

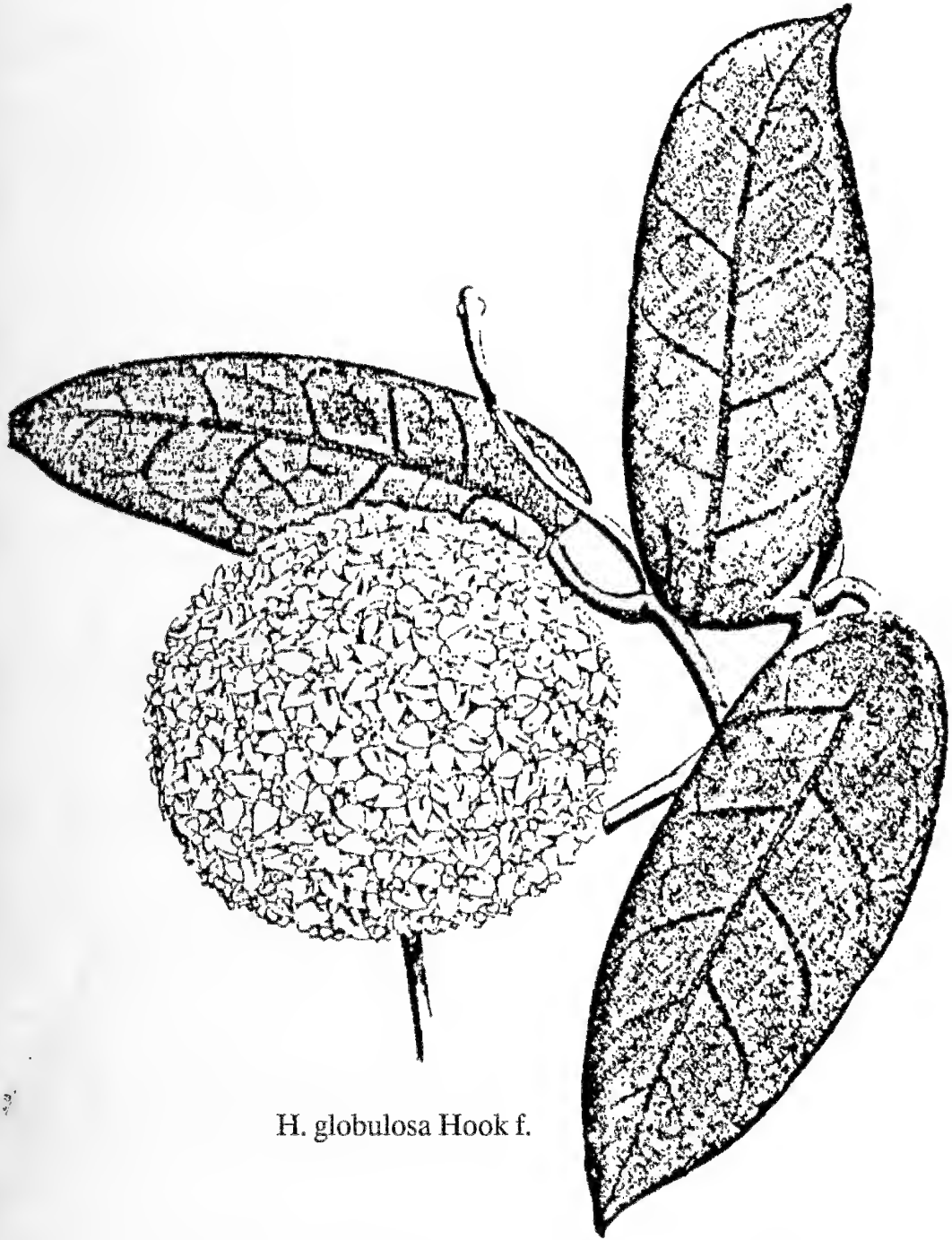
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FRATERNA

Official bulletin for
"International Hoya Association"
3RD Quarter 1990



H. globulosa Hook f.

INTERNATIONAL HOYA ASSOCIATION
(Formerly Hoya Society-West Coast)
P.O. Box 5130
Central Point, OR 97502
A Non-Profit Organization
Bulletin published quarterly

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May 15 for the June issue

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Back Issues

We have all back issues of our newsletter available at \$2.00 per issue, \$3.00 per issue shipped airmail overseas. March-April 1988 was our first issue, and was made up for our membership drive. It is free! and will be sent with all orders for back issues.

Attention Fellow Hoya Lovers!

You are cordially invited to attend the fourth meeting of the San Diego Hoya Group which will be held on Sunday afternoon, September 30, 1990, 1:00 p.m. at Rainbow Gardens Nursery & Bookshop in Vista, Calif.

There will be informal discussions on hoyo culture and care. We're expecting two keynote speakers. If you have any hoyas that need identification, please bring them with you. Wine and cheese, crackers, beer and other refreshments will be served at 1:00 p.m. underneath the bookstore entrance, in a cafe-style atmosphere prior to the start of the meeting. A self-guided tour through Rainbow Gardens will also be available during that hour (as well as plant and book sales). After the meeting is over, a special dessert cake and coffee will be served.

We are expecting another lively meeting, with exchanges of ideas from the experts as well as from the amateur grower.

A raffle will be held, and it would be greatly appreciated if all who attend could bring a cutting or two.

We expect to see everybody that attended the last get-together and many more!! Please come and bring an interested friend!.

For more information, contact Chuck Everson or Jerry Williams at Rainbow Gardens (619) 758-4290

The long awaited first issue of our new publication "FRATERNA" has become a reality. In this first issue I would like to take the opportunity to "wipe the slate clean" and correct some errors in my articles on the hoyo flower that have been pointed out to me. In my first article I made the statement that I would try hard not to make mistakes but I am not infallible and undetected errors do creep in. I will point out some of the more obvious mistakes so that you may make corrections if you are so inclined, and to set the record straight.

As I become more involved in the research end of this project I sometimes forget that many of the plants that I have access to are not available to the trade as yet, and can get carried away with describing species that most of you are not familiar with. Since most of us do not have the room, the money nor the desire to own every plant representing every characteristic that taxonomists use for identification and just want to enjoy growing and reading about the plants we love, I will stick to the more familiar plants for descriptions in future articles.

Corrections Under:

Peduncle- Volume 2, Issue # 3, page 6. "leafless tendrils" strictly speaking my term should have been leafless stems. Tendrils are modified stems or foliage used for support eg. like on the sweet pea plant.

H. pubera- Volume # 2, Issue # 3, page 6. The plant I refer to came from Thailand and is the one in the trade under this name. There is a question as to it's correct identity, as there is with many of the plants we are now growing. The names of several familiar plants as we now know them will change as we gain a clearer insight to all the species, and a more thorough study of available material is made.

Pedicele- Volume 2 Issue # 3, page 6. Geotropic means turned toward the earth (down) to use the adjective "positive" is unnecessary. We need only to designate negative geotropic. Thus we have geotropic umbels (concave, flat and convex) and in addition, negative geotropic umbels.

Calyx- Volume 2 Issue # 3, page 7. A better example of overlapping sepals is found in the hoyo species we know as H. sp. # 81089.

I have switched terms in mid-stream and now prefer the term ligule in place of auricle, as the structure referred to are generally more tongue-like than ear shaped.

When the corolla separates from the calyx it usually leaves the "double ovaries" which contain the ovules inside.

Corolla-Volume 2, issue # 4, page 6. Dr. Ken Hill in "A Revision Of Hoya In Australia" only mentions a revision of the genus Hoya. "One group of taxa represented in Australia by a single undescribed species, differs markedly in a range of diagnostic characters from Hoya sens. strict. A study of Hoya and related genera has led to the removal of this group to a new genus (Eriostemma Schltr. K. Hill in prep.)" Sorry about that folks!

Corona- Volume 2, Issue # 5, page 2. We did not get the line drawing referred to into print. The name of Dr. Schlechter was misspelled as "Schlecter". (Note: both of these errors were the fault of "yours truly, The Editor", and not the fault of the author).

On page 3 of this same issue in the paragraph under Color, I inadvertently typed H. longifolia, and described it as having a red crown. To correct this error, I am stating that H. longifolia has a white crown, and it was H. lanceolata that I was referring to as having a red crown. (My mind knew it, my fingers didn't!).

Anthers and Pollinaria- Volume 2, Issue # 6, page 5 top left. Schlechter said "This species is very remarkable for the two auricles that exist between the corolla lobes). It does not say corona lobes as I somehow got fixed in my mind, so my interpretation of sheet # 49395 is incorrect, as is also the statement that I made concerning hoyo mindorensis. The corolla folds back at the sinus to form two little lobes, and we now know that this is really not uncommon as Dr. Schlechter felt that it was. Other species exist with this characteristic. The double anther wings I had in mind show up on two herbarium sheets in the Herbarium at the University of California at Berkeley. Both are double in a different way.

I am truly sorry these mistakes occurred, others probably exist along with misspellings etc.. I would like to assure you all that it won't happen again but being human, it probably will. Some have suggested that I quit writing before I "ruin my reputation". I am stating here and now that I thoroughly enjoy writing these articles, and even amidst threats (to coin a phrase) of being tarred, feathered, and run out of town on a steel rail, I plan to continue with them, although I will try to be more careful in the future. As one very wise man once said "Let those among you that have no sins cast the first stone".

Dale Kloppenburg

Questions & Answers

Question: *Recently I repotted a number of my hoyas in a totally different mix than I had previously used. Yesterday I noticed that the leaves on all of my plants that I put into this mix are dry, crinkled and brown around the edges and have large spots that look like rust. I haven't changed fertilizers or added anything unusual. Only the newly repotted plants are doing this. What could be the cause? W.H.*

Answer: *Without actually seeing the leaves in question it is impossible to say for sure, however your statement that you haven't changed fertilizers leads me to suspect that you are using fertilizer on newly repotted plants which is not only unnecessary but can be fatal. The symptoms you are seeing are caused by chemical burn, and the spots that look like rust, are indeed rust, caused by a too high concentration of iron. Newly repotted plants should not be fertilized for at least six months unless you are repotting into a completely soilless mix. Even soilless mixes should not be fertilized for a couple of weeks. This will give your plants time to adjust to the new mix and for any torn or broken roots to heal.*

Question: *If a hoyo develops seed pods (pollen parent unknown) and these seeds are planted, grown to flowering size and in time develop merits of their own, can they be named and registered? Would it even be worthwhile? R.G.*

Answer: *There are differing opinions on this. Many are for it, many are against it. Certainly we wouldn't want to flood the market or even grow plants in our own homes that are inferior to what we already have. I personally believe there is a place for exceptional cultivars and even hybrids which is a cross between two different species. The problem would lie in evaluating which plants to keep and which to toss out. I don't think anyone would argue the point that the gorgeous *H. pubicalyx* "Red Buttons", or the spectacular *H. Mcgillivrayi* "Red Masterpiece" that appeared in Michael Myashiro's collection are both keepers, as is also Dale Kloppenburg's *H. pubicalyx**

"Fresno Beauty". These are truly exceptional plants, but they are only a few out of thousands upon thousands of plants grown from seed that were considered "good enough". There are many named cultivars listed in dealer catalogues that are nothing more than exact replicas of the original species. What we need is a team or committee of members working together to carefully evaluate these plants that suddenly seem to be appearing out of the woodwork.

Question: *I was at the meeting in Escondido in June and saw a man filming videos of the meeting. Will these video tapes be available for sale or rent to members? P.K.*

Answer: *After viewing these tapes, we (photographer included) have unanimously decided that our photographer needs a little more experience with the Cam-Corder before offering these videos to our members. We understand that there was also a non-member representing another organization at the meeting that was recording conversations on cassette tape. I'm not sure whether these will be offered for sale or rent either.*

Question: *In Volume 2, Issue # 5, there was a reference made to a line drawing of a cross section of a hoyo flower. I couldn't find this line drawing in my copy of the newsletter. Could I be missing a page somewhere? G.S.*

Answer: *I'm so sorry about that! There is no page missing, only the line drawing. I had it all ready to go in and got sidetracked. The next time I even thought about it was about two months later. It's saved/buried in my computer somewhere along with close to 8,000 other files. I don't remember what name I saved it under and have since misplaced the original drawing that it was scanned from. Someday when I have lots of time, I will call up all my files until I find it, or make a concentrated effort to find the original in my file cabinet and redo the whole thing.*

Ann Wayman

Dischidia singularis Craib

Singularis in latin means 'one at a time' or 'alone'. In the case of *Dischidia singularis* I found out why Craib chose to name it so, for it is 'alone' and truly different from the rest of the dischidias. On two counts!

Nearly all hoyas and dischidias have entire leaves, that is without lobes on the blade. The usual exception is the occasional "ears" at the base that makes the leaf auriculate. *D. singularis* is another exception for in many of the leaves there are lobes on the side of the blade, usually about the middle but can be anywhere. I had seen this when looking at herbarium sheets but it didn't register as being anything unusual. When I actually found the plant in the wild, it really hit me.

The second odd thing that I found was the manner of growth. *D. singularis* is the closest thing that I have seen to a parasitic hoyo or dischidia.

Remember, that despite the fact that *Hoya parasitica* and *Dischidiopsis parasitica* are so named, they are not parasites. A true parasite is one that lives OFF another plant and actually takes its nourishment from its host. Both of these plants live ON other plants as do all epiphytes and merely use the host tree or shrub as a ladder to reach the light and air movement above.

The few plants of *D. singularis* that I found on Doi (Mt.) Sutep at Chiang Mai in Northern Thailand were growing on small trees overhanging a small stream. The area was quite shady and at a very cool upper

elevation ((about 1500 m). The plants were "rooted" into breaks in the bark of the trees and had to be pried out. They did not have roots exposed on the surface of the host as with most epiphytes and, the oddest of all was that the percentage of "roots" could not possibly support the top growth. Immediately I thought that this might be a parasite. It seemed to be quite rare so I collected only a few plants and several of these were the damaged parts from prying them out of the holes.

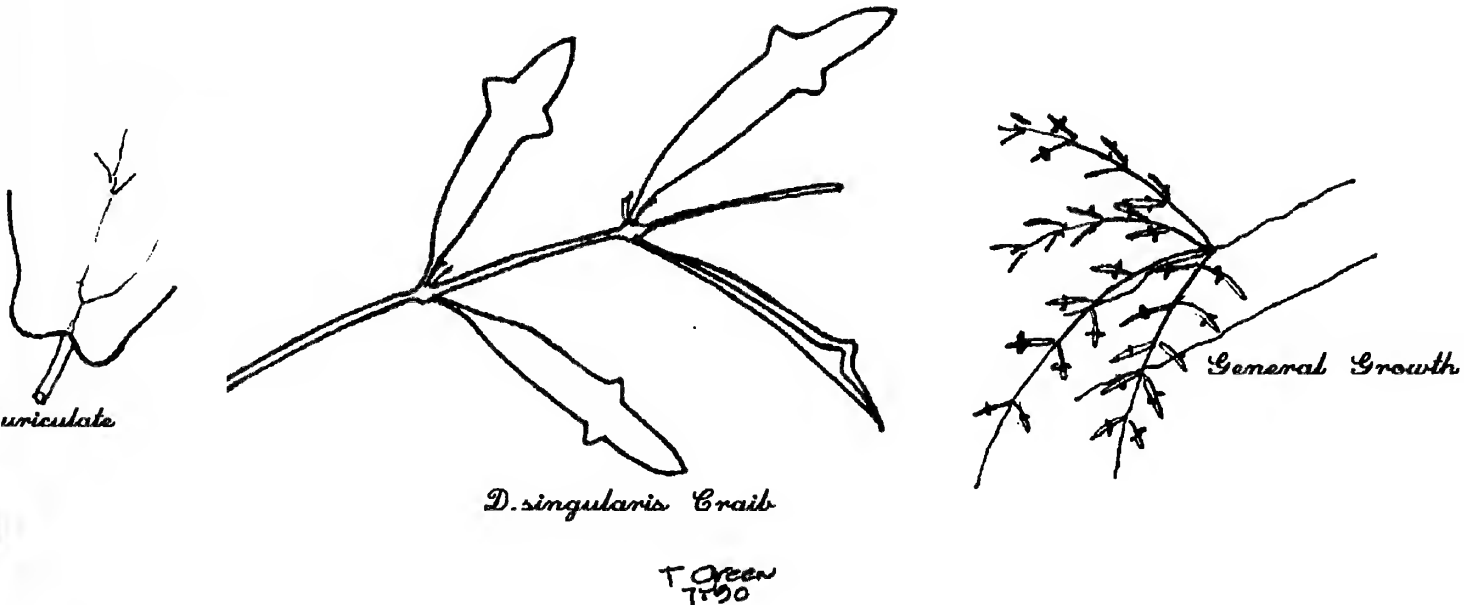
On returning home, I planted half in peatmoss/perlite and the other half in New Zealand Sphagnum moss. Now one month later, all the cuttings have died but the two complete plants (with bases) are still alive and hanging on although no new growth has started.

This lack of rooting of the cuttings is typical of parasites. I am hoping that the whole plants are able to survive on the water and nutrients that I am giving them.

Incidentally, another dischidia species was growing with, and entangled together with one of the plants of *D. singularis*. This particular plant is growing extremely well and is definitely not a parasite.

D. singularis is somewhat of a weirdo but very interesting and deserves further study if I can keep it alive.

- TED GREEN
- GREEN: PLANT RESEARCH
- KAAAWA, HAWAII





Hoya diversifolia Blume

This photo was given to me over a year ago by Henry Raphael, along with some cuttings of the plant that it came from. He said he had had the plant for about seven years, and that this was the first time it had bloomed. These cuttings had bloom spurs in practically every node, so my cuttings started blooming very fast. This plant was identified as *H. diversifolia* Blume, from Java (not to be confused with the giant leaved *H. diversifolia* B.).

The name *diversifolia* can mean different foliage, or foliage changing in shape. This phenomenon is usually referred to as dimorphic if only two types of leaves are represented. On a four foot vine that I have in my greenhouse at present, I don't believe any two leaves look the same. I have opposite leaves that in some cases have small oval leaves on one side of the stem and huge 6" long by 4" wide leaves directly opposite. One leaf on this plant is long, skinny and a perfect elongated heart shape. Next to this is an orbiculate leaf that looks exactly like a solid green obovata leaf.

These flowers are about 3/4" in diameter and have a very fuzzy pink corolla with a deeper pink crown. If you have room for a large vine, this is a very nice hoyo to own.



The Hoya Ovaries & Stigma

Ovary

The ovaries of hoyas are in pairs above the calyx ring, and surrounded by the staminal column. In cross section the ovary is hemispherical. The two together are like a circle cut in half, each half form the cross sectional view and they meet at the flat plane. In vertical view they are like little fingers. They are for the most part waxy in appearance and moist. Most are lime green in color, some are yellow, and in *Hoya carnososa*, *Hoya motoskel* and *Hoya fungii* they are a beautiful red color. In *Hoya archboldiana* the lime green base is topped with a plum-red apex. Very colorful!

The descriptions of most hoyas do not mention the ovaries, although a few say urn shaped etc.. They are rather insignificant and certainly very small, however there are similarities in both the ovaries and stigma among related species that lead me to suspect that if a classification system were developed for them, they would prove to be useful taxonomic tools.

There are long columnar types of ovaries as in *H. darwinii* with it's rounded apex, and exceeding the sepals in length. In *Hoya multiflora* they are also long and narrow and shaped like bowling pins in some varieties, in which case there may be more than one species involved. In *H. camphorifolia* the ovaries are only about 1/3 as long as the sepals, and those in *H. obscura* could be described as short and dumpy. In *H. micrantha* the ovaries are long and very slim, almost twice the sepal length. Nearly all ovaries are glabrous and smooth, however in the *Hoya* species WMZ, the inner surface where the two ovary pairs meet contains projecting stiff cilia. I am trying to point out that in the genus *Hoya* there is a vast array of variable structure, and it is again exhibited in the ovaries.

The pollen tubes enter from the apices of the ovary and fertilize the ovules within. After fertilization a pod (follicle) develops. Though two pods are possible from each flower in an umbel, it is more usual to see only one pod develop from the two ovaries. Under favorable conditions an umbel may give rise to a whole cluster of pods. The seed pods grow rather rapidly and are mature and ripe within two to three months. In most hoyas species the pods are long and slender, either curved or straight, and less than a centimeter wide by 3 to 6 inches or so long. In the *Eriostemma* section the pods are usually large, like thick polish hot dogs, at any rate they are a hundred times larger in diameter than

their smaller counterparts but only slightly longer. When the pod reaches maturity it splits longitudinally from the apex toward the point of attachment revealing rows of imbricate flat brown seed. Each seed is attached to a folded parachute (a silky tuft of hairs called a coma). As the pod dries the comose seeds are freed from the placenta and wafted off by the slightest breeze.

