Hoya obscura Elmer ex Burton (clone #900149)
Photo by Dale Kloppenburg
INTERNATIONAL HOYA ASSOCIATION

1444 E. Taylor St.
Vista, CA 92084
Phone: (619) 758-4290 Fax: (619) 945-8934
E-Mail: RBGdns@aol.com
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Chuck Everson
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Vista, CA 92084

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Back Issues

We now have the thirteen original issues of the Hoya Society-West Coast bulletin bound as one publication. The price of this bound text is $25.00 U.S. and $35.00 shipped surface overseas. Due to the extra pages and pictures in our new publication "Fratema", we must, out of necessity, increase our prices for back issues of "Fratema" to $7.00 per issue, $9.00 per issue shipped surface mail overseas.

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Editorial Policy

Errors of fact may occur from time to time in "Fratema". It is the policy of the IHA to publish corrections of fact, but will not comment on matters of opinion expressed in other publications.

Dealer Catalog Requests

The IHA office does not have dealer catalogs available. Please address your catalog requests to the individual dealers, or write to our Board Member Virgie Demanski, who will have a listing of mail order dealers available. Please send a self addressed, stamped envelope. Virgie's address is P.O. Box 1239 El Cajon, CA 92022-1239 U.S.A. In some instances there may be a charge for these catalogs.
The President’s Message

by Dale Kloppenburg

Already we are well into 1997. For those of you who have the space and live in areas where winter is giving way to spring, we can start thinking of moving our plants outside. This is a good opportunity to clean up the plants, control pests and fertilize. With spring growth and increased light, plants will respond rapidly to nitrogen fertilizers. I am always amazed at how quickly my hoyas respond to the spring feeding.

You will notice in this issue we have not included a Question and Answer page since there has been so few questions received in the mail recently. I will hold what few I have received for publication in Issue #2. This brings me to another change. We are beginning our 10th year so the cover indicates Volume 10-#1 instead of our past 1st Quarter heading. It does not seem like 9 years. It shows how rapidly time marches on!

In these past ten years we have fortunately seen the interest in hoyas expand rapidly all over the world. We are fortunate for the many new species and clones that have become available in this time frame. This is all possible because of devoted collectors who willingly spend their time and money traveling to far off hoya habitats to study and collect these plants. Let’s hope the next ten years will bring us even more rewards. I believe this is possible since more people are developing an interest in hoyas and other asclepiads.

I am reminded that we have here in the United States many fine Asclepiad species. I have been recently making an effort to collect seed of the California species. I will let you know how they respond to domestication. As a final thought, thank you all for your timely renewals and for getting new members to augment our hoya association. It is always nice to welcome new members, to be assured of continued growth and interest.

Special Notation: Check your expiration date on the label of the envelope. If it is highlighted in yellow, this is your last bulletin. Send your renewal payments, $18 domestic; $25 Air International, made out to I.H.A., and mail to our new membership Secretary at:
I.H.A. Attention: Membership Renewal, 1444 E. Taylor St., Vista, CA 92084. Phone renewals okay: 1-619-758-4290. Fax renewals okay: 1-619-945-8934 E-mail renewals okay: RBGdns@AOL.com Credit card renewals okay. We take Visa, Mastercard, Discovercard Please provide us with your full account number and expiration date. (charges will appear on your bank card statement under Rainbow Gardens).

Renewed Request: We would like to remind and encourage the membership in “Sponsoring a Picture Program”.

You can always contact me by phone, or mail, about your questions, comments or concerns. THANK YOU.

Dale Kloppenburg, President I.H.A.
6427 N. Fruit Ave.
Fresno CA 93711
Phone and Fax: (209) 439-8249
Continued from winter issue (4th Qtr.1996) of FRATENA. This concludes the series.

**Wednesday 30 November**

While waiting for the Landcruisers to come I witnessed a pack of dogs attacking a pig on the common. The pig was lucky, because some of the villagers came to the rescue. It got away with a torn leg. Because it had rained the previous night, the roads were very slippery and there was always the possibility of the vehicle sliding over the edge of the road into the forest below. One stretch was particularly bad, so bad in fact, that one of the Landcruisers got stuck and only with the greatest of difficulty was it able to get out of the mud again.

We made a stop to have a look for plants and we found some Orchids and *Nepenthes*. At that elevation it was cool enough for rhododendrons to grow. We stopped once more to look for plants and then went back to Tentena to freshen up.

**Thursday 1 December**

Across Lake Poso, in Bancea, an Orchid reserve has been laid out and we went to visit it. We were taken over by a large boat, so large that we had to climb down a ladder into a smaller boat to get ashore. There were no piers where we could embark and disembark. The reserve was fenced off and you had to have a guided tour. Plant and seed collecting was allowed for 1,000 rupiah a person. The Orchids had been collected elsewhere and brought to this area. A chance find was a *Hoya* species, possibly *gracilis*, that had probably been brought there attached to an Orchid. It was flowering, otherwise we probably would have assumed that it was a sort that we had already collected. This one was unusual in that the flowers, instead of hanging downwards as in most Hoyas, pointed upwards. We asked if we could take a small piece and the guide gave us the whole plant. Close by, an interesting *Dischidia* was also found. There were some very nice Orchids there, including the rare black Orchid in full flower. Growing by the road, close to the Orchid reserve, were some of the large yellow-flowering *Ipomoeas*. In Tentena I'd seen a plant that looked like an *Ipomoea*, but it had white milky sap. In Bancea I found some of the plants in flower. It turned out to be an *Ipomoea* sp. This was our last night at Tentena and we spent the evening packing so that we could have an early start to Sengkang. Ruurd went and collected the Hoyas from Eric's friends.

**Friday 2 December**

It was difficult to realize that the holiday was coming to an end and that this was the last time we would see Tentena. We were up early and left after an early breakfast at about 7:30. Sengkang lay about 400 km to the southwest of Tentena. We planned on visiting the Temper Lake to see the birds. The ride took about 14 hours as the first driver drove much too slowly. Fortunately the reserve driver got a move on, even so, it took a lot longer than it should have. From Tentena, a mixed Christian and Moslem area, to Sengkang, totally Moslem, the change was gradual. The houses began to be made of stone, to be better finished, to have a different design. There was more use made of rotavators instead of plough and oxen. There were more and newer cars, an almost complete lack of dogs (Muslims believe dogs to be unclean), more goats and geese, and fewer people washing in the river. We stopped at an interesting looking area and fanned out to see what we could find. Most of us missed the *Hoya imbricata* growing high up in the trees, but David spotted them. A few specimens were collected. There were plenty of ants under the leaves, which delighted David very much. We stopped once more on the journey to look for plants and I saw the last of the *Nepenthes* sp. of the holiday, growing reasonably well hidden among the grass and other plants. On the journey we saw a lot of slash and burn and the building of new settlement areas where
rainforests had been. We reached Sengkang at about 9 o'clock in the evening, found a reasonable hotel and booked in for a couple of nights. The only problem were the beetles being drawn through the ventilation.

Figure 8. A picture of a Nepenthes growing in the middle of Sphagnum moss at the highest elevation between Bada & Tentena.

Saturday 3 December

After breakfast we walked down to the lake for a boat trip to see the traditional houses on the waterside where people still live very primitively and to see the waterbirds and waders the lake is known for. The lake was a few meters lower than it should have been. It looked more like a river we traveled up to get to the dwellings. For the first couple of kilometers people were using the river to wash everything, including themselves. As we passed these waterside houses we came to a channel that ran through the waterplants, mostly water hyacinths. I was totally unprepared for the variety of birds I was about to see. It began with swallows, terns, and progressed to herons, egrets, bee-eaters, moorhens, stilts, and many birds I haven't been able to identify. We also saw a dabchick, ibis and a varaan. I used three films, just to try and
photograph all the birds. It was an unforgettable morning which flew past. We saw a lot of poles placed in the water above the waterplants in a teepee fashion. These were used to hold the waterplants together in order to protect the fish. In the afternoon we visited a weaving factory and had a look round Sengkang where we saw an old Dutch house, now a museum. The house was in the old quarters of the city. Many old trees survive there. There are very few epiphytes growing in them due to the fact that they are not the appropriate species.

Sunday 4 December

We left Sengkang for Ujung Pandang by public transport, but we chartered it, which means, that we had it virtually to ourselves. We were picked up from the hotel by the bus, and reached Ujung Pandang in 5 hours. The closer we got to Ujung Pandang the more 'civilized' it looked. At the bus station we transferred to microletts (small vans used as taxis) and were brought to our hotel. It was very fancy indeed. Rooms 1 and 2 shared the washroom which was at the other end of the corridor. We visited a well-known Orchid nursery, owned by a German named Bundt. Unfortunately the owner passed away last year and his wife now looks after the nursery. In the afternoon we visited Fort Rotterdam and went on a guided tour which proved very interesting indeed.

Monday 5 December

Today we had a choice, either to go snorkeling in the Makassar Strait, or, a free day to do what you liked. Ruurd, David, Cees, Geerdien and myself choose to go snorkeling, so after breakfast we went down to meet the boat. We were taken out to one of the small islands offshore, about one hour's sail away. We used the boat as a base to do the diving. The sea was very clear and the coral reef was easy to see in all its forms. The brightly colored fish, starfish and other creatures were easy to see. Cees had a complete underwater camera outfit to photograph the many wonderful creatures that live there. One had to be careful not to tread on any of the sea urchins. The giant clams were also present, but were very small and poised no danger to us. There was a small island close to where we dropped anchor which I explored. Here I saw good examples of Ipomoea pes-caprae, which is drought resistant, is tolerant of salt and helps to stabilize the sand. Other pioneering plants are grasses and a type of Euphorbia. I was very surprised to see a nightjar on the island. It allowed me to get quite close before taking off and landing a few meters away. There were a few lizards and geckos on the island. There were many sea slugs hiding under the coral and under the rocks in the water. In the open sea the blue starfish was the main sort, but under the rocks it was the brittle starfish that was more common. About dinner time, the weather started to turn for the worse and it began to rain. We headed back to Ujung Pandang. In the evening we had a meal from one of the many cars that line the sea front every evening, where you can watch your meal being prepared. While sitting waiting for the meal it was noticeable that after all the rain we had had, there were far more cockroaches about, possibly they prefer moister condition than we had had.

Tuesday 6 December

We got our things packed and went by minibus to the airport to catch the plane to Denpassar on Bali. We arrived in the evening and went into town to have a meal. Afterwards we went for a walk round.

Wednesday 7 December

This morning we went to the Botanic Garden and afterwards did the last bit of shopping for souvenirs before we had to be at the airport to catch the plane that would take us back to Holland. The holiday was nearly over. The biggest problem now, was to keep the collected plant material alive.
Epilogue

Just about all the Hoyas have rooted and will be divided between Ruurd and the Botanical Gardens in Leiden. The plants will have to flower first before they can be studied and written up. We think that we have collected about 25 kinds of plant, 5 of which are new. A good result from an interesting trip.

With thanks to Ruurd van Donkelaar for the additional information.

List of Genera Mentioned in the Text

Asclepiadaceae: Asclepias, Dischidia, Dregea, Hoya, Sarcostemma

Convolvulaceae: Ipomoea, Merremea

Dioscoreaceae: Dioscorea

Ericaceae: Rhododendron

Euphorbiaceae: Euphorbia, Manihot

Gesneriaceae: Aeschynanthus

Leguminosae: Clitoria, Mimosa

Melastomataceae: Medinilla

Nepenthaceae: Nepenthes

Passifloraceae: Passiflora

Polypodiaceae: Lecanopteris

Rubiaceae: Hydnophytum, Myrecodia, Tacca, Lantana

WHY IS IT? - ABOUT HOYA SEED

by Ted Green

Why is it that the average grower never sees hoya seed or seedlings? Occasionally, I get requests for seed and seedlings and if I have them I send them. I do have seed now and then for my plants are all grown in the open and bees, butterflies, skippers and moths work them - all looking for a sip of nectar. There are some of my plants that always have seed pods, especially a large plant of H. australis that is scrambling over a Dracaena bush in front of my house - always in bloom and always with seed pods in various stages of development. The seed can be seen many times blowing about and I know that the plant has spread onto the mountain near my house for I found a large plant about 1 mile away.

In contrast, there are some that only occasionally set pods and others have set only once in the time that I have had them. It is that chance pollination by one of the common pollinators or a new one that strayed into my yard.

If you want to see seed pods on your hoyas try putting the plants outside in the open during the summer months. There will probably be pollinators that will do the job for you and then as the weather becomes too cool the pods will develop when the plants are brought back inside. Of course, you might take ants back in with the plants.
As for hand pollinating hoyas to produce your own seed, I have not been able to do this, though I have tried many times. As far as I know, Michael Miyashiro of Honolulu is the only one who has consistently been able to hand pollinate hoyas and he has made about 50 selfings or hybrids.

SEED AND PODS

All of the Asclepiads are unique in that the seeds are wind disbursed and to accomplish that they have a coma (parachute) that is about 5 times the length of the seed and very light weight. The 200-300 seed are arranged in the pod with the seed all nested and pointed toward the stem end and the comas trailing away. Many times, there are twin pods produced and they spread apart going in different directions - sort of like a goat’s horns. As the pod ripens the pod turns yellow, and then watch out for the pod easily splits down one side and the seed blow away before they can be captured. I have noticed, that at 7 in the morning, a ripe pod is damp with dew and then as the sun comes up and warms the pod, it starts to split. By 10, the pod is open and then as it continues to dry the seed separate and drop out; by noon, all of the seed have blown away. To prevent this loss, I try a trick that I use on my terrestrial orchids, where I loosely wrap a piece of scotch tape around the pod. I then watch the pod each day to see how it is progressing. It saves a lot of heartache, especially in my orchid hybridizing.

My H. serpens seldom flowers for me and yet once that it did it got pollinated and produced double seed pods (see photo).

![Twin Seed Pods on Hoya serpens](Image)

Photo by Ted Green
GROWING HOYA SEED

It is very easy to grow seed of the hoyas. First of all, the seed should be fresh - not over a month old - and then should be spread and pressed on to the surface of a potting mix, sphagnum moss or even a totem pole. I leave the pot in a partially shaded part of the bench but where there is air movement and water about every other day. Within a week, the seed sprout and the seed-leaves (2, for hoyas are dicotyledonous) will rise from the new stem with roots. To avoid the new seedlings getting stem rot, I would not drench the new seedlings and watch to see that the water drains away quickly.

After about 3 months, the seedlings can be separated and replanted in individual pots or if space is a problem, plant 3 to a pot. Within 12 months, I have had some seedlings flower.

My seedlings of H. imbricata are 7 months old and are from a seed pod that we collected on Palawan Island in the Philippines. I am not going to separate them but instead just replant into a cement pot that can support a vertical wooden slab. I hope to get a robust clump with the individuals all intertwined. The seedlings of the H. pachyclada are 7 months and the H. greenii are 10 months and one is making a peduncle right now.

If you were to raise all of the seedlings from a seed pod, in addition to being overwhelmed, you would undoubtedly see a variation in growth and possibly the flowers. Raising just a few, you would not be treated to seeing the variation that is normal within a species.

HOYAS IN THE LAB

I have grown about 5 or 6 different hoyas in the lab, of course under sterile conditions. Most of these were grown from tips of stems but I have done some from seed, to see if my growing medium was correct for hoyas.

Growing hoyas, in vitro, under sterile conditions has not proved to be the answer for mass producing plantlets - as I do in cloning various orchids. It differs from orchids in that the tiny plants do not readily proliferate to make multiple growths. It is a slow process, at least for me, and ended up being a process where cuttings are made and replanted into new tubes. The only reason I can see for doing micropropagation of hoyas is to guarantee the survival of a rare species.

I have talked to several growers both in Florida and in the Netherlands about the use of micropropagated material and they said that it is too expensive and not as fast as cuttings.

