

The

Central

Spine

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OBSERVATIONS AND RAMBLINGS

OF AN AVID HAWORTHIA FAN

Back in the late 30's and early 40's Johnson Cactus Gardens advertised a cactus catalog for a dime. Pennies were saved until there were enough to reach the required 10 cents plus the 3 cents postage to speed it on its way. When it finally came, what a catalog! Next came the almost impossible task of saving enough for the minimum order, (I think it was \$2) and this was followed by the seeming eternity it took for my order to arrive. But What Plants! Such curiosities! Of course you know what happened -- the "bug" bit; a new "cactus nut" was born.

Then off to the war. Italy came next, from where more plants were acquired and safely shipped home. Some of the descendants of these plants remain in my collection today. During the years they have been subjected to many moves; at one time they remained packed, without soil, lights, or water, for over 3 months! All the Haworthias came through without one casualty; this helped them to find a special place in my heart.

Although personal contact with other Haworthia fans has been quite limited, I have been fortunate to correspond with people on three continents. Society journals, club newsletters and a few books have been very helpful to expand my knowledge and keep my interest. One of the rewards of corresponding with hobbyists thru the years has been the exchange of ideas about methods of propagation. Most are happy to pass along ideas they have heard or tried, so we all benefit. Only a few, however, apparently believe it is more blessed to receive than to give, but I do not agree with their reluctance to share source names and addresses and other information.

When we realize that only one catastrophe could completely destroy the collection of an entire lifetime, it is only then that we come to realize that we would never stand a chance to ever replace that rarest of rare, if we didn't share it or sell (or even give away) its duplicates. At some future

time we might wish to buy back treasured plants that were lost, and other caring hobbyists would be glad to comply, if it had been propagated.

We owe much to those who have studied in the field, in botanical gardens, or in private collections. Their willingness to share both plants and knowledge with others has made the hobby much more rewarding for us all. Occasionally they may seem to discredit each other, but we need only take into account that their goals may differ. I have found that those who have observed the plants in their native habitat, carefully studied and scientifically recorded their findings, to be the most reliable sources and the most technically accurate. M. B. Bayer serves as a living example.

Accuracy in nomenclature is especially important when buying by mail or corresponding; we hope we are referring to the same variety when we use the same name. How disappointing to order a new plant under a new name, only to receive a puny solitary "pup" which is identical to one you have owned several years that now sports a dozen offsets!

When you have grown Haworthias for a few years you begin to understand why one species is blessed (or cursed?) with so many names. Widely varying conditions can produce plants, even of the same clone, that differ so much that they may appear to be different varieties. For example, *H. cuspidata* grown in the sun is "normal" in size, but offsets from the same plant become giants when grown under lights. Some species will show tints of pink, red, orange or purple in winter sun, but are just plain green when grown in the shade.

Besides light, other conditions that can bring about variations are: potting mixes, fertilizers, water and watering programs, temperature, pH, size and type of container, and the many possible combinations of these.

All my Haworthias are now planted in previously unused clay pots; the planting medium is also the same for all. In no case are "natural" or garden soils used, because they can vary more widely than the artificial

media do. Besides, garden soils (unless autoclaved) are more apt to harbor fungi, or bugs, or weeds, or who knows what! I also try to grow them all in the same area so that light, temperature, and watering will vary as little as possible.

As a result of this consistent treatment, plants with formerly differing characteristics as well as differing names may, after a time, begin to appear to be one and the same. Happily, but rarely, the opposite can happen. Several times I have had plants that came from more than one source that looked alike on arrival, but the names differed. After a year of the same overall treatment, they developed differing characteristics, perhaps deserving the different names.

Human error may account for some confusion in names or descriptions. I have received identical plants in the same package with differing names. Two years later they still look alike. Whoever packed the plants must have made a simple mistake. Typographical errors and misspelling can also produce new names. Some who prepare labels are so rushed that they couldn't care less about spelling. Deciphering handwriting can also be a problem; I especially have trouble with letters from Europe and Africa that are handwritten.

