

the

GLOXINIAN

The Journal for Gesneriad Growers

Vol. 52, No. 3

Third Quarter 2002



Niphaea oblonga

American Gloxinia and Gesneriad Society, Inc.

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COVER

Niphaea oblonga
grown at the GRF greenhouse
(photo by Vern Sawyer)

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President's Message

Susan Grose <sagrose@aol.com>
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Greetings Gesneriad Growers,

This issue of THE GLOXINIAN has excellent articles on two small rhizomatous genera which include some of my favorite Gesneriads. Even though I love all Gesneriads I have grown, I have a special fondness for the rhizomatous varieties. Many of them are somewhat forgiving if there are occasional lapses in watering. Even though the vegetative growth may die back as a result of this brief neglect, there is often a rhizome, or if you're lucky, several rhizomes below the soil surface ready to sprout again when conditions become more favorable. I think of it as digging for "buried treasure" when I go searching through a pot of a rhizomatous variety that has gone dormant. It is a constant source of joy and relief to find one or two dormant rhizomes of a plant that appears to be completely dead.

Niphaea and *Phinaea* have only one or a few known species or varieties in cultivation, but they are delightful and usually reward the grower with prolific but delicate blossoms and then with multiple rhizomes when they go dormant. Most of these are relatively small growers and some enjoy (or require) terrarium conditions. Expand your horizons and read about these fascinating plants in this issue, and if you haven't already tried them, be sure to. You will have immense rewards in a relatively short time and a bonus of many rhizomes to share with others.

There is also an article in this issue about the Gesneriad Research Foundation in Sarasota, Florida, founded by Dr. Hans Wiehler. Unfortunately due to Dr. Wiehler's health issues, the GRF has had to cease operations. At the GRF he maintained a wonderful variety of Gesneriads he had collected on numerous trips to Central and South America. The closing of the GRF marks the end of an era of intense interest, collecting, growing, and sharing of plants by Dr. Wiehler and his associates, but the silver lining is that Dr. Wiehler's efforts will continue to benefit current and future Gesneriad growers. Dr. Wiehler will be continuing some of his work, but on a much smaller scale.

I know there are many AGGS members who cherish their participation in the annual GRF seminars, each one focused intensively on specific Gesneriad genera. Others participated in the plant study trips led by Dr. Wiehler to the tropics — climbing trees, scrambling up hillsides and scaling down ravines in search of Gesneriads in their native habitats. I regret that I did not have the opportunity to enjoy any of these trips in person, but I always enjoyed reading about them in THE GLOXINIAN, and each time I dreamed of future participation.

One way we can all help keep alive the work of the GRF is to continue to grow Gesneriad species that have been collected from the wild. Since many of the natural habitats of the Gesneriads we cultivate are disappearing with the destruction of the tropical rainforest, the more species we maintain in our personal collections, the more diverse the genetic pool for future plants will be. If everyone helps perpetuate at least one Gesneriad species,

just think of the impact that will have on the future worldwide population of the Gesneriad plant family. Be sure to read about the Gesneriad Research Foundation in this issue and think about how you can continue its legacy.

Susan



Dr. Hans Wiehler tending the research collection
in 1989 at the GRF greenhouse on Oak Street

Gesneriad Enthusiasts in San Diego County

are trying to re-establish an AGGS chapter in their area.

Contact Becky Fontes (619-337-6473) <fontesk@earthlink.net>
for more information.

Seed Fund

Bob and Carol Connelly <Bob_Connelly@email.msn.com>
2391 Phillips Drive, Auburn Hills, MI 48326-2450

By the time you read this column, we will most likely be in Morristown, NJ at the annual AGGS Convention or back home recovering from all the fun. Please be patient if you have sent any seed orders to us around the end of June or the first week or so of July. It may take us a while to catch up after the trip. We look forward to meeting many of you at the convention.

This seems like a good time to mention a few odds and ends: Please don't forget to include your self-addressed, stamped envelope with your order as it does save us time. For large and non-U.S. credit card orders we can add the postage to the credit card bill. Also keep in mind that rates may have already changed or will soon change again, so check that you have the correct postage. If you are ordering more than 10 packets of seed, it is a good idea to add additional postage for a second ounce.

With the hot summer days already here, we do not stop shipping orders (or during the cold winter months for that matter). We do try to time our mailings to avoid having orders sitting in a mail box or truck for an extended period of time by mailing early in the week and avoiding long holiday weekends. If very extreme weather is forecast for a short period, we may hold shipment for that time.

We would like to thank the most recent contributors to the Seed Fund for their generosity: Clay Anderson, Marlene Beam, Tsuh Yang Chen, John Clark, Christel Collier, Ray Coyle, Maryjane Evans, John Farina, Richard Holzman, Alison Lovell, Vivian Scheans, Lee Stradley, MJ Tyler, and Catherine Walbridge. It does appear that we are getting more donations lately—keep up the good work!

Seed Packets — \$1.50 each

Please

- Make checks payable to the AGGS Seed Fund in U.S. funds
- To pay by credit card, send your credit card number, expiration date, and signature, and indicate if the card is Mastercard or Visa (\$6.00 minimum)
- Provide a self-addressed, stamped envelope (non-U.S. orders may include International Postal Coupons or have the postage added to their credit card bill)
- List alternate choices
- Include your membership number (first number on your mailing label)

Achimenes (D)

- admirabilis* (B)
- pettoana* (B)
- erecta* (B)
- erecta* 'Tiny Red' (F,L)
- grandiflora* 'Robert Dressler' (B)
- longiflora* (B)
- longiflora alba* (B)
- skinneri* W1897 (L)
- warszewicziana* USBRG88-039 (B)
- Park's Breeder's Mix (B,L)
- hybrid mix (B,L)

Aeschynanthus (B)

- buxifolius* 913296
- ellipticus* 'Coral Flame'
- fulgens* USBRG82-271
- garrettii*
- hildebrandii* USBRG94-214
- hosseusii*
- longicalyx*
- longiflorus*
- micranthus*
- mimetes*
- parvifolius*

- parvifolius* 'Bali Beauty'
pulcher
sp. (Vietnam) 921622
sp. MSBG87-162
- sp. (yellow) (Philippines)
 - hybrid, lg orange/red
- Alloplectus**
bolivianus USBRG95-140 (M)
cristatus
dodsonii (yellow) GRF98184 (M)
tetragonoides GRF98153
sp. aff. *schultzei* GRF97103
sp. aff. *panamensis* GRF9781
(orange)
sp. GRF9776 (yellow)
sp. GRF9788 (pinkish/yellow above)
sp. GRF97153 (peach/orange)
sp. GRF97166
sp. GRF98151 (yellow)
sp. USBRG 98-030
sp. nov. (*plicatissimus* ined.)
(salmon calyx) GRF9521
sp. nov. (*plicatissimus* ined.)
(green calyx) GRF9556
sp. nov. (*prunifer* ined.) GRF98174
- Alsobia** (B)
dianthiflora
- *punctata*
punctata USBRG77-103
- Anodiscus**
xanthophyllus (M)
xanthophyllus (Ecuador) GRF97109
- Besleria**
barbata USBRG98-052
barclayi USBRG95-164
formicaria LS7560 (M)
laxiflora GRF9675 (M)
melancholica (MT)
princeps GRF9479 (LM)
sp. GRF9558 (LM)
sp. GRF9783 (orange w/yellow base)
sp. GRF97108 (orange)
sp. GRF97141 (orange)
sp. GRF9853 (yellow)
sp. GRF98139 (orange)
- Boea** (F,R)
hygroscopica
- Briggsia** (A,R)
aurantiaca
musciicola
- Capanea**
grandiflora GRF9480 (M)
- Chirita**
caliginosa (LM)
- *elphinstonia* (F,L)
 - *fimbrisekala* #3 (F,R)
 - *fimbrisekala* #4
 - *fimbrisekala* #12
 - *flavimaculata* USBRG94-085 (R)
 - *heterotricha* USBRG94-088 (F,R)
 - *involuta* (F,L)
- *lavandulacea* (LM)
 - *longgangensis* (F,R)
 - *micromusa* (F,L)
 - *pumila* (F,L)
 - *pumila* USBRG2000-18 (F,LM)
 - *sericea* (F,LM)
 - *sinensis* 'Latifolia' (F,R)
 - *spadiciformis* USBRG94-087 (R)
 - *speciosa* (dark leaf) (F,L,R)
 - *subrhomboidea* (F,R)
 - *tamiana* USBRG98-080 (F,R,P)
 - *walkerae* (F,LM)
sp. (Thailand)
sp. 'New York' USBRG85-022 (R)
 - *caliginosa* × *sericea* (LM)
 - (sp. 'New York' × *flavimaculata*)
× self (F,R)
 - Malaysian hybrid mix
- Chrysothemis** (F,LM)
friedrichsthaliana
friedrichsthaliana GRF9764
- *pulchella* (Ecuador)
villosa
hybrid mix
- Cobananthus**
calochlamys (F,LM)
- Codonanthe** (B)
calcarata 'Puyo'
caribaea
carnosa
corniculata
crassifolia
crassifolia GRF9858
crassifolia GRF9869
crassifolia 'Cranberry'
digna
digna 'Moonlight'
erubescens
gracilis
paula
- *serrulata* AC1313
 - *uleana* GRF9868
 - *venosa* GRF91175
- Columnnea** (B)
arguta
crassifolia
erythrophaea
fendleri
gallicauda
glicensteinii
gloriosa
hirta
hirta GRF9493
hirta var. *pilosissima*
hispida
maculata
nicaraguensis CR92F16
nicaraguensis GRF94105
oerstediana GRF9423
oxyphylla
proctori W3573

- raymondii* (LM)
scandens var. *tulae* (yellow)
schiedeana
schiedeana (red reverse)
sulfurea G3770
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- Conandron** (A,R)
ramondioides/Awaji Island
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 - sp. USBRG2000-19 (China)
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- Corytoplectus**
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cutucuensis (L)
cutucuensis GRF9794
riceanus GRF9654 (M)
- Dalbergaria** (M)
asteroloma GRF97169 (white)
eburnea
medicinalis GRF9507
ornata GRF2665
 - *perpulchra*
polyantha
sanguinea
sanguinea 'Orange King' GRF9492
sp. GRF93191
sp. GRF97160
 - sp. GRF9852
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vexans
- Didissandra**
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- Drymonia**
affinis GRF98109
alloplectoides USBRG96-347 (B)
brochidodroma USBRG95-156 (B)
coccinea GRF9851 (B)
coccinea GRF9873
coccinea GRF98150
 - *conchocalyx* (B)
conchocalyx 'Silver Lance' × self (M)
doratostyla GRF9674 (B)
ecuadorensis 'Red Elegance' (LM)
hoppii GRF98103
macrophylla (M)
mortoniana (L)
pulchra GRF9889 (L)
pulchra GRF98113
rhodoloma (B)
semicordata G2191
serrulata (B)
serrulata GRF9752
strigosa (B)
strigosa GRF1912
urceolata GRF93146 (LM)
urceolata GRF97124 (red)
urceolata GRF98154 (red w/yellow)
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xantha
cupreata hybrids mix
hybrid mix
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- Euclidonia** (D,F,P)
 - *andrieuxii*
 - *verticillata*
verticillata 'Ehrenberg'
hybrid mix
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cuneifolia 'Esperanza'
cuneifolia 'Quebradillas'
cuneifolia 'Tom Talpey'
pedunculosa USBRG97-102 (S,T)
pedunculosa WEK96153 (S,T)
pumila
reticulata
 - *reticulata* WEK96164
 - *reticulata* 'El Yunque'
ventricosa (M)
 - *viridiflora* ssp. *sintensis*
WEK96162 (T)
'Flashdance'
 - 'Sundrop'
- Gloxinia** (D)
gymnostoma (LM)
lindeniana (F,L)
nematanthodes (F,L)
perennis (LM)
perennis 'Insignis' (L)
racemosa (L)
sylvatica (F,L)
sylvatica GRF9943 (Brazil)
sylvatica USBRG94-002 (Bolivia)
- Haberlea** (A,R)
ferdinandi-coburgii
rhodopensis
- Hemiboea** (D)
subcapitata (L)
- Heppiella** (D)
ulmifolia GRF95141 (L)
ulmifolia GRF98172