If you are interested and want to try a little lab work, the medium that I use is Murishige and Skoog, modified with the addition of 1-2ppm of BAP, 20gms. of sucrose sugar and on agar with a pH adjusted to 5.7. I use either 25mm x 150mm test tubes with a plastic (Magenta) cap or small baby food jars with a plastic (Magenta) cap. I keep the tubes/jars under 200fc of fluorescent light for 12hrs., 0600 to 1800, and the temperature varies between 24°C and 27°C.
That’s it! Pollination is next to impossible without a pollinator so put your plants outside during the temperate part of the year. Let them live a little and you might hear the patter of little hoya feet.

Ted Green
Green: Plant Research
Kaaawa, HI. 96730

The following article is republished from Asklepios 67 (1996) by reciprocal agreement. The article will appear in two issues of Fraterna (here and in Vol. 10 #2). This is a very timely article and I am sure it took a tremendous amount of time and research. Our special thanks go to the author Phil Clark.
PHOYA CULTIVAR NAMES FOUND

Phil Clark

1. Introduction

The following is a very preliminary list of extant Hoya cultivar names. Discussion in the literature is mostly, and justifiably, concerned with the Latin names with relatively little consideration being given to cultivar names. Perhaps this latter situation does deserve to have a little more attention. Ultimately it is hoped that this list will stimulate discussion leading to the preparation of an open definitive list to which all new cultivar names can be added as they occur.

It is not always easy to distinguish between true cultivar names, each of which is unique to a particular Hoya clone* and others of a more temporary or trivial nature. As a consequence, quite a number of the names listed below are not cultivar names in the true sense of the term (i.e. in accordance with the Cultivated Plant Code, see Editorial). However unworthy, these names are in circulation and so cannot be ignored. Out of date or inaccurate names tend to persist as for many people the label in the pot is the only means of identification. It may be that some of these, feat e.g. H. Bikinis 'Dark Form' could acquire the status of a cultivar name, despite its etymology. Other words are habitually used to describe a feature, e.g. the lemon coloured form of "H. acuta", with no presence of being a cultivar name, could usefully acquire a cultivar name unless there is more than one clone of a similar colour. Temporary trivial names may be given to a plant pending identification or formal description, or for trade purposes, e.g. 'Bangkok Red'. These names will become superfluous unless attached to a distinctive clone. Some kinds of name have been omitted from the list below as they are not cultivar names, e.g. collectors' numbers, countries of origin†, the name of a person from whom someone else obtained the plants†, and so on, though some of these may have crept into the list below In some cases names have appeared in more than one form. If this is the case the alternatives found, and any likely synonyms, are also given, but obviously only one is 'correct'. No attempt has been made to express any opinion about the complexities of Hoya taxonomy.

Unsurprisingly, the species with the most named cultivars is that popular house plant, H. carnosa (but are there really that many cultivars?), but it would also be of interest to be made more aware of the actual, or likely, parentage of those names not 'attached' to particular species. In view of the preliminary nature of this list, corrections, suggestions and comments would be most welcome.

* Cultivar names are also given to strains of seed plants, but these do not exist in Hoya.
† Unless these distinguish a particular clone where there is no other label such as a collector's number.

2. Sources of information

References are given by each name when they include a description and/or other relevant information as in the following examples. When no reference is given, these names have been found without any further information or just mentioned in passing.

References:
A60: 10 - page 10 of Asklepios number 60.
SWC2(5):10 - Newsletter of the Hoya Society - West Coast, page 10 of volume 2, number 5. (This Newsletter continued as Fraterna).
Catalogues:

Those listed below are descriptive catalogues to which reference has been made. All are current at the time of writing (April 1996). Addresses and other information can be found in the 'Catalogues Received' section in this issue. If a new cultivar is described in a catalogue, this can be taken as being effectively published for the purposes of the Cultivated Plant Code, provided that the catalogue is dated.

D - van Donkelaar.
G - Green: Plant Research.
H&D - Hill-n-Dale Nursery.
M - Hoyas by Michael Miyashiro.
N - Newington Nurseries.

3. *H. carnosa* cultivar names

'Big One' - H&D.
'Compacata*'/Compacta Indian Rope'/Hindu Rope®/Cristata' - F2/4'91: 9; F2/4'94:
'Compacata Picata' - H&D.
'Compacata Regalis' - H4(4): 89.
'Compacata Variegata' - D; H&D.
'Cream One* - H11(2): 45.
'Dapple Gray* - K: 83.
'Darling One'
'Exotica Compacata' - D.
'Jungle Garden*'
'Krimson Princess'/Picta*'/Rubra'/Rubra Crimson Princess'/Exotica' - A60: 10; A66:
10; H8: 1-6; H10(4): 79; H15(3): 62; H16(1)12; H17(1): 5, 7; D; H&D. (Note - in
cultivar, the variegation is towards the middle of the leaf).
'Krimson Queen'/Variegata*'/Variegata Aurea'/Picta Aurea'/Tri-color'/Tricolour'/
SWC2(5): 10; SWC2(6): cover; D; H&D; N. (Note - in this cultivar, the variegation
is towards the edge of the leaf).
'Krinkle-8 Variegated'/Variegata' - SWC2(5): 10; H&D.
'Krimson Princess' - H4(4): 89.
'Motoskei* - H8(1): 2, 4; D; N.
'Motoskei California' - H5(3): 76 (= *H. australis*?).
'Motoskei Snowball' - Kp. 100.
'Motoskei Thailand White' - H&D.
'Pink One* - H11(2): 45.
'Pretty One* - H11(2): 45.
'Pixie Krinkle'
'Purple Leaf' - D.
'Rubinetta' - N.

10
'Rubra' - SWC2(5): 10; D; H&D. (Note - there may be as many as three cultivars with this name).
Snow fire
'Spotted Gray' - H&D.
'Suzie Q.' - K: 120.
'Sweet One'

* These cultivars have also been found listed under *H. pubicalyx*, and/or may possibly be hybrids between the two species, or the result of confusion?
†See 'Some Matters Arising' below.
‡ The first of the names listed for these two cultivars is possibly the names by which they are best known in the trade. However, according to the Cultivated Plant Code, if a Latin Name has been published in accordance with the ICBN for a form which is now regarded as a cultivar, this name is to be retained as a cultivar name. Hence 'Picta' and 'Variegata' are the correct names for these cultivars (see also H8(1): 1-6).

Some of the history of the names is described in SWC2(5): 10 and summarised in the two family trees below. It is an illustration of the regrettable practice of the multiplication of names for trade purposes, but at least the origin of a few of these names is described here. This does not necessarily remove confusion as it seems that several cultivars are involved and the names have become well muddled. Hence the names have been left in these two groups as listed as there has been a tendency to apply the names indiscriminately to similar cultivars within each group. Variegation tends to be unstable (e.g. the occasional reversion back to the green form). If a well marked shoot is propagated as a new cultivar, subsequent propagations may revert back so as to be indistinguishable from the original form, but still carry the 'new' cultivar name. It seems likely that this situation has occurred with the cultivars noted below.

A suitable strategy would be to designate two cultivar-groups (ICNCP Art. 4.) on the basis of the distribution of the variegation for the flat leaved variegated forms of *H. carnosa* (i.e. not 'Compacta' or 'Krinkle' forms, but allowing for the distortion that can occur due to the differential growth of the green and variegated parts of the leaf):

Picta Group, where the variegation is mostly towards the middle of the leaf.

Variegata Group, where the variegation is mostly towards the edge of the leaf.

There is a biological basis for this distinction. As the cells of the apical meristem (growing point) divide, they form concentric rings of cells from which the leaves and other structures develop. If one (or more) of these rings of cells is unable to form chlorophyll, the parts of the leaf that are derived from this ring of cells will be deficient in chlorophyll leading to the formation of patches of white or yellow. If the ring(s) of chlorophyll deficient in cells are towards the outside of the stem, the edges of the leaf will be variegated (Variegata Group). If they are deeper in the stem, the centre of the leaf will be variegated (Picta Group). Unfortunately the situation is not always as straightforward as this as dividing cells may not always keep to their ring, leading to the formation of irregular patches of colour, two rings of chlorophyll deficient cells may be separated by a layer of chlorophyll bearing cells between them, and so on. In addition, instead of being concentric as described above, variegation may consist of longitudinal strips of chlorophyll deficient cells between the normal cells of the stem.

Some variegated cultivars are particularly attractive because of pink or red coloration of the leaves. In most cases this colour is distributed over the whole leaf but is only conspicuous against the white or yellow variegation, not the green areas of leaf. This coloration tends to be influenced by the conditions under which the plant is growing (e.g. light intensity) whereas the white or yellow variegation depends on
the nature of the cells that make up the leaf. Thus this red colour would not be a 'good' character with which to delineate a cultivar-group.

With these thoughts in mind, and also the variation in leaf shape ('Compacta' forms etc.), it should be possible to devise a rational system for naming the variegated H. carnosoides forms in terms of cultivar-groups.

Continued in Fraterna Vol. 10 #2:

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Our Cover Picture

Hoya obscura Elmer ex Burton

You can easily spot this plant in a collection by its fully clothed very glossy foliage with green stems dangling down in long streamers. This is a Philippine species that is very prevalent from some localities. It has been collected as far south as Mt. Bulusan on the big Island of Luzon, from Mt. Malino, Mt. Makiling at Mud Springs, from Casiguran, Antig River, Quezon and many other localities. This is a species that can take a lot of water. It loves moisture and high humidity but does well, even with lower humidity.

There are many clones of this species in commerce and several distinctive variations. One of the earliest clones was from Peter Tsang and it is one of the clones who’s foliage turns red when exposed to strong light. Another distinctive clone has oblanceolate leaves, very long peduncles and is an exceptional strong grower. One clone has pale flowers and even in strong light fails to exhibit any reddening of the foliage. Oh, yes, flowers as you may know or can see in the cover photo, are fuzzy balls with the corolla reflexed, pale in color but with occasional rose infusions. The crown is a sloping yellowish star. In Manila this species has been used in garden landscaping along with Hoya multiflora, a species also found in the Philippines.

The original plant (Type) was collected by A. D. E. Elmer in 1916 from Mt. Bulusan at the far south end of Luzon in the province of Sorsegon. This is an area and mountain with many hoya species. Its type number was 16717.

This plant is among my best and most continuous flowering hoya species. It is so easy to grow and so attractive I feel it should be in every collection. The flower’s subtle spiced honey fragrance is an added attraction. After starting cuttings in 2 inch pots, move to a 4 inch pot and eventually to a 6 in size, probably a hanging basket if you have the room for one more.

Dale Kloppenburg

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COOL TEMPERATURE TOLERANT HOYAS

by Jeanne Beck and Harriette Schapiro

Many of us have acquired a Hoya plant or cutting from a friend or purchased one at a nursery. What attracted us was either the plant’s beautiful, sometimes fragrant, flowers or its’ unusual foliage. As with many collectibles, one Hoya is never enough. The question then arises, "Can they all be grown under similar conditions?". Unfortunately, we discover many species require warm greenhouse conditions. However, this is not always the case. Within the last few years, more information about normal habitat, and therefore, possible temperature tolerance, has become available to the novice Hoya grower and the collector alike.

Dependent upon your own particular growing conditions, there are many species that can tolerate lower temperatures not usually considered possible with "plants from the tropics". Many species can tolerate temperatures as low as freezing for very brief periods. Some species even seem to require a bit of cooling at night for good flowering, while others seem to require good air movement as well. All of the moderately cold tolerant species do require DRY "feet" when the weather gets cold. If Hoyas are grown under cooler conditions, they must be kept relatively dry during the cool/cold weather. The combination of wet soil and cold weather seems to promote root rot.

We, Jeanne and Harriette, live in coastal Southern California. Several others have contributed to the information used in this article and live anywhere from the coastal region to 20 miles inland. This short distance makes a great deal of difference in temperature ranges due to the many climates in Southern California. The immediate coastal zone in California is best described as fuschia and tuberous begonia climate. Summers are only moderately hot as a rule, while winter lows range from 44° to 24°F. Some local regions have never recorded freezing temperatures. The inland areas can best be described as avocado country. Summer highs can be up to 20°F above those in the coastal zone, while winter lows range from 38° to 23°F, with nights averaging 10° to 15°F colder than the coast. Inland regions are occasionally subject to extreme conditions due to winds from the desert. These are very hot (100° - 105°F), very dry (10 to 20% relative humidity) days. These Santa Ana winds can affect the coastal region as well. In fact, the coast can be hotter than inland at this time. In all regions of Southern California, winter rains are generally scanty. In San Diego proper, annual rainfall averages 9.5 inches.

Hoya globulosa, grown near the coast, has beautiful leaves and good growth. However, it rarely flowers. A plant grown further inland, with at least 10° hotter days and nights about 5° cooler has flowered profusely even though the foliage is not lovely. Hoya serpans is an interesting case. Grown in the shallow lid of an old Styrofoam cooler, hanging under the branches of an orange tree, it buds profusely, but only those buds on the portion of the plant that hangs below the level of the pot develop into flowers. It appears as though air movement and the possibly cooler environment below the container make the difference. Hoya linearis is another species which seems to thrive on some air movement and cooler conditions. The best blossoming observed on two different specimens owned by two different people seems to occur on the portion of the plant hanging below the pot and towards the Fall or when night temperatures are cooler. Hoya polyneura and H. pubera seem to love to bloom in the Fall with cool nights.

The accompanying table lists those species of Hoyas which have been grown outdoors in Southern California by one of us, or those species which show to be capable of growing under the same conditions. Our reasons for these latter choices, has been based upon collection locales in many cases. We list species which had been collected in higher, mountainous territory, assuming that higher elevation would yield colder night temperatures. Because of the necessity to maintain relatively dry conditions during the colder
weather, in most cases, "outdoors" means grown under overhead protection to prevent excessive rain from getting the plants too wet.

For those of you living in truly cold climates, these species may be the ones best suited for those "colder" areas in your greenhouse or home. They may well be the ones to do best near cold windows when a hard freeze lowers temperatures even in the house.

Our thanks to Virgie Demanski, Henry Raphael, Lee Phelps, Jerry Williams, and Rosemary Peterson for their input.

