THE HOYAN

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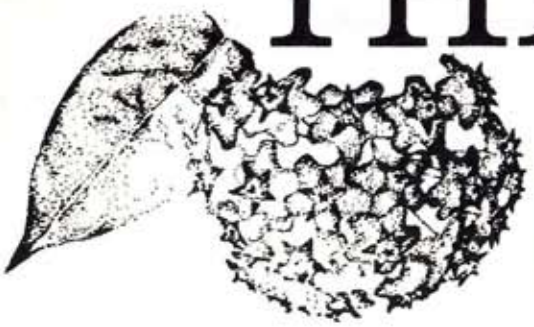

"Though wise men come not,
Nor angels sing,
Still the stars shine for
comforting."

....Margaret Widdems

Hoya archboldiana Norman
Photo by Ted Green

THE BULLETIN OF
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PRESIDENT'S MESSASGE

So far, our communications have been primarily through THE HOYAN and robin groups. Some members have indicated a desire to form local chapters of HSI. This is an excellent way for us to grow. Therefore, I have compiled a few ideas which might help you get started.

Contact the garden or feature editor of your local newspaper. Provide him or her with some information about HSI. Explain your desire to start a local chapter. Ask if he or she will write an article for your local newspaper. Write to Beth Mallorie, our Publicity Director, if you need information for the article. You can reach her at 308 West Main St., Silverton, OR 97381.

Your local botanic garden will provide you with a list of the presidents of the garden clubs in your area. Call or write to them and ask that anyone interested contact you. They will announce it at their meeting. They may even ask you to speak to their group.

Local garden centers and plant shops will usually allow you to display a poster. You can also publicize your intentions in THE HOYAN. (Send your notice to Chris following deadlines posted elsewhere in this issue. There is no charge for this type of notice.)

Publicity from many sources will help you find all the people in your area who share an interest in hoyas.

Sharon Popp

HOYA ARCHBOLDIANA Norman by Ted Green

Papua, New Guinea and Irian Jaya make up a very large island, 1,500 miles from NW to SE and 375 miles across, with mountains up to 16,500 ft. and a source of some of the most interesting and unique plants in the world.

As for the hoyas, more species of these plants are from there than any other place and, because of this diversity, we can assume that this is the origin of the genus.

Despite the fact that it is a very expensive place to get to, travel within, and live in, botanists have and are still working this island. There are many plants being discovered - tropical, subtropical, temperate and alpine - something for everyone. And think of the hoyas that haven't even been discovered yet, or the old ones that haven't been brought into cultivation!

Lucky for us, in 1933, L.J. Brass, as a member of the Archbold Expedition into the Central Province of New Guinea, discovered a handsome hoya that the botanist C. Norman later named H. archboldiana after the sponsor of the expedition. His collection was near Rona on the Laloki River, at about 1,500 ft. elevation - which puts it in a cooler situation than the stifling heat of the lowlands. The two forms that I have of H. archboldiana were collected in the same general area only 45 years later.

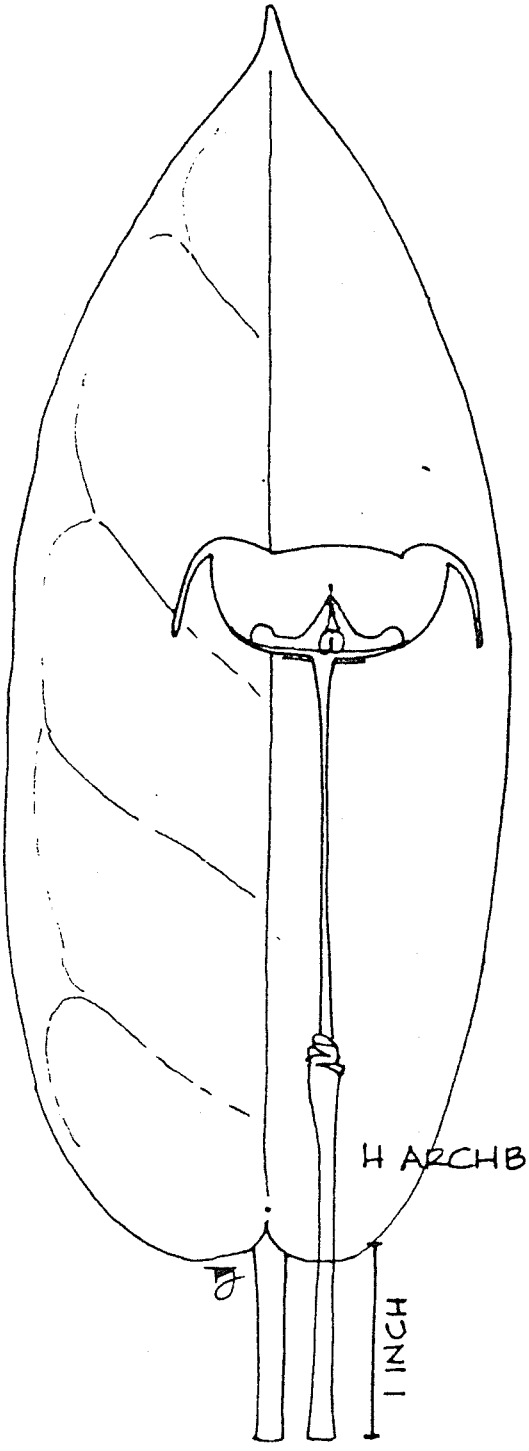
Norman, in his description, was struck by the large, shiny leaves, large flowers and its corona which he thought to be distinct and different from any other species. He had never seen H. macgillivrayi from the Cape York Peninsula of Australia (300 miles to the west) or he would have immediately recognized it as a near relative, differing in only 4 characteristics. The general growth of stems, leaves and persistent peduncle is almost the same as H. macgillivrayi except that H. macgillivrayi's leaves never attain 12 inches long. The 4 differing characters are 1) the shallow depth of the cut of the corolla to form the lobes, 2) the corolla lobes are folded back upon the lower bowl of the corolla (not bent forward and keeled as the H. macgillivrayi) and 4) the leaf tip is more attenuate.

A thumbnail sketch is: A robust, bald vine with dark green, large 7 to 12 inch X 3 inch, shiny, thick, lanceolate leaves with pinnate venation. The persistent, 2 inch peduncle bears a hemispheric umbel of large, bald, cup-shaped flowers. The lobes of the corolla are closely folded down over the outside of the cup making a prominent lip at the top. The corona lobes are long and narrow with the inner tips rising in a central cone at nearly a right angle to the outer tips that lie within the bottom of the cup.

As you can see by the picture, the umbel bears 8 to 12 flowers on pedicels that are equal in length, which usually means that there is a globe of flowers, but since the flowers are so heavy they hang downward making a cluster about 6 inches across. The flowers vary from 1 to 1 1/3 inches in diameter with a white to rose cup and rose to red lobes. My outstanding form is the one that has a white cup with contrasting red lobes and larger flowers (but less per umbel). This number character is the same as H. macgillivrayi. In both species the flowers stay open for about 5 days.

With its persistent peduncle, it breaks into bloom about every month and on a well grown plant with many peduncles it is possible to have flowers all of the time. As with H. macgillivrayi, it is night-fragrant, sweet and pleasant.

I am still waiting for one of my flowers to be pollinated so that I can see the pod, also to get some seed so that I can see the variation, but I have a suspicion that the pod is about like that of H. macgillivrayi - 1 1/2 inch in



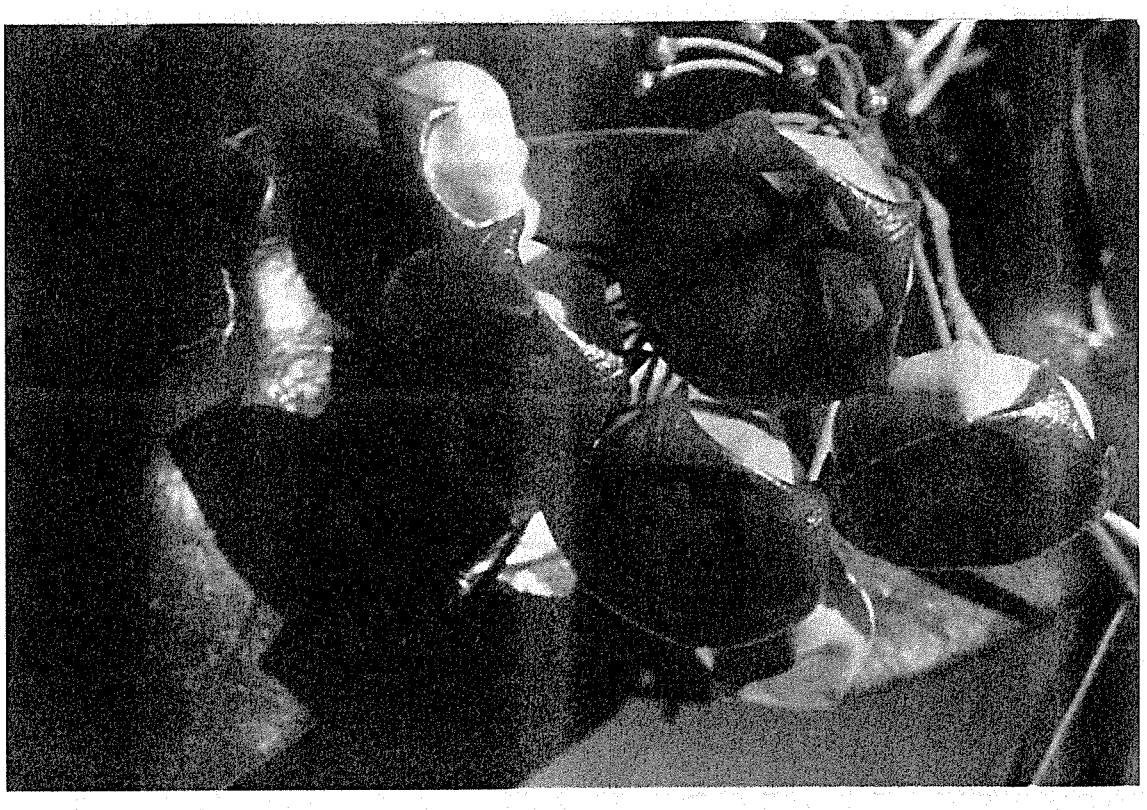
H ARCHBOLDIANA NORMAN

in diameter and 5 inches long.

This plant shares another characteristic with H. macgillivrayi in that it flowers when very young. For instance, an 18 inch cutting can easily throw a peduncle on the next growth.

I have found that these plants do very well in a 5 1/2", plastic pot with a reservoir, potted in a mix of waste orchid trash (fir bark, tree fern and some charcoal) and kept in 50% shade. Here in Kaaawa the temperature is never below 58°F nor over 90°F, relative humidity is never less than 50% and there is a salty, on shore breeze. I water 3 times a week with a diluted, soluble fertilizer and a teaspoon of MagAmp to force flowering.

This is an outstanding plant and makes me wonder just how many more fantastic things are waiting to be discovered in the forests of what we call New Guinea (Niu Guini).



Hoya archboldiana Norman (form known as YM Excellent) Photo by Ted Green

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OUR SYMPATHY TO:

The family of Herb Title. Word reached us just as we were going to press that Herb Title died on December 1, 1983. Herb has been very generous with his time and knowledge during the past five years, providing THE HOYAN with many of the pictures we have enjoyed so much. He personally saw to the printing of these pictures, seeing to the quality and providing us with a generous discount, which enabled us to enjoy quality that we will sorely miss in the future.

Our special prayers go with his wife, Naomi Title and their children at this time.

MORE NEW GUINEA SPECIES

The following New Guinea species were not described by Schlechter in the BOTANISCHE JAHRBÜCHER work on New Guinea hoyas that we concluded in the last issue.