- Koellikeria** (D,F,P)
- *erinoides*
 - *erinoides* 'Red Satin'
- Kohleria** (D)
- hirsuta* (LM)
 - hirsuta* USBRG96-163 (F,L)
 - hondensis* (LM)
 - rugata* USBRG95-010 (LM)
 - spicata* (M)
 - hybrid mix
- Lysionotus** (LM)
- pauciflorus* var. *pauciflorus* species
- Monophyllaea** (H,LM)
- horsfieldii*
- Monopyle**
- macrocarpa* GRF98117 (F,LM)
 - macrocarpa* GRF94123
- Moussonia**
- deppeana* (M)
 - *elegans* (M)
 - *elegans* GRF9407
 - septentrionalis* G1201 (F,L)
- Napeanthus** (H)
- costaricensis* (F,P)
 - jelskii* USBRG94-511 (F,P)
 - *primulifolius* GRF9941 (P)
 - robustus* GRF9765 (L)
- Nautilocalyx**
- adenosiphon* (B,L)
 - colonensis* (LM)
 - melittifolius* (F,LM)
- Nematanthus**
- australis* (B)
 - corticola* (B)
 - fissus* (L)
 - fissus* GRF9938
 - formix* (B)
 - fritschii* (B)
 - *jolyanus* (Sao Paulo) (B)
 - cf. *lanceolatus* AC2010
 - maculatus* (B)
 - serpens* (B)
 - strigillosus* AC1434 (B)
 - tessmannii* GRF9904 (red calyx) (B)
 - tessmannii* GRF9912 (red calyx)
 - wettsteinii* (B)
 - sp. GRF3555 (B)
 - sp. 'Santa Teresa' (B)
 - sp. MP50
 - sp. nov. (*punctatus* ined.)
- Neomortonia** (B)
- nummularia*
- Opithandra** (A,R)
- primuloides*
- Ornithoboea**
- wildeana* (LM)
- Paliavana** (S,T)
- prasinata*
 - prasinata* GRF732
 - prasinata* GRF91126
- *prasinata* × *S. macropoda* MP944
 - *prasinata* × *S. reitzii* MP949
 - *plumerioides* (Cabral)
 - sericiflora* AC2311
 - tenuiflora*
 - werdermannii* AC2310
- Paradrymonia**
- ciliosa* (L)
 - decurrens* (L)
 - *lurida* (L)
- Parakohleria**
- sp. GRF9778 (red, yellow below)
 - sp. GRF9780 (yellow)
 - sp. GRF97126
 - sp. GRF88105 (red) (L)
 - sp. GRF98144 (rose pink)
- Pentadenia**
- angustata* (B)
 - byrsina* (B,L)
 - crassicaulis* (B)
 - manabiana* (B)
 - microsepala* GRF1837 (B)
 - orientandina* (LM)
 - rileyi* GRF86243 (LM)
 - spathulata* GRF9503 (LM)
 - strigosa* GRF95154 (B)
 - strigosa* GRF9777
 - zapotalana* (B)
- Phinaea** (D,F,P)
- albolineata*
 - divaricata*
 - multiflora*
 - multiflora* 'Tracery'
- Primulina**
- *tabacum* (F,R)
- Ramonda** (A,R)
- myconi* —
 - white
 - lavender
 - pink
 - clone G
 - myconi* (upright rosette)
 - serbica*
- Rhabdothamnus**
- *solandri*
- Rhynchoglossum** (H,L)
- gardneri*
 - obliquum*
- Rhytidophyllum** (G,H,S,T)
- auriculatum*
 - leucomallon*
 - tomentosum*
 - villosulum*
- Saintpaulia** (F,R)
- *diplotricha*
 - *intermedia*
 - ionantha*
 - shumensis*
 - hybrid mix
- Sinningia** (D)
- aggregata* (M)

- aggregata* AC1461
aggregata 'Pendulina' (B,L)
 aff. *aggregata* (yellow) (M)
aghensis (T)
aghensis AC2356 (T)
allagophylla (MT)
allagophylla GRF9922
allagophylla GRF9929
allagophylla GRF9968
allagophylla (yellow)
 • *amambayensis* (L)
 • *araneosa* (F,L)
brasiliensis (M)
brasiliensis 'Verde'
brasiliensis AC1314
bulbosa (T)
calcaria MP891 (F,L)
canescens (F,L)
carangolensis (M)
cardinalis (F,LM)
cardinalis (compact) (F,L)
cardinalis (dark calyx) (LM)
cardinalis 'Innocent'
cardinalis (dark calyx) (LM)
conspicua (F,L)
conspicua GRF9942 (fragrant selection)
cooperi (LM)
cooperi AC1522
curtiflora (T)
curtiflora GRF9927
douglasii GRF91188 (LM)
douglasii GRF9936 (LM)
douglasii (pink form) (M)
elator AC1409 (M)
elator GRF9963
eumorpha/Saltao (L)
eumorpha (lavender) (F,L)
eumorpha (pink)
eumorpha (white)
gigantifolia (LM)
glazioviana (L)
harleyi MP482 (F,L)
hatschbachii (L)
 • *hirsuta* (F,L)
iarae (F,L)
 • *incarnata* (S,MT)
insularis (LM)
leopoldii (F,L)
leucotricha (F,L)
 • *leucotricha* 'English' (F,L)
 • *leucotricha* (larger flower) (F,L)
lindleyi AC1501 (L)
lineata (LM)
lineata (highly spotted)
macropoda (M)
 • *macropoda* (dwarf form) (L)
macrorrhiza (T)
macrostachya (LM)
macrostachya MP262
magnifica GRF91121 (pink) (LM)
- magnifica* MP627 (pink)
magnifica GRF91134 (red)
mauroana (LM)
mauroana GRF9964
micans MP892 (LM)
nivalis AC1460 (L)
nivalis GRF9923
piresiana (L)
 • *pusilla* (F,P)
reitzii (M)
reitzii GRF9914 (magenta)
rupicola AC1511 (F,L)
sceptrum (T)
sceptrum AC2406 (T)
 • *schiffneri* (LM)
 • *schiffneri* GRF91163 (red reverse)
sellovii (MT)
sellovii GRF9919
sellovii 'Bolivia' USBRG96-003
sellovii 'Purple Rain'
speciosa 'Cabo Frio' MP178 (F,L)
speciosa 'Lavender Queen'
speciosa 'Regina'
speciosa AC1652
 • *speciosa* (Chiltern Seed Co)
speciosa AC1503
sulcata (LM)
tubiflora (S,MT)
 • *villosa* (F,L)
warmingii (T)
warmingii GRF9921
 sp. aff. *warmingii* from
 Ilhabela MP631
 • sp. 'Esmeril' (L)
 • sp. 'Lanata' MP622 (L)
 • sp. 'Waechter' (LM)
cardinalis 'Innocent' × *iarae* (LM)
glazioviana × *leopoldii* F2 (LM)
speciosa AC1503 × *speciosa*
 'Regina' (R)
eumorpha hybrids mix (F,R)
 "Hummingbird Mix"
 'Anne Crowley' (F,L)
 'Apricot Bouquet' × self (LM)
 ('Apricot Bouquet' × self) × self (LM)
 ('Apricot Bouquet' × self) ×
S. conspicua (F, L)
 ('Apricot Bouquet' × self) ×
 (*S. conspicua* × *S. eumorpha*) (F, L)
 ('Apricot Bouquet' × self) ×
S. sp. 'Regina' (F, L)
 ('Apricot Bouquet' × self) ×
S. 'California Minis' (red) (F, LM)
 • 'April Dawn' × self (F,P)
 • 'Beauty' × self (F,P)
 • 'Bewitched' × self (F,L)
 • 'Cheryl M.' × self (F,P)
 • 'Delta Fox' × self (F,P)
 • 'Diego' (red) (F,L)
 'Diego' (pink)
 'Dollbaby' (F,P)

'Good Pink' × self (F,L)
 'Jubilee' × self (F,L)
 'Krezdorn Yellow' × self (L)
 'Krishna' × self (F,P)
 • 'Laura' × self (F,P)
 'Leo B.' × self (F,P)
 'Little Imp' (F,P)
 'Maiden's Blush' × self (F,P)
 • 'Mother of Pearl' × self (F,P)
 'Mothers Day' × self (F,L)
 'Pale Beauty' × self (L)
 'Pink Ice' (F,P)
 • 'Pink Imp' (F,P)
 'Pure Pink' × self (F,P)
 • 'Purple Crest' × self (F,P)
 • 'Rosebells' × self (F,L)
 • 'Ruby Red' × self (F,P)
 'Scarlet Sunset' (F,P)
 'Silhouette' × self (F,P)
 • 'Star Eyes' (F,P)
 'Super Red' × self (F,P)
 'Tampa Bay Beauty' × self (L)
 • 'Virgil' × self (LM)
 • 'Whimsey' × self (F,P)
 • 'Angora Love' × 'Margaret' (L)
 • 'Cherry Chips' × 'Super Orange'
 F2 (F,P)
 hybrid miniature mix (F,P)
 pink hybrid miniature mix (F,P)
***Sinningia speciosa* hybrids (F,R)**
 blue mix
 mini lavender
 • lavender/purple
 • pink
 • purple
 red
 rose
 white
 orchid/purple mix
 pink mix
 pink/white mix
 purple w/spots
 red mix
 red w/spots
 white w/red spots
 'California Minis'
 Charles Lawn hybrid mix
 Early Giant mix
 hybrid mix
 blue slipper
 lavender slipper
 pink slipper
 red slipper
 • purple slipper
 mixed slipper
 pink dwarf
 • Small's dwarf mix
 • white dwarf slipper
***Smithiantha* (D)**
aurantiaca (F,L)
canarina GRF9105 (F,LM)

lauri GRF9117 (F,L)
multiflora (F,LM)
 • *multiflora* GRF9121 (F,LM)
 • *multiflora* GRF9122 (F,LM)
 • *zebrina* GRF9104 (M)
 • 'Little One' (F,L)
Streptocarpus
baudertii (F,R)
buchananii (B)
caeruleus (R)
candidus (F,R)
candidus/Ngome, Natal
caulescens (F,LM)
 • *compressus* (U)
confusus (U)
confusus ssp. *confusus* (U)
cooksonii (U)
cooksonii (dark purple)
cooperi (U)
cyanandrus (F,P)
 • *cyaneus* ssp. *long-tomii* (R)
cyaneus (blue) (R)
cyaneus (blue/long corolla)
cyaneus (blue/short corolla)
cyaneus (lilac)
daviesii (F,U)
denticulatus (U)
 • *dunnii* (U)
eylesii (U)
fanninia (R)
fasciata (R)
 • *fenestra-dei* (R)
floribundus (R)
formosus (R)
formosus/E. Cape, Transkei
gardenii (F,L)
 • *gardenii*/Weza, S. Natal
 • *glandulosissimus* (B)
goetzei (U)
grandis (U)
grandis (blue form)
haygarthii (F,U)
haygarthii/Mkambati, Transkei
holstii (B,L)
johannis (F,R)
johannis/Komga, E. Cape
 sp. aff. *johannis* (F,R)
 • *kentaniensis* MBG2335-60 (R)
 • *kentaniensis* (N. Kei River)
 • *kentaniensis* (S. Kei River)
kirkii (F,L)
meyeri (F,R)
 • *meyeri*/SE Transvaal (R)
meyeri/NE Cape Province
micelmoraei (U)
modestus (R)
 • *modestus*/Magwa Falls, Transkei (R)
molweniensis (U)
 • *molweniensis* subsp. *eschowicus*
muscosus (L)
nobilis (M)

- pallidiflorus* (F,LM)
parviflorus (R)
parviflorus (mauve)
 • *parviflorus* (white) (R)
parviflorus (white/mauve)
pentherianus (F,L)
pole-evansii (R)
polyanthus (F,L)
polyanthus subsp. *comptonii*
polyanthus subsp. *polyanthus*
polyanthus subsp. *polyanthus*/lg fl
polyanthus subsp. *polyanthus*/Valley
 of 1000 Hills, Natal
polyanthus subsp. *verecundus*
porphyrostachys (U)
primulifolius (F,R)
primulifolius (dark blue)
 Port St. John, Transkei
primulifolius /Mt. Sullivan, Transkei
primulifolius /Bullolo Rvr, Transkei
primulifolius /Valley of 1000 Hills
prolixus (F,U)
pumilus (F,P)
rexii (F,L,R)
 • *rexii* (blue)
 • *rexii* (blue) Transkei
rexii (white)
rexii (pale blue/long corolla)
rexii (white/blue mix)
rimicola (F,P)
roseoalbus (F,R)
saundersii (U)
saxorum (B)
silvaticus (R)
stomandrus (F,L)
thompsonii (B,L)
thysanotus (B,L)
trabeculatus (U)
vandeleurii (U)
variabilis (F,R)
wendlandii (U)
wilmsii (U)
 • *wilmsii*/Graskop
wilmsii/Long Tom Pass
 • 'Athena' × self (R)
 • 'Bethan' × self (R)
 'Bristol's Popsicle' × self (R)
 • 'Canterbury Surprise' × self (F,R)
 • 'Demeter' × self (R)
 • 'Falling Stars' × self (R)
 'Georgette' × self (R)
 • 'Gloria' × self (R)
 • 'Ice Castle' × self (R)
 • 'Karen' × self (R)
 • 'Kitten Face' × self (R)
 • 'Mini Pink Fu' × self (R)
 • 'Party Doll' × self (R)
 • 'Pegasus' × self (R)
 'Royal' (red) (R)
 'Royal' (white/pink stripes) (R)
 • 'Sandra' × self (R)
 • 'Spooky' × self (R)
 'Suzie' × self (R)
 'Thalia' × self (R)
 • 'Ulysses' × self (R)
 • New Zealand hybrid mix (F,R)
rexii hybrids (F,R)
 • Wiesmooor hybrids (F,R)
 hybrid mix (F,R)
 hybrid, lt blue/dk blue lines (R)
 hybrid, lg burgundy (R)
 • hybrid, lg purple (R)
 hybrid, lg white (R)
 • *streptocarpella* hybrids (B)
- Titanotrichum***
oldhamii (propagules)
- Trichantha***
ambigua (B)
ambigua 'El Yunque' WEK96163
brenneri (LM)
citrina (B)
dodsonii (LM)
kucyniakii GRF93166 (MT)
minutiflora GRF9552 (LM)
purpureovittata (B,L)
 sp. nov. (*molinae* ined.) GRF98159
- Vanhouttea*** (S,T)
calcarata GRF3026
lanata
 • *lanata* AC2405
 • *pendula* (Caparaõ)
 sp. nov. AC2403
 • 'Bruegger' (S,T)
- Mixed alpine gesneriads**
Mixed gesneriads
- denotes LIMITED quantities

(A)	Alpine or cool greenhouse.	(LM)	Low to medium height.
(B)	Suitable for hanging basket.	(M)	Medium height; 1 to 2 feet.
(D)	Has dormant period, forming tubers or rhizomes.	(MT)	Medium to tall.
(F)	Blooms readily in fluorescent light.	(P)	Petite or miniature; not more than 6 inches tall.
(G)	Recommended for greenhouses; requires space.	(R)	Rosette in form.
(H)	Requires humidity and warmth.	(S)	Requires sun to bloom.
(L)	Low growing; not more than 12".	(T)	Tall plants; generally over 3 feet.
		(U)	Unifoliate or single leaf.