Stigma

Little has been written concerning or describing the stigma of hoyas. In recent publications neither Dr. Rintz nor Dr. Ken Hill discussed them. Christine Burton is the only recent researcher that I know who has recognized the variations in the stigma/styler material and their possible taxonomic significance. Strictly speaking the stigma (receptive area) is very small, a somewhat concave surface that lies under the retinaculum. Its surface is granular and spongy in appearance and the tissue leading from the area (styler in origin?) is of similar consistency. It forms a curve leading to the apex of the ovaries. The remainder of the styler material which we usually refer to as the stigma or stigma head, as it is the showy part, is modified in intricate ways. Some I think of as simple and primitive, others as complex and maybe evolutionarily more advanced. Here again a system of classification or categorization would be useful.

In the *Hoya* species WMZ the "stigma head" is shaped like a 22 bullet with a rounded top and short column. In *Hoya cumingiana* it is ornately capitate, lobed with a concave conical base, and rusty red in color. Most hoyas stigma heads I have observed are white in color. All the base areas of this head are five sided with rounded or scalloped connecting tissue in between. The five angles are usually thickened, some bilobed and from this base the conical (etc.) head arises. In *Hoya obscura* the head is cone shaped the sides laterally lined with a smaller granulose cone topping the larger base cone. I could point out numerous distinct and very beautiful intricacies of this structure. In the future we will have line drawings and perhaps color photos to show the huge variations as well as the similarities within certain related groups.

Dale Kloppenburg

Hoya erythrina Rintz

This new hoya species was published in the Malayan Nature Journal in 1978 by Dr. R.E. Rintz.

Dr. Rintz described this plant as having pale orange flowers with a white corona. Under my conditions this plant always has blooms the color of melted cheddar cheese with the corona at times the same color as the petals, at other times the corona appears clear white. The corolla of this flower is covered with fine, very short, silky white hairs. The petals curl under slightly on the sides and very sharply at the end, giving the appearance of almost square shaped petals. Although these flowers are not particularly showy, they have a very delicate beauty of their own.

The real beauty of this plant is in its spectacular foliage. Dr. Rintz describes the leaves as "coriaceous-fleshy, oblong with strongly corrugate margins", "15 cm long by 5 cm wide; 5-7 veined with a pair of veins parallel to the midrib; glossy green or

dull red above, red below". Although Dr. Rintz has described this plant very adequately. I prefer to add my own superlatives and express the opinion that it is probably the most beautiful foliage in the hoya world. Long undulate or wavy, silvery green leaves, splashed and spattered with silver, maroon, pink, white and more silvery green. The backs of the leaves are a brownish pink that I would call dusty rose. It is not a fussy plant, and will adapt to just about any standard potting mix provided that it is loose and fast draining. It does not do well in extreme bright light but prefers instead a slightly shaded spot in the greenhouse with maybe some very early morning sun. This hoya flowers quite easily and often, usually having five to seven flowers per umbel.

Dr. Rintz says " Endemic to Malaya, in hill forests in Pahang and Selangor from 400-700 meters and at Bertam, Ula Kelantan; common but not abundant along rivers on both sides of the Gap.



FILM CHOICES FOR FLOWER PHOTOGRAPHY

"Kodak has sold its processing plants but ... If you love your kodachrome 64, 25 or 200 it is available ... If you need processing it is available ..."

PHOTOFLASH (API), March 1990

Yes, Eastman Kodak has had problems. The company became complacent about its films, especially Kodachrome. They were successfully sued by Polaroid for copyright infringement involving their version of the immediate-developing film and cameras. Their disk cameras did not do well and the 110 cameras were not far behind. Then Fuji developed some very excellent film products rated as good or better than Kodak's.

Belatedly, Kodak took another look at their film products research department and have again produced some excellent films. However, there now are many companies with film on the market: some excellent, some good and some absolutely awful. There is also a wide variety of cameras available and the same film may not be best for every camera. Some DX coded cameras cannot use the slower films at all.

Flower photographers want good color saturation. Traditionally Kodachrome 25 has been recommended but even when the film is available, processing may be a problem. A & I Color Labs, Los Angeles, specializes in Kodachrome processing. Their service is only available through local camera shops.

Since print film is used by most of the general public, more research has gone into improving the negative/print film than transparency/slide film. This has resulted in some first-rate print films being made available. Negative/print films are considered more "forgiving" than transparency/slide films. For example, Kodak's 100 ASA negative/print film has a latitude for use between 50-400 ASA; transparency/slide films have no such latitude and require use at the ASA indicated.

The ASA (American Standards Association) number indicates the speed of film (Europe uses DIN numbers; ISO shows both with ASA first). Slower speeds, 100 or less ASA, will provide finer grain and richer color saturation than higher speeds, though this can vary with different film manufacturers.

Because a film is slower, it will require more light; this means you can either open your lens (f stop) or use a slower shutter. As you open the lens you will get a shallower depth of field (focus clarity from front to back). With a slower shutter, you should use a tripod to avoid camera movement while taking a shot. Choose the slowest film you can use for the lighting conditions available to you.

Daylight film is balanced for sunlight and is also good with electronic flash. Tungsten film compensates for the redder light of incandescent lighting.

The latitude of negative/print films permits richer, deeper colors and is designed with the average to advanced amateur photographer in mind. Kodak has introduced a new line called Ektar with three speeds of film: 25, 125 and 1000 ASA. Unfortunately, The Kodak Ektar films really require processing by a professional C41 lab for better results. This service is not available at camera stores, one-hour labs or drug store photo developing services.

Fuji fills the gap with their Fujicolor line: CN100, CA200, CH400, CU1600 and the REALA CSR100 ASA. Fuji has an excellent color lab in Orange County with Processing service through camera stores. Asahi and Lerner are also color labs available for processing services through camera stores and they both represent A & I Color Labs. Not only will you find that you get better results, you will discover that reputable labs, which almost always do business with camera stores, will redo your prints if you ask.

Polaroid has a variable film called "Polaroid One Film" that supposedly can be used at whatever speed you choose; 200 ASA is recommended on the box. Polaroid Customer Service Representative Jerry Looby says this gives you a four stop latitude for use at ASA settings 25-400, with 3 over-exposure and 1 underexposure (called "pushing" the film). He recommends overexposure but states that while this film will not match the grain of Kodachrome 25, it will approach the color saturation. Polaroid will be presenting this film in short rolls at camera stores (12 shots @ \$1.49). to introduce the film to the general public. Be sure to use the same ASA setting throughout the entire roll.

For transparencies/slides, Kodachrome is still available at speeds 25, 64, and 200 ASA for daylight film and 40 ASA for Tungsten. Fujichrome is available at speeds 50, 100, and 400 ASA for daylight film and 64 ASA for Tungsten. The ASA or speed of the film indicates the film's sensitivity to light and color saturation. Fuji's films are considered by most professionals to be the equivalent or better than Kodak's films.

When a roll of negative/print film arrives at a lab for developing, it is automatically tested for overall color balance, then the entire roll is printed by machine on the same setting. If you request a redo, your prints will be hand printed.

Photographers addicted to the spectacular Epiphylum hybrids demand the truest color possible. Most new 35mm cameras have reasonably accurate light meters. If your light meter signals insufficient light, try using an electronic flash, preferably one suited to your camera. Most electronic flashes are short, usually 1/100 to 1/250 of a second, so with the proper f stop, you should not get the glare so familiar to users of the old slow flashes. Even so you may want to cover your flash head with part of a nylon stocking to diffuse the light, or coat it with petroleum jelly (very messy!). There are dozens of methods if you use your imagination. You could, of course, purchase a diffuser.

Be sure you check the f stop setting recommended for your flash. Flash permits greater depth of field and, when used at close range, requires a smaller lens opening.

Do you use slide or print film? How often do you look at your slides? your prints? Slides are less expensive initially, but prints from slides are always more expensive than those from negative/print film.

In my opinion, you get richer color saturation with slides and usually have fewer battles to get good prints. Print film now has the same capability. The potential for good photographs is in the film; we have to insist that we get it on prints. With transparencies/slides, what you see is what you get and focus is critical. Out-of-focus slides will be reproduced as fuzzy prints.

Some labs seem a bit colorblind with negative/print films and you may have to return for a redo more than once. This is primarily due to the variance between machine and hand printing. The color is there; the machines don't see it. If you get acquainted with your camera store personnel, and let them see some of your flowers, you will find them much more cooperative and they will work with you and the lab. About the third time you return for a redo with a "Here we go again" attitude (never show anger or impatience), you will find your-

self with new friends who will be more sympathetic to your plight. Most camera store personnel will work very hard to keep you happy, and please don't forget to show your appreciation.

Get your camera out now and check the batteries before you miss a shot. If you haven't used that camera lately, you may need to take it in for cleaning or checking; some camera stores have specials at this time of year for camera checking. Be sure your camera is ready to go.

A word of warning. It does not pay to buy out-of-date film. With outdated film, there will be color shifts, especially if the film has been subjected to either heat or cold.

Should you be tempted to try professional (pro) films, you need to know a few facts about them. Pro films must be allowed at least three hours to bring them to room temperature when taken from the refrigerator before being loaded into the camera or they will collect moisture. Pro film not only needs to be stored in the refrigerator, it also needs to be returned there after a shoot if it is not to be developed immediately. If you leave it in your camera for any length of time (or leave it out of the camera) the color shifts.

Some do's and don't's. Do be sure your film is currently dated by checking the date on the box. Keep oversupplies of film in the refrigerator if you don't plan to use them up quickly. This is especially true of transparency/slide film. NEVER leave film or a loaded camera in the sun, especially in your car or glovebox, where temperatures can get to 140 degrees.

Don't be afraid to use your camera. It should be fun, both taking your pictures and looking at them later. When you prepare to attend a flower show, plan to bring along your camera. Remember that many places use Tungsten lights inside so use either Tungsten film or a filter for the lens that adapts your camera for Tungsten lights. Above all, enjoy.

MARIANS PHOTONOTES
Volume 1, Number 1
March 1990

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3720 Maine Ave.
Long Beach, CA 90806



H. globulosa Hook f.

H. globulosa just might be the stubbornest species in the entire hoya genus to coax bloom from, at least here in the U.S.. It is also one of the few shy bloomers that is worth the effort to do so. As you can see from the picture, this hoya forms huge umbels that are completely globe shaped, hence the name!. I understand that it is regarded as a very easy bloomer in England.

This hoya has been around for a very long time, having been discovered in India in 1849 by Sir J.D. Hooker.

I personally have had this plant within a few days of blooming twice, only to drop every bud overnight. Considering the high elevation in Sikkim Himalaya where this plant is native, it is very possible that it requires much cooler temperatures than we are brave enough to try.

This particular umbel of blossoms was photographed by IHA member Chuck Everson of "Rainbow Gardens, Nursery & Book shop" on a plant grown and flowered by George French in San Francisco. I haven't heard the story of how he got this plant to bloom. Just guessing, I would say he very probably grows it outdoors. He probably lives fairly close to the ocean. San Francisco gets many foggy days and nights during the summer when it's extremely hot inland. In other words, conditions very close to what it would enjoy in England.

Extremely easy to grow, this plant sports some of the most striking of hoya foliage, and until quite recently when even fancier foliaged hoyas came on the scene, was one of the very few that was grown for its beautiful foliage alone.





BIRD TRACKS

Excerpts From Round Robin Letters

- Round Robin Director
- Joyce Blumenstock

Wayne Scott..Calif. Robin # 2 I'm still mopping up after a fire in my greenhouse May 24th. A heating element in my rooting module shorted out causing a small fire that did several thousands of dollars worth of damage and destroyed plants probably not replaceable.

Ann Wayman..OR. Robin # 2. I have hoya flowers running out of my ears. I am keeping Dale very busy photographing flowers under his microscope. He has been working with a couple of taxonomists on identification, has also made connections with a taxonomist that is using chemical analysis for identification.

Mary Jean Sargent..OR. Robin # 2. I am a retired high school biology teacher, and now have a small indoor plant-care business. I have 20 or so clients; Doctors, restaurants etc. and this supplements my retirements benefits so I can travel a little and buy more peat moss and bone meal. I even use some of my bigger hoya plants as rentals in offices where there is good light. That's even better than raising them to sell. I still own the plant, and I get paid (but not much) for having others enjoy it!

I've had Hoya carnososa for years, then acquired half a dozen more 15 years ago and have been really smitten the past 3 or 4 years after I discovered "Hoya Society International". I now have 40-50 plants, many from cuttings and not yet bloomed. I have only an 8'X 12' solar greenhouse. Light from the south only & shaded by a Wisteria in summer. As a result my plants are very crowded as they must share with those "prosaic pothos" that work for a living. These crowded conditions are just to the liking of the *@**!!x meales. The plants are in my living area, so I have to be careful about toxic insecticides. As I can, I move groups of plants out to a shady place, spray thoroughly, dry, move back in, et cetera, et cetera, et cetera. This round I'm using orthene, a good squirt of Palmolive dish liquid, & lots of spray pressure to penetrate wooly rascals in bloom clusters & leaf axils & get the poison to them. I'm also a second year "Master Gardener" in the Oregon State University, Extension Office Project. I have a nice 10'X 60' perennial border, and a vegetable

garden. I am single so there is no-one else to help bring home the bacon, or cook it after it gets here.

I traveled to Thailand in October of 1987, and found the name of a member of the "Hoya Society International" in that groups membership roster. I wrote with the offer of some cuttings, set up a meeting, and was pleasantly surprised to find this person was a woman professor of Botany at the University of Bangkok. Nobody asked me if I had any hoya cuttings in shoe boxes, in my suitcases, and I didn't volunteer the information. This woman professor was delighted with these cuttings, as they were the only hoyas she had seen outside of her own, which were all native to Thailand. I refilled my shoe boxes with cuttings she had brought along to trade, mailed them 1st class postage to myself, and they arrived back here in good condition in just two weeks. I got eleven different plants, but the correct identification is again in doubt. This lady from Thailand did not have the *H. carnososa* as we know it. She had several plants, (I did not see the blooms) with medium sized leaves & 3 prominent veins that she had labeled *H. carnososa*.

This past February I took my daughter with me to Peru. A week on the Amazon, and a week at Cuzco, Macha Picchu Inca ruins. There are no Hoyas in Peru! But I did get to fulfill a lifetime ambition, and saw the Queen Victoria Water Lilies blooming in their natural habitat. The lily pads are 3 feet or more across. The blush pink blooms as big as a cabbage!. As I got my first glimpse, I stood up in a shallow dug-out canoe, and it didn't tip over.

I would love to see all the plants of each of you. Sure wish I had gotten to Eugene for the Work-shop. Get this thing back to me, and I will tell you about seeing the David & Iris Liddle Hoya nursery near Cairns, Australia in October of 1988, with pictures of *H. macgillivrayi* in bloom, collected from the wild.

Sincerely Mary Jean

(Editors Note) Mary Jean traveled from the Dalles to Central Point to attend our monthly meeting in July, and we did get to see her many slides from the D.J. & Iris Liddle Nursery in Australia.

Mary Jean has promised us a story all about her 1988 trip to Australia, and is off again to a different part of Australia this September. We are looking forward to reading all about her adventures!

Minis In A World Of Giants

Very early one morning in April I stood in the midst of my greenhouse gazing up in sheer wonder at the two hundred huge baskets of hoyas that hung from hooks in the rafters. In a little over three years These plants had all grown from tiny cuttings into gorgeous cascades of green, pink, silver and gold. Most were in full bloom and the fragrance of honey, citrus and spice filled the air. I was in a forest totally enraptured!. I was in the center of a green waterfall!, I was in fairyland!. I worked my way through the maze of foliage untangling vines from neighboring plants and wrapping them back around their own wires and supports.

At the end of one long row, I looked up and smiled at the tiny baskets of miniature hoyas that hung neatly over a long narrow table. Exquisite little jewels that in some cases were so full of blossoms you could barely see the foliage. One four inch basket of *H. serpens* has eight umbels of flowers, ten to twelve fuzzy 3/4" to 1" flowers in each umbel. I wondered how this can be. I had just finished tying up a huge *H. polystachya* with 10" leaves and flowers barely 1/8" across.

By this time I was hopelessly sidetracked and spent the remainder of the day comparing sizes of flowers and foliage.

In the giant class was *H. fraterna*, *H. latifolia*, *H. macrophylla*, *H. Meridithii* (80-05) *H. polystachya*. I should also add here the giant leaved plant that is sold as *diversifolia* B. Without exception, the individual flowers on each of these huge plants are less than 1/2" in diameter, and more often around 1/4".

Since so many of the hoyas that we consider tiny were in bloom, I concentrated on these for many hours. I have many favorites among these little gems. After giving it a great deal of thought I would have to declare the gorgeous little speckled leaf hoya that I know as *H. gracilis* with its small rosy pink flowers with deep pink tips to be my all time favorite. The flowers on *H. serpens* are certainly the most beautiful of all hoya flowers. They are very large compared to the tiny 1/2" dark green, coin shaped foliage. Extremely fuzzy, They open a mint or lime green, turning to white after a few days, then slowly turn pink over the next week before dropping. If anyone tells you these plants should be grown in the shade, don't you believe it! They require very bright light (no direct sun) in order to bloom but should be exposed to this bright light over a period of time to get them accustomed slowly so they don't burn. The species from Tanna is another very large flowered, small foliated plant. The flowers are 1/2" to 3/4" across with a tendency to cup. Mine blooms a bluish white, almost the same color as skimmed milk, with a brownish

red center. I pick up a plant that has perhaps the tiniest flower I have ever seen, It's the plant that I purchased as *H. bilobata*. The leaves on this tiny plant are around 1" long and 3/4" wide, almost a grass green with a dark purple or brown margin. The flowers are no bigger than the head of a pin, deep rose to brownish red in color with some yellow. The flowers are so small that it is difficult to even determine color without a magnifying glass. Under a microscope these flowers come alive and reveal one of the most intricately beautiful of all flowers.

I keep smelling a very heady spicy scent, and after sticking my nose into several flower pots, I finally find where this fragrance is coming from. Not from the rows and rows of minis but directly over my head in a 5" pot is *H. obscura* with it's gorgeous mahogany colored foliage and tiny orange or pale pink, fuzzy flowers. This fragrance is so reminiscent of allspice that it makes one wonder what kind of insect it is trying to attract. The plant I have with the number F-484 from Kuching Borneo has this exact same intoxicating fragrance, the flowers look very similar on the surface, however the foliage and growth pattern are quite different.

Back to the minis! I have to stop and look lovingly at the tiny leaved *H. curtisii*. I've been babying this little critter for over a year and it has finally, (as the saying goes) "took off". It sports extremely tiny, heart shaped leaves speckled all over with silver, and branches profusely from every node. I have seen no flowers on this plant as yet but have been assured that it truly has very small hoya flowers. I'm dying to get some pictures of this but I'm afraid it's going to be a long hard wait. One of the real beauties of the hoya world is the tiny *H. sp. # 81084* just published by Dale Kloppenburg as *H. burtoniae*. with its deep brownish maroon, almost black, velvety foliage. The entire crown is deep red but it sits on a ball of pure white fur that rolls backward, giving the impression of a ladies white fur muff. I have never been able to detect any fragrance in this flower. Speaking of fragrance, there is no hoya that I know of that comes even close to the clean, delicate, baby powder scent of *H. lacunosa*. Sooner or later almost everyone who loves hoyas will own this wonderful little plant with its tiny white fuzzy flowers and yellow center. This hoya appears to be much happier in the house than in the greenhouse. I usually keep one in my husbands bathroom which faces north/east. They love the humidity of a bathroom or kitchen and bright, filtered, early morning sun. *H. camphorifolia*? Whats this one doing in the miniatures????!! I'm not at all sure whether this one should be classed as a miniature, or even a dwarf, the leaf size is quite small and beautifully veined, however the plant as a whole can become very large

and very tangled with every other plant within grabbing distance. The flowers are in pretty much the same category as *H. bilobata*, being not much bigger than a pin head. Another all time favorite of mine is a plant that I purchased with the label *H. longifolia*. It has the long stringbean shaped leaves of *H. shepardii* but with a dark brown margin encircling each leaf. As soon as I saw this plant starting to bud up, I knew that it wasn't *longifolia*. The flowers on *longifolia* are pure white, and these buds were deep red/purple. Every time this plant blooms, I catch myself watching it for long minutes at a time and find it hard to turn away and go on to the next plant. This plant was finally identified for me as # F-428, and is sold by Ted Green as *H. angustifolia*. By whatever name or number it is certainly one of the most beautiful hoya flowers.