### COOL TEMPERATURE TOLERANT HOYA SPECIES

<table>
<thead>
<tr>
<th>Hoya species</th>
<th>Collection locales or evidence of hardiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>acuta Haworth*</td>
<td>Khasia Mountains, Assam, one of earliest flowering in San Diego</td>
</tr>
<tr>
<td>amottiana Wight*</td>
<td>Lower slopes Himalayas at 1000' to 3000'</td>
</tr>
<tr>
<td>bella Hooker*</td>
<td>Moulmein Mountains, Burma</td>
</tr>
<tr>
<td>carnsa R. Brown*</td>
<td>Native of South China, many other locations (many varieties successfully grown outdoors)</td>
</tr>
<tr>
<td>cinnamomifolia Hook*</td>
<td>Javanese Mountains</td>
</tr>
<tr>
<td>cumingiana Decne.*</td>
<td>Philippines from sea level to 4800'.</td>
</tr>
<tr>
<td>engleriana Hosseus *</td>
<td>Near Chiang Mai, Thailand at 5000'</td>
</tr>
<tr>
<td>globulosa Hook.*</td>
<td>Himalayas, Sikkim, Assam at 1000' to 3000'</td>
</tr>
<tr>
<td>griffithii Hook. f.</td>
<td>Khasia Mountains, Bengal, India at 2000' to 4000'</td>
</tr>
<tr>
<td>inconspicta Lindl.*</td>
<td>Guadalcanal in heavy rain forest at 2000'</td>
</tr>
<tr>
<td>kerrii Craib*</td>
<td>Chiang Mai, Thailand at 3000' to 6000'</td>
</tr>
<tr>
<td>keysii F. M. Bailey*</td>
<td>Survived temp. to 24°, New South Wales, Australia (Liddle)</td>
</tr>
<tr>
<td>linearis Wallich*</td>
<td>Nepal at 3000' to 6000'</td>
</tr>
<tr>
<td>longifolia Wallich</td>
<td>Chiang Mai, Thailand at 4500' to 5000'</td>
</tr>
<tr>
<td>micrantha Hook.</td>
<td>Evergreen forests Burma, northern Thailand at 2700' to 3000'</td>
</tr>
<tr>
<td>microphylla Schltr.</td>
<td>Woods of Bismark Mts., New Guinea at 5000'</td>
</tr>
<tr>
<td>minibelle.</td>
<td>hybrid</td>
</tr>
<tr>
<td>nicholsoniae F. Muell.*</td>
<td>Survived temp. to 24°, New South Wales, Australia (Liddle)</td>
</tr>
<tr>
<td>nummularia Decne ex Hook f</td>
<td>Khasia Mountains near Moosai, India</td>
</tr>
<tr>
<td>obovata Decne.*</td>
<td>Moluccas, Bouton Straits</td>
</tr>
<tr>
<td>odorata Schitr.</td>
<td>Luzon Province, Philippines at 3900'</td>
</tr>
<tr>
<td>pauciflora Wight*</td>
<td>Sri Lanka and India at elevations up to 5000'</td>
</tr>
<tr>
<td>polynoeura Hook. f.*</td>
<td>Sikkim Himalayas 3000' to 5000'</td>
</tr>
<tr>
<td>publicalx Merril *</td>
<td>Many cultivars do well outdoors</td>
</tr>
<tr>
<td>purpurea fusca Hook.*</td>
<td>Survived 25°F cold snap, Chula Vista, California</td>
</tr>
<tr>
<td>serpens Hook. f.*</td>
<td>Sikkim, Himalayas</td>
</tr>
<tr>
<td>shepherdii Short ex Hook.*</td>
<td>Sikkim at 3000' to 4000'</td>
</tr>
<tr>
<td>subquintuuplinervis Miq*</td>
<td>Chiang Mai, Thailand at 4500'</td>
</tr>
</tbody>
</table>

* indicates species has been grown outdoors successfully in Southern California
San Diego Hoya Group's Annual Holiday Party

Fifty five members and guests of the San Diego Hoya Group got together early last December to celebrate and have fun at the club's 7th Annual Holiday Party.

There were over 25 special door prizes given away (many members contributed these), as well as 55 small plants of Hoyas and Christmas Cactus for each and every person attending.
New officers were elected for 1997 -- Dr. Lee Phelps, Chairman, Dot Miller, Food Chairperson. Dr. Harriette Schapiro volunteered to be raffle co-ordinator and Hospitality Chief, as well as Holiday Party Co-ordinator. Chuck Everson and Jerry Williams will continue their existing jobs as Programs Chairmen and Treasurer.
1996 was a good year for the S.D.H.G., with the average attendance at each of the 4 meetings approaching 50 people. We were blessed with great programs like the March meeting slide show of a recent "Trip to the Philippines in search of Hoyas" by Jerry Williams. The June meeting brought Dale Kloppenburg from Fresno to tell us how he grows some of his most difficult-to-grow Hoyas-- as well as inputs from several growers and nursery people. At the September meeting, member Virgie Demanski showed slides of her recent trip to Costa Rica, the virgin rainforests, and beautiful national parks. This brings us to our December meeting--our annual Holiday Party. We were very fortunate to get Ted Green back again to speak to us. Ted is a favorite guest at our meetings, keeping us informed and entertained concerning his recent trips around the world in search of Hoyas. This time, Ted took us on a slide show to Sulawesi (see Paul Shirley's article in this and previous issues of Fraterna regarding this particular trip to Sulawesi) and also to the Philippines. With excellent slides and a brilliant narration, it turned out to be a delightful afternoon. Being from Hawaii, Ted won the prize for the person coming the longest distance, but we did have two guests from Broken Arrow, Oklahoma--Lynn & LoWilla Wilson.

Three dedicated S.D.H.G. members. L-R: Lois Tripp, Jean Costanzo, Frances Wilkes
Photo sponsored by San Diego Hoya Group

Photo by Chuck Everson
As is the custom every year, a vote was taken, and approved, to send our annual $100.00 donation to the I.H.S. color photo fund. Before the festivities came to an end, four people in the club were recognized for their hard work and dedication at each and every meeting for the year 1996: Lee Phelps (Raffle Chairman), Dot Miller (Food Chairperson), Virgie Demanski (Librarian), and last, but not least, Harriette Schapiro (all around worker who manages to make sure that each meeting went smoothly, with the food, raffle, and programs all starting and ending on time, and volunteering for anything that needed to be done). Each of these persons received a huge 6”-8” Christmas Cactus basket or special ceramic pottery.

All in all, it turned out to be a wonderful afternoon of good food, nice gifts, great program, great camaraderie. We all pledged to meet again in March for our next meeting. Chuck Everson will be presenting a slide program of his recent plant trip to South Africa and Namibia.

Chuck Everson, Program Chairman

Door prizes abound at S.D.H.G. 7th annual Holiday Party
Photo sponsored by San Diego Hoya Group       Photo by Chuck Everson
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The President's Message

by Dale Kloppenburg

For many of us summer brings on a slower pace and a time to enjoy ourselves outside. I realize this is not the ordinary time to be thinking of new projects, making new resolutions but permit me to throw out a few challenging ideas. Use your special talents to expand your interest and knowledge with Hoyas! **Art & craft enthusiasts:** preserve your flowers for use in dry arrangements, wreaths, note papers or stationary. Make a leaf collection, a photo collection. Embed parts in resins or under wax films or.........?? Adapt your talents to Hoyas. **Herbarium additions:** start your own herbarium, or donate materials to your local institutions. Make preserved collections. Keep a note book of observations, etc. **Travel and collect:** Next vacation go to the tropical Asian areas. Visit markets, local botanical gardens and universities. Trek in the forests, watch for hoyas on roadside trees and **Habitat and geography:** look for sources on the Internet and via E-mail; try local libraries and horticultural groups, get out the old geography book. **Research:** which hoyas have fragrance, when, how long; which have honeydew, taste, amount, sugar content, etc. Chemists may undertake electrophoresic or chromatographic studies. What about chromosome studies or cell differentiation. **Plant projects:** try new soil mixtures, light conditions. New pots or containers. Try your hand at grafting, or hybridization. Experiment with fertilizers and plant nutrients. Grow plants from leaves, use growth hormones, etc. **Evolution:** what are the centers of dispersal, specie connections, relationships, interrelationships. What are the common connecting features or structures.

Well as you can imagine your opportunities for expanded envelopment are unlimited. I suggest maybe you’d like to expand your horizons, become active, exploit your talents. Help us grow, interest friends and family, give talks to local groups, invade the Internet and chat groups, send some e-mail pages on hoyas. Help expand the IHA membership so we can bring you more and better coverage. Above all--- enjoy HOYAS.

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You can always contact me by phone, or mail, about your questions, comments or concerns. THANK YOU.

Dale Kloppenburg, President I.H.A.
6427 N. Fruit Ave.
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Phone and Fax: (209) 439-8249
The following article is republished from Asklepios 67 (1996) by reciprocal agreement. This is a very timely article and I am sure took a tremendous amount of time and research. Our special thanks go to the author Phil Clark. This concludes the article which is continued here from Fratema Volume 10 #1.

**HOYA CULTIVAR NAMES FOUND (Continued)**

Phil Clark

With these thoughts in mind, it and also the variation in leaf shape ('Compacta' forms etc.), it should be possible to devise a rational system for naming the variegated *H. carnosa* forms in terms of cultivar-groups.

Family trees of Cobia *Hoya* names, extracted from SWC2(5) 10:

![Diagram of Hoya carnosa cultivar names]

® These names have been patented by B.L. Cobia Inc. USA. The name 'Hindu Rope' was also patented to include all the 'Compacta' type Hoyas developed and grown by Cobia.

4. *H. pubicalyx* cultivar names
   'Bold One'* - H11 (2) 45.
   'Bright one'*- H11(2): 45; H16(1): 11; K: 29; H&D.
   'Chimaera'+/Chimera+/Chimeara/'Philippine Black' - F'91: 12-13; K: 68; SWC2(4): 2; H&D
   'Cream One' - H11(2): 45.
'Dapple Gray'
'Dark Red Seedling'
'Fresno Beauty' - H11(2): 44; K: 4; H&D.
'Grey Lady' - F4/4'90: 11.
'Jungle Garden' - F2/4'94: 3.
'Pink One* - H11(2): 45.
'Pink Silver*/'Silver Pink'/'Spotted Leaf' - H4(1): 9; H8(4): 71-72; H11(2): 44; K: 41; D; H&D; N.
'Pretty One* - H11(2): 45; H&D.
'Reva' - H&D.
'Silver Prince'

*These cultivars have also been found listed under H. carnosa, and/or may possibly be hybrids between the two species or the result of confusion? It could be argued that H. pubicalyx is a form of the variable H. canosa (which would make life easier!).

† My dictionary gives two alternative spellings - 'chimaera' and 'chimera', but which spelling was first applied to the cultivar in question? Whilst the dictionary describes it as a "bogy; thing of hybrid character", in fact it was a mythical monster with a goat's body, a lion's head and a dragon's tail. It was born in Lycia, and was killed by Bellerophon.

5. H. lanceolata Subsp. bella (syn. H. bella) cultivar names
   'Medio Picta' - H15(2): 32
   'Variegata'/'Annele Buis'/Lida Buis'/Krinkle Kurl'/Krinkle Curl' - H15(2): 27-28,
   SWC2(1): 8; G; N.
   'Wee Bella' (= H. chinghungensis)

6. Cultivars and forms of species

   H. acuta
   'Green Form' (= H. verticillata, syn. H. parasitica).
   H. archboldiana
   'Dark Red Form' - K: 73; M.
   'Pale Form' - G.
   'Pink Form' - K: 92; M.
   'Red Form'
   'YM Excellent'- G.
   H. affinis
   'Dark Form'- G.
   H. australis
   Nuuuli Valley - H&D.
   'Peter Tsang' - SWC1(6): 8; SWC2(1): 3.
   Tonga- G; H&D.
   'Variegata'/'Variegated' - H15(2): 30-32; SWC1(6): 8;
   SWC2(1): 3; H&D; M.
   Western Samoa - H&D.
   H. bilobata
   'Ben Hardy' - Kp. 105-106.
   H. erythrina
H. fuscomarginata  'Perpich'
H. finlaysonii     'Chanin's Variety' - M.
                   'Nova' - H&D.
                   Malaya - H&D.
                   'Ted Green's Variety' - M.
                   'Thailand Variety' - M.
                   'Lavender Seedling' - M.
                   Palawan - G; M.
H. kerrii         'Fuzzy Leaf' - SWC2(1): 11; H&D.
                   'Variegated' - K: 124; Fl/4'92: cover.
H. mitrata        'Chanin Thorut's Variety' - M.
                   'Ted Green's Variety' - M.
                   'Variegata'/Variegated' - K: 141; D; M; N.
H. macgillivrayi  'Rainforest' - H&D.
H. obscura        'Red Masterpiece' - H10(1): ii; H11(2)44; H&D.
                   Philippines - H&D.
                   'Rusty Clone' - H&D.
                   'Large Flowered Clone' - H&D.
H. pottsii        'Broad Leaved Clone' - H&D.
H. pubera         'Rusty leaf'
H. verticillata   'Bronze' - H&D.
                   (syn. H. parasitica)  'Green' - H&D.
                   'Lemon Scent' - H&D.
                   Thailand - H&D.
                   S. Thailand - H&D.

Note: There is a need to distinguish between different forms when there is more than one clone in circulation, hence the variety of names which may or may not be considered as 'cultivar names' (e.g. when a clone is named after the location in which it was found in habitat). However these names are likely to persist on growers' labels, so they need to be recorded. They do provide a means for the identification of distinctive clones, even though they may not conform to the Structures of the Cultivated Plant Code.

7. Named hybrids

H. archboldiana x macgillivrayi  'Kaimuki' - M.
                                'Napali' - M.
                                'Rainforest Beauty' - M.
H. vitellinioiides x incrassata  'Golden Eye' - H17(4): 66-67; M.

Note: These are all Miyashiro hybrids. There are in addition a number of unnamed hybrids that originate from the same source which as yet have no name. It would clearly be advantageous for all those in circulation to be named as more than one desirable cultivar can arise from the same cross. Some of these are listed below.
8. Unnamed hybrids

- *H. archboldiana x macgillivrayi* - G; H&D; (= one of the above?).
- *H. meredithii x crassicaulis* - G
- *H. meredithii x incrassata* - M.
- *H. meredithii x finlaysonii* - M.
- *H. rigida x acuta* - G.
- *H. subquintuplinervis x lacecarpentriana* - G. (One hopes that a short cultivar name will be found for this one!!).

9. 'Free standing' cultivars and trivial names

- 'Bangkok-4' - H1(1): 6; K: 12; H&D.
- 'Bangkok Red' - K: 94; H&D.
- 'Big Big Mac' - H11(3): 81; H16(4): 79. (= *H. macgillivrayi*?)
- 'Black Hoya' (= *H. ciliata*)
- 'Black Mac'
- 'Borneo Red' - G.
- 'Cinnamon' - G.
- 'Common Wax Vine' (= *H. carnosa*)
- 'Fish Tail Hoya' (= *H. polyneura*)
- 'Frosty Hoya' (= *H. pruinosa*)
- 'Gallego-l' [=H. flavida ed.]
- 'Giant Coronaria' - G.
- 'Gold Star' - K: 69; G.
- 'Hummel's Hybrid'
- 'Minibelle'/Minibel'/Mini Belle'/Mini-Belle'/Minibella'-H3(4):98-99; SWC2(4): 2; D; G; H&D. (= *H. carnosas pubicalyx* x longifolia or shepherdii?).
- 'New Guinea White' - K: 109; G. (= *H. magnifca*?)
- 'Pinkie' - H1(1): 15; G. (= *H. subcalva* x australis??)
- 'Perpich Purple' - H17(1): 7. (= *H. kentiana*).
- 'Sabah Beauty Hoya' - G.
- 'Shepherdell'/shepherdell' - H3(4): 99; G. (= *H. carnosas longifolia*)
- 'Shooting Star Hoya' (= *H. multiflora*)
- 'Silver Flecked' - G.
- 'Stringbean' (=H. shepherdii)
- 'Sweetheart Vine'/Valentine Vine' (= *H. kerrii*)
- 'Swinging Angel Plant' - H16(3): 49-50. (= trade-name for *H. lacunosa*)
- 'Thailand Silver' 
- 'WMZ' - F4/4'90: 6; F4/4'90: viii-9; H17(1): 7; G. (= form of *H. magnifca*?)

**Note:** A number of these names are 'stand in' names for as yet unidentified species.
10. Some matters arising

The names listed are as found. It is obvious that some of them do not conform with the recommendations of the Cultivated Plant Code, e.g. C. archboldiana 'Pink Form' (words such as 'form' should not be used as part of a cultivar name: Art. 17-15). On the other hand the name 'Variegate' should in all cases be changed to 'Variegated' unless previously established in accordance with the ICBN or given before 1 January 1959. Adjectives such as 'Variegated' need a noun or word that can be regarded as a noun to complete a cultivar name. Whereas 'Variegated' is incomplete as a name, 'Gold Variegated' (instead of 'Variegate Aurea') would be quite acceptable. There is now no need to place 'cv' before a name to denote its status as a cultivar, as according to present convention, when written it is already sufficiently distinct from the Latin name. In my personal view, to coin new names to substitute for those in common use just in order to conform with the Code would only serve to increase the number of names in circulation and so exacerbate an already confused situation.