The Gesneriad Research Foundation

Florida Volunteers AKA Friends of the GRF
Linda Massey, Melissa McDowell, Jerry Trowbridge

The research facilities of the Gesneriad Research Foundation on Oak Street in beautiful Sarasota, Florida, were brought into being by a severe freeze... and a tropical storm helped to bring them to an end. In the years between, Dr. Hans Wiehler and the GRF made many important contributions to the science of botany and rainforest research and education.

The GRF had actually been in existence for a few years before that freeze in December of 1983. Hans Wiehler had been educated at Cornell but was working on Gesneriads in his doctoral dissertation at the University of Miami in the mid 1970's when he was hired by the Marie Selby Botanical Gardens to help develop a new botanical garden and epiphyte research center in Sarasota. In 1975, Selby Gardens opened to the public.

Hans left Selby Gardens in 1981. He loved the ambiance of Sarasota, and the volunteers who worked with him in the greenhouses were loyal and supportive of his work. They all met to discuss their options and decided that, with the creation of the Gesneriad Research Foundation, Hans could remain in town and continue his work. So in 1981, the GRF was born—its principal purpose to further the cause of the tropical plant family Gesneriaceae through scientific research, education, and the production and distribution of horticulturally worthwhile plant material.

A local garden center was purchased by the new non-profit organization with the hope that the income created by this business would support the research work. And it did for a few years. The former Blaser's Nursery on Rt 301 became the GRF Nursery—or the Giraffe Nursery—and advertised being "head and shoulders over the competition in quality and variety of



First logo of the
GRF Nursery on Rt. 301



Michael Riley and Hans Wiehler at
the 1983 GRF fundraiser at the nursery



Melissa McDowell, Jerry Trowbridge, and Linda Massey –
Friends of the GRF who collectively volunteered
over 50 years of service

plants". With the help of the AGGS members who lived in the area, the local Suncoast Chapter became one of the most vital and active chapters in the country. There were as many as 150 chapter members at this time, and supporting the work of the GRF was their most important activity.

The following year, the partnership of the GRF and the Suncoast Gesneriad Society took on another major undertaking by hosting the 1982 AGGS Convention and the first International Gesneriad Symposium. Scientists from Scotland, Holland, France, Switzerland, Austria, South Africa, India, Malaysia, China and the U.S. came to Sarasota to discuss their common interest in Gesneriads.

For a year and a half, the GRF continued its existence at the nursery with Hans as "resident horticulturist". The nursery prospered by providing an unusual selection of rare plants, and the public responded with increased interest, both in the plant material and in the cause. For further promotion, Hans hosted a one-hour Saturday morning program "Plant Talk" at a local Sarasota radio station. The research work with Gesneriads continued.

Then came the almost-disastrous 1983 December freeze. Most of the plants at the nursery that had been the income producers for the GRF were destroyed. It was at this point that the ever-resourceful GRF supporters saw another opportunity. The nursery was sold and additional funds were borrowed to build a greenhouse on Oak Street behind Hans' existing home. The garage was turned into a herbarium, a potting shed was constructed, and a state-of-the-art greenhouse was erected. The surviving plant collection was relocated. The garden was transformed into a miniature "rainforest" complete with a misting system in the towering live oak tree that would then support many types of epiphytic plants.

Education was a continuing goal of the GRF. Invitations were extended to local school groups, senior groups, garden clubs, nature societies, etc., to visit the miniature rainforest on Oak Street and hear a lecture on the Gesneriad family and the importance of the rainforests to the health of the planet. Educational exhibits were created for various flower shows, Earth Day activities, etc. The GRF initiated the annual Sarasota Garden Party at a local mall and invited other plant and nature groups to set up displays and sale booths. This was where the Suncoast Chapter held its annual judged show.



Attendees at one of the seminars held at the GRF

To maintain some income to sustain the greenhouse, plants were propagated and sales were held at the new facility on Oak Street. However, to continue the important work of the GRF, new sources of income became necessary. Publicity was increased, and membership drives were undertaken to increase support. The GRF Bulletin was published with updates on activities, and plants were also sold by mail.

In 1985, a decision was made to host annual seminars about specific Gesneriad genera for the purposes of both education and income. Over the next twelve years, seminars were held one weekend each fall. These seminars covered 30 Gesneriad genera and were complete with plant material for review and discussion as well as handouts containing detailed information and illustrations. (With permission, the text of two of those handouts has been reprinted in this issue of TG and others will appear in future issues.)

Then came the next innovative project for the GRF, again for education and research as well as for income. Study trips were organized to provide serious non-scientists an opportunity to visit the rainforests of Central and South America and become active participants in the scientific process of finding, researching, identifying, collecting and preserving species of Gesneriads. The GRF sponsored 13 trips between 1986 and 1999 to six countries: Ecuador (7), Brazil (2), Bolivia, Colombia, Costa Rica, and Mexico.

Each trip yielded hundreds of live specimens as well as pickled material, pressed herbarium specimens, and seed for distribution to other research organizations as well as to the AGGS Seed Fund. These trips were extremely successful, and many gesneriads found on these trips are now in cultivation and are being grown by Gesneriad enthusiasts around the world.

Publication of scientific information was also a goal of the GRF. Hans continued to publish scientific research in *Selbyana* and *Phytologia* as well as to write articles and submit photos for THE GLOXINIAN. In 1995, the first Journal for Biological Research in the Plant Family Gesneriaceae became a reality when *Gesneriana* was published. It included articles on taxonomic revisions, new species, and the first listing of Gesneriads used medicinally in the Neotropics.

Continuing illustrations of new and existing Gesneriad species became another important project of the GRF. Sponsors were solicited for a planned

publication—the *Illustrated Digest of Neotropical Gesneriaceae*. This was an on-going project which continued over a twenty-year period. The Friends of the GRF are pleased to have recently compiled the completed illustrations into a new publication which is now available for Gesneriad enthusiasts to enjoy. (See the information at the end of this article for ordering the new I.D.)

For more than twenty years, the work continued: research, identification, illustrations, and publication; maintenance of the living plant collection as well as the herbarium and pickled specimens; hybridization, propagation and distribution of plant material; education, collection and study trips. These were daunting tasks for a one-man operation supported only by volunteer help.

Unfortunately as time went on, Hans developed some serious health problems. First came the onset of adult diabetes that took quite a while to get under control. The seminars at the GRF and the study trips to the rainforests continued, however. Then early in 2001, Hans suffered a major stroke. Shortly thereafter, he was diagnosed with cancer and treatments began. It simply became too difficult for him to care for the plant collection as he had for so many years. Then this past winter, along came Tropical Storm Gabrielle causing severe damage to the research greenhouse and the rainforest. A decision was made to cease the operation of the GRF. And so it was that the research facility on Oak Street that had been started as a result of a freeze, ended with a tropical storm.

The remaining plant collection at the GRF was distributed, and the herbarium and pickled material were transferred to Selby Gardens where they will be housed with their other tropical plant specimens and preserved for further study. Hans has relocated to an apartment in Sarasota that he is currently able to maintain on his own while still undergoing treatments. He is continuing his Gesneriad research there on a limited basis. We wish him well and sincerely thank him for 35 years of dedicated work with Gesneriads and for sharing his experiences and wealth of knowledge with us all.



Participants processing plants on one of the GRF study trips to Ecuador



Dalbergaria medicinalis from Ecuador



Corytoplectus riceanus from Bolivia



Codonanthe venosa from Brazil

Hundreds and hundreds of Gesneriad species were brought into cultivation from the thirteen GRF Study Trips between 1986 and 1999.



Heppiella ulmifolia from Ecuador



Drymonia hoppii from Ecuador



Gloxinia racemosa from Colombia



Trichantha kuczyniakii from Ecuador

The species pictured here are only a sampling of the over 100 species now available in the AGGS Seed Fund from seed collected on the GRF Study Trips. (Photos by Study Trip participants)



Besleria princeps from Costa Rica



Gasteranthus wendlandianus
from Ecuador

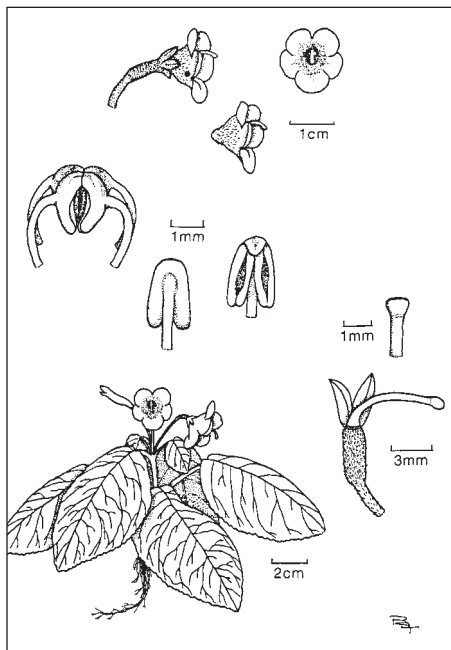


Smithiantha laui from Mexico

New Publication

"The Illustrated Digest of Neotropical Gesneriaceae"

A new book of botanical illustrations of Gesneriads has just been published by the Friends of the GRF. Over a twenty-year period, more than 200 plates were sponsored by individuals and organizations in support of this project.



I.D. Plate 145
Niphaea peruviana
Wiehler

First Publication:
Gesneriana 1:65,
Fig. 18. 1995. (GES)

I.D. Illustrator:
Robert Scott Thompson

Sponsor:
Edwina Varner,
Fairview, NC

The **I.D.** contains full-page illustrations of 220 species of Gesneriads, most of which were collected, then researched and grown at the GRF greenhouse. It also includes an introduction, classification table, and brief summary of the 54 Gesneriad genera of the New World. The design is similar to that of the GRF publication *Gesneriana*. A limited number of copies have been printed and are now available by mail order.

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The History and Biology of *Niphaea*

(Reprinted with the permission of Dr. Hans Wiehler from the Gesneriad Research Foundation Seminar Series, October 1993)

Establishment of the Genus — *Niphaea* Lindley, 1841, in Edward's Botanical Register 27: Misc. 80. 1841.

Type Species — *Niphaea oblonga* Lindley — in Edward's Botanical Register 27: Misc. 80. 1841 and Edward's Botanical Register 28: plate 5. 1842.

History — The German plant collector Theodor Hartweg (1812-1871) had been commissioned by the Horticultural Society of London to work in Mexico, Guatemala, Ecuador, Colombia and Cuba for the years 1836-1843 and 1845-1848. He was very successful and sent lots of new plant material to London, among them many Gesneriads. Sometime before 1841, he discovered in Guatemala a small herb with snow-white flowers and shipped rhizomes or seed to England.

This Gesneriad was first labeled *Achimenes alba* in the horticultural community of western Europe where showy new species were spreading very fast between botanical gardens and plant dealers. After all, the habit of this new plant was similar to species of *Achimenes* from Mexico and Jamaica, by now well known in Europe.

Soon John Lindley (1799-1865), a sharp-eyed botanist from Cambridge University (who is best known for his work in and knowledge of orchids) was introduced to live plants of the white-flowered novelty from Guatemala. He figured this could not be an *Achimenes*, which has tubular and bell-shaped corollas, long stamen filaments which curl up when their function is finished, and a thick, ring-shaped nectary. This Guatemalan species had a rotate (= flat, wheel-shaped) corolla, very short stamens, and the nectary was either a very thin ring or absent, in either case non-functional, not producing nectar for the drama of pollination.