Just about the time I decide this hoya or that hoya is my favorite, another plant will bloom for the first time and I'm in awe. I take two more steps and stop dead in my tracks. *H. parvifolia* with its tiny, felted, silver spattered leaves is in full bloom. I'm sure no one who has ever seen this plant either in or out of bloom could resist owning it. The foliage is breathtaking, the flowers are sheer delight in gold and brown. Many dealers describe

this flower as being straw colored, however this time and on this particular plant, the flowers are golden yellow, the huge crown is golden brown or bronze. I sometimes wonder why a plant will bloom so different at different times and for different people. For instance, I have an *H. megalaster* that blooms almost constantly but every time it blooms, it's either a different color, or the flowers are bigger or smaller than the time before. The foliage on a hoya can look one way for one person, but let someone else take this same plant for a few months and under different conditions it is no longer recognizable as the same plant. Perhaps the unknown is the lure that draws us all!. Everyone loves a mystery!. Is the monstrous plant that is growing up the wall and into the rafters with its tiny almost microscopic flowers the mini? or is the small plant in the 4" basket with its tiny leaves and huge flowers the giant?.

Ann Wayman

Drop A Pebble In The Water

- Drop a pebble in the water: just a splash, and it is gone;
- But there's half-a-hundred ripples circling on and on and on,
- Spreading, spreading from the center, flowing on out to the sea.
- And there is no way of telling where the end is going to be.
- Drop a pebble in the water: in a minute you forget,
- But there's little waves a-flowing, and there's ripples circling yet,
- And those little waves a-flowing to a great big wave have grown;
- You've disturbed a mighty river just by dropping in a stone.
- Drop an unkind word, or careless: in a minute it is gone;
- But there's half-a-hundred ripples circling on and on and on.
- They keep spreading, spreading, spreading from the center as they go,
- And there is no way to stop them, once you've started them to flow.
- Drop an unkind word or careless: in a minute you forget;

- But there's little waves a-flowing, and there's ripples circling yet,
- And perhaps in some sad heart a mighty wave of tears you've stirred,
- And disturbed a life was happy ere you dropped that unkind word.
- Drop a word of cheer and kindness: just a flash and it is gone;
- But there's half-a-hundred ripples circling on and on and on,
- Bearing hope and joy and comfort on each splashing, dashing wave
- Till you wouldn't believe the volume of the one kind word you gave.
- Drop a word of cheer and kindness: in a minute you forget;
- But there's gladness still a-swelling, and there's joy a-circling yet,
- And you've rolled a wave of comfort whose sweet music can be heard
- Over miles and miles of water just by dropping one kind word.

James W. Foley

Pruning Hoyas

If you have a large hoya plant which produces little or no flowers, or one which has totally outgrown the space available, pruning is indicated. All hoyas initiate flower peduncles only on young, actively growing shoots. Some species do not retain peduncles from year to year, though the majority do. 'Bella', 'lanceolata', 'cumingiana', 'linearis' and, sometimes, *Centrostemma* 'multiflora' all shed peduncles after blooming. Pruning is therefore just a matter of removing excess growth, either after blooming or before new growth commences in Spring, to promote flowering. My, "seat-of-the-pants" experience suggests that, where plants are growing in colder conditions, pruning should be left till Spring to avoid damage to any tender new growths which may be promoted by pruning.

The species which do retain peduncles provide more of a challenge. Since the object is to induce new growth, at least some old stems should be shortened considerably. Do this when vine is dormant as much unraveling will be necessary. Hardy species, such as *carnosa*, etc. do not seem to mind being totally cut back to, say, a metre.

Pruned plants will almost certainly need repotting too. DO NOT BE TEMPTED to use larger than 20 cm shallow containers, unless you wish to have a rampant plant. It is preferable to wait till new growth commences in Spring, then carefully remove some of the old roots to make room for some new potting mix in existing container. Some of the smaller-growing species will live happily for years in a 10 cm-12 cm container.

To induce flowers, place your hoyas in a good strong light (without being in direct sun) and feed regularly as soon as plants are actively growing again.

- Reprinted with permission From
- Auckland Epiphyllum And Hoya Society
- Newsletter March 1990

The Auckland Epiphyllum And Hoya Society is a fairly new discovery made in the process of trying to find Societies in other countries interested in furthering knowledge into the Hoya genus. I wrote for information and arranged an advertising and reprint permission trade-out. The quarterly newsletter of this society, usually around four pages per issue, is literally packed with information about growing Epiphyllums and hoyas. Each issue features a color photo of a Hoya or Epiphyllum. Since most of us who grow Hoyas also grow some Epi's, this society and their newsletter is surely a welcome addition to our expanding library of

literature that we have available. I would also like information on any other organizations, or, individuals that any of you may know of that is studying the hoya genus, or is involved in research into this genus.

Ann Wayman

Below is a reprint of a brief history of this society received from Mrs Von Cross 'News Editor'.

The Auckland Epiphyllum & Hoya Society was formed in June 1984 by a group of enthusiasts who hitherto had met informally at their various homes. Growing numbers finally decided them to become a Society under the able leadership of Mrs. Betty Gross. It was soon apparent that there was much interest in both epicacti and hoyas from growers who were unable to attend meetings in Auckland and so our first newsletter was issued in June 1985 and thereafter quarterly. We now have approximately 160 members throughout New Zealand plus a few overseas.

Our aim is to gather and distribute as much information as possible about growing these plants in our own climatic conditions. However it is not easy to generalize as New Zealand, though quite small, extends from 35 degrees to 46 degrees (approximately equivalent to Northern California through Seattle) and climate varies from sub-tropical to alpine.

We take every opportunity to display both epicacti and hoyas in conjunction with other horticultural Societies. We have also arranged two week-end conventions for our members and will soon commence planning our next one in November 1991.

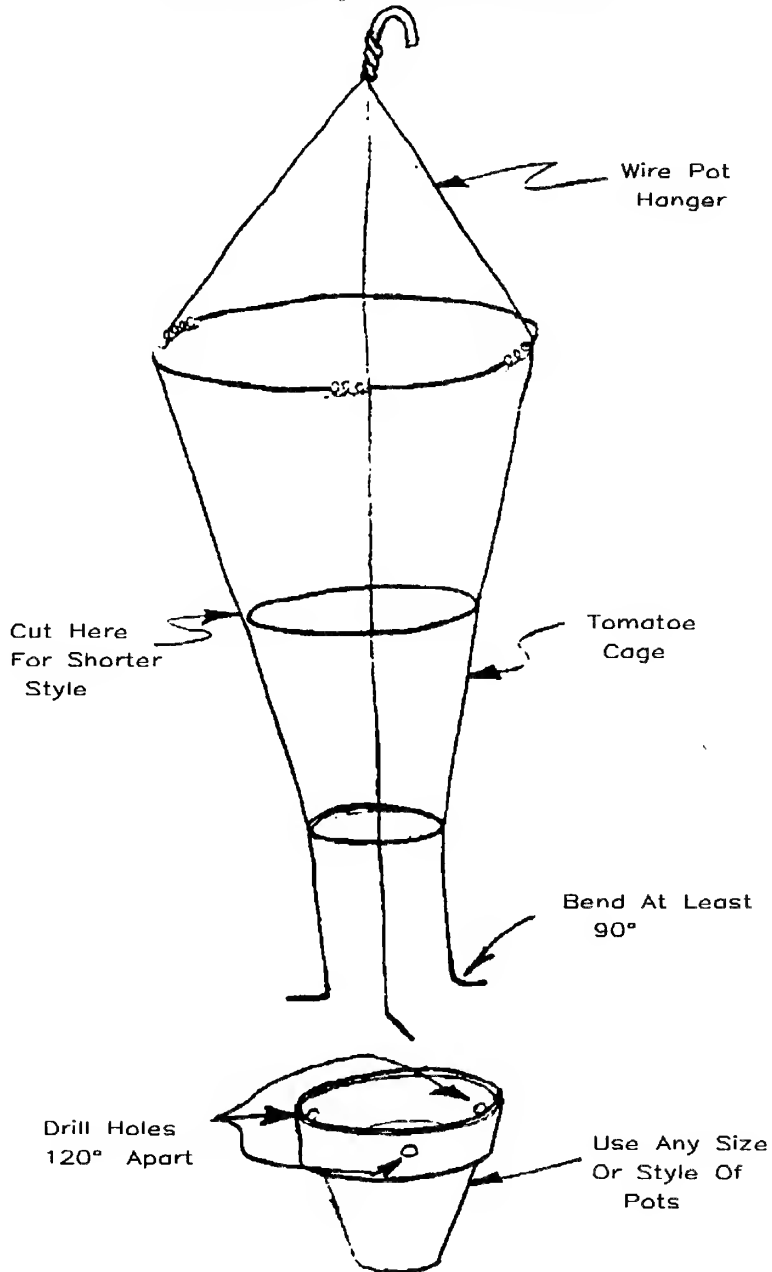
Should any of your members be interested to join us, our subscription for U.S. members is \$US 6.00. We do not have facilities for credit cards at present. Newsletters are posted quarterly by airmail.

To join: send \$6.00 U.S. funds, (I assume they will accept checks or money orders also). To:

- Auckland Epiphyllum And
- Hoya Society
- P.O. Box 17-159 Greenlane,
- Auckland 5 New Zealand

Plant Hanger/Stand

Submitted by William Herrera

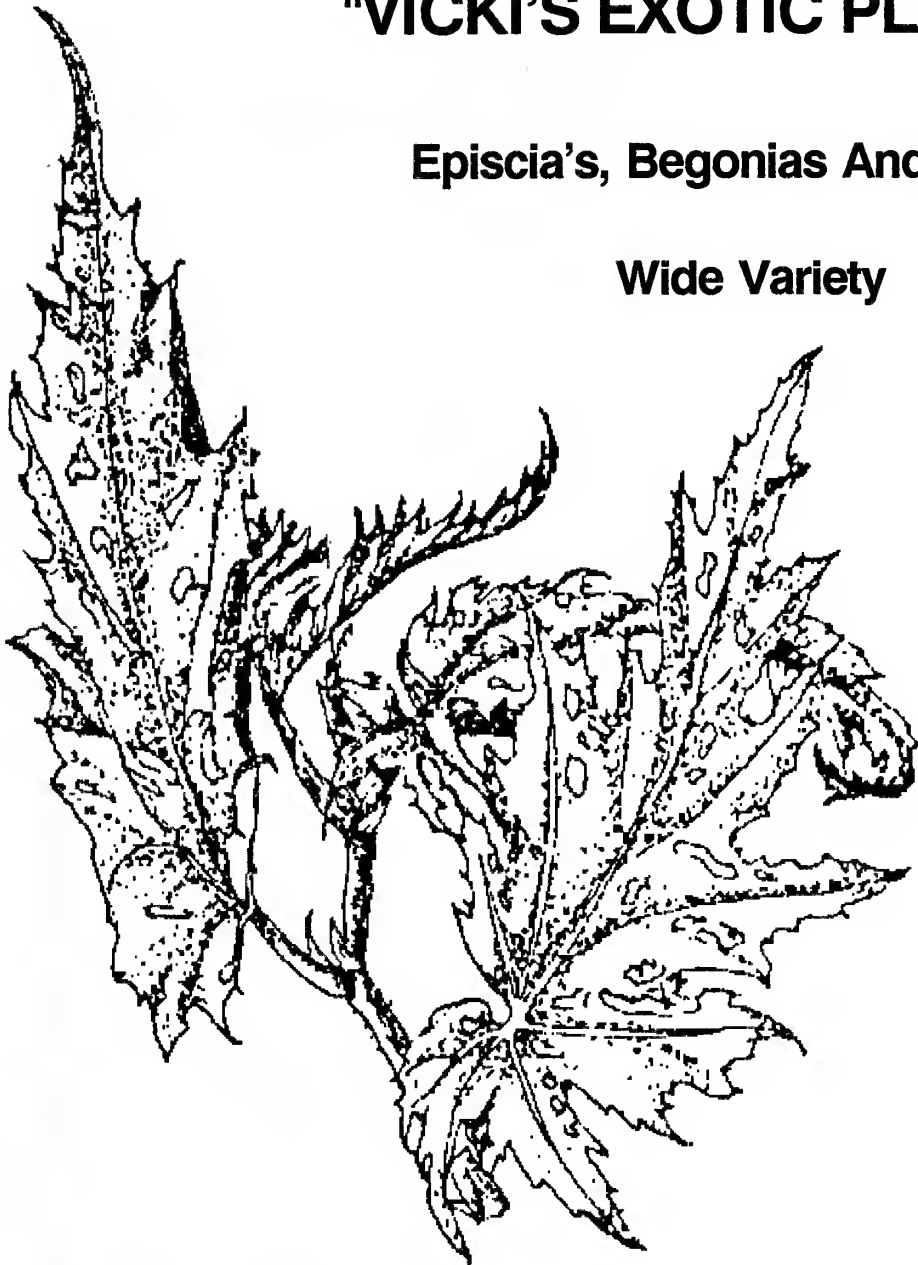


A lovely picture of *H. kerri* accompanied this drawing. We hope to be able to reproduce this photograph for you in a future issue. A.W.

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SEPT. 23, 1990

MEETING

International Hoya Association

Eugene Chapter

*260 Greenleaf
Eugene, Oregon
2 To 4 P.M.*

*For More Information
Colleen Christian (503) 689-5020
Margie Stone (503) 343-2852*



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H. cinnamomifolia
H. gracilis
H. pubicalyx (Dark Red Seedling)
H. laurifolia (this is PNG 4)
H. arnottiana
H. kenejiana
H. kerrii (Fuzzy leaf)
H. acuta (Green Form)
H. pachyclada
H. obovata

Volume 4

H. fuscomarginata
H. species # 454 parviflora (long skinny leaf)
H. polystachya
H. acuta (lemon scented)
H. species # CI-1244
H. species # F-484
H. species USDA # 354246
H. pubicalyx Cv. Red Buttons
H. species (New Guinea Gold)
H. species Unidentified (Golden Yellow, pure white corona)

NEW ITEMS Volume 5

H. citrina
H. nicholsoniae # 39
H. cummingiana
H. neo-ebudica
H. padangensis
H. camphorifolia
H. inconspicua
H. caudata var. crassifolia
H. Spec. PNG-1
H. erythrina

Volume 6

H. fraterna
H. coronaria Form 1
H. limonaciae
H. bilobata
H. Spec. PNG-6
H. tsangi, Burton

H. diptera
H. acuta (bronze)
H. fungii
H. diversifolia-B

Volume 7

H. carnosa cv. "Krinkle 8"
H. Sp. Saba Malaysia
H. Sp. WMZ
H. polyneura
H. Sp. WMZ (Back of flower & calyx)
H. pubera
H. acuta Penang
H. plicata
H. carnosa cv. "Dapple Gray"
H. keysii

Volume 8

H. purpureo fusca (The real one)
H. odorata
H. pottsii
H. Sp. IML 33
H. picta
H. pseudo littoralis
H. nicholsoniae (from Logee's)
H. micrantha
H. vitiensis
H. curtisii (foliage)

These pictures are taken especially for our photo album series and will not be appearing in our bulletin. We still have volumes 1&2 available.

Pictures
Hoya Society-West Coast
P.O. Box 5130
Central Point, OR. 97502



**NEW
PHILIPPINE
HOYA SPECIES
BY
DALE KLOPPENBURG**

NEW PHILIPPINE HOYA SPECIES

By Dale Kloppenburg

Published in "FRATERNA" the official bulletin for 'International Hoya Association' 3rd quarter 1990 Dale Kloppenburg has been involved in the nursery business in one capacity or another for over 40 years. After his retirement from Northrup King Seed Co., he became involved in the actual collecting of tropical plants in their native habitats and developed an avid interest in the Hoya genus. Since 1976 he, together with several botanists/taxonomists have done extensive research in this field. The work continues!. Anyone wishing to share notes or otherwise participate in this research should contact Dale directly, or write to International Hoya Association.

Dale Kloppenburg
6427 N. Fruit Ave.
Fresno, Calif. 93711
(209) 439-8249

International Hoya Association
P.O. Box 5130
Central Point, Oregon 97502
(503) 664-6808

Hoya alagensis Kloppenburg sp. nov.

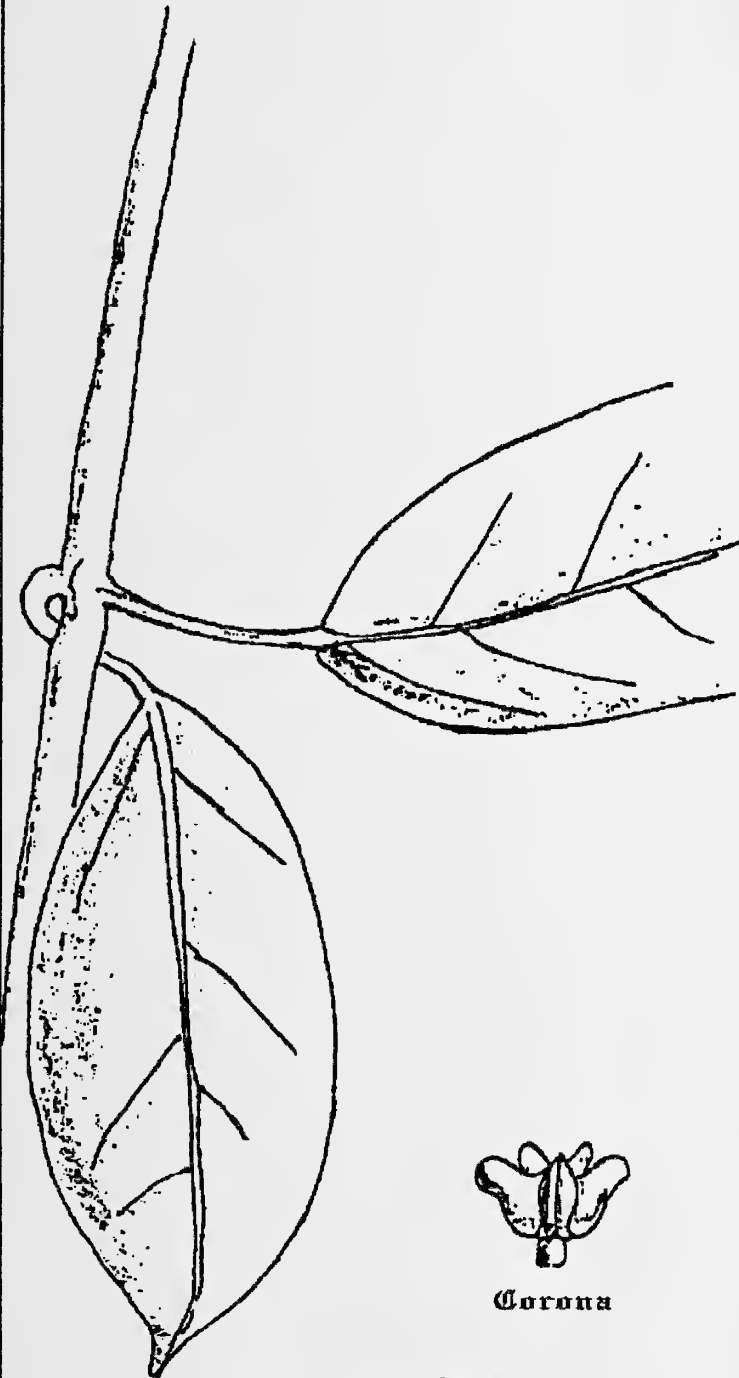
Type sheet #5542 Collected by Elmer D. Merrill on the Alag River, Mindoro, Philippines November 1906 in the forest at 150 m altitude. Flowers purplish, odorless. Berlin (B) Holotypus. This is Schlechter's unpublished Hoya alagensis. ex. spec.

Volubilis scandens 6 m vel plus, ramis teretibus glabrous, carnosiusulis, foliis patentibus ovatis-lanceolatis, basi rotundus, apice acutis ad rostratis, 11x 4-5.5 cm. latis, utrinque glaberrimis, non carnosus, venis utrinque 4-6 ascendentibus, reticulatus, costa crassa recta infra promonens. Petiolo carnosulo glabro 3.0 cm. longis, 0.2 cm. diametro, curvus, teretibus. Pedunculo 4.0 cm. longis, glabrus, 0.2 cm. diametro, rachi incrassata 0.4 cm. diametro abbreviata. Pedicellis filiformibus, pubescentis ad 5.0 cm. vel plura longis. Calycis segmentis hirsutis, 0.25 cm. longis, leviter imbricatis, ovatus obtusis, ligulea praesentia. Corolla lobis late ovatis acutis ad apiculatis, profunde lobatis. Corona foliolis superne ovatus, apice anteriore breviter rostratis, apice posteriore breviter excisis, medio gibbo linear brevior longitudinaliter donato, subtus longitudinaliter foveolatis.

