## THE SANSEVIERIA BOOK

hermine stover

# THE SANSEVIERIA BOOK

By Hermine Stover, Sansevieria collector, grower, and owner of Endangered Species Nursery.

Photographs by Roger Stover.

The Sansevieria on the front cover is S. desertii The Sansevieria on the back cover is S. 'Lillian True'.

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## the sansevieria trilogy

### part one-

This afternoon a tiny gray-haired lady bolted into the Director's Office at the Fat Bags, Kansas Botanic Gardens and confronted Dr. Herschel Fondu.

Guards at the Botanic Garden were unable to explain how the wee grandmother was able to escape notice and enter into the Director's office without detection. According to authorities, the diminutive trespasser, identified as Mrs. Lillian True, said to Dr. Fondu "You might not think that a mere amateur such as myself would have plants of interest to such a person as yourself....but you'd be mistaken. I have a fine collection of Sansevierias. And I cannot help but notice that you have one that I lack. Since I am always interested in expanding my collection, and I am sure you feel the same, I would be pleased to trade you one of my own plants for just a leaf cutting from your plant!"

Witnesses reported Fondu was aghast.

According to guards who were at the scene, True then pointed to a gigantic plant she was pulling in a child's wagon behind her and said, "I found this growing in a garbage dump in Tel Aviv, near the Sea of Galilee!"

She then pointed to a huge plant with white-striped leaves, and said "I noticed this special plant while on holiday in the Virgin Islands - there was a field of plain Sansevierias, but only one had stripes like this, so naturally I took him home!"

Dr. Fondu was dumbfounded, but he reported her last comment was "SANSEVIERIAS ARE A LONELY PASSION!" The director was later seen pulling the small wagon into a revolting and unkempt area at the rear of the gardens, and has not been available for comment since. Colleagues say he is distraught and has taken to shouting unintelligibly and gnawing on a shovel.



### builds the sanseviera ashtray

Here are my mother's instructions for building the Sansevieria Ashtray -

Move to a small dim apartment in Brooklyn.

Obtain a glazed pottery container WITHOUT drainage holes.

Dig up soil from the rear-yard parking lot. Incorporate pieces of broken concrete sidewalk and asphalt for "tooth".

Place a few Sansevieria trifasciata laurentii plants in the center of the pot, and firm the soil until it is as hard as a rock. IMPORTANT - leave a great deal of room around the plant so you will not have to .empty the Ashtry very often.

Place the pot on the floor under the grand piano about ten feet from a west window.

Water sufficiently to just BARELY moisten the top layer of compacted soil every 2 months. It is not necessary to remove butts before watering. If the ashtray is mistaken for a spittoon go to a 4-month watering cycle.

Eventually the plants will multiply and fill the pot, taking up valuable room and rendering the Ashtray useless. At that point discard the entire mess and begin again, salvaging a few plants for your next Sansevieria Ashtray.



part three The Strange Case of Doctor

Let us examine what I am compelled to call "The Strange Case Of Dr. L.". I am forced to note that these events (perfectly incomprehensible as they may be) are regrettably common even in this day and age.

You will say to me, "But, this cannot be! - That a woman of such breeding and education, a University graduate, a brilliant physician and celebrated author, a kindly person....a collector of art, a lover of beauty - she *cannot* have behaved so...... reprehensibly!"

But you, Dear Reader, would be sadly mistaken.

The tale began when last I visited Doctor L. in her home. I could not help but notice a pot of dead Chrysanthemums displayed as a grisly decoration. "I cannot seem to keep plants.....alive....." muttered Doctor L. into her beard. Nervously, I looked further, and beheld a small drainless vessel filled with some Sansevieria Hahnii which I had given to Dr. L. some years ago. I was astounded!

- for I had never before seen a Sansevieria with leaves as limp as hounds' ears. "When was the last time you watered these?" I asked in a voice which refused to remain steady.

"I must plead with you not to ask this question of me!" she shrieked.

"I MUST know!" - I tore the words from my burning throat and forced agonized gasps of hot breath from between my sere, mummified lips.

Dr. L. closed her eyes, turned slowly away from me, staggered backwards and collapsed, weeping harshly. A small voice, such as would perhaps emanate from a telephone which had been left off the hook for centuries, or from a dying computer on a once-green planet millions of light-years from the earth, spoke directly into my anguished brain - "About a year ago."



A merciful blackness closed over me, and I heard no more.

finis.



Ever since Sansevierias were discovered over 200 years ago, the horticultural world has been underwhelmed by them. Not a year goes by that anyone who is capable of writing a book about them doesn't.

There are an abundance of annoying Anthologies of Anthuriums, A bonanza of boring books on Buxus. A cornucopia of callow Compendiums of Compositae, Divers dumb dull dissertations on Dizygotheca, Exorbitant extraneous epistles to Episcia, A flood of fatuous folios on Forsythia, A glut of grisly gazettes on Gazania, A hundred hideous horticultural harrangues, An infuriating increase of irksome Items on Iris, A jillion jerky jingles on Jade Plants, A krock krammed with Keen Kouplets to Kranberries, A lavishment of lewd Lily lyrics, Many monotonous monographs on Mosses, Not enough Nobel Nominations for News of Ndangered Species, An overdose of 'orrible offensive orations on Orchids, A profusion of piddling ponderous Perennial pronouncements, A questionable quantity of quarrelsome quartos on Quercus, A redundance of ridiculous raps on Radishes, A surfeit of superfluous Sermons on Senecio, Thousands of tiresome Tomato Tabloids, Untold unctuous ululations to Ulmus, Vexing vile Villanelles vis-à-vis Vinca, Weeks worth of Works on Watermelons, Xtraneous xacerbating xcrescences on Xacum, Years of yelping, yammering and yodeling about yeast, Zillions of zealous zinnia zingers,

But scarcely a solitary scintilla on Sansevierias -Just a single salute, and then.....silence.

### a terse history

Most Sansevierias are native to Africa, although a few originated in India and Asia. They were lumped by Linnaeus into Aloe in 1753. In 1763 Adanson called them "Cordyline". In 1786 this was altered to "Acyntha", and a year later they were christened "Sanseverinia" after the Prince of Sanseviero. In 1794 Thunberg corrected the spelling of this commemorative name to "Sansevieria".

The Sansevieria is a succulent member of the Lily family, although its placement in that vast and varied clan is in dispute. Or would be in dispute if you could get two taxonomists who knew and cared for Sansevierias together in one room, or at least on the same continent. Aside from widespread cultivation throughout the tropics as a source of vegetable fiber, the Sansevieria has been all but ignored.

We are fortunate in having one fine monograph on this genus, by N.E. Brown, printed in 1915 by Kew Gardens. This was an attempt to describe all the species known at that time. In some instances Brown had dried specimens, and no living plants, and therefore had a rather difficult time of it. Certain of the accompanying drawings made from dried specimens do not convincingly portray living plants. However the work is thorough, comprehensible, most read-able, full of accessible information and highly credible. It is well that we have Brown's fine work, but it is almost ALL we have. There are a few brief pamphlets published by botanical gardens. There is a pamphlet by Lad Cutak which documents the origins of such modern cultivars as 'Bantel's Sensation'. There is a pamphlet put out by the Adelaide, Australia Botanical Gardens on some species and cultivars known to Australian growers. There is a book of color photos by Kurt Morgenstern. That's it - there is no other reliable printed information available. These last two publications are largely pictorial; I am grateful for the pictures; some species and cultivars are shown for the first time.

I am not a trained plant scientist. I have relied upon N.E. Brown and John Beck and Horst Pfennig and about a handful of other Sansevieria-growing friends for information outside of the printed page. I have observed my own collection of plants.

This is not a "Work of Science" (clearing of throats and harrumphings), but rather a book intended to raise Sansevierias out of the dusty cellar of obscurity into the light of day so we can all see them. It remains for some other fellow to write an updated monograph, and I sure wish he would get cracking!

### say what?

I derive many hours of harmless and childlike pleasure from correctly pronouncing certain words which are commonly mispronounced even by literate and educated people. I look forward to the next time I say, "grimace" or "status" or "gratis" because I know that some poor schluck with delusions of superiority is going to try to correct my pronunciation. The sadist within me cackles with anticipatory delight as I envision myself saying, "Let's look it up - I'll get the dictionary."

Let everybody else say SAN SE VAIR EE A. Everybody else is wrong. Say – SAN SEV EE AIR EE A - and be right.

I wish I could be there the first time you pronounce Sansevieria correctly.

What you do then is your business. I'd go right for the throat!



### why a person ought to grow 'em

The recent mania for houseplants has subsided, as fads will do, and has left in its wake some people who have found that growing plants is great pleasure. My husband and I enjoy plants for their own beauty and not because they make good "interior landscape". A large part of the challenge and pleasure is in growing them with attentiveness towards their needs, and in selecting only such plants that we can reasonably hope to care for properly. Yet many serious plant fanciers try to grow plants for which they cannot possibly hope to provide a suitable environment. They seem to think that if a plant does not require an unusual environment, and a difficult regimen of care, it is a weed, and not worth growing.

Perhaps this is one reason why Sansevierias are ignored. Sansevierias don't know when to die. They are so easy to grow that collectors tend to ignore them. When you do find Sansevierias in nurseries, they are usually stuffed under the benches because it is widely believed that they like it that way, with no light, or at least with less light than the average fern. How can this be, a desert or dry-plains plant which likes less light than a fern?

Have we not all seen dismal pots of Sansevierias in dim corners, subsisting for years under a thick coat of dust? On side-tables in old, barely surviving restaurants, lightly coated with a sticky film of kitchen grease, and not having seen the light of day in living memory?

I have no idea what makes a person wish to put a plant in a place where no plant could possibly grow. I find nothing ornamental in dead or dying plants. However, since human beings are collectively capable of breaking all the Ten Commandments, it is not surprising that some individuals have sunk to the lowest deeps of the human spirit - THEY TRY TO KILL SANSEVIERIAS. The unappealing sight of so many filthy, neglected "Mother-In-Law's-Tongues" has given the genus a bad name. "Mother-In-Law's-Tongue" IS a bad name! The only reason more people are not crazy about Sansevierias is that they have no idea how many different kinds there are, and what they look like when they are properly cared for. For to know them is to love them, and for that reason, Sansevierias need to be yanked out of the dark corner, out from under the bench, out from under the coat of dust, and thrust into the light of day where they can grow properly and be admired! I bet you could easily locate and rescue an abused Sansevieria today, with very little effort!

Because Sansevierias are so non-demanding, you can have a vast number of them without having to have a greenhouse and without having to dedicate enormous amounts of time and energy towards their upkeep. I am not speaking here only of bare maintenance. You can give your Sansevierias the kind of care which will yield show-quality plants with less time and effort than that required by any other kind of plant. This means you can spend time admiring and touching your plants without having to fuss and worry over them. The exceptions to this are the highly variegated plants, some of which are not so tough. You can easily take care of the delicate ones when the rest of your plants take so little of your energy and time.



### leaf forms and anatomy

Some jargon used by botanists to describe plants is obscure. I am for simple language; thus the following miniature dictionary of terms:

#### STRAP-SHAPED LEAF

Parallel margins with little tapering Botanists call this "oblanceolate".

#### **BLADE-SHAPED LEAF**

The common S. trifasciata Laurentii has a bladeshaped leaf which tapers & thickens as it narrows to the base. Botanists call this leaf "lanceolate".

#### SUBULATE OR TERETE LEAF

Cylindrical, awl-shaped, or tapering like a spine. Circular cross section.

#### CHANNEL

Some subulate leaves have channels starting at base, from which the next leaf emerges. Often channel continues considerable length up the leaf, and has obvious margins.

#### RIB

Some subulate leaves are ribbed parallel to their length, and expand and contract according to the moisture in the leaf and the age of the leaf. Old leaves are more ribbed than young ones. The valley of the rib is often called a "furrow".

#### PETIOLE

Narrow stem-like portion of the leaf at the attachment to the rootstock or stem.



#### VARIEGATION

Distinct areas of pigments other than chlorophyll are relatively common is Sansevierias. Few have leaves which are entirely self-colored - most show some sort of green-on-green banding at least. The Snake Plant (S. trifasciata Laurentii) has a wide deep yellow leaf edge, and some sports like 'Bantel's Sensation' have pure white streaks in their leaves.

#### TEXTURE

This can vary from the smoothness which rivals waxed and polished wood (as in S. grandis) to the sandpapery and sharkskin-rough texture found on some of the subulate-leaf kinds.

