

American Rock Garden Society Bulletin



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BULLETIN

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No. 1

ALPINES OF THE GENUS *ASTRAGALUS* L. I - ASIATIC SPECIES

ING. VLADIMIR VASAK, *Pruhonice, Czechoslovakia*

It seems most suitable to begin this series of articles on the genus *Astragalus* with those species which come to our gardens from the center of their evolution; from mountainous areas of Central and Western Asia.

The genus *Astragalus* is widespread in all of the moderate zone of the Northern Hemisphere and in mountainous areas running to the tropic zone both in Eurasia and America. It is the richest genus of all the Pea family. The number of species varies considerably as referred to by various authors in accordance with their different evaluations of the taxonomic rank of the various types. Actually more than a thousand species of this genus have appeared in botanical writings.

In many remote mountain areas of Central and Western Asia, on the steppes and elsewhere, each year new species of astragalus are found. Here, as alpine gardeners, we can await many new and surprising plants.

In my opinion, the types most suitable for use in alpine gardens are those astragali that form cushion-like, dense clumps, or have their spreading branches depressed to the ground to make decorative clumps. Nearly all astragali, sooner or later, have very long and thick roots, many with only one tap root. It seems best that only seedlings, which have been raised in pots, be planted in our dry walls, in screes, and in crevices among our rocks. Only a few species can be transplanted or divided as mature plants, and these are mostly those astragali that make adventive roots on their spreading branches, or have some underground stolons.

The majority of astragali are propagated only by seeds. The seeds of nearly all species are very hard, and without special preparation are unviable, or of very low viability, at least.¹

Some of the more tender species may even be propagated by grafting on some easier species, especially on plants whose roots are not tender. Even some warmth-loving species can be grown on hardier stock. By this means

*Astragalus elbrusensis* Boiss.

Vaclav Plestil

we may be helped to grow some of the very difficult or nearly impossible species.²

Since this genus contains such a great number of fine species suitable for alpine gardens, to describe each even briefly would require a very large book. At present, most of these plants can be found only on their home mountains, and we must do everything possible for their introduction into our gardens.

I am writing preferably about those species that we have raised from seed in our Botanical Garden of the Czechoslovakian Science Academy at Pruhonice, near Prague. I hope that they may make a good contribution to our collections. Probably most astragalus species will not be subjects of much interest to most, but some of them may be to those alpine gardeners who like to grow the more difficult plants.

The first species to be discussed is found in Mt. Elburz, the highest mountain in Iran, which is the type locality of *Astragalus elbrusensis* Boiss. (Syn. *A. hololeucus* Boiss., *A. alyssoides* Kotschy non Lam.). Except at the type locality this plant grows only in small, limited areas in Kopet Dagh and in the Talysh Mountains. At each of these three isolated localities occur plants with small differences though not enough for them to rank as three separate species.³

Astragalus elbrusensis is a low-growing alpine with a woody taproot and caudex about 10–15 cm high, quite silvery with adpressed silky hairs, densely branched and cushion-like. The leaves have from 6–13 pairs of narrowly ovate leaflets, usually 5–7 mm long and 1–2 mm broad, and the flowering stems are quite a bit longer than the leaves.

These plants retain some part of their green leaves during winter, so that even in early spring they have a very decorative habit. In summer *A. elbrusensis* resembles slightly a diminutive *A. alpinus*, but it differs by its smaller size in all aspects; by narrower leaflets and by the presence of some living leaves from the past season. It well retains its small growth habit even in good, rich soil.

Flowers of *A. elbrusensis* are pale violet, about 12 mm long. Fruits are ovate, 5 mm long, covered by dense, short, white hairs. Blooming period is from May to June.

We now have only one plant of this species. It first flowered in late summer, in September, 1966, in the second year after the seeds were sown. We obtained the seeds, which were collected in the wild, from the Botanic Garden of the Turkmen Academy at Ashkhabad. *A. elbrusensis* inhabits dry and stony slopes at heights of 2200-2600 m. a. s., and is relatively rare. In fact, it is described in Flora SSSR, Vol. XII, 1946, only from an exsiccated specimen, and the color of the flowers as cited only from a dry plant, without any report of a living plant. Taxonomically, it is placed in subgenus *Cercidothrix* Bunge, section *Hololeuce* Bunge.

From the same section, we await this year the first flowers of *A. hyalolepis* Bunge, a small alpine from the Caucasian Mountains and from Armenia. We have a few good seedlings from last year's sowing.

Astragalus hyalolepis Boiss. is a nearly stemless plant, only 15-20 cm high, all covered with grayish, depressed hairs. Its leaves are composed of 4-8 pairs of elongated, nearly linear leaflets which are narrowed at their bases and tips. The head-like inflorescence is dense with flowers brought together; calyxes are inflated. Corollas are usually purplish, pale blue, or whitish, and the "pseudo-leaflets" are pellucid, thin (hence the Latin name of the species). Fruits are ovate, 13-14 mm long, all covered with long, silky hairs. The usual blooming period is June and July.

Astragalus hyalolepis in the wild inhabits only very small, limited areas in the region of Lake Sevan and east from there (Small Caucasus), in the territory of both Turkey and Soviet Armenia. It grows at elevations from 1500-2000 m. a. s., in alpine and subalpine zones. This species occurs only in an area about 50 × 150 km. Even in its home it is relatively rare. A. A. Grossheim, in his Caucasian flora (1952) writes of only twenty-five herbarium specimens.

All the species of section *Hololeuce* Bunge are small, tiny, stemless alpine, gems in their home mountains from Asia Minor to southern URSS and to Iran.

Astragalus adsurgens Pall., ascending Milk Vetch, is quite different from those mentioned before. It grows from East Siberia, over northern China and Japan to the mountains of North America. It is a member of the section *Onobrychium* Bunge under the subgenus *Cercidothrix* Bunge.

The adsurgent stems of this species are arranged in a "rosette" and are 20-45 cm long. Leaves are with 5-10 pairs of thick, fleshy, or elongated leaflets—quite decorative. The inflorescence is cylindrical to broadly conical to 7 cm long, the flowers brought together, in number 30-40, on stems which are some longer than the leaves. The color is violet, but varying in its shades. Our plants, coming to us from Japan, have flowers light violet or lilac. This species flowers from June to September, though its blooming period is shorter or longer depending on conditions. In culture, it usually blooms, with small delays, all summer, mostly when dry and sunny weather changes so that there is more coolness and moisture. It is a very tolerant species, inhabiting not only dry steppes, stony and scree slopes, light, dry, shrubby formations, but even stony stream banks and meadows near rivers.⁴

In the Cyclopedia of Horticulture, it is cited as having been in gardens since 1818. In my opinion, *A. adsurgens* would be a very good plant for the rock garden if good clones were selected with bright violet flowers and compact, ornamental leaves at the base of the plant. I particularly appreciate the amiability of this astragalus—its long blooming period, the easiness of its culture, and its suitability for such places in the garden that are difficult to water. They are also suitable for the marginal parts of the alpine garden, for dry walls, etc. If some of this seems incompatible with the fact that *A. adsurgens* grows in the wild even along streams, it must be remembered that these streams are in areas where the climate is very dry and mostly hot.

Astragalus mandenovae Achv. et Mirz. is one of the astragali found on dry gyps-stone slopes in only one locality on Zovashen Garni in the area of Yerevan in Armenia. It was named in honor of the botanist who wrote chapters on the genus *Astragalus* in Takhtadzhjan's *Flora of Armenia*, Vol. IV, 1962. From it we learn that this astragalus has not been known for long. It makes free, nicely arranged clumps of 20–30 cm high branches; its leaves are grayish and are composed of 8–11 pairs of ovate leaflets, 10–15 × 5–8 mm in size; nearly glabrous, or poorly hairy on upper parts of leaves, but with long, woolly, grayish hairs on the lower parts. Flowers of *A. mandenovae* are arranged into dense, conical, elongated heads, very deeply purple-violet in color. One inflorescence had up to fifteen flowers.

This plant produces seeds with relative ease which makes its retention in cultivation not difficult. But we must take into account the high mortality of young seedlings, especially in the more moist areas. If I might characterize this unusual and rare astragalus, I'd call it the "pensive astragalus." The first seeds of *A. mandenovae* I obtained from the Botanic Garden of the Armenian Science Academy at Yerevan. These seeds had been collected in the wild. My plant had its first flowers in the second year after sowing.

The last of the Asiatic astragali of which I wish to write is *A. fuhsii* Freyn et Sint., a member of subgenus *Calycophysa* Bunge, section *Megalocystis* Bunge. This section has species widespread in the mountainous areas of Iran, Asia Minor, and even in the territory of URSS. In URSS, *A. fuhsii* occurs only in a very small area near the villages of Prochladnoje and Suljuklju in Kopet Dagħ, where it inhabits scree or stony slopes which are well-covered with *Artemisia*. Our seeds came to us from seeds mailed to us from Ashkhabad, collected in the wild on Kopet Dagħ. They were sowed in April, 1964, and we saw our first flowers in June, 1966. I have raised many species of astragali from seeds in our Botanic Garden, but the species with the most exotic habits of all tried has been *A. fuhsii*. To my knowledge, no picture has before been published in any botanical literature.

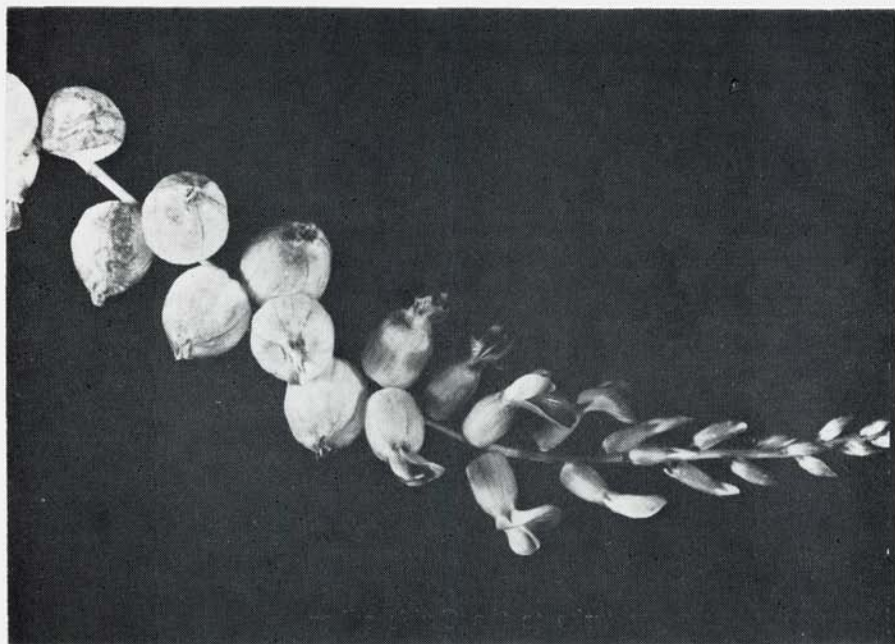
This species could be called the "amethyst" among astragali for its very unusual delicacy. It is a stemless plant 20–50 cm high (when in fruit), with a woody taproot and caudex making a not too dense clump. It has very distinct and characteristic leaves which can be up to 30 cm long; the central axes of the leaves are very firm, even wire-like, and since they remain on the plant in winter, they resemble porcupines. Leaflets are small, 4–15 mm long, with a small spine at each tip. They are glossy on the surface, gray-green and rigid.