1. Hoya albiflora Zipp. ex Blume..see Vol. #4.

2. Hoya anulata Schlechter published in NACHTRAGE ZUR FLORA DEE DEUTSCHEN SCHULZGEBIETE IN DER SÜDSEE, page 362 (1905)

"Epiphytica in arboribus ramosa, nunc alte scandens, nunc dependens; ramis ramulisque elongatis, flexuosis, teretibus, glabris, radicantibus, laxe foliatis; foliis patentibus patulisve ellipticis vel oblongo ellipticis, obtusis, nunc obtuse acuminatis, utrinque glabris, nervis vix conspicuis, textura carnoso-coriaceis, 6 - 8 cm longis medio fere 4 - 4.5 cm latis; pedunculis crassiusculis, ca. 4 cm longis rhacide incrassata, demum cylindrica; umbella multiflora; pedicellis gracilibus, filiformibus, glabris, 2 cm longis; calycis segmentis ovatis obtusiculis, glabris, ca. 1 mm longis; corolla rotata 8 mm diamentiente, papiloso-puberulis corolla intus medio anulo paule incrassato, glabro, 5-lobulato ornato; coronae foliolis horizontalibus carnosis; superne oblongis obtusis, apice breviter et acute acuminatis, medio incrassitis, subtus (dorso) oblongis, medio longitudinaliter foveoai; antheris late trapezoideis, appendice hyalina parvula, ovata ovtusa; polliniis oblique oblongis, translatoribus brevibus, retinaculo rhomboideo polliniis multoties minore; stigmatis capite breviter conico.

Kaiser-Wilhelmsland: Auf Bäumen am oberen Nuru, auf dem Wege vom Ramu zur Küste, alt. ca. 400 m. (R. Schlechter n. 14185, bl. Febr. 1902).

Durch dem eigenartigen etwas verdickten Ring am Grunde der Abschnitte der Korolla haan diese Art von den verwandten leicht unterschieden werden. De Blüten sind weiß und besitzen rosenrote Korona."

TRANSLATION:

Epiphytic, in tree branches, sometimes high climbing, sometimes hanging down; branches rebranched, elongated, flexuous, terete, glabrous, rooting, loosely leafed; leaves spreading outward, elliptic or oblong elliptic, obtuse or sometimes obtusely acuminate, glabrous on both sides, nerves scarcely conspicuous, fleshy-coriaceous, 6 to 8 cm long, in the middle 4 to 4.5 cm wide; peduncles somewhat thickened about 4 cm long, rachis thickened, at the end cylindric; umbels many flowered; pedicels slender, filiform, glabrous, 2 cm long; calyx segments ovate obtuse, glabrous, about 1 mm long; corolla rotate 8 mm in diameter, lobes ovate acute, apexes recurved, outside glabrous, inside densely and shortly papillose-puberulous, corolla inside at the middle having a small, thick, glabrous ring, 5-lobed, ornate; corona scales horizontal, fleshy; above oblong obtuse, apexes shortly and acutely acuminate, middle thickened, beneath (back) oblong, middle longitudinally and minutely pitted; anthers broadly trapzoid, appendages small hyaline, ovate, obtuse; pollina obliquely oblong, translators very short, retinaculo rhomboid, much smaller than pollinia; stigma head small, cone shaped.

Northeastern New Guinea: in trees of the upper Nuru on the road from Ramu to the coast, at about 400 meters above sea level (R. Schlechter #14185 - blooming in February 1902).

Distinguishable from related species through its characteristic thickened ring at the base of the corolla segments. The flowers are white and possess a rose/red corona.

3. Hoya apiculata Scheff., published in ANNALES DU JARDIN BOTANIQUE DE BUITENZORG. Vol. 1, page 37 (1876).

"Folia glabra, e basi subcordata, suborbicularia, apice apiculata, uninervia, ad basin callo glanduloso instructa; pedicelli umbellati, graciles; calycis laciniae extus velutinae, lanceolata, acutae; corollae laciniae extus glabrae, intus velutinae, ovatae acutae; coronae stamineae phylla suberecta, supra concava, subtus sulcata et lacunosa, ovata, obtusa, angulo interiore acutissimo; stigma apiculatum.

Nouvelle-Guinee, dans le Humboldtsbaai (Teysmann) -- Petiole 1/2 pouce de long. Feuilles longues de 3, larges de 2 1/2 pouces. Pedoncules longues de 6 - 9 pouces, pedicelles de 1 pouce. La corolle ouverte a un diametre de 8 lignes."

TRANSLATION:

Leaves glabrous, at the bases somewhat cordate, almost orbicular, apexes apiculate, one nerved, with thickened glands at the bases; pedicels umbellate, slender; calyx lobes velvety outside, lanceolate, acute; corolla lobes glabrous outside, velvety inside, ovate, acute; corona lobes somewhat erect, concave above, sulcate and excavated beneath, ovate, obtuse, interior angle very acute; stigma apiculate.

New Guinea, from the Humboldtsbaai (Teysmann). -- Petiole 1/2 inch long. Leaves 3 inches long and 2 1/2 inches wide. Peduncles 6 to 9 inches long, pedicels 1 inch long. Corolla 8 lines (about 2/3 inch) in diameter.

4. Hoya apoda S. Moore in TRANSACTIONS OF THE LINNAEAN SOCIETY OF BOTANY. Vol. 9, page 114 (1916).

"Section Physostelma"
"Planta scandens, frequenter ramosa. Rami hac atque iliac radicantes, sat bene foliosi, glabri. Folia breviter petiolata, ovato-oblonga, sursum caudato-acuminata, apice obtusa, basi subrotundata, tenuiter coriacea, glabra, saepissime 8 - 10 cm longa, 4 - 4.5 cm lata. Umbellae sessiles, oliganthae. Pedicelli filiformes, floribus certe longiores, glabri, circa 2 cm longi. Calycis segmenta oblongo-ovata, obtusa, glabra, 1 mm longa. Corolla ad normam generis mediocris, pansa fere 20 mm diam., late campanulata, ad quartam partem 5-loba, utrinque glabra; lobi triangulari-deltoidei, obtusiusculi, 4 mm longi. Coronae phylla carnosa, paulim ascendentia (vix horizontalia), apice erecta, superne elliptica, medio concava, extus obtusa, fere 3 mm longa, lateribus late oblongis crassiusculis. Pollinio ambitu oblonga, utrinque obtusa; caudiculae subnullae; glandula oblonga.

Canoe Camp, 500 ft.

A scandent shrub or a subshrub, the freely-produced comparatively slender branches occasionally putting out one or more longish, very slender, wiry, seldom-branching rootlets. Leaves very pale when dry, particularly on the under side; midrib impressed on the upper, prominent on the lower side; nervation more prominent on the upper than the lower side; reticulum moderately close; petioles stout, deeply channelled above, microscopically puberulous, 3 to 5 mm long. Flowers yellowish white with the under side tinged with red and a dull purple centre. Polliia 0.4 mm, gland 0.16 mm long.

To be inserted in the genus near H. papuana, Schlechter, which has differently shaped leaves and flowers with a larger calyx, a larger rose-red corolla and somewhat diverse corona. The flowers are all detached, so that it is impossible to say how many of them go to the umbel."

TRANSLATION:

Climbing plant, frequently branched. Branches here and there rooting and moderately well leafed, glabrous. Petioles short. Leaves ovate-oblong, towards the apex obtusely caudate-acuminate, bases almost rounded, thinly coriaceous, glabrous, very often 8 to 10 cm long and 4 to 4.5 cm wide. Umbels sessile, few flowered. Pedicels filliform, with additional flowering becoming longer, glabrous, about 2 cm long. Calyx segments oblong-ovate, obtuse, glabrous 1 mm long. Corolla in the genera middle-sized, about 20 mm in diameter, broadly campanulate, 5-parted to 1/4, both sides glabrous; lobes triangular-deltoid, somewhat obtuse, 4 mm long. Corona scales fleshy, a little ascending (scarcely or barely horizontal), apexes erect, above elliptic, middle concave, outside obtuse, almost 3 mm long, sides broadly oblong thickened. Pollinia oblong, both sides obtuse; caudicles almost lacking; gland oblong.

5. Hoya archboldiana C. Norman. published in BRITTONIA, Vol. 2, page 328, (1937).

"Frutex glaberrima volubilis. Folia crassa, ampla, nitida, pinnatim nervosa, usque 13 X 7 cm, ambitu oblonga apice abrupte acuta basi leviter cordata, sinu in sicco clauso. Inflorescentia umbellata pedunculo circ. 1.5 cm longo, crasso. Pedicelli circ. 7, aequilongi circ. 4 cm longi. calyx, prorata, parva, lobis ovatis acutis circ. 4 mm. Corolla ampla glabra 3.5 cm diametro, subrotata, extus alba, intus rubro-rosea, lobis late triangularibus valde reflexis (ex coll.). Corona cornea in sicco fulvo-nigricans, lobis valde productis, 6 mm longis, radiantibus, a dorso staminorum decurrentibus, apice leviter incrassatis. Gynostegium conicum acutum.

Type: L.J. Brass 3621, collected Nov. 3, 1933, at Rona, Laloki River, Central Division, British New Guinea, alt. 450 m, deposited in the Britton Herbarium, New York Botanical Garden.

The large shining leaves, large flowers and corona seem very distinct and unlike any other species."

TRANSLATION:

A very glabrous climbing shrub. Leaves thick, large, shining, pinnately veined, 13 by 7 cm in circumference. The apexes abruptly acute, bases lightly cordate, wavy when dried. Inflorescence umbellate, peduncles about 1.5 cm long, thick. Pedicels about 7 in number, of equal length, about 4 cm long. Calyx equally divided, small, lobes ovate about 4 mm. Corolla large, glabrous, 3.5 cm in diameter, somewhat wheel-like, outside white, inside re-rose; lobes broadly triangular, greatly reflexed (from what I collected). Corona horny, when dry tawny-black; lobes greatly extended 6 mm long; the stamina elevation points downward, apexes somewhat thick; gynostegium cone shaped, acute.

Editor's Note: I have seen this specimen and have a picture of it. There is no doubt about the hoya Mr. Green described elsewhere in this issue being this hoya. It is!

6. Hoya coronaria (Bl.) var. papuana F.M. Bailey in QUEENSLAND AGRICULTURAL JOURNAL, Vol. 3, page 157. (1898).

"A robust tall twiner. Leaves oblong-ovate, thick-coriaceous, 4 to 5 in. long, slightly peltate, the apexes with a rather long point, 2 to 2 1/2 in. broad at the centre, upperside glossy, the underside clothed with a close, short, stellate tomentum of a dirty-white colour; lateral nerves distant, nearly hori-

zontal, only visible on the upper side, the gland indicating the attachment of the petiole beneath barely visible. Petiole about 1 in. long, Flowers in almost sessile short racemes; the peduncle thick, stellate-tomentose, about 5 or 6 flowers open at a time. Pedicels tomentose, about 1/2 in long. Flower-bud a thick 5-rayed star, the rays recurved, expanded flower about 1 1/4 inch in diameter, at first somewhat greenish, ultimately almost ivory, white, or very pale-yellow. Calyx-segments very obtuse, 2 lines long, tomentose. Corolla-tube swelled, very short, the inside lined with simple silky hairs, lobes broad with strongly reflexed margins, glabrous and glossy above, stellate-tomentose beneath. Corona-segments colour of the corolla, about 1 line in diameter, 2-ribbed on the underside. The flowers seem very near H. coronaria Blume, but without the scattered purple dots on the flowers of that species.

Hab.: Twining up trees on the margins of a small bay, foot of Mount Trafalgar, New Guinea."

7. Hoya dictyoneura K. Schumann in NACHTRAGE ZUR FLORA DEE SCHUTZGEBIETE IN DER SÜDSEE, page 362 (1905).

"Frutex scandens ramis florentibus gracilibus novellis ipsis complanatis glabris; foliis breviter petiolatis, oblongis vel ellipticis vel suborbicularibus acutis basi rotundatis quintuplinerviis utrinque glabris; racemis breviter pedunculatis congestis primum subumbellatis demum rhachide crassa elongata; floribus pedicellatis pluribus; sepalis ovatis glabris parvis; corolla alto in lobos ovatos acutos divisa intus prope basin papillosa; coronae lobis radiantibus acutis subtus subtilissime oblique striatis.

Der etwa meterlange blühende Zweig ist am Grunde 3 mm dick, holzig und mit dünner zimmtfarbiger Rinde bekleidet. Der sehr kröftige, oben abgeflachte Blattstiel ist höchstens 1 cm lang; die Spreite hat eine Länge von 5 - 8.5 cm und eine Breite von 3.5 - 6 cm das oberste Paar der Grundnerven verläuft bis zur Spitze, stärkere Seitennerven sind nicht entwickelt, dafür springt aber das Nervennetz an beiden Seiten Kräftig, wenigstens an der getrockneten Pflanze vor. Der Blütenstand wird von einem 1 cm langen, sehr kräftigen Stiel getragen; die Rhachis mißt 5 mm; die Blütenstielchen sind 1.5 cm lang. Der Kelch mißt reichlich 1 mm; die weiße Blumenkrone is 6 mm lang. Die Staminodien sind 4 mm lang.