#### LEAF MARGINS

These can be of aid in identifying species. One commonly sees a transparent cuticle edge, which ages to henna-red or white. Some edges are crenelate (ruffled). Often the channel will have a cuticle edge of a particular color. This can be an ornamental feature of the plant.

#### **LEAF FORMS**

Within the genus Sansevieria, there is great variation in leaf size, type, and color between the highly adapted succulent forms of the desert and dry plains and the soft-leaf forms which prosper in tropical and subtropical climates. The desert types have tough skins and reduced leaf area in the form of cylindrical leaves rather than the wide strap-shaped, softer leaves of the tropical types.

Since the visible portion of the Sansevieria plant is usually entirely made-up of leaves one reasonable way to categorize and think about the plants is by their leaf types. This works well because differences in leaf color, shape, variegation and texture produce over 100 identifiable different kinds of Sansevierias. There are two major kinds of Sansevieria leaves - SOFT (tropical), and HARD (desert).

#### SOFT LEAF FORMS

These tropical plants have the blade shaped or "lanceolate" leaves which taper from a thin petiole to a wide blade and then back to a thin soft point. The softer leaves are generally found in plants forming rosettes of at least 6 leaves per plant, for example, the S. hahnii group, which are dwarfs. Taller plants like S.trifasciata Laurentii make a kind of spare erect rosette of 2-6 leaves. The cultivar 'Compacta\* will often make a rosette of over 10 leaves. Also S. parva, dooneri, nilotica, senegambica, plus trifasciata and all its cultivars.

#### HARD LEAF FORMS

These desert or dry-plains plants have hard, rough, stiff, truly succulent-type leaves in blade or flattened shapes forming rosettes of generally 2-5 leaves. Some examples are S. kirkii, kirkii v. pulchra, subspicata, grandis, conspicua, dawei, raffillii, liberica, concinna, subspicata, aubrytiana, metallica, angustiflora, thyrsiflora, bracteata, braunii. The rough sandpapery texture on some, and brightly figured mottling on thick stiff leaves, trimmed as they so often are with dried margins in white and rust red, makes this group extremely ornamental, and one of my own personal favorites.



Then there are the strange and bizarre forms, most of which may not even be identified as Sansevierias by many people, and which were called "caricatures of plants" by the first botanist who saw them.



ehrenbergii

#### **CYLINDRICAL SINGLE LEAVES**

For example, singularis consists of one leaf shaped like a tough-skinned tusk, banded rather brightly in pale azure blue and almost black-green, tipped with fat spine like an Agave. Author's choice! - Stuckyi is another single leaf cylinder of fibrous, tough stuff - it attain eight feet of height in nature! Canaliculata and sulcata have single pencil-thick leaves which grow perhaps 2' in height. Folk seeing them for the first time are often astounded at their appearance.

#### **CYLINDRICAL LEAVES IN FLAT FANS**

This group includes ehrenbergii, desertii, cylindrica, cylindrica v. patula, and rorida. The leaves are called "2-ranked leaves" by botanists, and grow into a flat fan shape.



sulcata



arborescens



#### CYLINDRICAL LEAVES IN ROUGH ROSETTES

The leaves protrude all around in a visually haphazard manner in this group, which includes but is not limited to suffruticosa, gracilis, humbertiana, bagamoyensis, caulescens, volkensii, philippsiae and intermedia.

### THICK SUCCULENT LEAVES OF VARIABLE SHAPES IN ROSETTES

Zeylanica, roxburghiana, burmanica, aethiopica, grandicuspis, and arborescens. The rosette may hug the ground, form a loose tulip shape (both commonly called "birdnest"), or it may form an erect and very vertical plant like the common "Snake-Plant".

### what's in a name?

A name is a temporary thing, given in this case to a plant by a plant taxonomist. Later on another plant taxonomist may change all or part of that name. Many plants have had three name changes in five years. Taxonomists do bloody battle over these things. I am not a taxonomist. I am not a bloody battler, either. I do like to know what are currently considered correct names by plant taxonomists because I like to discuss plants with large numbers of people, and therefore I want my names to be as correct as possible. If I never discussed plants with anyone I could call them anything I chose and it wouldn't matter.

Because Sansevieria history consists of a brief period of botanical study following the discovery and colonization of their native haunts by botanists, and then a sizeable gap with little new scholarship, the record is discontinuous and much description has gotten separated from the plant to which it was originally given and to which it properly belongs.

Some of my own unnamed plants strongly resemble some of the plants which Brown has described, but they have not yet flowered for me, so I have not yet been able to make an absolute determination of their names. I have omitted flower details here, even though it is the flower upon which the taxonomist makes species determination. This is for several reasons. Most of us try to determine the names of our Sansevierias when they are NOT flowering, by the physical appearance of the plant itself. When my plants flower I usually do not have the time, energy, or ability to precisely measure and exactly describe the flowers. I doubt that many do today, other than taxonomists. I suggest that anyone who wishes to make a positive identification based on flowering should obtain a copy of Brown's monograph.

The problem in naming Sansevierias today is generally one of matching up old valid names with the proper plants. Most of the plants described herein were so described while the actual living plants were sitting in front of me. A few which I have never seen, but believe exist, are described from the descriptions of persons who have seen the plant.

Since Brown wrote his monograph in 1915, new species have been discovered and named. These will be covered in a supplement to this book which is now "in the works".

Brown had to describe some plants which he had never seen. Some of these plants have never been seen since. If Brown never saw it, and if no other botanist has seen it since, and if I have never seen it, and if I don't know anyone else who has ever seen it - I rather doubt that it exists!

There are many plants, in my own collection, and plants in other collections which are either improperly named or unnamed.

The most confusing of all possible cases is when one plant with a perfectly good and known name is commonly called by different name which properly belongs to another plant in the same genus. S. metallica for S. kirkii var. pulchra is the commonest example of this error which springs to mind. In this case two names are ruined at once!

### sansevierias known by brown

Brown believed these Sansevieria species were genuine in 1915 -

abyssinica aethiopica angustiflora arborescens bagamoyensis bracteata braunii burmanica canaliculata caulescens chinensis (?) concinna conspicua cylindrica cyl. v. patula dawei

desertii dooneri ehrenbergii fasciata gracilis grandicuspis grandis grand. v. zuluensis intermedia kirkii kirkii var pulchra lanuginosa (?) liberica longiflora I.v.fernandopoensis metallica

met. v. longituba met. v. nyasica nilotica nil. v. obscura parva patens pearsonii perrotii philippsiae powellii raffilli raffilli v. glauca rhodesiana robusta rorida roxburghiana

senegambica singularis sordida stuckyi subspicata subtilis suffruticosa sulcata thrysiflora trifasciata t. var laurentii varians volkensii zanzibarica zeylanica

These names are not of Brown, but are valid - aubrytiana, caespitosa, humbertiana, macrophylla, pinguicula (Bally), scabrifolia, schweinfurthii, suffruticosa v longituba (Pfennig).

These are species names of plants which may not be valid, but for which we do not have a better name - nelsonii (that is, <u>not</u> trifasciata cv. 'Nelsonii', but an epithet), javanica, (Brown puts this in Pleomele), splendens, transvaalensis. These are not species names, however they are the kind of names commonly used to designate some rare Sansevierias offered by several specialty nurseries - Species from Socotra (Lavranos), small form. Species from Socotra (Lavranos) large form. Species #12681 (Bally). And many others numbered and accredited to various collectors.

Some of the numbered plants may be older, well-known plants given a number by somebody who did not know the proper name. Others may be new finds, as yet unnamed.

### how i keep track

We become accustomed to thinking of a name as "belonging" to a particular plant, rather than being something temporarily applied to that plant. Nameless plants threaten our sense of order. So most plant collectors have some kind of system for keeping track of their "nameless" plants. Some people use numbers. But since the part of my brain which has to do with numbers is absent or non-functional, I don't do that very much. I usually have a one or two word description of either the appearance of the plant and/or its homeland, plus the initials of the person from whom I obtained it. This information goes on the plant label.

Then I also enter the plant in a small book, and in the book I write any other observations I might have which are too bulky to put on the label - for example "Shamva #1" and "Shamva #2" both came to me from Zimbabwe. Both have thick blade-shaped leaves. The book tells me when I got them and from whom. I won't forget Shamva, and I can count to two without trouble. "Lime Dwarf" is a sport of "Green Hahnii". It is predictably lime-green in color. The entry in the book records what commercial nursery the plant came from, and in what year, plus the fact that it comes true from leaf-cuts, which is unusual for such a sport.

It is important to know where you have obtained a rare plant. Even if it has no proper name now, it may get one at some time in the future, and you may be then able to match the plant with its name by remembering where you got it.

Some of the most incredible non-names happen when one collector gets a plant with no name from another collector. He then adds his own name and numbers to that plant. I have plants with numbers covering both sides of a label. I then, of course, add another label to the pot with my own descriptive non-name, so that something like '289-768A/AG79 SOM' becomes 'Dark small spike', which is something I am able to recall, whereas I am not able to remember the string of numbers and initials.

Sometimes after years of growing a nameless plant I decide that it is exactly the same as some other plant. If one of the two has a name, no problem. If they both have numbers and initials instead of names, I have to decide whose initials to stick with. But - this whole story gets written down in my book. The main reason to maintain the book is that plant labels are not big enough to record these lengthy sagas.

Sometimes I buy a plant from another collector and it turns out to be identical to a plant I already have under another name, and I have to decide which name to use. Then there is no hard and fast rule - I try to use the older name, but again, the transaction is recorded in my book of records.

When I sell or trade one of my rare plants to another person, I want them to have all the information about the plant that I have. So often a little story of the origins goes along with the plant. A name would be a simpler thing! But so much less interesting! And eventually, of course, one's book of records may become so large and involved and interesting that one may actually publish portions of their book of plant records, which is what I am now doing.



### sansevierias described by brown





#### ARBORESCENS

arborescens

This plant grows a cylindrical central stem from which very sharp leaves protrude in every direction. It is solid light grassy-green, totally unmarked by any banding or mottling. The leaves are hard, smooth, and tipped by a very sharp brown spine. This is a most unusual Sansevieria, one few people would ever guess is a Sansevieria at all. Arborescens specimens in our collection have grown over 3'-4' high with leaves 6"-8" long by 1" wide before I cut them back for propagation, whereupon they produce side branches which eventually may be cut off as individual plants. (East African desert & tropics)

#### BAGAMOYENSIS

Brown described this from part of a plant. It has fat strap-like leaves which are 7"-15" long by 2/3" wide, bearing a brown terminal spine. The leaves are arranged in untidy rosettes proceeding upwards on a central trunk or main stem. (East Africa)

#### POWELLII

Has a central stem or trunk which grows 3'-4' high x 1" thick, from which pointed cylindrical I'-2' x 1" leaves protrude in a spiraling fan. Sometimes it appears to be an irregular rosette. Leaves have concave channels which spread at the base to embrace the main stem. Leaves are tipped with brown spines. Edges of the channels have red margins and dried white edges. Leaf color is dark green with a somewhat rough texture. Pfennig believes this plant to be a natural field hybrid of robusta X arborescens. Quite handsome. Certain specimens collected in Ghana have lighter coloring and a pleasant mottled pattern, at least in young plants. (Voi, East Africa)

#### CAULKSCENS

I have not seen this plant, but it appears to be very desirable. It develops a main stem or trunk of uncertain height. Brown saw one individual only, which was 2' tall, so we don\*t know the maximum height. The cylindrical narrow leaves are 18-30" long and 5/8" wide, recurved, and are crowded on the main stem in untidy rosettes. They terminate in a soft, pale, tan point. The leaves are deep green with very dark green lines deepening into furrows. (Nairobi)



#### SUFFRUTICOSA

suffruticosa

Prostrate branching main stem 24"-30" long branch covered in leaf-scales which gradually turn into 7-8 leaves up to 18" long per growth. Leaves are cylindrical, tipped with a brown spine, and clasp or encircle the main stem in irregular rosettes. Color consists of alternate bandings of light and dark green on rough textured skin. Horizontally borne branches terminate in individual plants often carried a few inches above the soil and anchored by means of stilt roots put down by the new plant. Babies may be separated from parent at any time, give no indication of needing special encouragement to cause them to root. They often root into the pots of other plants.

