

A taxonomic revision of Malagasy endemic *Homalium* section *Nisa* (Salicaceae)

Presented by Anna Wassel

REU Mentor: Dr. Wendy Applequist



Salicaceae



Homalium



Abatia spicata



Calantica grandiflora

© 1998 G. E. Schatz



H. involucreatum



H. brevipedunculatum



Salix nigra



H. albiflorum

Homalium

Sections

- *Antinisa*
- *Blackwellia*
- *Nisa*
- *Odontolobus*
- *Rhodonisa*
- *Symphostylium*
- *Eumyriantheia*
- *Homalium*
- *Pierrea*
- *Polyanthera*

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In Madagascar

- *Antinisa*
- *Blackwellia*
- *Nisa*
- *Odontolobus*
- *Rhodonisa*
- X
- *Eumyriantheia*
- X
- X
- X

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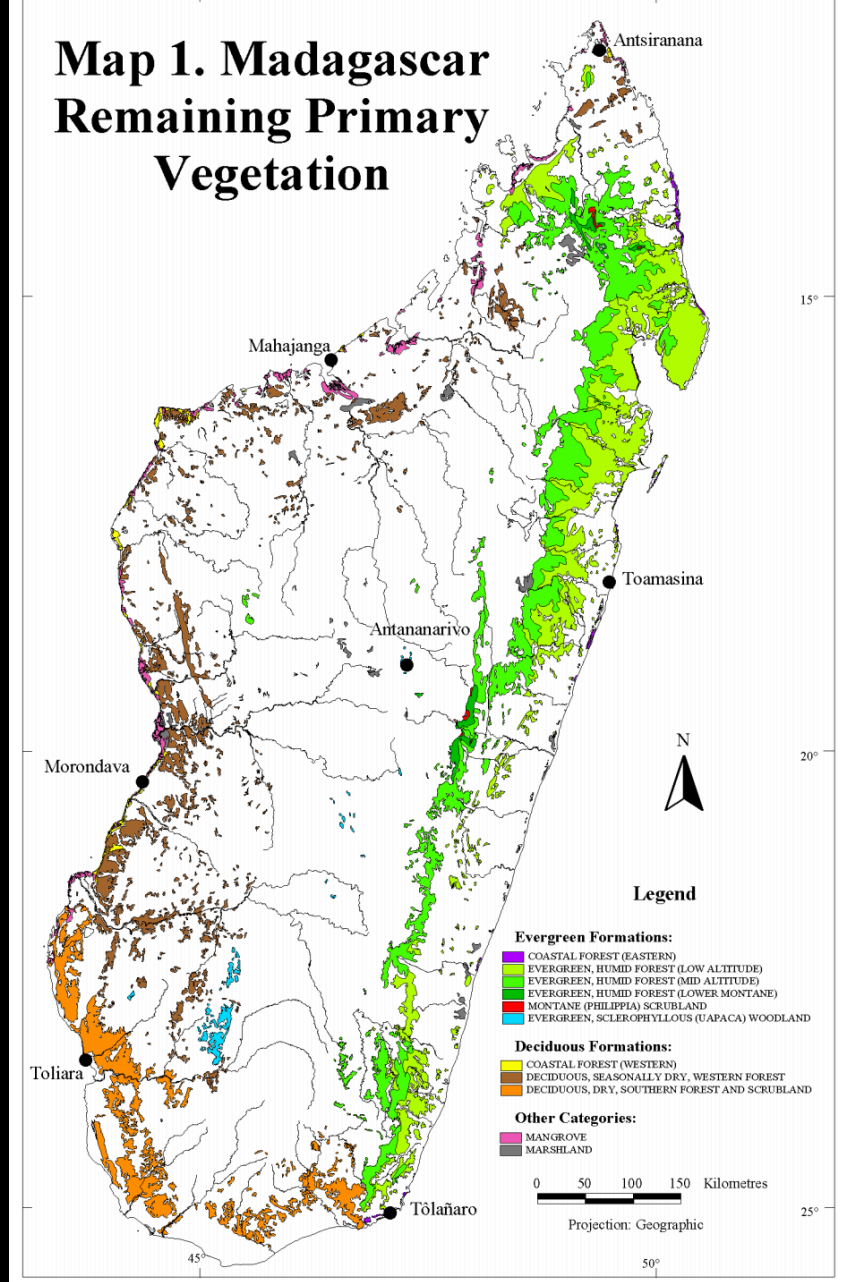