Kaiser-Wilhelmsland Sattelberg, 850 m. Ü M. (Nyman n. 720, bl. Juli 1899).

Die Form der Blätter und die ziemlich kleinen weißen Blüten kennzeichnen die Art."

TRANSLATION:

Climbing shrub, flowering branches slender, young ones flattened, glabrous; leaves shortly petioled, oblong or elliptic or somewhat orbicular, acute, bases rounded, 5-pli-nerved, both sides glabrous; racemes shortly peduncled. Flowers crowded together at first but somewhat umbellate, at length rachis thick and elongated; it flowers on plural pedicels, sepals ovate, glabrous, small; corolla high divided with lobes ovate, acute, inside near the base papillose; corona scales spreading, acute, below somewhat or a very little obliquely striate.

The nearly meter-long blooming branch is at the base 3 mm thick, woody and clothed with thin cinnamon coloured bark. The very strong petiole is somewhat flat and measures 1 cm long. The leaves are 5 to 8.5 cm long and 3.5 to 6 cm wide. The principal pair of thick basal nerves reach almost to the leaf tips; side nerves are not well developed, instead there is more of a network of strong veins on both sides, at least on the dried plants. The inflorescence is

held on a very strong 1 cm long peduncle carrying a 5 mm long rachis. The pedicels are 1.5 cm long. The calyx measures as much as 1 mm; the white corolla is 6 mm long. The corona scales are 4 mm long.

Northeastern New Guinea at Sattelberg, 850 meters above sea level (Nyman #720, blooming in July 1899).

The form of the leaves and the handsome small white flowers characterize this species.

8. Hoya dimorpha F. M. Bailey in QUEENSLAND AGRICULTURAL JOURNAL, Vol. 3, page 156, (1898). Original is in English.

"A stout strong twiner, the extremities often slender with much smaller leaves. Leaves thick-coriaceous, oblong-acuminate, slightly cordate at the base; those on the thick portion of the stem exceeding 5 inches in length and 2 inches in breadth; those on the slender ends often cordate and under 2 inches long, glabrous, underside pale, the gland on the face indicating the attachment of the petiole, beneath often a broad ciliate disk at times more or less umbonate. Petiole stout, usually less than 1/2 inch long. Peduncles slender, 2 to 3 inches long, bearing an umbel of many - 27 or more - small flowers. Pedicels about 1 inch long, purlish; flower-buds 5-angled, about 3 lines in diameter. Calyx-segments triangular, 1/2-line long. Corolla nearly white, 5-lobed, expanding to about 5 lines in diameter, silky-hairy on the back, more prominently so on the margins, and also forming a ring around the orifice of the corolla tube, nearly glabrous on the face. Corona white glossy, segments about 1 line long, concave above, the sides produced into thick wing-like ribs beneath.

Hab.: Twining over shrubs and trees growing on the margin of the small bays at the foot of Mt. Trafalgar, New Guinea."

9. Hoya globulifera Blume in MUSEUM BOTANICEIS LUGDUNA-BATAVORUM, Vol. 1, page 44 (1849).

"Volubilis, glabra; foliis subsessilibus ex ovato ellipticis acutis basi rotundatis carnosis planis subaveniis supra ad basin macula alba notatis subtus punctatis; umbellis pedunculatis subglobosis; corollae intus sericeo-velutinae laciniis triangulari-ovatis acutis; coronae stamineae foliolis lanceolatis supra canaliculatis angulo exteriore obtuso. - In sylvis litoralibus Novae Guineae. Flores magnitudine qua in H. carnosa, fusco-purpurei."

TRANSLATION:

Twining, glabrous; leaves very short petioled and ovate-elliptic, acute, bases rounded, fleshy, flat, lightly veined above towards the base spotted white, below prickled; umbels somewhat globose, on peduncles; corolla inside intensely silky-velvety, loves triangular ovate acute; corona segments lanceolate above channeled, outer angle obtuse. In trees, near the seashore. New Guinea. Flowers the size of H. carnosa, dark purple.

to be continued.....

HELP AT LAST

HSI member, Martha Lynn, of Atlanta, GA, has graciously volunteered to assist Chris in putting out THE HOYAN. Our special thanks to Martha.

1. H. angustifolia Elmer has already been covered in previous issues.

2. H. benquetensis Schlechter as described in THE PHILIPPINE JOURNAL OF SCIENCE 1st supplement page 301 (1906).

"Epiphytica volubilis, scandens, ramosa; caule ramisque filiformibus elongatis, flexuosis, teretibus, glabris, laxe foliatis; foliis ellipticis vel ovato-ellipticis acuminatis, glabris, textura crasse coriaceis, nervis primariis 5 bene conspicuis, 6-10 cm. longis, medio vel infra medium 2.5-4 cm. latis, petiolo brevi carnoso, 0.5-0.8 cm. longo; cymis umbelliformibus multifloris, rhachis demum cylindrica elongata, pedunculo nunc brevi nunc usque ad 7.5 cm. longo, pedicellis filiformibus gracilibus, glabris, 1-1.3 cm longis; floribus ut videtur rubidis in genere mediocribus; calycis segmentis ovatis obtusis glabris, vix 0.2 cm longis; corolla usque infra medium 5-fida rotata, extus glabra, intus minutissime et subinconspicuo farinosa-papillosa, circ. 1 cm diametiente, lobis late ovatis, acutis, circ. 0.3 cm longis; coronae foliolis subhorizontalibus, apice obtuse rostratis porrectis, dorso obtusis, superne usque infra apicem longitudinaliter carinatis, subtus sulcatis; poliniis oblique clavatis translatoribus brevissimi, retinaculo rhomboideo.

LUZON, Province of Benquet, Baguio (5979 Elmer) March 1904.

A species in leaf characters somewhat resembling Hoya camphorifolia Warb., but well distinguished from that species by its flowers, which are apparently reddish."

TRANSLATION:

Epiphytic, twining, climbing, branched; stalks and branches filiform, elongated, flexuous, terete, glabrous, loosely leafed; leaves elliptic or ovate-elliptic, acuminate, glabrous, thickly coriaceous, primary nerves 5, very conspicuous, 6 to 10 cm long, in the middle or below the middle, 2.5 to 4 cm wide, petiole short and fleshy, 0.5 to 0.8 cm long; inflorescences umbellate, many flowered, rachis cylindric, elongating, peduncle from end to end up to 7.5 cm long, pedicels filiform, slender, glabrous, 1 to 1.3 cm long; flowers, as seen, red or reddish and in the genera middle sized; calyx segments ovate, obtuse, glabrous, scarcely 0.2 cm long; corolla 5 parted up to the middle, rotate, outside glabrous, inside very minutely and somewhat inconspicuously farinose-papillose, about 1 cm in diameter, lobes broadly ovate, acute about 0.3 cm long; corona scales somewhat horizontal, apexes obtuse, beaked and stretched out and forward, back obtuse, above keeled, furrowed beneath for the full length; pollinia obliquely clavate, translators very small, retinacula rhomboid."

Adding to this in LEAFLETS OF PHILIPPINE BOTANY, Vol. 10, page 3574 (1938), Elmer claims that it was his #8896 upon which Schlechter based this species, however, the specimen so labeled at U.S. National Herbarium is labeled Elmer #5979, as stated above. Elmer adds that the Igorots (or "people of the mountains") called this species by the name of "Umum", meaning "the home of ants". He adds that the leaves are fleshy, but comparatively thin, yellowish beneath, dull green above. He says that the flowers hang on dull purplish pedicels and the calyx is purplish on the outside, otherwise pale white (Can anyone explain how white can be anything but pale?).

3. Hoya bilobata was also covered in previous issues.

4. Hoya bordenii Schlechter as described in PHILIPPINE JOURNAL OF SCIENCE 1st. supplement, page 302 (1906).

"Epiphytica in ramis arborum, ramosa; ramis caulibusque filiformibus elongatis, flexuosis, glabris, laxe foliatis; foliis patulis lanceolato-oblongis vel anguste ellipticis acuminatis, glabris, textura coriaceis, 11-18 cm longis, medio vel infra medium 2.5-4.5 cm latis, petiolo carnosa brevi 1.5-2cm longo; cymis umbelliformibus pedunculatis, pedunculo 3-5 cm. longo, tereti, glabro, pedicellio filiformibus gracillimis glabris, 2.7 cm longis; floribus illis H. parasitica Wall. fere aequimagnis, roseis; calyxis segmentis ovatis obtusiusculis basin versus sparsissime puberulis, circ. 1.5 mm. longis; corolla rotata circ. 1 cm. diametiente, usque infra medium 5-lobata, extus glabra, intus minute et sparsim granuloso-papillosa, lobis ovatis acutis; coronae foliolis horizontalibus superne anguste ellipticis, apice anteriore et posteriore subacutis, medio gibbo lineari breviore longitudinaliter donato, subtus longitudinaliter foveolata; anthera apicem anteriorem folioli paululo excedente, marginibus cartilagineis angustitis falcatis; poliniis oblique oblongoideis, translatoribus brevissimis, retinaculo rhomboideo parvulo.

LUZON, Province of Bataan, Mount Mariveles (1213 Borden) June, 1904. In forests at 650 meters.

Evidently one of the species of the H. parasitica Wall. group, and closely related to that species. However, it can be readily recognized by its long leaves and rather narrow straight corona scales."

TRANSLATION:

Epiphytic, branched shrub in tree branches; branching stalks filiform, elongated, flexuous, glabrous, loosely leafed; leaves outspread, lanceolate-oblong or narrowly elliptic, acuminate, glabrous, coriaceous, 11 to 18 cm long, in the middle, 2.5 to 4.5 cm wide, petiole fleshy, short, 1.5 to 2 cm long; inflorescence umbellate, pedunculate; peduncles 3 to 5 cm long, terete, glabrous; pedicels filiform, very slender, glabrous, 2.7 cm long; flowers similar to those of H. parasitica Wall, almost equal in size, pink; calyx segments ovate, somewhat obtuse, towards the base very sparcely pubescent, about 1.5 mm long. Corolla rotate about 1 cm in diameter, 5 lobed up to the middle, outside glabrous, inside shortly and sparcely granulose-papillose, lobes ovate acute; corona scales horizontal, above narrowly elliptic, apexes at both ends somewhat acute, middle having a short linear longitudinal ridge, beneath longitudinally pitted; anther apexes a little higher, margins flexible but firm and tough, narrowly falcate; pollinia obliquely oblong, translators very small, retinaculo smaller and rhomboid.

In LEAFLETS OF PHILIPPINE BOTANY, Vol. 10, page 3573 (1938), Elmer, adds a few bits of information, such as the fact that the corollas are almost flesh coloured ("subincarnatus") and the anthers are "lilac" in colour and "the branches are almost as thick as a slate pencil".

An examination of the available herbarium specimen's, including the holotype, at Smithsonian and New York Botanical Garden, revealed a plant with long, mostly oblanceolate leaves having three primary light coloured parallel veins.

5. Hoya bulusanensis Elmer was first published in English in LEAFLETS OF PHILIPPINE BOTANY Vol. 10, page 3575 (1938).

"A small but rigid epiphyte, creeping and forming bunches along the upper side of large branches or upon inclining tree trunks. Stems flexible or bendable, occasionally branched, that portion near the root ligneous, gnarly at the point of branching, smooth, not wrinkled longitudinally in the yellowish brown state, minutely and numerously punctate, the ultimate branchlets thinner and slender, most of the nodes are enlarged and often with a short crippled branchlet from

the axil, very crooked at or near the rigid stiff root cluster, where they cross they form enlargements. Leaves very thick, pale or yellowish green beneath, the upper surface paler green, normally opposite along the slender branches, more or less clustered toward the base or upon very short and thick seemingly abnormal branchlets, subdeciduous, glabrous but minutely punctate on both faces, the dry blades wrinkled on the upper but perfectly smooth on the lower side, flat, edges straight and entire, curing yellowish brown, of two distinct types, the orbicular to rotund shape and the elliptic to obovately oblong type, the latter ones 2 cm wide above the middle and 4 cm in length, obtusely rounded at the apex, broadly cuneate at the base, the smaller kind 1.5 cm wide across the middle; petiole very short and very thick, curved and expanded toward and at the base, dull brown, rugose on my specimen, leaving large circular scars after falling; midrib scarcely evident or entirely obsolete in the smaller type of leaves, in the middle region longitudinally striate below especially so of the larger blades, lateral nerves none. Inflorescence axillary or terminated by equally short bracteated tubercles or receptacles; pedicels bearing rather rigid and livideus coloured flowers, as long if not shorter than the peduncles; calyx spreading, 5 segmented, the lobes glabrous and obtuse to acute, coriaceous, 1.5 mm in length, united at the base; corolla sparsely ciliate pubescent along the margins, otherwise glabrate, united below the middle, the 5 lobes adnate and descending but with inflexed acute tips, about 5 mm long, relatively broad across the middle; corona united to the short column, comprised of 5 radially spreading prongs whose tips are strongly inbent, thick or fleshy, bifid at the tips, alternating in betwen them are erect linear processes; pistils 2, flask shaped.