#### PHILIPPSIAE

Many-branched 12"-15" main stem with 5-10 leaves per growth. 4-18" by 5/8" wide leaves carried a few inches above the soil line. Each branch is clothed in leaf bases which eventually turn into leaves, and terminate in individual plants. Cylindrical leaves are tipped with a brown point and the channel is trimmed in a white edge and deep brown margin,

borne in an untidy rosette which opens quite flat. Leaves are mottled and banded in dark green and darker bluegreen, are quite smooth and furrowed longitudinally in mature individuals. Small plants, which are paler in color, will show furrows as a series of parallel dark green lines. (Somalia)





#### GRACILIS

gracilis

This plant makes a narrow 3" multi-branching main stem clothed in flexible narrow, dark-green, awl-shaped leaves, 3-12 leaves per growth which are deeply furrowed if the plant is grown dry, even when quite juvenile. The leaves are 9"-30" long and about 1/2 " wide. It is a good basket subject. However, if its branches, which, like so many Sansevierias of this kind, are clothed in leaf-bases which turn gradually into leaves and thus into individual plants ...if these branches are left hanging in mid-air and not placed where they can root in soil, they remain very skinny and have the appearance of desiccated plants even if the parent plant is well-watered. (Tropical Africa).

#### RORIDA

Brown saw only a young seedling of this plant. It supposedly forms a main stem or trunk 3"-9" tall surmounted by cylindrical leaves, 11-15 leaves per growth, arranged in a flat fan configuration. The leaves were 12"-21" long and about 1-1/4" wide. This would make it a most desirable plant. I do not know anyone who claims to have the plant, or to have seen the plant. I do have a plant fitting the description in my collection, but it came to me without a name, and it has not yet flowered, so I am not sure of its identity. (Somalia).

#### PERROTTI

Brown never saw this plant. I have never seen this plant and I don't know anyone else who has ever see it. It is described as having a short (6-8") main stem and a fan of fat 3-5' long by I" wide leaves with 8-12 leaves per growth. It sounds as if I would like it very much, and I would like to meet it someday. (East Africa).

#### ROBUSTA

Another fan of fat cylindrical leaves on a stout main stem. The stem is 1-2' tall and the leaves 3-7' long with 6-14 leaves per growth. I have seen many photos of this plant, and I may even have it under an alias. (Voi, East Africa).

#### ZANZIBARICA

Has fat, strap-shaped 6"-12" long by 3/4"-1" wide leaves arranged in a crowded fan on a very short main stem. Brown saw only pieces of this plant, and did not see flowers. I have never seen a plant fitting his description. However, many plants of this configuration enjoy a protracted childhood, in which they are NOT fan-like in form. Perhaps when my plants attain some maturity they will grow into this description. (Zanzibar, East Africa).



ehrenbergii

#### EHRENBERGII

Has either no stem or a small central trunky stem up to 9" tail. 30"-72" long leaves in a crowded fan configuration with 5-9 per growth, rough, furrowed and dark green. Channel is margined in deep blood-red edged in dried white tissue. Leaf is tipped with a hard point on which I have impaled my fingers many times. Showy, angular, bizarre, one of my favorites, one of the first odd fellows I obtained.





desertii

#### DESERTII

This is an upright, close fan of rough, furrowed cylindrical leaves which emerge directly from a creeping rhizome. They are tipped in fierce white spines which are banded at the base in a color which is appropriately like dried blood. It is a tough, flexible, slow-growing plant. Mine flowers when about 18" tall, but it is said to attain 40" in height, which I look forward to seeing. Newly cut rhizomes are exceedingly susceptible to rotting from over watering. (Kalahari, Rhodesia).

#### VARIANS

I have never seen this plant, nor do I know anyone who has. Brown says it is a stemless plant, a fan of leaves 1"-4" long with 4-8 leaves per growth.

#### PATENS

Each growth consists of a stemless fan of 5-10 cylindrical leaves measuring 18"-36" long by about an inch wide. Newly found at Koko Crater Botanic Gardens by Ed Eby.

#### **INTERMEDIA**

This plant is a rosette, but the 30"-48" long by1/2"-3/4" wide terete leaves are held in a close, rather than open rosette. There are 2-7 leaves per growth. They are very dark green, covered in minute bumps but smooth-skinned, rather like a fine-grained beaded movie screen. For some reason one sees it's name applied to various other Sansevierias which are totally unlike it in appearance.

#### RHODESIANA

This is a stemless fan of 36"-66" long by 1" wide terete leaves with 3-4 leaves per growth. I have obtained several plants fitting this general description from its homeland, Zimbabwe, but it is not yet possible to say they are the correct rhodesiana.

#### SORDIDA

I have not seen these plants, nor do I know anyone who has. Brown says it has 4-12 leaves per growth, 27"-40" long leaves and a stemless, spreading fan.

#### PEARSONII

3-5 leaves per growth, leaf measures 30"-36" long, a stemless, close, erect fan. I might have this one under an alias.

#### STUCKYI

Plants sold as stuckyi often are not stuckyi at all. This may be because the plant is a giant which persists in an immature form with up to two or three leaves per plant until it attains its mature size. It is a most impressive and beautiful plant, and it is quite an education to see it progress from its immature, rosette stage to its mature single leaf cylindrical stage, at which point it becomes 4'-9' tall and 1-1/2" to 2-1/2" wide. (Eastern Africa). The plant hogging the center portion of the photo to the right is Robusta, but a very juvenile form of Stuckyi is shown growing up against the far right border of the same photo.



intermedia



stuckyi

#### **CYLINDRICA**

Wow, have I got cylindrica! Friends have collected cylindrica for me from all over the world where it has been introduced as an economic plant. The distant forms all look slightly different. It forms a stiffly erect fan of leaves 30"-60" long and 3-4 leaves per growth. Sometimes the leaves wiggle rather as if they had once been coiled and were now straightened, but have retained a slight memory of their former condition. The skin is smooth; the plant is light to mediumgreen with some banding and blotching. Variety patula stays smaller and has leaves which are not straight and erect, but which recurve. Most people who know there are odd Sansevierias seem to know about cylindrica.



cylindrica in bud



cylindrica in flower





singularis

#### SINGULARIS

A most beautiful typical single-leaf plant when 12"-15" tall, rather like a tusk. The coloring is alternate irregular bands of bright pale-blue and deep black-green. With age it turns nearly black and becomes 8' tall. The texture is silky with minute bumps, so it feels like some curious hard leathery velvet, like no other Sansevieria. Despite its dry habits, we have grown this one rather wet and it persisted in being typical. It is slow to make new growths, but not that slow. Quite exotic and sure to fool anyone who doesn't already know it for a Sansevieria! (Voi, East Africa).

#### SULCATA

This is a plant with one 2' long pencil-thin leaf which requires staking or some sort of support if you want it to grow upright. It is bright green and often encompassed at the base by sheath leaves which are heliotrope-purple in color. I think if I grew them drier they might be stringier and thus, more self-supporting. A variegated form exists which is longitudinally striped in cream- yellow and is described on page 54. Also called "bacularis". (South Africa).

sulcata

#### CANALICULATA

This plant has one or two 2' long dark green leaves per growth; the leaf is very dark green and furrowed. It is stiff, not flexible. Several apparently dwarf forms are known which make recurved leaves and to date our plants, which we have grown for years, are not even 6" tall. (Somalia).



#### LANUGINOSA

This plant supposedly has woolly!!!!!! grooves on its 18"-36" leaves!! 3-4 leaves per growth. Brown never saw it and didn't believe it existed. Neither do I.

#### VOLKENSI

Pfennig now believes this is identical - or nearly so - to intermedia.

#### **CEYLANICA**

(Formerly "zeylanica") A very rare plant. The name is not rare - lots of Sansevierias are so labeled. But they are not properly named. Brown doesn't believe he saw it. I have some infants which could be the real thing - they came from the right place. Anyway, it is supposed to have thick strap-shaped 18"-30" x 1" leaves which are rounded and have darker green parallel lines on the backs, plus alternating bands of green and lighter green crosswise on the leaf face, 5-11 leaves per growth. (Ceylon).

#### BURMANICA

I have not seen this plant. It is the first of the plants in Brown's listing with semi-terete leaves held upright in a close rosette of 8-13 leaves 18"-30" long by about an inch wide, from sandy, dry regions in Burma.

#### ROXBURGHIANA

This is rare and beautiful. The subtle coloring of alternate bandings of light and dark green is enhanced by the sandy reptilian leaf texture. The leaves are 8"-24" long by 1-1/2" wide, with 6-24 leaves per growth. We have what we believe is the true form plus several forms which were collected near the habitat Perhaps they are variants. (India)

#### SCABRIFOLIA

Brown did not know this plant. It has semi-terete leaves, quite rough, with peeling white margins. The leaves are held upright in a rosette in young plants and this rosette spreads somewhat as the plant ages. There is some kind of central trunky rootstock. I don't know if it would be considered a true stem or whether it is just the root being heaved up out of the soil. The plant has many leaves per growth. Our oldest plants nave leaves 15" long and about 1/2" wide.





#### LIBERICA

3"-4" leaf attains 18"-40" in height, 1-3 leaves per growth, very bristly marked in silver green blotches and bright grass

green. Has dried margins which are usually white. Basal sheath of the new leaf is marked in deep purples. Older leaves are perhaps less strongly marked than new ones. Unless plant is grown rather bright and well-drained, it loses stiffness and strong markings and looks a bit like guineensis. I find it to be showy and beautiful. The name liberica is often improperly applied in the trade to 'Bantel's Sensation'.



#### TRIFASCIATA

Tall and narrow (12"-48" high with I"-4" wide leaves), with an upright rosette and snakeskin-like coloring, it is a most common plant.

#### TRIFASCIATA VAR. LAURENTII

As above, but with wide yellow margins, perhaps the most common houseplant in existence. The varied cultivars of this plant are dealt with elsewhere under variegated plants - for example – 'Green Hahnii', 'Silver Hahnii', 'Gold Hahnii marginata', 'Loop's Pride', 'Silver Queen', and so forth and so on.

#### DOONERI

Brown describes this as 4"-17" tall with 20 leaves in barren growths, 6-8 in flowering growths. The leaves are about an inch wide. Certain specimens in our collection seem to be tiny dwarfs, even after years of growth, while others do approach 17". The leaves are soft, narrow, recurving and pale bright green. It may be grown satisfactorily in a basket because the rhizomes poke out all over and are quite long in relation to the size of the plant.

#### PARVA

Similar to dooneri, but may be distinguished by its more upright habit of growth. 6-14 leaves per growth 8"-18" long. Also has a narrowing of the leaf into a petiole, and brighter color and transverse markings. For us it is a more vigorous grower, which bursts out of the pot much faster than dooneri.

#### **GUINEENSIS**

There are many plants with long broad leaves up to 4"-6" wide, rather brightly mottled in shades of light and dark green which are called guineensis in the trade. They are all quite similar. Perhaps the fact that this plant was introduced so widely into the tropics and cultivated as a source of fiber led to this dispersal of characteristics. Most of the plants called guineensis do not have a dried leaf edge. The plant is quite large - 4' is not an unusual height for old plants in a big clump, and it is reasonable to assume in habitat it would get even taller.

#### SENEGAMBICA

Solid medium-green leaves with a smooth surface and a kind of waxy translucence, slightly marked with transverse barring. Under our culture the leaf attains perhaps 2' in length, 2" in width, 3-4 leaves per growth.

#### NILOTICA

Long, narrow (3'-4' long by 2" wide) strap-shaped leaves which narrow into rather stiff but quite narrow petioles. 2-3 leaves per growth. Our plants are about 30" long, but have been potbound and not encouraged to attain any size. They are dark green and show some transverse barring. The plant makes new offsets and is quite prolific. I saw it growing in Hawaii in the sort of darkness you see when almost all light is excluded by an overhead canopy of palms, ferns and other large-leafed foliage. The plants had fewer leaves per growth than normal, but otherwise seemed typical in form, and healthy. A form called f. obscura is also known.



#### GRANDIS

Makes a leaf 1'-2' long and 4"-16" wide, often having a cupped shape, and with 4-5 leaves per growth. The leaf is oval, very smooth; bluishgreen indistinctly blotched with lighter green. Some people grow this plant in an orchid raft or basket to take advantage of its long rhizomes. Such rhizomes, when contained in an ordinary pot will often make two complete revolutions before emerging as a new plant, usually through a drainage hole. Its rhizome is stout and will not be denied its desire to grow to great lengths, so a basket is as good a way, as any to cope with its propensity to wander far from its mother! Several forms such as f. zuluensis are known.

