January 1993 - Central Spine

ON THE DRY SIDE

by Timothy Chapman

I get real nervous around the autumn months of the year, succulent-wise. I understand that a lot of my cactus are beginning to curb their rates of growth, but to tell you the truth, I can't really tell just by looking whether they grew slower this week than last. And plants that have any kind of foliage are starting to look bad; leaves are turning a ghastly shade of yellow and falling off. My greenhouse is becoming populated by bald Dorstenias and naked, shivering Euphorbias. Why do they need to rest anyway? I mean, it's not as if they dashed about in a frenzy all summer long. So, they put out a few flowers and look great for a few days. Is that so exhausting? I got a haircut a couple of weeks ago, and I didn't collapse from the fatigue.

Ah, well, complaining will get me nowhere, except possibly in tight, cranky little circles. What does help, though, is having a few plants that are more active right around now--like members of the genus Pelargonium.

Pelargoniums are tough little xerophytes, most of which come from South Africa. There are about 200 species, including the familiar geranium. Many are positively succulent, like my P. alternans, a stem succulent. And because I cannot convince it that it no longer lives in the southern hemisphere, it insists on breaking dormancy only after the blazing Arizona summer has begun to relent. Right now there are small parsley-ish bits of green peeking out from the dry remains of last season's growth.

My little specimen of Pelargonium alternans is still a young plant, only a few years old, but is beginning to exhibit some of the more attractive attributes of the species. The surface of the main stem looks as if it has the low-fire crackled glaze of raku pottery, and small papery sections are beginning to peel away, things your average caudiciphile goes nuts over. A more mature plant

forms a shrub made up of sausage-like stems and typically reaches 70 cm in height. P. alternans is apparently self-compatible, for my single individual has set viable seed which have given rise to some handsome little seedlings.

The seeds themselves deserve mention here. The small zygomorphic flowers give rise to needle-like fruit, each one eventually splitting into five seeds. Each seed has at one end an awn, or stiff bristle, which is in turn topped off by a little parachute which aids in dispersal. Once the seed has chanced upon a favorable site on which to grow, the awn, coiling in response to changes in atmospheric humidity, literally corkscrews the little seed into the soil. I love it! Oh, and here's a great word: hygroscopic, meaning able to absorb water, like the aforementioned awn. Klendusity is a neat word, too, but we'll leave that to another time.

So, to sum up: succulent Pelargoniums grow actively during our winter months, are generally tough and hardy, and often flower and set seed freely. They come in a variety of forms, and best of all they give people like myself, compulsive waterers, something to do with their shaky watering hand besides drowning their poor Mammilarias.

DESERTS --from page -4-

Other deserts, like much of southwestern United States, include barren rocky mountains and dry plains of soil and gravel. The wind sweeps away finer soil and the stones that are left form a gravelly surface called "desert pavement."

From the hewsletter of the National Capitol Cactus & Succulent Society, "THE EASTERN SPINE" September 1990, and from the Newsletter of the American Rock Garden Society Berkshire Chapter.

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"A desert is where evaporation exceeds precipiitation."

ASTROPHYTUMS By BERYL NILES

These small fat cacti are found in the Mexican Desert and along the Rio Grande in Texas.

Astrophytums grow round to slightly columnar with 5 - 8 ribs which may be sharp edged or rounded, and edged with widely spaced, wooly areoles.

Their yellow, daisy-like flowers emerge from the top of the plant during the summer. The flowers are 1-1/2 to 3-1/2 inches across with some having red centers. They usually last a week or more, followed by scaly, globe shaped fruit.

Astrophytums grow slowly, and when grown from seed they will take 4 - 5 years to reach 2 - 3 inches in diameter. At this size they will usually begin to bloom.

They are popular indoor plants because of their unusual appearance, and are relatively easy to care for and bring into flower. They grow well in individual pots or dish gardens. Where climate permits they can be grown outdoors the year around.

Intense summer sun can damage the plants. However they do best with four or more hours of sunlight a day, or at least twelve hours of strong artificial light. They will do fairly well in bright indirect light. Low humidity is essential.

The soil should be well drained sandy loam, and in the spring and fall it should become almost totally dry before watering. In the hot summer the soil should dry only moderately before the plant is watered, and of course, during the winter plants should be watered only enough to keep them from shriveling. The cooler the temperature the less water needed.

Many hybrids and varieties are available, of which a few are listed:

A. asteria, commonly known as the sand dollar or sea urchin. It is globe and white flecked, measuring only 3-1/2 inches tall and 3-1/2 inches in diamters. The plant is spineless having eight shallow rounded ribs which are dominated by wooly areoles evenly spaced along the ridges of the ribs. The 1-1/2 inch flowers are yellow with red centers.