The greatest area of confusion appears to be around H. carnosaa. As H. carnosaa does not require a high temperature for its well being as do most other species of Hoya, to collect forms of H. carnosaa with a view to sorting out the cultivar names would be a worthwhile project for someone. Though it would not invite the same attention as growing the latest introductions from the depths of an Asian jungle, it would be most useful. If a species has been sunk within another, the original species name can be usefully retained as a cultivar name if it is horticulturally distinct. It is a matter of discussion between 'lumpers' and 'splitters' as to whether H. compacta and H. motoskei are species in their own right, or cultivars of H. carnosaa. This will determine the form by which these plants are referred - e.g. H. compacta, H. carnosaa 'Compacta' or H. carnosaa var. compacta.

The foregoing discussion concerning cultivar-groups would seem to offer a way forward. Detailed examination of variegated Hoyas would be needed before the cultivar-groups could be properly delineated for these plants, and the same idea then extended to cultivars that are not variegated, using other characters. The concept of a cultivar-group would provide a sound framework into which cultivar names can be placed without disturbing existing arrangements.

Inevitably lists such as these depend on the information to hand when compiled. Though over a hundred names are included here (not all are 'good' cultivar names) this is probably the small tip of a large iceberg - no doubt there are many other names which should have been included in these lists. It is hoped that readers will furnish additional names, and further information concerning the origin of names in particular.

Acknowledgements

I am most grateful to Douglas Kent for some very helpful advice (though any taxonomic indiscretions are mine alone!) and to Geoff Hedgecock for the loan of material.
HOYA LAUTERBACHII K. Schumann

by Ted Green

Think big when you talk about *H. lauterbachii*; colossal is a better word, for this is largest hoya that I have ever seen.

First, I think that it would be fitting to print the translation (from the German) of a century ago, as published in the January 1896, Monthly Magazine for Cactus Science (*Monatsschrift für Kakteenkunde*).

**Hoya lauterbachii, K. Sch., A New Wax Plant**

from K. Schumann

(with one illustration)

All adults probably still remember, vividly from their childhood, that a Wax Plant belonged to indispensable indoor plants and together with the Geranium (*Pelargonium roseum, Ait.*), a Sedum (*Sedum sieboldii, Sweet*), the Oleander (*Nerium oleander, L.* ) and the Fuchsia they formed the continued existence of these “foster children”. The desire for a change or the fashion trends let some of these plants disappear and it is difficult to find them now days - others provided consistency over time. The Wax Plant belongs to the first mentioned group and it can be seen only occasionally today. But it still received a higher and renewed attention because of its easy propagation with cuttings, its willingness to grow and its ample flowering. Furthermore, it belongs to the family of the Asclepiadaceae which we most recently got to know and discussed the peculiar representative *Heurnia macrocarpa* Schw., which is rather interesting because of its strange flower production. The genus Hoya has furnished a lot of hothouse plants some of which are splendid. One of them is *H. imperialis*, Lndl., unquestionably one of the most striking plants, with large hanging umbels of dark brown, big flowers.

None of the almost 100, so far described species, are a match for this new species considering the beauty of the flowers. Dr. Lauterbach brought it back from New Guinea four years ago and entrusted the description to me. The mentioned traveller, who applies himself to a great extent to plants and their care at his estate ‘Zu Stabelwitz’, near Breslau, is also a great lover and expert of cactus.

*Hoya lauterbachii*, K. Sch. is a vine which is covered with hair, unlike most of the species of this genus. The relatively thin, single-celled, wavy hair form a soft cover on the younger, perfectly round branches and in particular the back of the leaves. The leaves have petioles, 2 to 3 cm long; the shape is oblong, elliptic or sometimes reversed, oval elliptic; short with a pointed tip, have a rounded base and are succulent. The hanging umbel-shaped inflorescence consists mostly of four flowers. They have peduncles up to 10 cm. long and the pedicels are relatively long themselves (up to 8 cm). The somewhat thinner pedicels, as well as the peduncles, are mostly covered with hair. The calyx measures approximately 1 cm in length; the sepals are three-sided, oval, to three-sided oblong and pointed. The corolla is cup-shaped and up to 7.5 cm in diameter. It is pubescent on both sides and has a dark brown-red color on the inside. This color very much contrasts with the emerald-green on the outside so we have without doubt one of the most beautiful flowers, in front of us.
The fruit-producing apparatus, the gynoeceum, occupies the base of the flower and is 15 mm. in diameter. The scales of the corona are succulent, indented at the front and pulled over the stigma tip like a bird's beak. The stamens have a relatively conspicuous, skin-like snow-white appendage.

Dr. Lauterbach found the plant on 10 November 1890 at the Gogol River.

There has never been found a species with such dimensions of the flowers, either in New Guinea nor anyplace else in East Asia. We surely hope that the plant will be found again and imported to Germany, during the up-coming expedition to Kaiser-Wilhelmsland, that will be guided by Dr. Lauterbach.
Clarification Drawings*

Flowering stem of *Hoya lauterbachii*, K. Sch., reduced to half size. Flower, natural size; b) Gynostegium, twice enlarged; c) Pollinarium, showing here the pollinia, which are by means of the arms attached to the two-pointed clamping body.

*Note: These drawings are reduced to about 75% of the original.

Now, a bit about the two plants that I have. In 1992, David Liddle and Paul Forster went to Eastern Papua New Guinea to retrace Schlecter’s and Schumann’s routes of a century ago. David and Paul went south out from Madang to the Gogol River area looking for *H. gigas, H. lauterbachii*, and couple of other big ones. They found that the Gogol River area had been deforested so they collected west of Madang in the Dom River area. There they found many Hoyas, two of which are listed as IML 1062 and IML 1133. While visiting the Liddles at Mareeba, Australia, in 1995, I got a cutting of each of these. I have now flowered them and I believe them both to be *H. lauterbachii*, although the IML 1062 is twice the size of the IML 1133.

![Flower Umbel of Hoya lauterbachii](image)

*H. lauterbachii* is of the Eriostemma section and as such might be hard to flower under greenhouse or home conditions, as some hoya collectors have found with other Eriostemmas. Some other observations: It is a robust grower with 3” by 6” fleshy, lightly haired leaf blades; the sap is milky white; the peduncle is persistent and on the smaller flowered form bore four 1-1/2” flowers and the larger form bore eight 3-1/4” in diameter flowers with a 1-1/2” deep cup.
The overall width of the umbel of the larger form is an impressive 12”. The day and night fragrance (?) of the flower is pungent (that surely must attract a working beetle or other insect that is attracted to that bad smell).

The original, *artistique* drawing (shown on page 8) by Behrendt shows much less rigid leaves, less orderly (mathematically correct?) flowers and non-pendant presentation of the flowers in the umbel than those on my plants. My accompanying photos show these differences. Undoubtedly, his drawings were made from pressed, herbarium material for remember, in the original write-up, the author said that he hoped that it would be introduced to Germany from an up-coming trip? Even with these artistic differences, I believe the plant growing in nature is closer to or equal to my photos.

I am sorry that I do not have a decent photo of the smaller flowered form for it flowered and was past its prime while I was on a trip.

Although the flowers of *Hoya megalaster* and *H. gigas* are of the same diameter as this large form of *H. lauterbachii*, the *H. lauterbachii*, with its massive, deep cup seems more outstanding, more impressive. This is undoubtedly the largest of the Hoyas, so think impressive, think colossal, think big!

Ted Green---Green: Plant Research, Kaaawa, Hawaii
Hoya Index

The following is an index of all major references to Hoya sp. in the West Coast Newsletter and the Fraterna, the journal of the International Hoya Association. This is NOT a comprehensive index, but does include all photo references, sp. nov. descriptions, and factual references to specific species.

**WeC** indicates issues of the Hoya Society West Coast Newsletter.

**#** indicates issue numbers of Hoya Society West Coast Newsletter.

**Q** indicates quarterly issues of the Fraterna.

**Boldface type** indicates photographs.

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Hoya glabra Schlechter

by Ann Wayman

I’m not sure if this is in fact *H. glabra* but since the plant is being circulated under this name, I will call it that also.

This is the plant that I frivolously called “Green’s Gaudy Giant” in Fratema 3rd quarter, 1993. Although my plants have never achieved the impressive size that Ted’s do, it is still a gorgeous basket plant with beautifully veined foliage.

The plant blooms with literally dozens of large, globe shaped umbels opening all at once. The flowers are extremely waxy and greenish lavender in color. They are similar in appearance to the huge leafed plant we used to call *H. diversifolia* B. (Ted Green has since published that plant with the new name of *H. loyczandrewsiana*)...a real mouthful to pronounce!

This is one of the easiest of the Borneo plants to grow and bloom, flowering in 12 to 18 months from a 2 node cutting.

Want a picture of these beautiful blooms? Grab a camera quick...the flowers last only about twelve (12) hours and even less in very hot weather. A redeeming feature is that they are seldom without buds in many different stages, and all eager to bloom throughout summer and winter.
Attention all IHA members! Have you taken the time to get involved? Join a robin and meet nice people, exchange ideas, learn new things about Hoyas and have fun doing it. We are even thinking of starting an e-mail robin. Get in touch! Get with it!

Robin #5 Carita (Finland). We have a new home. (June) We started packing 3 weeks before the day we moved, then came 8 inches of snow. I really worried about my Hoyas, because H. acuta had big buds for the first time, as did H. mindorensis, too. I packed them and before that, washed all the pots, I have 70. Guess what? When I opened the packages (it was of course the first thing to do) H. acuta had opened its buds for the first time and it was flowering.

Robin #5. Maria (Sweden). This summer (August) for the first time I tried to put some of my Hoyas outside. I placed H. carnosa, H. pubicalyx, H. australis and a few others together with my tomato and cucumber plants in the greenhouse. They are doing fine despite the chilly weather and H. engleriana loves it!

Robin #3. Harriette (San Diego, CA). H. linearis is in full bloom (Sept.). It seems to bloom the best below the pot. That repotting into old soil and a very leaky redwood hanging pot did it wonders. I will get an article on H. linearis written, providing I get reasonably good photos.

Robin #3. Rosemary (Long Beach, CA). The big event this time was a sad fate of my big carnosa, growing on my sweetshade tree in the front yard. This is the one hubby accidentally whacked off the main stem... I measured it and it was a good half inch thick... that’s the one I called the trunk. It had been growing there for years and years.

As the weather got cooler the leaves began to wither and finally I decided to cut it back. The amazing thing is that in the crook of this tree it is growing on; it had sent out roots into the bark of the tree! That’s why it kept blooming, even with the lower section cut off. I had hundreds of flowers on this thing all summer long! At any rate before the whole plant went to pot, I cut off blooms and dried them with silica gel and have been using these little stars in my pot-puree mixes.

Robin #3. Benigne (Florida). All the carnosa and pubicalyx varieties have been in steady bloom through the summer (August), covered with clusters of flowers. Meliflora and fuscomarginata have also bloomed but not as much as past years. Repotted the 2 wayetii plants I have, both bloomed heavily. All the “older” plants had moderate growth rather than the rampant of the last several years, and I’m not sure why; the only exception is the fuscomarginata that has 6’ vines, up and into the oak tree it hangs in. The new cuttings I bought have had heavy growth, with the australis ssp. tenuipes getting ready to bloom. Saw a lizard on one Hoya last week and told it to share the aphids with the ladybugs!

Editor’s Note: It is surprising what you can learn from a Robin. I have an interest in mushrooms and found a fellow enthusiast in the Robins. Write Harriette, become involved today!
Hoya parvifolia Wright
by Ann Wayman

Parvi (small) folia (foliage)= H. parvifoia.
It took many years and many dollars worth of cuttings that rotted in the rooting mix before they ever took root to finally learn to grow this adorable miniature hoya. I might also add that in my case it took a nice plump seed pod obtained from Alma Parker to get 9 tiny little plants to grow. It appears that they respond better if grown in your own environment from the very start. Now, I know that hoya seed pods are not easy to come by but this little plant seems to form seed pods at the drop of a hat. Many plants have been started from cuttings taken from these original seed grown plants and once I had enough plants growing to try some experiments, I learned a great deal about what they do and don’t like. Of the things they don’t like, wet feet is probably what they dislike the most. Actually when you come right down to it, wet feet is apparently the only thing they absolutely will not tolerate. The way to get around that is to use a potting mix with considerable amount of sand. They like small pots and should never be placed in a pot larger than 2 ½ to 3 inches as the roots will always remain very small. Once a plant is growing well it will branch profusely and take on the appearance of a tiny shrub. The very small, gray/green leaves are fuzzy and have the texture of velvet. I’m always amazed at the size of the flowers on such a small plant. They are approximately ¼ inch across and normally have three to five flowers on each umbel. The only unsatisfactory trait is that it has no detectable fragrance.
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Phone: (760) 758-4290  Fax: (760) 945-8934
E-Mail: RBGdns@aol.com
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The President's Message

by Dale Kloppenburg

A lot of wonderful things have been happening. We are getting positive feed-back from the recent issues of FRATERRNA. Good comments on the quality and professionalism of its contents have been warmly received, and are deeply appreciated. New members continue to join and we are encouraged by this continuing trend. As I have mentioned before, if each of you will make an effort to interest one new person in hoyas and then get them to join you as a member of I.H.A, we can bring you even better and more interesting issues. There is strength in numbers, so do your best to help us continue to grow.

I am reminded through my correspondence that the interest in these plants is growing worldwide. Expanding interest, more collectors to many new collecting areas, increased research and taxonomic study by university people and others. We will all benefit by this activity. We continue to have available to us new species and new clones, thanks to the efforts of many collectors and friends from areas where hoyas are found and grow as native plants. It is always a benefit to have new clones of species become available. We will find some more adaptable to our conditions, and we will be able to select superior flowering types and better performing plants. This brings me to Ann Wayman’s comment in the previous issue of Fraterna under the heading of H. parviflora grown from seed. “It appears that they respond better if grown in your own environment”. Yes, this is really so. For one thing if there is any genetic variation in the species, those seeds which are most adapted to your local conditions will outperform those that are not. The fittest will survive, the most adapted (best) will remain.

Look forward to the next issue: We will have more interesting and timely articles !!!

Special Notation: Check your expiration date on the label of your envelope. If it is highlighted in yellow, this is your last bulletin. Send your renewal payments, see last issue $18 domestic; $25 international (credit cards OK), made out to I.H.A., and mail to our new membership Secretary at:

I.H.A.
Attention: Membership Renewal
1444 E. Taylor St.
Vista, CA 92084-3308

Phone renewals Okay: 1-760-758-4290
Fax renewals Okay: 1-760-945-8934
E-mail renewals okay: RBGdns@AOL.COM

You can always contact me by phone, fax, regular mail, or E-mail, regarding any questions, comments or concerns you may have. I will be happy to respond. THANK YOU!

Dale Kloppenburg, President, I.H.A.
6427 N. Fruit Ave., Fresno CA 93711
Phone and Fax: (209) 439-8249. E-Mail: cembra@Juno.com

UPCOMING MEETINGS

IHA Board of Directors Annual Board Meeting for 1997 will be in San Diego, CA. This meeting will be held at the home of Dr. Harriette Schapiro. It will coincide with the San Diego Hoya Group’s September 21st meeting which will be held at Rainbow Gardens (1444 E. Taylor St., Vista, CA 92084-- Phone 760-758-4290). The Board Meeting is open to all members of the IHA. Please call Harriette ahead of time if you plan on attending, as seating is limited (619-273-4267). And everyone’s welcome to attend the S.D.H.G. meeting the next day-- including potential new members and guests---should be lots of fun!
The Cytological Studies in Family Asclepiadaceae
Hoya

The following is an English translation by Masaki Yamagata & Setsuo Kinosita of a Japanese work done by Takuzo Nakamura and Hiroshi Yuasa. This work was published in La Kromosomo on 31 December 1978.

Key Words: Chromosome: Threadlike structure of the cell nucleus containing the hereditary material. The chromosome is divided along its length into two identical strands joined at some point by a centromere. Prior to cell division they condense, becoming visible with the light microscope. The $2n$ number is the number of chromosomes in cells other than the reproductive cells (which contain $\frac{1}{2}$ this number (the $n$ number)).

