



# Espinas y Flores

BULLETIN OF THE SAN DIEGO CACTUS AND SUCCULENT SOCIETY  
*Affiliate of the Cactus and Succulent Society of America, Inc.*

Volume XVIII, Number 8

August 13, 1983

## AUGUST MEETING

Saturday August 13, 1983

1:30 P.M.

Casa Del Prado, Room 101, Balboa Park

## PROGRAM

### THE GENUS FEROCACTUS

A slide program will augment the Cactus-of-the-Month.

- o Dorothy Dunn will present the Cactus-of-the-Month.
- o Madelyn Lee will discuss the genus Ferocactus as an introduction to the slide program.
- o Frank Thrombley will present the slide program (Ferocactus in Habitat/California & Baja) with commentary.

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NEW WORLD BOOK information . . . . . Insert

Deadline for September Issue - August 28 - Thanks Mary

A Fine Welcome to New Members for July --

Mrs. Pat Harper - El Cajon

Mrs. Cathryn Mangold - Rancho Santa Fe

Donald P. Thompson - El Cajon

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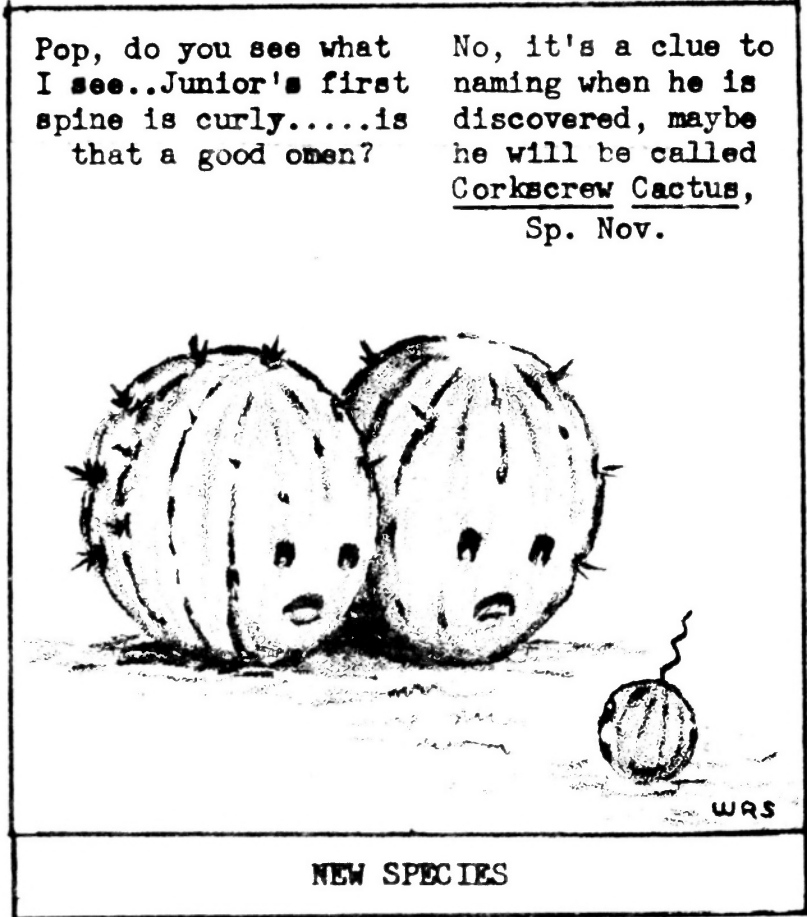
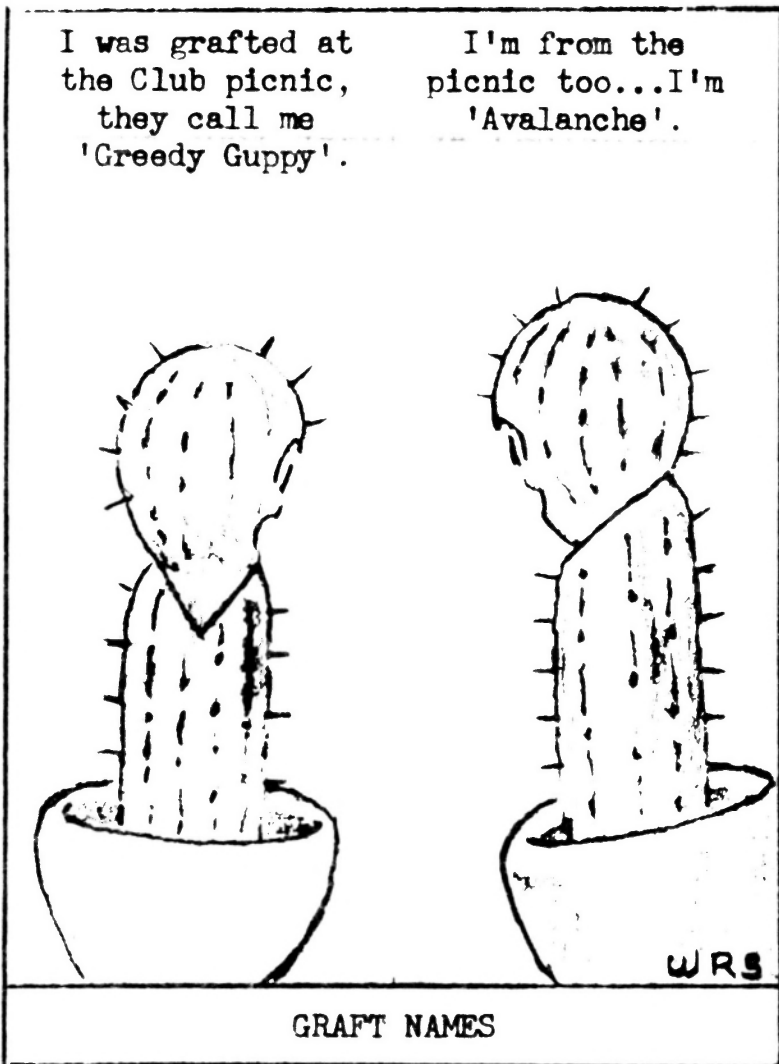
Bob Ken reports that when he ordered from New World Books that it took about three weeks for delivery.

