraso@AOL.com or paulheld@optonline.net. Write to ASA, 195 North Ave. Westport, CT 06880.



Sakurasoh Festival dance, Tajimagahara, Japan Paul Held Photo

Presidents Message cont...

For those of us attending the APS National Show in Vancouver, BC, Canada; we already have to have our plants inspected to go into Canada and now, we may have to do the same to bring them back to the United States with our trophies.

On a more cheerful note, I certainly hope to see some of you at one of our Primrose Shows this spring. The British Columbia Group will be hosting the National Show in Vancouver on April 20-21; contact Show Chair (and Board Member) Ruby Chong for details. The Tacoma Chapter will present its show at the Puyallup Fair on April 18-21; contact Candy Strickland, Chapter President for show schedules. The Juneau Chapter will have its Show in connection with the Southeast Alaska Gardening Conference on May 3rd and 4th; contact Pamela Finney, Chapter President.

The new 60th Anniversary Quarterly you received in January should be getting some use as you or your friends are deciding which Primulas you should grow or where they will grow best. If you need more copies to use for educational talks, programs, or in your recruiting efforts, please contact our Quarterly Librarian Cheri Fluck, for extras. Remember to take pictures this spring and summer, especially of the flowers on your Primulas from the China Expedition seeds. There will be a photo contest in the Fall or Winter issue of Primroses and some of these pictures may help to identify the accessions that were only numbered when we collected them in the Fall of 2000. Get growing!

Board Minutes

Minutes of the American Primrose Society Board Meeting conducted Saturday, are as follows. Twelve voting members were gathered together by the miracle of computers and conference phones January 19th. Present were Pam E., Ed B., Cheri F., Mary K., Phyllis P., April B., Mary E., Pam F., Terry M., Julia H., Judy S., Candy S., Roger E., Thea O., and Robert T. No corrections to the August Board minutes were noted. The Treasurers financial reported the Society possessed Total Liabilities and Equity of \$23,846.69. Candy S. motioned we have the Societies books audited. Discussion followed, the motion was tabled pending a cost estimate by way of three bids, most likely to be sought after tax season. Additional discussion suggested language be put into the next by-laws revision that our books be audited whenever they are passed from one Treasurer to another. General agreement on this issue was noted. A motion to allow a link on the APS website which would allow for members to purchase primrose related items, with some of the proceeds coming back to the Society, was made, discussed, and passed. The cost of additional copies of the 60th expanded edition of the Quarterly was set at \$5.00, with the Society paying postage when 5 or more copies are ordered by anyone. Quarterly Librarian Cheri F. will coordinate the distribution of the available excess copies. Candy S. asked Maedythe or a representative of the BC group to contact her to coordinate getting our Trophies to Vancouver for the National Show. Respectfully, Robert T.

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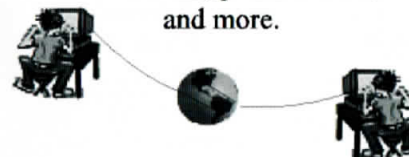
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**Primrose Websites
of Interest**

The following not-for-profit websites are provided as a resource for APS. members who share a common interest in Primroses.

American Primrose Society

<http://www.americanprimrosesoc.org/>

**National Auricula and Primrose
Society**

http://freespace.virgin.net/peter_gavin.ward/index.htm

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American Primrose Society
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The purpose of this society is to bring the people interested in Primula together in an organization to increase the general knowledge of and the interest in the collecting, growing, breeding, showing and using in the landscape and garden the genus Primula in all its forms and to serve as a clearing house for collecting and disseminating information about Primula.

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President, Maedythe Martin
 951 Joan Crescent
 Victoria, B.C. Canada V8 3L3
 mjmartin@pacificcoast.net
 (250) 370-2951

Doretta Klaber Chapter

President, Ann Hudnall
 325 W. Ashbridge St.
 West Chester, PA 19380
 Tel: (610) 696-5503
 Ann.hudnall@verizon.net
 Co-President, Lucille Koenig
 Box 15, Thornton, PA 19373
 Tel: (610) 459-7422 theldk@aol.com

Eastside Chapter

President, Thea Oakley
 3304 288th Ave. NE
 Redmond, WA 98053
 Tel: (425) 880-6177 othea@mindspring.com

Juneau Chapter

President, Pam Finney
 P.O. Box 23096, Juneau, AK 99801
 Tel: (907) 586-5080 finneybj@aol.com

New England Chapter

Chairperson, Mary Irwin
 6 Spruce Mountain Terrace
 Danbury, CT 06810
 Tel: (203) 207-4695
 semgirl77@aol.com
 Co-Chairperson, Elaine Malloy
 P.O. Box 38, South Salem, NY 10590
 elaineprim@aol.com

Tacoma Chapter

Co-President Candy Strickland
 6911 - 104th St. E.
 Puyallup, WA 98373
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 Co-President Cy Happy III
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 Juneau, AK 99803
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 dbuell@iname.com

EDITORIAL COMMITTEE

Robert Tonkin
 3155 Pioneer Ave.
 Juneau, AK 99801
 Tel: (907) 463-1554
 primroses@gci.net

SEED EXCHANGE

Jacques Mommens
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