Karyotype: The physical appearance of a chromosome as seen at a certain stage. (miotic metaphase). The number, size and shape of the chromosomes in a set is usually highly characteristic of the species. It may be consistent within a genus.

Trabant: A spherical body seen attached to one end of a chromosome arm. Often a pair are present. The number and position of trabants are one of the features of the karyotype. Its function is as a nucleolar organizer. (The chromosomal DNA that codes for RNA).

$\mu$ (Micron or micrometer): A unit of length. One thousandth of a millimeter.

Chromosome numbers and karyotypes in genus Hoya:

Takazo Nakamura: Biological Institute, Showa College of Pharmaceutical Science. Hiroshi Yuasa : The Research Institute of Evolutionary Biology.

Genus Hoya is in the Asclepiadaceae Family. It is distributed from Southern Kyushu in Japan to South Asia, Australia. About 100 species. They are branched climbers and epiphytes some more shrubby or succulent. As to the cytological studies about Hoya, there is only a report of chromosome numbers by Pardi (1934), Hsu (1967) up to the present. This time, we report the results of karyological observation about 8 species and 1 variety in the genus Hoya.

The material and the method:

We used all materials grown in The Research Institute of Evolutionary Biology. Though the method of study, the analysis of karyotypes and the indication is as before the report, because the chromosomes of genus Hoya are very small. We took the following method: as soon as we take a root, we soak it in 5 °C pure water for 4 - 6 hours and dyed and fixed by following the usual method, which is substitution for previous manage by 8-Oxyquinoline (8-Hydraxyquinoline).

1. Hoya carnosa (L) R. Brown
$2n=22$ Yakushima Is. Japan.


Chromosomes range from Max. 1.6 $\mu$ to Min. 0.4 $\mu$. We are able to distinguish three groups, L M. S in morphological and size order.

L — 3 pairs have median constriction and 1 pair submedian constriction. But 1 pair of Max chromosome keep secondary constriction, the rest of 3 pairs are distinctly trabant.

M — 4 pairs with median constriction and 1 pair submedian constriction.
S — 1 pair of the submedian constriction and 1 pair Min median constriction.

The size of chromosomes are continuous and a little symmetrical karyotypes. The formalization is as follows:

K=22=2scLm+2tLsm+4tLm+8Mm+2Msm+2Sm+2S

2. *H. carnosa var. variegata* De Vriese.

2n=44

It is the Variegated *Hoya carnosa*. Leaves: a little smaller than *H. carnosa* a little wavy, milky white marginated 1/3 ~ 1/4 leaf edge. Often variegated parts are light red.

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*Hoya variegata* Siebold ex Morren (*H. carnosa* var. *variegata*).

Photo by Ann Wayman
Chromosomes range from Max. 1.3 μ to Min. 0.4 μ. This construction is distinguished as *H. carnosa*.

L — This construction is 5 pairs. 3 pairs have submedian constriction with trabant and 2 pairs have median constriction with trabant.

M — This construction is 12 pairs. 4 pairs with submedian constriction and 8 pairs with median constriction. 8 pairs have median constriction distinguish. 2 pairs with M 1 sub-group and 6 pairs with M 2 in size order

S — 2 pairs of the submedian constriction and 3 pairs of the median constriction.

The size of chromosomes are continuous except in the L group. On the whole it shows symmetrical karyotypes. The formalization is as follows:

\[ K=22=2tL_{sm}+4tL_{m}+8M_{sm}+4M_{1m}+12M_{2m}+4sm+6Sm \]

3. *H. obovata* Decne. (H. kerrii Craib.)

2n=22 Thailand

Young stem is hairy. Old stems are not hairy. Leaf is thick, oblong-cordate, 10cm wide, 14cm long, truncate.

*H. obovata* belong large plant in this genus. Leaves: surface; dark green, slender haired, reverse; light blue, alternate or opposite. Corolla: white. Corona: rose-purple, densely hairy inside.

Chromosomes range from Max. 0.9 μ to Min. 0.4 μ. These chromosomes belong to the small type.

L — 1 pair of the Max chromosomes have submedian constriction with trabant. The rest of the 3 pairs keep distinctly trabant and primary constrictions are all median constriction.

M — 4 pairs with median constrictions and 2 pairs of the submedian constrictions.

S — 1 pair with submedian constrictions.

The size of chromosome are continuous and big variation is poor. It shows symmetrical karyotypes. The formalization is as follows:

\[ K=22=2tL_{sm}+6tL_{m}+4tL_{m}+8M_{m}+4M_{sm}+2Sm \]

4. *H. purpureo-fusca* Hook. (Actually this is *Hoya pubicalyx*, a Philippine indigenous species)

2n = 22

Leaves: thick, oblong, 4cm width, 15cm length, bright green, silver pink splashed reverse; light green. Corolla is large, dull red, center is pink, It called H. cv. Silver Pink in Hawaii.

Chromosomes range from Max. 1.0 μ to Min. 06 μ.

L — 3 pairs. 1 pair of the Max. chromosomes have submedian constriction with trabant. 2 pairs keep distinctly trabant and primary constrictions with median constrictions.

M — 5 pairs. 2 pairs have median constrictions and 3 pairs have submedian constrictions.

S — 3 pairs. 2 pairs have submedian constrictions and 1 pair has submedian constrictions.

The size of the chromosomes are continuous. They show symmetrical karyotypes. The formalization is as follows:

\[ K=22=2tL_{sm}+4tL_{m}+4M_{m}+6M_{sm}+4.0s_{m}+2.5sm \]

2n=22. Sikkim

Leaves: lanceolate, thick, 1cm width, 15cm length, slender. Surface; glossy dark green, reverse; light green. Corolla; white, red center. Milkweed Chromosome ranges from Max. 1.3 µ to Min. 0.7 µ.

L — 2 pairs of chromosomes are submedian constriction with trabant 3 pairs have median constrictions with trabant.
M — 4 pairs. 2 pairs with median constrictions and 2 pairs with submedian constrictions.
S — 2 pairs. 1 pair has submedian constriction and 1 pair has the median constriction.

The size of chromosomes are continuous. They shows nearly symmetrical karyotypes. The formalization is as follows:

K=22=4tLsm+6tLm+4Msm+4Mm+2Ssm+2Sm

2n=22 Australia

Leaves: ovate, thick, over 10cm long, surface; glossy green, sometime silver green spotted. Corolla: red center, fragrant.

Chromosomes range from Max. 1. 7 µ to Min 0.6 µ
L — 6 pairs. 1 pair has median constriction, but 1 pair of Max. chromosomes keep secondary constriction. The rest of 5 pairs of all chromosomes have trabants, but the position of all primary constrictions are different. 1 pair has the submedian constriction with trabant and 4 pairs are with median constrictions
M — 4 pairs. 3 pairs have submedian constrictions and 1 pair has median constrictions.
S — 1 pair with Minimum median constrictions.

The size of chromosomes are continuous. It shows symmetrical karyotypes. The formalization is as follows:

\[ K=22=2scLm+2tLsm+8tLm+6Msm+2Mm+2Sm \]

Hoya macrophylla Blume

Photo by Chuck Everson
7. **H. keysii** F. M. Bailey

2n=22 Australia

*H. keysii* belongs to medium plant size order. Stems are gray-green, leaves; opposite ovate-elliptic, they are slender haired.

Chromosomes range from Max. 1.0 µ to Min 0.6 µ.

L — 5 pairs. 1 pair of Max. chromosome is the submedian constriction with trabant. 3 pairs of the median constriction with trabant. The remaining 1 pair has the submedian constriction, but one which lacks a trabant.

M — 4 pairs of the median constriction.

S — 1 pair of the median constriction.

The size of chromosomes is continuous. It shows symmetrical karyotypes. The formalization is as follows:

\[ K=22=2tLsm+6tLm+2\frac{1}{2}tLsm+8Mm+2Sm \]

8. **H. macrophylla** Blume

2n=22 Java

This belongs to a large plant group. Stem: 1cm robust, brown-gray. Leaves: ovate elliptic, apex acute, 9cm wide, 15cm long, thick, surface; purple brown, 5 parallel slender, bright green, venation reverse; light purplish brown. Corolla: white.

Chromosomes range from Max. as 0.9 µ to Min. 0.6 µ.

L — 5 pairs. 1 pair of Max. chromosomes have submedian constrictions with trabant. 4 pairs have median constrictions with trabants.

M — 5 pairs. 1 pair have Max submedian constriction in M group and 4 pairs have median constrictions.

S — 2 pairs have median constrictions.

The size of the chromosomes are continuous. It shows nearly symmetrical karyotypes. The formalization is as follows:

\[ K=22=2tLsm+8tLm+2Msm+8Mm+2Sm \]

9. **H. bella** Hooker (*H. paxtonii* Hort.)

2n=22 India

This belongs to a small plant grouping in this Genus. Stem is slender, leaves are small. Grows up to 100cm. Leaves: acute apex, thick, 1 midrib is sunken surface; green, reverse; light green. Flowers: several, white, pink center.

Chromosomes range from Max. 1.1 µ to Min. 0.6 µ

L — 3 pairs. 1 pair of the Max. chromosomes have submedian constrictions with trabant. 2 pairs have median constrictions with trabant.

M — 5 pairs with median constrictions and 2 pairs have submedian constrictions.

S — 1 pair has submedian constrictions and 1 pair has median constrictions.

The size of chromosomes are continuous. They show nearly symmetrical karyotypes. The formalization is as follows:

\[ K=22=2tLsm+4tLm+10Mm+4Msm+2Sm \]
Genus Hoya belongs to the Asclepiadaceae family and its position on the taxonomy has been studied by White & Sloane, Bailey, Jacobsen, etc. But it seems that the details must be examined in many respects. This time cytological study, particulars, the analysis of karyotypes was examined. It is considered that Asclepiadaceae family is the basis of the taxonomy system. The above is certified in observing the form of the chromosome. The Asclepiadaceae family is similar to the Cactaceae family in that it contains many small chromosomes, but the position of the constriction and existence of the trabant differ in these two families. In the Genus Hoya, which is examined this time, the chromosome of Genus Hoya are smaller than that of the Genus Stapelia, and there is only a little difference in the length of each chromosome in comparison with Genus Stapelia. In the Genus Hoya, a median primary and a submedian primary chromosome occupies the most of the part of the karyotypes composition. The average T.C% of the Genus Stapelia is 63% and that of Genus Hoya is 57%. The karyotypes of the Genus Hoya structurally still more progress for symmetry than in the Genus Stapelia. In the view of the karyology, it is estimated that Genus Hoya is a more evolved genus. It is estimated that the differentiation of species and genus of Asclepiadaceae family is mainly attributed to the decrease of the number of the chromosome and the form changes of the chromosome rather than the course of the polyploidy. Some karyological observational results which indicate grounds for differentiation of function are indicated below.

First of all, the basic number of chromosome is this: Genus Hoya; 2n=22, 24: Genus Stapelia; 2n=22, 23, 24; Genus Caralluma; 2n=22.

The number of the chromosome of Asclepiadaceae family are all multiples of eleven. In consideration of observational result in which Hsu, Pardi report that the number of chromosome of the Genus Hoya; n=11. Secondly regarding the problem of polyploidy, the Asclepiadaceae family has little polyploidy. In the Genus Hoya, it is only observed that the chromosome of H. carnos var. variegata; 2n=44. Therefore diploids are the main constituents in the Genus Hoya. Further the diploids justly have dry-tolerant qualities. The polyploidy is not necessarily concerned with the cold-tolerant qualities, which is certified by the observation of Genus Hoya being distributed in China.

A relationship between the size of form and the polyploidy is not simple, which is comprehended by the results that the big species like, H. obovata, H. macrophylla; 2n=22. The size of chromosome of Genus Hoya has a main tendency to small-chromosome-dominance which is observed in many succulent plants. Therefore Genus Hoya belongs to the classification of succulent plants of medium size. There are many hypothesis about the reasons for miniaturization of the chromosomes. It may be that the physiological conditions of dryness in which Genus Hoya is distributed is one of the main causes.

The main karyotypes feature of Genus Hoya:
1) It is composed with a crowd of small chromosomes (1.0 μ ~ 0.6 μ). It is distinguished by three types, Large size (L), Medium size (M), Small size (S).

2) The karyotypes feature is distinctly showed in particularly Large size (L). Each species has certainly a pair of chromosome which has secondary constrictions and trabants.

3) H. carnos and H. australis whose chromosome contains secondary constriction are both median constricted chromosome. As to satellited chromosomes, submedian constricted chromosomes and median constricted chromosomes are respectively 67% and 33%.

4) There is no rule for the number of the secondary constricted and satellited chromosomes. Its pair numbers ranges from three to six.

5) In H. keysii, above all, the trabant of the fifth pair of chromosomes is lacking in one side. That is a heteromorphic form.

6) Though the group of Medium size (M) is between that of Large size (L) and that of Small size (S), the difference between chromosomes which adjoin the group of the Large size is small. Most of Medium size chromosome are median constriction chromosome.
7) The group of the Small size are mostly of median constricted form and symmetric.

8) As a whole, the group of the Medium size occupy a large part of chromosome composition in the Genus Hoya. 2/3 of all chromosomes are of median constriction form and the remainder are submedian constriction chromosomes. The karyotype composition is generally symmetric.

9) This time it was difficult to find out whether the external morphological difference of each species of Genus Hoya is concerned with the karyotypes.

Conclusions:
Considering the above things, it seems that the karyotypes of Genus Hoya has been developed in the direction of decrease of the chromosomes and approach; 2n=22. It is estimated that the karyotypes together with the decrease of chromosomes have been simplified at present. The change of karyotypes applies to a law of Williston, and the fact that there are many trabant in the Genus Hoya seems to be concerned with small chromosomes. There is an idea that the trabant may pioneer in the miniaturization of chromosomes. In the case of succulent plants, it is estimated that in addition to the trabant, physiological condition of dryness still induces the miniaturization of chromosomes. Whether it is true or not, as the chromosomes are small, the analysis of the karyotypes was not studied for one more step. From now on, we will analyze the karyotypes for details by using the band method and etc., and investigate the concern with the external form.

Somatic Chromosomes of Hoya (2n):

1. Hoya carnosa 2n=22
2. Hoya carnosa var. variegata 2n = 44
3. Hoya obovata 2n = 22
4. Hoya pubicalyx 2n = 22
5. Hoya longifolia 2n = 22
6. Hoya australis 2n = 22
7. Hoya keysii 2n = 22
8. Hoya macrophylla 2n = 22
9. Hoya bella 2n = 22

Editors notations: The representation here of the chromosomes is not precise since the scanner digitizes the images. The borders are actually smooth. The magnifications here are approximately 6,500. It is interesting to note the differences in H. keysii and H. australis which have been grouped into one species, not even as a variety.
WHY IS IT? - ABOUT NAMES

by Ted Green

Why is it that I can make a trip to Timbuktu and come back with the same name and yet I have sold, traded or given a Hoya cutting to an individual and the name changes? Same plant but with a different name!

Basically, what I am talking about is that from time to time I lose a plant and then go begging to get a piece back. Many times I get back a cutting with a beautiful label on a beautiful cutting - the only trouble is that they don’t match the one I originally had! What has happened is that cuttings are passed around or traded and labels are mixed or faded to the point where they can’t be read and then a new name is “created”. Or, maybe some botanist has dreamed up a new/different name for the plant and the owner goes along with the change.

Or, I have seen very critical articles about one of my plants and later I find out it was something else, entirely different, that was being criticized. The reader of the article then gets the idea that the gospel has been spoken and then the innocent plant is forever wronged. From then on, nothing will correct it. In fact, some years ago I was accused of dreaming up or changing names just to sell more cuttings.

In orchids, it is a cardinal sin to lose a label - or a worse one, to change a label. Here in Hawaii, there are many beautiful flowering orchids that are "No-names" (that is not a name!), kept just for the beauty of the flowers or sentimental value. As orchids, the original Hoya label should stay with the plant. Speaking of lost labels, once from Indonesia I received about 10 cuttings of the same plant with 10 different names! The original plant must have died and a different one had grown up in its place but the original label remained.