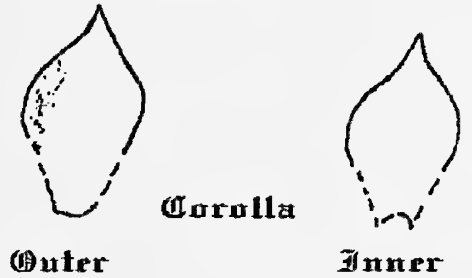
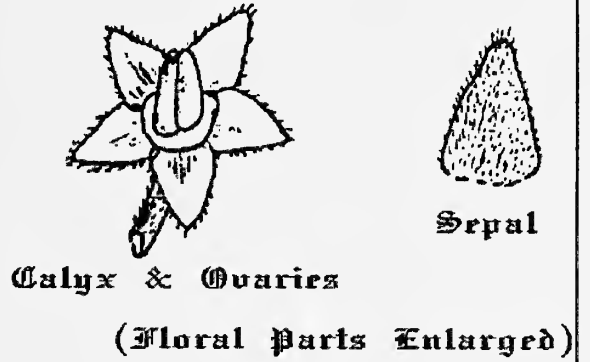
This species has foliage similar to *H. angustisepala* Burton and the coronas are somewhat similar in having the outer apex slightly re-curved and blunt. Even the corolla lobes are similarly shaped, however the sepals are entirely different. It differs from other known Philippine species.

I have retained Schlechter's area name.

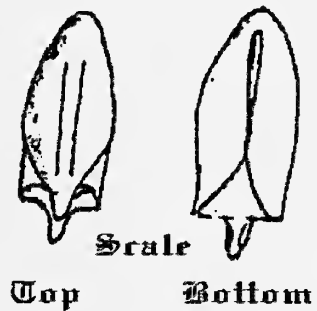
Tracings from Schlechter's *H. alagensis* sheet # 5542 collected by Elmer D. Merrill Nov. 1906 on the Alag River, Mindoro, Philippines By Dale Kloppenburg



Leaf & Flower Cluster
Actual Size



Corona



Pollinarium

Hoya cembra Kloppenburg sp. nov.

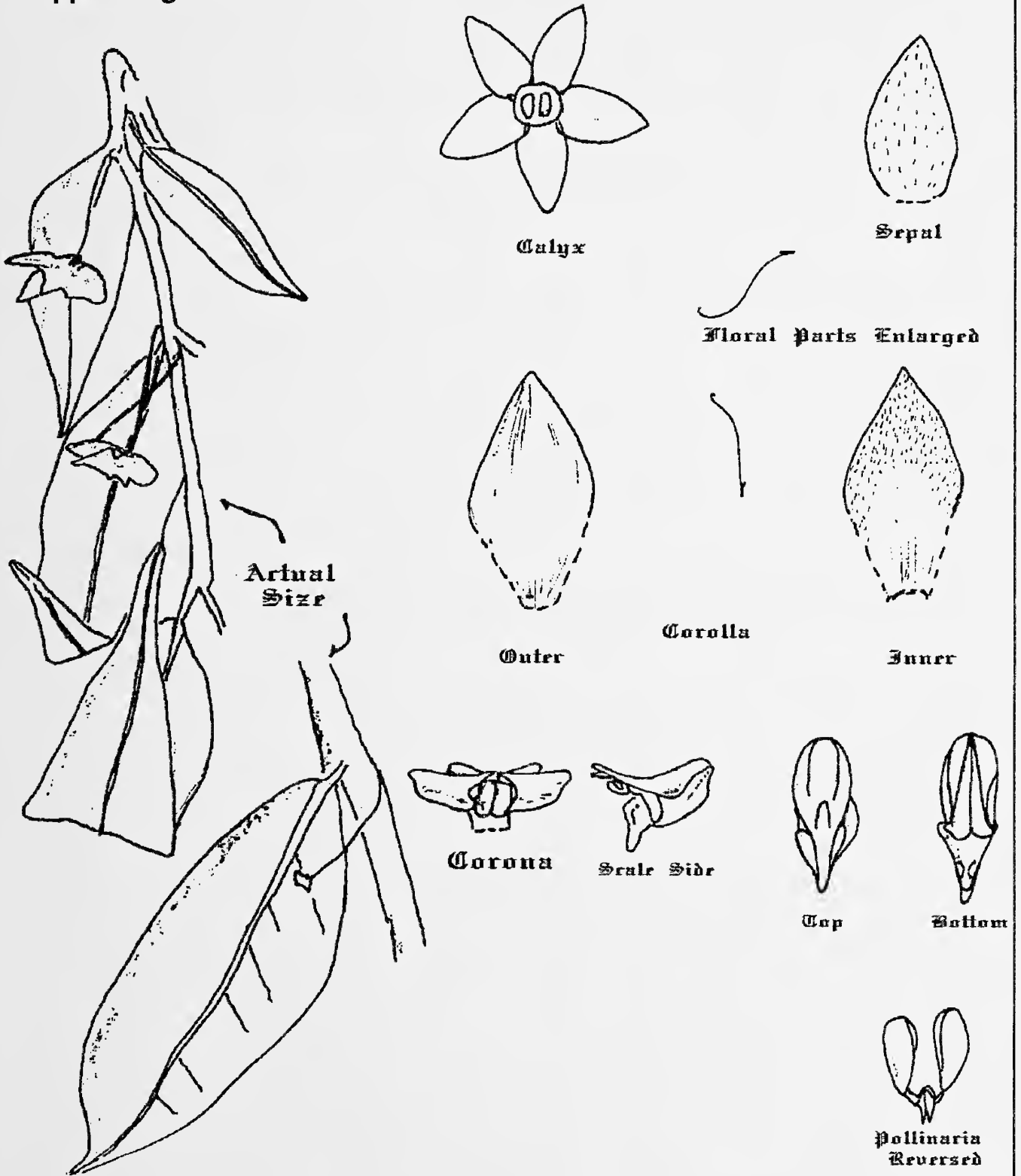
Type sheet #5650 Elmer D. Merrill found in thickets along the Alag river, Mindoro, Philippines, at 300 m. altitude November 1906. Berlin (B) Holotypus. This is Schlechter's unpublished *Hoya leucantha*. ex spec.

Ephiphytica scandens vel teresta, pauciramosa, glabra, bene foliatus; flexuosis; foliis erecto-patentibus breviter petiolaris, anguste ellipticus apexis rostratus glabris, lucidis, textura tenuiter coriaceis, 8-10 cm. longis, infra medium 2-3 cm. latis, petiolus 0.5 cm. longis; floribus in umbellis paucifloris albis; pedicellis filiformibus, teretibus, glabris 2.5 cm. longis; calycis segmentis lanceolato-oblongis obtusis, extus ciliatis, ligulae praesentia; corolla rotata cir. 1.8 cm. diametiente, triangularis acutis, extus glabra, intus pubescens; coronae foliatis carnosae horizontalibus, ovatis, segmenta interiora contiguus, anguste productus, subtus sulcatis apice posteriore obtusissima, superno haud recurvato, prosus umbo, antheris paululo brevioribus.

This species is near *H. odorata* Schlechter but differs in its narrowly elliptic foliage, 8-10 cm. vs. 3.5-5 cm., The outer surface of its sepals, which are ciliate, its pubescent inner corolla surface, especially its outer lobes which are glabrous in *H. odorata* Schlechter, its distinctive channeling of the lower surface of the corona lobes, the blocky outer corona lobe with an umbo on the dorsal side near the inner lobe rather than an ornate longitudinal hump as in *H. odorata*. Its channeling, sepals, corolla and corona differ from #5618. (B)

This *Hoya* species is named for my daughter. Her name is derived from a picturesque pine species of the Central European Alps, the Swiss Stone Pine.

Tracings from Schlechter's *H. leucantha* sheet. Collected by Elmer D. Merrill Nov. 1906 on the Alag River, Mindoro, Philippines # 5650. By Dale Kloppenburg 1990



Hoya halconensis Kloppenburg sp. nov.

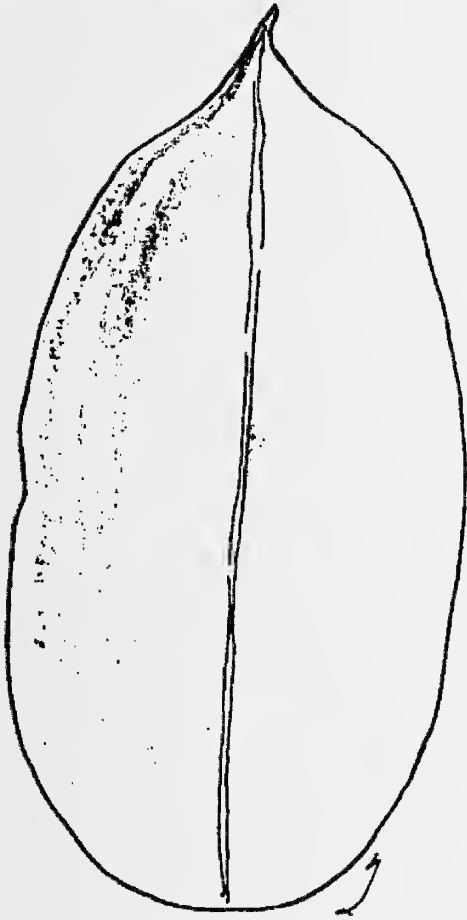
Type sheet #5674 collected by Elmer D. Merrill November 1906 on Mt. Halcon, Mindoro, Philippines in a mossy forest at 900 m. altitude. Flowers with faint odor, purplish outside, yellowish within. Berlin (B) Holotypus. This sheet is Schlechter's unpublished *Hoya halconensis*. ex. spec.

Ramulis crassis 0.5-0.6 cm. diametro, glabris, internodiis elongatis 18 cm. Foliis 9-12.5 x 4-6 cm. plerumque parvis, glabris, ovatis-ellipticus, apice breviter acute acuminatis, basi late rotundatis. Pedunculo 3.0 cm. longis, rachi incrassatis cir. 2.0 cm. longis. Pedicellis hirsutis, filiformibus, teretibus. Calycis segmentis ovatus, hirsutis extis, 0.3 cm. longis, ligulea presentia. Corolla lobis late ovatus acutis ad apiculatis, profunde lobatus cir. 2 cm. diametro. Coronae foliolis, obovatus aqapice interne aliquantum breviter rostratis, externe subobtusata, medio longitudinaliter, inter apices carina donatis, subtus longitudinaliter foveolatis. Anthera apicem folioli excedente. Poliniis oblongoidiis, translatoribus linearibus, retinaculo rhomboides linealiter compressa.

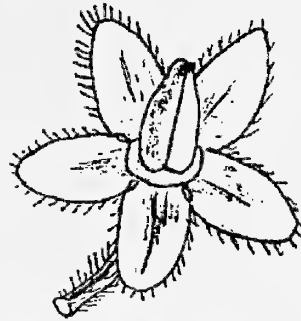
The foliage of this species is similar to that of *H. mindorensis* Schlechter although more broadly rounded at the base much like *H. cardiophylla* Merrill. It has the large pencil sized stems like *H. angustisepala* Burton. Its corona scales are elevated on the outer lobe more than *H. cagayanensis* Burton, but like this species it's outer lobes are blunt although the very apex of this species is somewhat more narrowly rounded. Like *H. benguetensis* Schlechter it has a similar longitudinal ridge on the upper surface of the corona scale, extending from apex to apex.. it is, however, distinct from any of these species.

I have retained Schlechter's area name.

Tracings from Schlector's *H. halconensis* sheet # 5674 collected by Elmer D. Merrill Nov. 1906 on Mt. Halcon, Mindoro, Philippines in mossy forest at 900 m altitude.



Near Actual Size



Calyx & Ovaries



Sepal



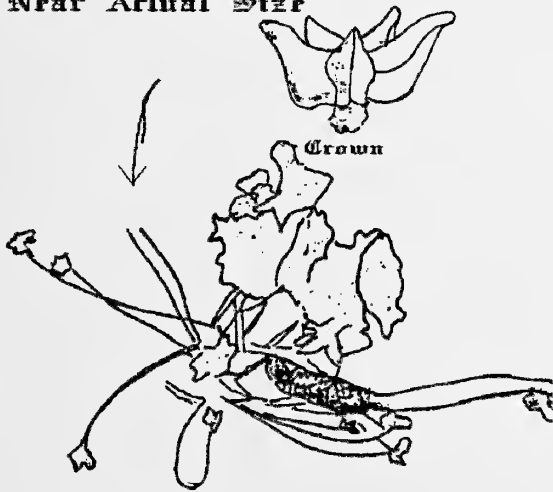
Outer

Flower Parts
Enlarged

Corolla



Inner



Crown



Side



Top



Bottom



Pollinaria

Hoya madulidii Kloppenburg sp. nov.

Holotype sheet # 357 F.H. Bolster (B) found at 400' altitude, vine 60' long hanging from trees over the river at top of falls, Caningag Creek. Flower purple. Very common but difficult to secure. May-June 1906 Province of Surigao, Mindanao, Philippines. This is Schlechter's unpublished Hoya coronarioides. Isotype UC.

Epiphytica, scandens, fortis cerescens, parvis ramosa, ramulis carnosae, ciliata, crassius terete, cum internodiis elongatis, 13 cm. longis, nodus amplificatus, folia decidua, rami circatricibus foliorum declinatorum rotundatus notati. Petioli cir. 2.3 cm. longi crassi, rectus vel curvus, supra sulcatus. Folia divaricate dependentia opposita, late depressa infra vadosissimum concava crassissimum, margine recurva infra ciliata, et costa proxima dense ciliata supra sparsim ciliata, late ovata, basi rotundata apices obtusa, apiculata, 9-13 cm. longa x 7 cm. lata, costa crassa recta, infra prominens, pubescens, supra depressus, nervis obscura. Pedunculi erecti dense pubescentes, carnosus, terete cir. 2 cm. longi, pedicelli carnosus, terete cir. 2-2.5 cm. longi, x 0.3 cm. diametri, post aestivationem incrassatis, subtentus per bracteas in rachis, ciliatae dense, aeviculiatae. Calycis segmentis imbricatis 2/3, 0.4 cm. longis et latis, non ligulae (ligulae nullae) dense ciliatus extus, capulatus intus et glabra, cilia 0.04 cm. longis. Corolla intus glabra, punctata, reflexa, extus pubens, niger, margine recurvatus apex acutis, non inflexus; collum elongatum inssemitis, cir. 0.70 latus.

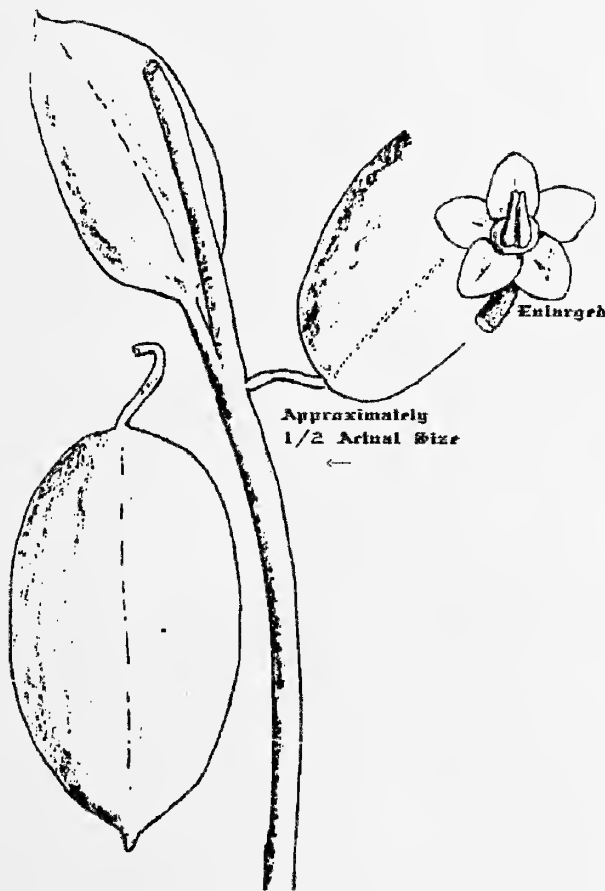
This species differs from H. ciliata Elmer ex Burton in having a distinctively long strong staminal column. Elmer described H. ciliata "column very short and thick". It also differs from H. pulgarensis Elmer for the same reason. The column on this new species is so distinctive as to be a characteristic that no taxonomist would overlook. Herbarium sheets bearing the label H. coronarioides vary considerably in the ciliation of the foliage surfaces and other parts but most appear to be one species here described. This species belongs to the Eriostemma section. It is similar in foliage (as are many in this section) to Hoya coronaria Blume but differs from it in flower color, crown angle and shape and stigma type, also in the retinaculum of the pollinaria. Many herbarium sheets exist of this complex and are mixed and mislabeled. I feel the complex may contain additional distinct species, in any case it needs close systematic study. The plant in commerce labeled #81089 (and sold as H. ciliata) originally collected by Dr. Juan Pancho, Botany professor UPLB, Laguna Philippines is this species and matches Schlechter's drawings on sheet #357 very closely.

H. madulidii cont.

The coronal collar of this species is thick and strong, 0.46-0.52 cm. tall; the opening diameter is 0.45 cm. with thick ciliation around the throat, granulose inside with fewer cilia. The outside is glabrous but prominently granulose. It should be noted that the corolla acute apex is not inflexed as it is on *Hoya ciliata*.

I have named this species in honor of Domingo A. Madulid, Ph.D. the officer-in-charge of the Botany Division, National Herbarium, Manila, Philippines. He has been gracious and assisting in furthering my work of the Genus *Hoya*.

Dale Kloppenburg



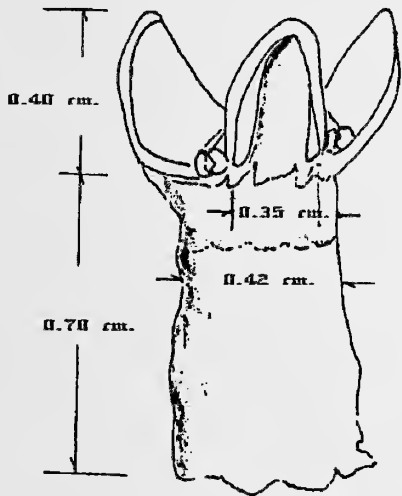
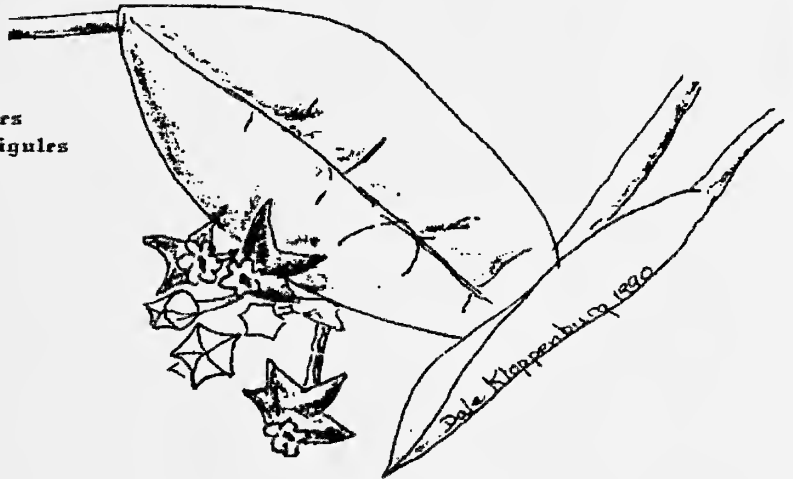
Hoya madulidii Kloppenburg Sp. nov. Holotype #357 (B) F.H. Bolster
Surigao, Mindanao, Philip.