Type specimen number 15937, discovered by A.D.E. Elmer on a steep forested ravine at 1500 feet elevation, Irosin (Mt. Bulusan), Province of Sorsogon, Luzon, May 1916.

Our species is a critical segregate from H. bilobata Schlechter based upon 420 Copeland from Davao. It should also be compared with the unpublished Hoya longipes of the same author. When my distribution was made it was sent out as H. diversifolia Elm., an untenable name since Blume had already used it."

The type specimen, #15937, which is housed at U.S. National Herbarium (Smithsonian) has no leaves or flowers left...only stems. However, I believe that duplicates were distributed so a better example of this may be found later.

6. Hoya camphorifolia will be found in Vol. 5, #2.

7. Hoya cardiophylla Merrill first appeared in Latin with English translation by the author in PHILIPPINE JOURNAL OF SCIENCE. Vol. 17, page 310 (1920-21).

"Planta epiphytica, ramulis leviter pilosis, glabriscentibus; foliis oppositis, late ovatis, basi late rotundatis et perspicue cordatis, apice brevitor acute acuminatis, 5 ad 7 cm longis, in siccitate subflaccidis, nervis utrinque circiter 4, patulis, cum reticulis laxis subperspicuis; umbellis multifloris, floribus glabris, circiter 1 cm diametro, corolla rotata, lobis rhomboideo-ovatis, obtusis vel acutis, processibus turgidis, crustaceis, oblongo-ovatis, acuminatis.

An epiphytic vine, the branchlets sparingly pilose, soon becoming glabrous. Leaves heart-shaped, apparently fleshy when fresh, rather flaccid when dry, 5 to

7 cm long, 4.5 to 5 cm wide, pale when dry, glabrous or the younger ones slightly ciliate near the basal margins, the base broadly rounded and distinctly cordate, the sinus acute, the basal lobes broadly rounded, the apex shortly and sharply acuminate; petioles 5 to 7 mm long; lateral nerves about 4 on each side of the midrib, somewhat spreading, anastomosing, the reticulations lax and distinct on both surfaces. Umbels many-flowered, the flowers yellowish-white, usually 5-merous, 10 to 11 mm in diameter, their pedicels about 2 cm long, glabrous. Calyx-lobes triangular-ovate, acute or obtuse, 1 mm long. Corolla rotate, the lobes rhomboid-obovate, about 4 mm long, obtuse or somewhat acute, the tips more or less inflexed. Lower lobe of the coronal processes oblong-ovate, acuminate, turgid, somewhat crustaceous, the upper surface somewhat concave. Staminal column short, sessile.

DINAGAT, Bur. Sci. 35160 Ramos & Pascasio, May 13, 1919, on tree trunks at low altitudes.

A species well characterized by its broadly ovate, rather prominently cordate, shortly and sharply acuminate, conspicuously and laxly reticulate leaves."

8. Hoya ciliata Elmer (not to be confused with H. ciliata T. & B. previously listed in INDEX KEWENSIS but for which no description ever published). H. ciliata Elmer was published in English in LEAFLETS OF PHILIPPINE BOTANY Vol. 10, page 3577 (1938).

" A suffrutescent climbing vine upon small trees or shrubberies. Stems 1.5 cm thick, terete, green but mixed gray, only sparingly branched from above the middle, the slender yellowish green branches drooping, yellowish brown in the dry state, wrinkled and minutely pubescent, 5 mm thick on my specimen. Leaves divaricately hanging, opposite, well scattered along the free ends or ultimate branches, very shallowly concave on the yellowish green lower surface, shining deep green above, rigid and very thick, edges involute and marginal rim compressed, ciliate beneath, sparcely ciliate on the upper side, curing yellowish brown on both faces, finely wrinkled on the upper side, smooth or obscurely wrinkled below, deciduous, elliptic in shape or ovately so, broadly rounded at the base, broadly obtuse toward the apex and finally constricted into a short tooth like point, the larger blades 6 cm across the middle and 12 cm long without the petioles, occassionally consideralbly smaller; petioles stout. 2 cm in length, curved from the expanded base, compressed and grooved along the upper side, densely yellowish brown pubescent, leaving large scars after falling; midrib stout, straight, more evident and pubescent beneath, caniculate and sparsely ciliate above; lateral nerves 5 to 7 on each side, obscure from both faces, strictly divaricate. Peduncles curvingly suberect, arising from between the leaves from the lower side of the branch or twig, also green, light tawny and densely soft pubescent on my type, 5 cm long or longer or even much shorter; flowers clustered and spreading from the distal end of the peduncle; the pedicels averaging 3 cm in length, sparsely ciliate, strict or curved, dark brown but green when fresh, usually ascending and arranged in whorls; the sepals 5 to 8 mm across, broadly orbicular, a little broader than long, the basal central part coriaceous, the marginal portion subhyaline and minutely ciliate, the ventral side glabrous, the dorsal side with only a few ciliate hairs; corolla leathery, nearly black when dry, rigid, the larger of the 5 segments 1 cm long, united below the middle, the sharply acute apex inflexed, glabrous on both sides, persistent as is also the calyx; column very short and thick, subtended by minute scales; staminal horns 5, erect, rigid, yellowish brown, the short oblong lobes rounded at the apex. Fruits not known. Tumagisig in Bagobo.

Type specimen number 11072, discovered by A.D.E. Elmer along a dry wooded ridge of the Baracatan creek at 1500 feet altitude, Todaya (Mt. Apo), District of Davao, Mindanao, July 1909.

Apparently it has not been recollected and cannot be matched with any specimens in the herbarium. It is characterized by its ciliate pubescence of the stems, nether side of leaves and calyx margins. Some of my material was sent out under Hoya rotundisepla Elm. new name."

to be continued.....

SEED SAVER

We have often lamented the fact that hoya seeds need to be fresh in order to have them germinate. This often poses a problem as they dry out so quickly that they are often too old by the time we get them if they have to travel any distance.

The USDA Seed Research Laroratory at Beltsville, Maryland has found that coating seeds with polyethylene glycol may improve performance from old or damaged seeds. Old seeds take up water too quickly when planted because the outer coating that surrounds the embryo deteriorates with age and exposure to air. This absorption of excess water causes the seed to rot before germination takes place. If one coats the seed with polyethylene glycol the seed cell membranes are repaired artificially. Those seed used in the experiments germinated as fresh seed even though they had been in storage for several years.

No experiments were run using hoya seed, but it certainly is worth trying with them. It just might work.

One word of warning. Since American Horticultural Society first reported this, about a year ago, several companies have been advertising this very special product for sale in gardening magazines at a very high price. Save money and hold out a few tablespoons next time you add anti-freeze to your car. It's the same thing and a heck of a lot cheaper.

HOYA HEARTBREAK

by Christine M. Burton

1978 was the year that the seeds of HSI were planted and it was also the year that I began to have bad luck. As the old saying goes, "Without bad luck, I'd have no luck at all."

By mid-December of 1983 I had begun to congratulate myself and anticipate 1983 would be the first full year since 1978 that at least one truly tragic event had not occured in my life. Then came Christmas day. I count my blessings at having all but one family member on hand but the entire family had come to look upon that greenhouse filled with hoyas as "family too" and all was lost!

The greenhouse was intended to be heated by "passive solar" and had already proved it could handle the coldest temperatures ever recorded in the Atlanta area. Then came the record breaker of 10° below 0 F with wind chill factors of 50° below 0. This was preceded by a week of rainy weather when the solar didn't function. The auxillary heat source was electric with a standby kerosene heater.

There was little warning that such extreme weather was coming. Earlier in the week the weatherman had actually predicted a warming trend and we were assured of sunshine which led us to believe the solar system would begin working again.

Christmas eve the sun came up with the wind and the greenhouse, which had only a week before (with lows in the usual winter 20's nights and 30-40 days), had reached 124° F at noontime, just as it had in mid-summer, never got over 42° F.

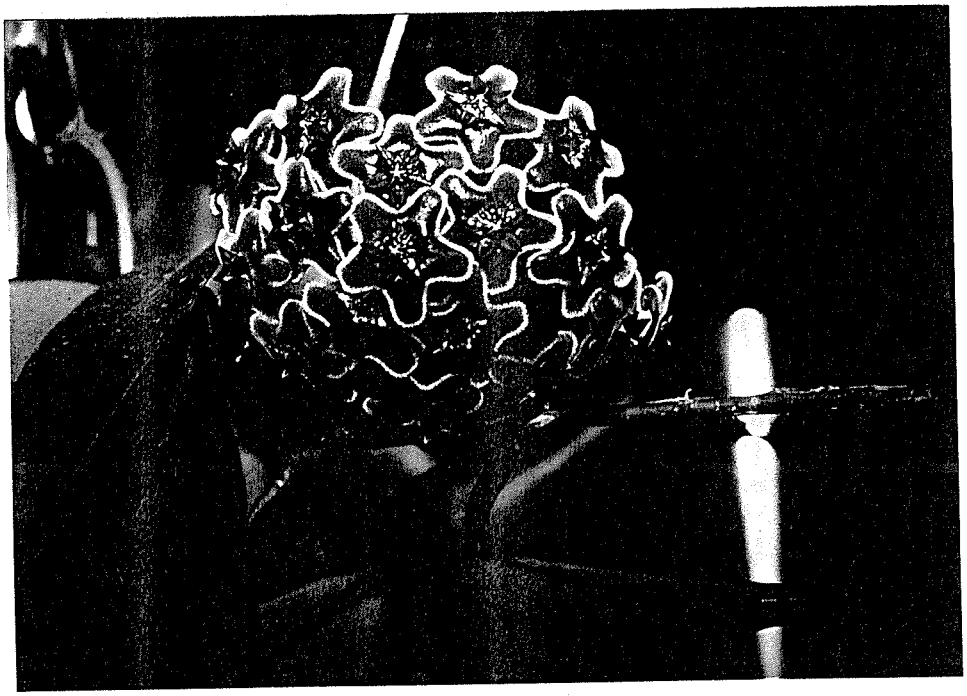
continued on page 81 ...

HOYA 'BRIGHT ONE' by Catherine Perpich

Lack of space is a constant problem for hoya growers. However, you are missing a beautiful display if H. 'Bright One' is not included in your collection. This floriferous beauty is unusual, with both the corona and corolla having the same vibrant, deep-red to cherry-red color. Most people refer to this plant as a hybrid but am wondering if it is not actually a species. Whatever it is, the plant is definitely worth cultivating.

The leaves of my H. 'Bright One' are generally mid-sized between those of H. carnosa and H. carnosa var. motoskei. They are dark green, with some silver speckling. A number of growers, particularly in California, report that their plants show pink speckling, instead of silver. This characteristic is probably due to the difference in the lighting conditions. Regardless of the lighting conditions, H. 'Bright One' has continued to produce an equal amount of blossoms when grown in near-direct sunlight or deep shade. However, the tone of red of the flower will vary under varying light intensities.

The easy care and simple cultural requirements make this an ideal houseplant. It will tolerate less humidity than some other hoyas; but, it will still appreciate as many hand mistings as you can provide. It is not fussy about the type of potting medium. However, I have found that it does best in a very loose, open, fast draining mix. A lot of hardwood charcoal, tree fern and wood chips are added to my basic hoya mix to assure extra fast drainage. I hasten to add that my basic mix is already very loose and fast draining and contains time-release fertilizer and micronutrients (trace elements). The medium is always kept barely moist, without being allowed to become completely dry.