Endemic to Madagascar

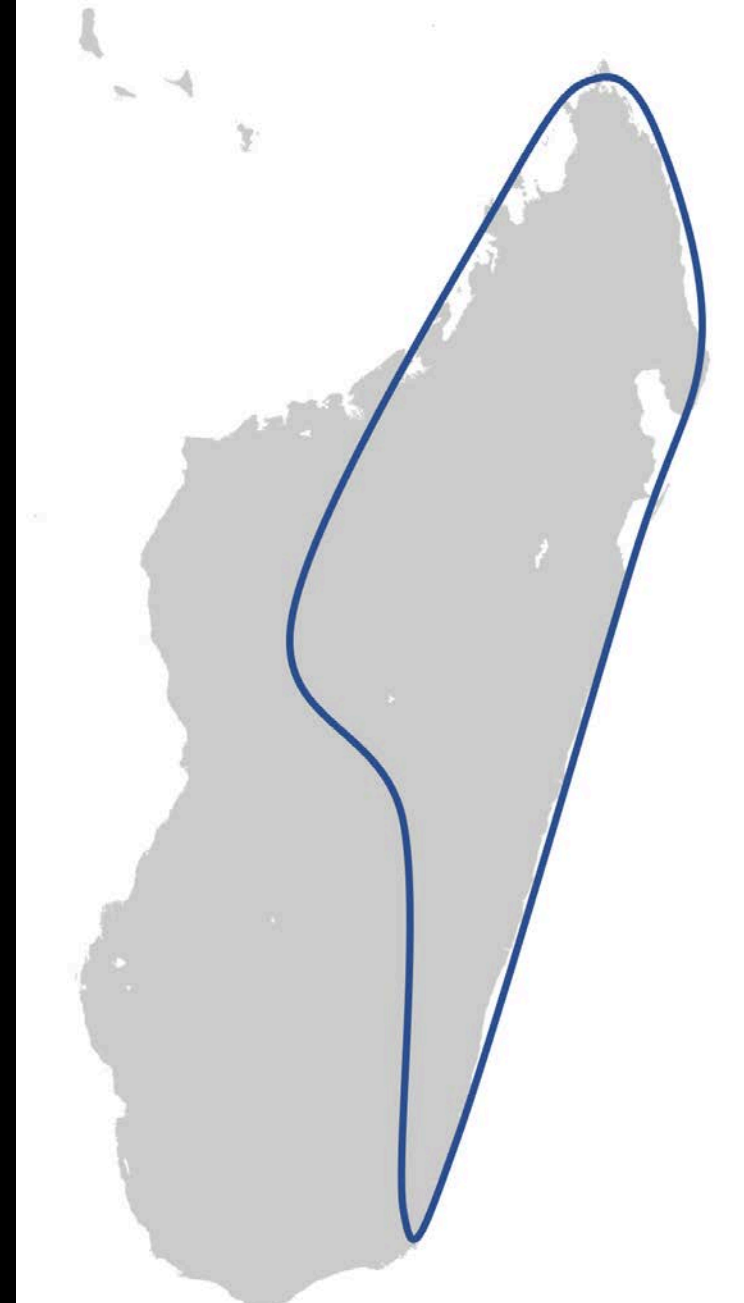
- *Antinisa*
- X
- *Nisa*
- *Odontolobus*
- *Rhodonisa*
- X
- *Eumyriantheia*
- X
- X
- X

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Map 1. Madagascar Remaining Primary Vegetation



Du Poy & Moat (1998)



Sect. *Nisa*, *H. nudiflorum* Complex Distribution

Section *Nisa*



Solitary stamens

Accrescent sepals

Persistent bracts
and bracteoles



H. nudiflorum

H. louvelianum

H. stelliferum

H. intercedens

Important Character: Leaf size, margin



MISSOURI
BOTANICAL GARDEN
HERBARIUM



No. 0465504



*Homalium
nudiflorum*



(G. McPherson & H. van der Werff 16535)
FLACOURTIACEAE
Homalium nudiflorum var. *nudiflorum*
Det. R. Gereau (MO), 1995
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)
MADAGASCAR

FLACOURTIACEAE
Homalium

Toamasina

Near Andasibe; forest of Mantadia,
beyond graphite mine.
18°55'S 48°25'E 950-1150 m

Tree 8 m; flowers white.

07 November 1994

G. McPherson & H. van der Werff 16535
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)



Important Character: Petal/ Sepal Indument



H. nudiflorum



H. confertum



MISSOURI
BOTANICAL GARDEN
HERBARIUM



Nº 6571253



SALICACEAE MADAGASCAR [199]
Homalium nudiflorum (DC.) Baill.
 det. D. Ravelonarivo 2011
 Toamasina: Atsinanana Region
 District Brickaville, Commune
 Maroseranana, Fokontany Ambodilendasy,
 Ankerana.
 18°25'49"S 048°47'14"E 890 m
 Tree 13 m tall; DBH 14 cm, leaves green,
 flowers parts yellowish greenish. Photo,
 DNA.
 24 mars 2011
 P. Antilahimena 7778
 MISSOURI BOTANICAL GARDEN HERBARIUM (MO)