Another problem: I am continually arguing with my old friend Dale Kloppenburg (we are called the Odd Couple, for we seldom agree on anything!) about some of the Philippine hoya’s - especially in the small leafed group. My contention is that Merrill and Elmer surely must have seen and named most of them in the early 1900s for they are not rare now and must have been quite common then, before all of the development. For instance, the road up Mt. Makiling (just south of Manila and the Botanical Garden of the University) was built about 1916 and that made an easy access to the top for many botanists (and picnickers). I believe that in the past 80 years all of the species found there were named and yet several have been renamed in the last 10 years. Somebody is wrong.

Another problem: I believe that there are about 300 species of hoya’s of which about 200 have been named - according to Index Kewensis, (which is bible where the names of all flowering plants are registered) but the problem is matching the name to the species. I have never found a Hoya growing wild with a name tag on it! A major problem for the botanist is trying to match the original herbarium specimen with what is in hand - especially when the original has been so poorly kept that maybe only a stem and a couple of leaves are left - no flowers and a poorly written description of the plant. That is when the arguments start!

Another problem: Most people think that a species is ONE certain looking plant and all of the plants that we have in cultivation have to look exactly like that one. It is unfortunate that most of the hoyas in cultivation came from a single collection from the wild. Remember, a species is a group that breeds true and in which the offspring all look similar. It must be realized that in the species, there can be minor variation; as color, size of flower, flower parts and leaves, growth, etc. A good rule of thumb is that species must differ in at least 2 characters and size and color are not considered. The “splitter” botanist makes species out of all of the minor variants while the “lumper” botanist throws all of the minor variants into the pot to come up with one species. For instance, I now have 4 forms of what I consider to be H. littoralis (with 4 different species labels). I guess you see that I am a “lumper”.

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Another problem: Synonyms are two or more names for the same species - where one botanist gave a name not realizing that the plant had already been named. I believe that possibly 25% of the names listed in Index Kewensis are synonyms. An example of this is H. padangensis where it was already named as H. uncinata. By the rules of botanical nomenclature, the first name, H. uncinata, has priority since it was named in 1863 and H. padangensis, in 1916. The confusion comes when some growers use the name padangensis. If you want confusion, think of this: H. acuta, H. pallida, H. parasitica are all legally H. verticillata.

The big trouble today is matching the plant to the scientific name. Maybe we should adopt the attitude, as with roses, iris, camellias and many other horticultural plants where outstanding forms are given popular names—like Peace, Fire, Ville de Nantes, etc. We already have a few in hoyas: Wax Plant (H. carnosa), String Bean Hoya (H. longifolia), Sweetheart Hoya (H. kerrii), etc. why not more? It would surely be easier for some who have trouble pronouncing "subquintuplunervis", or the like. Incidentally, subquintuplunervis means "from Latin, up to 5 nerved". Common names would make everyone happy, except maybe botanists. On the other hand, 200 common names would be staggering. And, in what language? Swahili?

Ted Green-- Green Plant Research, Kaaawa, Hawaii

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MY EXPERIENCE GROWING HOYAS IN CLAY PEBBLES

by Margie Stone

Some time ago, an article appeared in FRATERNA about using leica stones (clay pebbles) to grow hoyas. I decided to give them a try and ordered some. I wasn't real impressed with them. My plants and cuttings didn't grow, but then that could have been my fault, and I probably kept them too dry or too wet. So now what to do with a bucket of clay pebbles. I decided they would make a nice attractive top dressing for hoyas I had in brandy snifter types of terrariums. In a large one that has a 7 inch top opening, 10 inches across bottom, with a bowl part being 12 inches high, I had a Hoya serpens. It was doing okay, but once I placed the clay pebbles on the top of the soil, it took off and before long had filled the whole terrarium. Within a couple of months it had set on two umbels that bloomed, eventually setting on a seed pod. It took several months for the seed pod to mature and pop open. I now have about 15 H. serpens seedlings. The clay pebbles in this instance were just put into the pot mostly one pebble deep, wherever they landed and not really a solid covering.

Since the H. serpens was doing so well with the clay pebble topping, I decided to try them in the terrarium that I had H. curtisii in. It immediately started growing, and rooted into the pebbles. I have not changed my watering schedule. They are watered the same as my other plants, but since the soil is not as deep it probably dries out faster than in the regular pots. The clay pebbles seem to absorb excess water and probably hold the moisture, but the dampness is not visible. I have been using liquid fertilizer and all the plants get it at once—no special treatment.

In a shallow ceramic bowl I placed the pebbles, upon which I placed a piece of tree fern that was wrapped with some sphaghnum moss. To this I attached H. imbricata, and then placed all of that in a very large Zip Lock bag, leaving most of the zip lock undone. Then have placed it within a couple inches of gro lights. First time I have got a start of it to grow.
My latest experiment with the pebbles is topping the pots of some hoyas that have sat (it seems) forever, to see if they will be encouraged to grow. Those that I am trying now are H. caudata, and H.darwinii, topped with the pebbles, and set in a plastic container with a removable lid, and then another pot of them (again topped with the pebbles) but setting within a few inches of grow lights. Will see which will grow faster, or if they will even grow at all.

I am always checking garage sales and fleas markets for inexpensive terrariums, gold fish bowls or old aquariums. The latest acquisitions were some plastic candy containers (with lids) that the neighborhood convenience store was getting ready to throw out. These took a little work, as the only thing that undid the labels was WD40. Then had to use Simple Green to cut the oiliness of the WD40. Once that was accomplished, and the containers washed in bleach water, they have made a nice mini-greenhouse, for small new plants to get started.

I use pea gravel (which I wash with bleach water) along with agricultural charcoal in the bottom. If I am going to plant directly into the container, I then put in my planting mix and add the plant, topping it off with the clay pebbles. With an aquarium, once the gravel and charcoal are in, I add a few of the clay pebbles, and set small pots on top of these. Usually I put a piece of glass or plastic on top at night, removing it during most of the day.

I don't know if the pebbles or a combination of things have led to better success growing some of the hoyas, but for now they seem to be working.

Margie Stone

Our Cover Picture

This beautiful hoya species comes to us from the Philippnes. We now have several different collections of this species from many diverse areas of the Philippnes. A fortunate situation since it gives us some interesting variations. The species was first described in the Philippine Journal of Science Supplement by Dr. Rudolph Schlechter in 1906. It was collected by Borden growing on Mount Meriveles, Province of Bataan at 650 meters altitude (2,132 feet) in June 1904. I would assume the specimen was sent to Dr. Schlechter in Berlin where it was subsequently described.

Schlechter felt the flower was about equal in size to that of H. parasitica Wallich (H. verticillata Vahl) G. Don.) but could be readily recognized by its long leaves and rather narrow straight corona lobes. Schlechter also wrote: “Evidently one of the species of Hoya parasitica Wall..group and closely related to this species”.

Personally I have found that this species is not the easiest to grow into a nice looking plant but surely it is any effort put into its well being. The foliage is glossy, distinctly veined, and beautiful. The flowers are outstanding.

Although the type specimen was collected at a relatively high altitude, it was subsequently collected and recollected from trees in primary forests at low and medium altitudes. As well as from the northern Philippnes, collections have been made on Mt. Maquiling, Mt Banahao, Benguet, Bulucan, Cavite, Tayabas, Sorsegon, etc. It appears to be a widespread species but not a prevalent species.

The question that always seems to arise is, are the specimens we have collected the true species and if so do these specimens form a variable cline, (continuous variation ) whose members may include such species as Hoya palawanica and others. It seems we will always have a never ending task with species determinations.
IMPORTANT ANNOUNCEMENTS
The official I.H.A. slide program is available to all I.H.A. members.

140+ beautiful slides of hoyas (flowers and foliage shots)! If you would like to show these 35 mm slides to your local garden or succulent club (or to get a few members together to see the lovely presentation), please write to the person listed below on how to obtain the slide show. No fee required other than shipping and insurance charges and a reasonable deposit to cover possible loss. Write to:
Jerry Williams, Slide Librarian, 1444 E. Taylor St., Vista, Ca. 92084-3308

ADOPT A MEMBER PLAN RE-ACTIVATED FOR I.H.A.

Back in 1993, there was a plan put forth called “ADOPT-A-MEMBER”. Simply put, a member of I.H.A. adopts and pays for a year membership for a person or organization of their choice. It’s one way of introducing a friend to our wonderful society through the quarterly issues of FRATERNA that each new subscriber will get. The dues are only $18.00/year ($25.00/Foreign). Make someone happy—A birthday gift, an anniversay gift, or just a gift to someone you care for. They will enjoy it for a whole year—maybe more!

HELP SPONSOR A PHOTO CAMPAIGN

How do you like the photos that are put into each issue of FRATERNA these days! would you like to see more? We certainly would if we could afford it, but let’s face it—one of the most expensive things about putting out an issue of FRATERNA is having all those pictures made and pasted into each issue. To offset those costs and allow more pictures to be added, we are actively asking our members to help sponsor a photo. This was very popular a couple of years ago, but in the last 18-24 months, we’ve seen a lack of interest ---probably because we didn’t promote it enough. Let’s rectify this! Send in your non-profit donation of $25.00-$50.00-$100.00 today! through your generous support, everyone will benefit! Thank you.
QUESTIONs AND ANSWERS

by Ann Wayman

Question: What causes my hoya leaves to suddenly turn yellow and fall off the plant? T.D.

Answer: This is usually caused from plants that are allowed to become too dry. As the potting medium becomes drier, leaves all along the stem will start to turn yellow and drop off the plant in large numbers. If it receives water in time the yellowing and leaf drop comes to a halt and the plant will usually survive. It can also happen with plants that have poor drainage and be allowed to remain wet for an overly long period of time. You can tell the difference from the appearance of the plant. Plants that try to exist in water soaked soil normally have water-soaked looking leaves and stems. Over a period of a few days or even a month or longer as the roots slowly rot, the entire plant will become wilted as if it needs water and many of the leaves will turn yellow. The leaf stems will usually be black with rot and the leaves will fall off.

Question: I think I have mealie bugs under control but then they suddenly re-appear practically overnight by the hundreds. Where are they coming from? T.D.

Answer: Many years ago the inspector for the Oregon State Dept. of Agriculture told me: “If there is a mealie bug within a 10 mile radius, it will find your hoyas”. He was right! Somebody else told me they appear out of nowhere like a phantom...another person said: “Hoyas breed their own herds of mealie bugs”. The truth is that you may think you have them under control and don’t have a single one left alive, but if you look at some leaves and stems through a microscope or a strong magnifying glass you will see dozens of babies too small to be seen with the naked eye but almost mature enough to start up a new crop of mealies. Even if a few or maybe even one escapes the spray and general cleanup, that’s all it takes to start another colony, as they are born alive (not from eggs) at certain times of the year (usually in the spring)---already pregnant...just like aphids.

Question: Recently I purchased several hoyas as cuttings. I put them in a rooting medium as suggested by the grower and now 10 days later they are all rooted. How long should I wait before potting them in my regular potting mix? T. D.

Answer: It’s probably a good idea to wait until they are showing some new growth. That normally takes 4 to 6 weeks but it can take much longer if the cuttings were taken from old wood or the cuttings is too long in size. A 6 to 10 inch cutting will start new growth much faster that one 2 foot long. I personally have potted up cuttings with one tiny root and they did fine. But don’t do as I do...I have many of my own to experiment with, which is not usually the case when you buy expensive cuttings.

All of these questions were sent along with about a hundred more from T. D. in Montana... keep ‘em coming, T. D.

If you have questions, we would like to help if we can. Please mail your letters to our correspondence secretary, Harriette Schapiro, 5217 Cassandra Ln., San Diego, CA 92109. If Harriette doesn’t know the answer, she will forward your letter to someone who can help you.
BIRD TRACKS

From: Robin Director
Harriette Schapiro
5217 Cassandra Lane
San Diego, CA 92109
(619) 273-4267
E-Mail schapiro@juno.com

Attention all IHA members! Did you take time to get involved in your association? Did you join a robin and meet nice people, exchange ideas, learn new things about hoyas, exchange cuttings, increase your collection and have fun doing it? GOOD NEWS! We now have an e-mail Robin flying. If you are interested in joining our e-mail Robin, please contact me at the above e-mail address.

Robin #1. Margie (Oregon). Last October, we made a trip to Hawaii. Had a nice visit with both Ted Green (and his wife) and Michael. While in Honolulu we attended an orchid show and my husband (Bob) got hooked on orchids, but guess who gets to take care of them. We had a few shipped home from the show and then found a couple of orchid places near Hilo that we visited (and bought from). They should be compatible with hoyas. Although I have always liked orchids, I think hoyas are still my first love. Probably the most exciting hoya experience I had this past year was H. serpens blooming in a large sniffer type terrarium and going to seed. Have about 15 seedlings right now. Ted asked "what pollinated it?". Have no idea. He said he thinks that some could be self-pollinating.

Robin #1. John (California). If I were to rate hardiness of specific hoyas, I would include Hoya pubicalyx Merrill (all varieties), H. carnosa R. Brown (all varieties) and H. kerrii Craib to name a few. I even noticed H. ciliata Elmer made it fine in the dry section. Hoyas seem to like a high humidity during the cool winters but not much root watering. Slow release fertilizer doesn’t release so fast so I prefer to use it during the cooler periods. I believe, like many others, that hoya pollination is a myth as they can set pods asexually. Botanists have recently accepted the concept that more than two kingdoms exist and have included fungi, ancient bacteria, and modern bacteria. Virus would be included if it could reproduce by itself. The point is that ancient bacteria can reproduce asexually while modern bacteria can do it by sexual means.

It is going to be interesting to observe more of this in the future.

Robin #1. Harriette (California): I do have an addition to the list of plants NOT to try outdoors. I had two starts of H. wayetii. The one I had outside, did not like our not very cold winter. Oh well, the one indoors is doing just fine. Incidentally, I know you have heard about my experiment with H. linearis. I have to report that you would not recognize the pot as the one I started last year. It apparently loves my very leaky redwood pot filled with old soil. It gave me the best blossoming I have ever seen in this species. I already see signs of new growth. (1 April 1997) I will keep you posted on the rate of blossoming this year.

Robin #3. Benigne (Florida). (Nov. 1996) Temp. dipped to 48°F. Didn’t get all the hoyas indoors right away but those that stayed outside longer seem OK. It took some doing to untangle all the vines from the trees they were in. Only after I brought them inside did I get the full impact of just how large they really were. I wasn’t sure what to do with them. Pruning them back was a limited solution because all these varieties had large leaves. It didn’t make sense to cut off that much growth. I now have new lightweight, movable PVC stands.

Editors Note: It’s surprising what you can learn from a Robin. I have an interest in mushrooms (I was once a Research Agronomist), and recently found a fellow enthusiast through the round robin. Write Harriette and become involved today!
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Hoya lobbii  Hooker f.
Photo by Ted Green
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Phone: (760) 758-4290 Fax: (760) 945-8934
E-Mail: RBGdns@aol.com
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Back Issues

We now have the thirteen original issues of the Hoya Society-West Coast bulletin bound as one publication. The price of this bound text is $35.00 for U.S. shipment and U.S. $39.00 shipped surface overseas. Due to the extra pages and pictures in our new publication "Fraterna", we must, out of necessity, increase our prices for back issues of "Fraterna" to $7.00 per issue, U.S. $9.00 per issue shipped surface mail overseas.

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Errors of fact may occur from time to time in "Fraterna". It is the policy of the IHA to publish corrections of fact, but will not comment on matters of opinion expressed in other publications.