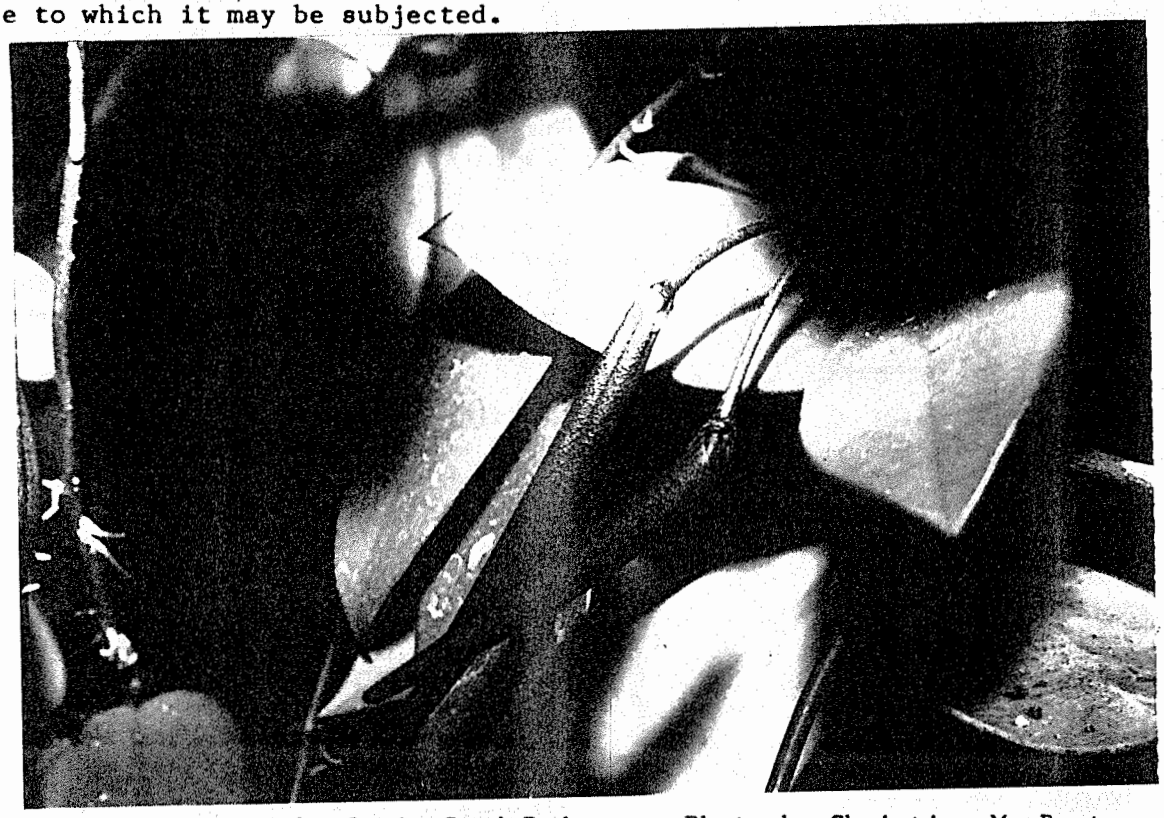


Hoya 'Bright One' Photo by Christine M. Burton

Whenever the culture of any hoya is discussed, it is important to stress one very important fact ... There is no one perfect medium for everyone. Each person's particular environment and watering practices differ; and, any medium must be adjusted in relationship to these factors. Pro-mix, Sunshine Mix, and Metro Mix are good basic media. To these you may add perlite, horticultural charcoal, hardwood charcoal, wood chips, tree fern, Turface or lava rock to make the mix more open and allow greater air circulation. I personally prefer hard-

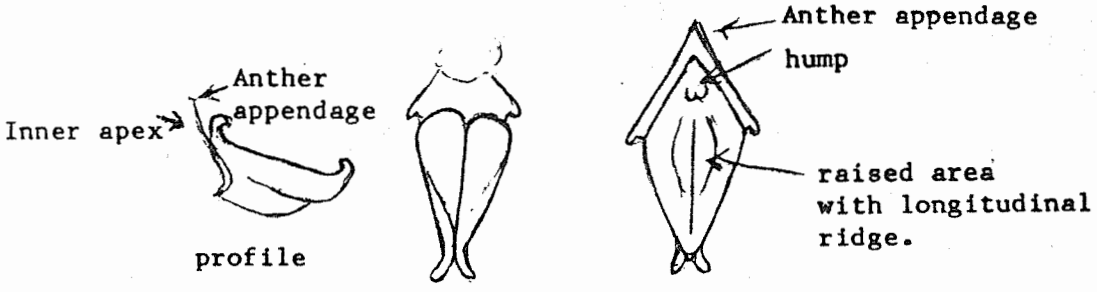
wood charcoal, tree fern and lava rock; but this is a matter of choice.

H. 'Bright One' is one of the hardiest hoyas that I've grown and I highly recommend it for new collectors. The plant seems to survive, in spite of the abuse to which it may be subjected.



Hoya 'Bright One' Seed Pods Photo by Christine M. Burton

Not all hoyas have such decorative seed pods. We had this picture prepared in order to show you just one more facet of this marvelous hoya.



Corona scale viewed from beneath.

Corona scale viewed from above.

CORONA SCALES OF HOYA 'BRIGHT ONE'

Editor's Note: Despite the constant avowal on the part of many, this does not appear to be a var. of H. carnosa, which has very different corona scales. If a hybrid, it would appear to have been pollinated by an Otostemma section member, but not H. lacunosa.

Beth Mallorie ... Robin Latifolia ... Oregon .. "I was surprised to see that both H. shepherdii and H. mostoskei Var. California * have a common trait that none of my other bloomers have displayed, as yet. When the bloom was over, the flowers closed up, dried up, and then fell off the pedicel ... and then finally the pedicel dropped off, leaving only the peduncle. Anyone know if this is normal for these varieties, or something caused by temperature or other climatic conditions?"

*Editor's Note: 99 44/100 per cent of all hoyas close their flowers before dehiscing. Most drop flower and pedicel at the same time. Some, such as H. bella drop the peduncle also. The only example of the so-called H. motoskei var. California I have seen is the Australian form of H. australis ... There always seems to be someone working overtime trying to keep our hoya nomenclature in a muddle!

Joyce Blumenstock ... Robin Latifolia ... Michigan .."I have a silly theory that hoyas respond to movement by growing quickly. All my rooted cuttings, which were just resting, grew after I poked around in the soil. H. serpens always sends out new shoots when I disturb the soil."

Sharon Popp ... Robin Latifolia ... Tennessee .. "I used the Ortho Bloom Builder, 0-10-10, several times during the last winter. I believe it helped me get blooms on some small plants this spring and summer."

Betty Moormeier ... Robin Latifolia ... Colorado .. "I believe the 0-10-10 Bloom Builder really works. I didn't use it this year and I had about half the hoya bloom I had over the past two years I used it."

Mary Cohen ... Robin Latifolia ... Florida .. "Cathie Perpich told me of a better way to save seeds from seed pods. Instead of using a plastic bag, put an old stocking over the pod, so it can still breathe. I tried it with 'Red Buttons' and it worked beautifully."

Cathie Perpich ... Robin Ariadna ... Florida .. "I've grown hoyas everywhere in the house, except the closet ... and if I run out of room, I may try there next. While light is certainly important, I've had hoyas bloom even though they are buried underneath benches in very, very deep shade. I think that the importance of light is blown out of proportion.

At U.S.D.A. Research Station in Miami, where tropical and sub-tropical plants and trees are studied for possible introduction into agricultural and commercial horticulture, they have about 10 hoya species "naturalized" throughout the station. Most of the hoyas are planted in the boots of palms but a few are placed in the notch of trees just like we read in the descriptions. In all but one

case the hoyas are grown in rather deep shade provided by the massive canopy of nearby trees. The plants that I've seen don't seem to mind the shade one bit ... in fact they bloom their fool heads off. The only fertilizer they receive is a quarterly foliar spray; and, I think this is not always on schedule. The plants are apparently deriving whatever it is that they need direct from nature, i.e., the droppings from birds, decaying leaves, etc. The reason that I mention these "naturalized" hoyas is that it has shown me that hoyas do not need to be pot bound or have very strong light in order to bloom.

I've gone to using the biggest, most shallow containers I can find (like the bus pan used in restaurants to collect dirty dishes). When attached to the trees, the hoya roots spread out all over the place; they're not confined to one small, tight 4 to 6 inch pot. I've even started using a potting mix that is almost exactly like an Orchid mix so that the roots get plenty of air.

"Because, during the past year, I have not had the time I would like to devote to the care of my plants, I am using MagAmp fertilizer (7-40-6) in my mix. I don't use a lot of it ... less than the manufacturers instructions, because I feel that this is just too much phosphorus on a daily basis. When I've had the chance, I've fed a balanced 10-10-10 water soluble. By the way, MagAmp also contains all of the trace elements, which is a seldom discussed, but nonetheless important ingrediant for all plants."

SLIDE SHOWS

Sandra Crow presented a program about hoyas to the Houston, Texas Cactus & Succulent Society on August 24, 1983. Sandra used HSI slides to illustrate the program which was held at the Garden Center in Hermann Park and was open to the public.

Ann Mann also presented a program on hoyas to the Winter Park, Florida Garden Club. This was on November 9, 1983. This is the second hoya program, using HSI slides that Ann has presented. The other was to the Windemere, Florida Garden Club on February 8, 1983.

Our thanks go to these two for helping "spread the gospel"!

FOOD FOR THOUGHT.... A gold mine ...Maybe?

Some companies match gifts given by their employees to non-profit organizations. Some of these companies even consider the dues one pays to non-profit organizations as matchable gifts. This isn't done automatically and it isn't advertised. One must ask and request. Why don't you ask your employer or personnel manager if this is a policy in your company? You might be surprised! This isn't often done in small hometown businesses, but is quite common among the big corporations...or so I have been told. If it is the policy, don't forget to request macthing gifts for HSI.

GLOSSARY OF HOYA NAMES

angustifolia: narrow leaves.
anulata: having a raised ring or band.
apiculata: ending abruptly in a short point.
apoda: literally without a foot. In this case there is no peduncle.

continued on page 79

UP, DOWN, OR SIDEWAYS? HOW SHOULD MY HOYAS GROW? by Christine M. Burton

Several years ago, Altantan, John Portman, built a hotel which later became the Regency-Hiatt House, anchor hotel for the Hiatt Chain. This was Mr. Portman's first major hotel and has been copied all over the world, just about. The lobby is around 25 stories tall and was designed to simulate a waterfall. In the center there is a fountain which reaches just about to the top and descends into the basement area of the hotel. Around the perimeter of the lobby, on each floor are balconies with planting beds containing vines which cascade downward as does the water of waterfalls.

When this hotel was first built these planters were planted exclusively with Philodendron scandens. It wasn't long, however, before the plants began to cause trouble. They became listless and dull and actually appeared to be shrinking in size. The caretakers replaced them so often that maintaining the beds became a major expense. Plant experts were called in from the University of Georgia and USDA. After much study and discussion, it was revealed that the Philodendron plants were trying to tell the caretakers something and that was, "We are just what our name says, Climbers!" It is not the nature of Philodndron scandens to cascade downward in the manner of a waterfall.

Another vine that I have had the opportunity to watch is Hedera helix (English Ivy). This too is a climber, though it also trails along the ground. Once it reaches an obstacle, up it goes, never cascading downward until it reaches the top of whatever it is climbing upon. On the ground, ivy has rather small leaves and never blooms but the higher it climbs, the larger the leaves become (I have seen the leaves at the top of a pine tree reach as much as 8 inches in diameter) and the higher it grows the healthier it looks. When high up in trees, the ivy blooms and produces huge grape-like clusters of blackish fruit. While the ivy will cascade downward, once it reaches as high as its support allows, it does not do so until that height is reached. This fact and the fact that it does not bloom, except when quite tall seems to me to be saying something that might also apply to other vines whose nature it is to climb.

What has all this to do with hoyas? Hoyas are, with only a few exceptions, climbers. We know this because of the adventitious rootlets seen along the stems of almost all hoya species. Yet most of us grow these plants as trailers and most of us (judging from my mail) have trouble getting them to bloom...I, as much as the rest of you.

After reading the account of the Regency-Hiatt House and its cascading Philodendron scandens problem, it occured to me that those of us having problems growing and blooming hoyas might improve our luck by changing directions.

It isn't known why the leaves of both ivy and philodendron grow larger when grown tallest. It would seem to me that the further from the ground roots the less nourishment available to the plant. However, this does not appear to be the case or one would see diminishing leaf sizes at the vine apexes, yet we find the opposite.

Those of you who saw David Silverman's hoya exhibit at New York Botanical Garden several years ago, may recall that most of his planters were designed to allow the vines to grow upward several feet, some as much as five or six feet. All were handsome plants that bloomed profusely. The only problems those plants encountered were mealie bugs which were present in the greenhouse before the hoyas entered it and they were looking for a new treat. I visited this exhibit several times. When I last saw them, quite late in the season, the mealies's had not made much headway, partly because David sprayed them himself but, mostly because the plants were so much more vigourous than the average hoyas, due, I think, to the upright growth.

I have started providing climbing support for my hoyas. However, with each climber I am endeavouring to grow a control plant to see if my theory is correct. I think I already have the answer as those so supported are already growing larger and they all have larger leaves near the extremities and yet my experiment is only a couple of months old. It is too soon to tell if bloom performance is improved but I am sure it will be as healthier plants bloom better.

It is my hope that others of you will join me in this experiment and let me know at the end of six months and a year how it has worked for you.

VERY IMPORTANT NOTICE
VERY IMPORTANT NOTICE
VERY IMPORTANT NOTICE ....To those outside USA only.

In the future all orders and membership forms must be accompanied by payment. A receipt or notification of a previously purchased International Money Order will not do. These orders will be destroyed. If a subsequent money order should appear, it will be returned to the sender, who can then resend it along with the previous order or can apply to his/her post office for a refund. If he/she decides to reorder, he/she should enclose three International reply coupons to cover extra postage such transactions require.

Such trouble and time delay can be avoided by sending a check on an USA bank. They are available in every country in the world at about the same cost as buying a money order. When you leave the bank you have a check you can send with your order.

EXTREMELY IMPORTANT NOTICE:

HSI, Christine M. Burton, and Flora ad Astra are three separate entities. Any checks made out to pay for orders to two or more will be cashed and will be refunded after subtracting postage and bank charges.

SILDE LIBRARY

Helene Flemming, our slide librarian has moved. Her new address is:

Helene Flemming
57 Elm St.
Millburn, NJ 07041

Inquiries about slide rentals should be directed to her.

AUSTRALIAN members will be happy to know that Noel Skennar has finally gotten the slides as promised almost a year ago. Noel will be moving shortly so will wait to hear his new address before relisting here.

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australis: southern.
bella: beautiful
benquetensis: from Benquet.
bilobata: two lobed.
bordenii: Borden's.
bulusanensis: from Bulusan.

continued on page 81

GOOD NEWS

In response to an appeal a few issues ago on how to get H. serpens to bloom, several members wrote of their experiences. They are to be found below.

HOYA SERPENS Hook.f. - SOME NOTES ON FLOWERING by Malcolm Symonds

A few years ago I experimented with some plants of Hoya serpens with a view to establishing the conditions under which they would flower successfully. I tried growing them in different degrees of humidity, temperature and shade but I am bound to add that, lacking the necessary facilities for proper scientific controls, my experiments were somewhat amateurish.

Although some of the plants flowered, the results were not conclusive and I failed to discover a set of conditions under which H. serpens could be relied upon to flower regularly. However, I did find that if the humidity was too high or if too much shade was given no buds formed at all. On the other hand if the plants were grown in stronger light the buds would form but were liable to drop off in hot weather.

Last summer I placed a number of pots of H. serpens on slatted staging with the plants trailing between the slats and dangling beneath the staging. By early summer buds had formed on all the peduncles. As had so often happened before, a short spell of hot weather resulted in most of the buds dropping. However, the buds on the peduncles hanging below the staging were not affected and continued to develop, eventually to flower without any bud loss.

There was often little difference in humidity between the area immediately below the staging and that just above it. At night and in dull weather there was not much difference in temperature either but on hot days the surface temperature above the staging rapidly rose to a much higher level than the temperature below the staging. It seems to be too high a temperature, or too great a fluctuation in temperature, in the vicinity of the peduncles, possibly coupled with low humidity, that causes bud loss. On the other hand there has to be a sufficiently high light intensity and temperature to stimulate the flowering process in the first place. This appears to be why the combination of a plant grown in a reasonably light position, with branches which were heavily shaded by the staging, was successful.

If any other members decide to experiment with flowering of H. serpens, or indeed, any other hoya species that is reluctant to flower, I would be interested to learn of their results. It must, of course, be remembered that growing conditions can vary considerably from one country to another and what works well in the U.K. may not succeed in the much hotter conditions of the southern U.S.A.

HOW I BLOOM HOYA SERPENS by Joyce Blumenstock

My Hoya serpens blooms very well in my basement. I planted it in a shallow broad pot so it could crawl a little. It is closer to my lights than anything else I grow. I keep it sitting on a plastic glass because I have nothing else that needs so much light. This saves raising the shelf. It bloomed all spring and early summer. Now I've brought it upstairs, trying again to get it to live with our normal environment. It really sulks as soon as I bring it up. Also -- I get it to send out new shoots by irritating the roots.

The plant is barely larger than when I bought it 4 years ago because the tips brown and die when I bring it upstairs.

AND HOW I BLOOM IT by Carolyn McMillan

I don't think one with H. serpens knows the HOW .... all we know is it either DOES or DOESN'T, in spite of what we do!

Mine started as a cutting with one bloom coming early and when another came on a healthy looking branch I shared the cutting with Jennifer Hartigan. Whether hers bloomed or not, I haven't heard, as I sent it to her early in the summer. My main plant was moved to the raft (as I described on page 19 of the summer issue of THE HOYAN) It has had 2 bloomings. One was rather sparce, but the other one normal and lovely. It now has four more peduncles not yet in bloom.

AND MINE? by Christine M. Burton

My H. serpens was planted in a lovely ceramic pot (with bottom holes) about four inches wide and about the same deep. It was made for me by our slide librarian, Helene Flemming and was declared by David Silverman, a professor of ceramics, as being a very lovely piece of work. H. serpens grew very large in it. In fact in only a year, more or less, it completely hid the pot. Every sping and throughout the summer, it put out hundreds of peduncles and embryonic buds only to blast before getting more than the size of a grain of barley. One umbel reached the size of shoe peg corn kernals and then blasted.

This plant was kept hanging quite high in the greenhouse so I am inclined to think that Malcolm has pinpointed the problem. I should have known without being told, as I have been told that in nature it creeps on the ground and on low branches, like a snake, hence the name. I have now planted H. serpens in a cypress bark cradle, exactly as Carolyn's. I hope to report to you, by this time next year, that it bloomed abundantly all summer long in 1984. I can dream can't I?

HOYA HEARTBREAK ...continued from page 73

Before retiring, both the electric heater and the standby kerosene heater were lit. The entire greenhouse had been lined with bubble foam and that afternoon we added additional insulation on the north wall and over the door and air vents. During the night both sources of heat failed for reasons we have not been able to determine as both worked perfectly afterwards. No switches or valves were incorrectly set and as far as we know there were no power failures. It was as if someone "up there" simply doesn't want us growing hoyas.

Only two hoyas are left, a H. darwinii in a fish tank in the livingroom and a "Pink Silver" vine hanging in the livingroom window.

Like Job, just about everything has been taken from me now, the good husbandman has pruned all the branches and on my birthday 1983 has left me only one direction in which to go ...UP!

---

camphorifolia: having leaves that resemble the leaves of the camphor tree.
cardiophylla: having heart-shaped leaves.
carnoa: fleshy.
ciliata: bordered with fine eyelash-like hairs.
coriacea: leathery.
coronaria: crowned or garlanded.

YOU ASKED FOR IT by Christine M. Burton

QUESTION:

On to the 3-5 nerved types. Can the nerves move up from the base to higher up on the leaf as it matures?

ANSWER:

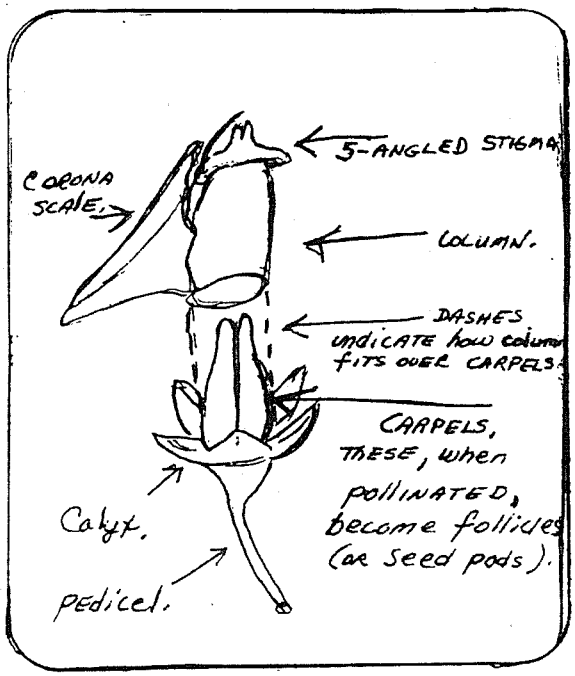
They certainly can. However, I believe that rather than maturity it is excess moisture and too much fertilizer (or more than nature normally provides) that causes many 3-5 nerved parallel or palmate veined leafed plants to start making leaves that are 3-5pli nerved or even to produce leaves that appear pinnate. This type of leaf is almost always distinguishable from naturally pinnate leafed plants, however. Most often one can tell what the natural appearance would be by the leaf texture and at flowering one notes that 99% of this type has yellow recurved blooms. Unfortunately not all yellow recurved flowers belong on 3-5 nerved species so on goes the confusion.

QUESTION:

That "sp. Sarawak" (#300) is a crazy hoya! It has 2 seed pods from one flower....and not on just one flower but on three flowers....3 flowers = 6 pods! Couldn't believe my eyes. Have you ever seen that before? .... Alma Parker

ANSWER:

Yup! See our picture of the 'Red Button' seed pods. The common peduncle is hidden in the shadows but I assure you it was there. When I took that picture, the plant was on my apartment balcony and I had to fight yellow jackets to take the picture. That annoyance kept me from shooting the half dozen pairs on the opposite side of the plant. The norm is considered two pods per flower. However some flowers are less fertile or pollen is not evenly distributed so sometimes one of the pair of carpels never develops. At right I have drawn the carpels for you so that you can see that each hoya flower that is perfectly pollinated will have two pods per flower.



QUESTION:

Someone wrote in and asked if hormone rooting powders did what was claimed for them and if misting systems were desirable. I sent these questions to about a dozen knowledgeable members, including those who grow hoyas commercially. Unfortunately I misfiled the letter so do not have exact wording of the questions and don't recall who submitted them. I apologize.

ANSWER:

Of the four replies, here are their thoughts. About the rooting powder: 2 thought the powders aided in rooting and two thought not but all said they used them for the benefit of the fungicides they contain. One person cautioned that you should purchase the smallest size package because the beneficial hormones are lost quickly once the powders are exposed to air.

All four who replied felt that the benefits of misting are tremendous. All felt

that a properly operating automatic system is the ideal but one felt such a system is impossible to maintain and relies on manual controls. All agreed that an automatic system is not necessary but felt that few would have time to hand mist enough to obtain any real benefits from misting, unless one had only a very few plants. So to receive these benefits, one with a large collection must install pipes and valves and have them operate with automatic or manuel controls or become a slave to hand misting. I just spray down the whole greenhouse early every morning and it helps a lot. With an automatic misting system I am told I could go away for a week or two and not worry about having someone come in to water. If so, I would surely enjoy it.

CORRECTIONS AND AMPLIFICATIONS:

J. Donker, of the Netherlands, wrote in and suggested that the following changes be made in the R. Schlechter translation of New Guinea Hoyas:

1: THE HOYAN, vol. 3, #3, page 66. Under the section Otostemma. Instead of reading "a broad ball", Mr. Donker suggested that "a broad cone" would be a better translation. I agree.

2. Same place: instead of "two short tips (ears)", he suggests a better way of saying it would be "two obtuse ears."

Thank you Mr. Donker. Next issue we will feature two hoyas with pictures supplied by Mr. Donker.