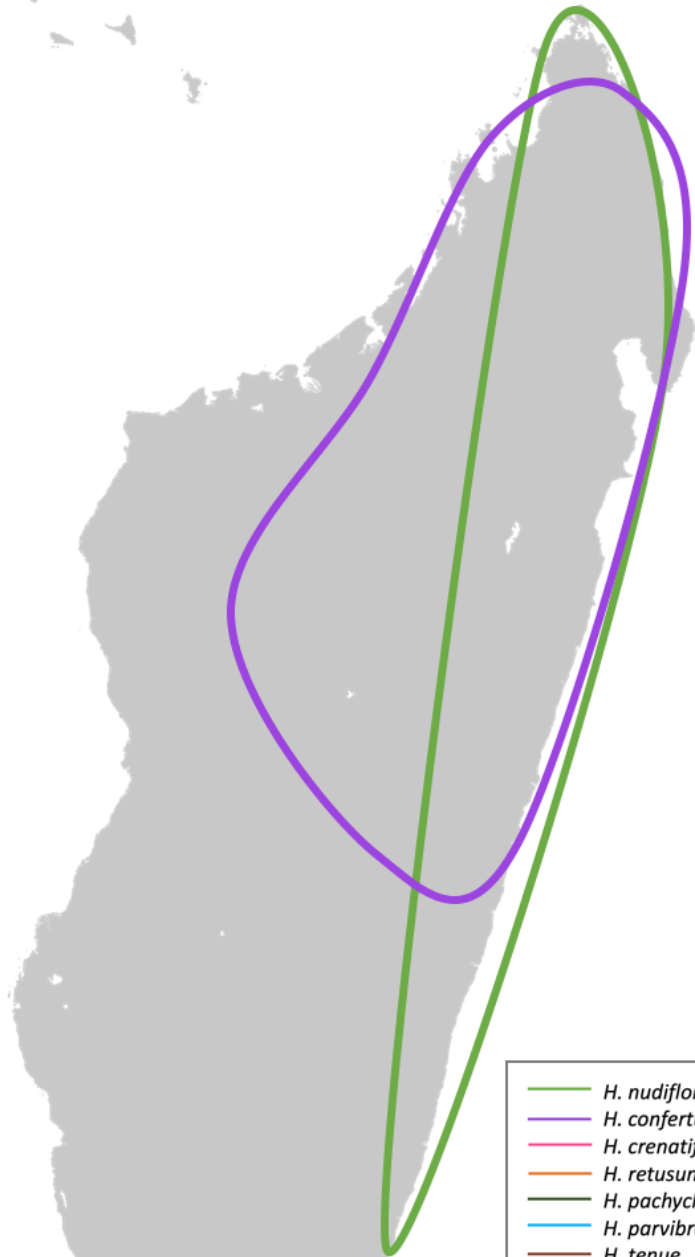
Homalium confertum



Photo courtesy of Tropicos.org, MBG

Character of Note: Leaf Glands





- H. nudiflorum*
- H. confertum*
- H. crenatifolium*
- H. retusum*
- H. pachycladum*
- H. parvibracteale*
- H. tenue*
- H. ciliolatum*

H. nudiflorum

Elevation range: 12-1180 m

H. confertum

Elevation range: 700-1860 m

Together: over 40 specimens

MISSOURI
BOTANICAL GARDEN
HERBARIUM



N° 6121204



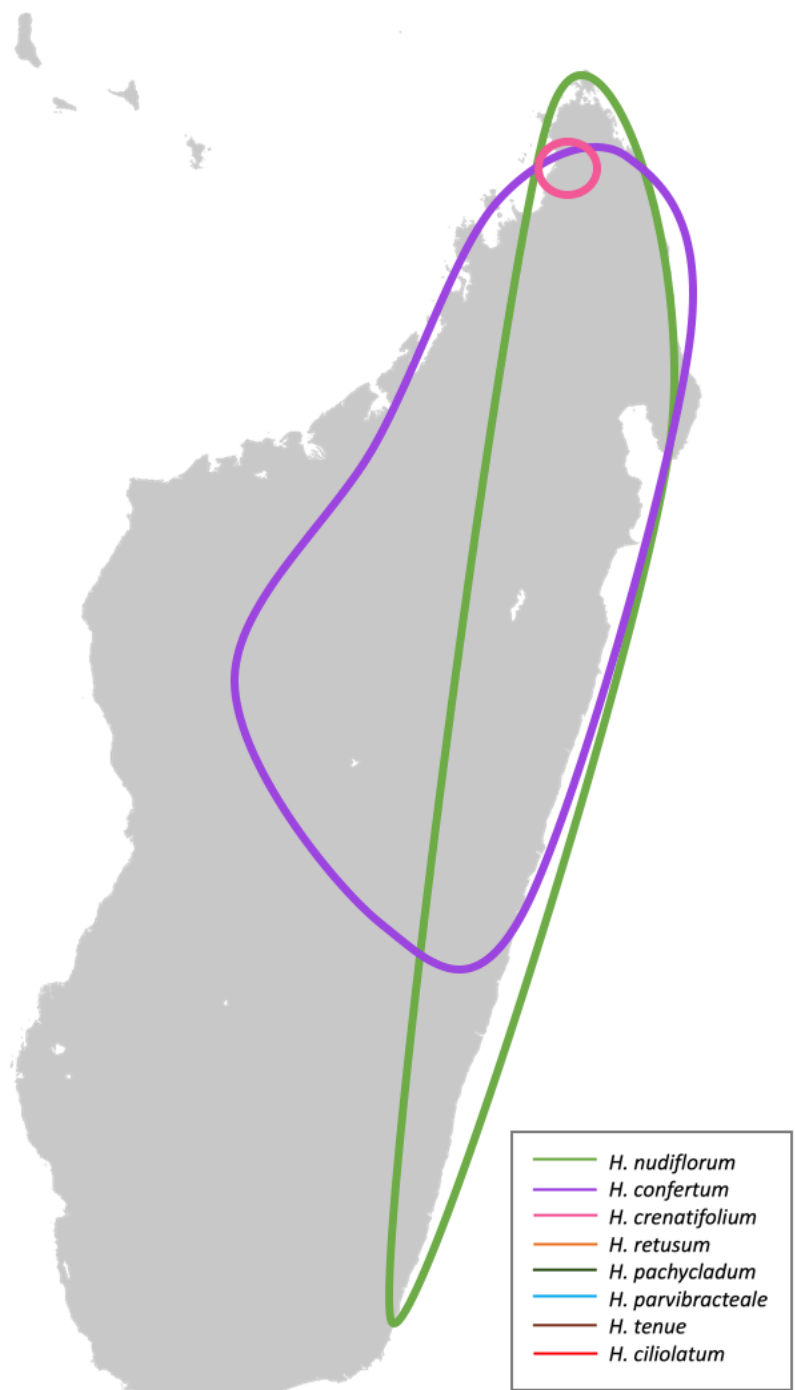
Homalium *crenatifolium*



MADAGASCAR
FLACOURTIACEAE
Homalium nudiflorum (DC.) Baill.
det. R. Randrianaivo, 2005
Antsiranana
Ambilobe, Marivorahona. Forêt
sèche dégradée d'Andavakoera,
à 3 km à l'Est de Marivorahona.
Récolté avec R. Rakotondrajaona,
S. Randrianaspio, V. Benjara, M.
Bezara & J.B. Leopold.
13°05'56"S 49°08'33"E 54 m
Arbuste 3 m de haut, DBH 5 cm, fleur
Jaune-vert. Abondant. ICBG #: Root:
M83450, Stem: M83451, Leaf: M83452.
02 sept 2005

Richard Randrianaivo et al. 1221
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)
Specimen collected as part of Madagascar
International Cooperative Biodiversity Group
(ICBG) program. Please contact ICBG Project
Coordinator at MO if specimen is annotated.





