



Cymopterus Ripleyi Barneby

IMPRESSIONS OF NEVADA --
the Countryside and Some of the Plants --
as Seen Through the Eyes of an
Englishman, H. Dwight Ripley

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Because many rare plants in Nevada now under consideration for threatened or endangered plant status were first discovered by H. Dwight Ripley and Rupert C. Barneby, it seems appropriate this year to reprint the parts of a series of articles written by Ripley which pertain to Nevada and which describe some of our unusual plants. These articles were written primarily for rock gardeners in the British Isles and appeared in the Bulletin of the Alpine Garden Society. Ripley's impressions of Nevada may not be the same as yours, but please consider how strange Nevada must have seemed to these two Englishmen. Their travels took them to many unusual habitats, rare plants rarely grow in beautiful locations. Some areas which Ripley felt were virgin country had been poorly collected in the past. In fact, until recently some species were only known from Ripley and Barneby collections. One at least, Arenaria stenomeres, has never been recollected. Just as plants know no political boundaries, neither did they in their search. So the descriptions of a few interesting plants which they found in adjoining states have been included - many of these plants also grow in Nevada or possibly may be found here in the future.

The original articles were illustrated with excellent photographs, most of these were taken by Barneby, but a few were taken by Ripley. The page numbers by the names of some of the plants, such as Arctomecon californica and A. merriamii, refer to photographs. Only one of the photographs was reproduced at the end of these excerpts. No effort was made to bring plant names up to date.

Ripley and Barneby began their plant explorations in the 1920s in northern Africa and south-

eastern Europe, especially in Spain. They collected many plants to grow in Ripley's garden in Sussex, England, but they also collected for herbaria. After 1936, when they moved to Beverly Hills, Calif., they traveled extensively in Nevada and other southwestern states as well as in Mexico. Barneby was interested in searching for plants in the Pea Family (Fabaceae), especially in the genus Astragalus, and this led them to many unusual places. Ripley kept his eyes open for plants with horticultural appeal and these are the ones he wrote about particularly in this series of articles. In 1948, these two men moved to New York and built two large rock gardens, one in Dutchess County, and a later one on Long Island. They successfully grew many unusual and difficult plants, including some from Nevada, in these gardens.

In addition to being a plantsman and an author, Ripley was an artist. His artistic talents show in these articles as well as in other fields. He was fluent in over 30 languages and dialects and for many years worked on a compilation of botanical information based on vernacular names of plants in these other languages. This huge manuscript, which was not completed at the time of his death in 1973, is in the Library of the New York Botanical Garden.

Barneby, a modest perfectionist, is a research associate at the New York Botanical Garden. He achieved "botanical immortality" with his monumental works: Atlas of North American Astragalus and Dalea Imagines (see the October 1978 NNNPS Newsletter). Barneby drew the 142 plates illustrating the latter book. Although he is still keenly interested in Nevada plants, he is currently working on an account of Cassia in the New World Tropics.

--Margaret J. Williams.

The Limestone Areas of Southern Nevada and Death Valley.

BY DWIGHT RIPLEY

The partially calcareous region here described occurs from the Grapevine Mountains of California's Death Valley south-east to the Sheep and Spring Mountains of Nevada, a distance of roughly 130 miles. It is an area rich in endemics, curiously neglected by to-day's botanists, who with few exceptions prefer something a little less jejune, choosing rather the high and chilly pasture, the more immediate rewards of "timber-line," infinitely richer in genera and species. But for those who are able to turn a blind eye to the seductions of lupinus and alpine castillejas, these desert massifs more than atone for any lack of camping facilities, or what the Sunday supplements describe so aptly as "swathes of colour."

Although Coville and Purpus have both collected in this region, it was the tireless Marcus Jones who found and named so many of the rare species of the district. His only means of travel was his bicycle, on which one may imagine him swooping and skimming like some exotic bird over the valleys scorched by summer sun, or toiling up dusty roads that led, tedious yet arrow-straight, into the flaming mountains. He it was, for instance, who named that rare penstemon—*P. albomarginatus*—a plant from three obscure dunes of special orange sand (one in California, one in Arizona, and one in Nevada), its leaves and calyx-lobes edged with ivory as in the western swertias, and smallish flowers of a cold and ruthless pink. The undulant white margin of the calyx is very noticeable, unique, I think, in this large genus.

From the town of Las Vegas, the centre of our many excursions, the scene is one of uncompromising austerity. But for Charleston Peak rising to the west with its dazzling lawns of snow tilted steeply above the smouldering desert, one might well be in south-eastern Spain, in the province of Murcia. Here, however,

are no Alcares, Espuña or Carrascoy, but the more prosaic Spectre, Skeleton and Pintwater Ranges. Any hint of vulgarity is confined to occasional sunsets, not too shrill affairs of tea- and ginger-coloured clouds trailing between a dark blue zenith and the sharp profile of the sierras, whose crests and chasms, most of them unknown even to the Knight of the Burning Bicycle, lie blackly on a horizon of brilliant and tender green.

The climax of these limestone gorges is undoubtedly Titus Canyon in the Grapevines, a deep and frightening crevasse down which winds a primitive "road" or river-bed. For in this slightly theatrical setting, together with most of the region's endemics, lurks the prize of prizes, the undisputed queen of all Antirrhineae, *Maurandya petrophila* (see page 20), whose nearest relatives live far away in Arizona and on the inhospitable shores of Mexico, two species of immense antiquity. While the leaves of these are scalloped and glandular, at once fleshy and brittle, those of *M. petrophila* are harsh and papery to the touch, without glands, the lobes elegantly spine-tipped like those of certain thistles. The genus *Maurandya* tends on the whole to flop or twine, but *M. petrophila*, scorning such controversion, sits tight in its cave or precipice, a dome of convex prickly leaves, the older plants almost suffrutescent. All three species bear pale yellow flowers, itself an anomaly in the genus, but in the other two they are small and unattractive. Those of *petrophila*, on the other hand, peer from the stiff rosettes like sumptuous primroses—primroses just opening with the flowers still a little crumpled, of a serene and candid yellow, lighting the grottoes and the echoing solitudes of rock with moonlit pallor.

Possibly the most remarkable thing about this plant is the fact that it was not discovered until 1932, by Copille and Gilman, and named as recently as 1935, although botanists, particularly Jones, must have travelled down the canyon before them. The first yellow-flowered *maurandya* to be noted, in 1921, was *M. flaviflora*, pendent on chasms by the sea at the bay of Las Animas, a remote Mexican *concha* difficult of access. This was followed in 1928 by the discovery of *M. acerifolia* on canyon-walls in the Salt River gorge east of Phoenix, Arizona, presumably after the opening of the Apache Trail road. But *M. petrophila*, the most extreme development of the genus, was the last of the three to be found, and then in the well-explored state of California, within the boundary of a "National Monument," the famed Death Valley, visited annually by scores of tourists who come to gape at and record on imperishable Verichrome such geological oddities as Dante's View and the Devil's Golf Course, sea-level phantasmagoria denuded of all vegetation

and coloured violently in tones of mustard, cinnabar, and arsenic-green.

There are very few ferns in this region, and the only species I recall seeing at all is *Notholaena Jonesii*, glaucous and rather unhappy-looking, growing at the top of Titus Canyon and in the Spotted Range. It is far exceeded in elegance by *N. limitanea* of southern Arizona, which has an altogether healthier port, with fronds produced more lavishly, and absurdly blue. Other noteworthy species inhabiting the limestone are *Salvia mohavensis*, with ink-coloured flowers and whitish bracts in which the same blue-green ink seems to have run; *Penstemon Thompsonae*, whose small sharp violet corollas set among glaucous leaves conceal a stoutly woody base (this is one of the finest for the garden)

Further down the canyon you will come upon quantities of *Salvia funerea*, a sage with spiny-toothed leaves felted in white wool and small corollas of dark violet, emerging from calyces yet more woolly, resembling pellets of swan's-down. It is confined to Death Valley, where it occurs rather rarely, and its nearest relative is the equally bizarre *S. Greatae*, of which a few aged and obviously moribund shrubs still lurk in the Orocopia Mountains more than 200 miles away. It is less attractive than *S. funerea*, with lilac flowers and greenish herbage, but the leaves are more noticeably spiny.