The flowers were very similar to the Cuban and Haitian Gesneriad genus *Bellonia*, found (in 1690) and described (in 1703) by the French botanist Plumier and later (1753) adopted by Linnaeus. In fact, the then well-known European Gesneriad from the Pyrenees, *Ramonda*, had the same flat-shaped



Rotate flower of *Niphaea oblonga*



Rotate flower of *Bellonia aspera*

corolla. (Lindley never knew the African *Saintpaulia* with its saucer-shaped blue corollas, discovered in 1892.) White or pale blue rotate corollas are also typical for the genus *Napeanthus* from the American tropics.

So it was clear to Lindley that this Guatemalan species represented a new genus, probably closely related to the two shrubby or woody species of *Bellonia*. He coined for the little herbaceous plant with the brilliant white flowers the generic name *Niphaea*, after the Greek word for snow, *nipha* (= pertaining to snow, or "snowflower"), and as a specific epithet *oblonga*, with reference to the oblong leaves. Only a botanist from a cold, temperate-zone country could have had snowflake stars on his mind while conjuring up a name for this plant from the hot tropical rainforests of Guatemala, completely devoid of snow!

But, more importantly, why does this plant have white corollas? Or better yet, why do all species of *Bellonia*, *Niphaea* and *Phinaea* and *Napeanthus* have rotate, white corollas? Is this by chance, accident? Or is it by design, for a purpose? No other Gesneriads in the New World tropics have such flower shapes. Lindley published the name of the new genus and the new species in Edward's Botanical Register in 1841, and an illustration a year later.

In the next 35 years, six more species were added to *Niphaea*, all with rotate white corollas: *N. rubida* Lemaire from Colombia, *N. albo-lineata* Hooker from Colombia, *N. parviflora* Al. Braun & Bouché from Guatemala, *N. caripensis* Klotzsch & Hanstein from Venezuela, *N. cupreo-virens* Lemaire from Mexico, and *N. pulchella* Griesebach from Cuba and Hispaniola.

Then, at Kew Gardens, before 1876, the English botanist George Bentham (1800-1884) examined this assembly of white-flowered species. He found two different kinds of stamens among them and divided them into two genera, keeping only *Niphaea oblonga* and *N. cupreo-virens* in Lindley's genus. The stamens were the critical character in this generic division.

In *Niphaea* the stamens stand upright and are grouped around the stile of the ovary like a protecting column or cylinder. The anthers are free from each other, but are touching one another. The filaments (stalks) of the stamens in *Niphaea* are short, about the same size as the anthers, and the two anther cells (or locules) are confluent at the apex, forming a single pore or opening. Through this hole at the tip of the anther cells the pollen escapes. In more typical Gesneriads of the New World, the pollen is shed through a longitudinal slit on each pollen sack.

Bentham named the second group *Phinaea*; the name is an anagram of the word *Niphaea*. In this group the filaments or stalks of the stamens are much longer than the anthers. In the species known to Bentham, the stamens do not stand upright to form a cylinder around the style of the ovary. The long filaments are bent, and the four anthers are joined into a star shape, as in the anthers of *Sinningia*. The two thecae or pollen sacks of each anther are not joined at the top (as in *Niphaea*), but remain discrete or separate. The pollen sacks do not open by the typical longitudinal slit, but by a much smaller, restricted opening, a pore.

Bentham's division of *Niphaea* into two genera was elegantly confirmed a hundred years later. In his long-term cytological study of the family Gesneriaceae, Dr. Robert E. Lee at Cornell University found the base chromosome number for *Niphaea* to be $n = 11$, for *Phinaea*, $n = 13$.



×*Niphimenes* 'Lemonade' – Patrick Worley's intergeneric hybrid of
Niphaea oblonga and *Achimenes flava*



×*Niphadonia* 'Whisp' – Patrick Worley's intergeneric hybrid of
Niphaea oblonga and *Euclidonia verticillata*

Three more species of *Niphaea* were discovered in this century, bringing the total number to five. But there may be more in the tropical rainforests of the Americas. *Niphaea mexicana* Morton was found in central Mexico and El Salvador, *N. saxicola* (Brandegee) Gibson was first described as a species of *Napeanthus* and is native to the state of Chiapas, Mexico, and *N. peruviana* Wiehler was discovered in central Peru by Dr. Robert L. Dressler. Our present collection of *N. oblonga*, G-838, now in cultivation on many continents, was sent to Cornell University by the plant collector Tom MacDougall from the Mexican state of Chiapas in 1961. It grew in a rainforest at 1500 meter altitude on a rock ledge in humus and moss. This collection is so far the only species of *Niphaea* in cultivation.

Earliest Illustrations —

1842 <i>Niphaea oblonga</i>	Edward's Botanical Reg. 28: plate 5
1844 <i>Niphaea oblonga</i> (as <i>N. elata</i>)	L'Horticulteur Universel 5: 301

Number of Species (5) and Their Places of Origin —

- | | |
|--|-----------------------------|
| 1. <i>N. oblonga</i> Lindley | Guatemala, Mexico: Chiapas |
| 2. <i>N. cupreo-virens</i> Lemaire | Mexico: Oaxaca |
| 3. <i>N. mexicana</i> Morton | Mexico: Mexico, El Salvador |
| 4. <i>N. peruviana</i> Wiehler | Peru: Huanuco |
| 5. <i>N. saxicola</i> (Brandegee) Gibson | Mexico: Chiapas |
- (Synonym: *Napeanthus saxicola* Brandegee)

Distinguishing Generic Characters — Corolla actinomorphic (radially symmetrical) or nearly so, rotate (wheel-shaped), flat or cup-shaped, white; stamens 4, forming a cone around the style of the ovary, the filaments about as long as the anthers; nectary absent. Plants with underground scaly rhizomes. Chromosome number $n = 11$.

Modern Definition of the Genus — Small herbs, to 10 cm tall, with underground rhizomes, stems and opposite leaves hairy, the inflorescences axillary, the rotate, white, nodding or upright flowers borne above the foliage, the base of the corolla and the stamens bright yellow, the filaments about as long as the anthers which form a cylinder around the style, the stigma club-shaped, the nectary absent, the ovary semi-inferior, the fruit a dry capsule, the seeds numerous, elliptic, brown.

Placement of the Genus — Family Gesneriaceae, subfamily Gesnerioideae, tribe Gloxinieae.

Divisions with the Genus — None. The genus is too small for the establishment of sections.

Geographical Distribution — Mexico, Guatemala, El Salvador, Peru

Propagation and Culture — From seed (hard to obtain), stem cuttings, and rhizomes. Any porous, easily draining soil will do. Plants need a rest period after flowering and seed production, but the rhizomes produced after anthesis will soon sprout new shoots.

Medicinal Use — None reported.

Habitat in Nature — Tropical moist or wet rainforest, on moss-covered boulders in creeks, on rock walls or on slopes, in filtered sunlight or fairly shaded. Seasonal dry periods.

Pollination — If you ever wondered why the rotate white flowers of *Niphaea* (and *Phinaea*, *Bellonia*) looked different from those of the other American gesneriads (for instance *Columnnea*, *Kohleria*, or *Sinningia*), there is a good reason for the different flower shape. These almost symmetrical, flat, white flowers employ a different type of pollinator. These white-flowered genera have adapted to a different mode of pollination — see the accompanying article on Buzz or Vibrational Pollination in Neotropical Gesneriaceae.

Intergeneric Hybrids — Since there is only one species of *Niphaea* in cultivation (since 1961), no interspecific hybrids have been produced so far. In 1978, Patrick Worley made the first intergeneric hybrid which he named \times *Niphimenes* 'Lemonade'. *Niphaea oblonga* was the seed parent, and *Achimenes flava*, with a funnel-shaped corolla tube and a broad limb, was the pollen parent. Like almost all intergeneric hybrids in the Gesneriaceae, the progeny was sterile. The corolla was intermediate between saucer-shaped and funnellform, and the anthers shaped and positioned like *Niphaea*, but without the apical pore. For enterprising Gesneriad hybridizers, there is ample opportunity to produce more interesting hybrids with *Niphaea oblonga* and other species.

Intergeneric Hybrids with *Niphaea*

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\times *Niphimenes* — The first intergeneric cross I made with the genus *Niphaea* was with the genus *Achimenes*. I was interested in finding out what would happen when a tubular flower was crossed with an African violet-type flower. Since my early, naive crosses between a *Saintpaulia* species and a *Streptocarpus* species proved unfruitful, I cast my eyes toward these two genera with similar, parallel structures. I used *Niphaea* as the seed parent, as I did with most of my later crosses, and the reason is simple: if the cross was anything but pure white, the evidence of a hybrid was apparent. A factor in the hybridizing of these two genera is the relatively short stigma of the *Niphaea*, allowing for easier growth of the pollen tubes from the pollen parent.

\times *Niphimenes* 'Lemonade' resulted from a cross between *Niphaea oblonga*, which has a white rotate flower, and *Achimenes flava*, which has a deep, clear yellow flower and a fairly short tube. \times *Niphimenes* 'Lemonade' exhibits light yellow flowers with a relatively flat limb and multiple flowers in each axil, on a mature plant. The cross came into bloom with a single flower in time to be exhibited at the AGGS Convention in 1978. The flower opened on the morning of the show. It wasn't very impressive, but showed the foliage form, texture and darker rose center vein of the *Niphaea*. The nice yellow color showed the *Achimenes flava* pollen parent. I was quite satisfied, and I believe the hybrid is still in cultivation.

I have made five other successful \times *Niphimenes* crosses, unfortunately they were lost in the terrible storm and freezing temperatures of the 1989/90 winter in California when all power and gas were lost for over ten days.

×*Niphiantha* — This intergeneric resulted from *Niphaea oblonga* being crossed with *Smithiantha cinnabarina*. (I also crossed *Niphaea oblonga* with *S.* 'Little Yellow' and *S.* 'Little One'.) The offspring had very unfortunate-looking blooms that were pinched and distorted and often turned in or sharply down. I grew many on to bloom size. The limb never fully expanded in any of these ×*Niphiantha* hybrids, and I abandoned this work when all of the seedlings showed badly distorted flowers. No hybrids were named from this cross.

×*Niphinaea* — This cross between *Niphaea oblonga* and *Phinaea divaricata* made rangy plants that were not attractive to me. They were of intermediate size and the foliage had a bronzy color and an interesting texture. The flowers were borne on long stalks and flopped over which made a poor presentation. The flowers were also smallish for the size of the plant, white and not very showy. They were rotate, as is seen in both parents. The cross was lost when I became ill, but I do not mourn its loss as it was unremarkable. The hybrid was not named, but I do have photos of this hybrid.

×*Niphinia* — This intergeneric name represents a cross between *Niphaea* and *Gloxinia*. The seed parent was *Niphaea oblonga* and the pollen parent was *Gloxinia lindeniana*. The offspring were compact in stature. The foliage was patterned with wide dark bands on the upper surface with a lighter middle band much like *Gloxinia lindeniana*. The underside showed the typical darker center vein as well as the texture of the foliage of *Niphaea*. The flowers were rather flattened with a light bluish lavender eye, also in the manner of *Gloxinia lindeniana*. Altogether the hybrid looked rather washed out and proved interesting in the mix, but it was not worthy of introduction. Photos do exist of this hybrid, but it was named.

×*Niphadonia* — This was a cross of *Niphaea oblonga* as seed parent and *Eucodonia verticillata* as pollen parent, and I called it ×*Niphadonia* 'Whisp'. It was a very compact plant with nicely textured foliage. The tube was more elongated than I imagined that it would be, but the flower color was washed out and not very spectacular. The color was more like *Sinningia* 'Dollbaby', and at the time I just didn't think we needed another medium lavender-blue flower. I probably should have waited another season before tossing it out. (I do plan to remake this cross next season.) I did another that I did like with *Niphaea oblonga* and *Eucodonia andrieuxii* 'Tinctocoma'; it bloomed well and had a picotee flower.

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Growing *Niphaeas*

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Introduction

Niphaea oblonga is a challenge to grow well, but the decorative foliage and the unique flowers (like white buttercups) are worth the trouble. Growers differ on its light requirements. It seems to tolerate lower humidity, and generally is not grown in an enclosed container.

How to get the best foliage on your *Niphaeas* ... by Vincent Parsons

I like *Niphaea oblonga*. The tip and trick I use most with it is pinch early and often, and stick the cuttings back in the pot as with *Achimenes*. In fact, I grow it just like *Achimenes*, under lights and also near a west window, where it doesn't really get a lot of sun but doesn't get the full fluorescents either. I have never tried it in a terrarium. The leaf color has been much richer for me in a mix with the usual pinch of dolomitic lime added. The pot without the lime had lighter leaves without as much contrast in the dark veins.

Incidentally, many people are unaware of the leaf fragrance of *N. oblonga*. I love the smell — it's very light and only noticeable near the growing points, when you brush the hairs lightly. It is definitely a clear scent you don't have to wrap your nose around to detect though.

This plant makes distinctive, very tight rhizomes with a high number of small scales, giving a smoother more rounded appearance to them than most other scaly rhizomes. They store easily in bags with nothing (else) in them, for a long time without spoiling. In fact, it's hard to wake them up early. They seem about as adaptable as *Achimenes* to me, and I will probably try a small basket outside this summer to see if plants act the same out there... which isn't all that great, with our cool nights here in the Northwest.