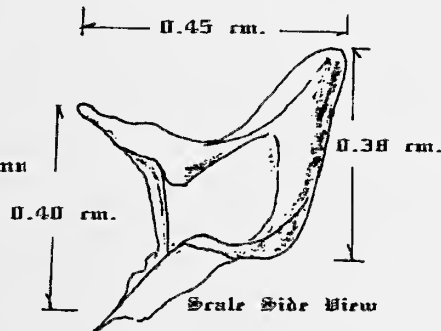
Diam. 0.8 cm.
pedicel 2.5 cm.

long

0.3 cm. diam. Calyx & Ovaries
Sepals with no ligules



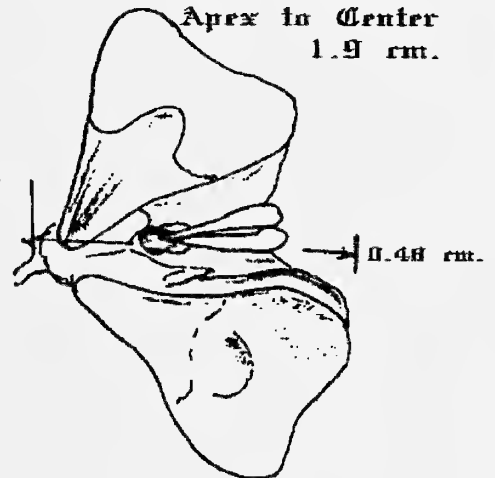
Scale End & Column



Scale Side View

Flower Cluster

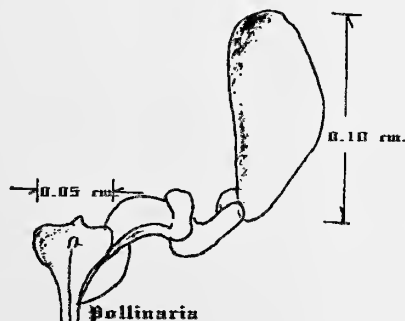
Corolla 3.8 cm. diam. flat
Apex strict
Sinus to Sinus 1 cm.
Apex to Sinus 1.2 cm.
Apex to Center 1.9 cm.



Scale Top View



Stigma Head
Side View



Pollinaria

Hoya palawanica Kloppenburg sp. nov.

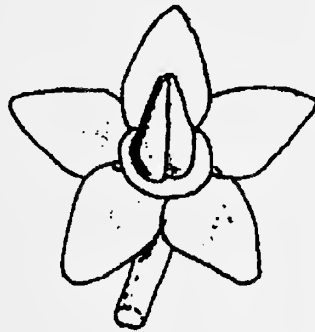
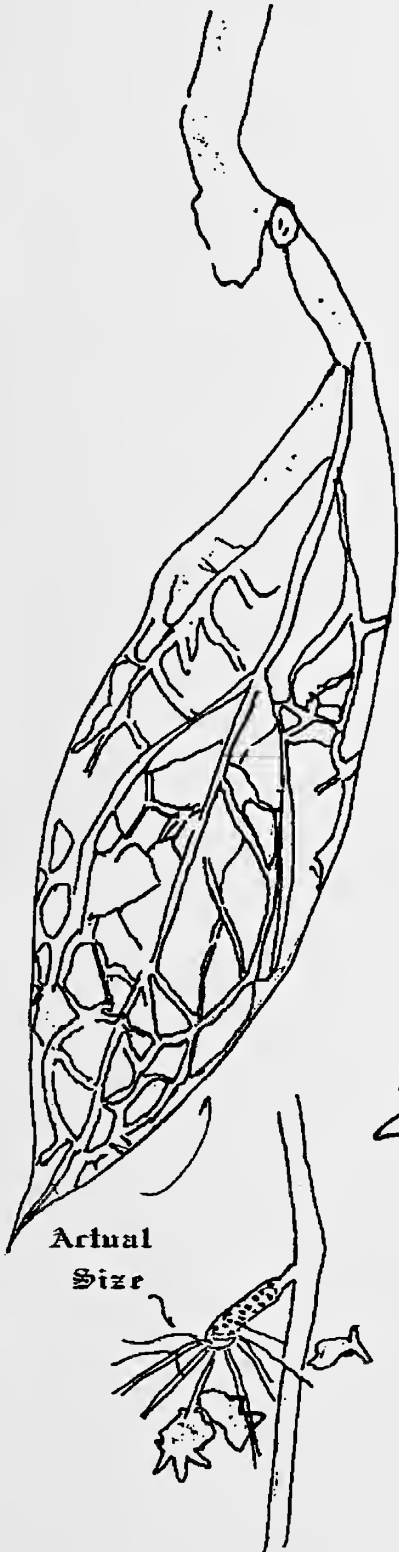
Type sheet # 834 F.W. Foxworthy found in borders of mangrove swamps, Island of Palawan, Philippines. May 1906. Berlin (B) Holotypus. This is Schlechter's unpublished *Hoya palawanica*. ex. spec.

Epiphytica vel tereste, exceptis glabris, carnosus, radicanibus, laxe foliatis, patentibus. Caulis internodiis elongatis, cir. 14 cm. longis, ad 0.4 cm. diametro, in nodis incrassatis. Petiolis cir. 1.8 cm. longis, 0.6 cm. diametro, velde incrassatis, ramis terminalis tenuis. Foliis ellipticus, lanceolatis 13.2-14.5 cm. longis, medio 3.8-4.2 cm. latis, deciduous, rami circitricibus foliorum declapsorum rotundatus notati, utrique glaberrimis, nerves laterabilis, supra prominulis, 2-3 paribus e costa angelo 60 degrees abscuntibus et nervo marginali a margine 0.3-0.6 cm. distante conjunctis. Pedunculo brevi gracilis axillari cir. 0.4 cm. longis. Pedicellis gracillimis, filiformibus glabris, strictis, teretibus 1.5 cm. longis. Floribus cir. 0.1 cm. diametro glabris. Calycis segmentis ovatus obtusiusculis, glabris, ligulea praesentia. Corolla 5-lobata infra medium. Coronae foliatus horizontalibus superne anguste ellipticus, apice anteriore et posteriore acutis, extus brevilobis, medio gibbo lineari brevior longitudinaliter donato, subtus longitudinaliter foveolata, brevicollum.

This species has a very distinctive leaf with venation similar to *H. erythrostemma* Kerr with looping inner pairs anastomosing. The calyx scales are broadly rounded with obtuse apices, ligules are present at their union. The crown is essentially horizontal but slopes outward slightly and is bi-fid and acute at the outer apex. The scales are rather narrow, longitudinally ridged above and fully channeled below. The anther appendages slightly exceed the inner scale lobe. The staminal column is short to medium. This species has been compared to *H. incrassata* Warburg from which it differs in having leaves with acuminate leaf bases as opposed to *H. incrassata*'s rounded to subcordate bases. It differs in the sepals not having cilia and its more narrowly elliptic corona lobes, with its longitudinal ridge extending from apex to apex, whereas *H. incrassata* ends at an umbo toward the inner lobe. Their outer lobe apices differ also.

I have retained Schlechter's area name of *H. palawanica*.

Tracings from Schlechter's *H. palawanica* sheet. Collected by F.W. Foxworthy May 1906 Palawan Is. Philippines #834 By Dale Kloppenburg 1990



Calyx & Ovaries



Sepal

Flower Parts
Enlarged



Outer

Corolla



Inner



Corona



Top



Bottom



Pollinaria

Hoya paziae Kloppenburg sp. nov.

Type sheet #5618 Elmer D. Merrill found in mossy forest at 900 m. altitude on Mt. Halcon, Mindoro, Philippines, November 1906. Berlin (B) Holotypus. This is Schlechter's unpublished *Hoya eugeniodes*. ex spec.

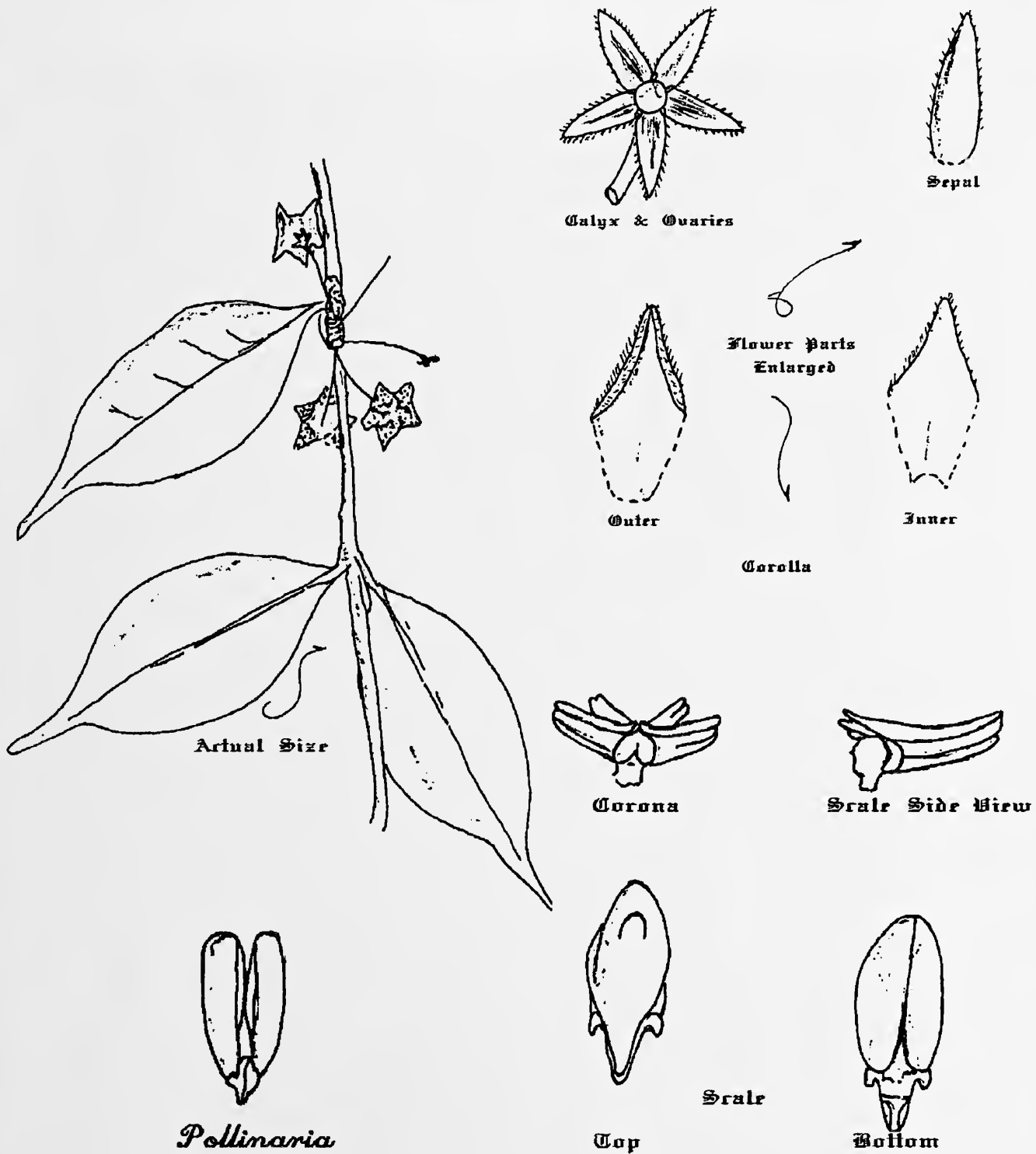
Ephiphytica vel teresta, pauciramosa, ramis caulibusque teretibus glabris, flexuosis, bene foliatus; foliis erecto-patentibus breviter petiolaris ellipticus vel obtusus cum acumine glabris, lucidis, textura tenuiter coriaceis, 6-7 cm. longis, infra medium 2.5-3 cm. latis; internodia cir. 4.5 cm. longa; floribus in umbellis paucifloris albis cum centrum purpurescens, sine odoratus; pedicellis filiformis, teretibus, glabris cir. 1-5-2 cm. longis, terete; calysis segmentis linearis, anguste oblongatus, margine ciliatis, ligulae praesentia. Corolla rotata cir. 1.4-1.6 cm. diametiente, usque infra medium 5 lobata, margo retrocurvatus et ciliatus, extus glabra, intus farinose papilose; coronae faliois carnosae subplanis, oblongo-ovatus, segmenta interiora contiguus, anguste prolongatus, subtus sulcatis, apice posteriore obtusissima, latera cum bicrista longitudinalis, anthera apicem anteriorum foliali haud excedente.

This species is near *H. odorata* Schlechter but differs in its more lengthened leaf apex, larger longer leaves, odorless flowers with purplish centers, ciliation on the corolla edges and turned under lobes to form a sharp pointed corolla apex, by its more narrowly linear calyx lobes; more narrowly elongated inner corona lobes, fully channeled below without interior side lobes, its blunt outer apex and two side crests, a single umbo near the outer apex rather than an ornate longitudinal hump.

This *Hoya* species is named for peace, the elusive desire most of us wish for in relations between nations, within nations, with our neighbors and with our friends. Most of all we wish peace to prevail in our individual relationships, and finally we strive for peace within ourselves. I have named this species for my wife Paz, named for peace, who I feel exemplifies this quality within her life.

Dale Kloppenburg

Tracings from Schlechter's *H. eugenioides* sheet collected by Elmer D. Merrill Nov. 1906 at Halcon, Mindoro, Philippines # 5618 By Dale Kloppenburg 1990





FRATERNA

Official bulletin for
"International Hoya Association"
4th Quarter 1990



Epiphyllum caudatum

INTERNATIONAL HOYA ASSOCIATION

(Formerly Hoya Society-West Coast)

P.O. Box 5130
Central Point, OR 97502
A Non-Profit Organization
Bulletin published quarterly.

Present rates for a 1 year membership, which includes our quarterly publication are \$12.00 per year, \$15.00 per year overseas. All overseas mail is sent by airmail.

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May 15 for the June issue
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November 15 for the December issue

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Back Issues

We have all back issues of our newsletter available at \$2.00 per issue, \$3.00 per issue shipped airmail overseas. There were thirteen issues published, however March-April 1988 was our first issue, and was made up for our membership drive. It is free! and will be sent with all orders for back issues. Because of the extra pages of our new publication "Fraterna", we must, out of necessity, increase our prices for back issues of "Fraterna" to \$3.00 per issue, \$4.00 per issue shipped airmail overseas.

Jackets

Remember, we have some very beautiful jackets available with our 'International Hoya Association' emblem emblazed across the back. These are wonderfully warm, fully lined nylon jackets in a dozen gorgeous colors. We also have tee shirts, and some of the girls are even sporting sweat shirts with our emblem. Colleen Christian is in charge of all jacket and tee shirt orders. Colleen informed me that our price on the jackets has been increased by \$1.50 by the manufacturer, so please write for the latest prices before sending your money. Colleen Christian, 260 Greanleaf, Eugene, Or. 97404

Presidents Message

It's hard to believe that it is December already. The year has passed quickly; as years have a habit of doing when all is running smooth and everyone is happy.

I want to extend a warm welcome to all of our new members including seventeen Botanical Garden libraries who have joined our group. It is gratifying to know that all the hard work that has gone into making our organization a success has not passed unnoticed by the professionals in our field.

I want to thank Constance Cole of Lomita, Calif. for supplying us with several original drawings for the covers of "Fraterna". As a tribute to all of our friends and members in the Epiphyllum Societies, we are

featuring, this month, a sketch of a lovely Epiphyllum drawn for us by Connie.

I would also like to give a special thank you to Ruth Grenier of Oregon, who has single handedly, brought us eighteen new members from the Portland, Oregon area.

I want to thank Ann Wayman, who's dedication and hard work have helped to put me in close touch with some of the top professionals in the world of botany, and I want to thank Joyce Blumenstock who has kept our Round Robins moving smoothly.

Every member of IHA plays an important part in each of our lives. As the year draws to a close, I hold precious memories and warm thoughts for you all.

Dale Kloppenburg

IHA, SAN DIEGO GROUP

Meeting Notes

June 24th, 1990

The third meeting of the newly formed SAN DIEGO HOYA GROUP met on Sunday, June 24, 1990 at the home of Lina and Dieter Paul. Lina is one of the members on our Board of Directors and is the spearhead behind the formation of this exciting group in Southern California. Guest speakers included: Ann Wayman, Secretary/Treasurer of IHA, and Editor of "Fraterna" our official quarterly publication; Ted Green, owner of Green Plant Research, a hoyo nursery in Hawaii; and Dale Kloppenburg, president of IHA and owner of Hill ~ N ~ Dale nursery in Fresno, Calif. The complete list of the 39 signed participants includes the following:

Jeanne Beck (Coronado), Eleanor Calkins (Escondido), Bob & Carol Causey (Hawthorne), Jean Costanzo (Encinitas), Colleen Christian (Eugene, OR), Chuck Everson (Vista), Ted Green (Kaaawa, HI), Bob & Helen Gushue (San Diego), Maud Hamilton (Escondido), Ben Hardy (Santee), Michael Kartuz (Vista), Marc S. Kelley (Rocky Point, NC), Douglas Kicak (Escondido), Dale & Paz Kloppenburg (Fresno), David Jones (Lakewood), Krista Landrum (Mira Loma), Margaret Oberg (Los Angeles), Dieter & Lina Paul (Escondido), Curt Pederson (Poway), Rosemary Peterson (Long Beach), Tony & Erna Princiotta (Santa Monica), Henry & Elsie Raphael (San Diego), John Scoville (San Jose), Mario & Diane Sharp (San Diego), Margie Stone (Eugene, OR), Lois

Tripp (Encinitas), Henry Varney (Santa Monica), William De Vean (San Diego), Jim & Ann Wayman (Central Point, OR), Francis Wilkes (San Diego), and Jerry Williams (Vista).

Chuck Everson, assisting Lina Paul, made a few introductory comments and introduced Ann Wayman. Ann gave a short history of IHA (formerly HS-WC) and stated our membership of approximately 200 stateside and a dozen more overseas. Not a bad membership in less than two years of operation. The popular hoyas in Oregon included *carcosa* and *australis* but *bella* was the best seller. Grower experiments in cultivars and hybrids were mentioned as things to do in the pod producing areas. Ann stated that we can anticipate four color pictures per quarterly issue of *Fraterna*, as long as the budget permits. The Oregon local group meets the 1st Saturday of each month and an invitation was extended to all members.

Dale Kloppenburg had some kind words to say about our growing membership and stressed the necessity of input from members. We need articles on hoyas, growing tips, local area considerations, feeding, watering, indoor/outdoor facilities, and building/wiring notes. Members are invited to submit articles to Ann directly or to other officers and board members for help and expertise. It was pointed out that criticism holds no ground in IHA, as friendly suggestions and helpful hints are the rule. Dale said none of our members should ever be afraid to submit a gathering of our

thoughts on any specific subject. Our members would like to hear from you just like you would like to hear from them.

Dale also mentioned some of his recent work in Philippine hoyas. He told us about his camaraderie with Ted Green, growing up together, attending school, and all.

Lina Paul introduced Ted Green and Ted continued the times he and Dale spent together, in school, traipsing around the world collecting hoyas and other plants. Ted mentioned some recent trips that included Borneo, Thailand, The Philippines, and even Holland. He mentioned his disappointment in not finding the large leafed *H. sp. Diversifolia* Type B in the Thailand/Burma area where the conditions appear so advantageous for it. Cuttings from Holland? It appears that the Dutch are great in producing marketable items and hoyas might be another hit of theirs. Ted says we will be hearing more from them in the future.

Ted told of the "sunday Market" concept practiced in Bangkok, Thailand where large quantities of orchids, hoyas, and other tropicals are hauled in and sold to any and all buyers in lots. What isn't sold is pushed aside to rot. Certificates for bringing specimens into the US are getting harder and harder to come by, but this practice still goes on destroying tropical regions.

The wet/dry conditions of the Doi Sutiff mountain areas of Southern Thailand are ideal for proliferation of specific hoyas species including *H. longifolia*, *H. engleriana*, and *Dischidia singularis*. A national park there has been frequented by Dr. Kerr and has an unusual custom. It seems like the ladies there believe that plants belong to "someone" so a price of 50 cents is levied on each. The procedure for sending plants out is complicated and Ted reviewed certain conditions of no insects or dirt on the roots, no grass, dual permits, one general and the other specific, and the after 60 day quarantine rent. Collecting hoyas in their native habitat is not for the unadventurous!

Ted recently collected *H. pruinosa* on the Isle of Palawan, not the Papua, New Guinea of its origin, after its absence for the last 87 years. It looked more like a *Dischidia* than a hoyas but Ted says it has a very distinct, although small, hoyas flower.