Not all of this region's rare and beautiful plants, however, are confined to rocks or cliffs. Between the mountain ranges there stretch vast areas of gypsum known as "gumbo flats," which support an endemic flora quite as interesting as that of the more tempting ravines. For many miles in every direction round Las Vegas these flats extend, occasionally fed by a salt spring adorned with sedges and the indigo stars of a little *sisyrinchium*. Their most remarkable denizen is without doubt *Arctomecon californica* (see page 19), which in spite of the specific names does not grow in California, nor has it yet been found outside the immediate vicinity of Las Vegas—whose bluish leaves, clothed in long pale hairs, sit comfortably on beds of alkaline clay as white and stodgy as nougat. From these rise tall, smooth stems, almost leafless, each branching into a corymb of fabulous gold poppies, sometimes fifteen or twenty, the buds pendent on the glaucous pedicels. But the charms of this plant, though equalling those of the loveliest meconopsis, are considerably offset by its refusal to grow in anything but a gumbo flat. It is possible, by expending endless care,

to cultivate the most obstinate Himalayan poppies, for their requirements are after all a mere matter of shade, water and drainage; but with an arctomecon there's really nothing you can do unless, having first installed an air-conditioning plant, you are willing to reproduce, under glass, a bed of deep imported gypsum charged, of course, with the correct ratio of unwholesome salts. No. Arctomecons are not for the English garden. Yet one never altogether gives up hope. . . . There is another species, for instance, in its way almost lovelier, *A. Merriamii* (see page 19), with white poppies held fastidiously, and singly, above the typical shaggy pale-blue leaves, broadly toothed at the apex. This does not grow exclusively on the alkali, but more often than not climbs away from the plain on to stony ridges, which it shares with *Cymopterus Gilmanii*, a rare umbellifer with foliage like that of the wild celery, small pinkish flowers, and conspicuous white fruits sometimes tinged with mauve. Neither of these plants is really rare at the south base of the Spotted and Desert Ranges, but elsewhere you may search in vain for the cymopterus, which before last year was known only from Death Valley, though the Bear-Poppy has been found here and there in the region, always on the most caustic and unfriendly slopes. There is a third arctomecon, *A. humilis*, collected only once in south-west Utah, but this I have not seen. If the dried specimen is any criterion it should prove the best of the three, since the whole plant is scarcely more than eight inches high, while the large white flowers, borne in umbelliform racemes, have persistent corollas—almost an anomaly in the Papaveraceae.

Rather similar in habit to the arctomecons is *Enceliopsis nudicaulis*, a composite with handsome heads of yellow rays, which often grows with them; but this is surpassed by *E. argophylla* and, more especially, by *E. argophylla* var. *grandiflora* (*E. Covillei*), which I have cultivated successfully in England, though it is a plant of clayey banks in the Panamint Mountains, and should be as hard to please as an arctomecon. It has large, entire, oval leaves densely silver-plated with fine hairs, above which are balanced the enormous blazing suns, visible from a great distance in the sombre and flowerless wastes of Wildrose Canyon. The scarlet loco-weed, *Astragalus coccineus*, also occurs in these same mountains: this I have already described in a previous article in the *Bulletin*. The accompanying photograph (page 20) speaks, I think, for itself. Similar, and equally striking in its way, is *A. funereus*, with silver as opposed to white-woolly indument and black-haired calyces producing long flowers of purple. The pods are of heroic size, exceeding even those of *A. coccineus*, furred like

a polar bear with white, expensive-looking plush.

One of the most rewarding gypsum areas visited last year lies south-east of Frenchman Flat in Nye County, Nevada, a parched and desolate stretch of low alkaline hills on which only the meagrest of vegetation subsists. But the few species which have the fortitude to endure in such surroundings the long fiery months between spring and winter are rarer, or actually unknown, and well repay the arduous visit to their habitat. *Polygala sub-spinosa* here displays an especially glaucous form, the shrubs being little more than three inches high, pleasantly enlivened by the familiar flowers of *P. Chamaebuxus* reduced by one half. With it grow *Phacelia Parishii*, a scarce plant, and *Cymopterus Riplei* var. *saniculoides*, whose globular heads of black-purple, on long, dark peduncles among the varnished leaves, remind one vaguely of chocolate truffles from some pre-war *confiserie*. The seeds of this species are squeezed so tightly together that many become asymmetrical or actually abort; they are elegant, with short silver hairs. The only member of the genus to share its peculiar fruit-structure is *C. deserticola*, a great rarity known from two widely separated localities on the Mohave Desert, and often looked for without success by Californian botanists; its black, congested umbels bear an even more marked resemblance to something scrumptious from the local tuckshop, which may explain why the desert hares devour them almost as soon as they appear, a habit that is doubtless the cause of the plant's apparent rarity. This phenomenon of absolute black occurs also in the flowers of another umbellifer growing in the region, *Lomatium mohavense*; were these two to be cultivated in a large pan together with, say, one of the blacker Greek fritillaries, an effect could be produced of such unmitigated gloom that visitors, gazing at the awesome trio, might well suppose one had conjured them from the nether regions.

A fourth inhabitant of these gypsaceous hills was a new species of *Quamoclidion*, which we have tentatively named *Q. pendulum*, with a conspicuously alien habit, bearing pallid bluish foliage and stems, entirely devoid of glands, and hanging clusters of white flowers that open only in the evening. This grew elsewhere in fair abundance, as at Hiko and the Pahrnagat Lakes, and it is a mystery how so distinct a plant could have escaped the notice of Marcus Jones, who collected in the Hiko district.

By the end of June most of the above-mentioned species have ceased blooming, or at best have a slightly careworn look, and by mid-July the interesting plants are to be found high up in the Charleston Mountains, at an elevation of nine to eleven thousand

feet. Ira Clokey, of Pasadena, was the discoverer of many of this range's endemics; until his extensive herborisations a few years ago very little was known of its flora. Now, however, we have such notable new species as *Ditaxis diversiflora*, *Cirsium Clokeyi* and *Synthyris ranunculina*. The first two offer chiefly botanical interest, but the *synthyris* is choice enough for the most captious members of our horticultural hierarchy, being just about the smallest and frailest (and incidentally the southernmost representative) of its genus. The leaves can only be described, however much we may inwardly shudder, as "wee." They are wee. In point of fact they are a quarter the size of *S. Sweetzeri*'s, scalloped as in that species, but with a characteristic outline, more like those of *Sibthorpia europea* or *Hydrocotyle natans*. The flowers are blue. It grows in damp places with dodecatheons and other moisture-loving species, seemingly unperturbed by any thought of its future extinction which, in view of the ever-increasing aridity of the Nevada climate, is only too probable.

Potentilla cryptocaulis is another plant confined to the Charleston range, where it runs about among the stones, its narrow leaves composed of densely imbricated leaflets giving that almost vermiform appearance familiar in such species as *PP. Gordonii* and *santolinoides*, while *Ivesia Jaegeri*, a cousin similarly endemic, chooses stark precipices of limestone for its habitat. Then there is *Aquilegia scopulorum* var. *perplexans*, a diminutive columbine with flowers of all colours—red, blue, white, red and white, blue and white, and occasionally yellow. *Epilobium nevadense*, too, may be found growing about Cathedral Rocks at the head of Kyle Canyon, a perennial with creeping roots and sizeable rose trumpets. From the point of view of pot-culture in England, however, probably the most decorative of all the Charleston Peak plants is *Tanacetum compactum*, a species so distinct that Rydberg gave it the generic name of *Chamartemisia*. In habit and general appearance it bears a really striking resemblance to *Artemisia granatensis* of the Spanish Sierra Nevada. The minute leaves are trifid and densely sericeous, springing from a stout woody rootstock, while the capitula are borne singly above these neat silver mats. The whole affair is barely two inches high and, like many species which diverge sharply from all their congeners, is to be found quite commonly at the correct altitude, in this case 9-11,000 feet. In the alpine house (where, needless to say, its hardiness would never for a moment be in doubt) this exquisite tansy from desert snows should vie successfully with such persistent winners in the "Silver Foliage" class as *Stachys mollissima* and *Helichrysum virgineum*.

RARETIES OF WESTERN NORTH AMERICA.

By DWIGHT RIPLEY

The following species are among those observed by Rupert Barneby (who took the accompanying photographs) and myself during successive years of herborizing in California, New Mexico, Texas and Nevada. I have marked with an asterisk those plants which were collected and are now braving the rigours of cultivation in a Sussex garden.

