Erythroniums

By Carl Purdy

A flower that is either charming in some way or decidedly unpleasant in some way is almost sure to have a popular name. Wherever erythroniums are among the wild flowers the women and children love them and consequently name them. In Europe there was but one species and that is everywhere there called Dog's-Tooth Violet. Its Latin name too is merely the same thing or rather just Den-sCanis or Dog's Tooth. A more in-appropriate name could hardly have been given it, if we judge by first impression, but the flowers are violet in color and the bulbs are the shape of a dog's incisor tooth—not so bad after all.

Rather widely scattered throughout the eastern half of North America are several species and here they are called either Adder's-Tongue, Dog's Tooth Violet, or Trout Lilies. The Adder's Tongue would seem to be named from the shape of the leaf; the Trout Lily from the spotted leaf.

On Mount Ranier, Erythronium montanum grows in such numbers as to give a white color to the landscape and there it is the Avalanche Lily, while E. grandiflorum, which is less plentiful, is the Yellow Avalanche Lily.

Move on down the coast to Astoria and we have Star Lilies; not so bad, for the half opened flower is certainly a six-pointed star. In Oregon generally they are Fawn Lilies, from the spotting of the leaves, although in a few places Adder's Tongue is used and was probably brought from the East by early settlers. In northwestern California they are usually Easter Lilies, owing to the fact that they are in flower at Easter and are used in decoration. Lake County in that region makes an exception for there they are Chemise Lilies. Chemise, I may remark, is a shrub which covers wide expanses of hilly country and gives the erythronium the light shade that it loves. When I was a boy here they were Adam and Eve. Often they have two flowers, the upper larger, hence the name.

If I were writing a treatise on the value of scientific names for flowers, I could hardly give a better example of the confusion to which popular names lead us. The word erythronium means just the one thing all over the world while these popular names mean nothing away from the immediate neighborhood where used. In Mariposa County erythroniums are Mariposa Lilies and the Calochortus are Mariposa Tulips and correctly.

While erythroniums are not true lilies they are among the genera most closely allied to true lilies. They are native of woodlands in rather mild to cool climates or on mountains well up in the cool regions. In order to give a general idea of the genus I will treat the one European species and the few eastern American species very briefly. I have no personal knowledge of them so will rely upon Bailey's Cyclopedia for my data.

But first as to some botanical terms used in the description of erythroniums. If this article were written solely for popular use I might sufficiently designate the species by color, locality or some other salient points, but as some may like to be able to understand the botanical characters, I will briefly treat them in that way also.

The flowers of all lilies are divided into six parts and the outer parts are not just like the three inner parts. In flowers generally these parts are called petals and sepals but in lilies they are called the segments of the perianth; for convenience I will use the word petals for all of them. In very many erythroniums down close to the bottom of the inside of the inner petals there
are little knobs which are called auricles (ears). Very many bulbs propagate by little bulbs produced either on the side of the parent bulb or at the end of short stems from the parent bulb. Some erythroniums propagate one of these ways, some the other, and some by neither, but only from seeds.

In botany a key is a very convenient expedient for finding the name of a plant. If, for instance, I should tell you that a man had a wart behind his ear you could not miss him far. If I added that he was cross-eyed, the identification would be almost perfect, and if I added that he was 30 years old, there would not be one chance in ten million that you would get the wrong man. Botanical keys are built in just that way. The things seized upon to identify a plant may seem small, yet they are characteristic.
Lillian Guerney

Erythronium revolutum
KEY TO ERYTHRONIUMS.

Group 1. European.

*Erythronium dens-canis,* the original Dog's-Tooth Violet. Mottled leaves; single violet-colored flower.


*E. americanum* has leaves mottled with brown and a single yellow flower. The three inner petals have auricles at the base. It grows in rich soil in moist woodlands and has many offsets on slender underground stems. Widely scattered east of the Mississippi.

*E. albidum.* Has no auricles and the leaves are not mottled. Flowers pinkish white. Ontario to New York and Minnesota to Texas.