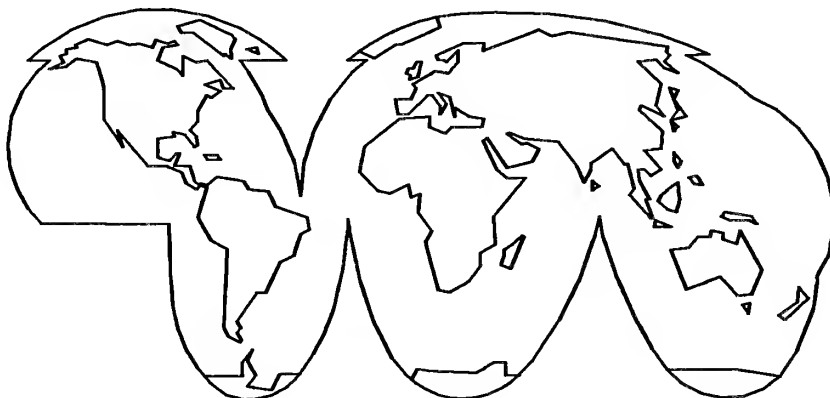
It was nice to have the attendance of five commercial hoyas growers with Chuck Everson and Jerry Williams of Rainbow Gardens, Ted Green of Green Plant Research, Michael Kartuz of Kartuz Greenhouse, and Dale Kloppenburg of Hill n Dale. Another plus was the nine new members that signed up. Everyone enjoyed the pleasant atmosphere and the generous servings of hot main dishes and cold desserts, complete with various beverages. There was also a large response by members to bring rooted or unrooted cuttings for the raffle. Everyone left with a prized hoyas. Ted Green brought some special (unusual & rare) cuttings from his nursery for sale at the meeting, including *H. pruinosa*.

It was a great meeting and I know all of us are anxiously waiting for the next one. Chuck mentioned the need for a regular meeting place that could accommodate the growing number of members, friends, and interested flower enthusiasts. The next meeting will be held at Rainbow Gardens on September 30, 1990. Meeting will begin at 1:00 PM. All are invited. For more information, contact Chuck Everson at Rainbow Gardens Nursery, 1444 E. Taylor Street, Vista, Calif. 92084, (619) 758-4290.

John Scoville, Chuck Everson assisting

Editors note

These meeting notes from the June 24th. meeting in San Diego were intended for our 3rd quarter publication of "Fraterna". They were accidentally left out, and I apologize. I haven't received the notes from the September meeting but they will be printed in a future issue when I receive them. A.W.



THE LARGE WHITE HOYA SPECIES OF PAPUA/NEW GUINEA

David Liddle P.O. Box 794 Mareeba 4880

The large white Hoya species from the island of New Guinea have long been sought after and grown by Hoya enthusiasts. The four species involved come from two sections and one is yet to be determined or described. The confusion as to the identity of these plants has been widespread. I have been fortunate to acquire all four species and following some investigation of sheets at the Queensland Herbarium have drawn the following conclusions as to their identity.

PTEROSTELMA SECTION

Hoya calycina, Schltr.

This is the smallest of the four in flower size with a corolla diameter of around 20mm. The color is white with an amount of red radiating from under the corona. It differs from the other members of the PNG pterostelma section by having comparatively deeply divided corolla lobes and an upright umble which does not droop as do other PNG members of the section. Pedicels are comparatively thinner although the same length as the others, and the peduncle has the same dimensions as the others. It is available as Hoya sp. USDA 354236.

Hoya albiflora, Blume

This Hoya is like no other and once seen in or out of bloom it is easily recognized. The leaves while being covered with soft hairs as the others are much narrower and tend to hang almost vertically. The flowers are white with no red under the corona but green, they have a diameter of about 35mm but never fully open and hang like bells. The calyx is extremely large and the lobes are quite narrow. The species is available as Hoya sp. 56/79 or IML299.

Hoya sp.

This is the plant universally grown as New Guinea White and is likely to be undescribed. It has large highly scented, 50mm diameter white flowers with some red under the corona. Everything about this plant is large for the genus. The leaves are about 20cm long by 12cm wide but can be larger and is covered with soft hairs. It differs from H. albiflora, Bl. in habit, leaf shape, calyx size and shape and flower shape. It is much larger than H. calycina, Schltr. and does not have as deeply divided corolla lobes. This plant is available as New Guinea White, and Hoya sp. USDA 354244.

ERIOSTEMMA SECTION

Hoya coronaria, Blume

This is a densely hairy plant and an obvious member of the Eriostemma section. The leaves and flowers are thick and fleshy and are not as fine as the previous species. The flower color is not the clear white of the pterostelma section plants but more a yellowish white, there is red spotting on the corolla. F.M. Bailey erroneously described a sub-species of Hoya coronaria from PNG in 1898. An examination of the holotype at Queensland Herbarium revealed it to be Hoya gigas Schltr. Hoya coronaria Bl. does occur

in PNG as collections by Brass (13465) in 1939, and Millar (NGF12115) in 1953 revealed. The illustration used is from Rintz.

As a guide to cultivation it should be remembered that the pterostelma section plants grow around an altitude of 900 metres or 3000 feet in plantations and closed forest situations. This section of plants are more tolerant of cool temperatures than *Hoya coronaria* which is a lowland species seldom being found above 300 metres or 1000 feet. A mention is made in the literature of its occurrence in mangrove forests and coastal swamps in its range and so requires warm humid growing conditions.

KEY TO FIGURES

fig. 1 Some collection locations:

Hoya calycina *

Hoya albiflora ^

Hoya sp. o

Hoya coronaria #

fig. 2 Hoya coronaria, Bl. from Rintz

fig. 3 Hoya calycina, Schltr.

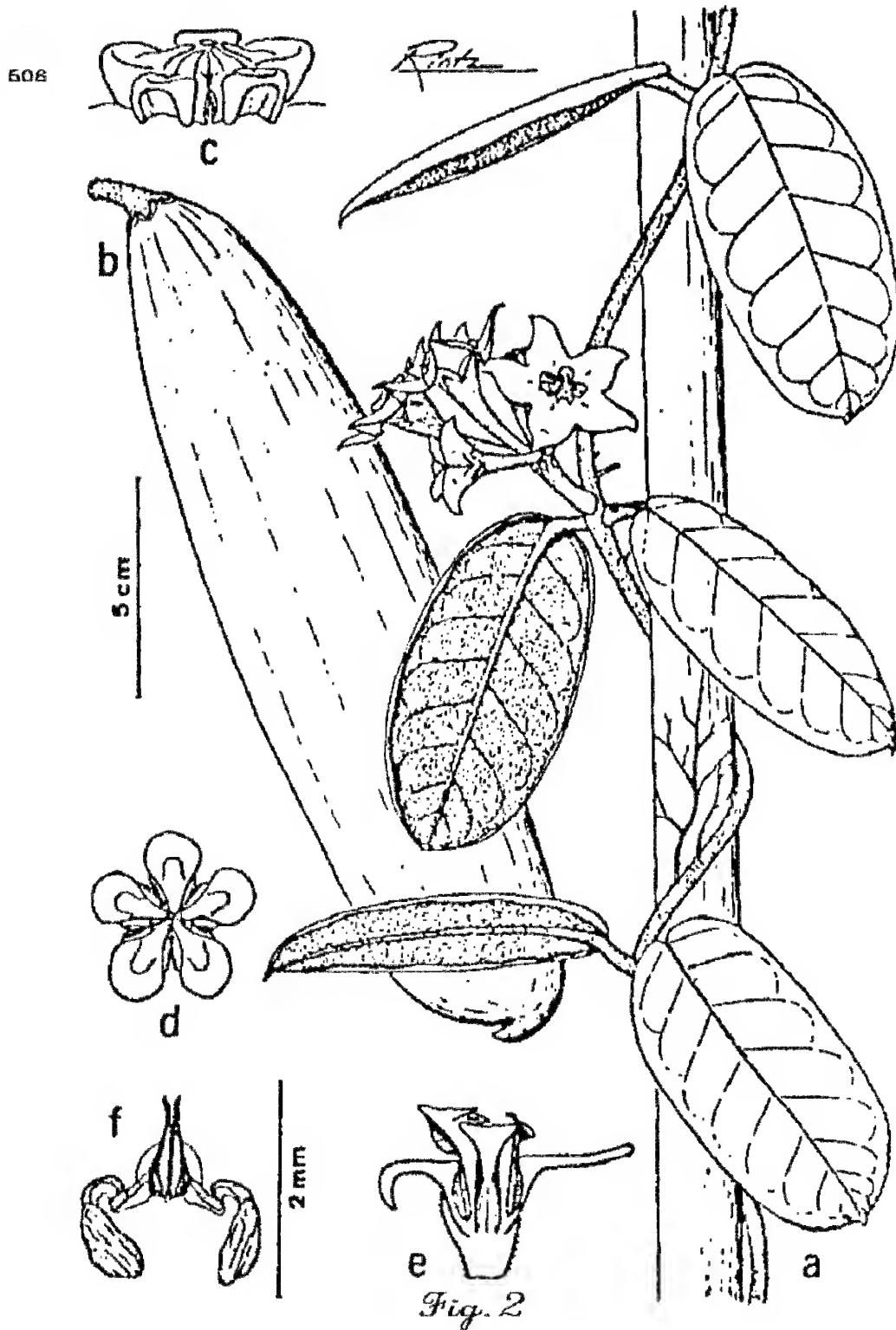
fig. 4 Hoya albiflora, Bl.

fig. 5 Hoya sp.



Fig. 20. *Hoya coronaria* Bl. a) habit; b) fruit; c) corona in side view; d) corona in top view; e) flower in median section; f) twin pollinia. From a living plant.

Malayan Nature Journal Vol 30, (3/4) page 506, Sept./Nov. 1978





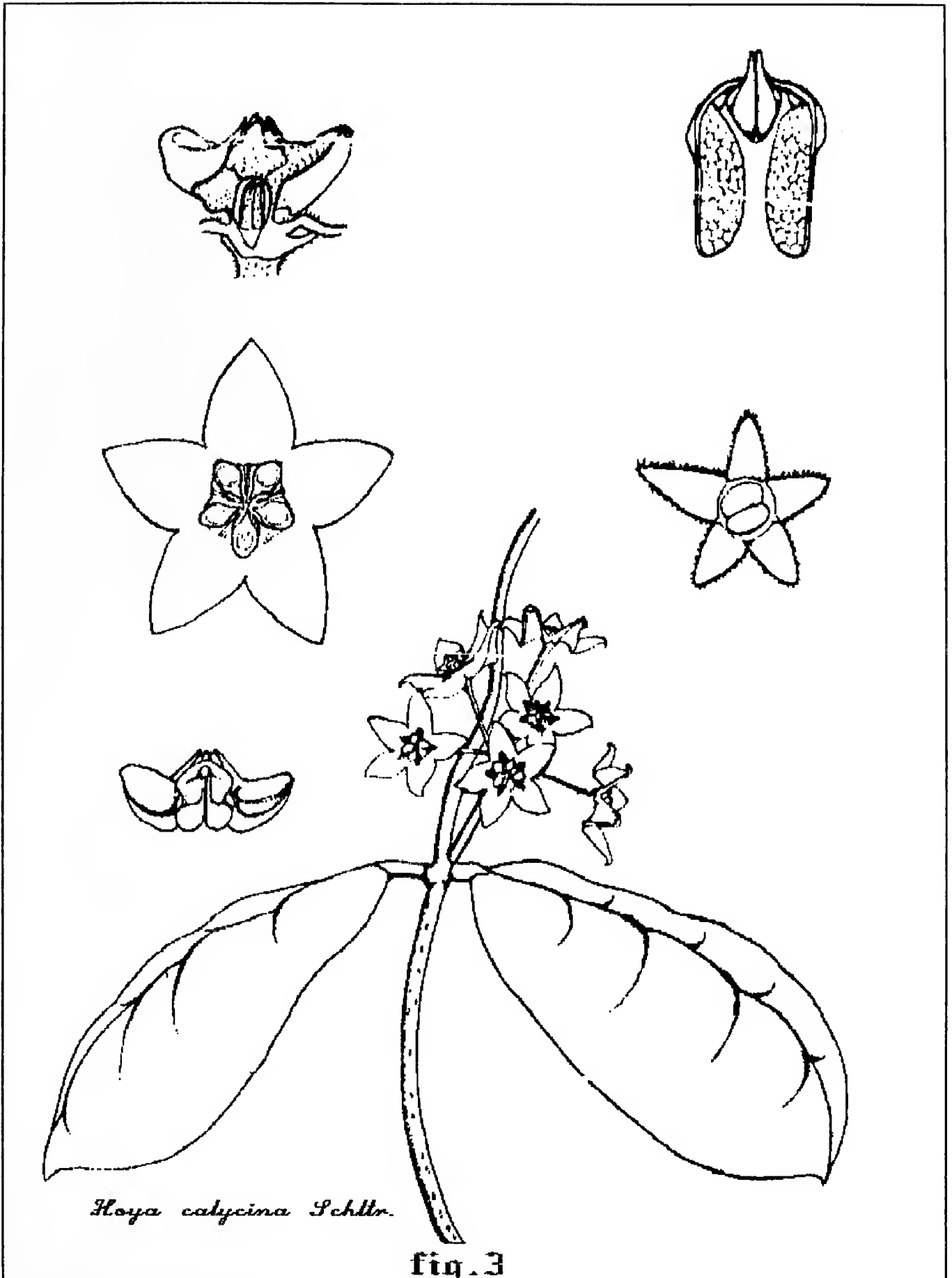
Hoya calycina, Schltr.

Many hoya collectors own the lovely, velvet foliated hoya species from Papua, New Guinea known only as USDA #354236. What this plant looked like in bloom, has remained a mystery for many of us. In August of this year, Colleen Christian brought a huge plant in full bloom to our monthly meeting in Central Point, Oregon.

There were 24 flowers on the umbel in this picture. The flowers were a full inch or more in diameter, and faced upright like a bouquet, rather than drooping. The white corolla is a beautiful, sparkling, sugar white. The deep red under the corona, makes a startling contrast. Extremely fragrant; with an overpowering scent of honey.

Planted in most any fast draining potting mix and allowed an abundance of bright light, this hoya will quickly grow into a very large plant. It forms many buds that will dry up and drop off before finally settling down to bloom as a mature plant. Some early morning sun and a fertilizer high in phosphorous will help to bring out blooms.

David Liddle, one of our major collectors and co-author of several books on hoyas has determined through investigation of herbarium sheets at Queensland Herbarium, and comparison with live material, that this plant we know as USDA #354236 is *H. calycina*, Schltr.



Hoya calycina Schltr.

fig. 3

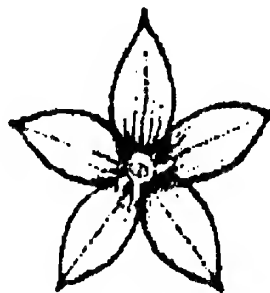


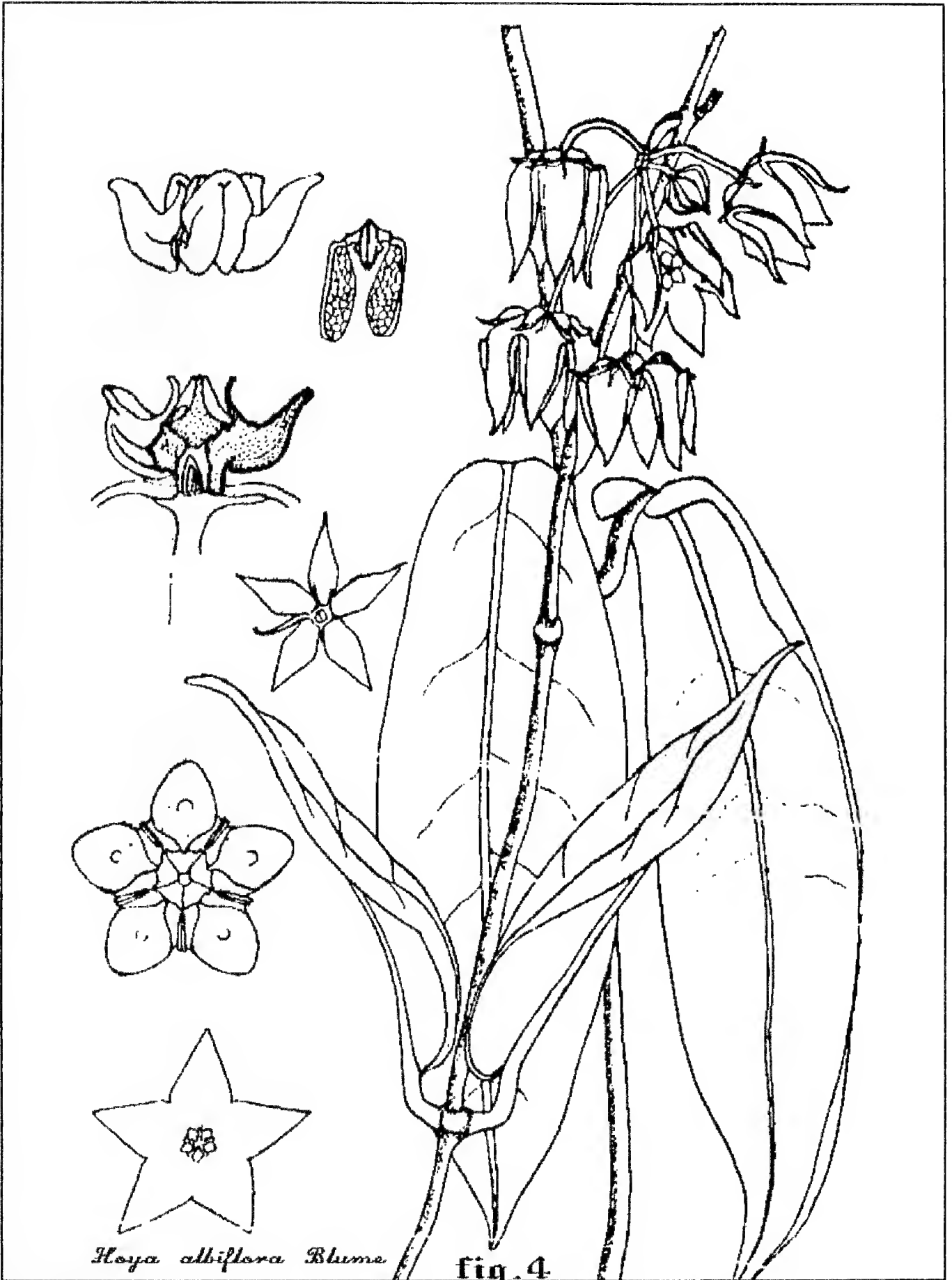
Back View of *H. sp.* WMZ

A perfect example of the huge calyx of hoyas in the *Pterostelma* section is displayed here on the plant I know as WMZ. In its bud stage, this large calyx completely covers the developing flower so that one would think it is the tightly closed corolla. As it begins to open, what appears to be a second, tightly closed corolla is revealed. This is the true corolla, which now begins to enlarge so dramatically that it literally bursts open within four or five days.

The texture of these flowers are twice as thick and heavy as most other hoyas, and last in perfect condition for ten to fifteen days before finally dropping off. The peduncle is very short, and seldom reaches more than an inch in length.

The dark red rim that edges the calyx of this hoya can just barely be seen in this photo.





Hoya albiflora Blume

fig. 4

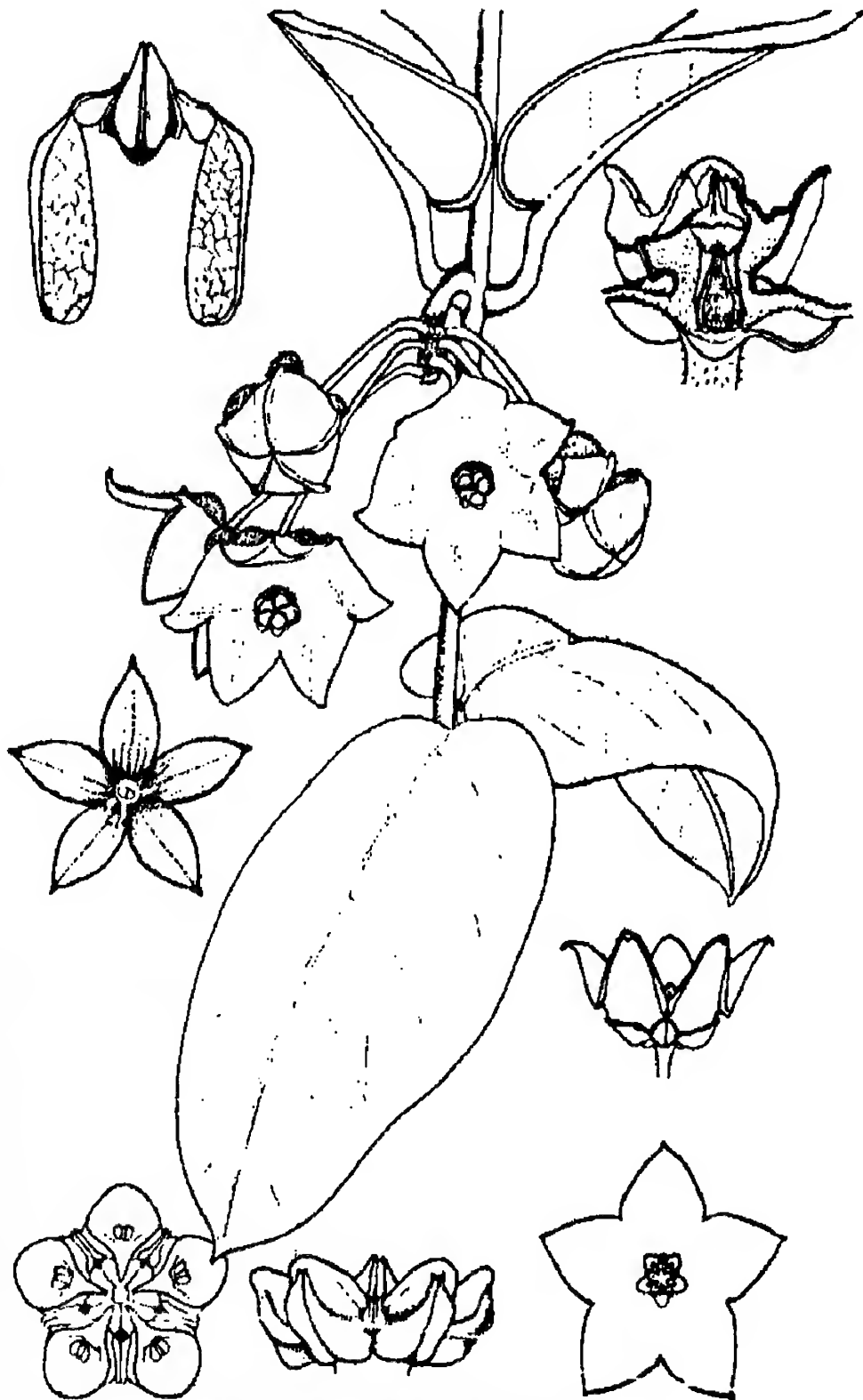
Hoya sp. of the Pterostelma Section

This hoya is known by many collectors in the United States as WMZ, named by Tony Jackson of the Welch Mountain Zoo.