Castilleja Barnebyana has been seen only on Connor's Pass in eastern Nevada, where it burns in all the rock-fissures with wads of pure vermilion. Its choice of habitat (vertical cliffs) is as unusual for an "Indian Paintbrush" as its stature, which is barely three inches. In California this genus has considerable diversity: high up in the San Bernardino Mountains, for instance, **C. cinerea* makes tufts of brown—flowers, bracts and leaves are all of the same saprophytic hue—while on the islands off the coast *C. hololeuca* is a large woody shrub with linear leaves like those of *Helichryson Stoechas*, inrolled and dead white. It grows with moderate success in the Botanical Garden at Santa Barbara, where there is a fine collection of native plants.

**Lepidium nanum* (see p. 75). Watson's specific name hardly does justice to this rare *Polsterflanze*, whose monster hummocks deserve a more imaginative epithet than "dwarf." It is a plant of calcareous-alkaline flats and sandy soil under sagebrush or junipers at a mere 5000-5800 feet and not, as you might expect, of some windswept scree high in the Rockies; it even has the extreme aretioid habit of many Andean species, and in particular of those famous cushions, so alike though often generically distinct, that stud the melancholy shores of Patagonia. This vegetable bun, peculiar to north-eastern Nevada, had only been collected in Elko County until last year, when we came upon a large colony more than 150 miles to the south, in the valley of the White River. Here it grows with *Astragalus toanus*, a graceful rush-like species of brilliant hue, and a new *Swertia* (*S. gypsicola* Barneby in sched.) with linear leaves edged in white, far and away the narrowest of the genus. In the photograph it may be seen pushing up through the small, cream-coloured flowers of the *Lepidium*.

Penstemon dolius is unusual for two reasons: its colour combination (grey leaves and sapphire-blue flowers) and its habitat (gypsum). Very few *Penstemons* seem ready to endure the ups and downs of life on the alkali, but this one has adapted itself successfully to its environment, and is conspicuous on a few denuded hills in eastern Nevada and Utah. In the Piños Mountains of California we saw several plants of *P. labrosus* (normally scarlet) with flowers of clear golden-yellow. This colour is not found, so far as I know, in any other *Penstemon* except **P. antirrhinoides*, a strongly woody shrub reaching a height of seven or eight feet, locally abundant in the dry massifs of San Diego County and without charm. Another beard-tongue of singular hue is **P. Whippleanus* from mountain woods in New Mexico, with thinnish, sylvan leaves and almost black flowers, produced in plenty, and as dark and forbidding as prunes. *P. Kingii* has the same colouring, but is altogether neater and more shrubby, and could even be described as pretty.

Laphamia, a composite genus very close to *Perityle*, is remarkable for being entirely saxatile, and since chasmophytes are all too few in North America as compared, say, with Mediterranean Europe, its members may be studied with respect and bagged, when accessible, for the pampered seclusion of the alpine house. Unfortunately, few of the choicer species are accessible. The best of all, *L. cernua*, is confined to Organ Peak in New Mexico, which not only represents an arduous climb, but is also the centre of an artillery range; it is for the collector to decide whether death itself is too high a price or not to pay for the *Laphamia*'s woolly mats and pendent orange disks, which anyway do not appear before August. Those of less heroic stamp might be content with *L. quinqueflora*, a glossy-leaved species described only ten years ago by Steyermark from the Guadalupe Mountains of Texas, together with the equally odd *Pinaro-pappus parvus* and straw-pale *Valeriana texana*.

**Notholaena Fendleri*. Ferns, being flowerless, are not easy to describe adequately in print; and of this *Notholaena*, to my mind the most beautiful of all the species growing in the United States, one can only note that its tiers of blue-green fronds, held out horizontally from the purple stipe and cut again and again into almost oriental zigzags of pinnule and rachilla, resemble nothing so much as intricate small pagodas of turquoise filigree, and let it go at that.

UTAH IN THE SPRING.

By DWIGHT RIPLEY.

After a season's herborizing in the less known regions of Nevada, when many new records for the state were made and nine species described for the first time, Rupert Barneby and the author, though fully aware that more material remained to be discovered if the search were prolonged, decided to explore the country to the east, and especially that part of central Utah known as the Green River Basin, made famous by Marcus Jones' remarkable collections of astragali.

These loco-weeds (from the Spanish word for "mad") have the reputation of driving cattle crazy, so that the poor creatures are occasionally seen staggering about their pastures or lying in the most uncomfortable positions, their motor nerves at sixes and sevens. Astragali have much the same effect on the botanist. For unless he has previously made an intensive study of the genus (and Rupert fortunately is as much at home with valves and sutures and the Eleusinian mysteries of the pod as Jones or Rydberg themselves, so that identification holds no terrors for him), he is likely to find himself caught in a labyrinth from which he emerges only after long months of fruitless endeavour and often with white hair.

However, by steering clear of such involved subgenera as *Cystium* and *Homalobus*, you may quite often light on a species of great distinction and beauty. *Astragalus utahensis*, for example, may be found here and there over most of the state, and is always worth your attention with its clumps of fat little leaves clothed in dense white wool and flowers of brilliant purple. A much rarer and more fantastic plant is *A. asclepiadoides*: in this species the "leaf" consists of the final leaflet enlarged to monstrous proportions, glaucous and succulent, while the remaining leaflets have entirely disappeared. It grows more often than not in the company of *Asclepias cryptoceras* which it so successfully imitates, and, though scarcely calculated to make the members swoon en masse at the A.G.S. Spring show, it is of course a great prize for the herbarium. The flowers vary in colour from stale yellow (as at Castle Dale) to staler mauve (as in the San Rafael Swell), while the pods, shaped like miniature lemons, have almost the texture of human skin, red from an overdose of sun and with enlarged pores.

But the main object of our trip, aside from tracking down and collecting certain astragali which existed only in Jones' herbarium at

Pomona (and to see such species as *AA. detritalis* or *musiniensis* growing in situ is worth the most arduous journey) was to try and rediscover *Arctomecon humilis*, mentioned in the March number of the Bulletin as being probably the choicest of the three species known. The other bear-poppies, *A. californica* and *A. Merriamii*, are confined to southern Nevada, except for a few records of the latter from the Funeral Mountains of California. Parry's discovery, therefore, of a third species in southern Utah was provocative to say the least, and unless I am much mistaken it has not been seen again since he collected it on his way to the Beaver Dam Mountains from St. George, in 1847. To have located the precise spot where Parry saw this plant would have meant a long trip on horseback, so we decided to search for it elsewhere in the vicinity of St. George. After three days of scouring the neighbourhood in vain, and just as we were about to give up, we acted on a sudden impulse after dinner and drove in the twilight to a group of red clay hills twelve miles south of the town, on the road to Mokiah Pass, which we had previously rejected as being too bare to support any kind of vegetation, least of all an arctomecon. But we had been wrong, it seems. For no sooner had we first set foot on the first of these forbidding knolls that we both spied the poppy at the same moment: except for a rather untidy eriogonum it was the only species in sight . . . (see p. 173).

Arctomecon humilis's rarity alone should recommend it to the discriminating cultivator, but it is also to my mind one of the most startlingly beautiful plants in all Utah. What success one would have with it in the alpine house is, alas, a matter of speculation, for the seeds of its cousin, *Arctomecon californica*, according to Mr. Clokey, have never yet been induced to germinate. It is indeed difficult to imagine this poppy, whose bristly rosettes of narrow bright-blue leaves sit so happily on their slopes of contrasting vermilion clay, ever looking anything but miserable in an English pot, swathed perennially in mist and the goal of every slug and aphid in the county. But I have dispatched some seeds of this to my friend Mr. Walter Ingwersen, and he, I hope, may succeed with the genus where others have failed. . .

Some boil their desert seeds, some burn them; others scratch and cut them. (Yet others, after three years of waiting for them to germinate, have been known to dig them out of their mouldering pans and stamp on them.) Violence, it seems, is necessary. And so, by following the modern precepts of fire and sword, we can perhaps conquer this arctomecon in our own humble way with fire and scissors.

MORE WESTERN AMERICANS.

By DWIGHT RIPLEY.