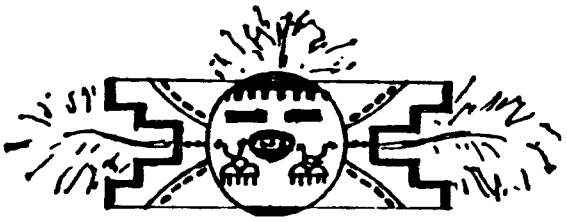
A. capricorne develops slowly into a tapered column which may be four inches thick and about ten inches tall. It usually has eight sharply defined ribs and in some varieties their green color is partially hidden by raised white flecks. This species gets its common name of "goat-horn cactus" from the flat papery, three inch long spines that twist and curve with as many as ten of them from each arole. These plants must be handled carefully as the fragile spines are easily broken off. Their silky yellow flowers have centers suffused with red.

A. myriostigma, the Bishop's Cap, usually seen as a two to eight

globe, although it can grow two feet tall and eight inches across in its natural habitat. Their five broad ribs are spineless, covered with fine, small gray flecks, and the ridges are lined with woolly brown areoles. Flowers are yellow and two inches across.

A. ornatum is commonly known as the "Star Cactus" and has eight spirally arranged ribs eventually becoming six inches in diameter and more then twelve inches in height. Flocked with thick, silvery specks, the plants have clumps of ten curved, yellow, stiff sharp spines about one and a half inches long. Their spectacular bright yellow flowers are up to three inches across.

From Beryl's Pages in the BEAVER TALE, JUNE 1984, the newsletter of the Cactus and Succulent Society of Southern Nevada.



HOW ARE DESERTS FORMED? By Arkady Leokum

A desert is a region where only special forms of life can exist. All deserts have a shortage of moisture, which means the life that exists in them must be able to get along with little or no water.

The hot deserts near the equator, such as the Sahara in Africa, lie in subtropical land where the air settles downward, becoming warmer and warmer as it does so. Lands in these areas are dry, even though they are next to the ocean. The same is true of deserts in northwest Africa and western Australia.

Deserts farther away from the equator are generally caused by the great distance from the sea and its moist winds and by the mountains between the desert annd the sea. These mountain barriers may catch rainfall on the seaward side, but the interior, leeward region remains dry.

This is known as "the rain shadow" effect. The deserts of Central Asia lie in the rain shadow of the great Himalayan ranges and the plateau of Tibet. The deserts of the Great Gasin, in western United States, lie in the rain shadow of high mountains on their west, such as the Sierra Nevada.

Deserts differ greatly in appearance. Where sand is abundant, the winds may build sand hills or dunes. These are sand deserts. Rock deserts consist mostly of bare rocks, which form fantastic cliffs and sand hills, or rough jagged plains.

Continued on page -2-

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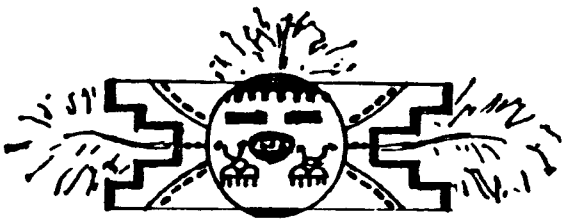

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The 1992 Monsoons

I think many of us in the Upper Sonoran Desert will remember this year as the year of the monsoons

As late as July 23rd the monsoons failed to materialize. The storm chasers asked "What monsoons?" The winds needed to whip up soggy air and rain into the Valley were hovering motionless over Mexico.

On July 24th we got our answer. The monsoons made a dramatic dangerous entrance into the Valley. Flooding was widespread, homes and business places were swamped, motorists were stranded, roads were closed. The normally dry Salt River became a raging torrent. Again on August 12 floods dominated the valley.

Let us hope we have a much drier winter so that we do not have to cope with high atmospheric humidity, fallen saguaros, rain rotted cactus and flooded washes and highways.

P.S. As of December we have had more rain than ever.

"The forced extinction of any species by humans is inexcusable when the survival of that species does not threaten our own survival. Such a loss of genetic material in the life system of our environment can never be replaced. No advanced technology will ever replace an extinct species. How much value does one place upon the future? When that can be determined by an accountant, then we can establish our value of a rare plant.'

Nature conservancy News March/April 1979.

BARTRAM'S BOTANICAL GARDEN

The first record of an attempt to grow cactus under glass took place at Bartrams' Botanical Garden in Philadelphia in the middle 1800's

The middle of the Nineteen Century was a time of Western exploration and expansion.

Collectors, botanists, ornithologists, geologists, zoologists----Emory with the Army of the West, Wislizenus in Texas, Bendire in Southern Arizona, Coulter in the Colorado Desert----accompanied survey parties working along the Mexican border and sent their incredible finds back to Missouri to Dr. Engelmann, E st to Asa Gray at Harvard, John Torrey in New York.

Knowledge of the genera of the continent grew by leaps and bounds as the desert areas were explored and specimens were examined and shared for the first time.

John Bartram who claimed before he died just prior to the Revolutionary War that he had a pretty general knowledge of "every tree and plant on our continent" never dreamed of the desert plants to the west nor could he have imagined what experiments and introductions would be taking place in his botanical garden fifty years after his death.

John Bartram is considered the "father of American botany" the "first botanist of the New Hemisphere." His era was a glorious time for botany. The intellectual climate was stimulating and creative. The Science was young. All America was virgin wide open wilderness. Every new species collected and identified was cause for exultation. Knowledge was something to be shared for the enrichment of the world.