*E. mesochoreum.* Has neither offsets nor mottling on the leaves; flowers lavender with broadly spreading petals. Iowa, Kansas, and Missouri.

*E. propullans.* Has offsets near the middle of the underground stem. The leaves are green with a little mottling and the flowers are rose-colored with a yellow base. South Ontario to Minnesota.

Group 3. Western America, from the Rocky Mountains to the Pacific.

General remarks: Earlier botanists put stress on the size of the flowers. For instance the first named species was *E. grandiflorum* or Great-Flowered Erythronium. Another was named *E. giganteum* or Giant Erythronium, while still later botanists have named one *E. parviflorum* or Small-Flowered Erythronium. As a matter of fact there is but one western American erythronium which could be spoken of as different in size of flower, and that is *E. purpurascens,* which is really small-flowered. In all other species size is a matter of soil, climate, or other conditions and any species may be smaller or larger in accordance with those conditions. The same is generally true as to the number of flowers. In the forms of *E. revolutum,* four flowers to a stem may be the largest number found, but in other species they may far exceed that number, with eighteen as the largest number that I have ever seen. Whenever fire burns over the beds the flowers are larger and more numerous.

**Sub-Group 1.**

Leaves not mottled. Petals auricled.

*E. grandiflorum.* Leaves a light green; style 3-cleft at the top. Flowers bright yellow in the type. This species has a very wide distribution. If you began high in the Rocky Mountains in Colorado and followed them into Canada; if you went high in all of the ranges of the Cascades; if you traversed the plateaus between these mountains and went down the slopes on both sides of the canyon of the Columbia River you would find *E. grandiflorum* at intervals. If you went along the Cascades, you would still find it at high elevations to some distance south of the Oregon and California border, but always in high mountains.

There are several forms. Some botanists have named the eastern form *E. parviflorum,* yet it is not small-flowered and has no distinctive difference. It is true that in some regions it has red anthers but even in the same region many flowers will have yellow anthers.

Variety *album* is found in the plateau regions of northern Idaho and eastern Washington and is, of course, white-flowered with a slight greenish tint. This was first described as *E. grandiflorum albiflorum.*

I have named a variety *robustum* from the low elevations on the Columbia River because it seems to be much easier to grow here.

*E. tuolumnensis* has very large leaves of a deep green; large conical bulbs which offset like a tulip with the offsets
inside the covering of the mother bulb. The flowers are a deep rich yellow. When the leaves and stems are dry they cling so strongly to the bulb that it takes an effort to detach them. This species, one of the most distinct of all erythroniums, was discovered by Professor Applegate of Stanford University, in 1930, and is limited to a very small area in Tuolumne County in the Sierra Nevada region of California at about 3,000 feet elevation.

*E. purpurascens* has narrow undulate leaves of a dark green color with metallic tints. The flowers are never large and are a light yellow or almost white, tinted purple. It grows at from 5,000 to 7,000 feet in the Sierra Nevada Mountains, a region of heavy snowfalls and late springs.

*E. montanum* is the Avalanche Lily of the State of Washington. Its leaves are broad and its flowers are pure white with orange base. Its home is high on the peaks of Washington and Oregon, in full open sun and it grows in such profusion there as to color the landscape. It is a very lovely species but my experience is that it is utterly intractable in cultivation. Instead of starting growth with moisture in the spring as all others do, it lies dormant until its usual growing season, which is July or August, when it meets utterly hopeless growing conditions.

**Sub-Group 2.**

Leaves mottled.

*Section 1.* Species inhabiting well-drained lands in cool places. No offsets. Propagation only by seeds.

*E. californicum.* Leaves richly mottled with brown; style 3-cleft; auricles on inner petals. In the type the color is a light yellow, deepening gradually to rich yellow at the center. A very fine species growing in the coast ranges of California, beginning fifty miles north of San Francisco and extending about two hundred miles to the north.