Asclepias Ruthiae was described for the first time by Bassett Maguire in 1941, and named in honour of his wife. It is an attractive plant, lying close to the ground which, to suit it, should be the special brick-coloured sand of the plateaux of central Utah. The furry, oval leaves are sharply pointed at the tip, suffused with lavender on both surfaces, and hemmed around with a thin margin of white. The umbels of flower are small and purple, echoing in a darker shade the purplish leaves, so that in its general colouring Ruth's Milkweed reminds one a little of those black-currant puddings devoured with such alacrity in the nursery, weekly miracles of mauve bread and acid, darkly Tyrian fruit. Up to the present it has been found only in and around the type locality, where I came upon a colony of limited extent in the summer of 1942.

Another uncommon *Asclepias*, published by Woodson in 1939, is *A. Cutleri*, confined to dunes of deep white sand in that obscure region east of Monument Valley so seldom explored by botanists. This is a bird of quite a different feather, bearing leaves as thin as, or thinner than, grass, and curious pendent foliicles, the whole plant barely three inches high: it is an inconspicuous member of a unique sand flora which includes that rare bulb, *Eremocrinum albomarginatum*, only species in the genus *Eremocrinum*. And when one has come face to face with the Lily of the Desert in the

full glory of anthesis, one is inclined to be thankful that the genus is monotypic; for *Eremocrinum albomarginatum* is without doubt one of the least beautiful bulbs in existence. As such I recommend it to certain friends of mine who, oblivious of all Dicotyledons, save perhaps an occasional *Dionysia*, pounce babbling on anything and everything that springs from an onion or a corm. Pan upon pan of Mediterranean *Menu fretin* clutters up most of the available space in their alpine houses: crocuses of dismal hue, alliums of no hue at all, and many little romuleas mailed frenziedly from Corsica form the nucleus of these remarkable collections. To them, then, I give the Lily of the Desert, and may their gaze feast long and lovingly on its arrangement of squalid stars, neither white nor green, but the colour of tissue-paper left out for a fortnight in the

rain, bunched all together into a lopsided spike above the narrow leaves.

Aster scopulorum, on the other hand, is very lovely indeed, though not at all rare: it has, in fact, a wide distribution from Oregon to the Rockies. It is synonymous with *Ionactis alpina*. This species is particularly pleasing when encountered in the desiccated ranges of Nevada, where vivid colour is confined mostly to yellow *Balsamorhizas* and the little sugar-pink *Phloxes* that are so abundant in the pinyon zone; for to this rather too familiar combination it adds a note of extraneous and piercing violet. Contrasting with the brightly-coloured ligules are the golden disk-flowers; and the leaves are scarcely a centimetre long, narrowly ovate, and crowded along the diminutive stems.

Astragalus uncialis (see page 69) is a most distinct member of the section *Xylophacos*. The trifoliate leaves, so unusual in *Astragalus*, impart a characteristic look to the whole plant, as do the large and hairless pods. These, unfortunately, do not appear in the accompanying photograph, which was taken during the exceptionally late spring of 1942, about a mile from a ramshackle general store marked on my map as the village of Currant. (For those who are interested in such things there is also a place called Strawberry about fifty miles to the north, as well as the strange and exotic Gooseberry in Utah.) A blizzard had swept over the region on the previous day, leaving thin lawns of snow upon the surrounding mountains and a sharp chill in the air that froze one's hands instantly into bluish immobility. The *Astragalus*, which affects a flat terrain, was able to escape forming part of this Christmas-massy and unwelcome scene, but even so it was almost the only plant seen in bloom during the 170-mile journey from Ely to Tonopah. When first discovered in the summer of 1941 it was already in advanced fruit, and all the corollas (which revealed themselves the following year to be comely and of a deep amethyst) had long since disappeared. It grew in association with *Polygala subspinosa*, crimson and gold and only a few inches high; *Penstemon dolius*, whose flowers shone as bright as sapphires against the alkali's unhealthy pallor; *Allium cristatum*, with its lined, transparent stars; and the white cottony mats of *Eriogonum candidum*, obscured at-flowering time by dozens of alkali-coloured umbels.

Delphinium armeniacum, in spite of its name, has never been any nearer Armenia than I have. No jewel from Mount Ararat, it inhabits instead the comparatively prosaic mountains west of Susanville in north-eastern California, where it occurs here and

there under the pines together with the local violets and *Allium platycaule*, whose heavy, pale-blue scimitars lie at awkward angles on the steep slopes of gravel. Heller's ambiguous name applies to the colour of the flowers, which he compares with that of the apricot (*Prunus armeniaca*), though to my eye they are plain orange. Perhaps he had the tinned variety in mind. In any case one wonders why he troubled at all to segregate this "species" from *D. nudicaule*, from which it appears to be indistinguishable.

Eriogonum Heermannii var. *floccosum* is a rounded, intricate small shrub from limestone rocks in Nevada and elsewhere, whose thorny hummocks immediately suggest the Greek *Euphorbia acanthothamnos* to which it bears such a marked resemblance. In late summer the little hedgehogs are peppered over with heads of white or pink, very pretty and certainly an improvement on the minute green flowers of the *Euphorbia*. Utterly different from this, and destined to make rather more of a splash in the rock-garden, is *E. Lobbii*, var. *robustum*, which I have seen once or twice in the neighbourhood of Reno, that Nineveh of the Sagebrush given over to gambling, drinking and the divorce racket, home of nocturnal hubbub and *locus classicus* of the morning megrim. The writer, alas, succumbed, like everyone else, to its fatal lure, and *Eriogonum Lobbii*, var. *robustum* was viewed customarily through a shifting saffron fog with little black dots in it. It is, however, a most striking plant, really handsome with its solid, rounded leaves clothed in thick white fur, its softly furry scapes, and its enormous heads of palest primrose-yellow. Slopes of denuded gypsum at the base of the mountains are its favourite haunt, and this fact should be borne in mind if cultivation is contemplated.

E. Ripleyi was very kindly named for me by Mr. J. T. Howell of the California Academy of Sciences, to whom I owe a deep debt of gratitude for his patient determinations of difficult genera sent to the Academy in recent years. It is a remarkable species, anomalous among its immediate kin in having the inflorescence reduced to a single involucre in place of the compound arrangement usually favoured by the buckwheats. The flowers, shell-pink and striped with dark red, remind one of so many little *Kalmias*, while the narrow, inrolled leaves, hairy yet of a bright deep green, are not at all unlike those of certain *Ericaceae*. The whole plant is but an inch or two high, the flowers barely surpassing the densely matted foliage. It grows on banks of reddish clay in a seldom-visited part of Arizona, not many miles from the southern rim of the Grand Canyon, high up among the junipers.

Phlox tumulosa, named by Wherry in 1942, is so absurdly bun-like in its contour that by comparison most other dwarf *Phloxes* look about as compact as a sweet-pea. It grows in colonies on the gypsum in eastern Nevada, where its ashen footballs are in summer half hidden by numbers of small white flowers. *P. austromontana* is really much prettier than this, with blooms of vivid pink all over its greener, gorse-like cushions; and *P. gladiformis* is an uncommon species from Utah and Nevada, the habit rather loose, the flowers large and showy. In the latter state I have seen it growing in fissures of rounded boulders at the base of the Pahroc Range. It was accompanied by a small fern, *Woodsia oregana*; the rare *Purpusia saxosa*, a relative of the *Potentillas* with intensely glutinous corymbs of white (not to be confused with *Potentilla saxosa*, somewhat similar but yellow); and *Phacelia saxicola*, one of the tiniest members of its race, forming plants about two inches across: this is never found anywhere but in the tightest crevices of exposed, dome-like rocks which, though light brown in colour and resembling sandstone, are in actual fact calcareous.

Polemonium Brandegei was growing in a deep ravine near Cimarron, in south-west Colorado, when I came upon it for the first time in June of last year. Here again the foliage is excessively viscid, while the tubular corollas are of a pale, diaphanous sulphur-yellow, most striking in the shadow of those black and igneous precipices. In spite of the protection afforded by its glands, it wilts almost as soon as you have picked it, so that the whole thing must be rushed straight into the press—glands, fragility and all—before its fleeting beauty has a chance to vanish altogether in the burning air of summer.

Polygala Rusbyi resembles a thornless *P. subspinoso*, and its circular, two-inch high mats are to be found but rarely on the limestone plateaux of northern Arizona. The flowers, however, are a little larger than in that species, and not so much crimson as *bois de rose*.