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The President’s Message
by Dale Kloppenburg

As I write this it is the end of summer and by the time most of you receive this issue, in
the northern Hemisphere many of you will have all your plants indoor. Hopefully you found
room for them. A few favorable places where the winter weather doesn’t get too cold, in coastal
areas, Florida or Hawaii, hoyas enjoy 12 months outdoors. Remember too in the southern
hemisphere it is the beginning of summer and many hoyas there are at their peak of bloom and
growth. It is amazing to me how successful many growers are with getting their hoyas to perform
and bloom indoors. We need more feed-back from these growers so we can pass along all the
secrets of cultural value to all our beginners and even those who are still struggling with their
plants. I am reminded that we still need to understand what the secrets are to growing and
blooming the Eriostemma species. We need methods that we all can apply so as to enjoy these
wonderfully different flowers. We have a number of problem species that need good professional
help in understanding the needed requirements for easy culture.

There is plenty of constructive work left to do. Pitch in and do a little research. If you are
already successful, pass your cultural methods along so everyone may benefit. We continue to
enjoy an increasing interest in hoyas. Hoya regional groups are growing and a couple of new
groups have been formed. Keep up the good work. Remember to give a membership to at least
one of your friends or relatives so as to sustain our growth rate.

We have a lot of new articles on tap for up-coming issues of FRATERNA. Look forward
to some new cultural techniques, some new collection articles, some more diverse species profiles
and also more about authors and other professionals. If there is something we are leaving out that
you want to hear about, let us know. It is your society—we want to help you in any way we can, so
let us hear from you.

Our new E-Mail Robin is up and functioning in addition to the regular Round Robins.
Contact Harriette Schapiro and join the fun. I suppose my theme for this issue is: GET
INVOLVED.

Look forward to the next issue: We will have more interesting and timely articles !!!

Special Notation: Check your expiration date on the label of the envelope. If it is
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You can always contact me by phone or mail, about your questions, comments or concerns.
THANK YOU.

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Fresno CA 93711
Phone and Fax: (209) 439-8249
E-mail: Cembra@Juno.com
HOYA LOBBII, Hooker f. - LOBB'S HOYA

by Ted Green

I have always wanted to collect in Northeastern India, actually in Assam and along the Burma border, for I have seen records of bushy (non-veining) types of hoyas from there - the ones that are not now in cultivation. One that I can now take off my want list is Hoya lobbii, Hooker f., for it is now in cultivation, I have it and now and hopefully it will never become extinct.

Hoya lobbii was named by J. D. Hooker (the son) after Thomas Lobb, the famous plant collector who was sent out by English nurseries, in the middle 1800s, to collect plants in Southeast Asia. Orchids and several other plants carry Lobb's name as a result of his collecting and bringing them under cultivation. He found H. lobbii at 1,500 ft. elevation in the Khasia Mountains of Eastern India and its description was first published in the Flora of British India in 1883.

Hoya lobbii  Hooker f.
Photo by Chuck Everson

The plant that I have was a world traveler for it came to me as a small cutting from a friend in Central California, who got it from another friend in Southern California, who got it from a friend in Germany, who got it from a friend-tourist traveling in Northern India. Another source of those in the trade is from Chanin Thorut of Bangkok, Thailand, who probably got it at
the Bangkok Weekend Market where people sell things from all over Thailand, eastern Burma and the borders of Laos and Burma. By either route, it is a world traveler! Incidentally, the first 2 cuttings I got, straight from Germany, didn’t survive but the third (the circuitous one), from Dale Kloppenburg took off and flowered in 6 months.

The German collector, who sent me the original cuttings, also sent me a picture of the plant growing in a moss-covered tree in Nepal. The picture showed a definite epiphyte with droopy woody stems that were 3 - 4 ft. long. It is obvious that it is a close relative of **H. polyneura** for its growth is quite the same - with its horizontal to sagging branches and with the flower umbels facing downward but the leaves are quite different. My plant appears to act like **H. polyneura** by all of the growth arising from one base and then not rooting along the stems. I do not know if it would root along the stems if it were growing on a mossy branch of a tree - as in the picture I saw.

My plant is growing outside, in a plastic pot hanging in a Thai Citrus Tree, which gives it about 50% shade. I have it planted in a fast draining mix of old fir bark and I fertilize it about every 3 months with a small portion of dry and well pulverized chicken manure (which I do not recommended for inside the house). I water it only when it hasn’t rained for a week or so. This plant is now about 18” across and with about 24” stems. It is a healthy plant that flowers every month, during the summer. The leaves are about 1-1/2” x 4-1/2”, symmetrical and of good substance and the whole plant is firm and quite woody. Since the flowers are viewed best from below, I have the plant growing above eye-level.

The flowers are dark but lively red, about 3/4” in diameter; 15 - 20 in the umbel that is borne on a permanent peduncle. The sap is milky white and the fragrance of the flowers is a pleasant musky-sweet.

**Hoya lobbii** is definitely a good addition to any hoya collection and should prove to be a good house plant. Just give it a chance but hang it high so that you can see the flowers.

Ted Green
Green: Plant Research
P. O. Box 597
Kaaawa, Hawaii 96730

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**Meet The Professionals**

By Dale Kloppenburg

The following professional is the one for whom the above beautiful hoya was named. The information was gathered from the Flora Malesiana Cyclopedia of Collectors. Series I volume I.

Thomas Lobb. Borne in 1820, in Cornwall, England, died 1894, at Devoran, Cornwall, England, employed by the firm of Messrs Veitch, Exeter, in the years 1843-60, to collect plants of horticultural value. As the result of exposure in his work, he lost one of his legs, which induced him to settle at Devoran in Cornwall.

He is commemorated in the genus **Lobbia** Planch. and in several Malaysian plant species (including the above Hoya species).
Collecting Localities: It is recorded that he proceeded to *Singapore* in 1843, and visited Java and adjacent islands. The first collecting dates from the Malaysian region, known to me, are from 1845; Lobb may have collected elsewhere in the meantime.— In 1845: The Malay Peninsula: Singapore, Penang, Kedah Peak, Malacca.— In 1845-1846: In West Java: Bantam, Mt. Salak, Mt. Seribu, (West of Buitenzorg), Panarang, Mt. Asapan near Bantam, Mt. Pangrango; Mt. Papandajan; ? Bali (?).—By a 2nd agreement he left England for Calcutta (Dec. 25, 1848), collected in British India and Burma and afterwards in the southern parts of the Malay Peninsula, on Mt Ophir (1849) (also visited in 1848) etc.; North Borneo (Labuan and Sarawak); subsequently visiting the Philippines, collecting in the neighborhood of Manila (Luzon) (according to Hort. Veitchii in *1848*)—Malay Peninsula: Singapore and short visit to Sarawak (1852); Java and Noesa Kambangan (? 1854); Mt. Ophir (1854); Borneo (1854); Sumatra (1855); British North Borneo, attempt to reach Mt. Kinabalu (1856), but forced by the natives to return when at Kiu (2800 ft altitude).

Collections: He collected dried plants, which were sold in sets after determinations; these often bear incorrect localities. The Java plants are numbered 1-276, those from Singapore 277-333, at least of the collection up to 1846. But here too errors occur, as no. 263, *Xyris lobbii*, which accordingly ought to come from Java, came surely either from the Malay Peninsula or Moulmein! A large Singapore collection was lost by shipwreck.

In Herbarium British Museum 131 plants from Java (purchased in 1846): 213 from Java, Penang, and Singapore (purchased 1847): 48 plants (purchased 1848) (elsewhere the statement: 711 plants from Malaysia purchased 1846-48); Singapore plants (acquired with Herb. Shuttleworth) (1877); 819 plants from the Eastern Archipelago (pres. by H. J. Veitch in 1888) 400 Borneo plants, chiefly ferns and Nepenthes (purchased 1894). Herbarium Kew: from Malaya, Singapore and Java (acquired 1854-98), nos 1-486, and 900. Duplicates at Cambridge in Herbarium Oxford University (with Fielding Herbarium): Singapore and Java; Berl. (only a few ?); Herb. Delees. (Geneva): 243 nos. from Java (purchased 1845-48): Herbarium Sing.: from India, Malacca (exch. 1889); Herbarium University of Dublin; Herb. Turczaninow (= University of Kharkov); Herb. Florence: Java plants; Herbarium Vienna: Java and orchids from Java and Borneo with Herb. Reichenbach; Herbarium of Paris: some from Java; Herb. Bor. Gard. St. Petersburg. (= Leningrad): Plantae javanenses; Herbarium Utrecht: Java (1846); Herb. Edinburgh: Java (1846).

Literature: (1) The mentioned data where occasionally collected in the literature, mainly in 'Hortus Veitchii' (1906) and in the cited biographies. The results are hardly satisfactory.

(2) cf. 'Mr. Thos. Lobb's Plants' (Hooker. Lond. Journ. Bot. 5 (1846) 198.

J. E. Planchon: 'Catalogue of the first series of plants of Java collected by Thom. Lobb, sets of which have been announced for sale by Mr. Heward, Young Street, Kensington' (l.c. S. 1846: 246-250); 'Catalogue of Malayan plants collected by Thom. Lobb etc.' (l.c. 6 (1847) 469-473). This catalog was discontinued.


cf. E. D. Merrill: 'Genera and species erroneously credited to the Philippine flora' (Philippine Journal of Science, Botany 10 (1915) 171-194). and 'A discussion and bibliography of Philip. Flow. Plants' Manila 1926:76; (Merrill even suggests: *The labels of Lobb's specimens seem to have been purposely falsified as to the localities in which they were collected*).

cf. also Ridley in Journal Straits Branch Royal Asiatic Society 25 (1894) 166 (erroneously William Lobb!).

(4) cf. 'History Collection British Museum 1 (1904) 89 and 163.

(5) Some plants described by J. D. Hooker in 'Illustrations of the Floras of the Malayan Archipelago, and of tropical Africa' (Transactions of the Linnean Society, London 23 (1860) 155-172, pl. 20-28).


Editors Notation: It was the falsification of collecting locality and species names that led to the erroneous drawings and descriptions of Hoya fraterna in Curtis’s Botanical Magazine (4684 in 1852); Fl. des Serres 8 (1852-53) 815, etc. that lead to the misunderstanding and misidentification of the real Hoya fraterna. We now know the depicted species was a native to the Philippines and was Hoya meliflora (Blanco) Merrill.

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New Philippine Dischidia Species

By Dale Kloppenburg

Dischidia polilloensis sp. nov. Typus: R. Fox #9043 (PNH) 1948 from Polillo Island, province, Philippines. Affinis Hoya hirsuta Decaisne a qua folis, pedunculi, pedicelli, et floris omnis parvior; flos flavidus vel auranticus differt.

A dangling epiphytic vine to several meters long, latex white. Stems, petiole, peduncles and pedicels all round and hirsute with a majority of the hair cells curved apically.

Nodes slightly enlarged with short light buff colored adventitious spongy roots on the side toward the base. Internodes 1 to 3 cm. long.

Leaf ovate-cordate or with the base broadly rounded, apex acute or sometimes shortly apiculate. Blade 16 mm. long and as wide occasionally 25 mm long x 18 mm. at the widest near the middle, margins entire. Upper surface distinctly lacunose flat with 4-5 raised nerves at right angles to the raised midrib, subalternate or staggered leaving 4-7 sunken (lacunose) areas on each side of the midrib, very dark green with occasional rusty undertones. Juvenile leaves with a very few fine single celled whitish hairs, most prominent on the margins otherwise glabrous, but with very fine lighter granulations (surface somewhat rough). Lower leaf surface often somewhat concave with the margins slightly revolute, lighter green in color with thickly produced, shallow whitish granulations, midrib visible as a deeper green color but not sunken or raised, nerves on this surface not visible.

Petiole twisted, allowing the leaf blade pairs to be raised in a shallow V shape, 2.5 mm long x 1 mm. in diameter, round, deep green in color but often with rusty colorations. Many hair cells especially when young.

Peduncles very short, somewhat thick, curved distally from the undersides of the nodal area, slightly enlarged at the apical end.

Pedicles round, with diameter increasing slightly toward the apex (calyx area); light green 2 mm. long; 0.5-1 mm. in diameter, surface slightly bumpy.

Calyx pale green, broadly triangular, 0.13 mm. tall (not all are uniform) x 0.16 mm. at widest. Ligules linear with sharp apex present at the narrowing base inside, inside smooth but outer light colored granulations show through.
Corolla tube: base 4.1 mm. at widest, buttery-yellow with 5 ridges alternating with slightly concave areas where sepals grasp the tube. Ridges with some rusty-rose colorations visible on the outside. Outside surface exhibiting gland like granulations, somewhat linear otherwise the surface is glabrous, waxy, shiny at the base, less so toward the apex; tube occasionally curved, about 6.0 mm. long to the 5 lobes; lobes thick (0.5mm.) and 0.15 mm. tall, slightly flared outward, inside bowl lemon-yellow; with 2 rows of single celled stellate white hairs about 0.08 mm. long, pointed outward, one circle just below the lobes, the other just below the throat where the corolla tube bulges outward slightly toward the base.

Dischidia polilloensis Kloppenburg
Photo by Dale Kloppenburg
Corona: appendages upright, 0.30 mm. tall, thick; outer apex formed into the typical Dischidia anchors, thin and translucent especially at the outer extremities. Retinacula (5) triangular 0.04 mm long, dark brown. Follicles not seen.

Under identical growing conditions in Fresno California USA, Dischidia hirsuta Decaisne has all part 1/3 to 1/2 larger, foliage always of a lighter color, with much larger, much more bowl shaped corolla tube and cranberry red in color; leaves much more thickened. The plants are readily distinguishable even when not in bloom.

---

Variation and Varietal Improvement

If you do not think that there is a lot of variation within single species, I suggest that you look around at your neighbors and observe the vast amount of variation in the human species. It is true of many hoya species also. In general, many of the species we grow are single clones. They arise from one cutting taken from a wild plant, then propagated vegetatively and passed along from grower to grower. Fortunately collecting in the wild adds to the introduction of additional clones and thus the genetic diversity at our disposal. Since Hoyas are rapid growers, say as opposed to orchids, asexually propagated for the most part, the chances for variations to arise even in a single clone are great. With careful observation and a sharp eye, we may be able to select and improve on existing clones. These variations are thought to be numerous, but only a few will ever be recognized and perpetuated. Many of the changes we see will be due to environmental factors and these changes are not permanent. Flowers developing under cool conditions, for instance will usually show more depth of color, more texture, and will not fade as rapidly as flowers developing in warm or hot weather. Flowers in hot weather may show border color changes due to fading. It behooves us all to grow our plants to the peak of their perfection to obtain the largest floral clusters, biggest and brightest flowers, and the healthiest plants possible. Aside from the environmental changes there is a good chance in rapidly growing plants like Hoya to find true genetic changes ("sports" "mutations").

Fortunately, there are collectors like David Liddle and Paul Forster in Australia and others who collect cuts from many species within an area and over wide areas. This type of collecting adds to our genetic diversity within a species and thus adds to the future potential in selecting improved plants. Geoff Dennis in the Solomon Islands was another collector I am aware of who takes samples of a single species at progressive altitudes. Note clones from Mt. Gallego labeled Gallego #1 through #5 (now named Hoya flavida Forster & Liddle). Too often, without even seeing flowers on plants, collectors will bypass clones since they feel: "why collect another one of this species since I already have this species?"

It is abundantly clear that Hoya australis exhibits great variation and it is my belief that as more clones of other species are collected we will find this type of diversity in those species. This is already evident in Hoya nicholsoniae and in Hoya verticillata. Color variations are evident in many of the species clones that we already grow. It appears that minor variations under genetic control is the rule rather than the exception. This variation of Hoya species lends itself to improvement of existing clones. This improvement can take many forms. I have mentioned selection of mutant types. Many species crosses which have not yet been successful to my knowledge are a wide open field of endeavor for those who live in areas suitable to the natural
production of pods (fertilization). Selection within populations arising from selfed pods is a practical and at hand method of improving a species.