Although the flowering stems are very firm, they cannot usually hold

up the heavy inflorescence—rich clusters of large rose flowers which mostly recline on the stones and chippings around the plant in a fan-like arrangement. Flowers are rose, with a rose calyx, covered with elongated dull red blotches. At the time of seed-ripening, the calyx becomes inflated, roundish, balloon-like. These balloons are on the lengthened stems above the brushy clump of darker, hard leaves, and are very decorative.

In its home this astragalus flowers in June and July; in culture in our country the blooming time is somewhat longer, as it is with other plants coming to us from arid areas. The last flowers in 1966 were damaged by frost at the end of October. Seedlings of this choice astragalus seem to be much less tender than those of other astragali and oxytropis coming from similar arid localities, and they are not so often damaged by overwatering, or by cool and wet periods of weather. Young seedlings of *A. fuhsii* have their first two leaves ternate; the following third and fourth ones are composed of five leaflets, then the number of leaflet pairs increase rapidly to the final number of ten to fifteen. Mature plants have their leaves finished at the tips by single spines, not by one unpaired leaflet.

In the first year of blooming, I harvested no seeds. Seemingly our bumblebees cannot effect pollination where such deep, tubular flowers are concerned, and our two only plants were probably neglected by the night insects. It is interesting to note that *A. fuhsii* survived the very wet summers of 1965 and 1966, although at the same time we lost, because of too much moisture, many seedlings of, for example, *Ononis natrix* and *O. cenisia*. The *Astragalus fuhsii* seedlings showed no signs of damage or any deformation



Astragalus fuhsii Freyn en Sint.

of growth. It is my opinion that *A. fuchsii* can be a good alpine for every gardener who would like to take under his care such an unusual and rare plant.

Literature:

- 1 — Grossheim, A. A.; Flora Kavkaza, Vol. V, 1952
- 2 — Flora URSS, Vol. XII, 1946
- 3 — Takhtadzhan et col., Flora Armenii, Vol. IV, 1962
- 4 — Bailey, Cyclopedia of Horticulture

NOTES

1 — See the short notice about the preparation of seeds of various Leguminosae in Ing. Vladimir Vasak's article in the *Bulletin* of the American Rock Garden Society, Vol. 25, page 59. This cites the hardness of seeds of many xerophytes, probably in connection with their ecology. This way these plants are helped to survive most difficult periods in the wild each year, for only a small part of the seed germinate at any one time. In this way the species can vault over the unsuitable period and try again under more favorable weather conditions. In alpine gardens the same situation may be met with where other groups of plants are concerned.

2 — Even in our country we have not any satisfactory experience with grafting of various astragali, either with the proper technique or with the treatment of various stocks. We would be very pleased if those of our readers who have had experience with grafting these plants would write to the author or to the editor.

3 — In my opinion, the recent documents indicate to us the very old age of this species which come from separate areas. These three types, which from the morphologic point are very close, could be from the phytogeographic point of view evaluated as good taxons of supraspecific rank, or as "good" subspecies or varieties. They are probably representatives of three evolutionary branches of the species under discussion.

4 — I have met in Mongolia with *Astragalus adsurgens* in the phytogeographic area called Orok-nur, northern part of the Gobian Altai on the semi-desert, on salted soils. There were very nice plants with intensely violet flowers. In the Mongolian north this astragalus inhabits the mountain steppes and meadows and is to be seen even on the stony places beside rivers. But it climbs not too high on mountains, its maximum elevation being from 1600 to 1700 m. a. s.

(Editor's Note) — These notes were written by the author with the exception of No. 1 and No. 3, which were contributions by Mr. Vaclav Plestil, to whom we are indebted for the labor of translating the author's original article.

* * * * *

OUR NEIGHBORS — The Alpine Garden Club of British Columbia, some of whose members are also ARGs members, publishes a monthly "newsletter" which could be read with great pleasure and profit by our own members, especially those who live in the Pacific Northwest. At hand are Nos. 7 and 8 of Vol. 10 (Sept. and Oct., 1967). Each has its special features of interest for us. In the first is an account (author not mentioned) of a visit to the Olympic Mountains. It is entitled "A Hike up Mt. Angeles," and it should be read by everyone who has any interest at all in the alpinism of the Olympics. In No. 8 is an article, or series of articles, under the heading "The Alpine House—A Symposium" with experiences related by Muriel Ross, Grace Conboy, Elizabeth Nunn, and Bob Woodward. Three of these writers are members of the ARGs. If you are interested in either or both numbers, it is suggested that you write to the Club's editor, Mr. J. MacPhail, 5017 Inverness Street, Vancouver 15, B. C. It is possible that he may have extra copies.

NOTES ON *ERYTHRONIUM*, *DOUGLASIA*, AND *PHILESIA*

ROY DAVIDSON, *Seattle, Wash.*

1 — The Genus *Erythronium*

Having come upon a splendid colony of an unbelievably beautiful white species of *Erythronium* last June in one of Oregon's State Parks, I set about to learn to identify these loveliest of spring "lilies." It is easy to see which have mottled and which green foliage, but some of the other key characteristics for separating one species from another are not so easily observed or remembered. Having a key at hand tells one what to look for AFTER noting the leaves. My park-find was easily run down to *Erythronium montanum* since its leaves were ovate and quite distinct from others. And so I noted that there was an easy combination of characters that made identification of the remainder of the species quite simple, particularly if one knows where each grows as an indigenous plant.

The genus has a disjunct boreal distribution; one species of Eurasian incidence; the remainder North American. *E. dens-canis* is the outlying Eurasian species; the name means "dog's tooth" and the spotted brown and green foliage gives the common name of "trout-lily" and "fawn-lily." The American species are in the main spotted of leaf, but some green leaved ones are to be found in the Far West. The floral coloring is white, yellow, lavender, and to rose and purple, often strikingly zoned in a contrasting color that is both startling and lovely. *E. americanum* is of eastern incidence, from the easternmost Canadian provinces south to Florida and west as far as Arkansas; it is mottled of leaf, flowers light yellow, and corms producing offsets to form colonies. *E. grandiflorum*, of the dry northwest (but only east of the Cascade Mountains), ranges from British Columbia to Montana, and eastern Oregon to Utah. Several horticultural forms have been designated but taxonomically there is but a single and constant and "good" variation. The species itself is golden of flower with reddish anthers; foliage shining green; few, if any, offsets (though a huge corm may produce two scapes and therefore divide into two corms). The variety, *parviflorum (pallidum)* is likewise golden, green of leaf and without offsets, but is smaller of every part and has white anthers. It grows at higher elevations than the species itself and occurs on the west side of the Cascades as well, and south to the Klamath ranges of southwest Oregon.

The foregoing are easy to identify, but along the Pacific slope speciation of these beautiful woodland "lilies" has reached its maximum and a good many seem not to belong to any described species. Petal colors may vary from those prescribed, thus to confuse the beginner, so the last thing to notice in any attempt at identification is the color. The things to notice are whether the leaves are mottled or not; the stigmas are entire to the tip, or cleft into three styles, and if so, how deeply; if the petals are banded at the base with a contrasting color (giving an "eye-zone" to the center of the blossom);

whether their bases are smooth or have saccate appendages; and whether the filaments (those little "stems" that extend outward with the pollen sacs dangling at their tips) are each distinct or whether they are broadened or connective at their bases. These varying combinations of little things to notice inform you as to the various species, and it helps to know where and when each is found. Thus we can tell the western erythroniums apart.

Erythronium tuolumnense is yellow of flower, with slight greenish eye-zone, plain of leaf, and increases by offsets. It is endemic to several small areas on the Stanislaus and Tuolumn Rivers of Tuolumn Co., California, in the Mother Lode country, where hillsides are profuse with it. The bases of the three inner petals have quite distinct little inflated-looking sacs, two per petal, disposed on each side of the median groove, thus forming a little tuft of sacs in the eye of the flower.

From the same general area, but far more widespread, comes the pale yellow, smaller *E. purpurescens*, turning to a pallid lavender with age, with plain leaves and without sacs, the flowers borne on long individual peduncles which elongate and become elevated at or after flowering to disclose the fact that all flowers are borne on a single scape. These two species occur only in California. From the higher elevations of Oregon and Washington come the only other one with green leaves, though it differs in shape from those of all other species, being ovate and quite distinct in differentiation of the pedicel, whereas all others taper into the pedicel and are lanceolate in outline. The flower is large, white with a golden-orange eye-zone; the stigma is cleft into three styles and the anthers are yellow. This is *E. montanum*.

The species with mottled leaves are several, though this brownish color may fade out to give a green leaf at the time of flowering, so one needs to further observe the details to be certain of identification. Those with a lobed stigma (and therefore with three distinct styles) include the cream-to-near-white two that are easily confused; both are found in the Illinois valley of Josephine Co., Oregon; one extending southward, the other endemic. The endemic is *E. howellii*, distinguishable by the absence of saccate appendages to the bases of the petals. *E. citrinum*, its look-alike, has the sacs, of course, and is rather widespread in northern California. Both have an orange eye-zone and *E. howellii* has rather narrowed bases to its petals, giving a more open, less solid-eyed effect.

Probably one of the delights of the white-flowered (actually creamy-white) fawn lilies is the one, at one time called *E. giganteum*, now known as *E. oregonum*, ranging from northern California through western Oregon and Washington to British Columbia. With mottled leaves, a distinctly lobed stigma, the style filiform to the base (it is narrowly club-shaped, or clavate, in the two above), and the filaments spreading at their bases (rather than long and slender to the bases), this is truly distinguished. A typical flower of this species has yellow, or rarely maroon, anthers, while the variety *leucandrum*, found only in the southern part of the range, has white anthers.