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Helen Heggi announces that Paul Hutchison of TROPIC WORLD will soon embark on a three month expedition of unbotanized parts of Brazil. He will travel from Rio to Venezuela.

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Please don't forget to bring you checks - Payable to S.D. Cactus and Succulent Society for the plants that you bid for at the July picnic.



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## SUCCULENT-OF-THE-MONTH

### Sempervivum and Jovibarba

by Rick Latimer

The Stonecrop or Orpine family (Crassulaceae) is generally considered to be the easiest to grow of the "Big Four" succulent families (the other three, of course being the Cacti, the Mesembs, and the Asclepiads). The family distribution is world-wide, but certain areas such as Mexico and southern Africa offer very rich diets. All members of this family have flowers of remarkable symmetry; with an equal number of sepals, petals, and pistils; and either as many, or twice as many stamens. The number of petals is commonly five (as in the subfamilies Cotyledonoideae, Crassuloideae, and Echeverioideae) or even four (as in the Kalanchoideae). However, in the subfamily Sempervivoideae that number may be six to fifteen, or even as high as thirty-five!

The subfamily Sempervivoideae includes such genera such as Aeonium, Aichryson, Greenovia, and Monanthes; which are largely native to the islands off the northwest coast of Africa (notably the Canaries). However, this subfamily also includes the one important genus in the Crassulaceae which is confined to Europe and adjacent parts of Asia - namely the genus Sempervivum (Latin for 'live forever'). Due to the fact that they are European - we have a very long record about them. Theophrastus, the "Father of Botany", in the Fourth Century B. C. described at least four succulents in some detail in his Enquiry into Plants. Of Sempervivum we learn "it is the nature of the house-leek to remain always moist and green, its leaf being fleshy, smooth, and oblong. It grows on flat shores, on the earthy tops of walls, and especially on tiled roofs, when there is on them a sandy accumulation of earth." During later centuries in German and Scandinavian countries, they were called "Thor's Helper" and were believed to drive off demons and guard homes if planted on roofs. Going back to the Romans, they were called "Joubarbe" (beard of Jupiter) and also planted on roofs as a guard against lightning.

The genus Sempervivum is either divided into two subgenera or two genera depending upon one's preference. The difference that is the most obvious is that the genus (or subgenus) Jovibarba has flowers with six petals and are bell-shaped and upright, while the (other) species of the genus Sempervivum have flowers with eight to twenty petals that are spreading. I do not know if it is typical of the genus Jovibarba to have its heads joined into thick corms (one has to make cuttings, not just separate heads as with Sempervivums), but the uprooted plants that I have examined all had this attribute (nursery grown). In his books, Jacobsen does not mention the genus Jovibarba. However, he lists the genus Rosularia. I do not know anything about them, but the one picture he included looks just like a Sempervivum. They are native to Asia Minor, through the Hymalayas, including Iran, Iraq, Turkestan, Armenia, Israel, Lebanon, Syria, and some of the Grecian islands. He states, "Uses and cultivation as for Sempervi-

vum, however mostly require protection from snow!" Flowers are reddish or yellow-whitish and bloom in June to July.

Flower colors of the genus Sempervivum (in the wider sense) range from white (S. kindingeri), to yellow (S. ciliosum), to pink (S. borissovae), to red (S. arachnoideum), and purple (S. montanum). The succulent leafed rosettes themselves may be such colors as pale chartreuse (S. allionii (Alps)), silver blue, lavender, many shades of red and/or green, and dark purple (S. atropurpureum (Jura Mts.)). Two of my favorite species are S. arachnoideum (Pyrenees, Alps, Apennines, and Carpathians) with its center graced with a geometric "spiderweb" and S. ciliosum (Bulgaria) all covered with white hairs. An unusual plant is S. "Odidity" with rather monstrose leaves. The color of Sempervivums is very changeable and that is part of their fascination. One variety may have its best color in the early spring and fall, while another would be at its peak in late spring and through the summer. There are about six species of Jovibarba and thirty-six of Sempervivum. However, some are very variable and often form hybrids easily in the wild. In all there are over 200 hybrids man-made and natural. Floyd Gable submitted the following list to Espinas y Flores about ten years ago:

HEAVY CLUMPERS

S. borissovae (good two-tone)  
S. ciliosum  
S. "Pekinese"  
S. simonkaianum  
S. laggeri  
S. montanum  
S. braunii  
S. fauconnetti (makes very small heads of only ½" by the hundreds!)

MOST COLORFUL

S. atropurpureum  
S. "Rubra-ray"  
S. "Carmen"  
S. "Engle's Rubrum"  
S. Wolcott's variety  
S. atroviolaceum heimlich (!)  
S. "Lavender and Old Lace"  
S. rubicundum  
S. sanfordii  
S. Purdy's 70-1 & 50-5 magnificent hybrids

Since species are widespread in the mountains (usually in sunny, dry spots) in their native habitat (up as high as 13,000 feet); they are more popular in the rest of the country than in the South west due their ability to withstand cold. They can be tricky to grow in our climate, and some of us are quite successful. They may be called 'sempervivum', but mine don't!

REFERENCES:

Hermann Jacobsen, Handbook of Succulent Plants, V. I & II.  
Helen E. Payne, Plant Jewels of the High Country.  
Gordon Rowley, The Illustrated Encyclopedia of Succulents.  
J. Riha & R. Subik, The Illustrated Encyclopedia of Cacti & other Succulents.  
W. J. Tjaden, "Jovibarba sobolifera", ASPS (4:2 & 5), pp. 40-3 & 167-70.

## CACTUS-OF-THE-MONTH

### THE GENUS FEROCACTUS

Dorothy Dunn

The genus Ferocactus was established in 1922 by Britton and Rose when they subdivided the huge and diverse Echinocactus genus, and at that time consisted of 31 species. Borg lists 34, and Lindsay, in his dissertation "The Taxonomy and Ecology of the Genus Ferocactus", discusses about 35 species and varieties, including two imperfectly-known species. Other genera now included under Echinocactinae range from the tiny Fraileas, through such dissimilar forms as Leuchtenbergia, Aztekium, Astrophytum, Ariocarpus, and Gymnocalycium, on up to the very large Echinocacti and Ferocacti. Also included are the beautiful South American genera of Notocactus and Parodia, as well as several others.

Ferocacti are commonly called "barrel cacti" or "visnagas", and the name Ferocactus means, literally, "Fierce" or "Ferocious Cactus". They are characterized by globular or cylindrical stems and thick prominent ribs. These ribs are an intrinsic mark of all Ferocacti; they allow for rapid expansion of the plant body, which permits a maximum intake of water when moisture is available. A system of shallow radiating lateral roots is the principal means of this moisture absorption, while a few short vertical tap roots apparently serve only to anchor the plants.

The spines of Ferocacti are very strong and stiff, with the central one generally being hooked. According to Lindsay "In a number of cactus genera, particularly Ferocactus, certain spines are modified for the production of a sweet secretion, and serve as extra-floral nectaries. These "gland-spines" appear during the blossoming period of the plant and attract large numbers of ants and insects. While these insects sometimes damage the plant, they also act as significant pollinating agents." The larger spines show a definite striation, with each tiny line indicating one day's growth.

Ferocactus flowers may be red, purple, white, yellow, or greenish-yellow (as in F. viridescens) and may vary within individual species, although F. gracilis always has red flowers and F. acanthodes var. tortulospinus always has yellow flowers. The flowers are produced by the younger areoles near the top of the plant and are apparently self-sterile.

Ferocacti are native to Mexico (including Baja California), Texas, Arizona, and California. They usually grow on rocky, well-drained slopes, and all species are relatively tolerant of basic soils. Their habitats are characterized by low and erratic rainfall, low humidity, high temperatures which fluctuate daily as well as seasonally, and strong winds. They are not in direct competition with plants which share their environment because their shallow root systems are devised to take up soil moisture rapidly when it is most plentiful; this they store in their expansible, highly succulent stems. Specimens have been known to survive without



water for as long as six years. Their geographical range is quite extensive. Lindsay says "The principal limiting factor for the southern distribution of Ferocacti is too much moisture. Most species grow where the annual rainfall is between 3 and 20 inches. When there is over 20 inches of rainfall, the specialized succulent storage system is unnecessary for water retention, and becomes a liability because of susceptibility to decay in a moist environment. Low temperatures prevent the northward migration of the genus. Barrel cacti can withstand 14° to 20° F. temperatures for short periods, but prolonged exposure to temperatures under 28° will cause their destruction. Plants turgid with water will damage more easily than flaccid, dessicated ones." This should provide a clue to their requirements under cultivation in our gardens.

All Ferocacti are easily grown from seed and this is the usual means of propagation as most species generally do not offset unless damaged. Seedling plants are very attractive and are well worth growing for their rugged forms and spinations alone, as most Ferocacti must attain some age and size before blooming (with the exception of F. fordii and F. viridescens).

The principal pests affecting Ferocacti are scale, and borers in F. fordii var. fordii. In the wild, ground squirrels often eat the flowers, and later cut off the top of the fruit in order to collect the seeds. However, man is really the most serious enemy. Since a mature Ferocactus is at least 50 years old, over-collecting by commercial dealers and the practice of some ranchers of uprooting and feeding barrel cacti to their livestock poses an increasingly deadly threat to the survival of these magnificent plants.

#### THE "BAJA BARRELS"

No article on Ferocacti would be complete without some mention of the often spectacular species which inhabit the peninsula of Baja California and its adjacent islands. One of these is F. gracilis, an exceptionally attractive red-spined "barrel" with red flowers and yellow fruit, which occurs from about the El Rosario area southwards to below Punta Prieta, where it intergrades with and is replaced by its variety coloratus and F. peninsulae var. vizcainensis in the northern Vizcaino Desert. F. gracilis was so named by Howard Gates because of its tall slender form; it is usually less than one foot in diameter, but may occasionally reach a height of nine feet. It grows in particularly arid sections from silt flats near the beach to rocky slopes. F. peninsulae, another very handsome barrel, and its variety vizcainensis occur further south in central Baja, from Bahía de los Angeles and the Sierra San Borja to the Cape region. F. acanthodes var. torulospinus occurs in the Laguna Chapala Seca area and along the Jaraguay Grade, and has a very limited distribution; scattered specimens have also been found in the Calamajúe Canyon area. This barrel is impossible to mistake because of its very long (up to seven inches) and strangely-twisted lower central spine, to which the specific name refers. The plant body is always simple. The flowers and fruit are indistinguishable from F. acanthodes. F. acanthodes var. rostii is found much further north in the San Matías Pass area, along the road which connects Ensenada with San Felipe on the east coast. Superficially it resembles

the "Golden Barrel" (Echinocactus grusonii), but the body is a peculiar dull green shade and the spines are dull gold.

Another unmistakable - and very rare - barrel is F. rectispinus, which occurs at sea level along Conception Bay but may be found as high as 4,000 - 5,000 feet. The flowers are a brilliant clear yellow, and the extremely long central spines sometimes reach a length of 10 or 11 inches. This plant is now practically extinct in habitat. It apparently intergrades with F. peninsulae in the area where the two populations merge. F. fordii var. fordii grows in the coastal area of western Baja, particularly around El Rosario. It grows in coastal chapparal in association with Euphorbia misera, Echinocereus maritimus, Bergerocactus emoryi, and several species of Dudleya. Although it is one of the less attractive Ferocacti, it does have several unique features: the flowers are rose-purple to orchid as opposed to the usual red to yellow shades of Ferocacti blossoms, the plants bloom when very small, and they are subject to attack by borers, which is unusual in the genus Ferocactus. F. chrysacanthus is another very beautiful and very rare barrel, occurring only on Cedros Island, some 75 miles off the west coast of Baja and northwest of Scammon's Lagoon, where it can grow near the beach in loose sand or among rocks in arroyo bottoms and sides of canyons. It also grows on higher slopes of the island. The plant body is covered with a mass of yellow or red twisted spines, and the spine color can range from almost white to dull gold to bright yellow to red, with the bright yellow coloration being the most desirable.

Other noteworthy Baja Ferocacti include Ferocactus gatesii, known only from islands and islets at the mouth of Bahía de los Angeles (Smith Island group), where it grows on barren granite rocks in an area of extremely limited rainfall. It has large red flowers and enormous elongated fruit. Another rarity, F. johnstonianus, occurs only on Angel de la Guarda Island in the Gulf of California, where it grows among rocks. It has brilliant yellow spines which lose much of their bright coloration when removed to a damper climate. F. diguetii, the largest of the barrel cacti, is known only from a few islands in the Gulf of California, whereas F. townsendianus is quite a small plant which occurs farther south toward the Cape Region. As a group, these varied and striking "Baja Barrels" comprise a fascinating field of study in themselves.

Literature cited:

Borg, J.                    Cacti  
Lindsay, G.                The Taxonomy and Ecology of the Genus Ferocactus





## INQUIRIES AND INFORMATION

- The most complete source of information on prices and availability of books is "Books in Print" and the "Subject Guide to Books in Print," at your local library.
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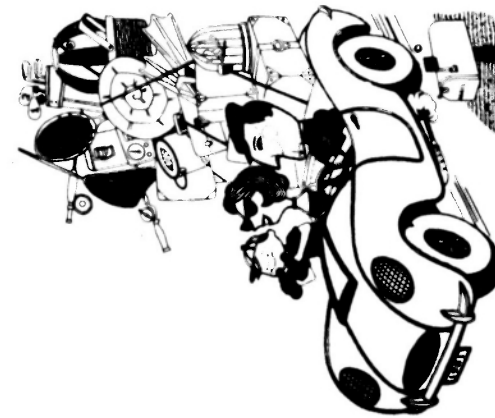
The San Diego Cactus & Succulent Society is open to all persons interested in growing cacti, other succulents and exotic plants. Meetings are held the second Saturday of each month at 1:30 pm in Room 101, Casa del Prado, Balboa Park. Board of Directors meetings are held after the general meetings. Annual dues are \$8.00 per single member per year, \$2.00 for each additional member of a household within a family. Single copies of Espinas y Flores are 60 cents.

Editor

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