I will assume here for simplicity's sake that most, if not all naturally occurring pods are the result of a plant being fertilized with its own pollen or pollen from the same species. These are essentially selfs, not hybrids. Plants arising from such crosses, however, may exhibit a lot of variation from which different or superior forms may be selected. In highly variable species like corn, wheat and barley to name only three, the major improvements in yield and quality have arisen from selfed selection and/or modified hybridization, not from crosses between species. I have grown populations from hoya pods and selected from *Hoya pubicalyx* (Pink Silver or what we mistakenly then called pupleoro-fusca). From one population I was able to select "Fresno Beauty" which I considered an improvement of *H. pubicalyx*. Growers in tropical areas are fortunate to live where pods form readily. These growers need to be encouraged to sell or otherwise supply seed pods to growers willing to grow large numbers of seedlings, from which superior selections can be made.

Plant breeding is a numbers game. The larger the population one can select from the greater the chances are of being able to select something desirable. From a single hoya pod we can grow 100 or more seedlings, this number varies considerably with the species involved. If we had the time and space it would be better to grow 1000 seedlings, the more the better. One can see that plant breeding programs can evolve rapidly into occupying a lot of space, time, and money. Needless to say, you have to grow all these plants to flowering unless you have a limited objective such as distinctive foliage only, and that 99.9% of the resulting seedlings will end up in the dump. Many will be like the parent or inferior, and only a few will have novelty or be superior. It takes a sharp eye and an ability to observe and remember differences in order to be successful in this endeavor. There has been concern expressed that a flood of inferior plants will be released or registered from this type of endeavor. It is my belief, however that since we operate in an open market society only improvements will survive the test of time.

I would like to add one personal experience. When I graduated from college I went to work for Armstrong Nurseries, The Rose People. We made thousands of crosses and the resulting seedlings eventually found their way into field planted rows for observation and selection. Occasionally we made what we considered "wild crosses". I can remember plants from some of these crosses which had no resemblance to modern roses. They did not possess the characteristics to be selected for entry into the ALL American Rose selection process. Many of these off types were low rambling plants more like foundation shrubs than roses. They were different! Over my objections they never saw the light of day. I still believe these plants had a place in our gardens. Somewhere I recently saw some of this type of rose offered for sale. The point I want to make is that when selecting plants, the bizarre or unusual may have a place. A selection does not have to look like an improved species. I would submit to you the selections made on goldfish by the Chinese over the ages. Of course we in the Hoya world are familiar with our twisted leaved hoya types. This type plant is certainly different and has a place in our homes. What future selections may bring, we do not know. Save those pods, grow them out, see what you can find, or give them to a friend.

Dale Kloppenburg
Hill n' dale Nursery
6427 N. Fruit Ave.
Fresno, CA 93711 USA
HOYA UNCINATA
By Ruurd van Donkelaar*

HOYA UNCINATA Teijsmann & Binnendijk. The flower leaf from this number adorns a particular Hoya. This plant with this collection number is IPPS 164 and carries the name Hoya uncinata. The name was given in 1863 by Johannes Elisa Teijsmann and Simon Binnendijk, Netherlands Botanists working in the Botanical Garden of Buitenzorg at Bogor, Java. The plant was discovered on Mt. Panjar in Western-Java in bushes below 800 meters. Because of the typical hooks on the outer corona lobes it was named uncinata. The flower flattened is something

Hoya uncinata Teijsmann & Binnendijk
Photo by Ruurd van Donkelaar.
more than 1 cm. in diameter. The corolla flaps are narrow inversely boat-shaped and standing straight out. The color is creamy-white with sometimes rose. The corona is strongly raised. The corona leaflets are boat-shaped with an obtuse summit that has that typical hook. They are white with somewhat yellow coloring. The stalk is smooth like the broad long flattened leaves. These being grey green in color with here and there single silver white spots. The leaves being very thin and weak in structure. The nerves are not obviously visible. Still a peculiarity: *Hoya uncinata* is from the few species along with *H. carnosa* and serve as a division of those containing no white milk-sap. *Hoya uncinata* is a fast grower that not many seekers possess. Climbing around a bent branch or along a mossy branch, or as a light plant it will not easily outgrow its container until it is a substantial plant. Approximately two years after it will be planted, usually in the summer months the first loose florescence umbels emergence will appear. These can bring forth flowers the year long. From these hoyas with its aberrant shape and florescence you will certainly get much pleasure.

From: Translated by Dale Kloppenburg (with the aid of Albert Hofman) from Hoya Nieuwsbrief #2, published by Ruurd van Donkelaar, The Netherlands.

Literary References:
- Natuurkundige Tijdschrift voor Nederlandsch Indië 25 (1862-1863) 408.

Special notation: It is a mystery to me why Teijsmann & Binnendijk placed this species in Miquel’s Section 3 Acanthostemma. (The actual section was Sperlingia Vahl). Miquel did include in this Section a number of Blume’s (Genus) Acanthostemma species e.g. *Hoya rumphiui, longifolia, hasseltii, and puber*. There is nothing in the type description of *Hoya uncinata*, however that mentions that the outer coronal lobes are bifid (a key element of the Section Acanthostemma). The same applies to the 1965 description of this species (*Hoya uncinata*) by C. A. Backer. It seems abundantly clear that this species is not in the section Acanthostemma-good description .. wrong section.

![Flower drawing](image)

Correction: the photograph on page 4, 2nd Quarter Fraterna 1995 is labeled *H. quinquinervia* Warburg. It is a photo of *Hoya merrillii* Schlechter. Notice the coronal outer lobes turn up, whereas in *H. quinquinervia*, the corona is flat.
Questions and Answers About Hoyas

1. How do you flower H. bandaensis? V.S. (NJ). I have been unable to flower this species. I have 2 plants, one 6 or more years old, pot bound in an 8” basket; a newer one has also never flowered. I have had them in nearly full sun to partial shade. A: This species originates from the Banda Archipelago (N. tip of Sumatra). This is a little north of the equator about the same latitude as Penang Is., Malaya or Kota in Sabah Malaysia (Borneo). In this area the day length should be fairly constant and with only the wet and dry periods giving a lot of contrast. I do not know how to flower it, but suggest maybe attempting to regulate the light so as to make it more constant in length. In addition, try normal watering for 6-8 months and then water only minimally. Some plants can be forced into a bloom cycle by being extremely stressed. This species is closely related to H. diversifolia, one that I have a difficult time flowering regularly. Suggestions will be appreciated!

2. I have been reading old issues of FRATERNA. I have noticed 3 hoyas that I haven’t seen in any list. Do they exist? EW (Sweden). The species are H. dicksoniana, H. kingdomwardii and H. myanmarica. A. These 3 new species were described by P. T. Li in the Journal of South China Agricultural University in 1994. As far as I can determine no one has introduced them to commerce. The first is related to H. imbricata, the 2nd to H. bella and the last, H. myanmarica similar in habit to H. obtusifolia. If any one has these available, let us know.

3. What is my favorite hoya and why? AW (OR). What a loaded question for a hoya nut. A. Everything that’s in bloom is my favorite, at least for a day. To get serious, I guess I would have to say the H. pubicalyx and all of its many cultivars are my all time favorites. Why???. The foliage and the plant’s robust vining habit are always beautiful. The plant lends itself to many different growing methods, pots, trellises, hanging baskets, anything and everything seems to work well for them. The flowers: how can you imagine anything more beautiful than a huge umbel of 1 inch across (or more), rose pink to deep purple fuzzy flowers with that lovely white furry edge. They have a wonderful fragrance, last for at least a couple of weeks in perfect condition, and bloom almost all year round.

4. Does increased sunlight help Hoyas to bloom? See what MS (OR) thinks: A. I’ve really loved having my hoyas outside on the front porch this summer and hate it that fall is arriving and I’ll have to bring them in again. The outdoor weather and hot sun seemed to take care of the mealie bugs, which shocked and pleased me. I thought the sun was going to kill my plants in the beginning because they started looking poorly like they were going to die. Suddenly they turned dark green and lush and you should see them now. One of them that has never bloomed is now in the process of opening out in flower. Happy Day!!!

5. What watering schedule do you use? from RP (CA). A: My watering is irregular on an as needed basis. My soils are varied, plain dirt to assorted mixes, Cornell preferred, but not always used. Many of my large plants are in the ground, so they can be watered less often. The tender babies I keep my eye on pretty much daily.
The photo accompanying this article is a plant that I got from Ted Green in 1993 labeled merely "truncate leaved species from Borneo". My husband and I were attending the annual Board of Directors meeting being held at Rainbow Gardens Nursery in San Diego, California. Of course when Ted arrived, everyone crowded around to see what Ted had brought, as he always brings weird and wonderful new things from his latest trips to the South East Asia regions. This time he had brought five of the most spectacular looking plants I had ever seen plus boxes and boxes of donated plants to be raffled off after the meeting (SDHG meeting). I was lucky enough to obtain three of these wonderful new plants.

This particular plant was just a single leaf with a mallet cut (a mallet cut means that the cutting was made at a branched node and forms a T-shape so that there is a considerable amount of tissue from the mother plant still attached). The cutting rooted well and started new growth from the roots within just a few weeks. This species is a strong, steady grower, and soon I had a very nice full plant in a 4 inch pot. After about 2 years, I potted it up into an 8 inch pot then waited to see what would happen.
The plant continued to grow well but showed no sign of peduncles. I took several cuttings from it to make more plants and it got fuller and even more beautiful. In its third year it put on a few peduncles but no flowers. This year (its fourth) it finally rewarded me with 13 umbels of very pretty little yellow, waxy flowers. As you can see from the photo, the flowers are small, the entire umbels were not much more than an inch and a half across and are similar in appearance to H. incrassata.

I have not found any plants in the literature that I can to match this particular plant to but will continue searching. Surely this spectacular leaf could not remain hidden from the collectors for so long without someone stumbling over it. The large, rather thin, papery feeling leaves are actually more heart shaped than truncate and have absolutely gorgeous dark green marbling. This is also one of the easiest plants to grow, and is happy in just about any fast draining potting medium. If you want flowers, give it lots of light--but for a master piece of foliage, less light will work fine.

Ann.

Editors Note: Ann welcomes e-mail letters from any of our members. You can write her at: HOYAANNIE@AOL.COM

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**IMPORTANT ANNOUNCEMENTS**

The official I.H.A. slide program is available to all I.H.A. members.

140+ beautiful slides of hoyas (flowers and foliage shots)! If you would like to show these 35 mm slides to your local garden or succulent club (or to get a few members together to see the lovely presentation), please write to the person listed below on how to obtain the slide show. No fee required other than shipping and insurance charges and a reasonable deposit to cover possible loss. Write to:

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How do you like the photos that are put into each issue of FRATERNA these days? Would you like to see more? We certainly would if we could afford it, but let’s face it—one of the most expensive things about putting out an issue of FRATERNA is having all those pictures made and pasted into each issue. To offset those costs and allow more pictures to be added, we are actively asking our members to help sponsor a photo. This was very popular a couple of years ago, but in the last 18-24 months, we’ve seen a lack of interest—probably because we didn’t promote it enough. Let’s rectify this! Send in your non-profit donation of $25.00-$50.00-$100.00 today! Through your generous support, everyone will benefit! Thank you.
BIRD TRACKS

From: Robin Director
Harriette Schapiro
5217 Cassandra Lane
San Diego, CA 92109
(619) 273-4267
E-mail: Schapiro@juno.com

Attention all IHA members! Did you take time to get involved in your association? Did you join a robin and meet nice people, exchange ideas, learn new things about Hoyas, exchange cuttings, increase your collection and have fun doing it? If not be brave and do so now! Give a membership of IHA to a friend, a plant enthusiast, or a family member. Christmas can last all year long. “Get with it!” Do it! Do it! Do it! Now you can also join an E-mail Robin, contact Harriette.

E-mail Robin HS(CA). Hoya linearis does seem to like cool temperatures. Mine is covered in buds and the start of flowers. The other hoya that loves to break the rules seems to be H. cumingiana. Mine is on the edge of the patio and gets full sun until noon. The internodal distance is extremely short and right now, the plant is covered with blossoms. (July 1997)

E-mail Robin MS (OR). I was a terrible watch pot when H. archboldiana was in bud. They were pretty good sized before I noticed them. Then I would check twice a day to see if they had opened. H. onychoides just closed back up today. Have another one in bud that I hope will be open for the local hoya society’s display at the county fair next month. Will be interesting to see if it is as light colored as this one was. For the rest of you, it was a dark rose color instead of dark, almost burgundy that it had been earlier. Had moved it from the greenhouse between bloomings. (Aug. 1997).

Robin #5 CF (Finland). The new species which have bloomed for the first time are H. erythrostemma and H. gracilis and H. tsangii. The flowers of H. erythrostemma were so beautiful, white stars with bright red middle star. I was very, very happy when it opened its buds, but unfortunately, it was dark and rainy every day when it bloomed and photographing it was difficult. H. tsangii has grown well and it is a very nice looking plant.

The other bloomers this autumn have been H. linearis, H. australis and H. munnularioides. The first two have bloomed really well. H. australis had at least 54 umbels open at the same time. H. linearis had also 20 umbels open at the same time. The fragrance of H. linearis was nice, like some kind of citrus fruit. They started opening every evening at 9:00 p.m. for almost two weeks. H. linearis flowers were longer lasting than most of the other hoya flowers. (Nov. 1997).

Robin #1 RP (CA). Here at home my H pauciflora is covered with over 2 dozen beautiful white flowers. It has bloomed well for me the past two years, but this is the best yet. H. serpens has had a few flowers and trying again, and my surprise this year was a Bangkok Red. The blossom wasn’t red at all, but white. Instead the foliage is very green, so I do not know where they got that name.

Robin #3 DR (NV). I have had some hoya’s for 15 to 20 years. I currently have 34 different hoya plants. I do not have a greenhouse so all my plants are in my home which limits how many plants I can have. Somehow I do find places for new plants each year. It is easy when they are cuttings, but when they start to mature and the vines get long, that’s when I find it difficult to find a spot to hang the plants so they get good light. (Jan. 1997)

Editor’s Note: Some of the robin notes I have saved for the Q & A section. It is difficult for me not to comment on some items. I note a lot of discussion on H. pubicalyx “Red Buttons” blooming with different colors and even within the same flower. I am convinced the variety involved is the “Chimera”. This is typical of its flowering pattern, really never the same twice. “Red Buttons” should bloom true with each blooming a very dark color.
ADOPT A MEMBER PLAN RE-ACTIVATED FOR I.H.A.

Back in 1993, there was a plan put forth called “ADOPT-A-MEMBER”. Simply put, a member of I.H.A. adopts and pays for a one year membership for a person or organization of their choice. It’s one way of introducing a friend to our wonderful society through the quarterly issues of FRATerna that each new subscriber will get. The dues are only $18.00/year ($25.00/Foreign). Make someone happy—A birthday gift, an anniversay gift, or just a gift to someone you care for. They will enjoy it for a whole year—maybe more!

AFFILIATE NEWS

San Diego Hoya Group March 1998 Meeting: The March meeting for the San Diego Hoya Group will meet at Quail Botanic Gardens, Encinitas, CA, on March 29, 1998. This will be our annual plant auction, always a well anticipated event by all of our members. All donated plants are welcome for this auction, not just hoyas. If you would like to bring plants for this auction please contact Harriette Schapiro at 619-273-4267. As we are limited to time at this function we like to hold the quantity of the plants to be auctioned to a manageable amount. The monies gained from this auction will be used to support the San Diego Hoya Group functions. As we only charge $5.00 per household for dues, for life, we support our club activities through the plant raffles held during our summer meetings-as well as our spring auctions.

All persons wishing to attend our meetings are welcome. Though we have a pot-luck at each meeting, you need not bring food if you wish not to. We do ask for a donation for the food fund if you choose not to bring food. We hope you will join in the fun and attend our meetings if you are in the area. For more details contact Harriette Schapiro at 619-273-4267.
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