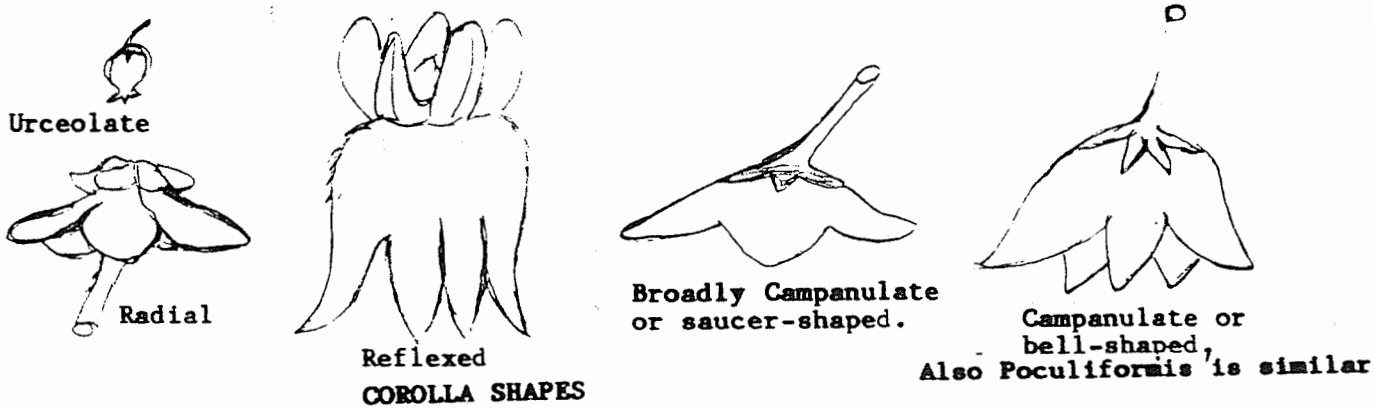
NOTICE ABOUT GRANT

It was announced in the winter issue of 1982 that we had a $1000.00 grant for hoya research.

Not a single application came in. This is not too surprising due to the fact that it got little publicity and perhaps, in this day and age, $1000.00 dollars really isn't very much money.

One problem encountered is that the few publications we asked to announce this grant refused, saying that it was not of "broad enough interest". If a horticultural society journal will not make such an announcement, it makes me wonder who would!!?

Perhaps the next step will be to contact land grant colleges that have strong horticultural leanings. Also perhaps we should let this fund build longer so that it would have more appeal. This subject will most certainly be brought up at the spring meeting.



COROLLA SHAPES

BIBLIOGRAPHY

Thanks go to Douglas H. Kent of London, England for supplying the six following for us. These are three we did not know in last installment.

Binn. = Binnendijk, Simon, (1821-1883).
Cat. Gew. Buitens. = Catalogue van eenige der merkwaardigste zoo in - als uit - jeemsche Gewassen te vinder in's Lands Plantentuin te Buitenzorg. Batavia. 1823. (Facsimile reprint Jamaica Plain, 1946). A list of plants (without descriptions) at the Buitenzorg Botanic Garden. Descriptions of new species in the list were published two years later in FLORA (1): 97 -160 (1825).

Nederl. Kruidk. Arch. = Nederlandsch Kruidkurdig archief. Verslagen en mededel ingen der Nederlandsch botanische vereeniging. Amsterdam. 1846-1951 (Important Dutch botanical periodical).

(With titles like those no wonder so many abreviate.)

Scheff. Could be Scheffers.

Steud. = Steudel, Ernst Gottliev von, 1783-1856.

Teijsm - Teijsman, Johannes, 1809-1882.

Hook. = Sir William Hooker.
Bot. Reg. = Botanical Register.
Bl. = Blume
Decne. = Decaisne
DC Prod. = Decaisne's Prodromus.
Wall. = Wallich
Wall. Cat. = Wallich's Catalog
Pl. As. Rar. = Plantae Asiatae Rarories.
Gard. Chron. = Gardener's Chronicle.
Ic. = Icones.

Note: In many of the listings it is very difficult to tell if Ic. or lc is meant, as different styles of printing is used and the capital i and small l look much alike. Look for the period (though often missing) noting abreviation. If you do not find at place you think, keep this in mind and you may find it in another place.

Dalz. & Gibs. = Dalzall and Gibson.
Bomb. Fl. = Bombay Flora.
Haw. = Haworth
Rev. Pl. Succu. = Revisiones Plantarum Succulentarum

Due to the longness and repetiveness of this list, I am going to stop here. This should give any of you wishing to do this research enough to keep you going for a long time. Contact Chris if you need more. All full titles will be supplied as we reprint the descriptions.

On to a few additional pictures locations:

H. australis is pictured in the following publications:

Lamb's Popular Exotic Cacti in Color, page 105
Royal Horticulture Society Journal, vol. 98, #5, page 216.

H. bella can be found in:

Nicolsen's Pocket Encyclopedia of Indoor Plants, #137
Royal Horticultural Society Journal, vol. 98, #5, page 216.
deWit's Plants of the World:The Higher Plants, Vol. 2, page 107.
Hay's The Dictionary of House Plants, #282
Kiaer, Indoor Plants in Colour, page 67.
Kroadijk's 200 Houseplants in Colour, #107.
Mass. Horticultural Society's HORTICULTURE, vol. 34, #1, page 20.
Minninger's Flowering Plants of the World, #25.
Hamlyn's The Pictorial Encyclopedia of Plants and Flowers, page 249
Park's Seed Catalog always pictures it. Page number varies from year to year.

H. carnosa. I am not going to list these because this is so well known that I doubt many would look it up. For the few who do not know how it looks, there will be ample opportunity to see it on these pages or even on your own window sills. Besides that it gets printed at least once or twice a year in popular publications.

H. coriacea has had only one picture (not counting the one in THE HOYAN, vol. 4, #3, cover and page 65) in modern times that I am aware of and that was in:

Brian Morely's Wild Flowers of the World, #24.

H. imperialis was pictured in:

Harrison's Climbers and Trailers, page 51
Royal Horticulture Society Journal, vol. 98, #5, page 216.
Brian Morely's Wild Flowers of the World #120, erroneously as H. sussuela.

H. purpureo-fusca was pictured in:

Brian Morely's Wild Flowers of the World, #120. This is only correct portrayal of this species since the early to mid 1800's, except in THE HOYAN.

The infamous "Pink Silver" vine was pictured in:
Harrison's Climbers and Trailers, page 51.
HORTICULTURE, accompanying Chris Burton's article on miniature hoyas, January 1983. When Chris complained to HORTICULTURE's picture editor about the fact that the name was incorrect and that it certainly was not a miniature hoya, the reply she got was,"We could tell it was a miniature because the flowers were so small in relation to the leaf size and we got the identity from the world reknown hoya authority, Michael Kartuz." Chris's reply was that if flower size in relation to leaf size were a criteria upon which to classify miniature plants, how come live oaks or redwoods aren't considered miniatures? ... and no disrespect to Michael Kartuz (who certainly knows his gesneriads and begonias), but when the heck did he become a world reknown hoya authority?

While I am on the subject, an amusing thing happened in regards Michael Kartuz and I think he might enjoy knowing the esteem with which he is held by his customers. A lady, who had seen some publicity about our society and who had also seen the issue of THE HOYAN which covered H. serpens, wrote to Chris and sent her a small cutting of it. Her letter read, "I had intended to join your society until I read my friend's copy of your bulletin, where you called this plant H. serpens. I bought this plant from Michael Kartuz and it was listed in his catalog as H. minima. He is a very knowledgeable man and knows everything about plants. You'd better consult him about these things in the future before you print anymore untruths." Chris wrote her back and suggested that she order Kartuz's latest catalog and that in it she would find this plant correctly la-

beled H. serpens. She also explained to the lady how plants got their names and upon which authority came the name H. serpens. Nothing more was ever heard from the lady and she never joined HSI. It is feared her faith in authorities was permanently damaged.

With this we are concluding the bibliography. As new publications are brought to our attention, we will list them here for you. I hope this has been helpful. ...cmb.

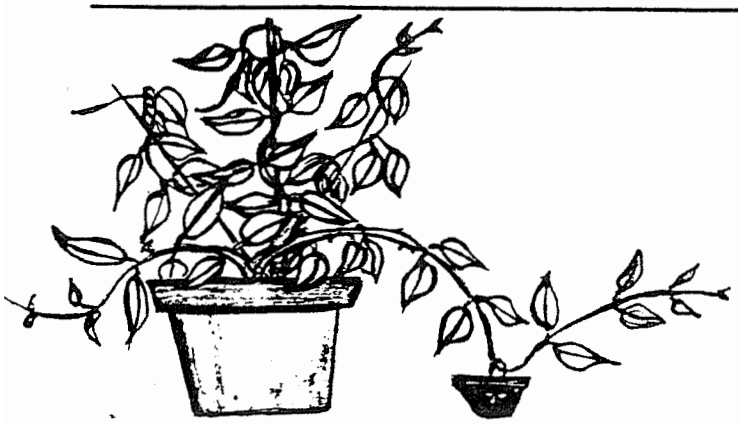


Fig. 1

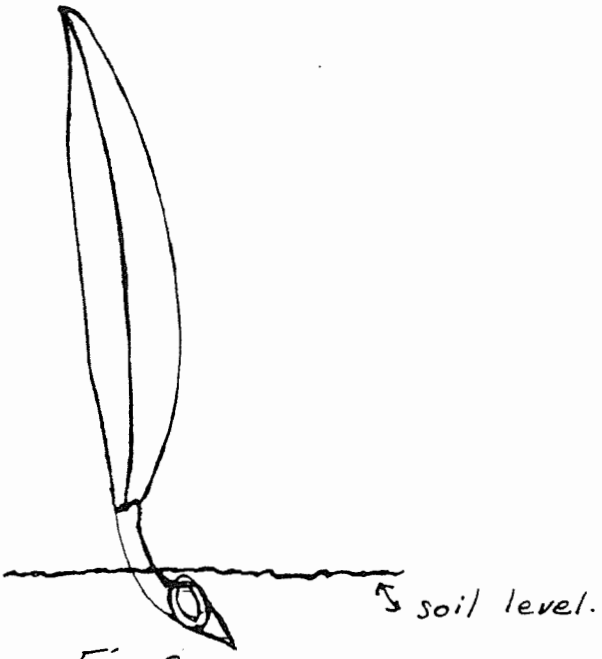


Fig. 2

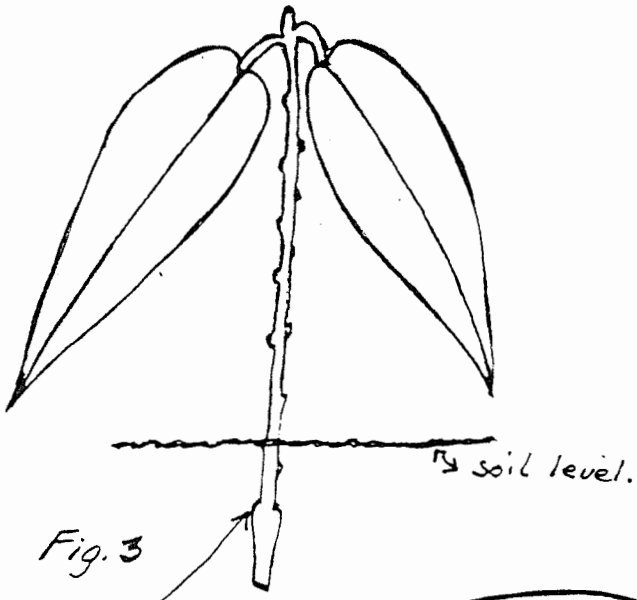


Fig. 3

Fig. 4

ROOTING AND ROOTING MEDIUMS by Christine M. Burton

One of the most often asked questions is, "What is the best way to root hoyas?" As with so many cultural methods, there is no single best way but I will share with you some of the ways I have gone about it.

On the opposite page I have sketched several hoya plant parts. My favorite is the part shown in Fig. 4. Using this method, I very carefully cut a young branch that has grown out of a growth point in a leaf axil. Usually there is more or less of a rosette of leaves at this part and very little stem below the bottom leaves. Cutting it is difficult because of little cutting space. I use a small bladed exacto knife with a new blade to make such cuts. When I make this type of cut (usually only on the hardier Eu-Hoya section plants), I usually plant it directly into a five inch pot with the permanent planting mix, or a larger basket. If I use a larger pot, I plant several cuts in the same pot. With Eu-Hoyas it has been my experience that rooting in a rooting box or other intermediate medium is usually unnecessary. This type of cut is usually rather inclined to topple so I pin it down with a hair pin or florist picks and put it in a place where it will not be brushed against until it is established. One can get a blooming size plant very quickly by this method, even in the same season if peduncles are already formed when these large cuts are made.

Cuts, such as those in Fig. 3 are the easiest to handle but usually take three or more years to bring to flower if Eu-Hoyas, such as H. carnosa are used. These can be rooted in a permanent pot also but many need to be planted together to make a decent sized planting in the shortest time. This is the size cut most often made in commercial nurseries. While some strike the cuttings into a common rooting box, I prefer to place each in a separate container (often a Solo Cup saved from the bathroom waste basket) in order to avoid having roots of several different cuts becoming tangled up together. When this happens they often become damaged when separating for potting up later on.