Variety Bicolor, discovered by myself in 1930, has flowers with the outer half pure white, the inner half almost orange and a very pronounced and delightful fragrance. Found in southernmost part of the range of the species. A very lovely form and possibly will prove to be finest of all in cultivation.

Variety White Beauty, found at the northern extreme of the range of the species in Humboldt County, California. The color is really a slightly creamy white, which by comparison is white. At the inner base there is a zone of maroon to almost red in many flowers. In the wild it only grows in very rocky places and even in the fissures of rocks. At one point I saw fine flowering bulbs in the fissures of an almost perpendicular cliff. It takes to ordinary soils wonderfully well and Van Tubergen, one of the best European authorities, considers it the best garden erythronium.

*E. hendersonii* has an undivided style, richly mottled leaves, and a flower which is lavender in its upper two-thirds and deep brown-maroon at the center. In its color perhaps the most distinct of all erythroniums and one of the most charming. Found on either side of the Oregon-Californian border for perhaps fifty miles and well back from the ocean.

*E. citrinum* has an undivided style, richly mottled leaves and a flower which is pure white on outer half and citron at center. The stem is much stiffer than related species. For perhaps fifty miles on Oregon-California line, beginning thirty miles from the ocean.

*E. havellii* alone has no auricles on petals but is otherwise close to *E. citrinum*. The flower opens white on outer portion and citron at the center and within a day or so begins to turn pinkish until it is decidedly pink. Habitat same as last three species.

*Section 2.* With offsets borne on slender thread-like underground stems.

*E. hartwegii* and *E. purdyi* comprise this group. They are alike too in the
peculiar way in which the flowers are borne. All other erythroniums have the flowers, if more than one, in a raceme but in these two the flowers are borne in a sessile umbel so that each appears to be on a separate stem like a bunch of flowers in a bouquet holder. In *E. hartwegii* the flower is light yellow, deepening to bright orange at the center; in *E. purdyi* it is white with a very pale lemon center. All other erythroniums have bulbs which speedily suffer if exposed to the air and would lose all vitality in a week or so, but the bulbs of these two are thickly coated and would keep months if fully exposed, and, in fact, have about the keeping qualities of the tulip. In their native homes they live in a decidedly hot portion of the foothill region of the Sierra Nevada Mountains of California where there are no dense shades. The soil is open and never wet and in summer gets to be very dry. The eastern rock garden has no section even in full sun as hot as these bulbs live in habitually. They force well in pots if handled as Dutch forcing bulbs are. Both can be planted successfully in much hotter and drier regions and locations than any other.

**Sub-Group 3. The Revolutum Group.**

Leaves mottled; petals auricled, with broad auricles which join to make a sort of ring at base of petals. Stamens with the filaments broad at base and coming to a point. In all others the stamens are slender throughout. The name revolutum implies that the petals turn back more closely than in any other species, but that is not true. They at first open broadly with little curve but eventually curve well back. The type has a flower of much firmness and has stout stems.

The forms of *E. revolutum* have quite different habitats from any other western species. They are found in decidedly moist soils and prefer a rich loam. In the rainy season the soil is often quite moist to wet. I have seen beds over which a little stream flowed for months in the early season and often have dug them when ripe in soil which was so wet as to be sticky. Later it gets dryer, although always at least barely moist. In my garden I had a bed of *E. johnsonii* one year planted in a soil which was moist but not wet. Excessive rains made it almost a quagmire all winter, yet they were happy.

*E. revolutum* type is exceedingly well marked in general appearance but changes in color from region to region. At the south it begins in Mendocino County, California, about 80 miles north of San Francisco and about 12 miles from the ocean. This is a region of heavy winter rains and many summer fogs. At that point the color is white tinted lavender to light lavender. The species follows at about the same distance from the ocean going north, and in Humboldt County, 140 miles north, is all soft lavender-pink. This is Pink Beauty. On north it extends, always not far from the sea coast, and in another hundred miles is in a deep pink form and with leaves having dark mottlings. Other forms have light mottling. This is a new form for the gardens which will go out as Rose Beauty.