**Hesperochiron californicus*, var. *leporinus* is the chief adornment of a salt, unhappy little bog (and famous type locality) known as Rabbit Springs, marooned in the torrid wastes east of Victorville. It grows also at 6000 ft. in the mountains nearby, but is never more welcome or alluring than when rimed with the alkali of this desert spring, accompanied by *Allocaryas* that form a dense white carpet on the mud, and china-blue *Phacelia Fremontii*. The spatulate leaves make fat rosettes among the sedges, while at their centre sits a bunch of pale, symmetrical corollas, smaller than in *H. pumilus*, and thin as gauze.

NEVADA, 1944.

By DWIGHT RIPLEY.

Since the invention of the locomotive and the internal combustion engine, one may safely say that the accessible portions of our globe, at least in the temperate zones, have been scrutinized pretty thoroughly by the botanists of this century; and that nowadays it requires at least a lengthy trip by horse, camel or canoe, preferably into some distant corner of Mexico or Asia Minor, before virgin territory can be encountered. . . . Yet in central Nevada, less than 250 miles from the pious gloom of Salt Lake City to the east, and only 190 from the impious glitter of Reno to the west, there exists to-day the paradox of a tarred road—broad, straight, and incredibly smooth—traversing an entire region never explored by botanists. In the summer of 1944 it was my privilege and great good fortune to be able to visit this region for a few weeks with Rupert Barneby, who not only took the accompanying photographs of plants, but also shouldered the responsibility of final identification, an exacting task that involves the making of order out of Nature's disorder, of a neat and rigid scheme in which to fit, with many a tug and vicious little jab, the deplorable untidiness of the vegetable kingdom.

So far there have emerged three new species from this year's collections: an *Asclepias*, a *Penstemon* and a *Physaria*. We also made nine new records for the state, some of which are remarkable from a phytogeographical point of view, and which I shall discuss later. Our *Physaria* is a small yellow-flowered Crucifer bearing a close resemblance to certain European *Alyssums*, and more especially to the western American *Lesquerellas*; and its strange little flattened pods, rather like those of Shepherd's Purse, are the reverse of what one expects from a genus whose name is derived from the Greek for "bladder", and which is indeed characterised by excessive inflation of the silique. Its two nearest relatives—the only other members of the genus to bear these flattened pods—occur as far away as Washington, Oregon and Montana, and it is odd that a similar species should now have been found at an isolated station in the middle of Nevada. It grows by preference in gullies between the alkaline clay hills, tangling with the sagebrush in whose shade the tender basal rosettes are able to defy successfully the advances of a too ardent *Phoebe*, as well as the ponderous imprint of the local kine.

These white clay hills are, of course, the clue to the whole region. Not steep at all, but tilted at an easy angle, marked occasionally by the black distaffs of junipers, they crop up here and there beside the road all the way from Austin to Eureka, the two principal mining-camps of the district; and they are especially rewarding in Monitor Valley, near the sink of a little river to the south of Lone Mountain, twenty-five miles westward from Eureka. Here xerophily reaches its zenith: for the various species inhabiting the alkali have been so squeezed, compressed and hardened into their respective mounds and domes that it is difficult at first sight to distinguish one from another, and only a close inspection will tell the trifid leaf from the entire or from the elegantly pinnate. An ecologist's dream, these hills appear to be the last remnants of disintegrated limestone peaks, and their flora is often more alpine in character than that of the mountains several thousand feet above them. (It has been my experience, that at 7-8,000 feet in Nevada, the vegetation is inclined to be poor and lacking in variety, and that one acre of this alkali, at 6,300 feet, may be more profitable to the collector than a whole range in the pinyon zone.) A case in point is *Oxytropis oreophila*, occurring very locally on these hills, which until this year was known only from scattered stations on the summits of high desert mountains. It is one of the smallest of its race, densely caespitose and clothed all over in shaggy silver hair, each plant covered with hundreds of violet pea-flowers and the delicate dark-brown pods which appear as early as June. Somewhat resembling it, but forming less durable mats, is *Astragalus calycosus*, quite pretty with its rounded pinnae plated in silver and its purple or cream-coloured flowers. By the connoisseur of the queer, however, the variety *monophyllidius* will probably be preferred to the type, since in this the leaves are reduced to a single oval leaflet, an anomaly shared by no other of the four hundred-odd species of North American *Astragali* except *A. asclepiadoides*.

Lepidium nanum (see page 7) is without doubt the most exaggeratedly aretioid of all the plants growing here. When out of flower its hummocks look like those of some extra-tight *Dionysia*, of a peculiarly intense shade of sap green, and when in flower they are almost concealed by the profusion of its small parchment-coloured corollas. From the alpine gardener's point of view this is the Draba to end all Drabas, and it is surprising that it should have fallen to the lot of a *Lepidium*—that scorned and miserable race more at home on the dump-heap than in the vast purity of

the Nevada—to produce such a spectacular example of the “vegetable sheep”. One could imagine an *Arabis*, a *Draba*, or even a *Lesquerella* doing such a thing, but never, somehow, a pepper-grass. The plant is confined to north-eastern Nevada, and is a significant endemic of what Rupert, for want of a convenient name, has called the Ibapah Plateau: that region of high sagebrush plains and towering limestone mountains bounded on the west by a wilderness of basalt, and on the east by the burning flats of Utah.

Almost as rock-like as the *Lepidium* in its tightness is *Phlox tumulosa* (see page 7), dealt with in the June *Bulletin*, and rather variable in the amount of pubescence. Some plants are a vivid dark green, as the one illustrated; others are light grey, against which the blooms of pure and waxy white are not really displayed to full advantage. Closely imitating the *Phlox* is another member of the Polemoniaceae, *Leptodactylon caespitosum*, with narrow fawn corollas that open after sundown to emit a penetrating scent of hyacinths. We saw it only once in Monitor Valley, where it appears to be extremely local: this is the first record of the species from Nevada. Its nearest relative is *L. (Gilia) pungens*, a straggling shrub, not uncommon in the desert areas of western America, and totally lacking in distinction. The name *Gilia pungens* has been applied erroneously in gardens to *G. californica*, the only member of this group in cultivation, almost as untidy, but redeemed by its large corollas of glowing rose. It belongs to the chaparral, or maquis, of the Californian coast, where its gorse-like bushes are known as Prickly *Phlox*, and even in southern England it will always be sensitive to our winters. Far better than this for the rock garden would be *Leptodactylon Watsoni*, rather similar, but lower in stature, with paler flowers, and the additional merit of being perfectly hardy. It is a charming feature of the calcareous cliffs and ridges that rim the southern shore of the Great Salt Lake, as well as of the islands rising from the lake itself, innocent otherwise of saxatile species save for the rounded emerald tufts of *Laphamia Stansburiana*, most fragrantly glutinous and hidden all through July by panicles of yellow daisies.

Another, and far more desirable, Composite, whose white or pinkish rays are tinted underneath with red, is *Erigeron compactus*, growing here and there on the gypsum of Utah and eastern Nevada, and with the rest of the cushion plants in Monitor Valley. This is one of the choicest of its race, for the interlacing stems with their minutely linear leaves have been moulded by centuries of

Nevada's intolerable climate and searing winds into the stoniest little cakes imaginable, dotted over the snow-white hills like domes of lichen in Iceland. Earlier in the year, in southern Oregon, we had found a number of interesting *Erigerons*, but none which, like *E. compactus*, positively begged for admittance to the scree. *E. poliospermus* (see page 29) was one of the best, only a few inches high and sometimes quite covered by its burden of lilac asters. *E. filifolius*, too, was very pretty indeed, while on the margins of rocky gullies grew *E. peucephyllus* with narrow, light green foliage, and daisies of clear gold. Though hardy enough, none of these can be said to be true alpine: they are instead the all too rare adornment of sagebrush plains, stretching without water, birds or hope from Lake County in Oregon eastward to Idaho, broken only occasionally by those areas of denuded clay so dear to the botanist.

Of the remaining pulvinate plants, *Eriogonum candidum*, *Kentrophyta unguolata* (an *Astragalus* with spine-tipped leaves) and a very remarkable form of *Aplopappus Nuttallii* were perhaps the most interesting; though before moving on we must not overlook *Artemisia pygmaea*—discernible in the accompanying picture of *Lepidium nanum*—unusual by reason of its deep green colour and which, when not in bloom, can only with difficulty be recognised as a species of sagebrush; nor the woolly mats of *Pachylophus crinitus*, an evening-primrose of quite exceptional merit, whose leaves are reduced to a minimum and clothed in long white hairs, the enormous flowers seeming to be almost stemless, nacreously pale or blushing a little from knowledge of their own perfection.