#### DAWEI

A most commanding plant 2-3 leaves per growth. Brown says that the leaf can attain 5' in length and 4" in width but ours are 30" x 6", thick stiff, nicely rough, something like fine sharkskin texture, dark bluish-green mottled with lighter green, and have a distinct waxy bloom when they are grown hard, that is, on the dry side. They bear dried margins. Their size, stiffness and general heft makes them very impressive as tubbed specimens.

dawei



#### KIRKII

The leaf is leathery, very smooth, particularly on the face, with dry white margins occasionally peeled back to form threads. The color is grass-green, lightly mottled with lighter green and bearing longitudinal dark green lines on the front and back. Our plants are young and not over 12" tall. According to Kirk, they can attain 9' in height, about 3" in width and 1-3 leaves per growth, which I would very much like to see.

#### **KIRKII VAR. PULCHRA**

Many believe this is the most beautiful of all Sansevierias. For years it has been incorrectly called "metallica" in the trade. The base color of the leaf is a very dark, almost black-green, blotched and spotted with creamy rose-tan.

The dried margins are white and red and they undulate. The leaves are carried close to horizontal. Our plants make about 3 leaves to a growth. The coloring is very clear and beautiful. You would not mistake this plant for any other.

#### METALLICA

kirkii var. pulchra

Looks nothing like kirkii var. pulchra. Its leaf is smooth, leathery and green, marked most indistinctly with dark green. Our one plant so named is less than a foot tall, but evidently the plant can attain 5' in height and 2"-5" in width, with 1-3 leaves per growth in nature. I have no idea why it was named metallica - it has no metallic appearance whatsoever. There are 2 other forms f. longituba, and f. nyasica.

#### RAFFILLI

Another commanding plant, like dawei. It makes perhaps two leaves per growth which are thick, rough, muted but mottled in shades of light and dark green. It bears a dried reddish point at the apex of the leaf. In pot culture the leaves easily attain 24"-40" in height and 3"-5" of width.

#### **RAFFILLI VAR GLAUCA**

Similar to raffilli, but the leaf is covered in waxy bloom. Our specimens seem to be a paler green than the species. The coloring is very attractive. The plant is somewhat slow to produce new offshoots.

#### SUBSPICATA

Makes an open, spreading rosette of dark green with slightly shiny 9"-24" by I"-2" leaves which are only just barely marked with lighter green, and have 4-8 leaves per growth. The leaves bear dried brownish red margins and are slightly spoon-shaped, having stiff and narrow petioles. Sometimes the plants have a bluish cast if grown to their deepest coloration.

#### **ABYSSINICA**

Plants called "Lavranos #50" in the trade are abyssinica, according to John Bleck. The blade is wide, thick, stiff, with rough sandy texture, red and white dried margins. Youngsters are very brightly mottled in light and dark green. We also have several forms of conspicua with this general appearance. Our Heidelburg #22836 (Rauh) is in this category. 1-2 leaves per growth, 2' tall by about 3" wide leaves.

#### **AETHIOPICA**

looks like less extreme form of scabrifolia. Leaves are wider and slightly softer but still fairly stiff, rosette is less close and margins which are white when dry, do not peel like thread. Color is blue-green, like certain marine algae. Skin surface is mildly rough. Sometimes mislabeled intermedia. 13-30 leaves per growth, 5"-17" long by 1/2" wide.

#### GRANDICUSPIS

We have this plant and another one very like it under the name "transvaalensis". The leaf is strap-shaped and has longitudinal dark lines running down the underside. It has an open spreading rosette form. 5-15 leaves per growth, 7"-20" long and I/2"-I" wide.

#### CONCINNA

Rosette of blue-green leaves which are roughly linear, narrow with a channeled petiole. 5 leaves per growth, 6"-10" long and 1/4" wide. (East Africa).

#### SUBTILIS

2-4 leaves per growth, 21"-27" x 1-1/2" with long-handled spoon shapes with narrow deeply channeled petioles, erect slightly spreading rosette. (Uganda).

#### **FASCIATA**

A small, crowded rosette of a few flexible, leathery, and a bit shiny leaves with dried reddish edges. The color is bright but dark green and faintly mottled.

#### **CHINENSIS**

I'm willing to bet there are no Sansevierias native to China. So was Brown. This plant sounds like one of the many things named guineensis. He believed that guineensis was misspelled as chinensis.

#### **CONSPICUA**

Oval leaves, slightly cupped, dark green, leathery, a bit stiff, narrowing into a channeled petiole. The front of the leaf bears some longitudinal dark green lines. We have plants of this name from various reputable collectors and botanists. Some forms have mottled leaves, other forms are sandy-textured. One form is so bristly patterned as to rival kirkii v. pulchra. All forms have lines on the leaves. All of ours still seem juvenile. 3-5 leaves per growth, 9"-30" x 3" wide. The inflorescence is spectacular - they don't call it conspicua for nothing!



#### ANGUSTIFLORA

Stiff apple-green lanceolate leaf with slight mottling and dried red edges. Up to 12 leaves per growth, 18"-24" long and I"-3" wide.

#### **THYRSIFLORA**

Similar to angustiflora, but seems under our growing conditions to become a big plant faster. Perhaps a little less leathery and stiff, and coloring seems not so strikingly pastel.

#### LONGIFLORA

Nicely marked rows of light on dark blotches, dried red & white marginal edging. Grows well, I have not seen flowers which are said to be 4" long! I expect quite a display when it is ready. 15"-18" x 3-1/2" leaves. Another form, f. fernandopoensis is known.

#### BRACTEATA

15"-24" x 2-1/2" wide leaves resembling aubrytiana

#### BRAUNII

Rosette of 12"-27" x 3"-4"wide strap-shaped rigid leathery leaves with dried red edge. (East Africa)



## sansevieria species discovered since brown's mongraph.





humbertiana



caespitosa

#### AUBRYTIANA

Brown knew this epithet, but did not award it to any plant. Subsequently it became applied to a plant of the tall, bladeleaf form, having brightly mottled foliage in very light-green, nearly white, and a pale bright-green, with reddish dried margins and white edges when grown dry plus a mottled purple basal leaf sheath. Our immature plants have leaves over 24" long by 4" wide, 1-3 leaves per growth.

#### CAESPITOSA

A clump of narrow leaves having a grassy appearance. Apparently of too modest an appearance to interest growers of "ornamental" plants. I have grown lawn grass in a flowerpot for its beauty, so I celebrate having this Sansevieria. Like a tiny parva. (S.W. Africa).

#### NELSONII (PF115)

Pale, but rather bright grassy-green spoon-shaped leaves with long petioles. It is not the same plant as the one in common currency called "Lavranos, Socotra." Not listed in Index Kewensis.



javanica

#### HUMBERTIANA

Discovered in Kenya in 1940 by Guilliaumin. Today Pfennig believes this to be synonymous with volkensii and intermedia. The plants we received under this name are stiff and angular gracilis-like plants, of very pale-green color and mottling.

#### JAVANICA

Brown puts this into Pleomele, yet our javanicas are definitely Sansevierias. It is of Java, and bears resemblance to Ceylanica, has a keeled (like the bottom of a boat), strapshaped leaf, vertical lines en the back, and cross-banded markings on the front. Young plants are rosette-forming.

#### MACROPHYLLA

A fairly large, stiff blade, pale-green, slightly sandy texture, rather free of mottling. Our plants have not yet attained full growth, but I imagine they will get to be at least 3' high. Similar to raffilli v. glauca.





schweinfurthii

#### SCHWEINFURTHII

Similar to and confused with cylindrica. It has 6 leaves per growth - twice the number per growth as cylindrica, the leaves are shorter, a uniform dark green, and they lack the spikey tip of cylindrica, terminating instead in a fleshy point.

(Eritrea, Africa)

#### SUFFRUTICOSA VAR LONGITUBA

Pfennig's find, having a floral tube 2 cm in length, this being twice as long as that of suf-fruticosa.

#### **SPLENDENS**

Shiny, dark green blade-shaped leaves narrowing into channeled petioles, red leaf margins and dried white edges.

#### TRANSVAALENSIS

Resembles those Sansevierias having narrow strap-shaped leaves which are keeled with fine dark uninterrupted lines on the reverse plus light and dark cross-banding on the front.

#### PINGUICULA

Discovered and named by Peter Bally in 1964. It looks like a dwarf Agave, with thick, fat, horn-like, bloom-covered dark green leaves which are tipped with a lethal point. A fierce rosette! Very slow. It offsets by means of above-ground branches which terminate in new plantlets which put down stilt roots. A mature plant is about a foot across.
### sansevierias in search of an identity

These plants have been introduced into the trade to the extent that they are carried by some nurseries specializing in rare desert plants. They are certainly distinct plants and not just forms of something all ready named, at least in overall appearance. Having no proper names, they are called by various numbers and nicknames. These are two of the most worthy –

#### FKH#432

Frank Horwood's find. This otherwise rational man professes not to like Sansevierias, but he did find this unique individual which has leaves ranked in five, set on top of each other like an Astroloba. The leaf is awl-shaped and mottled in medium greens. A beautiful form and unique in the genus.

Thanks Frank!







Spoon-leaf plant from Socotra



### SPOON-LEAF PLANT FROM SOCOTRA, ACCREDITED TO JOHN LAVRANOS

It occurs in two forms, big and little. Both forms have unusual attenuated petioles and tiny blades, thus having a form like a demitasse spoon. One form stays quite small ... a clump grown for years consists of perhaps 12 plants about 5" tall, crowded comfortably into a 4" square pot. The larger form has grown to about 15" in height. It makes long rhizomes, and thus tends to have offshoots protruding from drain holes, rather like grandis.

### usda cotton and cordage collection

In the old days, before the invention of Rayon and other synthetic fibers, the United States Department of Agriculture maintained a Cotton and Cordage Fibers Branch. Under this umbrella certain Sansevierias were imported and grown in Florida. The remains of this project are now housed in a Florida agricultural station - the director says the Sansevierias are in disorder, that certain ones have vanished and others have become separated from their labels. I like to think the ones which vanished were taken home by somebody, rather than dead This is a list of the original cotton and cordage collection -

ABYSINNICA AETHIOPICA ANGUSTIFLORA CANALICULATA CONCINNA CYLINDRICA DAWEI DESERTII EHRENBERGII GRANDICUSPIS GRANDIS GRANDIS VAR SALVENSIS GRANDIS VAR ZULUENSIS INTERMEDIA KIRKII KIRKII VAR PULCHRA LIBERICA METALLICA PATENS PHILIPPSIAE SCABRIFOLIA SCHWEINFURTHII SENEGAMBICA SINGULARIS SPLENDENS STUCKYI SUBSPICATA SUFFRUTICOSA THYRSIFLORA

Then there are about two dozen plants listed as species, with no name. The interesting part of this collection are the hybrids, a number of which we have in our collection, but some of which may not be correctly labeled –

TRIFASCIATA X DESERTII TRIFASCIATA X LIBERICA TRIFASCIATA X EHRENBERGII TRIFASCIATA X DESERTII TRIPLOID TRIFASCIATA X PARVA

And of great interest, but alas, extinct -

#### TRIFASCIATA X LIBERICA YELLOW CHIMERA TRIFASCIATA X DESERTII YELLOW CHIMERA TRIFASCIATA X DESERTII WHITE CHIMERA

Some unknown botanist or grower or collector at the USDA did quite a bit of Sansevierias hybridizing. Part of the research was based on the significance of multiple sets of genes, which is called polyploidy. Some of the hybrids, particularly those involving a cylindrical leaf parent and a blade-type leaf parent, are interesting enough to be of hor-ticultural significance. S. kirkii var pulchra would make a nice parent for any plant! I sure would like to see some more of these plants, if somebody out there has them!

# cultivars, variegates and other sports

Cultivars are usually developed by growing and propagating large populations of specific plants, isolating out unique individuals and propagating those individuals so as to establish new, identifiably different and propagatable clones of plants. The largest number of Sansevieria cultivars are derived from S. trifasciata and S. trifasciata laurentii because these two Sansevierias are the most common ones and therefore provide the largest number of plants for horticulturists to watch for new emerging mutations.

Some of the cultivars I list are known to commercial nurseries, and others are not, but are known only by a dedicated bunch of Sansevieria collectors who keep in touch with each other. It takes a lot of time, energy, and dedication to propagate enough new individuals to be of interest to the large modern American nursery industry, which is based on the mass-production of relatively few plants.