H. crenatifolium

Elevation range: low, 54-100 m

Described from 2 specimens

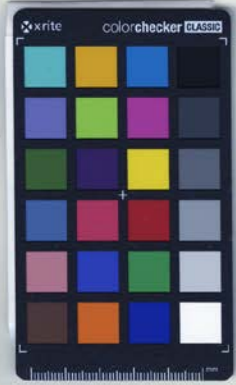
Important Character: Bract and Bracteole Size



H. parvibracteale
1-3 mm



H. ciliolatum
3.5-5 mm



MISSOURI
BOTANICAL GARDEN
HERBARIUM
N° 6396267



MADAGASCAR [199]
SALICACEAE
Homalium nudiflorum var. *ciliolatum*
Sleumer
det. Razakamalala & Rakotovoao, 2007
Toliara: Anosy Region
Commune Iabokoho, Fokontany Antsontso,
Ivohibe forest. 41 m
24°34'10"S 047°12'37"E
Tree 14m tall, dbh 11cm, leaves green
above, pale green below. Fruits greenish
yellow. Vernacular name: Kamirisa.

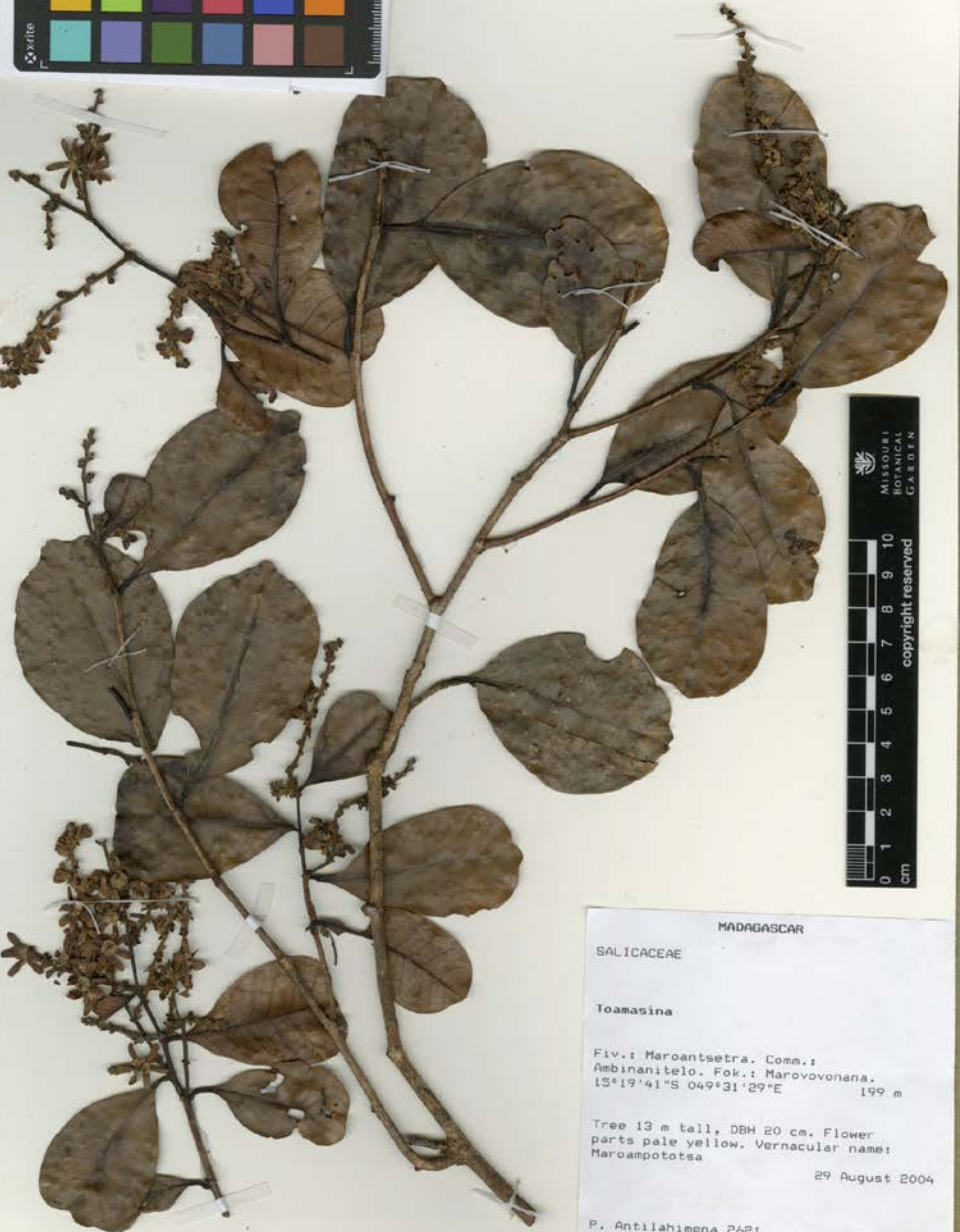
24 Mai 2006
P. Antilahimena & et al. 4863
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)