The only bulbs observed were *Leucocrinum montanum*—fairly abundant over our territory at moderate elevations, a bouquet of grass-thin leaves in which the white corollas sit quite stemless on the ground—and *Allium pleianthum*, var. *particolor*, endemic to the Ibapah Plateau, a rather handsome garlic whose recumbent scapes, more often in twos than single, end in pale flowers closed at the mouth and striped with Turkey red.

East of Eureka are to be found the same clay hills, but they lack the variety and richness of those to the west. At one point of the journey, however, a few miles north of the ghost town of Hamilton, we discovered another new station for *Lepidium nanum* (till now reported only from Elko County), and on a symmetrical white knoll known as Pancake Summit, there was a curious association of three Penstemons, two of them rather rare, and practically nothing else. Towards evening, in a small clayey

depression among the junipers, we came upon a variety of *Scutellaria nana* with dark blue flowers, which in the distant future will probably appear in print as var. *sapphirina*. The typical plant (see page 30) is common on stiff soils over much of Oregon, Nevada and north-east California, and is scarcely more than an inch in height, with hoods of whitish yellow. In cultivation it will need a well-dug, open bed; the deepest pan, I imagine, would never really satisfy its peculiar root-system.

In the broad valley running north and south between the Egan and the Schell Creek Ranges, and not very distant from the Utah border, there is an isolated patch of alkali marked on the map as Monte Neva Hot Springs. This we explored for five hours in the teeth of one of those relentless winds that tear periodically all summer over the interior states, a non-stop typhoon charged with a million particles of noxious ore blown northward from the slag-heaps of McGill, leaving us dazed and groggy, our bloodshot eyes and raucous voices bearing testimony for a week after to the folly of our enterprise. But, as usual, it seemed worth it at the time; and it was only later—much later—that we were to find that Marcus Jones had also collected in the neighbourhood. At the time we were fully convinced we trod on virgin soil.

After leaving the car, the first thing we sighted was a small marsh, through which flowed a stream of hot, malodorous water as brown as Lipton's. (No geysers here, but everywhere strange little jets and vapours rising from the cracks in the gypsum.) And the first plants we saw were a pink and yellow columbine, *Aquilegia formosa* var. *caelifax*, and a Dodecatheon, *D. pauciflorum*, neither of any particular value to the garden. A minute later we came upon two unfamiliar species of sedge and a pair of dwarf Senecios, *S. Purshianus* with leaves felted thickly in white tomentum and usually rayless flowers, and *S. cymbalarioides*, smooth and green. *Potentilla* (*Ivesia*) *Kingii* was abundant here, its prostrate reddish stems caked with drying clay and ending in loose, irregular panicles of small white stars. The leaves, composed of minute and overlapping leaflets, are almost as narrow as those of *P. santolinoides*, that extreme development of the genus with foliage like silver catkins. Here, too, was a distinct and novel form of the beautiful *Hesperochiron californicus*, the ample white corollas, oddly flattened and marked with violet lines: this may, however, have been merely a local variant produced by the sterility of its habitat, since almost every species collected at Monte Neva showed some deviation from the norm. *Leptodactylon caespitosum*, for instance,

mentioned further back, grew here in noticeably looser tufts, while *Tanacetum potentilloides* appeared so impoverished that we were tempted to take it for a new species. The tansy's little mats of white dissected leaves occurred locally on knolls together with the similar *Hymenopappus lugens*, and with *Senecio Purshianus*.

Toward the middle of the valley, between the scalding rivulets of the actual Springs and the railway line which runs northward from Ely and McGill, there stretched an area of even clay that seemed at first sight to be quite hopeless,—unbelievably squalid and trampled flat by generations of blandly insouciant hooves. Yet three species of considerable interest were collected: *Phlox Kelseyi*, var. *salina*, found a few miles away by Jones and named by him, and apparently endemic; *Musineon Hookeri*, an Umbellifer also found near here by Jones, though not incorporated by Tidestrom in his *Flora of Nevada and Utah*; and an unidentified Castilleja, the whole plant of a uniform greyish brown, low-growing and with fleshy leaves. The *Phlox*, too, is inclined to be fleshy, forming loose mats of almost *Salsola*-like foliage, studded rather sparsely with its blueish flowers. The *Musineon* is very dwarf, only an inch or two high, the yellow umbels sitting pat on their bed of gumbo, disposed in a circle around the rootstock and the light green unelaborate leaves.

The last item now on our programme was a visit to Duck Valley, where we examined a small area about ten miles north of the mining town of Pioche. On the previous evening, at the end of a full day's herborising among the limestone hills of northern Lincoln County, and as late as seven o'clock, we had come across *Astragalus Sileranus* growing abundantly in the alkali to the east of Pioche, at the southern end of Duck Valley. It was this discovery that urged us to explore further the following day, for the *Astragalus* is a plant of high, cool pine-woods in Utah, very different from the low and torrid sink in which we found it here. We knew, moreover, that no botanist had ever collected in the central part of the valley.

However, as it turned out, this particular area was none too rich in species. . . . And after trudging over the clay for several hours it hardly seemed sufficient to have discovered *Oxytropis oreophila* in a third new station, or the tall, canary-yellow vases of *Oenothera Wrightii* rising stemless from their rosettes of narrow velvet. (Exhaustion prevented the photographing of this lovely member of the Megaptërium section.) The day's most notable find was

Linum Kingii, var. *sedoides*, one of the few attractive American flaxes, if not the only one. At first glance it resembles some strange *Hypericum*: then you look again and wonder if it might not be a *Haplophyllum*, knowing full well this is an Old World genus; finally, you realise from the pointed, glaucous leaves that it must be a species of *Linum*, and that it is the prominent stamens which have fooled you. Arranged in generous panicles above the neat blue foliage, the flowers are golden yellow, a shade considerably brighter than that of the annual western flaxes, which usually are tinged with brown or sordid orange. This is the second record of the *Linum* from Nevada, in which state it was collected a few years ago on a dry lake bed near Dolly Varden, 170 miles away. But its real home is farther east, where, like *Astragalus Sileranus*, it is found high up in the mountains. Who can explain how these plants came to, or have managed for so many centuries to survive, the parched clay valleys of Nevada?

After leaving Pioche it was a little depressing to travel south toward Los Angeles and gradually descend, under an ever more importunate sun, from five thousand feet to one thousand. Yet even at that low altitude, quite late in June, we were able to add a few specimens to those that already filled our presses to bursting: for as we turned on to the main Las Vegas—Salt Lake highway—my companion let out a yell which would, had we been in overpopulated Europe, have brought every peasant running from miles around. As it was, I merely stepped on the brake and enquired the reason for this sudden display of emotion. He replied tersely, "The Boerhaavia". Which piece of news, delivered with such admirable succinctness, was as grateful to my ears as to his. . . . For three seasons we had been on the watch for this plant, an undescribed variety of the rare *B. leiosolena* (or maybe a related species), fruitlessly scouring the gypsum around Las Vegas and the numerous gullies to the north. It is a vast and hideous thing, with large, rough basal leaves almost precisely like those of a *Begonia*, bands of glue on each internode of the pruinose stems, and awkward candelabra of flowers that remain closed during the day, mere colourless tabs resembling the inrolled petals of some nocturnal *Silene*. But these, if kept till nightfall, reserve for you an unexpected beauty: as you peer at them by electric light before retiring to bed in your auto-court, you are astonished by the length of the rose-pink stamens, the faint yet definite aroma, and the deep gash in each division of the frail white perianth. • Associated with the *Boerhaavia* was an annual Composite, *Psathyrotes pilifera*,

whose domes of crowded oval leaves, most wonderfully glaucous and set with scattered hairs, had not (owing perhaps to the late season at which they bloom) been previously reported from Nevada.