The largest and fuzziest of the group of white New Guinea species, and certainly one of the most appealing. The identity of this particular hoya species has long been debated with no conclusions made as to its true identity. As David Liddle states in his article on page 4 of this issue, it has possibly never been described in the literature.

David feels that this species and the plant we know as USDA #354244, also as New Guinea white are one and the same. If this is true, the plant that I purchased as New Guinea white is something else entirely and actually resembles David's line drawing of *H. albaflora* Blume. Unfortunately my plant did not bloom this year so I didn't get any pictures. It is, however, something to stir our imagination and a good subject for debate.





An unidentified Hoya species

fig. 5

H. sp. #F-484

Collected in Kuching Borneo, this small growing hoya is a real gem. It displays a neat habit, with glossy, green foliage that makes a beautiful hanging basket. Under my conditions, it has never grown out of bounds or had vines that strayed into neighboring pots. The leaves are small to medium, about 2" long by 1 1/4" wide with a rather sharp pointed apex. Although not particularly showy, the tiny, 1/4" flowers are delicate and beautiful. The outer corolla is normally an off/white or buff color. As it opens fully, the petals reflex, or roll back to reveal long, silky, white hairs on the inner corolla. The corona lobes are yellow with a bit of pink or rose underneath. Some people have told me they cannot detect much of a fragrance in these flowers. Between midnight and 5:00 A.M., or on a very humid day, I can detect a very heady scent of allspice and citrus, especially if it has several umbels open at once.

The only problems I have ever had with this species, is that, for me, it is particularly sensitive to cold, and objects quite noticeably if the temperature drops much below 60 degrees. And, aphids absolutely love it!. I had some trouble a while back with sooty mold developing from the excess honeydew being given off by the aphids. I finally discovered, that a dog flea collar cut into 1" pieces and one or two strips placed on top of the soil would keep the aphids away. The strips need to be replaced every 6 to 8 weeks. I can't remember ever seeing a mealie bug on this species, even when plants right next to it had them.

Plant in a loose, fast draining mix, and let dry out slightly between waterings. Keep a little on the dry side in winter, and it will take the cold better.

Ann Wayman



Questions & Answers

Question: I have a lot of hoyas with only Sp. names or numbers on them, (List enclosed). Can you tell me what they are? E.K.W.

Answer: I am not familiar with the numbers following the Sp. on the list that was sent. As far as I know, the Sp. on a label means only that it is an unidentified species; which has been assigned a number. Many of these Sp. plants will have a location name such as H. Sp. India, H. sp. Philippines, H. sp. Japan etc. Some of these plants have been identified in the past several years, but without knowing where these were purchased, I have no way of telling what they are, as every dealer has their own numbering or labeling system. Some good close up pictures of both flowers and foliage would be a help, (flowers in one picture, foliage in another) though not a guarantee. If they are plants that are as yet unidentified, I could only tell you the name or number that I know them by.

Question: This past summer I had a terrible problem with mealy bugs. Out of desperation I tried several systemics but lost most of my plants in the process. Is there any safe systemics that I can use on my hoyas? L.G.

Answer: I have never found any that weren't safe when used according to directions. You state that you tried several. If these "several" were used together or even a few weeks apart, the different chemicals in each may have reacted against the other and caused the damage, also watering a chemical or anything else into a plant that doesn't need water, is the surest way I know of to kill plants.

Question: Can you tell me anything about the hoya Grey Lady? I saw one at a friends house and fell in love with it. My friend has never seen it in flower, and doesn't want to make any cuttings until after it blooms. Do you know where I can get one?. C.G.

Answer: I have heard of this hoya, and very recently acquired a small cutting from a friend. I had the same reaction that you did, I fell in love with the foliage. It has the most stunning markings I have ever seen on any hoya, and is marbled with grey, and a green so dark that it appears almost black, against an olive green leaf. I'm fairly certain that it's an H. pubicalyx cultivar, and as such I would expect the flower to be similar to the other flowers in that species, which can be pink, red, purple or so blood red that they look black. The hoya we know as Red Buttons and the Pink Silver vine belong to this species. As a rule these are all good bloomers and the flowers are gorgeous. So far I haven't seen it listed by any of the dealers, but may have news of it's availability soon.

Question: I recently became a member of IHA and sent for your picture sets. I never knew there were so many hoyas!. These are beautiful pictures of flowers but I was a little disappointed that so little of the foliage was visible because I wanted to use them to help identify some hoyas that I have without labels. Is there a possibility that you will at some future date have pictures showing flowers and foliage together? J.S.

Answer: The ideal picture of a hoya, would of course, be a close up of an umbel of flowers showing all the details that make this such a charming and lovely flower, and at the same time show all the details of the leaf structure such as veining, any fuzziness, or a smooth waxy look, how the leaf is joined at the petiole (leaf stem) color, variegation, growth habit, etc. A macro lens works very much like a high powered microscope, in that you can focus in on an aphids eye lashes but in order to see his feet you have to reset the eye piece with the focus knob, or change the lens setting so that it moves away slightly. You now see the entire insect but the close up detail is lost and you can no longer see any eye lashes. This is an exaggerated example, and I don't know if aphids even have eye lashes, but the principle is the same. Anytime you focus on a central object a few inches away with a close-up lens such as a macro, you can capture every detail of that central object on film. In order to get some of the foliage into the picture, you must move the camera farther away. By moving away to get more of the subject into the frame, you lose the advantage of using a macro lens because you can no longer see close-up detail. I take at least six shots of every flower that I photograph, from different angles, with different lighting, and closer or farther away, then try to pick the best of the lot for our picture series, or for the pages of "Fraterna". Maybe one day, some genius will invent a lens that can do justice to both flower and foliage. If that happens, I will be the first in line to purchase one. In the meantime I'm getting some very good results with the video camera, and can move from full frames of foliage and zoom in on the flowers with the built-in macro lens. We hope to have these video films available soon.

I'm sending your address to a long time hoya grower who has a large collection of hoyas, and lives very close to you. I think she may be of more help in trying to identify your plants than a picture would be.

Editors Note

It's getting close to the new year, and tax time is approaching fast. Our name change did not effect our tax exempt status. Remember to include any gifts or contributions made to Hoya Society-West Coast, or International Hoya Association during 1990, on your tax return. they are deductible to you as provided in section 170 of the IRS code. Bequests, legacies, devises, transfers, or gifts are also deductible for Federal estate and gift tax purposes if they meet the applicable provisions of code sections 2055, 2106, and 2522.

A.W.

Disease

Hoyas in general are subject to few diseases. Well grown plants, given the proper environment, are for the most part disease free. Under stress such as extremely moist (high humidity) conditions for extended periods of time hoyas are subject to fungus diseases. The fungus *Phomopsis* attacks hoyas as well as the fungus anthracnosis, though the occurrences are so rare and isolated as to be insignificant. Seedling plants are subject to the damp-off organisms which girdle the tender shoot at the soil line, this can be prevented or controlled with the use of a systemic fungicide like Benomyl or copper based fungicides used according to directions.

It is a known fact that when large populations of one plant are grown in close proximity, it is more likely that an opportunistic pest will attack. So far we have not seen many common plant diseases in hoyas, probably because of the limited number of very large hoyas collections. It is assumed that eventually we will face the invasion of plant viruses. Cultural methods can help protect us from this blind side attack. Always use sterile potting material, and be sure pots are new, or scrubbed thoroughly and rinsed in a 10% solution of Clorox if old pots are to be reused. Rinse thoroughly in clear water to remove any chlorine left behind. Although many people prefer the old fashioned clay pot, the newer plastics are ideal, in that the smooth non-porous surfaces lend themselves so well to sterilization and reuse. As Clorox tends to rust steel, Pruning and cutting instruments should be dipped into a Lysol solution between each cut to prevent spreading a viral infection from one plant to another. Most of us will not go to such trouble but if you suspect a virus, the above precautions will become a necessity. As with orchids, a virus infected plant is best destroyed. Even a suspicious plant should be isolated. Viruses usually indicate their presence as a yellowish mottling of an otherwise green leaf, or a fading of the green along the veins. Zinc and iron deficiency may also cause this latter pattern in leaves.

Insects

Insects are the greater problem with hoyas. Aphids are usually the most prevalent pest, and several species of aphid are fond of hoyas. Different areas will have different aphids to contend with. The green peach aphid, oat bird cherry aphid and the yellow oleander aphid are a few of the more common. You can find aphids of one kind or another, on just about every plant in your yard. You will also find them in your greenhouse if they have an easy way in. This can be by exhaust fans that pull them in from outside, they can be brought in on your clothes, or they can get in through the tiniest

crack in a screened in window. Aphids that are already in your greenhouse reproduce by laying eggs in the fall that overwinter in the rafters of your greenhouse, in material in your propagating bench, and possibly even in your pots. These eggs hatch out in the spring, all females, already pregnant and ready to produce offspring by the millions. Although the most persistent pest, they are also the easiest to kill. Aphids prefer the new growth, stem terminals and the undersides of tender new foliage. Crush them by hand, or dab them with an alcohol soaked cotton swab. Diluted alcohol in a spray bottle will cover more area if you have a lot of affected plants. If the situation gets out of hand, you may have to resort to an insecticide such as Malathion or Cygon used according to directions. A second or even third application may be necessary. In many areas of our country it is the mealy bug that growers will encounter most often, and always seem to be present to some extent. Mealy bugs look like small white woolly globs of cotton. They seem to prefer the pubescent plant types, but are by no means limited to these hoyas. Favored places for mealy bugs to congregate and lay their eggs, are in protected areas such as in leaf axils, and where stems cross or twine together. In the case of the indian rope hoyas they nest deep within the twisted leaves and are almost impossible to eradicate. The young are so small they can easily be overlooked. Treatment for this pest is the same as for aphids. Be ever watchful for their presence, and keep after them or they will get ahead of you.

Although we don't see them quite as often as mealy bug, scale is another frequent visitor to our hoyas. Usually tan to dark brown in color and dome shaped, these insects look more like a blister than an insect. A few days after hatching, or in many cases, live birth, they attach themselves to the stems or leaves of plants, lose their eyes and legs, and remain in one spot their entire life. Even on close inspection they look as if they were part of the plant itself. Scale is extremely hard to control if it gets a foothold on your plants. Mainly because the babies, or crawlers as they are called, will run underneath the mother who has a hollowed out depression on the underside of her abdomen, at the first sign of danger. Even if the mother dies these babies are well protected, as are any eggs that have not as yet hatched. This is a situation that definitely needs the use of an insecticide.

Outdoors

It is a futile exercise to try to control insects and pests inside a greenhouse without giving attention to what surrounds it. It is usually these outdoor areas that harbor the initial pests that infest our plants. Lots of

weeds close to the greenhouse could mean scores of grasshoppers and crickets mowing down your plants. Clean out the weeds and either haul them away or burn them. Berry vines and Ivy make a beautiful setting for a greenhouse, they are also famous hangouts for snails and slugs. I've never known of a slug that wouldn't leave a bed of Ivy to spend a week or two in a nice, moist greenhouse full of hoyas. The destruction they can wreak in one night is frightful. Clear back all vines to six feet or more from your greenhouse. Use metal-dahide based baits and liquids, and use them often to keep the population of these ugly beasts to a minimum. If you find a newly chewed leaf, examine the plant the following evening just after dark. Insects, snails and slugs included, have a biological affinity or preference for the nutrients from the same plant or species once they have fed on it, and will stick to the same food source before moving on.

Other pests you may encounter are rodents, usually mice or rats that will occasionally find their way to our hoyas. A rat can mow down plants with a lust. Any large animal, including dogs and cats, can wreak havoc to precious plants. Act accordingly. Screen off all vents, coolers and other openings so animals do not become entangled or endangered.

It is possible that other insects and diseases may occasionally become a nuisance. In extremely dry conditions (low humidity) Red spider mites and thrips can be a real problem. Spider mites especially, because they do not respond to the usual pesticides, and need a

specific miticide to eradicate them. The chewing mouthparts of spider mites leave a silvery or silver speckles and a very sick look to all plants infested with them. If you are unfamiliar with the symptoms affecting your plants, or need help with finding a particular control method, contact a professional. Most sales people at your local garden center have been hired for the summer and usually don't know anymore about it than you do. Your best bet would be your County agricultural agent or USDA official. As an alternative, almost every garden center in the USA has an "Ortho Problem solver", this is a giant book of plant pests and diseases all illustrated in beautiful color that can help you to pin down what your problem is.

Once you start a control program, make sure you continue long enough to completely solve the problem. It does no good to spray or dip your plants once and then stop the treatment. There is bound to be bugs that you miss, as well as eggs that continue to hatch out to start the next generation.

A word of CAUTION: Be extremely cautious with any insect spray, these are poisons. If at all possible, move your plants outdoors, wear protective clothing and gloves, and always use insecticides at the recommended rates and dilutions.

By Dale Kloppenburg

Plant Names

All plants came into the world without names. In an attempt to communicate and to distinguish one plant from another, man has given each individual plant a name. In the beginning, these names were in the local languages, and were mostly descriptive, Buttercup for instance or Skullcap. Many were descriptive of a use, such as Post Oak. These common names can be misleading, especially to a visitor from another area with a different language. Even among the English speaking countries of the world the term "Post Oak" was used (still is) for many different Oak species. As long as an oak was fairly straight it was considered suitable for posts and thus called a "Post Oak". In the Philippines, our common Portulaca is called Vietnam Rose. Now that's downright confusing!. The usefulness of a "common" name is most useful only in a local context.

These common names applied to plants can be used in our day to day communication with others in our own region, and for the most part cause no great problem. There are no rules or authority to render

judgement on our use of them. We are free to call any blue flower that hangs like a bell a Bluebell. Once we move out of our immediate locality or region this system becomes very confusing. The people 30 miles to the West may call the lupine a Bluebell, which also has tiny, blue, bell shaped flowers.

Considering the vast number of different plants known in the world, estimated at over 300,000, with more being discovered and described daily, it is no wonder that a way had to be found so people around the world could generally agree with the principle by which a name choice was made. Some universal structure or set of rules that all would be willing to follow. This search resulted in "scientific" names controlled by the International Code of Botanical Nomenclature.

What is the difference between a common name and a scientific name? What makes one internationally accepted and the other not?. According to international agreement, all scientific names are to be

written and presented in Latin. Why Latin, a dead language seldom used anymore?. Since Latin is no longer the official language of any country, its very use can cross all international boundaries without any nationalistic discontent. Latin was and still is the perfect apolitical language. Individual Latin words however have evolved to find their way into nearly every western language to a great degree, and in forms most of us do not even recognize.

By trial and error and over much time it was realized by learned men that the most workable naming system would be utilizing two and only two parts for the naming of any plant. The first a generic name, the plant "Genus". The second a specific name which would be applied to an individual kind of plant, the plants "Species" name. When the medical doctor Carl Linne (Linnaeus) formerly applied this "Binomial System" in his book "Species Plantarum" in 1753, the system was confirmed. The International Code of Botanical Nomenclature thus dates from 1 May 1753 and is recognized as the official beginning for "Scientific" plant names. The value of these "Scientific" names lies in the universal acceptance of this "code". The code standardizes the use of the binomial system of nomenclature in Latin as the official, non political, non sectarian language in standard Roman alphabetical letters. Man being what he is, must still use his own judgement in deciding the correctness of names and their application. The correctness of which name goes with which particular plant still requires human judgement. The Code is merely the framework for these judgments. The International Code is still being fine tuned as a set of articles and explanations by which plants are to be named. The latest publication is dated 1988 and was adopted by the 14th International Botanical Congress held in Berlin Germany in July-August 1987.

For in-depth reading on the subject, try your library or bookstore for Taxonomy of Vascular plants by George H.M. Lawrence 1951. Plant Systemics by S.B. Jones and A.E. Luchsinger 1979. A source-Book of Biological Names and Terms by Jaeger may be helpful in understanding the source of names and their meanings.

Dale Kloppenburg

0-A A Bit of Trivia

The name Linnaeus, contrary to frequent supposition, is not a latinized version of Linne, but Linne is a shortened version of Linnaeus, just as Nobel is of Nobelius, Artedi of Arctaedius. Before the eighteenth century many Swedish peasants did not possess family surnames; each added to the baptismal name the genitive of the father's name with the suffix-son (son) or -dotter (daughter) according to sex. Thus Linnaeus's father was Nils Ingemarsson (1674-1733), the son of Ingemar Bengtsson and Ingrid Ingemarsdotter, and grandson of Bengt Ingemarsson and Ingrid Andersdotter. The family possessed a property in Smaland called Linnagard after a big and aged linden tree (Tilia), Linn being a now obsolete Swedish variant of lind. On registering at a university, students had to provide themselves with surnames. Ingrid Ingemarsdotter's two brothers Carl and Sven took the name Tiliander from this tree. Her son Nils Ingemarsson coined for himself the name Linnaeus referring to the same family linden, and her grandson Carl Linnaeus made the name famous.

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William T. Stearn



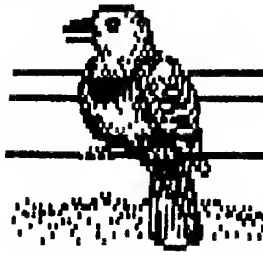
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Robin #1 Dec. 1989, Ann Wayman, OR...Judy, I have written a personal letter to you explaining about getting tags for importing plants from other countries, but for the benefit of the other robin participants that may be curious, I am going to repeat them here.

To order plants from any country outside of the United States including Puerto Rico, (even though it is a commonwealth of the U.S.) you must have an import permit. This permit is free and can be obtained by writing to = U.S. Dept. Of Agriculture = Animal And Plant Health Inspection Service = Federal Center Bldg. = Hyattsville, Maryland 20782. They will send you a form to fill out, 500 or so rules and regulations, a list of all endangered species, and a list of all the plants that are known to harbor certain diseases that will have to be inspected and go into quarantine. Read the instructions thoroughly, many people don't and end up checking the wrong blocks and sending for a general business permit and paying \$70.00 for a permit which is not required unless you are actually making a living selling plants. As soon as they receive your application they will send you a permit with a number on it, and usually about ten import tags with your number on them. As soon as you get these tags, you may order from any nursery in the world that has an export licence. You just send them one or more of your tags with your order (each package must have one tag). You will be charged for a Cites certificate and a phytosanitary inspection.

If you are planning to go to other countries and collect wild plants yourself, or buy them from native collectors, that's another story altogether, and I've heard the "red tape" is unbelievable. You are in essence acting as an exporter from that country, as well as an importer into the U.S., and must comply with all the rules and regulations of each particular country. Our USDA cannot furnish these permits, they can only tell you where to write in the different countries to obtain information. There is also a duty or import tax to be paid on these plants before they are allowed to leave the port of entry, so you must either be there to pick up your plants or hire a broker to act in your behalf. All in all, it's a real pain in the neck and as far as I'm concerned, not worth the effort.