Sansevierias are prone to develop variegation. Many species exist in a yellow margined form, and among the cultivated plants, about 5 ornamental variegations are in limited commercial production. One can only speculate on the numbers of variegations which pass unnoticed, because most commercial growers are not interested in the one odd plant in a field of thousands of normal plants. Most commercial growers see such plants as a kind of weed and instruct their workers to cull and discard them whenever they are noticed.

For so ornamental a phenomenon, variegation has not received much study among plant scientists or growers in the U.S. The Japanese, from whom we get the variegated Raphis palm, the variegated Japanese Maples, variegated orchids, and variegated bamboo (among other things), are obsessed with irregularities in foliage color, and, they collect and treasure unusually beautiful variegated plants of all sorts.

What do we know about variegation? Well, some people say, "It's caused by a virus!" And since a virus can give you a sore throat and a running nose, variegation is regarded by such persons as a sickness of plant tissue, and as a bad thing. Others argue, "It's genetic," and since genetics is a modern and scientific thing, they are really saying they think variegation is a good thing to study and admire.

Our point is that it does not matter what causes variegation - what matters is whether or not the variegation is esthetically pleasing, if the plant reproduces true, and if the plant is capable of healthy growth.

The virus-believers point out that some variegated plants are smaller than normal plants of the same age grown under the same conditions, as a sign of their inherent weakness. As a plant uses chlorophyll to make food for itself in its green or non-variegated tissue and, as a variegated plant contains less green tissue per plant than a normal plant, variegated plants can be expected to grow slower and be smaller than normal plants. Often, but not always, the degree to which green tissue is displaced by variegated tissue is the degree to which the plant will be slowed in its growth. However, variegation is normal in some quite vigorous plants which are commonly grown as landscape subjects, and therefore not all plants which have variegation can be called delicate or demanding. Sometimes a variegated plant will appear either in a bed of seedlings or plantlets produced from cuttings, and will be recognized as quite desirable, but will not reproduce itself. Sometimes such a sport is propagatable only by offsets. Some sports are just one-of-a-kind events, and never reproduce themselves. Not enough time has been spent doing meristem culture of such individual plants to know if this would be a worthwhile pursuit, but we sure would like to find time to try it. Certainly meristem culture of variegated plants offers a whole new field of fooling around to the artist-scientist-plantnut since variegation is known to be unstable in meristem culture.

I have found at least a dozen such one-of-a-kind plants. I have had high hopes for them - some were beautiful! And I have always been quite disappointed when they didn't reproduce. Solid yellow plants - which survive for years attached to the normal parent - have been one of these types.

I'm always afraid that really wonderful mutations are growing somewhere in some big wholesale grower's nursery, and that no one will see them, or that they will be culled out and lost forever. I'm sure it happens.

A note on leaf color - there is no substitute for actually seeing the plants. The second-best thing is to spend big bucks for high-quality color reproductions, but that is not nearly as good as actually seeing the plants. The third-best thing to do is to describe colors in terms of things whose coloring is familiar. People speak of "black" and "silver" leaves, but the colorings are neither black nor silver. Black is very very VERY dark green. It's about as dark as green can get and still be green - like the bottom of some old-fashioned pop bottles. Silver, as in 'silver hahnii' is really a very pastel green with an opaque or milky quality - the kind of color seen in the winter coat of silver-blue fox, and in the mother-of-pearl lining of certain shells. In some cultivars it is perfectly smooth and without any other bands or marks, and has a chalky quality. (Moonshine, for example). In other plants like 'Silver Hahnii' and 'Gray Lady', there is enough cross banding showing through the coating of silver to give it a green cast.

The yellow one sees in Sansevierias is somewhere between butter and mustard – a standard carotene color. The pale yellow or cream color is a dilution of carotene pigment, the palest form being ivory.

Some plants colors are produced by optics rather than by pigment. Minute air pockets in the tissue cells produces silver, and if you crush tissue by burnishing, the color turns green, because you have crushed the air out by flattening the pockets.

Sometimes we see entirely albino plants. Such plants may be able to survive for a short while because they have a few scattered cells containing chlorophyll in their tissues. Theoretically you could keep such a plant alive and growing by feeding it sugar-water at certain dilutions. But you would also have to keep it in a sterile environment, else the ever-present yeasts in the air would cause the sugar to ferment and sooner or later a level of alcohol in the growing medium would poison the albino plant.

### dwarf green plants (trifasciata sports)

#### **GREEN HAHNII**

A small nesting rosette with plain green leaves which are crosswise-banded in fine zigzag lines. Very common in dish gardens.

#### **'GREEN HAHNII AUSLESE'**

"Auslese" is 'German for 'picked" or "select". This plant is a selection from Germany with bigger leaves and cleaner, crisper markings than the standard green hahnii. Quite a nice plant, a robust grower, it is perhaps identical to a plant we obtained some years back called "Austrian hybrid medium".

## dwarf green plants with yellow stripes (trifasciata laurentii sports)



'Gilt-edge Hahnii'

#### 'GILT-EDGE HAHNII'

Originated in Oakhurst Gardens in Los Angeles. It is a basic green hahnii-type plant, except for the following distinctions - the leaves are edged in a wire-thin gold band, and the green cross-banding is of a clearer, crisper and finer pattern. It is not well-known. A very elegant little plant.



'Crosby's Marginata'

#### 'CROSBY'S MARGINATA'

Another showy California product, this hahnii variant has wide gold margins. Certain clones of it keep growing around a central stem until they become tall enough to flop over.

#### **'SIEBERT'S HAHNII'**

This is green hahnii with a central stripe of yellow down the middle of each leaf. Close, compact, unusual and ornamental.

### dwarf silver plants (trifasciata sports)

#### **'SILVER HAHNII'**

A compact birdnest dwarf with silver leaves – really a pale chalky mint-green with great pallor in young plants. Sometimes slightly cross-banded and/or edged in green.

#### **'AUSTRIAN HYBRID DWARF'**

looks almost exactly like silver hahnii, but its leaf is narrower, and oddly enough, it comes true from leaf-cuts. Also, it seems more dwarf than 'Silver Hahnii.'

#### SILVER DWARF COLLECTED IN SOUTH AFRICAN WILDS

Self-explanatory name. Not surprising that the same color mutation can occur in nature as in a nursery, but interesting to have such a plant in one's collection. Looks like any other 'Silver Hahnii'.



'Silver Hahnii'



'Silver Frost'

#### **'SILVER FROST'**

A small dwarf, smaller than green hahnii. Its leaf is thick and has raised striations which are silver-white over a darker silver-green. Showy beautiful, and occasionally attempts to make a few gold hahnii leaves, but never quite succeeds. We also have our own sport of silver frost which has margins like normal green hahnii and centers like silver frost. It comes true when it pups, and is quite handsome.

#### **'SILVER STARLIGHT'**

Seems nearly identical to 'Silver Frost'.

# dwarf silver plants with cream variegation (trifasciata laurentii sports)

'Silver Hahnii Marginata'

#### 'PEARL YOUNG'

As far as I can tell, this is nearly identical to 'silver hahnii marginata', except that it may get a bit bigger and may have a few more visible green cross bands. It is possibly a separate clone, independently arisen, of 'Silver hahnii marginata'.

#### **'SILVER HAHNII MARGINATA'**

A beautiful pastel plant, pale cream-silver with buttermilk-colored margins, unlike any other in coloring.

### dwarf yellow plants



'Gold Hahnii Solid Gold'

#### 'GOLD HAHNII'

The queen of the yellow-variegated plants, from Oakhurst Gardens. The leaf is egg-yolk gold with a wide green center-stripe. Young plants have a tulip shape, but a mature single specimen, with its side-shoots removed, will flatten out and attain 8-10" in width.

#### 'GOLD HAHNII SOLID GOLD'

Solid gold leaf with a thick, very dark green edge and no green center stripe.

#### 'GOLD HAHNII CENTERSTRIPE'

Has only a center stripe and no green margins or other markings. Its color is paler than the others. It is not a robust plant.



**'GOLD HAHNII FAVORITE'** Has a green center-stripe, wide, thick darkest green edges, and a random green stripe overlay which makes a very lively pattern indeed.





'Gold Hahnii Aureo-striata'

#### GOLD HAHNII TARTAN'

Medium pale-yellow leaves with cross-banding which gives a plaid effect to the green areas. It is a large grower and is quick to flatten out to an open rosette shape.

#### 'GOLD HAHNII GOLDGREEN'

European import, a kind of lime-flavored gold hahnii. Tinted all over in golden-green, but marked like gold hahnii. Slow to make big plants, but prolific.

#### 'GOLD HAHNII AUREO-STRIATA'

A most variable plant - some are dark green and heavily striped in random gold stripes. Others are mostly gold and randomly striped in green. A single clump allowed to run wild with no selective pruning will display every possible combo. I like its irregularity.

#### 'GOLD HAHNII PRIMITIVE'

This is the plant Lillian True wheedled out of Oakhurst Gardens when they were first working on 'Gold Hahnii'. It was considered too imperfect to sell but Lillian prevailed, and I am glad - the plant has pastel-green individuals, individuals like green hahnii, like gold-green hahnii, and like things which have not yet made up their minds what they are going to be. A surprise-box of variable masterpieces!

#### 'GOLD HAHNII LIME DWARF'

A sport of gold hahnii with aberrant color. It makes a couple of gold leaves, a couple of green-gold leaves, and then goes back to a couple of gold leaves. Meanwhile the first gold leaves have turned sort of blotched and marbled greenish-yellow with no cross-banding at all. AND it comes true from leaf-cuts, which is quite strange. A large clump of it looks like something you'd make if you were fooling around with an airbrush.

### dwarf black plants

#### 'LOOP'S PRIDE'

Found in a bed of normal green hahnii at Loop's Nursery in Florida. This plant has very thick somewhat grooved leaves which are darkest green and semitranslucent as if cast in wax. Individual leaves are pointed like gothic arches, and the plant form is similar to a tulip with the petals held close together, rather than open, as in normal green hahnii. It is a very slowgrowing plant and slow to increase, despite the fact that it is solid green. Certain clones display a "tweedy" margin on every leaf, or random subtle stripes.

#### 'GREEN HAHNII SEMI-MONSTROSE'

I have a number of sports of green hahnii with very thick waxy leaves which are variously ridged and/or bumpy. They are very dark and have a tall main stem. They are appealing and very slow to propagate.



'Loop's Pride

### normal-size black plants

#### 'BANDED NELSONII'

Dark green leaf typical of nelsonii, but margined in what looks like normal green trifasciata-type tissue, with its zigzag cross-banding.

#### 'BLACK SPORT'

A very dark green leaf with some tweedy white dashes. The leaf is fleshy, thicker than usual trifasciata, rather like the edge material of Bantel's Sensation. A pleasing plant, subtle rather than striking.

#### 'NELSONII'

Called the black Sansevieria, but although it is dark green, it is not that dark. It appears to be made out of wax, without any banding at all. Australian authorities show this arising out of the green parts of compacta, but all the cuttings I have done and seen have shown nothing but trifasciata arising from compacta cuts. Others say it comes from the green parts of trifasciata laurentii, but all I ever get from cuttings of trifasciata laurentii is trifasciata. From cuttings of nelsonii, I also get........TRIFASCIATA.

### normal-size green plant (trifasciata sport)

#### 'MOONSHINE REVERSION'

Some non-silver plants have appeared from the silver sport called 'Moonshine'. However, they are not just plain trifasciata. They have astonishingly wide leaves, a <u>trunk</u> which occasionally branches and from whose tips grow other individual plants. The horizontal zigzag banding is of very clear and crisp quality of pale bluegreen and dark, almost black. Has great vigor and is indeed striking.



'Nelsonii'

'Black Sport'

### normal-size green plants with yellow variegation (trifasciata laurentii sports)



'compacta'

#### СОМРАСТА

A showy, striking short plant, not usually much over a foot tall. The blade-shaped leaves are numerous, and the rosette is open. The green is very dark and unmarked; the edge is really intense yellow and wide.



#### 'CHINATOWN'

For years I have been trying to produce a clone of trifasciata laurentii with multiple yellow stripings. Then one day I found a clump of plants which displayed this feature in a L.A. Chinatown antique shop. The owner had put many of the pups into separate pots throughout the shop and they all had this multiple yellow striping. I got one, and it has continued to produce multiple yellow-striped plants.

#### 'STOVER'S GILT-EDGE'

Tall with rather narrow, nearly black leaves with exceedingly fine, golden margins.

#### **'FUTURA'**

Has a very wide leaf blade which is margined in pale yellow. Different clones show different degrees of margin thickness.