Those erythroniums with mottled leaves and flowers other than yellow include some of the delights of this fascinating genus. From the general area of the Rogue River drainage, though not in its coastal approaches, comes *E. hendersonii*, lilac with a pansy-black eye, the stigma only slightly lobed and the style clavate. It is unlikely to be confused with any other in flower.

With distinguishing characteristics almost identical to those of *E. oregonum* except for color, and with a range only along the west slope of the Coast Range from northern California through Washington to Vancouver Island, we have one of the most sought after erythroniums, *E. revolutum*, with petals rose, or rarely white with rose-colored eye-zones. Several horticultural names have been applied to selected variants which may be duplicated by the ardent collector. The style is filiform, the stigma lobed, and the filaments are broadened toward their bases so that they touch one another, or nearly. There is ordinarily a soft yellow base to the petals.

All erythroniums are easy to grow except *E. montanum* and it has even been stated that it is impossible at low elevations. Perhaps some enterprising plant breeder will combine this difficult one with others to produce a plant with huge white flowers with orange eyes that is easy; perhaps one that spreads to form wide colonies by offsets from the corms.

2 — Collecting Bulbous Plants while Blooming

It is perhaps unfortunate that the time of year when one can select, or even find, the bulbous plants is the worst possible time to bring them into the garden. Even staking a rare good plant, expecting to be able to go back in autumn to find it again, has its hazards and improbabilities, as most of us have found. It was the experience of this collector-of-several-summers to be advised recently of a satisfactory method of bringing in brodiaeas. The method is one in use here for a number of years, and having proven satisfactory, it is herewith passed on.

Take along a good supply of newspaper and a bit of water; dig the bulbs of your choice with a small amount of soil (just the amount that will adhere to the roots); roll in moistened newspaper and store anywhere that is convenient that is not in the sun. On returning home, DO NOT PLANT THE BULBS HARVESTED. Store the rolls in a cool, airy place. Keep them out of the reach of mice. In autumn, when planting time has arrived, unroll the papers and behold! — the bulbs are far plumper than when collected. The food in the leaves has been translocated to the bulbs to perpetuate the species. Had the bulbs been planted in the garden on your return, the leaves, no matter how skillfully collected or how well protected, would have withered and not sent their foodstores to the bulb.

Such things as bulbs and near-bulbs have been handled in this way with good results, including erythronium, calochortus, allium, brodiaea, fritillaria, and camassia; such things as trilliums have been attempted with some success, though they probably would have benefited from immediate planting. Iris MUST be planted and the sooner the better, and most orchids likewise.

Collection too early in the season, or before flowering, is not as satisfactory as later for there is not enough food in the leaves then. Be sure to tuck the ends of the roll in to form as airtight a package as possible in order to keep the leaves fresh for the longest time, but do not wet the roll after the time of collecting for too much moisture will cause decay, as will too much heat. However, the paper should be as wet as possible when rolled.

3 — On Growing *Douglasia* in the Northwest

Someone wrote in a recent *Bulletin* of the absence of a water problem in the Pacific Northwest! Last summer was perhaps a bit drier than many and measurable precipitation was almost negligible. Fortunately there is plenty of water most places that can be applied where needed, but from the heavens the supply is short almost every summer. But to tell how this affects the growing of one of our native alpine: some years ago a scree dug full of rough humus material was planted to several native collections. In the "Olympic Section" of this scree, among other plants, *Douglasia laevigata* and *Petrophytum hendersonii* were disposed on the northerly incline of the slope which had a generally easterly exposure. The single plant of *Douglasia laevigata* spread itself to about nine inches in three years and then in a moist, overcast summer (we do have them occasionally) beginning in the center, it all but died. However, the outermost tufts were spared and each began to develop into a little mat of its own, resulting in a well-disposed small colony, a far prettier effect than before, scattered among the chips and small stones that hold the contour.

The soil here is a porous and sandy loam, fine in texture and well-drained, never muddy even after heavy rain, yet requiring much summer watering to keep things in health, and is therefore a good base for scree-demanding plants. The humus was added as a water-retaining element and the stone-chip top-dressing to alleviate the amount of erosion and frostheaving, and to add to the natural effect of a mountain scree. The die-back came probably through the agent of some one of the moulds or other fungal conditions that are common in lowland elevations, and seldom bother mountain dwellers; my air drainage could be improved.

I attribute the degree of success with this plant to placement in regards to its needs for a cool yet somewhat dry situation in full sun, yet where it will not be baked. Others of the genus take to the same general area.

4 — On Growing *Philesia*

Philesia magellanica (*buxifolia*) is a shrubby ally of the fabulously lovely vining asparagus relative, *Lapageria rosea*, the national flower of Chili (so close, in fact, that a bigeneric hybrid called *Philageria veitchii* has been accomplished in England). Having recently come to us here in the Northwest as a garden plant, we are cautious about exposing it to our somewhat unpredictable winter seasons, which may have a week or two of false spring thrown in now and then. Though, as stated recently in "Notes from the Northwest," this plant may be more ideally a California plant, the statement did not say "coastal California" or "northern California;" surely it would never endure in southern or intermontane California. But with a little special attention to placement, surely, in time, it can become a valuable subject for a sheltered position in coastal Washington and Oregon.

The plants we are receiving are propagated as cuttings from a plant some ten years old growing outdoors in coastal southwest Oregon. True, this is an area of little frost, but it is a windswept and summer-hot area. This plant, placed to the north of a sheltering wall in full north and northwest light in an open, moist, sandy-peat soil, has spread itself and flowered profusely. Since it is hardy in shelter outdoors at Edinburgh, it surely can be

happy here is we observe and follow what can be learned from the literature.

Farrer, in his *English Rock Garden*, says, “. . . quite hardy; damp, cool summers in rich, sandy soil well-laced with half-rotted leaf-mould or peat in half shade. . . . at any rate, in southern (English) gardens; seems to like pieces of sandstone buried at the roots; drying wind and drought are its worst enemies.” Roy Elliott, in *Alpine Gardening* says, “Peat bed subjects include *Philesia*; eternal shade is not conducive to flowering; try it in several positions in the garden.”

Since this most intriguing little shrub is found in coastal Chili as far south as the Straits of Magellan, and is successfully grown in northern Scotland, and since the notes tell us it needs light, moisture, and a position that is air-warm and root-cool, it should not be difficult to devise a spot in which to grow it. The indications are that this plant should be placed where buildings or shrubbery cut off the drying winds, yet allow early morning sun, in a soil well-drained and consisting of sandy humus materials and sandstone, or other stone, to keep the roots cool in summer. Anyone who is familiar with these long, pendant, lily-like, fleshy, rose-red bells will be impelled to create just such a place in which to grow them.

Philesia grows slowly for several years and apparently does not root deeply. The root system is akin to that of asparagus; fleshy feeders radiating from the crown. After a few years, as it finally establishes itself by rooting deeply, it begins to flower and at the same time to send out stolons a few inches to a foot away from the crown. These do not make roots, at least for several years, and if removed must be treated as cuttings. Such a plant may prove root-hardy even though cut back by frost. A large crown may be divided, but the most certain method of propagation is by cuttings, until, at least, one has a great jungle-growth of it! The plant grows from 15 to 18 inches, has most attractive evergreen foliage; not a subject that blends into every scheme, it is nevertheless a prime contender for a specimen position. In fact, placed so as to grow properly and enduringly, it would make a splendid accent to an otherwise green fern planting.

* * * * *

PLANT COLLECTING EXPEDITIONS — Jean Koroluck, 316 Centre Ave., Lindenhurst, New York 11757, writes, “Having just received the fall copy of the *Bulletin*, I must write to you today and make comment on Dr. Worth’s article in reference to the plant collecting expeditions. As a new member (only a few years) this is of vast importance to me, and I would appreciate any further information you may be able to give me on this. Perhaps in the future issues of the *Bulletin* it would be of interest to many of the members to read of these expeditions, and future expeditions, in more detail.” Perhaps it would be of advantage to the plant explorers, as well, if advance information concerning contemplated expeditions were published in the various rock garden publications. It is suggested that such explorers as Mr. James C. Archibald, Mr. Brian Mathew, Rear Admiral Paul Furse, Mr. J. M. Watson, and others give thought to furnishing such information well in advance. There may be many members of the ARGs who, following Dr. Worth’s experience, would find much pleasure and excitement through sharing in the rewards from these expeditions, and in the expenses also.

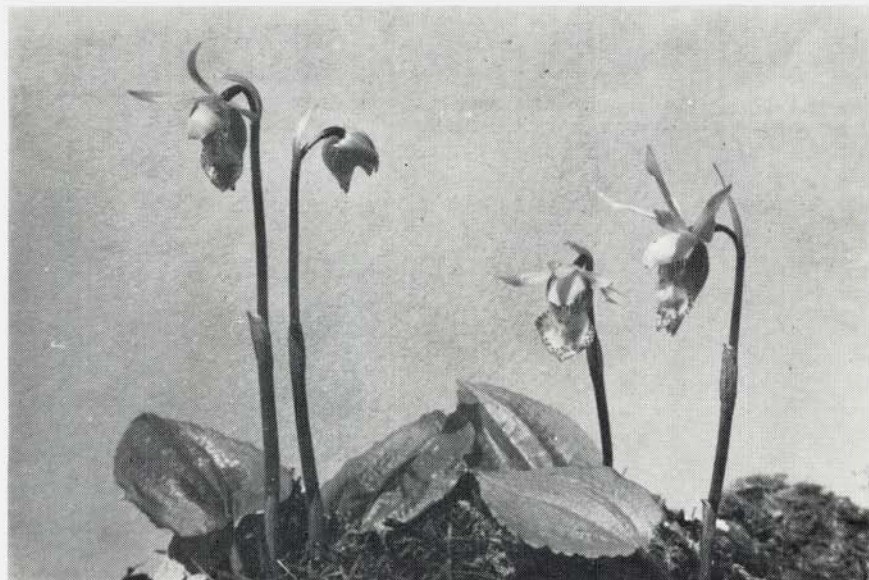
CALYPSO BULBOSA

EVELYN LAMB, *North Vancouver, B. C., Canada*

To find this little gem in the seclusion of our mossy woodlands is well worth any efforts one may have exerted. To collect it and be able to keep it from marauding birds and slugs, etc., is another thing. Some gardeners have gone to great lengths to keep this delightful treasure in the woodland corner of their garden; others have been able to grow it with very little effort.