(The following statement was not in the robin letter)

I got a real thrill from ordering from David Liddle in Australia. He collects different clones of the same species from many different areas. Since there is always some variations in the many seeds contained in a seed pod, there is quite often a surprise when his cuttings begin to bloom. I Love It!! Ann Wayman

Robin #3 May 1990, Dale Kloppenburg, Fresno, CA: My wife keeps asking me "Do you need to study on the hoyas, can't you just grow them?". My drive is intense, that is to produce and learn all I can about these plants. Two or three years ago my professor friend at UPLB in the Philippines, Juan Pancho, suggested that I concentrate on the Philippine hoyas. That was good advise as I feel I am getting a good grasp in at least one area.

Robin #3 "Bella Buddies"... Francis Wilkes, San Diego... Paula, since you and Gary both asked about H. Verna Jeanette, I have enclosed a couple of pictures. It looks similar to H. carnososa Tricolor to me, but it does not get any red leaves (perhaps one slightly pink at times). As you can see some leaves are long and narrow while others are wider and short. I like the "frosted" look of the leaves. I cannot find a description of H. Big Red except from Loyce Andrews list. She describes it "having large, solid green leaves felted lightly on both sides. Blooms deep red, velvety upper surface, up to 1 1/2 to 2 inches across each bloom, have counted 34 in one cluster. Beautiful and rare. Give soilless mix or vermiculite. It hates soil, being moved, or fussed over. Needs warmer than some".

Bella Buddies, August 1990, Harriette Schapiro, La Jolla... Out here in California with most hoyas, all but the more cold sensitive ones seem to not mind the temperature fluctuations. I don't start worrying until the night temperature gets under the mid 50's.

Bella Buddies. August 1990, Paula Jordan, North Carolina... Donald made me two big benches outside and I moved all my hoyas out, they seem to love it. H. pachyclada has spurs with buds forming, H. compac-

ta is blooming, everybody looks happy. All my new growth is red with green veins.

Robin #2, May 1990, Ann Wayman, Oregon...At present I have one of the big *H. archboldiana* (red form) in bloom, also a very dark purple *H. megalaster*. *H. finlaysonii* was very disappointing. Foliage as fancy as this should have a flower to match, but no! the flowers were tiny, kind of dirty red/brown, and only lasted one day. I didn't even get a photo, as they were closing when I got home from work. It's possible that they will last longer the next time they bloom. Rita I can't even imagine what secret you heard to get rid of mealy bugs, I think I've tried everything, and most works for awhile, but unless you kill every adult, baby and egg, they will come back. Even if you have them in the neighborhood, they will find their way to your hoyas. The best way I know to not have mealies, is to not grow anything in the milkweed family.

Robin #2, May 1990, Lana Seely, Oregon...My husband has not been able to start my greenhouse yet but I keep reminding him. In fact, I think he wants me to have a greenhouse as much as I want one, so he can see in the bathroom mirror to shave and find a place on the table to put his plate. (The kitchen table is my work area when I can't be outdoors).

Robin #2, August 1990, Joyce Blumenstock, Michigan...Lorraine, I don't think there are any good books on the care and identification of hoyas. As you continue in the robin, you will learn from others mistakes and experiences. Rita, we are still waiting to hear your new approach to killing mealies!

Robin #1, July 1990, John Scoville...You will be hearing of the latest meeting of the San Diego chapter in the coming Fraterna (I am still putting the notes together!). It was quite a success. Lina Paul has quite a reputation for growing nice hoyas and it was a real pleasure to see her plants in outdoor settings. I was remarking about her *H. sp.* India #1 being so beautiful and she said "It has enjoyed it right there for the last four years." That means that it has been hanging there on a tree limb for the last four years, outside. Have you ever seen *H. motoskei* in bloom? I think it is much understated. It is hardy, quite presentable, and has that gorgeous flower. It is nice to have exotic species that can sometimes be hard to grow but I am glad I have some "basics" to enjoy. The old *H. carnososa* \$2.00 cutting is a real joy for me. How about that "lacey" look of *H. lacunosa*? Ever seen an unattractive *H. pubicalyx*? Let's face it; they have pretty leaves, unusual growing traits, and sometimes most attractive blooms. They reward you when you care for them and die when you don't. I love them!

If you would like to become a participant in our round robins, We have several openings at present. drop a card or letter to our robin director.

- Joyce Blumenstock
- 30 Moorland Dr.
- Grosse Point Shores, MI 48236

Notes from New Zealand, September 1987

Mrs. Isabel Regan of Christchurch writes:

"...can someone tell me why my *Hoya* 'polyneura' does not flower. The umbels are there but not very big; the plant itself looks quite healthy. I have taken cuttings for our club and reports I get back indicate they have flowered, so why not mine?."

Members in Auckland who grow 'polyneura' have had no trouble flowering it. It is a cool growing species (possibly the most tolerant of cold of them all). Plants growing in deep shade appear to flower best. If no mites or mealy bugs are present to damage umbels, the most likely cause of non-flowering is that the plant is receiving too much warmth or not enough humidity in the summer months, causing the buds to 'blast' before developing.

Betty Gross writes:

A year has passed since I wrote a letter to you telling you about my new hoyas house, and how I had moved all my hoyas plants out of the glass-house in May into the plastic structure. I thought I would continue today to tell you how the plants grew over that year.

I would say that the double skin has been very worthwhile, raising the temperature by several degrees. We have had a very mild winter up here in Auckland with no frosts at all in my garden. The plants have grown remarkably and, at the moment, it looks like a jungle of hoyas in there. I have been spending several days every three months attending to the plants and it is time again for that attention. Over the winter I have watered on an average of once every ten days, feeding every second time. This seems satisfactory as the plants have not stopped growing. The heater has been in there and switches on at 50 degrees fahrenheit. The larger plants, which I put round the edge to climb up plastic netting, soon reached the top; then I cut the ends of those shoots off because I have to limit their size. The inner plants are growing fast but I will not repot those until they are in full growth again about the end of October-November. During the warm summer months I put Sarlon over the plastic to keep the very bright sun out and most days I had the two doors open

from 10am to 3pm. Sarlon was removed at the end of March.

" The rings which I have used on baskets hung up in the roof area, have worked very well. It is fiddly to tie all the shoots round the rings but well worth the effort. (Incidentally, these rings will be on sale at the convention). When they flower the umbels hang down, so are easy to see. I have used a number of varieties in baskets but find now some are too vigorous for the space I have for them. H. 'cinnamomifolia' is one, also 'Red Buttons', but the more moderate growers are very satisfactory. I have had to remove H. 'cumingiana' from the ring as I found it grew too stiffly to bend round. I now have a headroom problem. I think it will be necessary to lower the path in the middle of the structure so that the taller visitors, including my husband, can walk in comfort.

" Last September I imported a consignment of hoyas plants from North Queensland. They were strong, well-rooted cuttings and had to be potted into 4" pots on arrival. After the quarantine period of 3 months, I found 75% of them needed potting into 6" pots. They have continued to grow well and I am looking forward to seeing the flowers. H. 'archboldiana' was one of the imports. This hoyas was first discovered in New Guinea in 1933, but imports did not reach America until the late 1970's and New Zealand last year, so it is still expensive. It is a near relative of H. 'macgillivrayi' - description of the flower of H. 'archboldiana' is from 1-1 1/3" in diameter in an umbel of 8-12 flowers. Very heavy flowers equal in length, white to rose cup and rose to red lobes. The flowers are night fragrant, sweet and pleasant. I have seen pictures of the flower and it certainly looks outstanding. H. 'affinis' is still with me and growing but I would not call it vigorous. H. 'Gold Star' has the same type of growth. Maybe our temperatures are not warm enough for these two varieties. Would like to know if anyone has flowered these two varieties in New Zealand.

" Mealy bug has not been a lot of trouble in the hoyas house. I have sprayed several times for it, using Orthene, or have hand-brushed meths on the small plants. I find I have to wash the hoyas leaves periodically to remove algae and it is difficult to reach through the netting to clean it.

" H. 'lacunosa' is looking happy. Last winter I lost my plants through regular watering but this winter I learned by my mistakes and have kept the plants very very dry in punge pots.

" The hoyas family continues to interest and fascinate me and I hope to go to North Queensland at the end of September. One of the highlights will be a visit to meet the biggest hoyas grower in Australia and hopefully to see lots of wonderful flowers.

How I Grow Hoyas

Here is my method. It's no set way, just trail and error, and if it works - Viola! Icing on the cake!

We mix our own potting soil of compost, Spahgnum, peat, perlite, and vermiculite, also, leaf mold. Some-time, I toss in a handful of bonemeal, and/or a half cup epsom salts.

When I receive cuttings, or take some from my own, I strip off the bottom leaves, then soak them in water with a few drops of Superthrive overnight. The next day, I dip the end of the cutting in rootone, shaking off the excess, then place it in Gro-Mix, vermiculite, or out own potting soil. I have success with all three.

The pots are set in water and Superthrive to soak until the top of the soil is wet. They are then placed in the greenhouse (depending on the season) or under the lights.

I always fill my watering cans with water when they're empty and let them stand for at least six or eight hours to remove any chlorine, or other substances that are added to our city water. As I fertilize each time I water, I add half the amount called for of either Peter's Blossom Booster, Vaughn's 10-20-30, or Plant-Life.

Winters in Chicago are sometimes dark, and the days are short. The plants in the light garden are fine, but those in the greenhouse don't fare as well. Our best winters for plants and everyone are the cold, clear, sunny with snow-on-the-ground type. The light reflects off the snow.

I keep the greenhouse at 55 to 60 degrees. For humidity, I use a hose with a mister type nozzle, and spray all the plants with it. The orchids are especially appreciative.

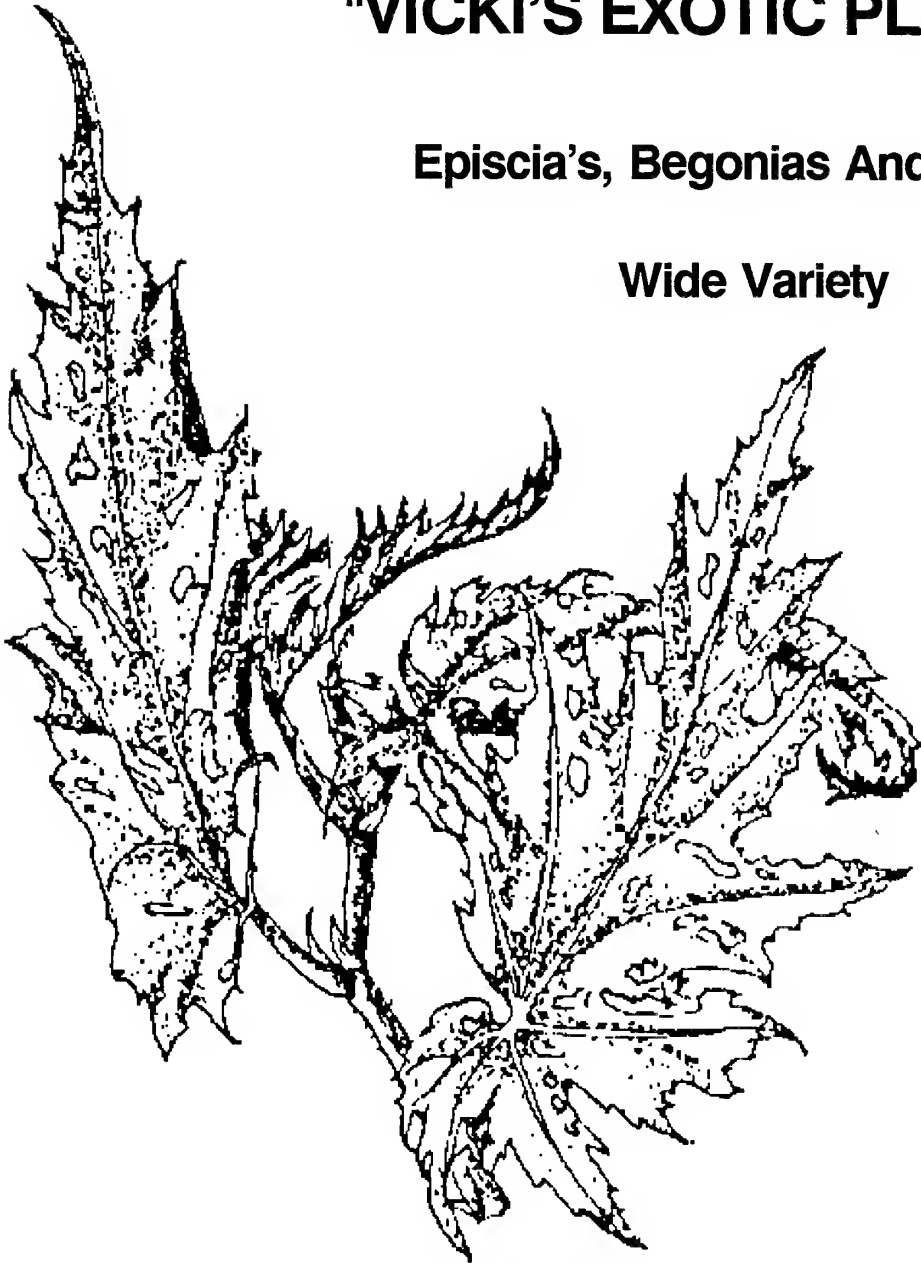
As all inside plants seem to attract mealies, aphids, etc., I spray with alcohol to which a few drops of liquid detergent has been added. Most of the time, this is all I need to do. If I should have a bad infestation, my husband will mix up Safer's Soap, Rotenone, and Pyrethrum with a spreader (so that the spray stays on the plants) and spray for me.

By Jean Spierling

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Information On Advertising

A letter of clarification from the United States Postal Dept. is being printed here for the benefit of present or future advertisers in the bulletins or journals of authorized non-profit organizations.

Dear Ms. Wayman:

Regarding a clarification of the requirements which appear in publication #417 section IV.

Part A of this section refers to "cooperative" mailings. I conclude from reading your letter and the other information you enclosed, that there may be a confusion between "cooperative mailings and advertising in items mailed at the special bulk third-class rates (non-profit.)

Organizations who are authorized to use the special bulk third-class rates may mail only its own material and the authorization may not be loaned to any other organization or person. For an example:

Organization "A" is a nonprofit mailer who has been authorized by the postal service through an application process to mail at the special bulk third-class (nonprofit) rates.

Organization "B" is a nonprofit organization who HAS NOT been authorized to mail at the special bulk third-class (nonprofit) rates.

Organization "C" is a commercial or for profit organization.

Example 1:

Organization "A" may not mail matter belonging to Organization "B" at the nonprofit rates. Such a mailing would be considered a "cooperative" mailing and must be mailed at the regular bulk rates.

Example 2:

Organization "A" has entered a mailing that appears to be their own mailing piece, however, Organization "B" has paid for the cost of the printing. This then becomes a "cooperative" mailing and is not eligible to be mailed at the special third-class (nonprofit) rates but can be mailed at the regular bulk rates.

Example 3:

Organization "A" and Organization "C" are both sponsoring an event. They wish to mail a brochure announcing the event. Even though Organization "A" is authorized to mail at the nonprofit rates, the mailpiece must be mailed at the regular bulk rates because Organization "C" is not an authorized nonprofit mailer.

All three examples above constitute "cooperative" mailing situations.

However, postal regulations do not prohibit authorized nonprofit organization from including "paid advertising" in their own mailpieces which are mailed at the special bulk third-class (nonprofit) rates.

I hope this letter will assist in a better understanding of the difference in requirements concerning "cooperative" mailings and advertising in items mailed at the special bulk-third class (nonprofit) rates.

Manager, Mailing Requirements

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H. multiflora
H. serpens
H. sp. tanna
H. sp. Bangkok #4
H. obovata (Foliage)
H. Globulosa (Foliage)
H. meredithii (Foliage)

Volume 2

H. 'Mini Belle'
H. latifolia
H. sp. Chiange Mai
H. variegata
H. compacta
H. obscura
H. pubicalyx 'Bright one'
H. bella
H. shepherdii
H. polystachya (Foliage)

Volume 3

H. cinnamomifolia
H. gracilis
H. pubicalyx (Dark Red Seedling)
H. laurifolia (this is PNG 4)
H. arnottiana
H. kenejiana
H. kerrii (Fuzzy leaf)
H. acuta (Green Form)
H. pachyclada
H. obovata

Volume 4

H. fuscomarginata
H. species # 454 parviflora (long skinny leaf)
H. polystachya
H. acuta (lemon scented)

H. species # CI-1244
H. species # F-484
H. species USDA # 354246
H. pubicalyx Cv. Red Buttons
H. species (New Guinea Gold)
H. species Unidentified (Golden Yellow, pure white corona)

Volume 5

H. citrina
H. nicholsoniae # 39
H. cummingiana
H. neo-ebudica
H. padangensis
H. camphorifolia
H. inconspicua
H. caudata var. crassifolia
H. Spec. PNG-1
H. erythrina

Volume 6

H. fraterna
H. coronaria Form 1
H. limonaciae
H. bilobata
H. Spec. PNG-6
H. tsangi, Burton
H. diptera
H. acuta (bronze)
H. fungii
H. diversifolia-B

Volume 7

H. carnosa cv. "Krinkle 8"
H. Sp. Saba Malaysia
H. Sp. WMZ
H. polyneura
H. Sp. WMZ (Back of flower & calyx)
H. pubera
H. acuta Penang
H. plicata
H. carnosa cv. "Dapple Gray"
H. keysii

Volume 8

H. purpureo fusca (The real one)
H. odorata
H. pottsii
H. Sp. IML 33

H. picta
H. pseudo littoralis
H. nicholsoniae (from Logee's)
H. micrantha
H. vitiensis
H. curtisii (foliage)

NEW ITEMS

Volume 9

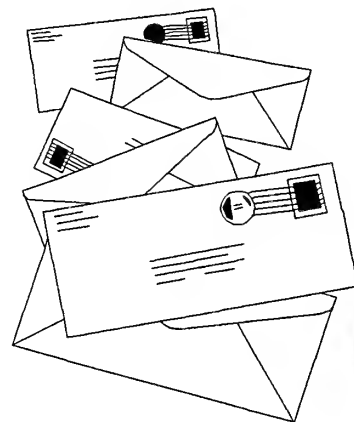
H. sp. USDA # 354236
H. merrilli
H. affinis
H. darwinii
H. pubicalyx 'Chimeara'
H. sp. 'Gold Star'
H. sp. # BSI-1
H. archboldiana (Red Form)
H. finlaysonii
H. naumanii

Volume 10

H. pubicalyx 'Silver Pink'
H. rupicola
H. vittelina
H. sp. IML # 234
H. meliflua
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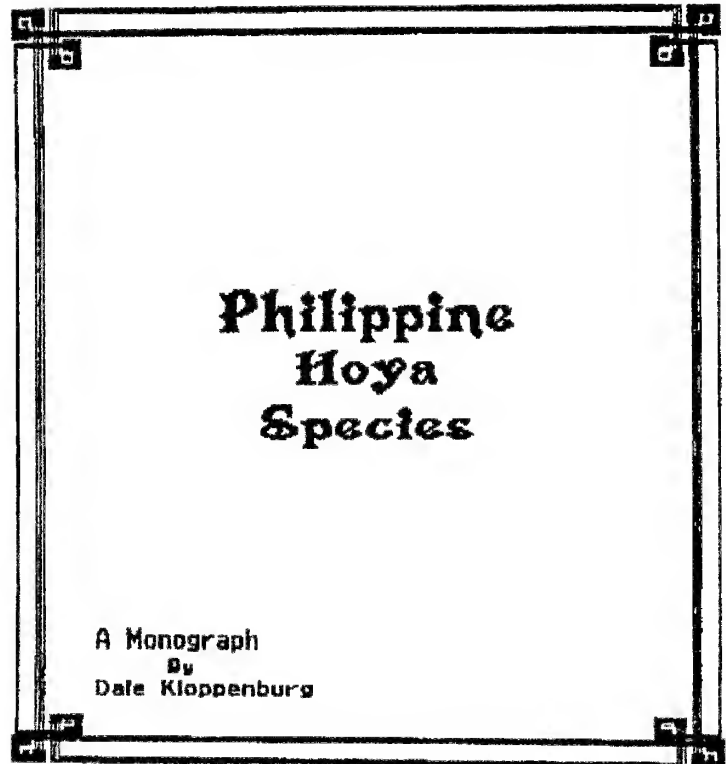
37 Hoyas of the Philippines

Key to identification

Culture section

Habitat & Altitude section

Several hoyas featured in full color



Over 100 pages with complete descriptions in English + beautiful line drawings.

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