John Bartram was basically a farmer, and so he remained, as did all Colonial men. As a farmer he was a man ahead of his time, flooding his fields with liquid compost developed behind a stone dam he built for the purpose. He was also a stone mason, splitting rocks as long as seventeen feet, and with his own hands building a massively solid house, adding to it as his children were born.

Most of all Bartram was a botanist, and confided that from the time he was ten years old he had been strangely drawn to plants. In his twenties he seriously applied himself to the study of medicinal herbs and gained something of a reputation for his knowledge. As he grew older the study of plants became such an obsession he occasionally neglected the farm, hiring someone to take his place, a practice his wife took a very dim view of, and with good reason, for she already had a houseful of children and more on the way. The clutch would be eleven before they were through.

Realizing his couldn't meet the needs of the farm and the demands of his constantly growing family and continue the personal luxury of his botanical trips, Bartram set aside five acres of his farm, and on it attempted to plant every species possible, in formal gardens, or among weeds and rocks, as nearly as he could duplicate their native habitat.

This project became the Bartram Gardens. Many plants now common in American and English gardens were first grown in his garden.

Vera Gamet.

THE TREASURE OF AN HERBARIUM: THE BOTANIST'S REFERENCE LIBRARY

An herbarium is a collection of dried and pressed plants which have been mounted for the purpose of serving as a ready reference to basic information about plants. These mounted specimens are often referred to as "sheets."

The term "herbarium" should not be confused with the word "herbal" which properly denotes a printed book that describes and illustrates plants. Herbals were produced between the 14th and mid-18th centuries. Early herbals focused on medicinal properties of plants, but through the centuries, as travel increased, the focus began to shift to new plants and to details about them. This change in focus necessitated careful observation of plants. By the middle of the 16th century, herbaria became realities in order to satisfy this interest.

The herbarium can be a teaching aid, even an absorbing hobby; but of greater scientific consequence, it serves as a reference library for plant research. Without herbaria (plural), the systematic study of plants would be nearly impossible. The herbarium constitutes the most essential tool for research in plant classification, distribution, ecology, and identification. The result of tens of thousands of hours of field and laboratory work [illegible] it represents a potentially similar savings of effort to a research botanist or field worker who uses its resources. An herbarius is the stuff of which most floristic and monographic works in botany are made.

Herbarium sheets are generally made in the following manner: The specimen is placed between alternating sheets of heavy blotting paper and corrugated cardboard and inserted into a wooden or metallic press. After it is properly dried the specimen is mounted on an 11-1/2" by 16-1/2" sheet of heavy paper with a high rag content. This size of mounting paper is standard in the United States. Other plants of the same kind, collected at the same time and place may be mounted on the same sheet. Specimens are mounted with gummed cloth tape. A label is prepared that identifies the plant and notes the locality and habitat in which it was collected, the date of collection, the collector's name, and any other pertinent data relating to the plant or its collection. Later an accession number is added to the label to reference the specimen within the herbarium collection.

Mounted specimens are arranged according to species, genus, and family, and then placed in folders of heavy paper. The folders are filed on shelves in airtight cabinets or cases. With the passage of time the flowers may fade but the mounted specimen can last indefinitely. Some have lasted over 300 years.

At the Phoenix Botanical Garden each specimen is accessioned in a book. Each entry contains the name of the collector, the collection date, and the name of the plant and other data available. This set of books housed in the Library of the Desert Botanical Garden reads like a botanical atlas of the world.

ITHACA

When you start on your journey to Ithaca,
then pray that the road is long,
full of adventure, full of knowledge.
Do not fear the Lestrygonians
and the Cyclopes and the angry Poseidon.
You will never meet such as these on your path,
if your thoughts remain lofty, if a fine
emotion touches your body and your spirit.
You will never meet the Lestrygonians,
the Cyclopes and the fierce Poseidon,
if you do not carry them within your soul,
if your soul does not raise them up before you.

Then pray that the road is long.
That the summer mornings are many,
that you will enter ports seen for the first time
with such pleasure, with such joy!
Stop at Phoenician markets,
and purchase fine merchandise,
mother-of-pearl and corals, amber and ebony,
and pleasurable perfumes of all kinds,
buy as many pleasurable perfumes as you can,
visit hosts of Egyptian cities,
to learn and learn from those who have knowledge.

Always keep Ithaca fixed in your mind.
To arrive there is your ultimate goal.
But do not hurry the voyage at all.
It is better to let it last for long years;
and even to anchor at the isle when you are old,
rich with all that you have gained on the way,
not expecting that Ithaca will offer you riches.

Ithaca has given you the beautiful voyage.
Without her you would never have taken the road.
But she has nothing more to give you.

And if you find her poor, Ithaca has not defrauded you.
With the great wisdom you have gained, with so much experience,
you must surely have understood by then what Ithacas mean.

--C. P. Cavafy, translated from the Greek by Rae Dalven,
<u>The Complete Poems of Cavafy</u>