#### **'LILLIAN TRUE'**

'Lillian True'

I probably shouldn't be allowed to write about this plant because it is my favorite plant in the world. First, somebody made these smooth leaves almost black and without markings. Then they were dipped in a thin coating of ballpark-mustard-colored wax. Finally the master engraver, using ruling instruments, removed thin strips of wax, revealing thin green lines. The sword-shaped leaves are about 3/4 yellow and carried very vertically. Many persons who profess to hate Sansevierias, having seen this plant, crave it. It apparently arose spontaneously in a pot of Trifasciata laurentii when Lillian True was not looking. She tells me that although she hauled pots of this plant to shows for a decade, the plant was met with overwhelming lack of attention; that I was the first person to ever crave it or love it as much as she did. I find this UNBELIEVABLE that this plant could have remained unnoticed when publicly exhibited, like Liz Taylor at the supermarket.



'Craigii'

#### **'FUTURA AUREA'**

The leaves are widely striped with solid yellow. European clones can appear solid yellow, showing the green only as a center stripe.

#### 'CRAIGII'

Mostly gold with irregularly spaced vertical stripes. A REAL SHOW-STOPPER



'Futura Aurea'

### normal-size plants with green and white variegation



'Bantel's Sensation'

#### **'BANTEL'S SENSATION'**

A most beautiful plant! Has pure snow-white streaks against a background of exceedingly dark green. On some plants the green is thick and has raised striations. On others white predominates. Despite its exotic appearance it requires nothing by way of special care and attention. Several distinct forms are known to propagate true from offsets -



'Bantel's Golden Sensation'

#### **'BANTEL'S WHITEBACK'**

This clone has solid white undersides to its leaf.

#### 'BANTEL'S GOLDEN SENSATION'

In this sport the white is lemon-gold and the leaf is both wider and taller than the regular 'Bantel's Sensation'.



'Bantel's Sensational Sport' Has green margins and a pure white center.

### normal-size silver plants



'moonshine

#### 'MOONSHINE'

Pure silver color with a very wide leaf, like futura and no horizontal bands.

#### **'PLATINUM PRINCESS'**

Seems to be a select form of Moonshine, as it has the widest leaf of all, perhaps I/3rd as wide as it is tall, and is without markings on the leaf.

#### 'SILVER CLOUD'

A European form of Silver Queen, also called 'Plumbea'. A tall plant which grows up to 30" high with thick 3" wide leaves which are curved across the width. Silver-blue with dark navy-blue bandings.

#### 'GRAY LADY'

Narrow gray leaves with lots of cross-banding.

#### **'SILVER STREAK'**

Some horizontal banding, leaves to 1" wide.

#### **'SILVER STAR'**

Very similar to above.

#### **'SILVER QUEEN'**

Leaves can be as large as 2" wide by 20" long, with some horizontal banding.

#### **'AUSTRIAN HYBRID TALL'**

Similar to Silver Queen but comes true from leatcuts.

#### **'SILVER MOON'**

Crown about 12" high, pale with no banding at all.



'silver trifasciata laurentii'

#### **'SILVER TRIFASCIATA LAURENTII'**

A special clone of trifasciata laurentii - this plant is silvercream with a wide cream edge. Like all silvers it turns a cream-of-spinach color with age and with exposure to bright light. Certain 3 or 4-year-old stock plants are seaweedgreen, and next to the near-white youngsters this makes a beautiful multi-colored, rather than silver specimen.

#### 'SILVER TRIFASCIATA LAURENTII GILT EDGE'

As above but only a thin edge band of cream-yellow.

#### **'TRIFASCIATA LAURENTII LIME FROST'**

This is like a creamy yellow-green silver version of Silver Trifasciata Laurentii. A person can run out of words to describe this, but it is a kind of cream-of-celery color trimmed in pale ivory at the edge.

#### **'TRIFASCIATA SILVER'**

Plain silver green form with no edge banding.

### variegates derived from species other than trifasciata laurentii



#### 'MANOLYN'

A beautiful plant with long, elegant strap-like leaves which are thickly overlaid with white parallel lines, so close as to give the appearance of a near white color. With age or moisture standing on the leaves, or physical damage, the leaves commence to get a rusty stained appearance, first at the base, but then continuing upwards. Juvenile plants, grown dry and warm may escape this blemish for months, but with age all plants eventually succumb.

#### **CYLINDRICA VARIEGATA**

I am not sure if this is cylindrica or some other subulate-leaf species, but it is nicely variegated with golden lines running lengthwise on the leaf.



Guineensis variegata

#### **GUINEENSIS VARIEGATA**

I don't know the parents of this plant. It has a green mid line stripe and exceedingly wide buttery yellow margins on a lanceolate leaf which narrows into a petiole. Very showy. One must be careful not to bruise the leaf or let cold water droplets land on it, as the tissue is easily damaged, and injuries become doorways for bacteria and other invaders.



parva variegata

#### PARVA VARIEGATA

This is parva with a leaf predominately deep golden yellow, and irregularly margined in green. It is very slow, but not feeble. That is to say, it is not going to grow and reproduce except with much time, but it seems not subject to any particular malady.





'Lillian True's White-striped Giant'

#### 'LILLIAN TRUE'S WHITE-STRIPED GIANT'

This seems to be a soft-leaved form of guineensis, introduced to St. John's in the U.S. Virgin Islands, where Lillian True found it growing on a path between the beach and the forest. The leaves are marked by pure white striping of various widths from pencil-linethick up to about 1/4" wide. The plant can get up to 4' high even in a container.

#### **'SULCATA VARIEGATA'**

Has pale cream-yellow lines running lengthwise through its pencil-thin leaves. As the cylindrical leaf types are so fewer in numbers than the popular kinds, they have less chance to develop mutation, deprived as they are of the repeated introduction of viral and other agents through use of the propagating knife.

### rogue's gallery

This is a collection of plants which defy being named at present. Some of them were from Peter Bally's last field expedition. Others just showed up in folks' back yards in Florida, looking suspiciously like some of the plants in the cordage and fiber collection. Some might be hybrids. I thought you'd like to see them, and I certainly think you ought to see them for your own edification and enjoyment. Some of my favorite plants are in the Rogue's Gallery.









Unknown species from Kenya in fruit



Pinguicula x robusta?



Sp. Nova from Zimbabwe West (Robertson)



Japanese Stripe

### culture

It is a little hard to write about the cultural requirements of Sansevierias since they hardly have any - I suggest you can grow absolutely beautiful Sansevieria specimens if you keep them above 55" F. at night (above 65" F. if they are variegated), and grow them in the same kind of bright light you would provide for Geraniums. You may summer them outdoors in half-shade or if you grow under lights you may use the highest intensity fluorescent light without fear.

The desert type Sansevierias (those having cylindrical or flat leaves with thick and possibly rough skins and which are quite stiff) may receive much more light than the soft bladed kinds. Actually these plants look better when they are slightly under-exposed to the sun. They have deeper coloring and more brilliant markings. When grown in the bright light levels of their natural habitats, they have a bleached and sunburned appearance which is not as attractive to those of us who demand a "cultivated" appearance.

I grow Sansevierias in a well-drained soil mix. You may grow them in a moss-lined basket or redwood raft such as orchids are grown in, which provides excellent drainage. They will stick offsets out at random, through the sides of the basket. In time this makes a gorgeous specimen, and something nobody who is not familiar with the genus would ever guess is a Sansevieria.

When the plants get dry, water them. But don't keep them soggy. I have kept some of mine endlessly soggy for months on end, including the desert types, with no harm whatsoever. Nonetheless, THEY OUGHT NOT to be kept soggy, and I should not have done it, even though they forgave me. I have had plants in pots which tipped over, out of sight, and which were not watered for long periods. I have had plants drop from the bench to the concrete floor below, and receive no water for months. All continued to grow.

I have hardly ever known a Sansevieria to die of anything other than old age after having produced many babies. What more can I say?

#### **CULTURE OF VARIEGATED SANSEVIERIAS**

How do we grow a normal, healthy plant which has a deficit of food-making tissues in its body?

Plants make food in the presence of light using the green substance chlorophyll. The variegated tissue in a plant, therefore, exists as a parasite on the green tissue, and the size of the plant, in terms of its food-factory function, is really the surface area of green tissue present, excluding variegated tissue. Therefore the maximum amount of light which the plant can take without burning is the proper amount of light in which it should be growing. Fertilizers which are high in nitrogen tend to promote the growth of large leaf-surface areas. Variegated plants should be fed low-nitrogen fertilizers to encourage small leaf-surface areas. We want to use a high-phosphorous food. The carotene in the yellow variegated tissues performs a complex chemical transaction in the presence of light and phosphorous which resembles photosynthesis and generates some amount of nourishment for the plant. We do want to have enough of this nutrient because this encourages the growth of stiff structural tissues. Variegated plants are often lacking in substance and tend to have limp foliage. This is not desirable. By feeding the plant to encourage slow growth of firm tissue (the opposite of the forcing done by commercial growers who wish to produce sizeable plants in minimal time), we produce a compact and healthy variegated plant.

Variegated tissues are vulnerable to invasion by fungus and mildew organisms. The cell-walls in cells without chlorophyll are weaker and more permeable. Such cells are more easily damaged mechanically. Certain plants like 'Manolyn' which has an overlay of white tissue, can be ruined by permitting condensation to form on the leaf while the temperature is dropping. Under those conditions the leaves turn rust colored and the surface tissues die. This is unsightly, and it reduces the area of leaf available for food making still further. Almost all variegated plants have yellow areas which occasionally turn soft and semi-transparent for no apparent reason, or from slight mechanical damage, or after being sunburned. The leaf seems almost to liquefy, and this is often the beginning of the end. This process has eliminated many all-yellow clones of trifasciata laurentii. However, if a plant cannot resist the invasion of the ever-present pathogens in the atmosphere with normal good care and routine hygiene, it is not a viable plant any more than a total albino is a viable plant.

In order to minimize the chances of fungus and other invasions, do the following - Water occasionally with a systemic fungicide called "Banrot". Avoid wetting the leaves. Avoid injuring the leaves. Avoid sun burning the leaves. When re- potting a new division of such a plant, allow the subsoil rhizome to dry and callous before being buried. To do this without drying out the roots is to wrap the roots with some moist potting mix in aluminum foil so that the freshly cut end of the rhizome sticks out into the open air. Then leave the wrapped plant for a few days until the cut rhizome is dry. Use a mulch of pebbles and wood chips to support the plants above ground. Don't use moist soil mix piled around the neck of your plants - it will encourage rotting. Bottom-water plants with leaves sensitive to fungus and rot. Grow such plants in well-ventilated areas.

This may sound like a lot of extra work. But it isn't, really.

It's just routine plant hygiene practiced with diligence and attention to the special requirements of the plants.

To simplify plant care, realize that all the variegated Sansevierias have the same needs and group them together and do the few extra things they need all at once. The more we care for plants, the more we enjoy caring for them. It's the kind of thing where you get out what you put in. We feel unneeded by certain old toughies who won't let us pamper them - they grow well, no matter what we do or don't do, and we feel less like a creative gardener and more like a caretaker. On the other hand, there is real pleasure to be had in growing a potful of super-gold hahnii, in which the only green is at the edge of the leaf . . . a potful of healthy plants like this is a work of art, as well as a work of horticulture.

#### SOIL MIXES

Sansevierias will grow in anything. In commercial nurseries one sees them potted up in whatever is at hand, usually something intended for ferns or African Violets. When you consider the robust root system of the plant, and its arid habits, you want to provide it with something which can drain, and with certain chunkiness. We grow ours in a mixture of about 3/4 brown stuff, and this is usually some mixture of composted redwood, shredded peat, loam . . . . you know, brown stuff. . . and one quarter draining material which for us is horticultural pumice. I have used calcined clay (kitty litter without deodorizers), volcanic pebbles, Styrofoam beads, vermiculite, perlite. ...but pumice is my favorite draining material. Sand holds water in a pot, even though the desert is made of it; thus it is terrible to use in potting mixes for desert plants unless you can get very sharp sand of large grains, and restrict it to no more than 10% of the total volume of the mix. I may also add some orchid bark to the mix for Sansevierias, as the large and irregular pieces leaven the mix and keep it from packing down.

I mulch the top of the soil with smooth small river pebbles. These hold the newly potted plant upright and prevent moist soil from crowding high up on the "collar" of the plant. Some Sansevierias, particularly highly variegated kinds like Gold Hahnii get rotted basal leaves from being in constant contact with moist earth. Mulching with pebbles preserves these outermost leaves.