After listening to various methods tried by those who have been able to keep the little white bulb from its enemies, I devised a plan of my own. The first rule that must be followed in collecting *Calypso bulbosa*, is to collect along with the bulb as much of the woodland material that it grows in; e. g. moss, rotted wood and needles that you will need to fill a six or seven inch pot. After making sure there is good drainage at the bottom of the pot, fill it with your woodland material—pressing and firming it into the pot. Then take your bulb or bulbs and press them down into the material and arrange small rotted-pieces of wood around them and cover this with moss.

The next step is to obtain a larger container than your pot; I have used a two gallon tin cut in half, but a plastic container would do just as well. Put a layer of damp sand in the bottom of this larger container and place your pot of calypsos in on this and then fill in around with more damp sand. I placed my container and pot on the north side of the house on a good thick layer of rocks. In this way I have been able to keep this treasure for over a year and a half. There were beautiful blooms this spring and I hope for more next year.



Calypso bulbosa

Evelyn Lamb

One final note—1. Do watch the watering and do not keep the sand and woodland material too damp. 2. I collected these calypsos on the coast. I have been told that those that come from the 4500 foot level will not stay or bloom in the garden. I collected some from this elevation two years ago and found that this was so. I am not sure what happened to them, however. I collected more bulbs this June from the 4500 foot level and with them I have followed the method just described. Time will tell if they will stay in my garden and bloom for me.

One must be ever vigilant for any sign of slugs. I check every once in a while by inserting my fingers down into the moss and rotted wood to make sure the bulbs are still there.

ROCK GARDEN PLANTS FOR THE SOUTHEAST

ANNA SHEETS, *Reidsville, North Carolina*

Growing rock plants without a rock garden, a dry wall, or a natural outcropping must sound dull and uninteresting to many people. I, more than anyone else, realize the limitations imposed, but I must garden as I can. To me, small plants are so fascinating that grow them I will, even though it be "catch as catch can."

For several years I grew the common rock plants: Phlox, Alyssum, Arabis, Armeria, Dianthus, Veronica, Nepeta, and most of the small bulbous plants such as Daffodil, Iris, Scilla, Eranthis, Brodiaea, Sternbergia, Crocus, Galanthus, Chionodoxa, and the hardy Cyclamens. Each year I would add as many new dwarf plants as I could find. Not until I obtained the catalogs of some rock garden specialists did I know what a marvelous variety there was to try!

My small plants are grown in two locations. One is the sunny garden, and the other the semi-shady area at the edge of the woods. Everything will grow in one or the other, I've found, though a few shifts have had to be made; if only a few feet, or across the path. The rock plants in the sunny garden are used as edging plants for wide perennial borders on each side of a grass path. Running east and west, the plants on the north side of the path get full sun, but those opposite have the heat tempered by the taller plants behind them. It is surprising what a difference this can make, even life or death to some. In the sunny garden the soil is kept neutral or slightly sweet. Back in the semi-shady beds most of the bulbs are grown along with the acid soil plants. The soil is made with leaf mold and mulched the year around with pine needles. These beds extend from full sun to full shade and provide conditions for everything from the heathers to the ferns and forest wild flowers. If a plant lives and grows well for two years, I consider it successful here. Most need either curbing or dividing every few years. The unhappy ones will show it in a few months.

Any list of plants could be grouped by color, season, soil needs, height, or use, but I think one alphabetical list with a few notes will serve to tell which plants have succeeded here. This list includes dwarf shrubs and conifers that are used as accent plants at corners and curves. The following list

may be of value to those just starting to grow small plants, especially those who live in the southeastern part of the United States in the areas between the ocean and the foothills. Wild flowers are not included here, but will be dealt with later.

Achillea tomentosa 'Moonlight'—silver foliage mats. Needs to be curbed every year. Dry sun.

Aethionema grandiflorum—daphne-like blue-green shrubby little plant. Rose flowers.

A. schistosum—like above but lower and of paler pink. All stone cress like lime and drainage.

A. 'Warley Rose'—best of all. Green foliage, covered in spring with pink blooms. Prune yearly.

Ajuga reptans—(blue, white, and variegated). All the Bugles make good evergreen ground covers here.

Allium moly—one that doesn't seed all around. Yellow. (Chives are one of the prettiest Alliums).

Alyssum saxatile—the common Basket of Gold must be cut back after bloom. Best as biennial.

A. s. citrinum—the paler color is not as hardy but is a better mixer. Give full sun.

Androsace sarmentosa var. *chumbyi*—tiny silver rosettes like a sempervivum. Pink flowers. Neat and slow. Sun.

Anthemis aizoon—cool, gray foliage. White daisies in April. Hot dry sun.

Aquilegia akitensis—a tiny blue Columbine that can stand part shade. Handsome foliage.

Arabis sturri—beautiful mound of evergreen foliage. White flowers in May. Slow and neat. Sun.

Armeria laucheanae—another evergreen mound I wouldn't be without. Rose heads on six-inch stems. Sun and dry.

Aster linariifolius—one of the few fall-blooming rock plants. Cut back to make branch. Sun.

Berberis 'Crimson Pygmy'—red leaf dwarf Barberry. Needs sun to bring out color.

B. verruculosa—dwarf evergreen. Tiny holly-like leaves. Slow and compact. Sun. A gem!

Bruckenthalia spiculifolia—a 5" shrub of the Heath family. Tiny pink blooms in May. Semi-shade.

Buxus microphylla—dwarf Box that needs water, protection, and shade until big enough to see!

Calluna vulgaris—many good named varieties of heather do well here. All like acid semi-shade.

Campanula carpatica—best of the Bellflowers here. Needs moisture and a little shade.

C. garganica—low-growing and slow. Beautiful blue in summer. Moisture is essential.

Chamaecyparis pisifera 'Nana'—one of the dearest dwarf conifers. Needs water and shade first year.

Cotoneaster adpressa—dwarf shrub with tiny leaves, red berries in fall. Sun or part shade.

- C. congesta*—very small, evergreen Rockspray. Pink blooms in June, red berries in fall. Sun.
- Cytisus kewensis*—dwarf broom that sprays out flat. Cream flowers in April. Sun.
- Daphne cneorum*—the fragrant dwarf shrub beloved everywhere. Best here with a little shade.
- Dianthus gratianopolitanus*—the double pink and white Cheddar Pinks are good, but need curbing.
- D. myrtinervius*—a miniature deltoides evergreen mat. Rose sprays for months. Sun or shade.
- D.* 'Tiny Rubies'—evergreen mound with little pink double flowers. Neat and slow. Sun.
- Draba olympica*—another tiny evergreen mound. Yellow blooms start in February. Sun.
- Dryas suendermannii*—evergreen ground cover for semi-shade and moist soil. Tiny, flat, and holly-like.
- Epimedium grandiflorum*—all of the Epimediums thrive here and are most valuable in sun or shade.
- Erica* 'Darleyensis'—my favorite of the Heaths, but all do well here in moist leaf mold and part shade.
- E. tetralix mollis*—gray foliage. *E. vagans* has crisp, dark green foliage. *E. carnea* is a good ground cover.
- Erysimum kotschyianum*—tiny evergreen mound. Gold flowers in March. Sun.
- Euonymus fortunei minima*—evergreen shrub with little shiny leaves. Sun and leaf mold.
- Genista radiata*—dwarf broom, green stems and yellow flowers. Sun and a dry spot suit it fine.
- Globularia trichosantha*—evergreen mound of foliage, blue flowers in summer. Light shade.
- Gypsophila repens*—both the pink and white dwarf Baby's-breath like full sun. Cut back often.
- Helianthemum* 'Buttercup'—the Rock Roses need severe pruning and a well-drained spot.
- Heuchera* 'Pluie de Feu'—a bright red Coral Bell that is small enough for the edge of the border.
- Hutchinsia alpina*—tiny green mound with white flowers in March. Sun and drainage.
- Hyssopus officinalis*—this small evergreen shrub is an herb and needs shearing in spring. Sun.
- Iris* 'Snowflake'—all of the Candytufts are good in sun or part shade. Cut back after bloom.
- Jasione perennis*—for sun and heat. Blooms for weeks and has a blue flower.
- Juniperus horizontalis* 'Glauca'—the dwarf Junipers are fine for low accents. Sun and drainage.
- Lavandula vera*—the dwarf lavenders need cutting back often for the good gray foliage. Sun.
- Lychnis alpina*—one of the best tiny, evergreen mounds. Rosy flowers in April. Sun or light shade.
- Mazus reptans*—dainty ground cover for small bulbs. Lavender blooms. Best

in part shade.

Micromeria croatica—dwarf evergreen shrub of the mint family. Purple spikes in summer. Sun.

Nepeta mussinii—gray foliage, lavender blooms. Fragrant when bruised. Dry sun.

Onosma tauricum—course evergreen ground cover. Yellow bloom in June. Stands neglect. Sun or shade.

Pachistima canbyi—dainty evergreen shrub with small leaves. Stays low and spreading. Sun or shade.

Papaver rupifragum—the Spanish Poppy has evergreen foliage. It is gray, crisp, and clean. Orange flowers.

Phlox divaricata—both the blue and white are easy and give early color. Nice with Daffodils. Needs curbing.

P. stolonifera—all colors make beautiful ground cover in shade or part sun.

P. subulata—chosen by color these evergreen mounds are most satisfactory. Sun and drought.

Pieris japonica variegata—dwarf evergreen shrub. Foliage edged cream and pink. Half shade.

Pinus mugo 'Compacta'—this pine is a must for dwarf shrub plantings. Sun.

Polemonium 'Blue Pearl'—excellent in April with Daffodils. Sun or shade.

Potentilla tonguei—small evergreen clump. Airy sprays of orange bloom all summer. Sun.

Rosemarinus officinalis—this fragrant herb grows as an evergreen shrub. Cut back for gray foliage.

Santolina incana—another silvery shrub. Beautiful if kept sheared. Sun.

S. virens—the green "lavender cotton" needs same treatment as the gray. For hot, dry spots.

Scabiosa lucida—lavender heads of bloom in June over good green foliage. Sun.

Schivereckia podolica—neat mounds of gray foliage. White flowers in April. Sun.

Sedum sieboldii—a blue-green refined sedum for sunny spots.

Sempervivum tectorum—all the "hen and chickens" like sunny hot places.

Silene schafta—pink flowers over green mats. Good for late summer bloom. Sun.

Taxus cuspidata minima—dwarf Japanese Yew is hardy and easy in sun or light shade.

Teucrium chamaedrys—evergreen Germander. Kept low and compact by shearing twice a year. Sun.