*Homalium
ciliolatum*



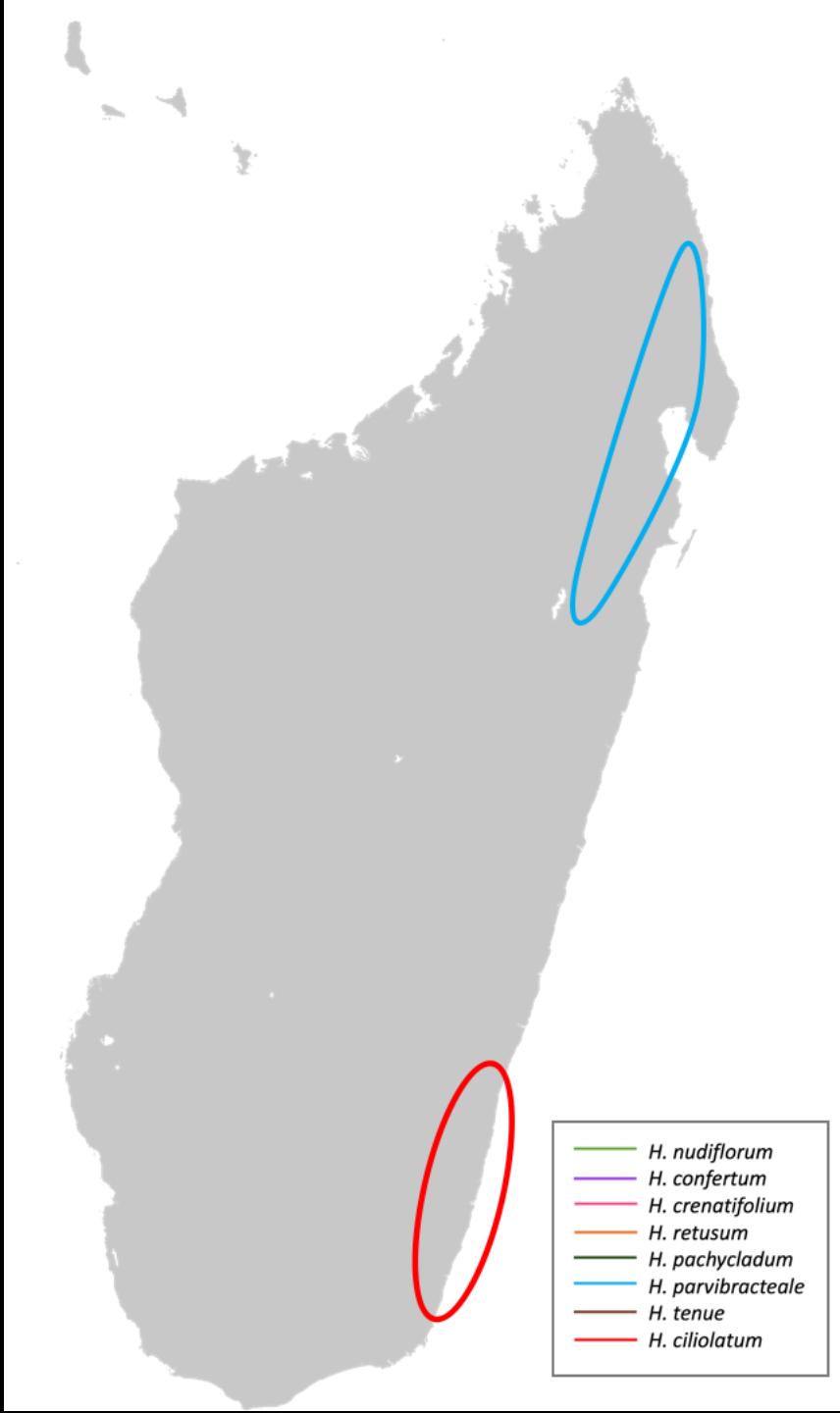
MISSOURI
BOTANICAL GARDEN
HERBARIUM
No 6755052



MADAGASCAR
SALICACEAE
Toamasina
Flv.: Maroantsetra, Comm.:
Ambinanitelo, Fok.: Marovovonana,
15°19'41"S 049°31'29"E 199 m
Tree 13 m tall, DBH 20 cm. Flower
parts pale yellow. Vernacular name:
Maroampototsa
29 August 2004
P. Antilahimena 2621
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)



*Homalium
parvibracteale*



H. parvibracteale

Elevation range: mid-high, 199-473 m
(one specimen labeled 740-1200 m)

H. ciliolatum

Elevation range: low, 41-73m

Important Character: Twig/ Rachis Thickness



H. tenue



H. pachycladum



MISSOURI
BOTANICAL GARDEN
HERBARIUM



Nº 6396271



SALICACEAE MADAGASCAR [199]
Homalium nudiflorum (DC.) Baill. var.
nudiflorum
det. Razakamalala & Rakotovoao, 2007
Toliara: Anosy Region

Commune Iabokoho, Fokontany Antsontso,
Ivohibe forest. 41 m
24°34'10"S 047°12'37"E

Tree 7m tall, dbh 08cm, calyx yellowish
green, fruits pale green immature. On
slope.