Osmocote is convenient, but the blue fertilizers like Peter's are equally fine. A choice of fertilizer should be made on the basis of what is clean and easy for you to use, since there are so many fine brands readily available. I do use a rather low-nitrogen formula, to avoid rampant growth. I use an especially low nitrogen feed on highly variegated plants of all sorts. Peters makes a formula intended for use on variegated African Violets, and also one for young seedlings, both quite shy of nitrogen. These are both good for variegated Sansevierias.

A pebble mulch is multi-functional. It's beautiful! It breaks the surface tension so that water sinks nice and evenly through the soil rather than merely running down the insides of the pot, leaving a dry cupcake of soil in the pot. A pebble mulch holds the plant firmly so that its new roots can get a start without the wobbling one might otherwise see in top heavy plants, recently potted. Pebbles cost something, of course, but are reusable. The Japanese use many grades of pebbles and recover them by means of tiny screens of various mesh size.

Clay pots versus plastic pots - clay looks nicer, but plants grow better in plastic. I thought for years that some plants should do better in clay, but I've examined many root balls, and have never found clay pots with roots as nice as the ones in plastic pots. I have invented several deceptions to overcome my own horror at being unable to use clay pots. My favorite one involves varnishing the inside of the clay pot so that it sucks up no water and functions as if it were a plastic pot. Outside it's a clay pot, inside it's impermeable so you can have it both ways. I fantasize this is better than slipping a plastic pot inside a clay pot, which is of course easier, and often done for decorative reasons.

#### CLIMATE

Sansevierias are comfortable in the same range of temperatures as human beings. Just one of the features which make them ideal houseplants!

However, they can endure some extremes which we might not find comfortable. The desert gets cold at night and quite hot during the day. So, we do not get alarmed at temperature drops to the mid 40's in the house holding the desert Sansevierias, especially since it is allowed to climb to 100 during the day, a rather extreme condition favored by many of our succulent plants in winter. The obviously less dry-growing types, having flat, soft, smooth leaves, are kept above 60° just to be safe. A clump of S. trifasciata laurentii outside our house endures winter temperatures down to the mid-30's for a few short hours at night, and grows in full sun during the day. After a few years the clump is packed solid with healthy and beautiful plants. Still, we do notice a certain less-than-optimum appearance on such plants as Gold Hahnii when the temperature falls below 60°, so we keep all variegates and all tender Sansevierias above 65° to be safe.

To me the single most important factor in having Sansevierias which grow all year round is temperature. Most of the plants we grow respond to day length, but Sansevierias less so. Bottom heat will keep them growing actively through the year, even though they are doing without all the foot-candles of mid-summer. The ideal conditions for maximum growth seem to be the same as the conditions for propagating cuttings, Sansevieria cuttings in particular, so I refer you to the chapter on propagation for further discussion of temperature.

#### LIGHT

I have seen Sansevierias grown as a kind of hedge in full Hawaiian sun. I have seen Sansevierias grown as a ground cover underneath benches in a dim greenhouse.

The plants in both of these exaggerated growing conditions looked terrible – The plants in full sun looked as if they'd been kissed by a blowtorch. - The plants under the benches were soft, floppy, elongated and pale.

The point is - the plant will put up with so much that it can become a problem to discover what is ideal. If you separate the desert Sansevierias from the semi-jungle Sansevierias, you might think that the desert group can handle more light. But in actual growing, I grow them both together and both do wonderfully well in very good bright diffused light, the sort of light in which you'd find Geraniums flowering. The only plants I grow in shade are the pale variegates because the yellow ones burn and bleach to near white, and the pale green ones darken up to a deeper green. This is a judgment made on cosmetic factors, not on horticultural ones.

I am something of a heretic when it comes to light. I grow plants under the conditions in which they look best, and this results in strange bedfellows indeed! Right next to Sansevieras I grow jungle Aroids of the tropical Americas, which are known to require much lower light levels. I have no explanation for why these two plant groups should flourish together, but the fact is, they do. I get great growth on both. And I grow Hoyas in the same greenhouse! And in a brighter part of the greenhouse, I grow really dry desert plants. Somehow the humidity generated by and for the Aroids doesn't harm the desert plants at all. I have no explanation for this.

#### THE PROBLEM OF INSECT CONTROL ON SANSEVIERIAS

There is no problem of insect control on Sansevierias. No insects. No problem. Nothing to control. Nothing to study. Nothing to discuss. THE END

#### **POSTSCRIPT** -

I have never seen an insect on a Sansevieria.

We have had plagues of hyper-mealybugs the size of rabbits, which were resistant to strong insecticides, and which all but sucked the juices out of our car, our greenhouse and the landscape. We have been invaded by scale monsters so large that they resembled hockey pucks, which then paved and plated our plants, like medieval armor. We have had ants and aphids large and numerous enough to populate five Japanese horror movies. And we have had slugs which frightened the dogs, and which were big enough to slice into T-bone steaks.

But at no time did I ever see an insect or other life-form crawling on or attached in any way to any Sansevieria.

Some collected Sansevierias have had tusk-marks on them, as if they had been used as teething rings by baby elephants.

BUT NARY A BUG.

#### SANSEVIERIA SIZE: WHY YOU NEED NOT BE AFRAID

Anyone reading Brown's descriptions who notices the sizes of the Sansevierias could go into shock. "9 Feet! Leaves NINE FEET LONG! What kind of houseplant is this, and who does she think she's kidding? I shall not let any nine foot long monster into MY home!" - Well, neither will I. Pot culture automatically turns a Sansevieria into a kind of Bonsai plant. They just never will attain anything like their mature adult sizes when you grown them in pots, because they will never be allowed to form a colony of plants. The way Sansevierias attain mature size is like this: First a seedling develops into the full seedling size, and will finish up 2-3" in diameter. The seedling will make an offshoot or pup which will be about twice as big as itself, or a bit larger. That first pup will have an offset which will grow to about 8" in height. The 8" offset will produce a number of pups which are 2 to 2-1/2 times its size. After that, the sky's the limit.

If you take plants which are on their way to some size like 4', and you divide them up when they are about 18" tall, you put a crimp in their growth schedule. You can continue to divide the clumps as often as you please, and will thus keep your Sansevierias juvenile in size for as long as you keep dividing. If 18" is too tall for you, you can take leaf-cuttings and grow the small plants that they produce. In this way you can control the size of your plants for as long as you wish. Some plants will not flower unless they attain something like their full size. Some Sansevierias exhibit brighter coloring or stronger markings in their leaves as juvenile plants than they do as mature adults. There is much to be said for keeping your plants small.

I was very disappointed the first time I grew Sansevierias from seed. The juvenile plants were so incredibly tiny and finely detailed that I though they were a dwarf species. It may take such seedlings 2 years to produce a first offset, and when mine did, and the offset was a veritable giant, I thought it was a great loss. But now that those plants are 3' tall, they are very beautiful again; they just don't look anything like their baby pictures.

### propagation

#### **PROPAGATING BY OFFSETS**

Offsetting is the normal way Sansevierias increase in population. Many species do not attain full adult size unless they are permitted free root-runs and allowed to form a population of individuals which remain connected. In nature the stems which eventually have new plants on their ends grow underground or parallel with the ground for considerable distances. In pots such stems may strike for the bottoms and go around blindly in circles until they believe they have attained sufficient distance from the parent.

By constantly removing such offsets it is possible to keep plants in a permanently juvenile state. This is neither desirable nor undesirable - it should be just acknowledged in order to keep one from having a false notion of the actual size and character of the mature plant. It is encouraging for the person who grows plants in limited space to know that one may indefinitely control the size of his plants without harming them and without having to have a 10th degree black belt in Bonsai culture.

We have mentioned some Sansevierias can be propagated only by offsets, because they will not come true from leaf-cuts. All obviously variegated plants are in this category - those plants with leaf margins of contrasting color, or striping within the leaf. Also in this category are plants whose variegation is less obvious, such as the silver platinum group, and also the "black" leaved plants like the semi-monstrose 'Loop's Pride' which reverts to a common 'Green Hahnii'. To put it more simply - leaf-cuttings of trifasciata laurentii will revert to plain green, and so will all the other more highly variegated forms of this plant. So such plants as 'craigii', 'goldiana', etc. are properly called –

Sansevieria trifasciata laurentii cv 'Craigii', Sansevieria trifasciata laurentii cv 'Goldiana', Sansevieria trifasciata laurentii cv 'Gold Hahnii', Sansevieria trifasciata cv 'Green Hahnii', Sansevieria trifasciata cv 'Loop's Pride' ......and so forth.

Sometimes a grower will spot an unusual freak or sport among the plant population. 'Bantel's Sensation' was such a freak, and so was the first 'Green Hahnii.' To propagate such a unique plant, you cut it loose from the parent plant population and place it in a pot by itself and wait to see if it produces offsets which resemble itself. Sometimes all further offsets will resemble the first renegade. Other times only some offsets will resemble the parent, some in varying degrees, others not at all.

In order to establish a strain, one cuts apart plants which favor the desirable mutated parent, and discards plants which tend to revert to the original. Since we have no seedlings to cull, we cull the meristem tissue by selective sequential pruning.

Often a plant will produce pups of one sort on one side, and pups of a different sort on another side. We have a plant of what could be called Hahnii aureo-striata, that is - the leaves are dark green and striped at random with lemon yellow. One side of the parent plant makes plants which are almost solid chartreuse. The rest of the plants all resemble the original. The chartreuse plants which we have removed have gone on to produce MORE chartreuse plants. It is smart to survey vast population of a propagator's stock, if you have the opportunity, to see if you can spot worthy mutations. Even a plant which is losing its variegation is worth watching, because if it is in the process of changing - anything can happen.

The most common method of increasing Sansevieria stock is by doing nothing. The longer you do nothing, the more offsets the parent plant will have produced. The question is: is there a difference between doing nothing AND propagating by means of offsets? The answer is YES, because if you do certain things along with doing nothing, you can goad your plants into making more offsets.

The single most important factor in encouraging root growth and thus the production of offsets is temperature. On hot summer days where the temperature in the greenhouse or plant room is well up into the high nineties, or even higher, Sansevierias produce the largest number of pups. On cool days in which the daytime temperature barely hits seventy degrees, offset production will stop. It would cost a fortune even in a warm place like Southern California to heat a greenhouse during the day. But this is not necessary, for as long as the roots are kept warm, offset production will keep going. There are many ways to supply this bottom heat, since it is a common enough technique which is used in all kinds of propagating. The easiest way is to go out and purchase a propagating mat of thick rubber with heating wires buried within. However, a Styrofoam picnic cooler containing a light bulb and covered by a tin cookie sheet is all you need. Even leaf-cuttings will be sped along their way using bottom heat - in fact, there is no form of plant propagation that is not enhanced by bottom-heat.

The most important thing to remember is that no matter what you do to stimulate pupping, you cannot reprogram plants to behave in mid- winter as if it were spring. What you can do is give them good growing conditions all year-round, and let them grow and pup as they will.



To encourage offsets, keep them warm, use bottom heat in winter, and extend their day length with fluorescent lights. Use a drainy, porous potting mix and keep it moist. Some plants can sit for considerable periods and do nothing. I always take such plants out of their pots and rinse the soil from the roots. I like to see what the roots look like and check for rotting or other root problems. Usually nothing will appear to be wrong. I then replace the plant, in different soil. I notice in some percentage of plants the repotting procedure seems to stimulate growth. Perhaps root-pruning is a factor. The Japanese are always handling plant roots, cutting them and repotting them regularly as a matter of course, but we have a tradition which says roots must not be handled any more than necessary, and so we are reluctant and a bit squeamish about touching them. Some people think potbound plants produce more offsets. I think a potbound pot of Sansevierias, crammed to bursting and beyond with plants oozing out of the drain holes in mid-air gives the impression of robust life ...but there is nothing inherently encouraging about that sort of crowding - Separating such a potbound clump will often itself trigger new growth.

#### **PROPAGATING FROM LEAF CUTTINGS**

Any Sansevieria without variegation can be grown from a leaf-cutting, including the cylindrical-leaf kinds. A single leaf-cutting will produce any number of small plantlets; why then do we not take leaf-cuttings from all the plants we wish to propagate? The answer is that certain irregularities in the plants will not reproduce true by any means OTHER than offsets. The yellow edge of S. trifasciata laurentii will be lost, and a solid green plant - trifasciata – will grow from the cutting. All variegated Sansevierias behave thus.