Thymus 'Gilt Edge'—the Thymes need strict attention to keep in bounds. Sun.

Tunica saxifraga—good for late summer bloom. A mist of tiny, double pink blooms. Dry sun.

Veronica pectinata rosea—good gray ground cover. Also in blue. Easy to control. Sun or shade.

V. fruticans—shrubby Veronica of green foliage and clear blue flowers. Sun or light shade.

V. guthrieana—evergreen shrub Veronica with bright blue flowers. Slow to spread. Sun.

Viola pedata—all violets grow *too* well here! The Bird's-foot is choice, beautiful and mannerly.

ARGS MEMBERS IN THE HIGH TATRAS

JOS. STAREK, *Prague, Czechoslovakia*

A group of local rock gardeners organized a week-long trip to the High Tatras and Belansky Tatras in Slovakia. We have been there many times before, but it is a very large area and it is always possible to see some new varieties of plants, and to make some new pictures. The weather was favorable and we enjoyed ourselves very much.

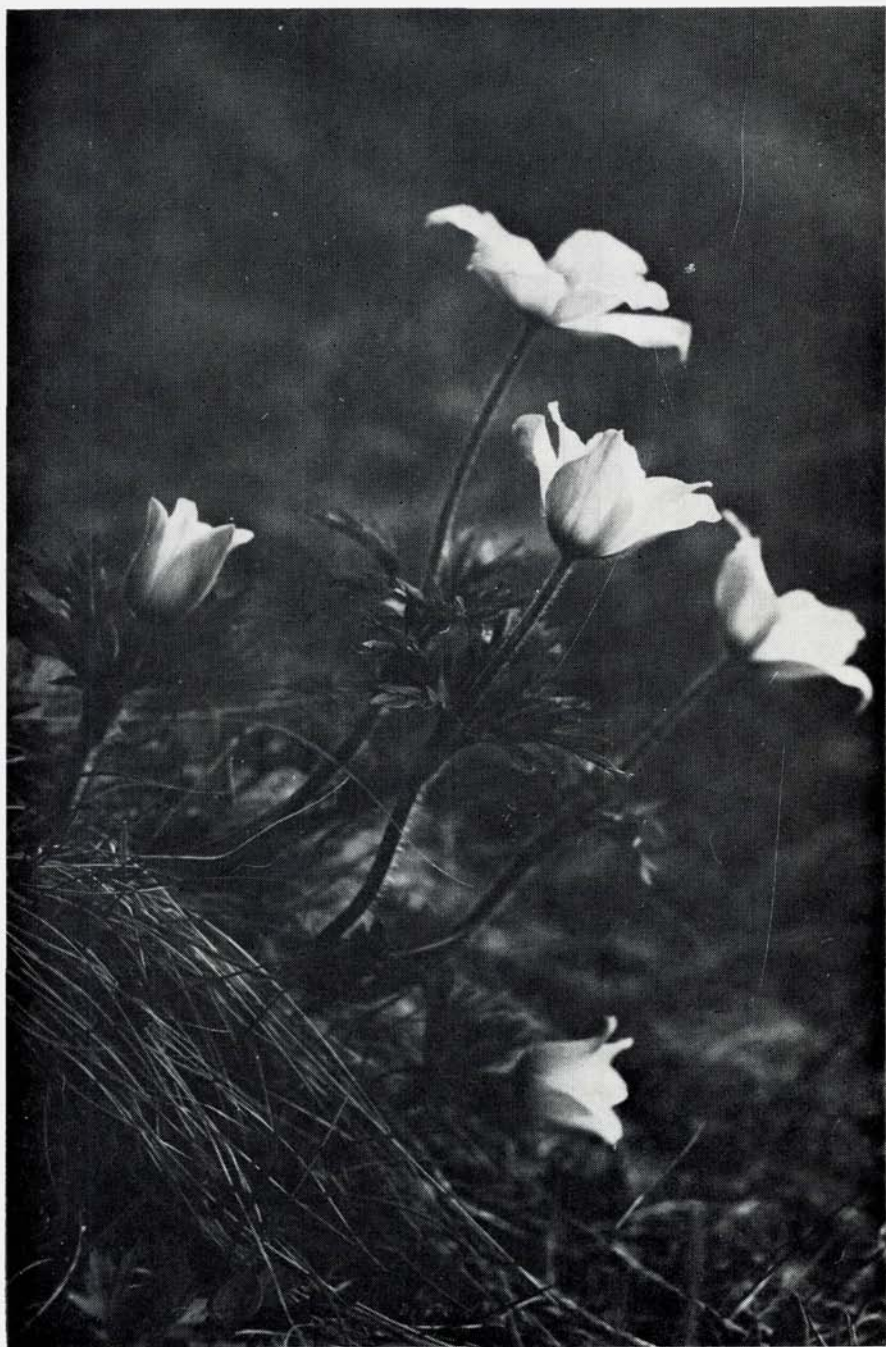
As most of the participants were members of the American Rock Garden Society, we took the liberty to establish a small week-long "ARGS STUDY CENTER IN THE HIGH TATRAS" in the Kezmarska hut (about 1600 m high). From this center we climbed and searched a few nearby peaks,—spread the ARGS spirit of friendship, cooperation and good humor.

We saw and photographed some interesting rarities, i.e. *Ranunculus alpestris* (double), *Soldanella carpatica alba*, *Silene acaulis* in various shades, also *S. acaulis alba pura*, *Primula minima* from palest to darkest rose, with



Meeting place of the ARGS Study Center in the High Tatras

Jos. Starek



Pulsatilla alba in the High Tatras

Jos. Starek



Under this emblem gather dedicated rock gardeners

Jos. Starek

some alba varieties, *Gentiana verna* in a light violet color, and *Pulsatilla alba*.

In the evenings we discussed articles of a few latest copies of the ARGS *Bulletin*. The news that the emblem was officially approved was accepted with pleasure. It is a very nice emblem, indeed. Even one local member already owned one. I made an enlarged copy of this emblem and we fixed it on the highest peak of the Tatras Mountains we climbed,—in order to promote the publicity and interest in the Society in Czechoslovakia.

Each member of our group used one or two cameras for slides and black and white pictures. Only typical aggressive weeds were left unphotographed. We made a total of about 700 slides and have chosen 140 of them for presentation to the ARGS. These slides were made by Mr. O. Ruzicka, Dr. V. Chaloupecky, and myself. A few members of the group prepared some slides to be entered in the ARGS Slide Competition.

We hope that among the future participants of a similar "Study Center" or "Study Club" will be also some members from the States.

NOTES FROM THE NORTHWEST

ELIZABETH PETERSON, *Seattle, Wash.*

DAY ON BALD MOUNTAIN — Over the snowy passes to the spring-released flowers in eastern Washington we drove. From 6,000 foot Bald Mountain, on the eastern Cascade slope, we brought back many happy memories as well as a few plants and seeds despite the onslaughts of motorcycles and arrogant jeep clubs, and the sight of deer remains left by unprincipled poachers. The rolling plateau, which was Bald Mountain's ridge-like summit, offered heartfelt tranquillity provided by sweet sun, an occasional "baa" or "moo" from the four-legged denizens, and the song of the meadow lark. There were vast-ranging mounds of *Eriogonums*, looking like the flowing rocks of Japan, which displayed every subdued color from cream, coffee, saffron to terra-cotta and claret. This shrubby *Eriogonum thymoides* of such an amazing color variation is a 6–12" shrub with short needle-like leaves growing in terminal tufts on the numerous branches, all a sun-and-wind-bleached gray-green. The flowers are turbinate in furry calyxes and cluster in balls atop stems which usually bear bracts around the middle. The occurrence of these eye-relaxing mounds is in dry sagebrush soil from eastern Washington and Oregon to Idaho. Their long taproots wind their way through layers of hard soil and sharp shards.

It is characteristic of most of these desert occupants to have ramifying taproots with limited feeder roots, and a pick is the best tool for persuading the earth to let them go. *Eriogonums* are of the Polygonaceae, yet their seeds appear most composite-like, and one may be challenged, or horrified, to learn that there are 150 species in the West to collect or ignore.

Another gray loveliness is *Erigeron poliospermus*, its 1½" long, rather upstanding, lanceolate, densely furred, entire leaves complimenting 4" stems which bear lavender rays surrounding yellow disc flowers; now sky-gazing, now bending to see from whence they have come; the whole flower measuring about 1" across. Heartbreaking as it may be to remove the charming flowers before they are entirely spent, this is the best way to ensure these daisies

their continued occupation of a new home, that is, if they decide to stay with you and flower again.

Waxy and lobed pale green leaves characterize the two dissimilar and less easily discovered plants; wine-colored *Paeonia brownii* and *Viola trinervata*. The latter, whose flowers have two upper petals of purple and three lower ones of a dainty lavender, might become as cherished as *V. pedata*, except that the flowers disappear too soon, and tend to flop in a dispirited fashion.

For one collector it was a bit unnerving to find that some green seed pods had popped merrily open on the way home in a bagful of *Trifolium macrocephalum* seed fluff. Needless to say, patience in sorting was required. Also the bag revealed several aphids and two minute spiders of differing species. Since the laying out of seeds to dry might be regarded as hazardous, it is recommended that the seeds' possible entomological population be checked.

There were also hordes of *Lewisia rediviva*; *Allium acuminatum* in haughty, isolated clumps; *Delphinium menziesii*, the beautiful blue bane of cattle drovers; *Geum ciliatum*, one plant which does exceedingly well in a cool spot in the garden, although not flowering every year. Then there were numerous clusters of *Penstemon gairdneri* in well separated groups whose shades varied from pink to lilac and lavender (something to do with the substrata). The frustrated botanist's apprentice, loping over the prairies, will be reassured to learn that this elusive penstemon (because they bloom, seed, and disappear within about two weeks), desert beauties that they are, differ in size and shape according to the spring moisture, and that he is not seeing new species he failed to observe previously.

These desert inhabitants do not take kindly to residence in alien soil. Pot culture with complete summer baking and outdoor sinking when fall rains commence, seems best though there are some exceptions. The Lewisias, Penstemons, and Eriogonums, for instance, have been kept going, though not flowering always profusely, by some gardeners in a hot, dry spot, near house foundations, which is well furnished with rock. It is remarkable how well a plant facing torrid, unrelieved sun glare will do when the roots are given sustenance and moisture from a rock in front.

Nature, incidentally, does not always do well by her plants. As an example, at Bald Mountain the deep, gray hue of rock and chips set off the herbage with telling effect, but we remember, too, the red soil of the Taneum Ridge (further north) which clashed violently with pink-orchid Lewisias. If reddish rocks are used in the garden, and there are many such in the West, careful thought must be given to which plants will look well with them.