Looking back now on our journey, I'm not sure that one particular piece of country north-west of Austin won't furnish the clearest and most gratifying memory of this year's trip,—an afternoon spent among the arid knolls that border the river Reese, where two new species, an *Asclepias* and a *Penstemon*, were discovered in quick succession. The *Penstemon*, seen later in abundance a few miles west of Eureka, is a plant of narrow, dark green leaves and glandular inflorescence, the large amethyst corollas set off by a contrasting orange staminate; while the *Asclepias*, which bears short prostrate stems and is remarkably pretty for a milkweed, seems to be the western counterpart of *A. involucrata*, common in the sand-dunes of New Mexico and elsewhere. It was observed only once, growing in a small clay gully less than fifty yards in length, and must therefore be accounted one of the rarest of its race; though in 1941 we had come upon a single plant of this, the flowers not yet expanded, in a very different habitat—the pinyon groves at 7,000 feet in the southern part of the Toquima Range, close to the little mining town of Manhattan. The perfumed umbels are a pleasant shade of dusty lavender (in *A. involucrata* they are greenish white), and the leaves are broadly ovate, pointed, and inclined to be glaucous.

In the evening, between the ritual of the press and supper, we climbed by a narrow dirt road to Castle Jackpot, quaint relic of Austin's boom days, a crenellated donjon perched on the steep western flank of the Toyabes and overlooking the Reese. From here the view was as Nevadan as you could wish: a thousand feet below you, the uninhabited valley with the river's cold white, beautiful serpent, coiling in bright anfractuosités toward its junction with the Humboldt, and above and beyond it the virgin massifs of the Shoshones and Desatoyas, serenely secret, waiting in silence for their date of inevitable deflowering, for the rattle of the first audacious vasculum, the first sharp cry uttered on the unbreathed air.

This single emptiness, this single heavenly vista of rose and tortoiseshell, of verdigris and dark blue—who knows how full of undiscovered species—was all Nevada. . . .

A TRIP THROUGH OREGON.

By DWIGHT RIPLEY.

On the morning of June the 1st, 1945, I awoke in a small, battered bedroom of the only hotel in Mountain Home, Idaho, with a feeling of exasperation and one of those moderate hang-overs half-way between a simple headache and the condition, described so accurately by S. J. Perelman, in which "parties unknown seem to have removed one's corneas during the night, varnished and replaced them, and fitted one with a curious steel helmet several sizes too small." I had spent the previous evening pounding a piano in a bar for the amusement of the local cowboys, and these innocent souls, inflamed no doubt by the novelty of my urban tempo after a lifetime of "Home on the Range" and similar forthright compositions, had kept me well supplied with refreshments.

But sleep, when I finally dragged myself to my pallet, refused to come: all night long the cowboys tramped up and down the creaking stairs of the hotel or shouted happily to each other in the corridors, while the less virile retired to their rooms to pass out, breathing peacefully with the quiet, regular rhythm of pneumatic drills. Shortly after dawn I fell into a fitful doze, and at six-thirty, wide awake and pondering on the world and its follies, I got up and dressed.

A little later a knock sounded on the door. It was my friend Rupert Barneby, looking enviably crisp, with a stack of drying papers under one arm and our camera and tripod under the other. Together we descended to the hotel café, where I forced my teeth to gnash sullenly for a few minutes on something yellow accompanied by two slices of salt pork, and gulped down a large cup of coffee in preparation for the day's collecting. By seven o'clock, armed with a thermos and some sandwiches wrapped in cellophane, we were in the car and off . . .

Our route lay to the south, toward the Idaho-Nevada line; and our particular objective in this case was a stretch of desolate country near the village of Bruneau. One or two collections from the immediate neighbourhood of Bruneau had been seen by us in herbaria, but none at all from the region to the south-east, and

we were impatient to explore it. After leaving Mountain Home the road traverses a level plain for about fifteen miles, a dismal grey expanse of uninterrupted sagebrush, then plunges abruptly into the valley of the Snake River. At the top of the grade was a dried-up pool covered with what looked like plants of candytuft, spaced evenly over the cracking mud as in a formal bed, and which proved on inspection to be a most unusual variety of *Lepidium montanum*. So far we've been unable to give a name to this. The leaves are fat and spoon-shaped, the branches especially thick, the flowers large and white; and the whole plant forms a compact, rounded little bush, quite different from its ragged cousins so abundant on the gumbo flats of Utah and Nevada. We crossed the valley, and after a few more miles of level country came to the edge of a steep escarpment. Here we stopped and were rewarded by a broad vista of white alkaline hills stretching away as far as the eye could see. Immediately below us lay the tiny hamlet of Bruneau hidden in the brilliant green of its cottonwoods. Leaving the car with strangled cries indicative of anticipation and with much flapping of paper, we scrambled down the cobblestone bluff, Rupert on one side of the road, I on the other. (When collecting we invariably do this, Rupert tearing off in one direction, I in the diametrically opposite: by such methods do we aim to gather the maximum number of species. But every now and then one of us is stuck with a perfectly appalling piece of blistered lake-bed covered with shadscale, while the other scampers gaily up and down a sandstone butte to return with half a dozen endemics.) After about an hour we met once more at the car and compared our finds. At the time these seemed a bit on the dull side, except for a couple of uncommon *Astragali*, but subsequent investigation showed four of them to be new for Idaho, while a slender, semi-shrubby *Gilia* with pale blue pompons turned out to be the rare *G. Burleyana*. *Arenaria Franklinii* was probably the most attractive plant growing on that particular escarpment—a prickly mound of sharp little leaves and handsome corymbs of white.

Eight miles south-east of Bruneau we got out again, and on a steep gypsaceous slope collected specimens of *Enceliopsis nudicaulis*, a beautiful Composite with ovate, silver leaves and a profusion of scapes bearing single yellow sunflowers. The plants here were a bit anomalous, however, since the heads were twice as large as in typical *E. nudicaulis* and thus approached in grandeur those of *E. argophylla*, one of the glories of our southern deserts. A few

miles farther on we arrived at the rim of another escarpment, but this time, instead of bare white hills, we were greeted by an extraordinary sight: a valley of black volcanic sand, hemmed in on both sides by a line of low calcareous cliffs, and completely uninhabited. . . . Were it not for the narrow road winding along the bottom of the valley and then climbing gradually to the horizon, one would swear that no human being had ever set foot there. Botanically it was *terra virgo*, and we knew it.

The customary sounds of excitement were perhaps a shade more subdued than earlier in the day, owing to mounting fatigue and the extreme heat of the sun, but we attacked those Stygian dunes with gusto nevertheless. As usual, Rupert disappeared from view after thirty seconds, while I, still rather pensive from the night's alternate decoctions of *Triticum* and *Humulus* (known vulgarly as "boiler-makers"), examined the nearer slopes. . . . Simultaneously, as if by telepathy, two startled cries rent the desert air. We had made the same discovery at precisely the same moment: *Petelia nevadensis*, a leguminous plant with large, whitish flowers and black-hairy calyces, 400 miles north of its nearest known habitat and a most unexpected addition to the flora of Idaho. Our next good find was *Mentzelia Torreyi*, var. *acerosa*. This and typical *M. Torreyi* are a pair of very queer fish, one from just around Bruneau, the other peculiar to lava knolls near Reno and on the shores of Mono Lake in California, a long way indeed from southern Idaho. Nine out of ten *Mentzelias* that you find west of the Rockies are annual or biennial—gaudy yellow Blazing Stars balanced on their brittle stems above the parched river-beds of July, or, more commonly, the humble, small-flowered denizens of sandy flats and sagebrush. But these two are strong perennials, forming symmetrical mounds of narrow, spine-tipped leaves, scarcely recognisable as those of a *Mentzelia*, and furtive little stars that are yellow in *M. Torreyi* and orange in var. *acerosa* and definitely do not blaze. The Loasaceae, to which this genus belongs, are thus far represented in English rock gardens only by the Andean *Cajophora scarletina*, unless I am much mistaken.

The large-flowered form of *Penstemon miser* was also here, a conspicuous beard-tongue with violet corollas and orange stamens, the inflorescence very glandular. Presumably Asa Gray bestowed his unkind epithet on the form that is prevalent in eastern Nevada, in which the flowers are less than half the size of the other's, and dusty pink. Later in the day we collected three annual

species not recorded from the state and, towards evening, made our first real "killing" of the trip. This was a new *Astragalus*, with handsome racemes of crimson-purple, a running rootstock (unusual in the genus), and pods coiled into a *complete circle* like those of a European medick. It has since been described in "Leaflets of Western Botany" as *A. camptopus* Barneby.