To insure that you get good results from leaf-cuttings, which is a most reliable method - do the following - (1) Take the leaf-cut in the active growing season. Cuttings taken in late fall can sit and sit and sit, while cuttings taken the following spring will quickly outproduce the older cuttings. (2) Use a young but mature leaf. Sometimes a leaf will root and die of old age before it makes any plantlets. (3) Allow the leaf to callus well before planting. The thicker the leaf, the longer this can take. A sword-shaped leaf of something like trifasciata can callus in 3 days in the summer, while a fat, full-size leaf of desertii or cylindrica can take a month, and might even lie about for many months without shriveling if you don't get around to planting it. But if you do not wait for the callus to form the leaf will probably rot when it is placed in the moist rooting medium.

Some folks set great store by one kind of rooting medium over another. The potting mix we use (and which is described in another chapter) seems to work just as well for rooting cuttings. I have had results as good as any from sticking the leaf into the base of the same plant it came from, although for the sake of orderliness I try to keep the cuttings apart from the adults. I have never found that the use of a rooting hormone has any effect at all on Sansevierias. Perhaps they are useful on hardwood chair legs or corn-cob pipes, but on the soft tissue of Sansevierias they do not seem to influence the speed or success of rooting.

#### **PROPAGATING FROM PUPS**

The easiest way to propagate Sansevierias is by harvesting the crop of side-shoots or "pups" which form on well-grown, vigorous plants.

This is how I separate pups - I empty the pot and remove enough soil so I can get a look at the whole root mess, including the old rhizome and the new plants. Often the presence of a single pup will herald the subterranean appearance of others. If I just reach in and cut, I run the risk of mutilating subsoil pups - but once I have dumped out the plant, I can see what is going on below ground and make a decision to remove one or more pups - then I take out my Japanese samurai sword or a serrated-edge steak knife, whichever is closest, and cut mother from child. I am careful not to cut too close to either one. Sometimes plants will be "kissing" with little or no rhizome between them. Then I would rather separate them with gently flexing until they break apart. If this doesn't happen, I cut very carefully so as not to damage either plant. Then I wrap the roots of the "pup", plus a handful of the barely moist potting soil in aluminum foil or plastic film, LEAVING THE FRESH CUT END OF RHIZOME OUT AND EXPOSED TO THE AIR. I leave it this way for a day or two, until the rhizome has a dry appearance. Then I pot the creature up. It is sometimes possible, what with the devious and meandering ways of the rhizome, to pot the new pup with the cut end above the soil line, in which case it may be immediately potted up.

Many nurseries mail out Sansevierias with dry roots. Few Sansevierias die because of this practice. However, such a plant will have to grow a whole new root system following the desiccation of its roots. Once I separated the first pup from a collected specimen of desertii. I carefully cut it away and potted it up. In two days it had turned olive-green, soft as a grape, and curiously transparent. Ever since then I callus the cut ends. Well, I don't callus plants which make long and narrow rhizomes like parva and dooneri or plants with overground branches and stilt roots - plants with very thin and fibrous rhizomes. But when cutting fat, creeping rootstocks, or the rootstocks of highly variegated plants, which are also particularly susceptible to rot, I don't like to take a chance and therefore treat them like any other succulent cuttings, and callus them before planting.

Once I have potted up the newly separated "pup", I treat it in every way as a whole new individual plant, and never think twice about it being "NEW".

#### **PROPAGATING FROM RHIZOME CUTTINGS**

Another way to propagate, which is not very much used by amateur growers, is via the rhizome itself.

To try this method, take apart a plant with multiple growths. Separate the plants into individuals, cutting close to the plants themselves so as to leave a maximum length of rhizome. Dust the rhizome lightly with fungicide and place it in a plastic bag along with a handful of moist sphagnum moss.

You'd expect to get a rotting mess from this process - and sometimes you do. But usually you get new plants emerging from any number of points along the length of the rhizomes.

This is an especially good way to increase your supply of unusual variegates, because, as you now know, they cannot be reproduced from leaf-cuts. So, you either wait for them to make pups, or you try to get pups from their rhizomes. Again, to increase you chances of success, I advise that you propagate rhizome cuttings in the middle or beginning of the active growing season, when the days are lengthening, temperatures are warm, and the plants are very actively growing.

Often when we repot overgrown pots which are long overdue for repotting, we are left with all kinds of bits and pieces of rhizome. So, we just consider these to be rhizome cuttings, bury them in a pot, and forget them. Invariably, some months later, a crop of youngsters emerges. Just make sure that you label such pots, or you may later throw them out before the babies come up, or not know what the new babies are when they do come up.

#### **PROPAGATING FROM SEED**

There is no problem with growing Sansevierias from seed.

First, take your seed ...... Oh, you have no seed? Well, now you have discovered the reason so few Sansevierias are grown from seed - even though mature Sansevierias flower rather freely in cultivation, most species set few seed.

The tubular and nectarish Sansevieria flowers are night-fragrant, which seems to point to the moth as a pollinator. I have tried pollinating many moth flowers, waiting until the fragrance at night called out to the moth-like sensibility within me, then turning the lights down low and flitting about the greenhouse, touching a plant here and dusting a flower there. Alas, as a moth-analog I am a total dud. However, I encourage everyone to develop moth-like sensibilities and pollinate their Sansevierias as freely as they are able. Without pollination we may never learn how to produce larger amounts of viable seed, so one must at least try - there's no reason to doubt that you may be vastly more moth-like and successful at pollinating than I am.

We do occasionally get a few seed from our plants, or seeds collected in the wild by others. The seed is hard, bony and slightly transparent, with a sticky reddish skin which suggests large, otherworldly fish eggs, or big pearl tapioca after being soaked.

Another reason why growing Sansevierias from seed is not very popular is that they take a long time to germinate. Bottom heat speeds things up. We sterilize our potting mix by pouring boiling water and 10% Clorox solution through it. This is not the sterile mix of orchid growers, but it is more sterile than inside your ear, or the dog's mouth. Then we plant the seed and enclose the whole thing in a plastic bag so we don't have to water it every day for six months. Sansevierias from seed are slow. Many of them are still comfortable in one-inch cactus pots after a year. I have certain seedlings of 'intermedia' which was planted 2 years ago, germinated 17 months ago, and is still growing in two inch pots. And there is no way to persuade anybody that they need to be moved up into larger pots. The original seedlings will never get big, but the first offsets will be much larger, and subsequent off sets "larger still.

One little known and somewhat confusing fact is that all seedlings of cylindrical-leaf types have bladeshaped juvenile leaves. This implies that the blade is the primitive leaf form, and that the cylindrical leaf developed later - another piece of evidence that the Sansevieria started out in a wetter climate than it now inhabits.

#### **REJUVENATING ELDERLY SANSEVIERIAS**

Sometimes an old Mother plant will start to go downhill and look real bad. I am inclined to save such plants out of sentiment and tenacity. I have discovered a method with which one may turn an old plant into a young plant. For example, take Loop's Pride. It's certainly too precious to trash! - Remove the feeble elderly plant from its pot and wash the roots free of soil. The plant may have quite a buried "trunk" or mainstem. Remove basal leaves, starting at the bottom and working your way up by carefully peeling them away from the central core. You may discover roots growing between the leaf and the core; treat them gently. Keep removing leaves until you have but a few remaining at the top, like a central bud. Cut the stem off about an inch or so down from the lowermost leaf. Let the stem dry for a day or two, and re-plant the thing. It will be greatly reduced in size from its former self. You may also replant the bottom piece. Leave the cut stub sticking out above the soil line. The bottom piece may rot, but it may also give rise to a few pups, so it is worth a try. Meanwhile, treat the top part of the plant as though it were a cutting. Probably it will re-root and become a youngster all over again.

Sometimes I divide Sansevierias which are so old that their rhizomes must be cut with a hatchet! Such old woody tissue seldom gives rise to new growths. When you divide up a big old plant, do some surgical removal of this old woody stuff, and you will thereby stimulate the plant into making some new growths.

### woman from kathmandu writes with the following question:

#### **QUESTION -**

How come variegation comes true only from offsets or plants arising directly out of rhizomatous tissue? If it is genetic in origin, or if it is viral in origin, still every cell of the plant would contain the "program" for the whole plant. So why not plants arising from leaf-tissue as well?

#### **ANSWER** -

Every cell in your own body contains the genetic program for your whole body. The code which makes you left-handed exists in the cells of your cornea; yet you do not have a left hand growing out of your eye socket. It's like starfish that can regenerate from a single arm. We cannot regenerate an arm, but some cells in our body can regenerate themselves - our germ cells, for example, found in the ovary and testes. These cells contain primal tissue, just the same as in our earliest embryonic state. This primal tissue, which can give rise to a whole complete organism, exists in order for us to reproduce ourselves, and to heal ourselves in case of tissue destruction. It can also exist where it is not supposed to and then becomes the basis for tumors called teratomas, to name one.

In Sansevierias we find this primary tissue in the rhizomatous tissue in the growing center or heart of each plant from which whole identical plants normally arise spontaneously, and in the rhizome.

The events, which cause a leaf-cut to give rise to new plantlets, are partly hormonal in nature. The cut edge of the leaf forms a callus, and the callus gives rise to roots, even though normally no roots grow out of the center of the leaf. In meristem culture the first step in culturing multitudes is to cause the formation of callus tissue. It is possible to callus and root a rose petal using the chemical programming of meristem culture.

The type of variegation present in Sansevierias is called a "Chimera", because you really have two separate organisms living together as one. ...the normal green Dr. Jekyll and the parasitic Mr. Hyde (without chlorophyll). The one without chlorophyll is not able to form primal meristem tissue from a leaf-cut, even under the stimulus of the callus and its hormones. So the pale plant tissue gets left behind, and only the green part of the plant grows from the leaf-cutting.

Variegated tissue is parasitic in nature, and is totally dependent upon the green tissue of the plant. The variegated plant is a dramatic composite of these two different plant personalities - one being a normal plant and the other an abnormal plant, with the abnormal plant not being able to make food by itself, or reproduce itself.



### exhibiting

If you belong to a plant club which has shows, slip your Sansevierias into several categories - Succulents, Houseplants, Variegated plants, Groups of variegated plants, Single plants, Clusters, Clumps, and whatever else you can make out of the various categories on the premium list. My friend Lillian enters dishes planted with various forms of Hahnii in all its variegated glory. She invariably wins, but alas - not with Sansevierias. She overheard a judge say, "I hate those things!" as he strode manfully past a pot full of her finest efforts.

#### What can a person do?

Most folks recognize only 2 or 3 kinds of Sansevierias - you can quite possibly overwhelm them with a well-grown singularis, or ehrenbergii. No one will guess what they are! It would be hard to imagine a more beautiful sight than S. kirkii var. pulchra, clumping in a pot that it had been in for a couple of years.

If you are thinking of exhibiting Sansevierias, it behooves you to take care not to damage or sunburn the leaves, for such scarring lasts forever, and in the case of the slower-growing desert-type plants, a leaf has a life-expectancy of many years. Five to ten-year-old leaves, if cared for, will show no sign of aging!

Exhibiting Sansevierias would be a good way to show just why this plant should be collected. If I could clone myself, I'd have one of us stay home and do nursery work, and the other would go to shows with pots and pots full of Sansevierias!

### where to get plants

The best way to begin a Sansevieria collection is to obtain a copy of the Cactus and Succulent Journal, Box 3010, Santa Barbara, California 93105.

Nurseries advertise therein and some small percentage offer Sansevierias. I don't want to date this book by publishing a list, as such things come and go with the seasons, but an up-to-date copy of the Journal will yield good sources.

You are also advised to join a local Cactus and Succulent society, if you are a joiner, and you will discover many more people collect these common but uncommon plants than you thought.

You can peruse whatever wholesale growers who will allow you into their nurseries, and scan their plants for interesting sports. I always check out the Sansevierias, even at the supermarket, because you never know where the next weird one will be. (Weird Sansevieria, that is).

If you have the time and like to write, you can write to rare plant nurseries and rare succulent plant nurseries and plant clubs, and you will come up with an astounding bounty in the form of more Sansevierias than you ever knew existed.

Few Botanical Gardens have any significant number of Sansevierias.

And finally, of course what I really want to say is, if you are interested in obtaining Sansevierias, write to me. My 1983 address is "Hermine Stover, 12571 Red Hill Avenue, Tustin, California 92680. I have a large collection with many individuals for sale at all times, and I am always looking for new plants.