ON THE ROOF OF OUR WORLD — It was a hot day with clear atmosphere providing a rarely seen panorama, in the damp Olympics, of snowy peaks on all sides, and visitors from as far and as high as Sikkim were pleasantly surprised. After five miles of steep switchbacks by shank's mare to the top of 6820' Mt. Townsend, one felt somewhat like Kingdon-Ward, and one wished one were a Farrer to pen the beauty of myriad flowers dancing in the soft breezes. And what fun to walk on the scree, soft as a carpet and at least a foot deep, through which roots wander dismaying distances.

Here was the place to find a goldenrod at which no officious border of tall perennials should sneer.

Best known as *Solidago algida* by gardeners, this small, golden fluff has been named several other things, such as *S. multiradiata* and *S. ciliosa*. The rays are not numerous (about thirteen) although the cilia along the narrowed petiole are observable. "Algida" means chilly, which seems to fit as the little herb occurs on high mountains along the Pacific Coast and east to Labrador. Basal leaves are spoon-shaped to oblanceolate, some acute at tips and some rounded, of a subdued green (due to the cilia, be it added), and the margins have neat little teeth. These leaves form a tufty clump from which erupts a thick, hairy, reddish-brown stem bearing its own wavy, spatulate leaves and leading to a small corymb of tiny yellow daisy flowers with narrow, pointed rays. Solidagos have for years been in disrepute because they were thought to weaken, via the sneeze. Reported to one foot tall, the local one is 3½" and a nice companion to its composite cousins, the shorter Erigerons, and as happy as they in sun and loam, and as easy to propagate.

By no means as easy as goldenrod, *Lupinus lyallii* is viewed with awe and covetousness, there being no greater challenge to a gardener than saying "It can't be done." This is perhaps the smallest of the lupines, silvery furred with its crowd of long petioles and palmate leaves which act as reservoirs, a warning to protect from downpours, for the crystal sparkling at the center of the leaflets also stabs the heart.

The short, fat spike is massed with blue-purple flowers, though G. N. Jones states white forms of the plant occasionally are found. There was much excitement when one was seen this glorious day. This lupine's range is from the dry mountain ridges of the Cascades to the Sierra. There is listed *L. l.* var. *danaus* in the high Sierra as being white or pale lilac, which presents inevitable speculation that the plant color is variable throughout its habitat.

Lupines, of the family Leguminosae, resent moving because of their deep taproot. Due to this long taproot they are better propagated by seed. Research reveals the family is pleased with good soil though considered short-lived. The utmost attention to this silky tuffet will be needed; aphids give them avid attention, too. One gardener we know keeps her gray, hirsute treasures in a sunny, sharp scree, but most of us are cowards, so give them partial shade. In the West are numerous species of lupines, which are supposed to prefer cool summers, however *L. perennis*, of the East Coast, certainly proves an exception to the rule.

MEDITERRANEAN BEAUTIES — From our University of Washington Arboretum Director, Brian O. Mulligan's participation in the International Dendrology Society tour of southern Yugoslavia, we Northwest gardeners were privileged to see soil and flora alien to our own rather damp and peaty land. There were fine stands of *Pinus nigra* and its varieties; *Fagus sylvatica* (a desirable tree for limestone soils and gardens large enough to support it); wide hummocks 5-6' tall of *Pinus mugo*.

A quietly attractive plant there, somewhat resembling a trillium, is *Paris quadrifolia*, whose leaves and small, linear, green flowers grow in ranks of four. This aptly named liliaceous one-foot herb confounds perfectionists by choosing occasionally to produce its foliage in ranks of five. It is a suitable

specimen for the wild garden, in leafy soil.

A glamour plant from Yugoslavia is *Gladiolus byzantinus* var. *amethystinus*, somewhat shorter and daintier than the usual gladioli. It is about 20" tall, blooming here in early June with rich, rose-purple, velvet, narrow flowers 1½" long. Decidedly an accent plant, it needs careful placement to enhance its dramatic, sultry beauty; an evergreen shrub on the order of dwarf box or *Pachistima canbyi*, or the brilliant, yellow-flowered native *Heli-anthemum grandiflorum*, serving to cover withering foliage. Seed does not set well, the plant going dormant before it completes the cycle, however, once obtained, the corms can be left in place in a mild climate. Lifting for storage in winter might be necessary in cooler parts of the country. A pleasant feature of this species is its ability to stand without a stake. Corms are available in United States nurseries.

Satureia alpina (Alpine Savory, or Calamint) is another bright beauty of the chalky heights and a delight to the herb collector. One of the numerous Labiates with woody rootstalk and aromatic, slightly toothed leaves, a 4-6" height and spikes of pinkish to purple tubes, it is eminently suited to the rock garden, in sun and sandy loam. It propagates easily from seed. What is a garden without a sweet-smelling herb or two to enliven the air? The Mediterranean regions abound in them.

BOGGED DOWN — Several methods of creating a bog garden have been reviewed previously in the *Bulletin*, but not the one Mrs. Joseph A. Witt told of making in her talk on bog and shade gardens. She made a virtue out of necessity by sinking and filling a bathtub which some misguided soul had deposited on the University of Washington Arboretum grounds. A more conventional idea she advanced was a paving of cobblestones projecting into a pond or small pool, as is frequently seen in Japanese gardens. This paving may be covered by perhaps two inches of water, with here and there a plant tucked in, or left unadorned to reflect the beauty of sky and the glow of wet rocks. This depth is also ideal for satisfying bird drinking and bathing needs.

Types of bog gardens are endless and so are the color combinations of the plants used. Pink and white may be a dominant theme by using for white the slightly fragrant, white-flowered *Rhododendron viscosum* (Swamp Azalea found the length of the East Coast), long-stemmed, white *Ledum glandulosum* blooms of lemon fragrance, or *Chamaedaphne calyculata* from whose long drooping racemes dangle waxen bells. The pink could come from the birthday cake decorations of *Kalmias* or the bells of *Andromedas*. All these are graceful shrubs requiring only moderate pruning, if at all, and are happy in peat, leaf mould and partial shade. Some of these shrubs will even take quite a lot of sun if their moisture requirements are met.

A bright blue and yellow garden could be contrived with the candelabra primroses, such as *Primula helodoxa* backed by the many fabulous blue or white Irises. *Iris laevigata* is a magnificent plant bearing flat flowers similar to the well-known *I. kaempferi*, but whose petals are narrower and appear more fragile; perhaps the yellow could be provided by our common yellow flag, *I. pseudacorus*. In warmer climates, the incomparable *I. fulva*, with its beautiful reddish-brown recurved blooms, should not be overlooked. We hope hybrids of these rare creatures will produce better hardiness ratings; although

some are hardy to New York, they are not reported to show their best.

All green bogs are desirable, too, floored in moss and the starfish *Droseras* (which require sun and sphagnum) and, rising above, various *Sarracenias* of red-brown, purple, or blotched leaves and erect scapes of nodding pitchers. There should be a corner reserved for the dark, menacing *Darlingtonia californica*, looking very much like an aggressive King Cobra we saw in a reptile garden. The *Darlingtonias*, in the north, need winter protection. Leaves or evergreen boughs may be used. If the green is overpowering, there is always room for a white *Trillium*, or two, stolen from your woodland garden. Perhaps you have a favorite plant group in your bog about which you might like to tell us.

INTERESTING FLORA OF THE PRAGUE ENVIRONS

JAROSLAV SIBAL, *Prague, Czechoslovakia*

At the southern border of Prague, still within reach of the busy city traffic, there appears an interesting geological formation of limestone called Barrandeum, extending from the city to the west and southwest at an altitude of about 200 to 300 m above sea level. Its hilly face is very diverse and one can find there numerous valleys with interesting flora (xerophytes, rock plants, prairie plants, and woodland plants).

This area is very rich in beautiful material for the construction of rock gardens. In the woods and in sunny places there can be found pieces of limestone, beautifully weathered, overgrown with mosses and lichens. Nature itself has created here ideal models of rock gardens, and many a keen rock gardener has come here and taken pictures of these natural formations in order to imitate them in his own rock garden. I, myself, belong to the lovers of beautiful stones and am lucky, being able to enjoy so many of them quite near home.

I am looking from my window at the sunny, rocky and prairie-like slope of the Hlubocepske Valley. In June, *Anthericum liliago* (Liliaceae) is in flower here. It has linear, glaucous leaves and white flowers, 3 to 4 cm across in a simple cluster. The roots penetrate very deeply into the stony soil. In the wild, the plant is about 30 cm tall, and a little taller when grown in the garden. Though it is protected by law, its flowers appear often on the altar of the local church for they hold their petals for a long time. *A. liliago* can be easily propagated from seed and it seeds itself freely, too.

All around grow plants of the genera *Thymus*, *Teucrium* and *Potentilla*. On the top of this slope there is a stony plateau, where, many years ago, there was a medieval castle, and where, on a very small area of a few square meters, appears the subshrub *Cytisus ratisbonensis*. It is a ground-hugging plant and only its lemon-yellow flowers are borne a few cm above the ground. The young shoots are softly hairy. Usually it grows together with *Lotus corniculatus*. They both have the same trailing habit, their papilionaceous flowers are much alike, and the leaves are three-parted; but *Cytisus* is a subshrub and *Lotus* is an herb. When grown in a rock garden, *C. ratisbonensis* is much more robust, up to 10 cm tall and it flowers more freely. I always

thought that it didn't produce seed-pods, but last summer I found out that it made a pod in a few days, which dried almost immediately and split, so that there was no trace of it on the plant. This makes seed-collecting rather difficult. The roots are long and wire-like, penetrating far into the stony soil (like *Daphne cneorum*). When transplanted from the wild, it rarely survives, but it can be well propagated by cuttings.

On the opposite, or north-facing limy slope of the valley, there in a thin pine woods, lives one of our native orchids, *Cephalanthera alba* Link. (*C. pallens* Rich.). In May or June one may find there its lovely yellowish-white flowers. Under a thin layer of humus in a heavy loam its roots grow intertwined with the roots of neighboring trees. This orchid is highly mycotrophical, and it is not possible to raise it from seed in the garden, and as a rare plant, it is protected by law.

But let us now go on the sunny slopes of our valley. On its upper border there are some smaller woods of *Pinus nigra*, which is native in south Europe. Here it can stand our winters, but stays dwarf. With its nearly black trunk, it is not as nice as our native *Pinus sylvestris*, the body of which is copper-coloured. This latter pine grows in abundance on the northern and southern slopes of the valley, and there it lives in the rocks, making there natural dwarf forms—so nice to look at.

As to the dwarf shrubs we may find the following species growing on the stony slopes of our valley: *Prunus spinosa*, *Berberis vulgaris*, *Euonymus europaea*, and *Cornus mas*.

In the spring *Pulsatilla pratensis* ssp. *nigricans* blooms in the grassy terrain. Its pendant, campanulate blossoms are of a deep, dark purple. Here in the wild it is only about 10 cm high, but in the rock garden it may reach twice that. Its roots are long and firmly established in the rocks. Propagating is easy from seed if sown when fresh. It is not definitely a lime lover. In similar localities appear small shrublets of *Helianthemum chamaecistus* Mill. and *H. canum* Baumb., both yellow flowering. The rocks there are also covered with *Sempervivum soboliferum*, *Sedum acre* and *S. sexangulare*. Also there is dwarf, golden *Alyssum montanum*, that may be easily raised from seed. Among these plants are beautiful cushions of moss, which apparently love the hot sunshine. Lichens also thrive there, even though the city with its exhalations is near.

Down by the brook, in the shade of tall trees, the yellow *Anemone ranunculoides* and the white *A. nemorosa* flower in the spring, each only 10 cm tall, and *Corydalis cava* with white, violet, and purple flowers. *Viola odorata*, *Hepatica triloba* (usually blue, but also pink and red), *Lathyrus vernus* Bernh. (*Orob. vernus* L.), with purple flowers that turn bluish; all these have their home higher up in the mixed woods. These two latter plants can be easily transplanted in the garden, where, if given a light place, grow up in strong decorative clumps with many flowers. Rarely also *Lilium martagon* can be found here. Close to the brook there is a small colony of tiny, bulbous *Gagea lutea*. And years ago, *Puschkinia scilloides* was growing in the valley, but had to give way to the building rush.

About half an hour away from here, in the Vltava Valley (facing east) there flowers in May *Iris aphylla* f. *bohemica*, a protected botanical rarity. It appears there in several tufts at the edge of a grove of *Quercus pubescens*,

a species of southern Europe that can thrive only in the warmest localities in Bohemia.

I wanted to describe here the interesting flora growing on the limy substratum quite close to Prague, but all that I have told you is but little when compared with the extremely rich limestone flora of the Natural Reserve near the Castle Karlstejn, only about 25 km further to the west.

I DARE TO DISAGREE

MARTHA MEARS, *Anderson, Indiana*

I would not dare disagree with anyone who has ever grown an alpine plant, for I am just now getting started on this wonderful adventure in gardening; but I do know most of the native flowers of Indiana and some of those of adjoining states.

I have had two rock gardens for many years, but have had to give up the larger one because of health. I have grown only the most common of rock plants. When I decided to try growing some alpiners in the smaller one, I thought I had better join the American Rock Garden Society, and read all of the material I could find on the subject. This way I have spent a very happy summer, reading and planning, grubbing out the old plants to make places for the new ones.

Imagine my surprise! In every book, pamphlet, hand book, quarterly, college extension literature, in all, except one, where *Viola pedata* was mentioned, I found these remarks by the authors: "Difficult." "Grows in very poor, sandy soil." "Must be planted in full sun to succeed." "Never found in shade and never found in woodlands, but always along railroads and on dry clay banks."

I have found six colonies of *Viola pedata* in my wanderings around in woodlands and they were all growing in open woodland in filtered sun. By open woodland, I mean large trees, no undergrowth or saplings, but definitely shade. Where there are trees there is leaf mold, and this does not mean poor soil. Sandy? Yes! We found a large colony in southern Michigan and another one about fifty miles away in northern Indiana. These two colonies would have covered about half a city block each. They were both in open woodland, both on a slope, one facing north and the other west. We found no bi-color, for they were all plain lavender with the mature plants five inches tall and four or five inches across. There were all stages of growth; small plants coming up by the hundreds; all in full bloom except the very small ones. What a wonderful sight! When I speak of "we", I had a friend who loved to wander in the woods as much as I.

Several years ago our State Garden Club Convention was held in Evansville, Indiana, which is in the extreme southwestern part of the state. One of the garden club ladies from Evansville told us that she had *V. pedata*, both in bi-color and the plain lavender one, as well as the rare white form, growing in her woodland. I bought some plants of both colors from a small local nursery and the nurseryman told me that he just planted the seed of this violet like radishes and that he had all the plants he wanted.

We found smaller scattered colonies of both bi-color and lavender in

the foothills of the Appalachians and the Smokies, all in open woodland. The soil was heavier there, not as sandy as the locations in Indiana and Michigan.

Another year I was part of a carload of women who drove down to the Garden Pilgrimage at Natchez, Miss. We drove on south to New Orleans and then east along the gulf to Georgia. I walked into one of those pine woods so common in the southern states. No filtered sun here! I doubt if ever a ray penetrated that thick canopy; yet I could not walk without stepping on *Viola pedata*. It was March and they were not in bloom. They were about three inches high, but anyone who has ever known *V. pedata* could not be mistaken in the foliage. Alas, my friend was not driving and our driver was not flower-minded and refused to wait for me to collect a few plants. I shall never know what variety they were.

I do not doubt that *V. pedata* grows in full sun also, for I have a friend who lived in the Virginias many years and she said that the roadsides were alive with them in the spring. We crossed both of the Virginias this summer and after many stops, I failed to locate even one plant.

Difficult? Yes, they are contrary and downright standoffish. I must admit (reluctantly) that after trying five times, once in the sun in the rock garden, and four times in my wild garden, I failed to keep them for more than a year. I had even brought soil in from the northern Indiana woods, but they refused to live in this.

My friend died and left me Louise Beebe Wilder's book, *Problems and Pleasures of a Rock Garden*. She is the only author I have read who said that *V. pedata* grew also in the shade.

In remaking my rock garden, I must try once more to have this jewel in my jewel box, so I am trying Mrs. Wilder's formula. I will use acid leaf mold and sand, modified a little. I am planting purchased plants this time, and since my rock garden is ninety percent sun (please don't laugh at me, you sun lovers) they will have to be planted in full sun. If you love to roam in the woods as I do, keep your eyes open; you may be as fortunate as I was and find *Viola pedata* in one of its native habitats.

BOOK REVIEWS

THE APPALACHIANS, by Maurice Brooks. 331 pp., illustrated. Houghton Mifflin Company, Boston, 1965. \$6.95.

Rarely do we find a top-flight naturalist with such a gift for story telling as Maurice Brooks, the author of "The Appalachians." He is on intimate terms with this big mountain chain which reaches for over two thousand miles from Mount Katahdin in Maine to the Springer Mountains in Georgia.

Formed of ancient metamorphic and igneous rock, the Appalachians are one of the oldest mountain ranges in the world. To one accustomed to the grandeur of the Alps or the Rockies, the Appalachians may seem unimpressive. But, as one geologist expresses it, "The venerable finished beauty of these mountains tells a story beside which that of the Alps is like the raw roughness of a new-quarried block compared to a finished statue."

There is much to tell of this huge country; its plants, animals, the people. The author tells it well as he leads us down the long Appalachian

Trail. There are exceedingly fine drawings that head each chapter, as well as some excellent photographs throughout the book.

This book contains a wealth of information that should not be missed and I enjoyed it thoroughly.

JOHN P. OSBORNE

THE COMPLETE GUIDE TO BULBS — by Patrick Syngé. 320 pp., illustrated. E. P. Dutton & Co., Inc., New York. 1962. \$6.95. (Published in England as *Collins Guide to Bulbs*).

Mr. Syngé has given us a very inclusive book on growing bulbs of many sorts, although he has confined himself to those which are available to the average gardener. No book could conceivably contain a complete list of every species of bulbs which might be of interest to the specialist in any species, or even to the bulb specialist. Mr. Syngé also limited himself as far as cultivars are concerned, but gives the better known of the named plants. His book, however, is as inclusive as most of us would want it to be, with many unfamiliar species mentioned.

In the first chapter, he outlines the many uses of bulbs; in formal beds, naturalized in grass or in the woodland, in the bulb frame, in the alpine house, and in the rock garden. There is some information on bulb propagation, on their pests and diseases, their structure and anatomy, and a very interesting small section on collecting bulbs. This is an aspect which is seldom covered in our literature.

The rest of the book is an alphabetical listing of the bulb species. It is very valuable with a wealth of little-known genera and species, along with the more common collectors' bulbs.

It is enticingly illustrated with 330 bulbs pictured in color and 27 in black and white. There are water colors by Paul Furse and Paul Jones, paintings by Pamela Freeman and Margaret Stones, and the color photographs of J. E. Downward and the author. Also there are line drawings by Pamela Freeman.

ALPINE LAWNS WITH SOME ACCOUNT OF THE SPECIAL USE OF CARPETING AND CREVICE PLANTS — by Anne Ashberry. 95 pp., illustrated. Hodder and Stoughton, Limited, London, England. 1966. 30s (approximately \$4.20).

The landscape use of rock garden plants is an engrossing study to many of us. So this new book is welcome, because the author shows us a very interesting approach to our hobby. She describes the alpine lawn and illustrates it. This type of garden is not new to the British, who have been writing about these lawns for a long time, but to Americans they are not so familiar.

In the beginning of the book, the author traces some of the history of these alpine lawns in England, going back to the seventeenth century and earlier to Bacon, who wrote that, "those (plants) which perfume the air most delightfully are three . . . that is burnet, wild thyme and watermints, therefore you are to set whole alleys of them to have pleasure when you walk or tread."

These fragrant lawns seem to have gone out of style in the nineteenth century, and now Buckingham Palace has one of the few remaining old lawns of this type. Now the lawn has become an adjunct to the rock garden,

with the mat formers being used in the approach and the surrounding garden. These lawns remind one of some of the very sophisticated pattern plantings which are coming to our attention in modern landscaping. Roberto Berle Marx is perhaps the most prominent artist in this.

Miss Ashberry gives some simple instructions for the preparation of the ground to be used for the alpine lawn. She shows how to plan the planting to allow for the spread of each plant. She illustrates quite exciting ideas of plant companions; sometimes plants we would never think were compatible, she combines with ease and success.

The latter two-thirds of the book is given over to plant descriptions, giving the probable eventual spread of each plant, and its proper use. She includes some annuals which are compatible with mat-forming alpiners, among them the delightful *Ionopsidium acaule*, which she sows on top of carpets with telling effect.

The book is illustrated by N. Creina Glegg. While she was obliged to photograph the same small plot of ground over and over again in different seasons and from different angles, she manages to make the pictures more effective in making the author's point, than if she had photographed bits and pieces of many other properties.

ROCK GARDENS AND THEIR PLANTS—by Wilhelm Schacht. 202 pp., illustrated. Edited and translated by Vera Higgins, Blandford Press, 167 High Holborn, London, W.C.1. 1963. 35s (approximately \$4.90).

Rock gardeners who really do their home work come sooner, rather than later, to the conclusion that they have read the same thing many times, and that they have seen the same pictures of the same plants too often. It is therefore, a joy to pick up a new book with a new approach, with new pictures of different plants, and probably new clichés. We will learn about this later, but at first it is a delight.

One such new book is not new, really. It is the English translation of the third edition of a book published in Stuttgart, Germany in 1960. Written by Mr. Wilhelm Schacht and edited and translated by Vera Higgins, M. A., V. M. H., it is nicely illustrated. No credits were given, so it is not known who to thank for the 20 color and 84 black and white pictures.

Mr. Schacht is known to members of the Alpine Garden Society and to others, as for years he was in charge of the famous gardens of King Boris of Bulgaria at Vrana. He is now Curator of the Botanic Gardens at Nymphenberg, Munich, and the Alpine Garden on the Schachen.

He recommends the "formal rock garden" for the city dweller. This is in contrast to the well established rule in England and in America, that the stones shall be laid in a natural manner, suggesting strata, and ideally giving the impression that the rock "grew there." All of this, which is most familiar to us who have read the rules time and again, is what the author calls the "informal rock garden" which he recommends for country gardens and large properties. For the city, he recommends what we know as retaining walls of flat walling stone, running in all directions and with all exposures for the well-being of the plants. The illustrations are very interesting in this section. One picture shows rows and rows of low walls rising in terraces. In the same situation here we would have outcrops and a natural look. The

latter two-thirds of the books is a plant list. He introduces many species which are not common to us here, such as *Aethionema oppositifolium*, the *Callianthemum* of the Ranunculaceae, and *Acantholimon olivieri*. The book contains some notes on grasses, sedges, and ferns and closes with some propagation notes.

Mention should be made of the short chapter on the animal life of the rock garden, though no reference to slugs is made. Birds, butterflies, lizards, even moles are animals we might think of, but Mr. Schacht recommends the hedgehog, better still, a family of them, both as friends and as exterminators of mice.

(Last three reviews) — LAURA E. JEZIK

OMNIUM-GATHERUM

Do the members realize what an exchange of gardening information and personal experiences with plants there is between individual members of the ARGS, as well as between our members and non-member gardeners? This is aside from the exchanges that normally take place where gardeners who live in the same communities or attend meetings of their Units or Regions get together periodically, or even occasionally, to discuss plants and gardening in general. The exchanges referred to are those of gardeners throughout much of the world who, through correspondence, exchange of pictures, slides, literature, seeds, and plants, and through personal visits, are building up a network of friendliness over which botanical and horticultural information flows with utmost freedom. Examples are numerous:

Mr. Vaclav Plestil, Turnov, Czechoslovakia, in a recent letter to the editor, writes in part, "You are right—we do have many mutual friends. Each day I am thankful to Mrs. M. Williams (Margaret Williams, of Reno, Nevada) for her very generous help, not only with seeds, but with very appreciable information; how to treat them, etc. Thanks to her, I have today in full bloom many very nice plants and many seedlings of various fine species quite new to us here. I am saving as the rarest gems seedlings of *Hesperochiron*, various *Fritillarias*, *Lilium kelloggii*, and *L. bolanderi*. There are seedlings from seeds sent me by friend Mr. Lawrence Crocker, also seeds from Dr. C. R. Worth. I will write to him now and send him some seeds. Seeds from so many others, too, that I must spend most all of my free time among seedlings—it is a very great joy.

"I am very happy to see *Castillejas* growing and increasing, *Gentiana algida* and *G. andrewsii*, *Talinums* in full bloom, *Lewisia*s with their rosettes growing broader day by day—each plant reminds me of some one. It is impossible to forget the name of Mrs. Birdie Padavich (North Bend, Wash.) with a pot of *Calypso bulbosa* in hand (*Calypsos* now have underground new tips, prepared to show new leaves in autumn. Impossible to forget that it was Dr. Worth who sent me *Sanguinaria canadensis fl. pl.*, *Anemonella thalictroides*, *Trillium grandiflorum*, *Penstemons* and *Lewisia*s. Then there is Dr. Rokujo of Japan who sent me *Galucidium palmatus* and *Viola eizanensis*. And now are to be seen the first buds of lovely *Lavauxia mutica* sent me by Dr. Wagnanski, of Santiago, Chili. There are too many to go on."

Our secretary, Mr. Richard W. Redfield, left via air on Oct. 23 for a



Part of natural rock garden in Botanical Garden, Pruhonice, near Prague, Czechoslovakia. Taken May 8, 1967.

B. O. Mulligan

months visit to New Zealand where he will contact ARGS members and other gardeners. He is accompanied by his brother, Mr. H. L. Redfield. You may be hearing more about this trip at a later date. From Seattle, Mr. and Mrs. Neill D. Hall visited England and Scotland this summer. Maj. Gen. D. M. Murray-Lyon wrote, "Recently we had a call from the Halls. A charming pair and I got some tips on how to cultivate *Cheilanthes siliquosa* and *C. gracillima*, so I am hoping they will do better in their new home." The General also wrote that he had the pleasure of showing about his garden Mr. and Mrs. Duchacova of Czechoslovakia. Mrs. Duchacova (Olga) is an ARGS member. Mrs. Margot Stuart, also of Pitlochry, wrote of brief visits from the Halls and the Duchacovas.

During the summer, Mr. Brian O. Mulligan, Director of the University of Washington Arboretum visited Czechoslovakia, Hungary and Poland, as a representative of the American Association of Botanical Gardens and Arboreta, to take part in a Symposium on the Biology of Woody Plants.

Later, he was on tour in southern Yugoslavia with the International Dendrology Society. While there he was joined by Mrs. Mulligan. They returned via the British Isles where they visited more gardens. Hundreds of other examples could be given were the details but known. Hardly an ARGS member who is not in one way or another contributing to this national and international exchange of botanical and gardening information.

Now that you have seen the first *Bulletin* of the 1968 season, it is hoped that the changes you have undoubtedly noticed met with your approval. The outside front cover is changed somewhat with our emblem emblazoned there. The real change is inside. The larger type used should be much easier on your eyes. Perhaps now more of the *Bulletin* will be read by more members. Space had to be sacrificed because of the new type and as a result there is not as much to read in each issue since the number of pages remains the same. You win and you lose.

The Index question has about reached a point of decision, at least as far as the editor is concerned. Of course, the Committee will be appraised of the results of the questionnaire and since there was not a single instance where a member suggested that the Index be discontinued, and some very potent arguments as to why it should be continued were advanced, there seems to be only one conclusion to be drawn. The latest questionnaire returned came from Austria. Dr. Franz Kiesenhofer desires that we prepare and publish an index covering all Bulletins from the beginning to date, as well as continue with the two-year one. To accede to his first desire would be a formidable task and not to be undertaken lightly.

Nomenclature! That botanical desert of shifting words; nothing seems permanent there. What one learns today may be worthless tomorrow. Plant names are not always what their latinized epithets indicate. An example: In Ing. Vasak's article in this issue you will read about *Astragalus elbrusensis* which the author says is found on Mt. Elburz, the highest mountain in Iran. Now the editor, having a questing eye for possible typographical errors, noted here a discrepancy. If the plant came from Mt. Elburz, then the name should be *A. elburzensis*, not *A. elbrusensis* as the author had it. Surely this must have been a mistake made when the translation was typed!

The editor, however, wanted to be sure before making any changes. He got out L. H. Bailey's *How Plants Get Their Names* and verified his understanding of the meaning of the botanical plant-name-ending "ensis" and found this given as an example: "*Saxifraga virginiensis*, pertaining to (citizen of) Virginia." To be consistent then, *Astragalus elbrusensis* would indicate that the plant was "a citizen" of an area called Elbrus, which, of course, is very close to the word "Elburz" and easily susceptible to error when one word or the other is used; pronunciation, misreading, misunderstanding, and mistyping, etc. One more check could be made, so the editor found a good map of Eastern Europe and Asia Minor, and this is what he found: In Iran, where he looked first, he found no Mt. Elburz, but he did find the Elburz Mountains. Further search of the map showed a mountain considerably less than 1000 miles to the northwest of the Elburz Mountains named Gora El'brus. This peak is 18,481 feet high (the highest in Europe)

and is on the Russian side of the Caucasus Mountains which separate Europe from Asia.

The author said that the plant came from Mt. Elburz (Elburz Mountains) in Iran, and the plant's name indicates that it is "a citizen of" Gora El'brus (Mt. Elbrus) in Russia. Certainly a discrepancy existed and the indication is that it could have been caused by a translational or typographical mistake in the Vasak article. Was the editor justified in making a correction in the plant name, as typed, as a result of the conclusions drawn? Possibly! He decided, however, to make sure. There was yet time before submitting the article to the printer to check with Mr. Vaclav Plestil, the translator of Ing. Vasak's article. Airmail was used and the answer came back promptly.

The editor expected some words of appreciation for his astuteness in ferreting out the truth. He could just see the words of apology for whatever the error was, with the addition of, "You're a pretty sharp editor to catch such a subtle mistake." The actual answer pricked his egotistical balloon and left him in a sadly deflated condition.

"I talked to Ing. Vasak yesterday morning," Mr. Plestil wrote, "and asked him to explain this question of Mt. Elburz and Mt. Elbrus. He said that the article was correct as written and translated. *Astragalus elbrusensis* does *not* grow in the area of, or on, Mt. Elbrus in the Caucasus, but in the Elburz Mts. in Northern Persia (Iran). It is one of the old nomenclature mistakes, which are not rare in botany, due to some orthographic error in the first publishing." Now you are warned; don't start looking for *Astragalus elbrusensis* on Gora El'brus in Russia for it is not "a citizen" there, in spite of its name. Pity the poor editor!

* * * * *

Notice has been received from Mr. L. M. McDaniel of the American Perennial Gardens of Garden City, Michigan, that he is retiring and had closed his nursery as of October 31, 1967. He wishes our readers to know this so that none may be disappointed should they have ordered from him after that date. His hearty thanks to all his past customers.

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