Another hundred miles and in northwestern Oregon, it is a real rose with white center and this is *E. johnsonii* or *E. revolutum johnsonii*. Another move up the coast and it is found in a similar rose-colored form but with orange center. I have not had specimens from farther north excepting from central British Columbia, where it has the same form as at its beginning in California. Given right conditions, *E. revolutum* stands above all other species.

*E. revolutum watsonii* is also known as *E. giganteum*. The name *E. giganteum* was first employed for a form of *E. grandiflorum* so can not be used. I really believe that it should be considered a separate species. It has the mottled leaves, the stout stem, the large auricles and the broad based
filaments of the type, yet is not nearly so stout a plant, nor so erect. There are many forms of it. Only two of them have been named either horticulturally or botanically. The color varies from pure white banded maroon at the base to a rich cream color with or without zones of maroon. At its best some of the forms are the most lovely of all erythroniums. Purdy’s White is a named form with pure white and maroon zone. *E. revolutum praecox* is rich cream with a zone of brown and is a most lovely flower. From a botanical standpoint it would not be worth while to name others of the forms, yet from a garden standpoint several of them are desirable enough to merit garden names. The species begins about fifty miles north of the Oregon-California border and extends north in the moist interior, west of the Cascades section, far into British Columbia. This then covers the species
known in the West, with the exception of one that Professor Applegate found in the Siskiyou Mountains but has not yet published.

**Hardiness of Erythroniums**

Of course the East American species are hardy for they grow wild almost all over the region from Nebraska east and into Canada. The western species have been planted very widely in gardens throughout the East from Montreal south and there is not a particle of doubt as to their hardiness.

**Culture of Erythroniums**

First some words as to handling of bulbs. With the exception of *E. hartwegii* and *E. purdyii*, the bulbs will dry out enough to decrease vitality when out of the ground in a short time unless packed in barely moist packing material and kept in a cool, shaded place. They are not bulbs which can be kept in a store in open bins, nor are they bulbs which can be shipped in dry material or in any other than a painstaking way. When the one who is to plant them gets them, they simply must be speedily planted or else kept in barely moist material in a cool place. Still again they must not be planted in dry soil. This caution is as a rule unnecessary east of the Rockies, for in September and on, when the bulbs would reach the planter, the soil is almost sure to be at least moist. In the West the caution is strictly wise. I have lost many bulbs by planting in dry ground or by planting in moist ground which, during a long fall drought, lost its moisture. But on the Pacific Coast when the soil is dry it is dry. Three or four months exposure to a hot sun leaves very little moisture in the surface soil.

Erythroniums can be grown well in a great variety of soils. Drainage is necessary and shade too. Not a dense shade but about the degree of shade that an apple tree gives. They will grow and make great leaves in dense shade but the flowering will get less and less under those circumstances. I have seen fine plants in gravel, in sticky clay, in sandy loam, and in soil three-fourths broken rocks, so that I would say that they are very adaptable to soil so long as there is a moderate amount of humus and a shady position. If I were making a soil especially for them it would be a light loam mixed with one-fourth grit and quite a little leaf mold.

The bulbs are long and slender and the top is smaller. They must be planted upright. A careful measurement in my garden shows that the bulb seems to do best when planted to a depth from four to five inches, which mean a cover of 2½ to 3½ inches. The caution as to not planting in dry soil does not apply after the planting time. When they are established they retain vitality perfectly in soil in which they would suffer at first. The bulbs can be obtained after September 1st and should be planted before December 1st. With good care they are in fair condition until New Year, yet the tendency is to suffer after mid-November.

If the gardener observes these simple rules he will find erythroniums most easy to grow, easy to maintain, and that a bed will continue in beauty for years. Under right conditions they self sow and it takes at least four years for the seedlings to reach the flowering stage. If seeds are sown they may come up in spring or they may lie dormant until the spring of the succeeding year. In my experience they do the latter more often.