Leaf cuttings, as shown in Fig. 2 should, if possible, have a tiny bit of the plant stem attached, preferably that part in the axil, as that is a growth area. The leaf will root and put up new growth almost as quickly as the cutting in Fig. 3 if this growth point is present. Without it the leaf WILL root and grow (regardless of what you may have heard to the contrary), but it will take up to two years to put up new growth in most cases. In some cases even those without the growth point it will put on growth fairly quickly. The rumor that hoya leaves will root but never grow into a plant was started by one who gave up too soon.

An example of leaf cuts rooting is H. pottsii which was started from a single leaf and flowered a year later. This was reported by James Traill who first published H. pottsii. Right now in my greenhouse is a small plant of unknown species which grew from a single leaf. It was sent to me by Catherine Perpich in the fall of 1982 along with 5 other leaves that looked identical, yet we both had reason to think that they might be different. They were not sent to me for planting but for study and illustration. When they arrived, I was in the midst of moving and all my mounting paper and notebooks were packed. Indeed, the only thing not yet packed were the few plants I had left at the time. I had a rooting box filled with my favorite rooting mix and I stuck all six of the leaves into this medium, not even using rooting powder as it too was packed. From November 17, 1982 until the end of February, 1983 that box sat in a rather dark bedroom getting very little attention and I forgot all about the leaves until I began moving things into the newly completed greenhouse. Too much to do may be the only reason I did not toss the box out as it didn't look like much. When I finally got around to it, one of those tiny leaves had put up a five inch shoot with three pairs of tiny leaves. I am anxiously awaiting blooms on this so that I will know which plant it came from because the label is missing.

Fig. 1 shows how to root by layering. I do not like this method at all. For a reason I can't figure out, it seems to me to take longer than the other methods. It works great on azaleas and camellias over winter outdoors but it doesn't do so well for hoyas. It also requires leaving the two pots in the same place until the small plant can be severed from the large ones or else using two hands to move both at one time. As anyone who has tried to move a hoya knows, this often ends up with one needing four hands or else knocking half the plants in the greenhouse over in the process.

When not rooting directly into the permanent pot, I like to use a mix of one part each of milled sphagham moss, vermiculite and perlite. This is the mix formerly sold by The Pot Shop, which so many of you have asked me about. I usually made it up as needed. I placed one quart of each of these three ingredients in a grocery bag along with two teaspoons of rooting powder or powdered fungicide and a half teaspoon of trace elements. I then closed the top of the sack by twisting it and as I held the top shut, I turned the bag over and shook it until all ingredients were well mixed. Any unused mix was stored in plastic bags and sealed with a "twist'um" until needed.

Another rooting medium I like for shipping is to root a small cut in a Jiffy-7 cube. I do not like the Jiffy-9's for this purpose because they are too compact making it difficult for roots to spread. The Jiffy-7's are more loosely packed and held together with a mesh material as they become crumbly when wet.

I think that under most circumstances that hoyas root more easily in an acid mix, but as they mature, I believe that many of them require a sweeter mix. In nature, these plants usually root in leaf mold and other debris on the forest floor, in crotches formed by branches in trees or in rock crevices. The medium of rooting is most often acid but as the roots penetrate the underlying soil it is more often than not calcerous according to all I have been able to learn about soils in hoya gorwing areas. Those hoyas that are entirely epiphytic may actually do better in a slightly acid mix at maturity. Too little is known with certainly as most of our plants have only been in trade for a few years.

Just as rooting seems to do better in an acid mix, an acid medium is almost certainly the natural medium for germinating seeds for the same reason, i.e. wind blowing the seeds into leaf mold on ground, tree crotches or crevices.

Bottom heat while rooting is desirable except in midsummer. This can be provided by heating cables made for this purpose or one can place the cuttings on the middle or top shelf of a light stand or on a tray atop a lamp shade. In the greenhouse, I have a utility light clamped to the staging beneath a 25" long perma-nest tray which holds my new cuts. This keeps the bottom warm no matter how cold it gets.

Rudy Bachmann writes that he uses Rootone F with all his cuttings, using relatively hard wood and usually gets roots in 2 to 4 weeks. He uses a 4 X 8 foot propagating box with 60 feet of heating cable; provides 70% plus humidity and maintains 65° to 90° temperatures, depending on time of year. He uses Peter's fertilizer (doesn't say which formula) at 1/3 to 1/2 strength (1/4 strength is what Peter's recommends if used every time) and also Vitamin B1. He adds that he also uses Superthrive with all waterings. He says that he doesn't use a misting system for cuttings as the removable top remains closed except when he needs to care for the plants and thus, has plenty of humidity. He does use a misting system in the greenhouse which is timed to go off every 30 minutes for 5 seconds, during the summer months. Others report similar conditions.

Also recommended is Cathie Perpich's rooting method, noted in the robin section. I find this especially useful for the very succulent hoyas, such as H. kerrii and H. diversifolia.

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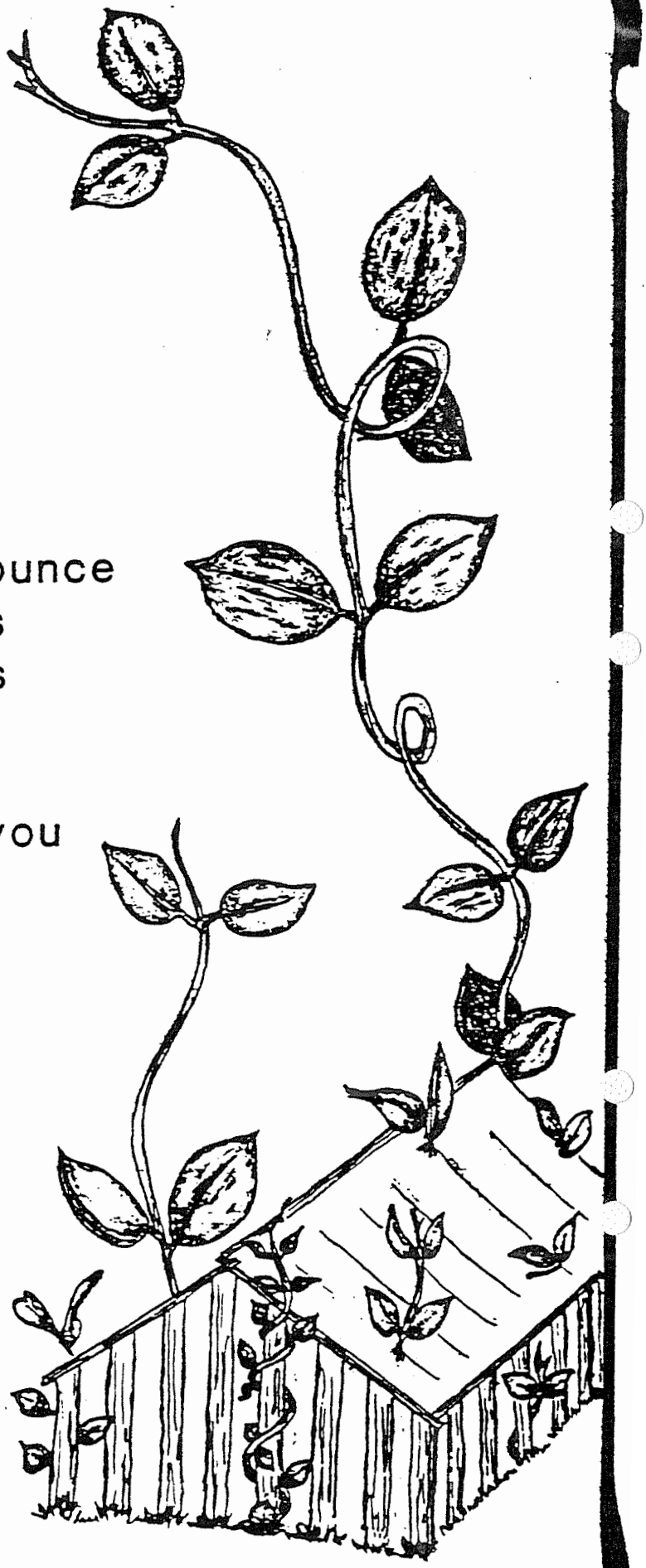

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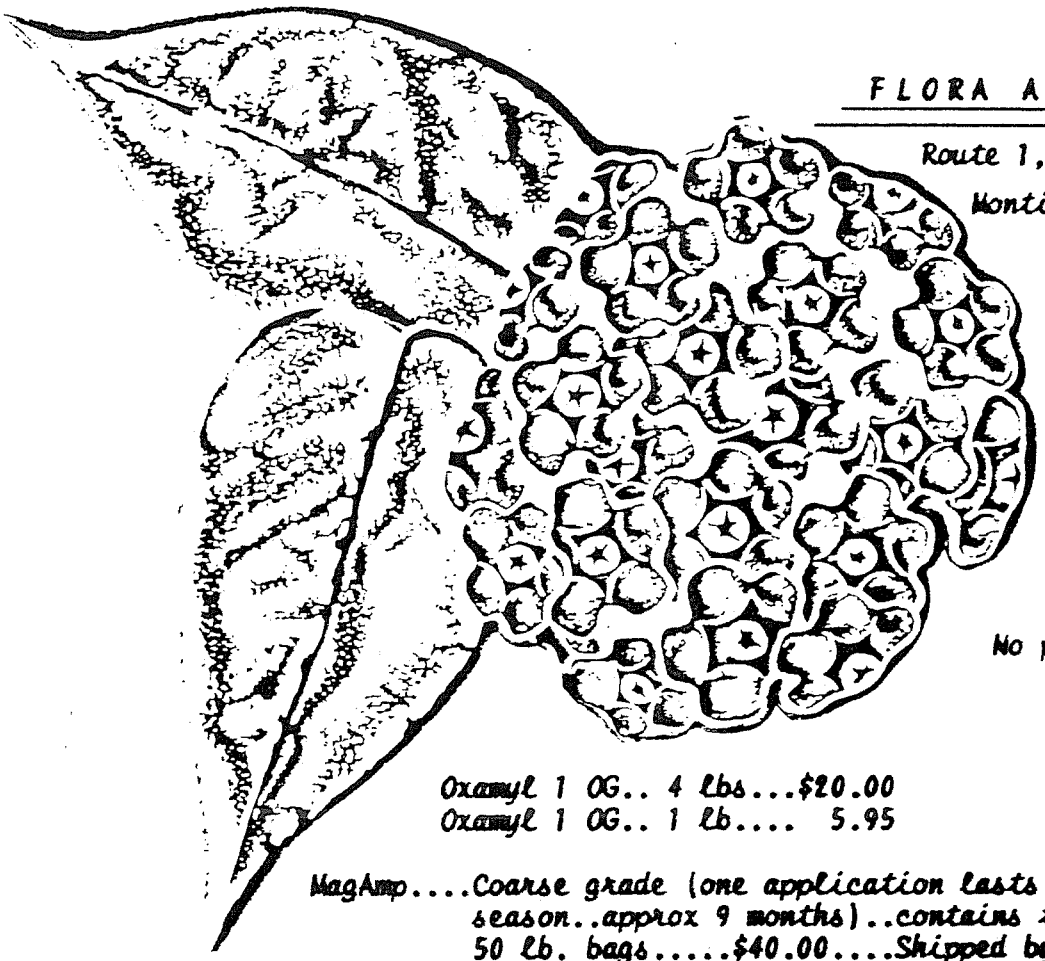

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1 lb to 2 lbs	2.13	2.24	2.27	2.35	2.43	2.48	2.56	2.69
2 lbs 1 oz to 3 lbs	2.19	2.47	2.55	2.60	2.68	2.90	3.08	3.44
3 lbs 1 oz to 5 lbs	2.32	2.71	2.74	2.78	2.99	3.28	3.60	4.12
5 lbs 1 oz to 10 lbs	2.57	3.08	3.12	3.26	3.61	4.18	4.75	5.66
10 lbs 1 oz to 15 lbs	2.93	3.16	3.45	3.90	4.55	5.42	6.30	7.74
15 lbs 1 oz to 25 lbs	4.16	4.38	4.76	5.39	6.27	7.62	8.87	10.80
25 lbs 1 oz to 45 lbs	4.95	5.24	5.86	6.90	8.15	10.05	11.84	14.46
45 lbs 1 oz to 55 lbs	5.86	6.36	7.28	8.46	10.16	12.64	15.08	18.08
55 lbs 1 oz to 70 lbs	5.86	6.56	7.44	8.69	10.45	13.45	16.32	18.84

Overseas: Send letter of inquirey before sending money. We will tell you what to send. Check with your government over legality of any chemicals before placing order.