The following morning we left Mountain Home, driving west by slow stages into middle Oregon. Little of note turned up during the next few days, but between 4,000 and 5,000 feet in the Blue Mountains a more boreal flora began to appear, and soon we were briskly picking Geums, buttercups and Pedicularis. Although one learns to expect nothing sensational in the way of novelty or endemism at such altitudes, it is unquestionably a relief to escape for a while from the gaunt, if profitable, vistas of the Basin and let one's hair down in a meadow, abandoning scarlet sands and too garish buttes for the cosier spectrum of snow and of lime-green summer grasses. East of Dixie Pass we stopped near a stony marsh in which grew *Allium Brandegei*, *Saxifraga nidifica* (one of the club-headed Micranthes group) and *Synthyris rubra*, together with such ubiquitous and attractive species as *Montia Chamissoi*, *Hesperochiron pumilus* and *Fritillaria atropurpurea*. What in the world prompted David Douglas to name this *Synthyris* "rubra" we shall never know; I have yet to discover any part of the plant to which his adjective could reasonably be applied. No need to describe it in detail: let the reader merely note that the flowers congested on their long thick spikes have no corolla at all, either red or anything else, and remember to shun it like the plague on the few occasion when it is offered us by the trade. (A catalogue arrived a few days ago from a well-known eastern nursery, and in it I see "*Synthyris rubra*. Rare species with red flowers. 75 cents.")

Probably our "best" find here was *Sisyrinchium Douglasii*, which we had never seen. I had always imagined the flowers to be a darkish shade of purple and was a little surprised to find they were light pink (with a touch of lavender), at least in those particular plants.

The colour scarlet appears to be considerably commoner in the New World than in the Old, where poppies, pheasant's-eyes and an oriental buttercup are about the only flowers of this hue that I can recall offhand (though obviously there are many more, such as *Onosma coccineum*, in out-of-the-way places). All over western North America, for instance, alpine meadows and sagebrush and desert springs are afire in their season with Castillejas, while scarlet species of *Penstemon* are too numerous to mention. *Zauschnerias*, which are vermillion willow-herbs, occur as widely in the California mountains as *Gilia aggregata* in the pinyon zone of the interior. And several of the larger genera can boast at least one dazzling renegade: *Monardella*, *Astragalus*, *Calochortus*, *Fritillaria*, *Mimulus*, *Delphinium*, *Cereus*. . .

THE LIMESTONE AREAS OF S. NEVADA. continued

An interesting *Polygala* seen once or twice on the stiffest alkaline clay was *P. acanthoclada*, a tangle of interlacing thorns sprinkled liberally with very small milkwort-flowers of palest yellow. It is what my gardener calls "a rum one," and would, I think, make a nice if not sensational pot-plant for the alpine house in the manner of *Stachys spinosa* and *Euphorbia acanthothamnus*. The variety *intricata* grows in large colonies by a saline spring outside Las Vegas, together with the rare *Calochortus Parishii* and slender, scarlet *Castilleja linariifolia*; it is taller than the type (up to three feet), often with a thickened trunk and branches yet more closely entangled, lacking the other's obvious pubescence. This variety bears so strong a resemblance to the chenopodiaceous *Grayia spinosa*, a shrub abundant in the upper Sonoran zone, that it may sometimes have been overlooked on that account.



Astragalus uncialis.
Photograph from "More Western
Americans."

R. C. Barneby.

We wish to express our appreciation to Dr. Rupert C. Barneby and to the Alpine Garden Society for permission to reprint the preceding passages. We also wish to thank H. Lincoln Foster for biographical information about Ripley and Barneby. The original articles appeared in the

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The drawing of *Cymopterus ripleyi* on the back cover was done by Dr. Rieno Alava. It was taken, with permission, from "Contributions Toward a Flora of Nevada, No. 44, Umbelliferae of Nevada" by Dr. Mildred E. Mathias and Dr. Lincoln Constance.

Oenothera wrightii 22
Oxytropis oreophylla 18, 22
Pachylophus crinitus 20
Penstemon albomarginatus 3
 antirrhinioides 10
Penstemon dolius 10
 kingii 10
 labrosus 10
 miser 27
 sp. ined. 24
 thompsonae 5
 whippleanus 10
Peteria nevadensis 27
Phacelia fremontii 16
 parishii 7
 saxicola 16
Pinaro-pappus parvus 10
Phlox austromontana 16
 gladiformis 16
 kelseyi v. salina 22
 tumulosa 16, 19
Physaria sp. nov. 17
Polemonium brandegei 16
Polygala acanthoclada 29
 v. intricata 29
 rusbyi 16
 subspinosa 7, 14
Potentilla cryptocaulis 8
 (*Ivesia*) *kingii* 21
Psathyrotes pilifera 23
Purpusia saxosa 16
Quamoclidion pendulum (?) 7
Salvia funerea 5
 greatae 5
 mohavensis 5
Saxifraga nidifica 28
Scutellaria nana v. saphirina 21
Senecio cymballioides 21
 purshianus 21, 22
Sisyrinchium douglasii 28
Swertia gypsicola 9
Synthyris ranunculina 8
 rubra 28
Tanacetum compactum 8
Valeriana potentilliioides 22
 texana 10
Woodsia oregana 16

INDEX to

IMPRESSIONS OF NEVADA --

the Countryside and Some of the Plants --
 as Seen Through the Eyes of an
 Englishman, H. Dwight Ripley

Occasional Paper No. 3

Northern Nevada Native Plant Society

In order to use the index, number
 the pages of the Occasional Paper
 beginning with the introduction.
 Thus the first page of Ripley's
 text will be page 3 and the draw-
 ing of *Cymopterus Ripleyi* will be
 page 31. An asterisk following a
 page number indicates an illustra-
 tion.

This index was prepared by Roy
 Davidson.

INDEX

- Allium brandegei* 28
 cristatum 14
 platycaule 15
 pleianthum v. *particolor* 20
Aplopappus nuttallii 20
Aquilegia formosa v. *caeliflax* 21
 scopulorum v. *perplexans* 8
Arctomecon californica 1, 5, 12
 humilis 6, 12
 merriamii 1, 6, 12
Arenaria franklinii 26
 stenomeris 1
Artemisia pygmaea 20
Asclepias cryptoceras 11
 cutteri 13
 ruthiae 13
 spinea 24
Aster scopulorum 14
Astragalus asclepioides 11
 calycosus 18
 v. *monophyllidius* 18
 camptopus 28
 coccineus 6
 detritalis 12
 funereus 6
 musiniensis 12
 sileranus 22, 23
 toanus 9
 uncialis 14, 29*
Boerhaavia leisolena 23
Calochortus parishii 29
Castilleja barnebeyana 9
 cinerea 9
 hololeuca 9
 sp. ined. 22
 linariifolia 29
Chamaeternisia 8
Cirsium clokeyi 8
Cymopterus deserticola 7
 gilmanii 6
 ripleyi 31*
 v. *saniculoides* 7
Delphinium armeriacum 14
Nitaxis diversiflora 8
Dodecatheon pauciflora 8
Enceliopsis argyrophyllus 6, 26
 v. *grandiflora* (E. *covillei*) 6
Enceliopsis nudicaulis 6, 16
Epilobium nevadense 8
Eremocrinum albomarginatum 13
Erigeron compactus 19
 filifolius 20
 peuciphyllus 20
 poliospermus 20
Eriogonum candidum 14, 20
 heermanii v. *floccosum* 15
 lobbii v. *robustum* 15
 ripleyi 15
Fritillaria atropurpurea 28
Gillia burleyana 26
 californica (*pungens* hort.) 19
Hesperochiron californicus 21
 v. *leporinus* 16
 pumilus 28
Hymenopappus lugens 22
Ionactis alpina (*Aster scopulorum*) 14
Ivesia jaegeri 8
 kingii 21
Kentrophyta unguolata 20
Laphamia cernua 10
 quinquiflora 10
 stansburiana 19
Lepidium montanum (?) 26
 nanum 9, 18, 20
Leptodactylon caespitosum 19, 21
 pungens 19
 watsonii 19
Leucocrinum montanum 20
Linum kingii v. *sedivoides* 23
Lomatium mohavense 7
Maurandya acerifolia 4
 flaviflora 4
 petrophila 4
Mentzelia torreyi 27
 v. *acerosa* 27
Montia chamissoi 28
Mussineon hookeri 22
Notholaena fendleri 10
 jonesii 5
 limitanea 10