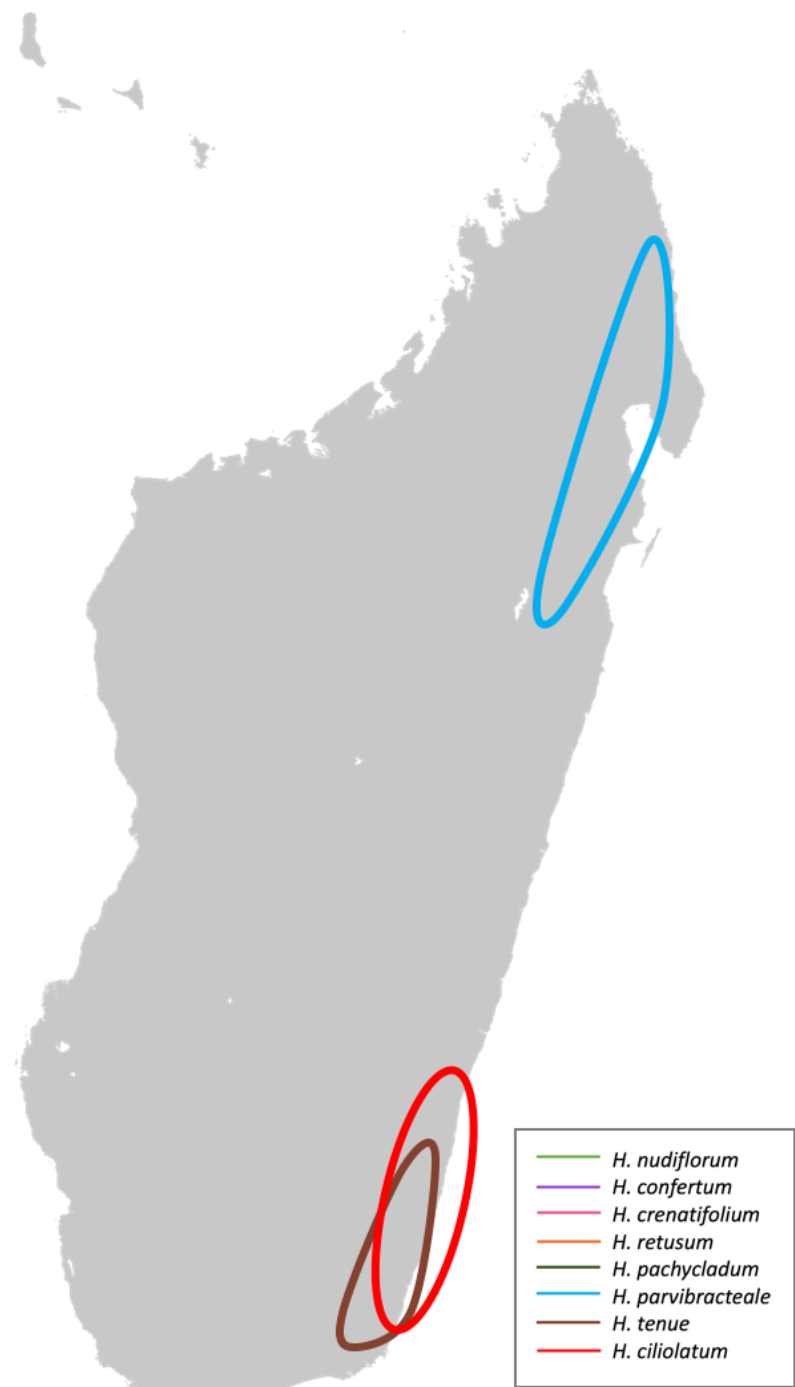
24 Mai 2006
P. Antilahimena & et al. 4858
MISSOURI BOTANICAL GARDEN HERBARIUM (NO)



*Homalium
tenue*

Photo courtesy of Tropicos.org, MBG





H. tenue

Elevation range: low, 41-271 m

Described from 7 specimens



MISSOURI
BOTANICAL GARDEN
HERBARIUM

№ 6144913



MADAGASCAR

FLACOURTIACEAE
Homalium

Toamasina

Fivondronana; Maroantsetra. Commune:
Antsirabesahatany. Fokontany: Anjahely.
15°23'06"S 049°26'58"E 809 m

Shrub 4 m tall, calyx green, corolla
green-yellow.

20 December 2002

P. Antilahimena, Pascal & Sasidy 1540
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)



*Homalium
pachycladum*



MISSOURI
BOTANICAL GARDEN
HERBARIUM



N° 6430509



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SALICACEAE MADAGASCAR [199]
Homalium nudiflorum (DC.) Baill.

Toamasina

Comm: Foulpointe. Forêt d'Analava à 7 km à l'ouest de la commune. Substrat: sublaurite, sol: laterite. Récolté avec: R. Ludovic, H. Rajaonera, J. Raharimanjionona, S. Andrianbolonera. Guide: R. Lahady & Jaquar.