Identifying plants using illustrations, even though mostly helpful, can also be a source for errors. Pictures alone do not tell size or age, and black and white photos do not show color.

Just how much unscientific collecting may have been done through the years is quite difficult to determine. But let us make a hypothetical case. Perhaps 100 years ago a local plant lover may dig up the last clump of a species, thus removing it from natural habitat. Maybe one of its "pups" eventually found its way to a botanical garden on the other side of the world, where it may have finally been given a name but without the necessary data of origin to qualify it as a "valid" species, but where it sits in disgrace (in some collections) being dubbed as a "probable hybrid." But it should not be discarded or thrown away.

Suppose it is of doubtful or unproven parentage; why should a beautiful cultivar be discarded or never recognized just because its ancestors were never proven to exist anywhere in that form in habitat? Many, many outstanding roses, African violets, begonias, etc, are hybrids, and in some cases the most beautiful are of unproven parentage.

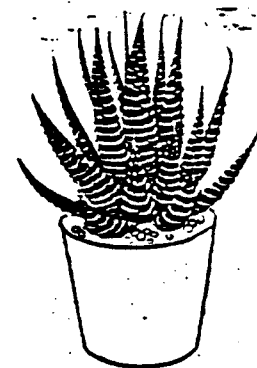
The same attention and recognition should be given to Haworthias. If an international society of dedicated people were to be formed to promote the distribution, conservation, cultivation and knowledge of Haworthias, worthy cultivars and chance hybrids could then be recognized and classified on their merits as such, without having to be discarded. Then we "purists" could maintain our purity and we accumulators could just accumulate with carefree abandon -- and a clear conscience!

A final thought: some fanciers attempt to duplicate the natural habitat as much as possible, believing application of knowledge of habitat conditions might solve problems such a growing a shy plant. Perhaps so. Although laudible, I have come to question the value of these efforts for one simple reason: as soon as you limit a plant to a container, you have already modified the habitat.

Now have fun! I hope you enjoy a fascinating interest in Haworthias as much as I do.

Bob Wagner
HOUSE PLANTS UNLIMITED
Columbia, Missouri

*Submitted by Carl Packer.



HEILA HAWORTHIA
Taworthia lanceolata

HAWORTHIA LEAF PROPAGATION

My initial success with leaf propagation was with leaves from what I call "crown cuts." The first crown cut was made on Haworthia setata. The stem was cut horizontally leaving about two-thirds of the leaves on the top, or crown, and about one-third of the leaves remaining on the bottom, or base, of the plant.

The base was then dusted with Rootone to discourage rot. Water was withheld until the stem of the base appeared to be "healed." Eventually the base produced 6 offsets. Of all other species on which crown cuts have been made, the base has produced at least two offsets.

The crown was dusted and then planted as you would a rooted plant. Bottom watering is recommended, that is, the soil is not kept constantly wet. Before the crown was dusted, leaves were removed from the lower part of the crown. Whole leaves were removed - none of the leaf was left on the stem. After one or two rows of leaves were taken they, too, were dusted and left to dry. After about a week the leaves firmed up and appeared to be ready for planting.

When a leaf takes root, it usually greens up and straightens up, and no longer uses the pot for support. Small new plants have appeared as soon as one month. Although some varieties leaves have stayed alive for longer than one year without producing new little plants, it is not unusual for a leaf to bear several plantlets.

Other crown cuts I have made include H. setata, H. arachnoidea, H. lockwoodii, H. margaretifera hyb., and several offsetting varieties. Both the crown and the base were lost in an attempt to propagate H. serrata in this manner. However, about two of ten leaves responded. After more than a year since the leaves were set, the young plants are less than one centimeter in diameter.

If you hesitate to try this method because your solitary plants are too valuable, I suggest you practice first on the offsetting

varieties that are nearly stemless. You might also like to experiment with simple leaf propagation; you could try it whenever removing pups or repotting a plant. Take off the healthy lower whole leaves. It is doubtful if older leaves will do very well, but there is no reason to throw away a leaf until you are sure it is dead.

In addition to the above-mentioned species, successful leaf propagation has also been accomplished with the following: H. tessellata (several varieties), H. limifolia (two vars.), H. kewensis, H. schuldtiana, H. xyphiophylla, H. tuberculata, H. setosa, and H. denticulata. A leaf of H. ubomboensis gave me 7 plants.

Many other species and varieties have recently been set, but it is still too early to report these except that very little rotting or dying has occurred. Many leaves that were set the same day they were taken from the mother plant are doing as well as those that were left to dry for a few days.

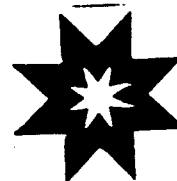
I believe good drainage and quick drying of soil are important in reducing rot. This is the reason I use clay pots in this part of Missouri where the humidity is usually over 50% and often up to 85% or more.

Plant names used above are those on the label that came with the plant as purchased. I believe it only adds to the confusion to change the name on the label until one is very sure changing it is correct. Also, old names may come with plants that are actually hybrids of a true species, or, if not a hybrid, a different clone.

Bob Wagner
HOUSE PLANTS UNLIMITED
Columbia Missouri

We took a "short-cut" thru Columbia on our way home from being away, and Bob gave me this article and his permission to print it in our NewsLetter. Nice guy. Knowledgeable. Shares his knowledge.

Carl S Packer



DR. GEORGE ENGELMANN, BOTANIST SUPREME by VERA GAMET

The lives of the people memorialized in the names of the plants they discovered, worked with, or are honored by should not be lost.

Echinocactus, Engelmann, Coryphantha Engelmann, Peniocereus Engelmann----
the list goes on and on.

Dr. George Engelmann was the first great student of the cacti of North America. He was primarily a medical doctor with a substantial practice which he established in St. Louis, Missouri in the autumn of 1835. At that time St. Louis was more of a frontier trading post than a town and the point of embarkation for daring adventurers, con men, missionaries and visionaries, dreaming of starting a new life somewhere beyond the great Missouri.

It was a wild and tumultuous time. Territorial expansion, "Manifest Destiny" and American greed were riding high in the saddle.

Great emigrant trains of covered wagons departed the east bank of the Missouri River spurred on by high expectations fed by missionary reports, over-drawn travel descriptions, and the extravagant fiction of the day.

In 1844 James K Polk (D) was elected president. Obsessed with the idea of territorial expansion Polk privately confided that by the end of his term the western boundaries of the United States would reach the Pacific.

By the end of the Mexican War (Mr. Polk's War and probably the most popular war the United States ever engaged in) California and the vast territory of Northern Mexico had fallen from the feeble grasp of Mexican hands to American hands. Texas had been annexed, and the loud talk of "Fifty-Four Forty or Fight" about the Oregon Boundary had been compromised at the 49th parallel. The later Gadsen Purchase in 1853 brought the southern border of the young Republic to about where it is today. The American dream of the nation reaching from ocean to ocean had become a reality.

Political and military turbulence was accompanied by an equally restless intellectual ferment.

The country was in the throes of an educational awakening.

The cultural scene saw the heyday of the lydeum circuits in a nationwide attempt to increase the "diffusion" of learning with public lectures. Public libraries were established, Normal schools were founded to raise teaching standards.

But above all interest in science, especially the study of nature, was sharply on the increase. New theories and new discoveries were challenging the Biblical version of Creation.

The inferential perception of the day was toward a great and wonderful future.

When Engelmann took his degree of Doctor of Medicine in 1831 at Wurtzburg, Germany, he made his inaugural dissertation on a preliminary study of the morphology of monstrosas, a selection which testifies to this lifelong predisposition toward botany.

Living in St. Louis when it was the entry point to and from all regions west of the Mississippi, Englemann enjoyed considerable advantage by being consulted by every collector going or coming from the West.

Never forsaking his medical profession, never turning away anyone who needed help, he used his leisure hours studying specimens and descriptions, primarily of cactus, sent in by botanists on early governmental surveys of the West.

Wislizenus, Wright, Bigelow, Parry, Poselger, Nuttall were the botanical heroes of these expeditions.

And hardy souls they were, keeping up with survey trains over rough trails or no trails at all, throughout mountain ranges, deep canyons and open deserts, scurrying into almost inaccessible pockets of habitat to bring back specimens of strange new cacti, then at night dissecting them for descriptions, writing out their findings, and finally packing the whole spiny mess up to ship to Englemann opportunity, occasions sometimes few and widely separated.

The logistics of such a trip stagger the mind. Much arrived at Englemann's home and much was lost enroute.

Englemann faced the formidable task of listing and describing huge populations of unknown cacti. He often named a species honoring the man who discovered and sent it in. His preference was to use descriptive names, and he coined names to describe forms and features, and worked out something of their relationships. His drawings were exquisite and accurate.

Although his material for examination was sometimes necessarily inadequate and so his descriptions consequently deficient, he gave the botanical world the first information we have on approximately two thirds of the cacti of the United States.

Nothing escaped his attention and he methodically secured his observations with notes. He was acute in his observations, critical of his judgments, and unyielding in his perseverance in devoting himself to a genus until he had clearly identified its features. Still he had a good natured open-mindedness about him which enabled him to continuously revise old conclusions in the light of new facts.

He essentially for the first time, established the classification of cacti upon their floral and carpological characteristics. His work was as extensive and important as it was difficult.

Englemann began publishing with his sketch of the botany of Dr. A. Wislizenus's "Expedition from Missouri to Northern Mexico."

The "The Giant Cactus of the Gila River (*Cereus giganteus*) and Allied Species" followed in 1852. His synopsis of the "Cactaceae of the United States" was published in 1856, and two illustrated memoirs, a volume on the "Pacific Railroad Reports" and one on Emory's "Report of the Mexican Boundary Expedition."

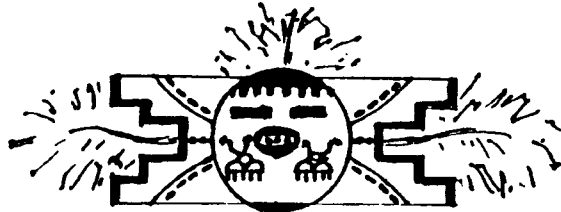
Englemann also did significant work on Cuscuta (dodder, a parasitic twining plant), Coniferae (gymnosperms) and Vitis (the grape family), Yucca and Agave.

During the latter part of his busy life he found time to explore in the mountains of North Carolina and Tennessee, the Lake Superior region, the Rocky

Mountains and environs.

Engelmann had made preparations for an enlarged and greatly needed work on North American Cactaceae but his health was failing and a sudden illness took his life at the age of 75 in 1884.

His collections and sketches housed in the St. Louis Botanical Garden will be indispensable to future botanists, but so much knowledge was lost by his death it may take decades for the work of other scientists to recover it.



THE SAGA OF FEROCACTUS ACANTHODES

by PEARL S. LEMKUILL

In 1950 I picked up two Ferocactus acanthodes that someone had thrown out along the road in California (they evidently were going toward the check-point station into Arizona) as we were heading for Utah where we lived at that time.

I planted them in two wooden nail kegs and they did beautifully, blooming each summer after being stored under the house each winter.

In 1956 we decided to move to California. I uprooted the plants, cleaned, inspected and packed, and brought them to Sacramento. I planted them in a rock-based raised bed. They did not like it there. They pouted for fourteen years, and finally one decided to die.

In 1970 I put in a new raised bed in front of the house and planted the Ferocactus in it where it received full sun all day. It still did not like it there and just sat not showing any sign of growth.

Reading an article on Ferocactus that stipulated their love for lime, once again I removed the plant, this time in 1979, and planted it in a pot with crushed plaster in the soil, and added some lime to the surface. To my delight it started to grow.

By this time thirty years had gone by since I originally found the plant.

The growth has continued, and I expect it to bloom again this coming summer. I still add lime to the surface of all my Ferocacti each year, and others already potted with old crushed plaster, given to me by a friend, have been blooming.

Thank Heavens the Ferocactus acanthodes survived all these various situations. It is now twelve inches in diameter and fourteen inches tall.