It's worth it for the flowers ... by Bob Clark

This one is a little fussy to grow, at least for me. It always comes up, but demands brighter light, more fertilizer and more consistent watering than other rhizomatous Gesneriads. It also goes dormant with just one missed watering. I still enjoy growing *N. oblonga*. The cute white flowers remind me of strawberry flowers; star shaped and symmetrical; not the common two petals on top and three on the bottom.

Under lights in Ontario ... by Monte Watler

I grow *Niphaea oblonga* under the same conditions as everything else — moderately cool temperatures, under lights, 12 hours per day. I've had no problem growing this species, and it always seem to bloom reliably. I can always depend on it for our show, which is held during March/April. After blooming, the foliage will continue to flourish for a long time. When it begins to deteriorate, I behead it and lift the rhizomes and replant them in new soil. The cuttings I propagate for our sales table. Occasionally I will leave the rhizomes in the pot and put it aside until it starts to show signs of growth. A fair number of fat rhizomes are produced, some of which I also donate to the sales table.

Under lights in British Columbia ...

by Bill Price

Niphaea oblonga has done best for me at the end of the shelf where it flowers constantly on different growths. I have tended to keep it moist all the time and it is a "thirsty" plant. Any drying out leads to brown leaf edges. When stalks get too long or stop flowering, I just cut them off. At any one time, there are several plants in different stages of growth in the same pot. Although the rhizomes are large, acorn-like and profusely produced, I find they break dormancy irregularly. Taking apart a pot of *Niphaeas* is a very rewarding treasure hunt!

In a greenhouse in New Jersey ...

by Maryjane Evans

I like this species a lot. The flowers are held well above the foliage and I like the rotate corolla. The dark veins are attractive, too. I grow it in bright light in the greenhouse. I haven't grown it under lights. The rhizomes are very "chubby" and are usually a white/off-white color. I've tried to set seed on it for YEARS with very limited success. Pollen is freely released and the stigma appears receptive, but I have success with perhaps only one out of ten flowers.

How to make your *Niphaeas* sturdier ...

by Robert Hall

I have two pots of *Niphaea oblonga* growing right now. One pot has a single rhizome, the other has five for a bushy effect. This species has a LONG dormancy. It does well cool and also warm, but for me it does not need much light: 6 to 8 hours daily under two tubes is fine. It needs lots of water in a regular to light mix, and can be wicked. Regular fertilizer of your choice is fine. It is best to start the rhizome in a small pot. Then when the plant is growing, transfer it to a larger pot and bury the stem. You might need to repeat this later as the plant has a tendency to fall over, and this method gives it strong sturdy growth.

In Sweden ...

by Ingrid Lindskog

Niphaea oblonga does well in Sweden. It is a good candidate for a basket plant. The rhizomes are the most beautiful I've seen, and the foliage is spectacular with the red veins against lemon-limeish green. With the first flowers out, they were my favorites for years. The foliage sometimes gets papery patches where the sun hits. Growing on wicks produces a better rhizome harvest. They get the same care as most everything around here (including *Koellikerias*): 3 parts "natural" soil (composted peat + bull manure + sand + rock phosphate), 2 parts perlite and 1 part vermiculite. I fertilize erratically with whatever catches my eye in my assortment. No blossom booster is necessary. Thrips sometimes materialize on them, so I will give them a Provado pill (European name for Marathon) in the pot this year. One year I tried to keep a spent plant of *Niphaea* on my back porch, out of direct sun, but the foliage was severely damaged and it stopped growing — I guess the nights are too cold. I harvested only a couple of tiny rhizomes from that pot.

Outdoors in Florida, a work in progress ...

by Barbara Matthews

I have had rhizomes of this species for several years. They always broke dormancy, but never developed into much when I grew them outdoors in a sheltered, semi-shady area. I had foliage but no bloom. Last year I moved the pot to where it received full sun for most of the day and the plant did bloom, but the foliage was poor.

Outdoors in Sydney, Australia ...

by Sue Hodges

Niphaea oblonga grows outdoors next to *Koellikeria erinoides*. I plant 3 rhizomes in a 5" squat pot to give a bit more room for root development. My plant comes into flower in March, a bit later than the *Achimenes*, so it seems to take longer to mature enough to bloom. It doesn't seem to carry a large number of flowers but they are held well above the foliage and are quite eye-catching with the bright yellow stamens on the clean, white flowers. It will take very bright light (full day of sun through shade cloth), but the foliage has better color and the veining is more pronounced if it is given a little more shade. I have not tried it indoors. It copes with our summer heat without any problems and will be dormant, of course, once the weather turns cool. It seems to produce plenty of rhizomes and has a definite dormant period for me.

Outdoors in a shade house in Sydney, Australia ...

by Beverley Donsworth

I have grown *Niphaea oblonga* for a number of years. My plant is blooming right now (March). We have just commenced our autumn season and although the weather has been extreme this week (37°C today, very hot), last week it was a little cool in the mornings.

I grow most of my larger Gesneriads — *Sinningias*, *Achimenes*, *Eucodnias*, *Smithianthas*, *Kohlerias* — and all hanging plants outside in a shade house all year round. They get overhead watering from a sprinkler system and rain, and protection from shade cloth. I usually use a long-acting granular fertilizer as I have too many hobbies to give them too much attention. My potting mix for everything outside is 50:50 African violet mix (peat, perlite, vermiculite) and garden compost (we are very big on composting everything Down Under). The shade cloth is supposed to be 75% but lets a lot of light in and keeps plants quite compact. If I tried to grow many of these things under lights they would be too leggy. *Niphaea oblonga* is quite a nice little plant but for interest only. It never has very many blossoms. The foliage is very attractive with veined leaves. Like all of the rhizomatous Gesneriads (except *Kohlerias*), my *Niphaeas* die right down in winter.

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Buzz or Vibrational Pollination in Neotropical Gesneriaceae

(Reprinted with the permission of Dr. Hans Wiehler from the Gesneriad Research Foundation Seminar Series, October 1993)

This is a very distinct kind of pollen transfer, only recently recognized. The agents are bumblebees, or other large and small bees, including the iridescent Euglossine bees known to pollinate the genera *Gloxinia* and *Monopyle*. (Not involved are the immigrant but wide-spread Eurasian honeybees which do not know how to buzz or vibrate flowers.) Only females (workers) perform this type of pollination. They bring the pollen in packages (or mixed with nectar) back to the nurseries as a protein-rich food for the larvae.

The bee lands on either the corolla or the anther cone above the corolla. A momentary high frequency vibration of the flight muscles (not the wings) shakes the whole flower very abruptly. It causes a burst or cloud of powdery pollen to shoot from the anthers, to be deposited on the bumblebee's abdomen. These vibrations (about 50-200 Hz) are heard as "buzzes" by the human ear, up to five meters away.

While flying to another flower, the bee gathers the pollen into packages, but some residue of pollen grains left in inaccessible places on the abdomen are brushed on the receptive stigma of the next flower visited, effecting pollination. Of course, the bumblebees are not interested in cross-pollination of the flowers, just in a protein-rich food for their brood. The plants lose a good deal of pollen in this transaction, but they have "figured out" a way to employ these vibrating visitors as agents of pollen transfer from plant to plant. The reaching style of the ovary with its club-shaped, receptive stigma has the right length, bent and position to catch enough pollen for the fertilization of the ovules.

Both insect and plant are winners in this transaction. How much trial and error through mutations and selection, how much time in terms of centuries did it take to perfect this intricate and balanced system between plant and bee? We will never know.

This kind of pollination has been known about only since the 1960's, occurring in 72 families or 544 genera of angiosperms. Good examples are in the Solanaceae, Ericaceae and Melastomataceae. A summary of our present knowledge has been published by Stephen L. Buchmann in 1983, in an article entitled: "Buzz Pollination in Angiosperms".

There is no report as yet for the Gesneriaceae, and no field observations have been done so far. But there are four genera of New World Gesneriaceae which have all the attributes for buzz pollination: *Niphaea* (5 species), *Phinaea* (16+ species), *Bellonia* (2 species), and perhaps *Napeanthus* (30+ species). The European genus *Ramonda* (3 species) falls into this category, too, and maybe even the African genus *Saintpaulia* (20 species). Buzz pollination occurs on all continents (except Antarctica) and also in temperate climates.

Some of the characteristics of buzz pollination, as applying to Gesneriads, are the following:

1. Corollas actinomorphic (= radially symmetric) or nearly so, rotate (= wheel-shaped), dish- or cup-shaped, bright white (also blue or purple), often with a bright yellow spot in the center.

2. Showy bright yellow stamens at the center (bull's eye) of the corolla, in a cone formation, or free from one another.
3. Anther dehiscence by apical slits, pores or valves. *Bellonia* is a good example of this; the other genera exhibit approximations.
4. Nectary absent or non-functional.

The species of *Niphaea* (and *Phinaea*, *Bellonia*) have adapted almost completely to this strange mode of pollination. They have almost circular white flowers with bright yellow stamens in the center, and the ring-shaped nectary around the base of the ovary is either absent or non-functional. They have given up the idea to attract pollinators with honey-producing nectar.

But in the evolution of anther cell dehiscence by apical slits or pores, these Gesneriads have developed some short-cuts. Only the two species of *Bellonia* have gone the complete route to true apical pores (Figure 1). Figure 2 shows a pair of typical Gesneriad anther cells on a stamen with complete longitudinal slits, open and ready to release pollen when the anther cells are mature (in the male phase of flowering).

Buzz Pollination Anthers in the Gesneriaceae

Figure 1: apical pores in (a) *Bellonia aspera*

(b) *B. spinosa*.



Figure 2: Typical gesneriad anther cells with longitudinal slits.

Figure 3: *Niphaea oblonga*, (a) single anther with apical pore, (b) anther cylinder around style.



Figure 4: *Niphaea peruviana*.

Figure 5: Anthers with pores in species of *Phinaea*:

Ph. divaricata

Ph. albiflora

Ph. ecuadorana



Ph. repens

Ph. hirtzii

Ph. macrophylla

Figure 6: Connate anthers in *Phinaea*: *Ph. rubida*



Ph. multiflora

Figure 7: *Ph. brasiliensis*

Ph. sp. Moore 8196

Ph. lacera

Ph. sp. Dressler 5132

Figure 3 depicts one of the four stamens in a flower of *Niphaea oblonga*. The four free stamens form a cylinder or cone around the style, with the anther cells facing inward, towards the style. Near the tip of the two separate, parallel anther sacs, the cell walls have broken down, creating a new single opening, a pore, for both anther sacs. In *N. peruviana*, the four anthers also form a cone around the style, but they are joined at top and bottom. The thecae face toward the inside, each with a complete longitudinal slit (Figure 4).

In most species of *Phinaea* (Figure 5), the longitudinal slit of the anther cells is reduced to a small opening (= a pore) near the center of the slit. The free-standing stamens are bent in such a way that the anther sacs face upwards, thus exposing the pore to the visiting buzz bee. However, in *Phinaea albo-lineata*, *Ph. multiflora* and *Ph. rubida* (among others), the four anthers are connate (= connected) by their sides into a star (as in species of *Sinningia*, etc.) with the thecae dehiscing either by a pore, or from the mid-point of the aperture to the apex (Figure 6).

In *Phinaea brasiliana*, the anthers form a cone like in *Niphaea*, here joined by their tips, but the inside-facing thecae have longitudinal slits (Figure 7). Longitudinal slits occur also in *Phinaea* sp. Moore 8196 from Guatemala and *Ph. lacera* from Panama (Figure 8). Whether these longitudinal slits of the anther cells are functioning in buzz pollination is not known. This first study of the stamens in buzz flowers in the Gesneriaceae shows that there is quite a bit of variation in anther dehiscence, even within the same genus.

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The History and Biology of *Phinaea*

(Reprinted with the permission of Dr. Hans Wiehler from the Gesneriad Research Foundation Seminar Series, October 1993)

History — Soon after the discovery of the snowflower of Guatemala by Hartweg and its description as a new genus and species, *Niphaea oblonga*, by Lindley in England in 1841, more new snowflowers were found in the American tropics and sent to Europe. The Scottish plant collector William Purdie (1817-1857) spent the years 1844 and 1845 in the floristically isolated region of the Sierra Nevada de Santa Marta in northern Colombia and found rhizomatous snowflowered plants with white-veined leaves near Ocaña in the department of Norte de Santander. They were received at the Royal Botanic Gardens at Kew in 1845, and described as *Niphaea albo-lineata* by William Jackson Hooker (1785-1865), the Garden's director. The publication was the Botanical Magazine, and the accompanying plate was drawn and lithographed by the famous W. H. Fitch.

Sent by Jean Jules Linden of Brussels to collect plants in South America, Louis Joseph Scrimbourn brought back in 1852 another collection of the same species, from the same area in Colombia, but with a finer white reticulation of the veins of leaves. This was first illustrated in *Flore des Serres* 8, plate 823, in 1852-53 as *Niphaea albo-lineata* variety *reticulata* and later also in the Botanical Magazine (84: plate 5043. 1858).

In 1846 the French botanist and sometime editor of "*Flore des Serres*", Charles Lemaire, received in Ghent, Belgium, another snowflower species from a horticultural source in England. The origin in tropical America was unknown, and in 1847 he published it with a color plate in *Flore des Serres* 3: plate 251 as *Niphaea rubida*. The German botanist Hermann Karsten (1817-



Phinaea albo-lineata
Illustration from 1847



Phinaea rubida
Illustration from 1847



Phinaea multiflora 'Tracery' grown by Maryjane Evans
(photo by John Evans)



Phinaea albo-lineata grown by JoAnna Behl
(photo by Jerry Vriens)



Phinaea macrophylla grown by Maryjane Evans
(photo by John Evans)



Phinaea divaricata grown and photographed
by Julie Mavity-Hudson

1908) spent 12 years collecting plants in South America, mostly in Colombia. In the same area of Ocaña, Norte de Santander, he found a snowflower which he published in 1861 as *Niphaea crenata* with a very detailed colored and uncolored lithograph. This species became a synonym of *N. rubida*.

When the English botanist George Bentham (1800-1884) published the Gesneriaceae for Bentham & Hooker's "Genera Plantarum" in 1876, he was familiar with these three species of *Niphaea*: *N. oblonga* from Guatemala, and *N. albo-lineata* and *N. rubida*, both from the same area in Norte de Santander, Colombia. (The names *N. parviflora* and *N. cupreo-virens* had already been published on the continent at this time, but without illustrations, and most likely without live material or herbarium specimens in England.) Anyway, Bentham decided there were two different genera among these snowflowered Gesneriads, and that the critical characters were the stamens. In *Niphaea* they form a column or cylinder around the style, the filaments are shorter than the anthers, and the two anther cells of a stamen have a common opening at the tip at maturity (=becoming "confluent").

In the second group of rotate, white-flowered Gesneriads (which he named *Phinaea*, an anagram of Lindley's *Niphaea*, snowflower), the filaments are much longer than the anthers. These anthers are joined by their tips into a star-pattern (as in *Sinningia*), and the anther cells remain separate ("discrete") at maturity, each cell dehiscing by a pore near the apex. This generic separation was nicely confirmed in this century, when Dr. Robert E. Lee at Cornell University in the 1960s established base chromosome numbers for these two snowflower taxa: *Niphaea* $n = 11$, *Phinaea* $n = 13$.

Number of Species (16) and their places of origin

<i>Phinaea albiflora</i> Rusby	Colombia: Depto. Magdalena
<i>Phinaea albo-lineata</i> (Hooker) Bentham ex Hemsley	Colombia: Depto. Norte de Santander
<i>Phinaea brasiliiana</i> Wiehler ined.	Brazil: Pará
<i>Phinaea caripensis</i> (Klotsch & Hanstein)	Venezuela: Monangas, Sucre Solereder
<i>Phinaea divaricata</i> (Poeppig) Wiehler	Peru: Huanuco
<i>Phinaea ecuadorana</i> Wiehler	Ecuador: El Oro
<i>Phinaea hirtzii</i> Wiehler ined.	Ecuador: Cotopaxi
<i>Phinaea lacera</i> Morton	Panama, Costa Rica
<i>Phinaea macrophylla</i> Wiehler	Colombia: Antioquia
<i>Phinaea multiflora</i> Morton	Mexico: Guerrero, Oaxaca
<i>Phinaea parviflora</i> (Brongniart & Bouché) Solereder	Honduras, Guatemala, Mexico: Chiapas
<i>Phinaea pulchella</i> (Grisebach) Morton	Cuba, Haiti
<i>Phinaea repens</i> (Donnell Smith) Solereder	Panama, Costa Rica, Guatemala
<i>Phinaea roezlii</i> (Regel) Wiehler ined.	Venezuela: Merida?
<i>Phinaea rubida</i> (Lemaire) Nicholson	Colombia: Norte de Santander, Santander
<i>Phinaea viscida</i> Denham ined.	Mexico: Chiapas

Distinguishing Generic Characters — Corolla actinomorphic (radially symmetrical) or nearly so, rotate (wheel-shaped), flat or cup-shaped, white; stamens 4, the filaments longer than the anthers, symgenesous (joined) or free, the anthers often connate into a star shape, thecae (anther cells) usually opening by a pore; nectary absent. Plants with underground rhizomes. Chromosome number $n = 13$.



Phinaea albiflora



Phinaea repens

Modern Definition of the Genus — Small herbs, to 15 cm tall, with underground scaly rhizomes, stems and opposite leaves hairy, the inflorescence axillary, the rotate, white nodding or upright flowers borne above the foliage, the stamens bright yellow, the filaments longer than the anthers, the stigma club-shaped, the nectary absent, the ovary semi-inferior, the fruit a dry, bivalved capsule, or a fleshy capsule with irregular dehiscence, the seeds numerous, elliptic, brown.

Placement of the Genus — Family Gesneriaceae, subfamily Gesnerioideae, tribe Gloxinieae.

Divisions Within the Genus — None yet.

Geographical Distribution — Mexico, Central America, the Greater Antilles, Colombia, Venezuela, Ecuador, Peru, Brazil.

Centers of Diversity — Colombia (4+ species), Mexico (3–5 species).

Propagation and Culture — From seed, stem cuttings, and rhizomes. Any porous, easily draining soil will do. Plants need a rest period after flowering and seeding; after a period of dormancy, the rhizomes will produce shoots and new plants.

Medicinal Use — None reported.

Habitat in Nature — Tropical moist or wet rainforest, on moss-covered boulders filtered sunlight or fairly shaded. Seasonal dry periods.

Pollination — Buzz or vibrational pollination. (See article on page 30.)

Hybridization — No known interspecific or intergeneric hybrids have been made as of this date (October 1993). Good horticultural material might be produced by crossing within the genus, and with *Niphaea oblonga*, *Bellonia*, *Achimenes*, *Eucodonia*, *Kohleria*, *Gloxinia*, *Koellikeria*, *Smithiantha*, *Diastema*, etc.

Update: In the late 1980's, Patrick Worley successfully crossed *Niphaea oblonga* with *Phinaea divaricata*, however, the cross was unremarkable and a hybrid was not named. In 1995, Dale Martens crossed *Phinaea albo-lineata* with *Diastema comiferum* creating \times *Phinastema* 'California Dreaming' which is currently in cultivation. (See the article on page 38.)

×*Phinastema* 'California Dreaming' Around the World

Compiled by Peter Shalit <ps83@cornell.edu>
1312 East Denny Way, Seattle, WA 98122-2519

— Dale Martens, Texas

I'm the hybridizer of ×*Phinastema* 'California Dreaming' and have been growing it for about seven years now. It's a cross between *Phinaea albolineata* and *Diastema comiferum*, therefore is rhizomatous. It is a registered hybrid: #96497. By the way, it turns out Al Wojcik made the very same cross at the very same time. I just happened to have entered my plant and both its parents at the 1995 AGGS Convention in Millbrae, CA and then later heard from Al about his cross. Dave Zaitlin grew out Al's seedlings, and Dave and I exchanged rhizomes and saw no significant differences in the plants.

This hybrid grows naturally bushy and compact under fluorescent lights. Its soil must never, ever be allowed to dry, therefore I use a wick. Actually I use New Zealand sphagnum as 1/3 of the soil mix. It would be happiest in at least 60% or more humidity. Daphne Yaremko grows it quite well on a plant stand where she uses a clear, plastic sheet on the outside of the stand to increase humidity on her shelves.

A major cultural point about ×*Phinastema* is that it does not like to be transplanted. My advice is to bury the rhizomes about 1 inch below the soil in a 3" pot (maximum) and leave it alone. If I transplant it, it will wilt immediately. *Phinaeas* are temperamental like that, too. The foliage cannot be used in a cut arrangement!



×*Phinastema* 'California Dreaming' grown and photographed by Dale Martens

Like those of its *Phinaea* parent, the individual blossoms of 'California Dreaming' last only about 2 or 3 days, but it has a blooming period of at least 8 weeks. It's a potential candidate as a foliage entry in shows because of the dark green, textured foliage with a dark maroon back.

— **Tim Tuttle, Tennessee**

×*Phinastema* 'California Dreaming' is one of my favorite Gesneriads. I grow it under lights, about 4-6" below a two-tube fixture in a 1:1:1 mix with chopped New Zealand sphagnum moss added to retain moisture. I grow it wicked on a reservoir, and enclosed in a high plastic dome-covered tray. I have learned the hard way, that THIS PLANT DOES NOT LIKE TO DRY OUT. With these conditions, it grows compact, about 4-5" tall, with multiple branches of beautiful dark maroon-backed foliage with clusters of bright pink flowers. Without the cover, the leaves burned every time. It branches well for me without pinching or shaping. I have also found that the rhizomes will dry out too much if kept in a ziplock without any media. So I include barely moist NZ moss in the bag with them, where there is not need to do this with other rhizomes. I feed continuously with Dyna-Gro and leach the medium every couple of months or so. I found that cuttings rooted easily.

— **Sue Hodges, Australia**

×*Phinastema* 'California Dreaming' is the odd one out for me as it grows indoors under lights although I did put it outdoors last summer. The flowers are large for the size of the plant and an attractive pinkish purple color against the dark foliage.

I had read somewhere about its long dormant period but I didn't realize just how long it would sleep! The dormancy did not seem to be tied to the season and it seemed to sit forever. Finally I put the pot outdoors out of the way and left it alone. Eventually it sprouted and I brought it back indoors and put it on a wick under lights where it is just coming into bud. I have always grown it in my 3:2:1 violet mix, and constant feed on violet fertilizer. It can get a bit leggy so I need to put it under the center of the lights (2 tubes).

— **Vincent Parsons, Oregon**

×*Phinastema* 'California Dreaming' is great! Purple-backed leaves, unusual flowers, and despite what Dale said last year, I have not found it to have a very long dormant cycle. Maybe longer than many *Achimenes*, but shorter than *Diastema racemiferum*. Tip cuttings are easy to root, and I still have one going that I have uprooted, removed rhizomes, and replanted or taken the tip again to root, and it has never gone dormant in two years. It is beginning another flush of growth in fact. One thing I've noticed but I think is common knowledge, is that this plant likes/needs high humidity to look well at all; and as Dale and I discussed previously, it can sit there in bud, like in suspended animation, seemingly forever until you put it under cover for high humidity. Leaf tips and edges brown easily in drier air too, like many *Diastemas* do for me in the open.

The 'California Dreaming' rhizomes are pink, and not large or numerous. Many cuttings seem to only make one or two, and I'm planning to try heavier sandy soil on it this year.

Growing Phinaeas

Compiled by Peter Shalit <ps83@cornell.edu>
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Introduction

Phinaeas tend to be small plants, and too delicate to grow outdoors even in tropical climates. Most growers tend to keep their Phinaeas under fluorescent lights, often in an enclosed environment. There are a number of species of *Phinaea* in cultivation, but no hybrids have been made between them.

Experiences with Phinaea ...

by Vincent Parsons

I have a few species of *Phinaea*, and I want as many of these as I can get! They all take lower humidity better than I thought they would, staying smaller and more compact. Most started really drying at the tips and edges at about 20 percent relative humidity. They also withstood soil dryness. They all have short-lived white flowers; only those of *P. albo-lineata* last several days.

Seeds ripen in about a month, maybe less, and most will self-pollinate automatically. Seed germination (two weeks on average, here) is easy, and pricking out seedlings causes no trauma. I kept the seedlings under plastic for about six weeks, or a month after germination. I had good germination on old seed, over a year after receiving it from the Seed Fund. It was not refrigerated. I do not know how long it was stored before getting it here.

I grow my Phinaeas bright, under full-spectrum lights (two tubes 14" to 18" away) with some bright light wash and even a little direct sun late in the day from a west window. I detected no fragrance in any of the flowers. (I thought *P. albo-lineata* smelled faintly floral/vanilla one day, but it was probably psychosomatic.) Another of them had ever-so-slightly scented leaves, but I don't recall which one.

Notes on some *Phinaea* species:

Phinaea albo-lineata. My favorite in a horticultural sense, having the pretty, semiglossy, deep green, white-veined leaves, decorative the moment they break the surface and begin to open up. Flowers are just too cute, angled fringed white bells of satin/wax substance, occasionally with a little pink blush, held in perfect symmetry to the rest of the plant. Seed is easy by selfing, they do it automatically. If it hasn't surpassed *P. multiflora* 'Tracery' in popularity by now, I'm sure it will very soon, if any Phinaea can be called "popular".

Phinaea divaricata has unusual leaves with their satiny/velvety bronze color. They have sort of the odd sheen of *Koellikeria erinoides* but matte instead of eggshell, if that makes sense. The flowers are typical of Phinaeas, open-faced, white with a creamy cast and little green eyes. They are short lived, sometimes open only a few hours in the morning on warm days, rarely still on the plant the next morning, usually having fallen by early afternoon. The pedicels have a funny habit of bending back on themselves, not spiraling, and holding the seed pod down at leaf level, upside down, while ripening. The rhizomes are the most intensely colored of all of them — an almost bright wine/red color that turns dark blood red after being out in a little light. *P. divaricata* is also the most enthusiastic about sprouting early in storage. All of mine have growth, though stored dry in bags.



Phinaea ecuadorana



Phinaea albo-lineata

Phinaea ecuadorana is the smallest species I have, with little blue-green leaves, highly textured and tongue-shaped (longer than wide but not pointed). Flowers are typical of Phinaeas, like *P. divaricata*, with a small yellow eye rather than green. The flowers last a couple days each.

Phinaea multiflora — all seedlings grew light lime-green leaves, and small flowers that did not open completely. They did produce some rhizomes, weakly, so I'll see if they do better this year.

Phinaea multiflora 'Tracery' — looked and grew completely different from the one sent as the species type. This one had dark green leaves with a ruddy cast to some of them, and of course the thin silver venation. Subtler in effect than *P. albo-lineata*, it is very charming. I look forward to keeping it in a terrarium with other plants. I can picture it in some mossy rocks looking very special. The flowers are cute, held facing up like chalices. Small and white, as usual. They do not open flat like a couple of the others, but are not joined into an obvious bell shape either.

Under lights in Tennessee ...

by Tim Tuttle

Phinaeas are favorites of mine. I have only grown two species, but love those two. The species I am growing are USBRG 96-336 and *P. divaricata*. I have experimented with growing them covered vs. uncovered, and with a variety of watering methods — wicked on reservoirs, wicked on matting, and top-watered.

I grow both species in 3-1/2" pots in a 1:1:1 mix. I put several rhizomes in each pot, maybe 5 or 6. I grow them under a two-tube fixture with the lights on for about 12–14 hours per day and the plants about 8" below the lights. These plants have a very definite dormancy and seem to have a mind of their own when it comes to sprouting; however, the dormancy does seem to follow the seasons, with the plants going dormant in the fall and emerging the following spring. I have found that the best growth occurs with them wicked on reservoirs with a very light continuous feed. I use Dyna-Gro with occasional fish emulsion, and leach every couple of months. I experience tip burn

on the leaves if I feed at regular strength and/or forget to leach often. My plants do well uncovered, but the best results are undercover or in terrariums.

I have found USBRG 96-336 to root very easily from leaf cuttings, but have not tried *P. divaricata*. I assume it would root from leaf cuttings too. I have also grown *P. divaricata* from seed quite easily. And of course, the tiny rhizomes are a great way to start new plants.

Under lights in British Columbia ...

by Bill Price

Phinaeas for me grow in a pronounced cycle. I am growing several species including the dwarf USBRG 96-336, *P. multiflora* 'Tracery' and a few others including some newer ones from the Seed Fund. The rhizomes tend to break dormancy more uniformly and then tend to be all flowering at roughly the same time in a given pot. I used to grow them more at the end of the shelf, but more recently I am placing them more centrally and find they are less leggy and the foliage colors are better. As with Niphaeas, they hate any drying out during their growth phase. They seem to be more sensitive to lower humidity also. I used to grow them under domes, but now grow them uncovered. My humidity levels are quite good — rarely under 50%. I leave the rhizomes in the pot when they go dormant then harvest them in 1–2 months to restart. Some of them are VERY small and are easily overlooked in the mix, but even the smallest seem to start okay when repotted and watered immediately. The smaller rhizomes have shriveled to nothing in a few days when I have not repotted them right away.

Under lights in Tampa, Florida ...

by Barbara Matthews

The only Phinaea that I grow is one of my favorite plants. It was collected in Ecuador by John Clark with the original identification of JLC 2490. It is now being distributed with the designation USBRG 96-336. I got a piece of it through my local chapter, grew it on and won a blue ribbon at the 2000 Convention held here in Tampa.



Phinaea sp. USBRG 96-336



Phinaea viscida



Phinaea multiflora

I have grown this both in a terrarium and on matting, and find that growing it in the open on matting on a plant stand works best. It shares a tray with larger plants so it is more of an "understory" grower rather than getting the full blast of the light. The blooms are very short-lived — the only fault I would find with this plant — but they are cute as a button. It is a very floriferous plant, which means a lot of grooming to remove the tiny spent blossoms. It does go dormant, but sometimes starts putting up new growth before the old growth has completely died back. It makes a lot of rhizomes, so having additional plants to share/sell is pretty easy. I had some on the sales table here in Tampa.

Under lights in Sydney, Australia ...

by Sue Hodges

There is not much science to my *Phinaea* growing. I only have *P. ecuadorana* at the moment and I love the blue-green color of its foliage. The plant tends to be a bit lax and sprawls and probably needs to be closer to the lights. It is about 8" below two tubes and gets 12 hours of light a day plus a bit of daylight from a large window. Once it flowers it stays in bloom for quite a time — tiny white flowers but freely produced.

P. multiflora 'Tracery' used to do well for me. It is also tiny, and the white markings on the dark foliage make it attractive. Once again the flowers are small, but stand out quite well and set seed easily.

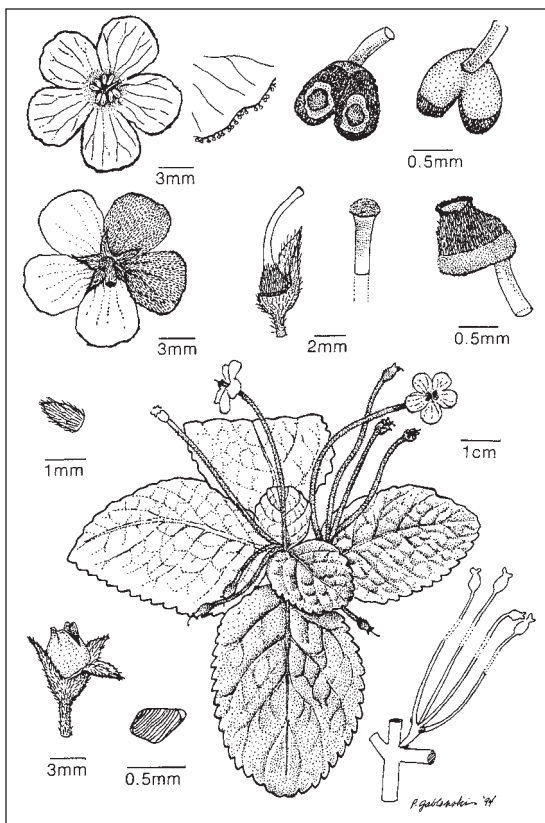
All of my *Phinaeas* have been grown under lights, multi-planted in small, shallow containers on wicks. They are given the same treatment as my Saintpaulias — a 3:2:1 peat, vermiculite, perlite mix, with African violet fertilizer constantly fed. When they go dormant, I just leave them in the pot and give water very occasionally until they show signs of life. Then I repot. They don't seem to have a definite winter dormancy as some of my other rhizomatous plants do but my plant room is warm in the winter. They just seem to go through cycles of growth and dormancy. I find I can keep the plants going longer by cutting back the tops when they get tatty and letting them re-shoot from the base of the stems.

Under lights in Toronto ...

by Robert Hall

I grew a good specimen of *P. multiflora* 'Tracery' that received best in class at an AGGS Convention one year. It grew in a flat type of bulb pot with about four rhizomes placed in. It was grown open and in regular mix and given lots of water and wicked. The temperature was warm. It was easy.

Phinaea sp. USBRG 96-336 was difficult to grow until I tried it in a small goldfish-type bowl with New Zealand sphagnum moss. The top was not covered. The extra humidity was beneficial, and I had a forest-type effect in the bowl with lots of flowers. This plant was also grown warm but grew better with less light than *P. multiflora* 'Tracery' (which was under two tubes, 10 hours/day). Nowadays I would give 'Tracery' even less light. (Most of my plants are now receiving between 6 and 9 hours of light a day.) The plants grow better if the rhizomes are allowed a long dormant period — don't try to force the rhizomes to sprout before they are good and ready.



Phinaea ecuadorana Wiehler

Ecuador

First Publication: Gesneriana 1: 84, 85, fig. 28. 1995.

I.D. Illustrator: Pamela Jablonski, 1984

Sponsor: Dr. Peter Shalit, Seattle, WA

I.D. Plate 186

Gesneriad Register

Judy Becker, Registrar <jbecker@mohawk.net>
432 Undermountain Rd., Salisbury, CT 06068-1102

The following registrations should be added to the Registered Gesneriads List found in Appendix C of the 1990 Gesneriad Register.

01769	<i>Streptocarpus</i> 'Franken Izzy'	S. 'Susan' × self	Davies/Jones
01770	<i>Streptocarpus</i> 'Franken Jane Elizabeth'	S. unnamed hybrid 2F × self	Davies/Jones
01771	<i>Streptocarpus</i> 'Franken Kisie'	S. 'Susan' × self	Davies/Jones
01772	<i>Streptocarpus</i> 'Franken Laura Ellis'	S. unnamed hybrid F3 × self	Davies/Jones
01773	<i>Streptocarpus</i> 'Franken Nita'	S. 'Magpie' × self	Davies/Jones
01774	<i>Streptocarpus</i> 'Franken Purple Haze'	S. 'Magpie' × self	Davies/Jones
01775	<i>Streptocarpus</i> 'Franken Sheila Emily'	S. 'Magpie' × self	Davies/Jones
01776	<i>Streptocarpus</i> 'Franken Stacey'	S. unnamed hybrid F3 × self	Davies/Jones
01777	<i>Streptocarpus</i> 'Franken Sygnet'	S. unnamed hybrid F3 × self	Davies/Jones
01778	<i>Streptocarpus</i> 'Franken Terracotta'	S. 'Gillian' × S. unnamed hybrid K21	Davies/Jones
01779	<i>Streptocarpus</i> 'Franken Blue Ice'	S. 'Magpie' × self	Davies/Jones
01780	<i>Streptocarpus</i> 'Franken Strawberry Fondant'	S. unnamed hybrid JP10 × self	Davies/Jones
01781	<i>Streptocarpus</i> 'Rose Gower'	S. 'Elsi' × unknown	Sue Long
01782	<i>Streptocarpus</i> 'Edward Steichen'	S. 'Blue Beard' × S. 960-92	George Gessert
01783	<i>Streptocarpus</i> 'Ariamsvlei'	S. unnamed pink <i>johannis</i> type × <i>S. denticulatus</i>	Jaco Truter
01784	<i>Streptocarpus</i> 'Epupa Falls'	<i>S. caulescens</i> × <i>S. pallidiflorus</i>	Jaco Truter
01785	<i>Streptocarpus</i> 'Khorixas'	<i>S. polyanthus</i> ssp. <i>polyanthus</i> × <i>S. meyeri</i>	Jaco Truter

***Streptocarpus* 'Franken Izzy'**, 2001, IR01769, Frank Davies/Ken Jones, UK. (*S.* 'Susan' × self). Fertile but reproducible only vegetatively. Rosette. Leaves medium green, 11" long × 4" wide, elliptic with undulate margin, acute tip and cuneate base. 7 flowers per peduncle. Corolla salverform, opening very flat, 2-1/2" long × 2-1/2" wide, mid blue, deeper on lower three lobes, touch of yellow in throat. Available from the grower and British *Streptocarpus* Society.

***Streptocarpus* 'Franken Jane Elizabeth'**, 2001, IR01770, Frank Davies/Ken Jones, UK. (*S.* unnamed hybrid 2F × self). Cross made and planted 1996, first flowered 1997. Fertile but reproducible only vegetatively. Rosette. Leaves dark green, 10-1/2" long × 5" wide, ovate with serrate margin, acute tip and cuneate base. 6 flowers per peduncle. Corolla salverform, 3" long × 2" wide, mauve with bright yellow throat and slightly fringed edges. Available from the grower and British *Streptocarpus* Society.

***Streptocarpus* 'Franken Kisie'**, 2001, IR01771, Frank Davies/Ken Jones, UK. (*S.* 'Susan' × self). Fertile but reproducible only vegetatively. Rosette. Leaves dark green, 13" long × 3-1/2" wide, elliptic with undulate margin, acute tip and cuneate base. 8 flowers per peduncle. Corolla salverform, 3" long × 2-1/2" wide, pale lavender heavily marked with darker blotches in white throat. Available from the grower and British *Streptocarpus* Society.

***Streptocarpus* 'Franken Laura Ellis'**, 2001, IR01772, Frank Davies/Ken Jones, UK. (*S.* unnamed hybrid F3 × self). Cross made 1996, planted 1997 and first flowered 1997. Fertile but reproducible only vegeta-

tively. Rosette. Leaves medium green, 10" long × 4" wide, elliptic with undulate margin, acute tip and cuneate base. 6 flowers per peduncle. Corolla salverform, 2-1/2" long × 2-1/2" wide, white heavily overlaid with deep purple netting. Available from the grower and British Streptocarpus Society.

***Streptocarpus* 'Franken Nita'**, 2001, IR01773, Frank Davies/Ken Jones, UK. (*S.* 'Magpie' × self). Cross made and planted 1997, first flowered 1998. Fertile but reproducible only vegetatively. Rosette with leaves tending to be upright. Leaves dark green, 11" long × 5" wide, oblong with undulate margin, acute tip and cuneate base. 12 flowers per peduncle. Corolla salverform, 3" long × 2-1/2" wide, blue-mauve overlay on white background, paler on upper two lobes and netted. Available from the grower and British Streptocarpus Society.

***Streptocarpus* 'Franken Purple Haze'**, 2001, IR01774, Frank Davies/Ken Jones, UK. (*S.* 'Magpie' × self). Cross made and planted 1998, first flowered 1999. Rosette with semi-upright leaves. Leaves dark green, 11" long × 4-1/2" wide, elliptic with undulate margin, rounded tip and cuneate base. 6 flowers per peduncle. Corolla salverform, 3" long × 2-1/2" wide, white suffused and netted with pale purple. Available from the grower and British Streptocarpus Society.

***Streptocarpus* 'Franken Sheila Emily'**, 2001, IR01775, Frank Davies/Ken Jones, UK. (*S.* 'Magpie' × self). Cross made and planted 1997, first flowered 1998. Fertile but reproducible only vegetatively. Rosette with semi-upright leaves. Leaves dark green, 12" long × 5" wide, elliptic with undulate margin, rounded tip and cuneate base. 5 flowers per peduncle. Corolla salverform, 1-1/2" long × 2" wide, white deeply netted with pale mauve. Available from the grower and British Streptocarpus Society.

***Streptocarpus* 'Franken Stacey'**, 2001, IR01776, Frank Davies/Ken Jones, UK. (*S.* unnamed hybrid F3 × self). Cross made and planted 1997, first flowered 1998. Fertile but reproducible only vegetatively. Medium sized rosette. Leaves dark green, 10" long × 3-1/2" wide, elliptic with undulate margin, rounded tip and cuneate base. 7 flowers per peduncle. Corolla salverform, 2-1/2" long × 2" wide, white with heavy netting of deep mauve, yellow throat. Available from the grower and British Streptocarpus Society.



Streptocarpus 'Franken Izzy'



Streptocarpus 'Franken Sheila Emily'



Streptocarpus 'Franken Stacey'



Streptocarpus 'Franken Terracotta'

***Streptocarpus* 'Franken Sygnet'**, 2001, IR01777, Frank Davies/Ken Jones, UK. (*S.* unnamed hybrid F3 × self). Cross made and planted 1997, first flowered 1998. Fertile but reproducible only vegetatively. Rosette. Leaves medium green, 9" long × 4" wide, elliptic with entire margin, rounded tip and cuneate base. 4 flowers per peduncle. Corolla salverform, 3" long × 2" wide, white with wavy edges and fairly large yellow throat. Available from the grower and British *Streptocarpus* Society.

***Streptocarpus* 'Franken Terracotta'**, 2001, IR01778, Frank Davies/Ken Jones, UK. (*S.* 'Gillian' × *S.* unnamed hybrid K21). Cross made and planted 1997, first flowered 1998. Fertile but reproducible only vegetatively. Rosette. Leaves medium green, 13" long × 5-1/2" wide, linear with undulate margin, rounded tip and cuneate base. 9 flowers per peduncle. Corolla salverform, 3" long × 2" wide, terracotta pink/red with darker stripes in throat, clear color on face. Available from the grower and British *Streptocarpus* Society.

***Streptocarpus* 'Franken Blue Ice'**, 2001, IR01779, Frank Davies/Ken Jones, UK. (*S.* 'Magpie' × self). Cross made and planted 1997, first flowered 1998. Fertile but reproducible only vegetatively. Rosette with very upright leaves. Leaves bullate, medium green, 14" long × 6" wide, elliptic with crenate margin, acute tip and oblique base. 7 flowers per peduncle. Corolla salverform, 3" long × 2-1/2" wide, open white turning to light blue over a period of days, ending up as a suffused blue. Long-lasting flowers. Available from the grower and British *Streptocarpus* Society.

***Streptocarpus* 'Franken Strawberry Fondant'**, 2001, IR01780, Frank Davies/Ken Jones, UK. (*S.* unnamed hybrid JP10 × self). Cross made and planted 1996, first flowered 1998. Fertile but reproducible only vegetatively. Rosette. Leaves medium green, 12-1/2" long × 6" wide, elliptic with crenate margin, acute tip and cuneate base. 8 flowers per peduncle. Corolla salverform, 3" long × 2-1/2" wide, strawberry pink with dark centre. Available from the grower and British *Streptocarpus* Society.

***Streptocarpus* 'Rose Gower'**, 2001, IR01781, Sue Long, UK. (*S.* 'Elsi' × unknown). Cross made and planted 1998, first flowered 1999. Fertile but reproducible only vegetatively. Rosette. Medium green leaves, 12" long × 4" wide, linear with crenate margin, acute tip and cuneate base. 9 flowers per

peduncle. Corolla salverform, 2-1/2" long × 2" wide, soft velvety pink. Available from the grower and British Streptocarpus Society.

***Streptocarpus* 'Edward Steichen'**, 2001, IR01782, George Gessert, OR. (*S.* 'Blue Beard' × *S.* 960-927). Cross made 5/28/98, planted 8/19/98 and first flowered 5/2/00. Fertile but reproducible only vegetatively. Rosette. Leaves medium green, hairy, bullate, usually less than 8" long × 2-2.5" wide, linear with slightly serrate edges, acute tip and cuneate base. Calyx green, split, 0.2" long. Pedicel 5-5.25" with one flower per peduncle. Corolla salverform, 2.5" in diameter, white with a dramatic deep purple-blue blaze.

***Streptocarpus* 'Ariamsvlei'**, 2001, IR01783, Jaco Truter, South Africa. (*S.* pink *johannis* type hybrid × *S.* *denticulatus*). Cross made 1998, planted and first flowered 1999. Fertile but reproducible only vegetatively. Plurifoliate rosette. Leaves smooth, light green, 80 mm long × 50 mm wide, ovate with undulate margin, acute tip and cuneate base. Calyx green, split. Corolla salverform, 40 mm long × 35 mm wide, deep indigo purple with white throat and lines at bases of all lobes.

***Streptocarpus* 'Epupa Falls'**, 2001, IR01784, Jaco Truter, SA. (*S.* *caulescens* × *S.* *pallidiflorus*). Cross made 1999, planted 2000 and first bloomed 2001. Fertile but reproducible only vegetatively. Caulescent, 200 mm tall. Leaves hairy, light green, 40 mm long × 30 mm wide with 10 mm petiole, elliptic with entire edges, acuminate tip and cuneate base. Calyx green. Corolla salverform, 15 mm long × 10 mm wide, rose pink with deeper veining.

***Streptocarpus* 'Khorixas'**, 2001, IR01785, Jaco Truter, SA. (*S.* *polyanthus* ssp. *polyanthus* × *S.* *meyeri*). Cross made 1997, planted 1998 and first flowered 1999. Fertile but reproducible only vegetatively. Rosette. Leaves bullate, medium green, 100 mm long × 70 mm wide, ovate with entire edges, acute tip and cuneate base. Calyx green, split. Corolla salverform, 20 mm long × 30 mm wide, chalky blue with parallel rows of purple lines in throat.



Streptocarpus 'Edward Steichen'



Streptocarpus 'Epupa Falls'

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Botanical Review Committee — Report #25

Compiled by John Boggan <bogganj@yahoo.com>
Dept. of Botany, NHB 166, Smithsonian Institution
Washington, DC 20670

Chautems, A., G.S. Baracho & J.A. Siqueira Filho. 2000. A new species of *Sinningia* (Gesneriaceae) from northeastern Brazil. *Brittonia* 52(1): 49-53. Illustrated.

The new species *Sinningia nordestina* is described and illustrated. The species is endemic to the states of Ceará and Bahia in northeastern Brazil and is distinguished from other members of the genus by its remarkable resemblance to *Smithiantha*. The tubers are vestigial and the plant may behave as an annual. Despite its unusual characteristics, molecular analysis confirms its identity as a *Sinningia* although its precise relationships within the genus are unclear.

Freiberg, M. 2000. Three new species of *Gasteranthus* (Gesneriaceae) from Ecuador. *Brittonia* 52(2): 203-209. Illustrated.

Three new species are described from Ecuador, all from the Bosque Protector Otonga (Otonga Forest Preserve) in Prov. Cotopaxi, Ecuador. *Gasteranthus aurantiacus* has also been collected in the Prov. Pichincha; the name refers to the orange corollas. *Gasteranthus atrolimbus* has also been collected in the Prov. Pichincha and Prov. Imbabura; the name means "black limb" and refers to the dark red, almost black limb. *Gasteranthus acuticarinatus* is known only from the type collection. The name means "pointed keel" and refers to the flower being more sharply keeled than in *G. carinatus*. The descriptions of these new species appeared too late to be included in the revision of the genus by Kvist & Skog (see below).

Pyle, C.M. 2000. Conrad Gessner on the spelling of his name. *Archives of Natural History* 27(2): 175-186. Illustrated.

Although not dealing specifically with Gesneriaceae, this article is of interest as it discusses the man for whom the family was named. The correct spelling of Conrad Gessner's name has been confused in the literature due to its spelling with a single "s" in Latin (i.e., "Gesnerus"). Adding to the confusion, the spelling of his name varied, both over his lifetime and with the language in which he was publishing. The article concludes that the correct vernacular spelling of the name in its original German form is "Gessner". The definitive spelling of his first name is less clear; the spelling "Conrad" is used throughout the article.

Skog, L.E. & L.P. Kvist. 2000. Revision of *Gasteranthus* (Gesneriaceae). *Systematic Botany Monographs*, vol. 59 (118 pp.). Illustrated.

The genus *Gasteranthus* is revised, with a key to the species and detailed descriptions of each. Several species are reduced to synonyms of previously described species. A total of 35 species are recognized, of which eleven are newly described. Most of the species are illustrated, with maps showing the distribution of each species. The range of the genus extends from southern Mexico to western South America south to Bolivia. The center of diversity is in western Ecuador, where 25 species occur. Members of the genus are understory herbs of shady, permanently wet places, particularly cloud forests. Because of their limited distribution in cloud forests, several species are vulnerable to extinction. At least 5 species may already be extinct in Ecuador, and an additional 7 throughout the range of the genus.



FIG. 30. *Gasteranthus leopardus*. A. Habit. B. Inset: section of abaxial leaf surface. C. Corolla. D. Corolla opened to show stamens. E. Calyx. F. Calyx, pistil, and disk. G. Fruit. H. Seeds. (Based on: A, B, *Harling & Andersson 12334*; C-F, *Clark & Dunn 2463*; G, H, *Hoover 2240*.)

Illustration of *Gasteranthus leopardus*
from the *Revision of Gasteranthus*

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Nashville: Convention 1999 (75 slides)	<i>Sinningias</i> (80 slides)
Achimenes (59 slides)	<i>Streptocarpus</i> Species (75 slides)
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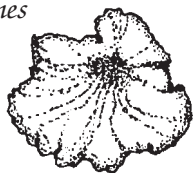
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Coming Events

August 24–25 — Missouri — Gateway West Gesneriad Society judged show and sale at the Missouri Botanical Garden, 4344 Shaw Blvd, St. Louis. Saturday & Sunday 9:00 am to 5:00 pm. Entries open to the public. Contact Betty Briscoe (314-645-4960) or Gary Dunlap (636-789-3604) <patpets@jcn1.com>.

September 14–15 — Colorado — The Gloxinia Gesneriad Growers annual show and sale "Gesneriads Old World and New World" in Gates Hall at the Denver Botanic Gardens, 1005 York St., Denver. Saturday 1:00 pm to 4:00 pm; Sunday 10:00 am to 4:30 pm. Admission fee to the gardens. Contact Ann Watterson (303-467-2135) <cah2oson@msn.com>.

September 21 — Massachusetts — Annual Plant Societies judged show and sale at the University of Massachusetts Eastern Extension Center, 240 Beaver St., Waltham. Saturday, 12:00 noon to 3:30 pm. Participating will be the New England Chapter AGGS, and the Buxton Branch, American Begonia Society. Free admission. Wheelchair accessible. Contact Bob Clark (978-738-6983) <thecopse@yahoo.com>.

September 28–29 — Missouri — Heart of America Gesneriad Society annual judged flower show and plant sale at Loose Park Garden Center, Building 5200, Pennsylvania Ave., Kansas City (near corner of 52nd and Womall Rd.). Saturday &

Sunday 10:00 am to 3:00 pm. Contact Susan Grose (913-381-7889) <sagro@aol.com>. (Garden Center 816-784-5300).

October 6 — New Jersey — Frelinghuysen Arboretum Chapter annual show and plant sale at the Frelinghuysen Arboretum in Morristown. Sunday 10:00 am to 4:00 pm. Free admission and parking; handicapped accessible. Contact Jeanne Katzenstein (973-627-2755) <jkatzenste@aol.com>.

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Correction to THE GLOXINIAN, Vol. 52, No. 2, page 7

Nominating Committee Report –

term ending in 2004 should be corrected to term ending in **2005**

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