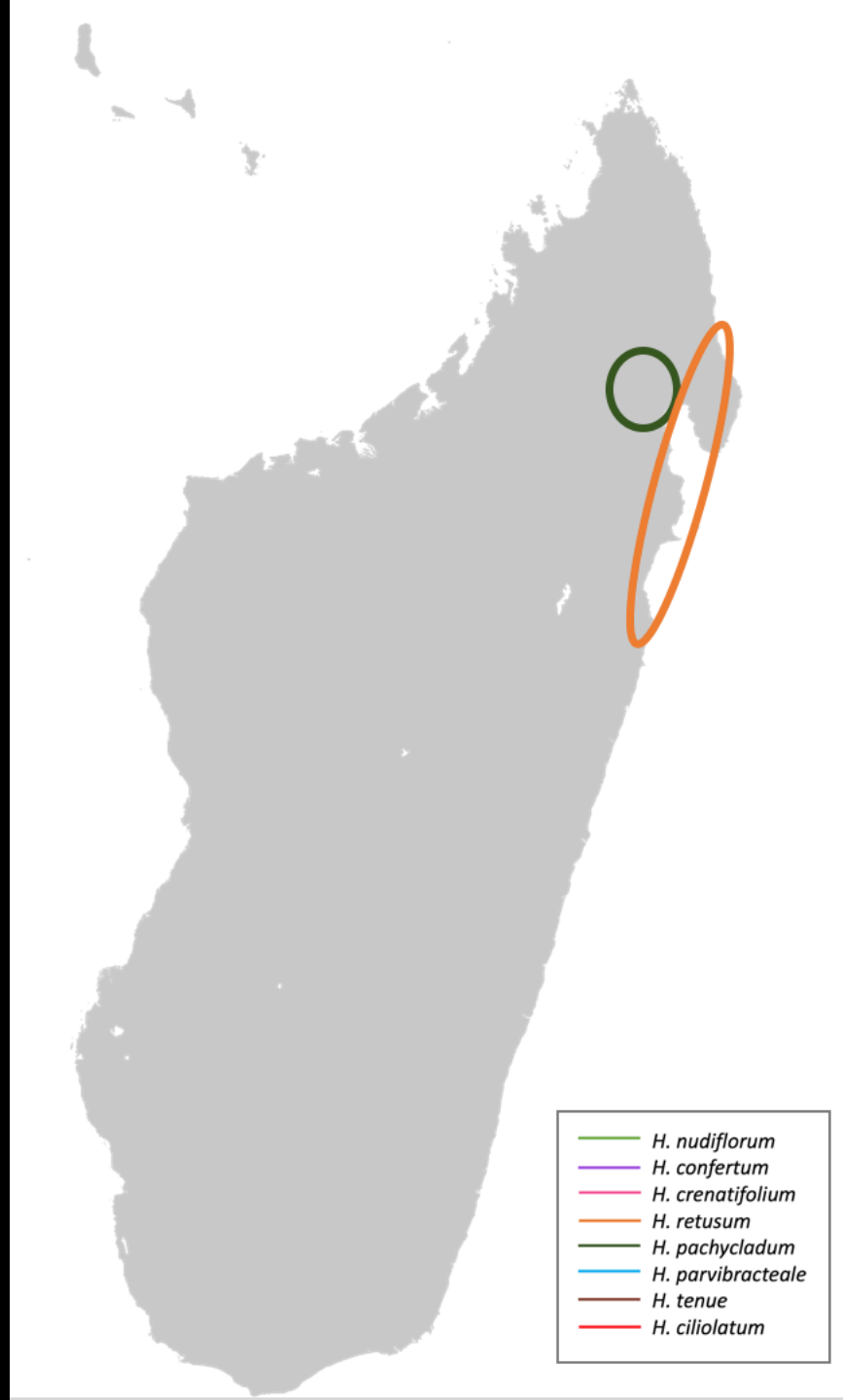
17°42'00"S 049°26'00"E 35 m

Arbre 7 m. Fleur: jaune avec une disque nectarifère (de couleur jaune).

19 Mai 2004
Clairement Randrianaruelo & et al. ?
MISSOURI BOTANICAL GARDEN HERBARIUM (MO)



*Homalium
retusum*



H. pachycladum

Elevation range: mid, 664-809 m

Described from 2 specimens

H. retusum

Elevation range: low, 30's m

Described from 3 specimens

Review I- Previously Described



H. nudiflorum

H. confertum

H. ciliolatum

H. retusum

Review II- Newly Described

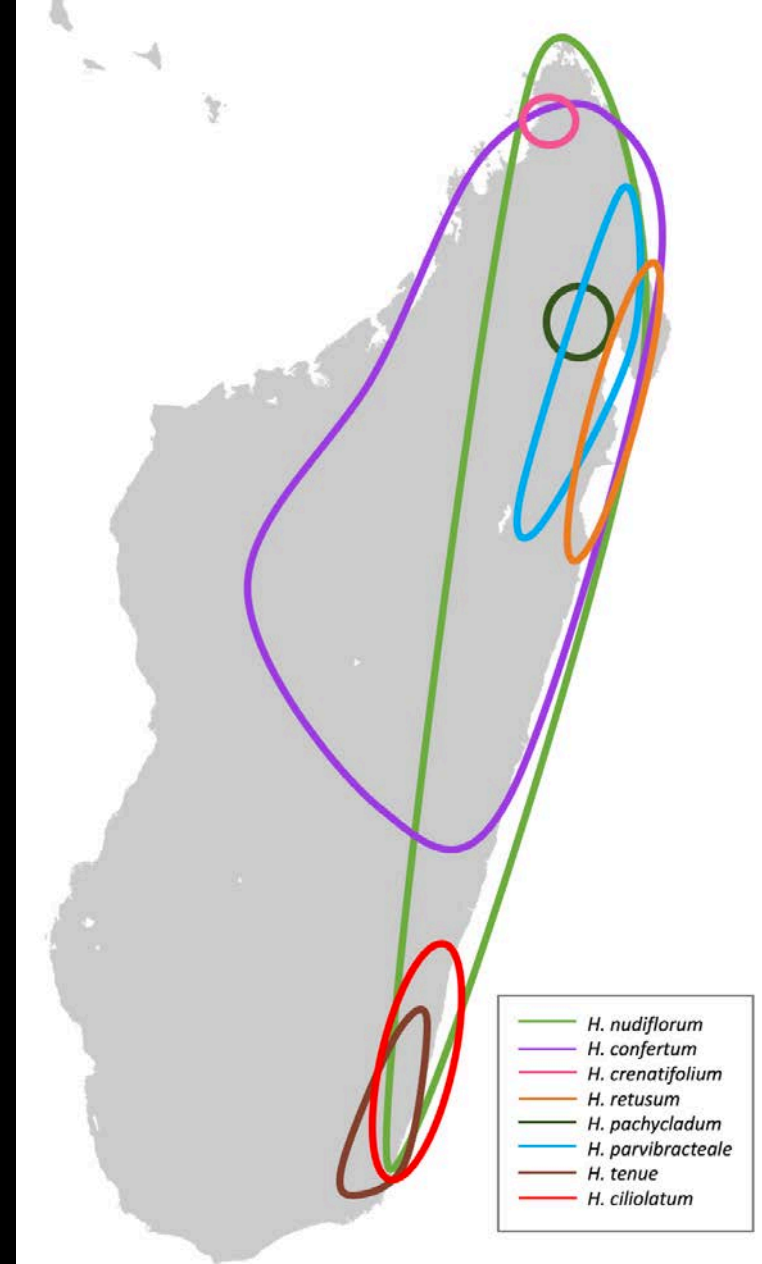
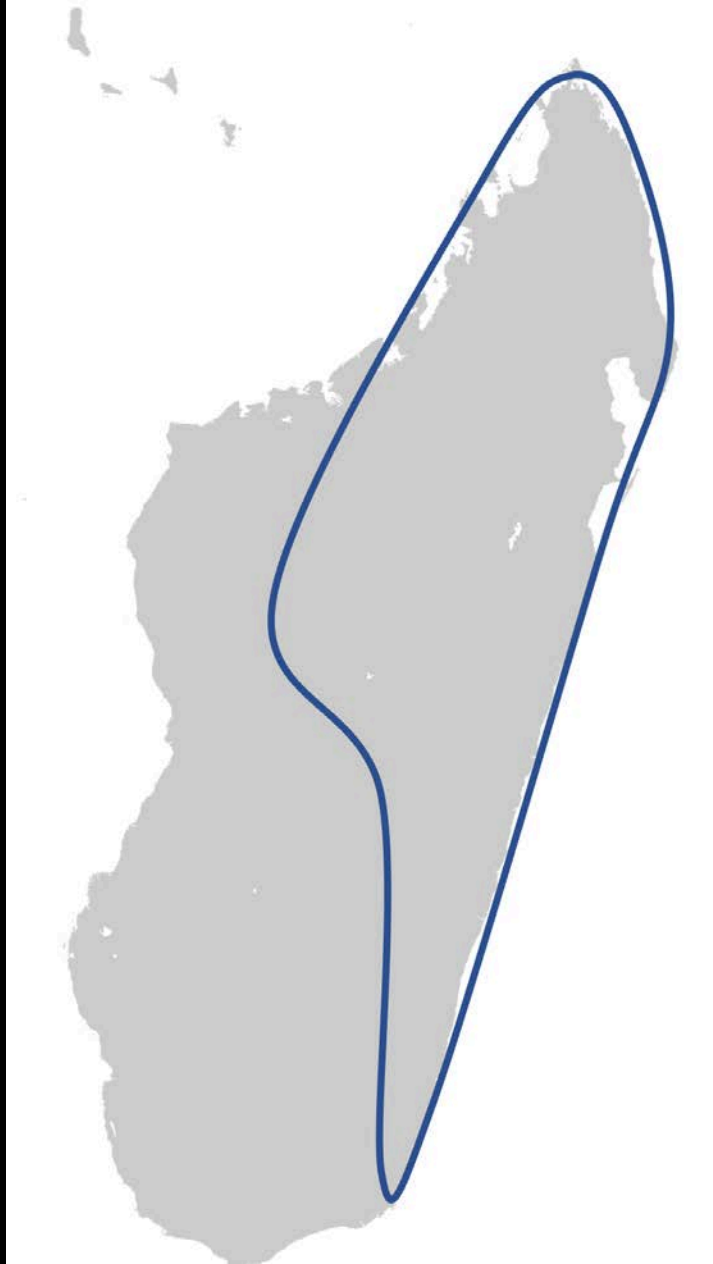


H. pachycladum

H. tenue

H. parvibracteale

H. crenatifolium



Sect. *Nisa*, *H. nudiflorum* Complex Distribution

Revision Species Distribution Map

Resources and Acknowledgements

Applequist, W.L. (2016b). A Reconsideration of the Infrageneric Classification of Homalium Jacq. (Salicaceae). *Candollea* 71: 231–256.

Chase, M.W., Zmarzty, S., Lledó, M.D., Wurdack, K.J., Swensen, S.M., and Fay, M.F. (2002). When in Doubt, Put It in Flacourtiaceae: A Molecular Phylogenetic Analysis Based on Plastid *rbcl* DNA Sequences. *Kew Bulletin* 57: 141–181.

Sleumer, H. (1973). Révision du genre Homalium Jacq. (Flacourtiacées) en Afrique (y compris Madagascar et les Mascareignes). *Bull. Jard. Bot. Natl.* 43: 239-328.

Photos:

Blank gray Madagascar map template: Light 3000. Wikimedia commons. https://commons.wikimedia.org/wiki/File:Map_of_Madagascar.svg

Live specimen photos: Tropicos.org, Missouri Botanical Garden, various photographers

Remaining Vegetation map:

Du Puy, D.J and Moat, J.F. (1998, in press). Vegetation mapping and classification in madagascar (using GIS): implications and recommendations for the conservation of biodiversity. In: C.R. Huxley, J.M. Lock and D.F. Cutler (editors). *Chorology, taxonomy and Ecology of the African and Madagascan floras*. Pp Xxx-xxx . Royal Botanic Gardens, Kew.

Thank you to:

Drs. Wendy Applequist, Monica Carlsen-Krause, Peter Hoch
& the following institutions:

