



# AIPC

## SPECIAL ISSUE

### 4

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**Special Issue 4** - english version of **AIPC** Magazine n. 25 - 2012

Edited by AIPC - Associazione Italiana Piante Carnivore

[www.aipcnet.it](http://www.aipcnet.it)

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AIPCMagazine is edited by AIPC  
(Italian Carnivorous Plant Association)



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The opinions expressed by the authors are  
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Subscription rates for year 2012: all  
countries via air mail € 22,00.

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# Editorial

**D**ear Readers,  
over the past couple of years, we've been able to introduce you to all of the carnivorous plants that were published during the previous year by providing photos and brief descriptions for each species in the "News" section of our journal.

The year 2011, however, was so rich in news that we were not able to insert our usual standard-sized article. So, we decided to prepare an entire journal completely devoted to the news of 2011. We have also asked the authors who published the descriptions of the new plants to prepare articles for our journal. The participation has been almost complete – only in a few cases we were not able to get in touch with the authors. In addition to our friends and collaborators Stewart McPherson, Andreas Fleischmann, Andreas Wistuba, Paulo Minatel Gonella and Barry Rice, we have, for the first time, included articles by Claudia P. Bove and Paulo C. Baleeiro Souza, Greg Bourke, Thomas Gronemeyer, François Mey, Jonathan Moran. Obviously we thank them all for their help and kindness.

Here you have the pdf-English version of the journal (AIPC-Magazine 25, n.1-2012) where you can find the 2011 news for 46 exciting plants including new species, subspecies, forms and varieties, descriptions of species previously invalidly published, and emended descriptions of species previously wrongly identified. We also present a brief article about the recent studies that have proved carnivory in genus *Philcoxia*.

More specifically you will find the following:

**DARLINGTONIA:** *D. californica* f. *viridiflora*

**DROSERA:** *D. quartzicola*, *D. ultramafica*,

**GENLISEA:** *G. exhibitionista*, *G. flexuosa*, *G. metallica*, *G. nebulicola*, *G. oligophylla*

**HELIAMPHORA:** *H. arenicola*, *H. ceracea*, *H. collina*, *H. minor* var. *pilosa*, *H. parva*, *H. purpurascens*

**NEPENTHES:** *N. appendiculata*, *N. baramensis*, *N. ceciliae*, *N. epiphytica*, *N. lamii*, *N. leonardoi*, *N. monticola*, *N. nigra*, *N. pulchra*, *N. robcantleyi*, *N. thorelii*, *N. undulatifolia*

**SARRACENIA:** *S. alata* var. *atrorubra*, *S. alata* var. *cuprea*, *S. alata* var. *nigropurpurea*, *S. alata* var. *ornata*, *S. alata* var. *rubrioperculata*, *S. alata* f. *viridescens*, *S. flava* f. *viridescens*, *S. leucophylla* var. *alba*, *S. leucophylla* f. *viridescens*, *S. minor* var. *minor* f. *viridescens*, *S. oreophila* var. *ornata*, *S. psittacina* var. *psittacina* f. *viridescens*, *S. psittacina* var. *okefenokeensis*, *S. psittacina* var. *okefenokeensis* f. *luteoviridis*, *S. purpurea* subsp. *venosa* var. *venosa* f. *pallidiflora*, *S. rubra* subsp. *alabamensis*, *S. rubra* subsp. *gulfensis* f. *luteoviridis*, *S. rubra* subsp. *jonesii* f. *viridescens*

**UTRICULARIA:** *U. densiflora*

**PHILCOXIA**

In addition to the new plants noted above, we would like to report that the name of *Drosera monticola* was finally validated in 2011. The plant was first described as *Drosera stolonifera* subsp. *monticola* and raised to species status in 2005 by Allen Lowrie. However, its name had been considered invalid because of a trivial oversight (the page number given for the basionym was incorrectly quoted) and that error has now been rectified.

Unless otherwise indicated, all photos and images are by the authors of the articles and any use outside the immediate context of this work must be authorized.

Happy reading!  
Maurizio Saroldi

# Darlingtonia

• *Darlingtonia californica* f. *viridiflora* B. Rice, f. nov.

by Barry Rice

A form of *Darlingtonia californica* that is completely lacking in red pigmentation, even in the rhizomes. Many *Darlingtonia* clones lack much colouration, but their petals are consistently red or red-purple, and the peduncle is usually flushed red. In this new form, the petals are bright yellow-green and the peduncle is pale green. I first detected these plants in the spring of 1997. It has been found at only one site in the wild - a privately owned, north-facing wet seepage at 1770 m elevation - which contains both the normal and the green forms of *Darlingtonia*. Probably 50-150 plants of this rare form are present. Interestingly, this site does not seem to be associated with serpentinite, a rock commonly found at *Darlingtonia* sites. I have spent years locating all the *Darlingtonia* sites in this part of California, and so far the site nearest to the f. *viridiflora* site is 5 km away, in a different watershed. None of these other sites have *Darlingtonia californica* f. *viridiflora*. Although the *Darlingtonia californica* f. *viridiflora* site is protected, it is at risk because it is small and isolated. The affects of nearby logging, trespassing cattle, and climate change are future possible threats. This site is currently the southernmost-known site for *Darlingtonia* in the wild.

This is the same plant that is treated with the horticultural cultivar name *Darlingtonia* 'Othello'. Seeds from the plants have been widely distributed, and specimens are in cultivation around the world (it is a common misconception that all cultivars must be propagated vegetatively).



## Description:

Rice, B. (2011). In Appendix of S. McPherson & D. E. Schnell (2011), *Sarraceniaceae of North America*: 739



# Drosera

## • *Drosera quartzicola* Rivadavia & Gonella, *sp. nov.*

by Paulo Minatel Gonella

In early 1990's, while studying herbarium specimens of *Drosera* from the Serra do Cipó, Fernando Rivadavia encountered a specimen of a very distinctive plant that didn't match with any known species so far. Location data was vague, but a very small population of that plant was finally found in 1996. After several excursions to that area, a total of four small populations of the new species were found, and it was finally described and named in 2011 as *Drosera quartzicola*, because of the very characteristic habitat that it occupies, in fine silica sand with quartz gravel.

The new species shares several characteristics with *D. chrysolepis*, and a few hybrids between both species were observed. Both species share (with some other closely related species as well) a very interesting type of trichome, called "translucent-yellow short-stalked globose trichome" (abbreviated as "TSGs"), which we believe act as a hygroscopic organ, absorbing water from the air, and helping these species to survive in habitats that are much drier than the usual for *Drosera*. The species is distinct by its large bronze-gold triangular stipules, the leaves with the petiole as wide as the lamina, the lack of simple hairs in the upper surface of the petiole, and the very short inflorescences.

*Drosera quartzicola* is the rarest sundew from Brazil, and is considered as Critically Endangered due to the very small and restricted populations.

Photo by A. Fleischmann



### Description:

Rivadavia, F., P. M. Gonella (2011). *Drosera quartzicola* (Droseraceae), a new and threatened species from the Serra do Cipó, Brazil. *Phytotaxa*, 29: 33–40.



Photo by A. Fleischmann

Trichome ("TSGs") on *D. quartzicola* (photo by P. Minatel Gonella)





• *Drosera ultramafica* A. Fleischm., A. S. Rob. & S. McPherson, *sp. nov.*

by Andreas Fleischmann

*Drosera ultramafica* is a species related to both *D. spatulata* and *D. neocaledonica*. It resembles the further species in flower morphology, and the latter in the stem-forming habit and in producing long, narrow leaves that form a subglobose rosette. *Drosera ultramafica* is one of the few sundew species from South East Asia

(usually rather *Nepenthes* territory), where it is endemic to high mountaintops above the tree line. It thus far has been recorded from northern Sumatra, from Mount Kinabalu of Borneo, from a few mountains in central Sulawesi, and from the island of Palawan from the Philippines. On all these sites, it exclusively grown on heavy-metal rich soils, so-called “ultramafic” substrate, which is normally toxic to many plants. The species name of this new taxon is referring to this unusual habitat. Most collections of *D. ultramafica* have thus far been identified as “*D. spatulata*”, but actually that species is quite rare in the Malesian region of South East Asia, and most records actually belong to the newly described *D. ultramafica*. The cultivation of this species is not difficult, and like *D. neocaledonica*, which is also naturally confined to ultramafic soils, it can be grown in a peat-sand substrate – just like *D. spatulata*.

#### Description:

Fleischmann, A., A.S. Robinson, S. McPherson, V. Heinrich, E. Gironella, D.A. Madulid (2011). *Drosera ultramafica* (Droseraceae), a new sundew species of the ultramafic flora of the Malesian highlands. *Blumea* 56: 10-15.

Photo by S. McPherson



Photo by A. Fleischmann

# Genlisea

## • *Genlisea exhibitionista* Rivadavia & A. Fleischm., *sp. nov.*

Photo by P. Minatel  
Gonella



One species from the Brazilian state of Bahia was discovered by Fernando Rivadavia near the Cachoeira de Fumaça (“smoking waters waterfall”), and thus had the preliminary name “*G. sp. Fumaça*” thus far. This species was named *Genlisea exhibitionista*, which refers to Fernando’s sense of choosing strange names in general, but in particular to the flower morphology of this species: unlike

by Andreas Fleischmann

most other *Genlisea* species, the corolla tube of this species is not fully closed (like in typical “snap-dragon” type flowers), but has an open throat – like e.g. most *Pinguicula* species have. Thus the stamens of this species are visible, and are not hidden by the corolla palate. This species most likely has adapted to a different pollinating insect, as it does not only have an open corolla throat, but also a short and thick spur, thus the pollinator most likely is a short-tongued insect. In the wild, *G. exhibitionista* is an annual plant, but in cultivation it can be grown as a perennial.

### Description:

Fleischmann, A., F. Rivadavia, P. M. Gonella, G. Heubl (2011). A revision of *Genlisea* subgenus *Tayloria* (Lentibulariaceae). *Phytotaxa* 33: 1–40.

## • *Genlisea nebulicola* Rivadavia, Gonella & A. Fleischm., *sp. nov.*

*Genlisea nebulicola* is a very rare species, and was yet only observed at two small populations in the Brazilian state of Minas Gerais. At one of them, this species grows in the spray of a large waterfall, and thus get permanently fogged by the spray. Therefore we named it *Genlisea nebulicola* – “growing in the spray”. This species has been referred to by Fernando Rivadavia by the informal name “*G. sp. Canastra*”, or “*G. mini-violacea*”, the latter name fits well, as this is the tiniest member of the subgenus *Tayloria*. In all other respects, it resembles more *G. lobata*, to which it is related. It has delicate little flowers on thin scapes, which are almost glabrous – in contrast to all other species of the subgenus *Tayloria*. The rosettes of leaves are comparatively large, in contrast to the inflorescence parts.

by Andreas Fleischmann

Photo by P. Minatel Gonella



### Description:

Fleischmann, A., F. Rivadavia, P. M. Gonella, G. Heubl (2011). A revision of *Genlisea* subgenus *Tayloria* (Lentibulariaceae). *Phytotaxa* 33: 1–40.

• *Genlisea flexuosa* Rivadavia, A. Fleischm. & Gonella, *sp. nov.*

by Andreas Fleischmann

*Genlisea flexuosa* is a perennial species, endemic to the Brazilian state of Minas Gerais, which is closely related to, and which closely resembles the annual *G. violacea*. The flowers with the relatively large lower lip and the comparatively small upper lip, and the long spur distinguish it from that species. The name of that new species refers to the long, flexuous scapes of *G. flexuosa*, which have pedicles that reflex in fruit, and will twine around nearby herbs and grasses for support.

This species grows in very swampy areas, usually between tall grasses, often accompanied by other carnivorous plants such as *Drosera graminifolia*, *D. grantsauai*, *D. x fontinalis*, *D. tomentosa*, *D. communis*, *Genlisea repens*, *G. aurea* and various *Utricularia* species.

*Genlisea flexuosa* is probably the most widespread species of subgenus *Tayloria* in cultivation. It is very easy in cultivation, and is known under the name *G. violacea* ‘giant’ or *G.* ‘giant rosette’.

Most “*G. violacea*” in cultivation (especially if they grow like a weed, are perennial and form carpets of leaves propagating by little plantlets that are budding from the trap leaves) are in fact *G. flexuosa*. The artificially created hybrid “*G. lobata* x *violacea*” sold by Kamil Pasek (bestcarnivorousplants) also is a hybrid of *G. lobata* and *G. flexuosa* (and not *G. violacea*).

**Description:**

Fleischmann, A., F. Rivadavia, P. M. Gonella, G. Heubl (2011). A revision of *Genlisea* subgenus *Tayloria* (Lentibulariaceae). Phytotaxa 33: 1–40.





• *Genlisea metallica* Rivadavia & A. Fleischm., *sp. nov.*

by Andreas Fleischmann

*Genlisea metallica* was formerly known as “*G. sp. Bella de Itacambira*” or “*G. sp. Itacambira Beauty*”. It is a perennial species, endemic to the Brazilian state of Minas Gerais, with beautiful dark lilac flowers, that have a metallic shine in full sun (hence its species name).

however usually die back after flowering, and the plant survives a short dormancy at its natural location by a thickened underground stem.

This species is very rare in the wild, and so far only known from two single populations.



*Genlisea metallica* is probably the most glandular of the South American *Genlisea* species, and its scapes are even sticky when fully dried. It has a compact rosette of densely arranged leaves, which will

**Description:**

Fleischmann, A., F. Rivadavia, P. M. Gonella, G. Heubl (2011). A revision of *Genlisea* subgenus *Tayloria* (Lentibulariaceae). Phytotaxa 33: 1–40.

• *Genlisea oligophylla* Rivadavia & A. Fleischm., *sp. nov.*

by Andreas Fleischmann

The large *Genlisea oligophylla* is a perennial species, endemic to the Brazilian state of Minas Gerais, which was thus far known as “*G. sp. Cipó*”. It is closely related to the even larger *G. uncinata*, and also has very thick, succulent tall scapes and only very few leaves during flowering time (the species’ name “*oligophylla*” means “with few leaves”). In contrast to the related *G. uncinata*, the corolla of *G. oligophylla* is veined, and the spur is never curved hook-like at its tip. *Genlisea oligophylla* prefers to grow

in more well-drained places, in sandy soil which are not soaking wet but only slightly moist in the dry season. It is usually found among tall grasses, and the flowers are borne on very long and succulent thick scapes.



**Description:**

Fleischmann, A., F. Rivadavia, P. M. Gonella, G. Heubl (2011). A revision of *Genlisea* subgenus *Tayloria* (Lentibulariaceae). Phytotaxa 33: 1–40.



# Heliamphora

• *Heliamphora arenicola* Wistuba, A. Fleischm., Nerz & S. McPherson, *sp. nov.*

by Andreas Wistuba



*Heliamphora arenicola* was observed in 1988 by Joachim Nerz, Peter Harbarth and Andreas Wistuba on a foothill of the Ilu-Tramen base while climbing the flanks of Ilu Tepui. Plants grew exclusively in a very sandy and open habitat. It later turned out, that the same plants had also been observed during an earlier expedition by Paul Debbert. The taxon has some similarities with *H. nutans* and *H. elongata* but is different in some characteristics. As a consequence it was described as a new species by A. Wistuba, A. Fleischmann, J. Nerz and S. McPherson in 2011.

Pitcher are infundibular and slightly swollen in the lower part, narrow above the middle and infundibular towards the pitcher opening.

The nectar spoon is small in comparison to other species. The nectar spoon usually is colored dark red while the pitcher is yellowish green to yellow. *Heliamphora arenicola* differs from *H. elongata* by the much smaller nectar spoon and from *H. nutans* by the hairy inflorescence. The specific epithet “*arenicola*” is derived from the Latin *arena* (sand) and *-cola* (dweller) and denotes the tendency of this plant to grow at sandy localities.

## Description:

McPherson, S., A. Wistuba, A. Fleischmann, J. Nerz (2011). In Appendix of S. McPherson, A. Wistuba, A. Fleischmann, J. Nerz (2011), *Sarraceniaceae of South America*: 516.

- *Heliamphora ceracea* Nerz, Wistuba, Grantsau, Rivadavia, A. Fleischm. & S. McPherson, *sp. nov.*

by Andreas Wistuba

the southern part of the Neblina Massif. The pitchers are 20-30 cm long, ventricose in the lower part, slightly waisted in the middle and infundibular towards the mouth. The inner surface of the upper part is completely glabrous covered by a waxy layer. This waxy surface bears prominent clusters of large nectar glands, a characteristic which has not been found in any other species of the genus. The only other species that has completely glabrous interior of the pitcher opening is *H. macdonaldae*, which may represent the closest relative of *H. ceracea*. The nectar-spoons are triangular to spoon-shaped with a prominent midrib and a distinctive tip. The specific epithet "*ceracea*" is derived from the Latin *cera* (wax) and refers to the glabrous waxy surface of the interior upper parts of the pitcher opening.

#### Description:

McPherson, S., A. Wistuba, A. Fleischmann, J. Nerz (2011). In Appendix of S. McPherson, A. Wistuba, A. Fleischmann, J. Nerz (2011), *Sarraceniaceae of South America*: 521.

*Heliamphora ceracea* was observed for the first time in 1998 and was formally described in 2011 by J. Nerz, A. Wistuba, R. Grantsau, F. Rivadavia, A. Fleischmann, and S. McPherson. It's only known from a few populations in wet highland meadows of the Brazilian part of Pico da Neblina, in





• *Heliamphora collina* Wistuba, Nerz, S. McPherson & A. Fleischm.,  
*sp. nov.*

by Andreas Wistuba

The first record for this species dates back to 1986, when Otto Huber collected the type specimen of this taxon which was, however, classified as *Heliamphora heterodoxa* and filed as such in the Caracas herbarium. After having done field studies of this taxon, *H. collina* was formally described by A. Wistuba, J. Nerz, S. McPherson and A. Fleischmann in 2011. *Heliamphora collina* is fairly widespread on the common base of the four Tepuis of the Los Testigos massif and surrounding lower Tepuis and hills in

very small in comparison to other species. *Heliamphora collina* can be easily distinguished from *H. folliculata* by the lack of the characteristic follicle of the nectar spoon, a unique characteristic of *H. folliculata* within the whole genus. The pitcher is less cylindrical than and more upright than the pitcher of *H. folliculata*. The specific epithet “*collina*” is derived from the Latin *collinus* (hilly) and refers to the hilly to submontane habitat of this plant on the foothills of the Los Testigos area where this plant occurs.



Photo by S. McPherson

an altitude of 1700 to 1850 meters. *Heliamphora collina* seems to be related to *H. folliculata*. The overall pitcher shape is similar to *H. folliculata*. Pitchers are infundibular in the lower part, cylindrical in the middle and slightly infundibular in the upper part. The nectar spoons are helmet-shaped and

**Description:**

McPherson, S., A. Wistuba, A. Fleischmann, J. Nerz (2011). In Appendix of S. McPherson, A. Wistuba, A. Fleischmann, J. Nerz (2011), *Sarraceniaceae of South America*: 523.

• *Heliamphora minor* var. *pilosa* A. Fleischm. & J. R. Grande, var. nov.

by Andreas Fleischmann

*Heliamphora minor* is a *Heliamphora* species endemic to Auyán-tepui and the summit of adjacent Cerro La Luna, and it is the only *Heliamphora* species occurring on this large tepui. Most of the populations have glabrous pitchers, with an interior sur-

face (“slippery zone”) that is fully glabrous or densely covered with very short hairs. However, there were a few reports of plants of *H. minor* from the northern part of the summit of Auyán-tepui, which have a dense cover of long pilose hairs on both pitcher outer and inner surface, and which grow in mixed populations with “typical” glabrous *H. minor*. This “hairy” taxon has stable characters, and was described as a distinct variety, *H. minor* var. *pilosa*. The plants do only differ from typical plants in the pitcher indumentum, but resemble *H. minor* var. *minor* in all other respects.

**Description:**

A. Fleischmann, J. R. Grande (2011), “Taxonomía de *Heliamphora minor* Gleason (Sarraceniaceae) en el Auyán-tepui, incluyendo una nueva variedad”. In: *Acta Botánica Venezuelica* 34(1): 1–11.





- *Heliamphora parva* (Maguire) S. McPherson, A. Fleischm., Wistuba & Nerz, *comb. et stat. nov.*

by Andreas Wistuba

This taxon was first observed in 1954 by Bassett Maguire, John Wurdack and George Bunting during the initial ascent of the Neblina Massif. Unfortunately, even though it was named *Heliamphora neblinae* var. *parva* by Maguire, the fact that he used specimens of this taxon as isotypes of *H. neblinae* itself and in addition the fact that the description of *H. neblinae* var. *parva* partially is based on specimens that were collected on Pico Phelps and which in fact represent *H. hispidula* led to some confusion. Recent field

studies and close studies of the types cited by Maguire helped to clarify the situation. It further became evident, that considerable differences between *H. neblinae* and this taxon exist. As a consequence, it was elevated to specific rank in 2011 by S. McPherson, A. Fleischmann, A. Wistuba and J. Nerz. *Heliamphora parva* grows in open meadows in the north-western part of the Neblina Massif. No other *Heliamphora* species is known from this area, as *H. neblinae* itself occurs in more southern parts of the massif.



Photo by S. McPherson

The plants form creeping stems that are covered by remnants of dead leaves. Usually only the younger part of the stem and the rosette of functional leaves are orientated upright. The dead leaves that cover the stem protect the stem itself from frequent wild fires occurring in the habitat where *H. parva* is found. The pitchers are infundibular and swollen in the lower part, and waisted above. The upper section is narrowly infundibular. The exterior surface of the pitcher is pubescent or subglabrous. While *H. neblinae* has a glabrous strip leading from the base of the nectar spoon downwards into the pitcher, *H. parva* lacks this strip. The lid is much larger and broader than the one of *H. neblinae*.

#### Description:

McPherson, S., A. Wistuba, A. Fleischmann, J. Nerz (2011). In Appendix of S. McPherson, A. Wistuba, A. Fleischmann, J. Nerz (2011), *Sarraceniaceae of South America*: 527.

• *Heliamphora purpurascens* Wistuba, A. Fleischm., Nerz & S.McPherson, *sp. nov.*

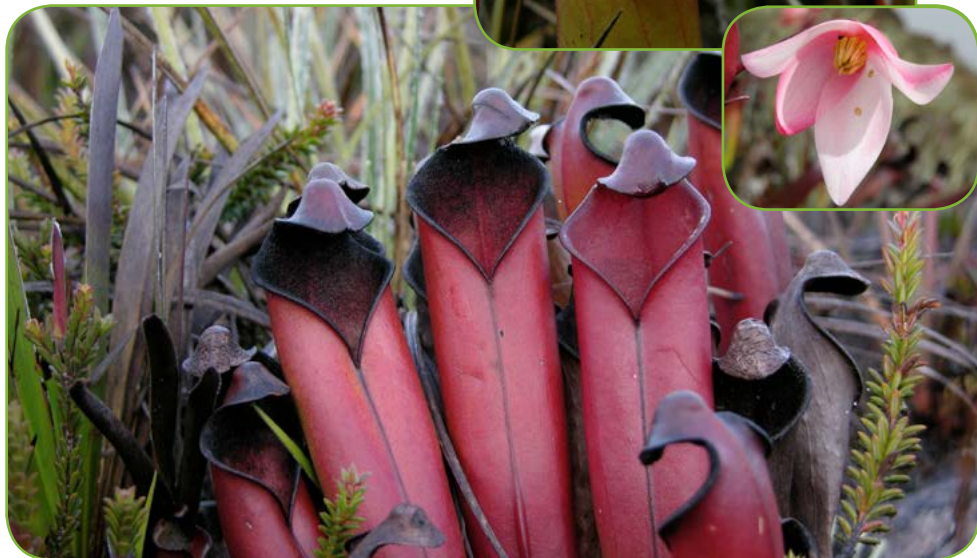
by Andreas Fleischmann

In 1951 the American botanist Julian Steyermark, described a unique species of *Heliamphora* from Ptari-tepui; he named this *H. heterodoxa*, the “extraordinary marsh pitcher”. When the first botanists explored the flat summit of Ptari-tepui by helicopter expeditions, they found *Heliamphora* growing abundantly there, and assigned this to *H. heterodoxa*, an opinion that was shared for many decades. Until recently, the plants from the top were considered to be the same species that is also growing in the uplands of the Gran Sabana surrounding Ptari, reaching far north up to Cerro Venamo. However the plant that Steyermark described was not the one from the summit of Ptari, but from a lower elevation shoulder of that tepui. The plants on top of Ptari differ from *H. heterodoxa* morphologically, and are closer to *H. saracenioides*, with which they grow sympatrically. Therefore, they were now described as a distinct species, named *H. purpurascens* - the species epithet means “becoming purple”, and is referring to the pitchers, which are usually getting a dark blackish-purple colouration when exposed

to full sun. *Heliamphora purpurascens* has narrowly tubular pitchers, which bear a relatively large lid, that often fully covers the entire pitcher mouth – however the shape and size of the lid greatly varies between different plants.

**Description:**

McPherson, S., A. Wistuba, A. Fleischmann, J. Nerz (2011). In Appendix of S. McPherson, A. Wistuba, A. Fleischmann, J. Nerz (2011), *Sarraceniaceae of South America*: 528.



# Nepenthes

- *Nepenthes appendiculata* Chi C. Lee, Bourke, Rembold, W. Taylor & S. T. Yeo, *sp. nov.*



photo by  
Katja Rembold

*Nepenthes appendiculata* was discovered in 2009 by Greg Bourke, Ch'ien C. Lee, Katja Rembold, William Taylor and Yeo Siew Teck while exploring the remote Hose Mountains range in central Sarawak, Borneo. It was published in 2011 in *The New Nepenthes-Vol. 1*, Redfern Natural History Productions.

From Danser's Regiae group, *N. appendiculata* is easily distinguished from all other species by its unique upper pitchers. The unusually large apical lid appendage with exceptionally large nectar glands, hooked basal lid appendage and upper pitcher shape

by Greg Bourke

which is cylindrical in the upper half are key to its identification. The purpose of the apical lid appendage is not yet fully understood but unlike other species that have unusual apical lid appendages like *N. naga* and *N. lingulata*, it serves only as an initial attractant providing a visual and olfactory attractant as well as a landing platform for flying insects.

Growing to 2 m, *N. appendiculata* is found primarily growing as an epiphyte in upper montane mossy forest above 1450 m where it is difficult to observe. It occurs with *N. ephippiata* (primarily epiphytic) and *N. tentaculata* (primarily terrestrial) with no hybrids having been recorded. The conservation status of this species is assessed as Data Deficient.

## Description:

Lee, C. C., G. Bourke, W. Taylor, S.T. Yeo, K. Rembold (2011), "*Nepenthes appendiculata*, a new pitcher plant from Sarawak". In S. McPherson (2011), *New Nepenthes-Volume One*: 24–35.



photo by  
Katja Rembold



by Jonathan Moran

This species was for many years classed informally as a variety of *Nepenthes rafflesiana* Jack; the most widely-used moniker was “var. *elongata*”.

However, it differs in both morphology and ecology from the typical form of *N. rafflesiana* to such a degree that we believed it merited specific status. Compared to *N. rafflesiana* pitchers, those of *N. baramensis* are highly elongated and slimmer in profile. The pitchers also differ in other ways: for example, whereas aerial *N. rafflesiana* pitchers do not possess an epicuticular waxy zone on the interior surface, those of *N. baramensis* do. Conversely, *N. baramensis* pitchers produce little nectar, and do not display the complex peristome/body contrast pattern and fragrance production of *N. rafflesiana*.

Perhaps unsurprisingly, *N. baramensis* catches very little invertebrate prey compared to *N. rafflesiana*, and recent findings suggest that this species may derive some nitrogen from the excreta of bats which can occasionally be found roosting in its pitchers.

*N. baramensis* occurs in peat swamp and heath forests in northwest Borneo. The specific epithet “*baramensis*” refers to the Baram River region, centre of abundance for this species.

#### **Description:**

C. Clarke, J. A. Moran & C. C. Lee (2011), “*Nepenthes baramensis* (Nepenthaceae) - a new species from north-western Borneo”. *Blumea* 56(3): 229–233.



• *Nepenthes ceciliae* Gronem., Coritico, Micheler, Marwinski, Acil & V. B. Amoroso, *sp. nov.*

by Thomas Gronemeyer

*Nepenthes ceciliae* was firstly discovered in May 2011 by the Philippine fern expert Victor Amoroso and his research assistant Fulgent Coritico during field research that they conducted on Mount Kiamo, situated near Malaybalay City, Philippines. They discussed their finding with me and my companions when we visited Malaybalay three months later as they were not sure whether the taxon represented a new species or an unusual dwarf form of *N. copelandii*.

F. Coritico joined our excursion to Mt. Kiamo where we studied the plants in their natural habitat. Indeed, *N. ceciliae* is closely related to *N. copelandii* but represents clearly a taxon on its own. Overall, *N. ceciliae* is a gracile species that grows predominantly in an open upper montane habitat where the plants scramble along stunted vegetation, sometimes forming dense stands. *Nepenthes ceciliae* has dimorphic pitchers with small, cylindrical lower and wholly infundibular upper pitchers of the same size than the lowers. Compared to *N. copelandii*, *N. ceciliae* is smaller in all respects: the lamina is linear and gracile with winged petioles whereas *N. copelandii* produces much broader, robust leaves with canalliculate petioles. The pitchers of *N. copelandii* are also much larger with the lid generally lacking an appendage that is consistently present in *N. ceciliae*. *Nepenthes ceciliae* grows exclusively terrestrially on

ultramafic soils in open, lucid areas, whereas *N. copelandii* usually grows as an epiphyte in montane forests.



*Nepenthes ceciliae* grows sympatrically with isolated specimens of *N. merrilliana* and *N. truncata* and with the newly discovered *N. pulchra*. Several hybrids with the latter species can be found.

*Nepenthes ceciliae* was named after the wife of Victor Amoroso, Cecilia Bertrand-Amoroso. She conducted ex-situ conservation studies on endangered plant species from the Philippines and passed away in January 2011 suffering from cancer.

#### Description:

Gronemeyer, T., F. Coritico, M. Micheler, D. Marwinski, R. Acil, V. Amoroso (2011), "*Nepenthes ceciliae*, a new pitcher plant species from Mount Kiamo, Mindanao". In S. McPherson (2011), *New Nepenthes-Volume One*: 412–423.



• *Nepenthes epiphytica* A. S. Rob., Nerz & Wistuba, *sp. nov.*

by Andreas Wistuba

The holotype of this species was collected as early as 1963 by Kostermanns on Mt. Nyapa in South East Kalimantan (Indonesia) but was regarded as an unusual form of *Nepenthes fusca* in the past.



In December 2011 *N. epiphytica* was formally described by A. S. Robinson, J. Nerz and A. Wistuba.

While the upper pitchers, that are narrowly infundibular in the lower half and broadly infundibular above, superficially resemble those of *N. eymae*, the lower pitchers which are narrowly cylindrical and narrowly ventricose in the lower half are quite unique in the genus.

The species name “*epiphytica*” (epiphytic growing) was chosen because all known specimens of this taxon have been observed growing exclusively as epiphytes on trees.

**Description:**

Robinson, A. S. , J. Nerz, A. Wistuba (2011), “*Nepenthes epiphytica*, a new pitcher plant from East Kalimantan”. In S. McPherson (2011), *Nepenthes-Volume One*: 36–51.





• *Nepenthes leonardoi* S. McPherson, G. Bourke, J. Cervancia, M. Jaunzems, A. S. Rob., *sp. nov.*

by Stewart McPherson

Named after the late Filipino botanist Leonardo Co, this species exclusively occurs on Schom-carp Peak, in Palawan, Philippines. The leaves are petiolate, with a narrowly oblong lamina up to 50 cm long and 10 cm wide. All parts of the leaf are usually green in the shade, or reddish purple in direct sunlight.

The lower pitchers are up to 15 cm tall and 6 cm wide, though usually smaller, and generally urceolate. The peristome is lined with ribs, spaced up to 2 mm apart, which form elongated, inward protruding needle-like spines up to 4 mm long. The lid is elliptic, up to 5.5 cm long and 3.5 cm wide. Intermediate pitchers occur in large numbers, and are variably infundibular.

The upper pitchers are up to 24 cm tall and 6 cm wide, although typically much smaller, wholly infundibular or infundibular in the lower quarter and cylindrical above. Wings are absent, or reduced to narrow ridges. All other parts were identical to the lower pitchers. They have an extremely variable colouration: usually pure, yellowish green, occasionally with an orangey red peristome. In a few specimens, faint dark red blotches are visible on the exterior of the pitcher, and in others, all parts of the upper

pitchers are pure red, burgundy or almost black. The black-pitched plants were rare overall.

The colouration of the lower pitchers is



less variable: the exterior is usually yellow or orangey red, lined with faint, dark, reddish purple blotches. The peristome is bright orangey red, usually suffused dark reddish purple in older pitchers, and the lid variably yellow or orange, often suffused red. In a minority of plants, the lower pitchers are entirely yellowish green, red or burgundy.

#### Description:

McPherson, S., G. Bourke, J. Cervancia, M. Jaunzems, E. Gironella, A. Robinson, A. Fleischmann (2011), *Carniflora Australia* (the Journal of the Australasian Carnivorous Plant Society), 8(1): 4-19.



- *Nepenthes lamii* (Jebb & Cheek) A. S. Rob., Wistuba, Nerz, M. Mansur & S. McPherson, *emend.* - *Nepenthes monticola* A. S. Rob., Wistuba, Nerz, M. Mansur & S. McPherson, *sp. nov.* - a two species complex

by Andreas Wistuba

The original description of *Nepenthes lamii* by Jebb & Cheek was based on herbarium specimens collected from a variety of locations in West Papua. The majority of cited specimens are morphologically consistent, but two specimens from Doorman Top differ in many respects, however were considered just as an alpine form by Jebb and Cheek. After having done field studies it became clear, that the types cited by Jebb and Cheek in fact represent two separate but related species. As one of the specimens from Doorman Top was used as holotype for *N. lamii* by Jebb and Cheek even though their description is in parts based on types that represent the other taxon, the description of *N. lamii* was emended by A. Robinson, J. Nerz, A. Wistuba, M. Mansur and S. McPherson and a new taxon was described by the same authors – *Nepenthes monticola*.

*Nepenthes lamii* plants do not climb but form rosettes or very stout short stems only. The leaves are thick coriaceous and are folded along the midrib. Lower pitchers are formed for a short period only. The upper pitchers are narrowly infundibular towards the base and broadly obovate above, up to 20 cm tall and 9 cm wide. The pitcher exterior in generally dark red. The pitcher interior is creamy white to pale, sometimes with speckles. *Nepenthes lamii* is known only from summit region of Doorman Top (3200–3520 m altitude). Here *N. lamii* grows as a terrestrial, upright and compact shrub in rocky, ultramafic substrates above the treeline. The taxon experiences possibly the coldest conditions of all *Nepenthes*. Temperatures below freezing (0 °C) prior to sunrise have been recorded.





*Nepenthes monticola* is a typical climbing *Nepenthes* species. The lower pitchers of young rosettes are narrowly ovate in the lower half, narrowing to form a marked waist, cylindrical above with a slight constriction below the pitcher opening. The upper pitchers are narrowly ovate in the basal 1/5–1/4, narrowing to form a slight hip and cylindrical above, becoming narrowly infundibular towards the pitcher opening. It has been recorded from various mountains in West Papua at altitudes between 1400–2600 meters. The specific epithet “*monticola*” is derived from the Latin *mons* (mountain)



and *-cola* (dweller), with reference to the high montane forest habitats from which this taxon is known.

#### **Description:**

Robinson, A. S., J. Nerz, A. Wistuba, M. Mansur, S. McPherson (2011), “*Nepenthes lamii* Jebb & Cheek, an emended description resulting from the separation of a two-species complex, and the introduction of *Nepenthes monticola*, a new species of highland pitcher plant from New Guinea”.

In S. McPherson (2011), *New Nepenthes-Volume One*: 522–555.



• *Nepenthes nigra* Nerz, Wistuba, Chi C. Lee, Bourke, U. Zimmermann & S. McPherson, *sp. nov.*

by Andreas Wistuba

*Nepenthes nigra* was known since many years but specimens were either confused with *N. tentaculata* or *N. hamata*. After studies had been done on several mountains of Central Sulawesi (Indonesia), the species was formally described in December 2011 by J. Nerz, A. Wistuba, C. C. Lee, G. Bourke, U. Zimmermann and S. McPherson.

*Nepenthes nigra* can be distinguished



from *N. tentaculata* by the blade-like ribs and elongated teeth seen in the peristome of lower pitchers, which *N. tentaculata* consistently lacks.

*Nepenthes nigra* may be distinguished



from *N. hamata* by its peristome. The blade-like ribs of the lower pitchers of *N. nigra* are much smaller than the sickle-shaped teeth of *N. hamata*. The upper pitchers of *N. hamata* consistently bear sickle-shaped teeth similar to the lower pitchers of that species, whereas the peristome of upper pitchers of *N. nigra* is cylindrical with flattened ribs.

The specific epithet is derived from the Latin *niger* (black) and refers to the distinctive colouration of the pitchers and stem.

**Description:**

Nerz, J., A. Wistuba, C. C. Lee, G. Bourke, U. Zimmermann, S. McPherson (2011), "*Nepenthes nigra*, a new pitcher plant from Central Sulawesi". In S. McPherson (2011), *New Nepenthes-Volume One*: 468–491.

• *Nepenthes pulchra* Gronem., S. McPherson, Coritico, Micheler, Marwinski & V. B. Amoroso, *sp. nov.*

by Thomas Gronemeyer

In the expedition that aimed to confirm the species rank of *Nepenthes ceciliae*, another spectacular species of pitcher plant was found on Mt. Kiamo: beside the trail we found some very impressive plants with pitchers resembling those of *N. petiolata*, but of much greater size and with broader peristome. On that day, we found only some adult (but not flowering) plants and we initially identified these plants as hybrids between *N. petiolata* and possibly *N. truncata* as we knew that both species should exist on Mt. Kiamo. However, the following day we explored the area more systematically and found several adult specimen (some in flower) and seedling plants in the stunted montane forest around the campsite and along the trail leading to the summit. With these findings we were sure to have found not a hybrid population but a self reproducing population of a yet undiscovered species. We named the taxon *N. pulchra*, referring to the attractive pitchers with their striking colouration and impressive size.

*Nepenthes pulchra* is nevertheless closely related to *N. petiolata*, and the morphology

and colouration of the pitchers of these two species are similar, especially in younger plants. The main difference that distinguishes *N. pulchra* from *N. petiolata* is the base of the leaves: in *N. pulchra*, the petioles are winged and strongly decurrent whereas in *N. petiolata* the base of the leaf is petiolate and clasps the stem. Additionally, the foliage of *N. pulchra* is considerably larger than that of *N. petiolata* and the upper pitchers are often twice as large and consistently narrower usually with a comparatively small inflated basal section.

*Nepenthes pulchra* shares the same ecology than *N. ceciliae* and hybridizes with the latter species.

#### Description:

Gronemeyer, T., S. McPherson, F. Coritico, M. Micheler, D. Marwinski, V. Amoroso (2011), "*Nepenthes pulchra*, a new pitcher plant species from Mount Kiamo, Mindanao". In S. McPherson (2011), *New Nepenthes-Volume One*: 424–439.



by Stewart McPherson

Named after the celebrated *Nepenthes* horticulturist Rob Cantley, this species is known only from just one location in submontane evergreen forest at ca. 1800 m altitude in the island of Mindanao, Philippines. The leaves of short stems are

though the midrib and lower surface may be more pale.

The lower pitchers were not described in the type description and upper pitchers are not formed.

Intermediate pitchers are broadly cylindrical, up to 33 cm tall and 9.5 cm wide. Wings are up to 10 mm wide, with fringe elements. The mouth is horizontal at the front but concave behind. The peristome, ca. 2 cm wide at the front, ca. 5 cm wide at the middle, and up to 10 cm wide below the column, is striate, with pronounced ribs, ca. 1.5 mm apart with teeth on the inner margin 3–4 mm long and outer edge that may be slightly undulate. The lid is broadly ovate to sub-orbicular, ca. 9.5 cm long and 9.5 cm wide. The lid bears a laterally flattened, semi-circular basal appendage. The exterior of the pitcher may be dark red, reddish brown, mahogany or almost black, often greening slightly towards the tendril. The peristome is commonly deep red, purple or black, with a colour gradient towards yellow or pale green on the inner margin. The lid is typically the same colour as the upper part of the pitcher on both surfaces, but often green on its lower surface, especially along the length of the keel. The pitcher interior is bright, yellowish green, heavily spotted with angular blotches of purple.



Photo by Rob Cantley

oblong-elliptic, up to about 28.5 cm long and 26.5 cm wide, with a truncate apex and a canaliculate, winged petiole, up to 23 cm long. All parts of the lamina are dark green,

**Description:**  
M. Cheek (2011), *Nordic Journal of Botany*, 29: 677–681.



by François Mey



The original description of *Nepenthes thorelii* (1909) was based on materials that included three Indochinese *Nepenthes* taxa: *N. smilesii*, *N. holdenii* and *N. thorelii*. Since then, no populations of *N. thorelii* have been knowingly studied from the field by botanists. But in August 2011, the genuine *N. thorelii* was rediscovered near to its type locality in Vietnam.

*Nepenthes thorelii* falls within a group of closely related Indochinese species. As a consequence of their similarities, these species are ascribed to a single group, the *Nepenthes thorelii* aggregate. All the so-called “*N. thorelii*” spread in cultivation are actually various species of this aggregate, most likely *N. smilesii*, *N. kampotiana* and *N. bokorensis*. The most obvious features that distinguish *N. thorelii* from all its relatives are its ovoid to sub-globose lower pitchers. At its only known locality, in common with other pyrophytic *Nepenthes* taxa, *N. thorelii*

commonly flowers in the rosette stage. The taxon does form strong climbing stems, but the majority of plants are stout and upright. *Nepenthes thorelii* grows terrestrially on acidic, riverine silt at sea level. Plants occur singly or in sparsely scattered groups across open and semi-open, seasonally wet land. The natural habitat of this species has been reduced greatly due to agricultural expansion; its existence in the wild is threatened by poaching. It is currently known from a single population.

#### Description:

Mey, F. S., L. Hong Truong, V. D. Dang, A. Robinson (2011), “*Nepenthes thorelii* Lecomte, an emended description and novel ecological data resulting from its rediscovery in Tay Ninh, Vietnam”. In S. McPherson (2011), *New Nepenthes-Volume One*: 104-131.



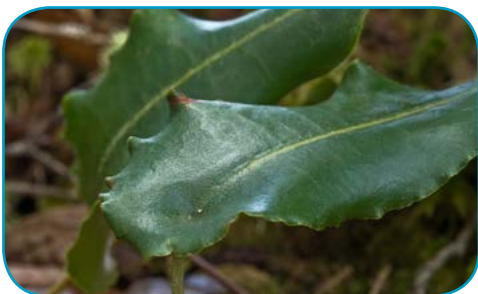
• *Nepenthes undulatifolia* Nerz, Wistuba, U. Zimmermann, Chi C. Lee, A. Pirade & R. Pitopang, *sp. nov.*

by Andreas Wistuba

*Nepenthes undulatifolia* was discovered on a mountain in Southeast Sulawesi (Indonesia) in 2009 and was described in December 2011 by C. C. Lee, A. Wistuba, J. Nerz, U. Zimmermann, A. Pirade Paserang and R. Pitopang.

It was discovered in South-East Sulawesi at an altitude of around 1800 meters. This species is readily distinguished from all other *Nepenthes* by its unique combination of vegetative features: it has broadly spatulate leaves with distinctively wavy margins. The tendrils are peltate, a feature known from species such as *N. clipeata*, *N. rajah* and *N. peltata* but not from any other *Nepenthes* known from Sulawesi. Lower pitchers are urceolate to ovate while the upper pitchers are infundibular and resemble the upper pitchers of *N. paniculata* which occurs in Papua. Soft, white hairs are present on most parts except upper surface of lamina.

The specific epithet "*undulatifolia*" refers to the undulating shape of the lamina, a distinctive characteristic of this species.



**Description:**

Lee, C. C., A. Wistuba, J. Nerz, U. Zimmermann, A. Pirade Paserang, R. Pitopang (2011), "*Nepenthes undulatifolia*, a new pitcher plant from South Est Sulawesi". In S. McPherson (2011), New Nepenthes-Volume One: 492-505.



# Sarracenia

• *Sarracenia alata* var. *atrorubra* S. McPherson & D. E. Schnell, *var. nov.*

di Stewart McPherson

The varietal epithet is derived from the Latin *ater* (dark) and *ruber* (red), with reference to the colouration of the pitchers. They are typically a uniform scarlet to deep maroon. All parts of the foliage may develop red colouration, though in some plants the base of the leaf and petiole may be reddish green, particularly if shaded by surrounding vegetation. Fine, dark red or dark purple veins are often present on the pitcher interior around the pitcher opening, as well as on the underside of the lid, although this venation may only be discernible when light shines through the pitcher tissue.

The colour of the pitchers darkens over the course of the summer. The interior of the pitcher opening often develops a prominent, silvery sheen that is more obvious than in most other varieties of *Sarracenia alata*. The developing leaves of *S. alata* var. *atrorubra* can appear identical to those of *S. alata* var. *ornata* before they open fully and develop their typical colouration. However, the mature foliage of both varieties is unmistakable due to its very different and distinctive colouration patterns.

*Sarracenia alata* var. *atrorubra* was historically rare, and is even more so today. Extensive, localised populations occur in Mississippi and eastern Louisiana, but it is not known whether the variety is represented in the western part of the species' range. Records suggest that it may occur in Texas, but these are not reliable and merit investigation. In Mississippi, *S. alata* var. *atrorubra* populations are often intermingled with populations of *S. alata* var. *orna-*

*ta*, and *S. alata* var. *nigropurpurea*; hybrids involving these varieties are common.

## Description:

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 740.





by Stewart McPherson

The varietal epithet is derived from the Latin adjective *cupreus* (of copper), with reference to the colour of the pitcher lids. These develop a prominent, coppery-bronze colouration on their upper surfaces. All remaining parts of the foliage are identical to *Sarracenia alata* var. *alata* in terms of colour,

including the location and degree of venation. Plants in which venation is present on the exterior of the leaves represent hybrids with *S. alata* var. *ornata*.

While all varieties of *S. alata* except *S. alata* f. *viridescens* may develop coppery lids as the foliage begins to discolour prior to withering, *S. alata* var. *cuprea* develops its distinctive copper colouration as soon as the leaves open in spring and summer, provided light levels are adequately high. Distinguishing this variety from all others is thus relatively straightforward except in the autumn.

Sporadic, generally small and rather localised populations of *S. alata* var. *cuprea* occur in Mississippi and eastern Louisiana. The variety is extremely rare overall. It is not known whether this variety occurs in the western part of the species' range. As with *S. alata* var. *atrorubra*, records suggest that *S. alata* var. *cuprea* may occur in Texas, but these claims have not been verified.

In Mississippi and Louisiana, *S. alata* var. *cuprea* often grows with *S. alata* var. *ornata*, frequently producing hybrids. It may also grow alongside and hybridise with *S. alata* var. *atrorubra* and *S. alata* var. *nigropurpurea*.

#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 741.



• *Sarracenia alata* var. *nigropurpurea* P. D'Amato ex S. McPherson & D. E. Schnell, var. nov.

by Stewart McPherson

The varietal epithet is derived from the Latin *niger* (black) and *purpureus* (purple), with reference to the colour of the pitchers. These develop spectacular and distinctive purplish-black colouration in the upper parts of the pitcher, especially the underside of the lid, inside the pitcher opening and on the column. This dark colouration may extend across the pitcher exterior, especially just below the pitcher opening. It is sometimes restricted to the interior of the opening, possibly as a result of hybridisation with other *Sarracenia alata* varieties, reducing the expression of the dark pigment on the pitcher exterior.

The upper surface of the lid is usually dark bronze, reddish or purple. In all cases, the exterior of the basal half of the leaves is olive green, or greenish-red. Fine, unbranched, dark purple veins may be present on the pitcher interior, around the pitcher opening, beneath the lid or on the pitcher exterior; in plants where the dark pigmentation covers the exterior of the leaf, it may only be discernible when light shines through the pitcher walls. In shade, the leaves are reddish-green and cannot be distinguished from *S. alata* var. *atrorubra* or *S. alata* var. *rubrioperculata*. This variety tends to die back earlier in autumn, so it is difficult to observe in the wild after August.

Small, localised populations of *S. alata* var. *nigropurpurea* occur in Mississippi and eastern Louisiana. It sometimes occurs alongside *S. alata* var. *ornata* and *S. alata* var. *atrorubra*, but its remarkable, dark colouration means that it is unlikely to be confused with any other species of *Sarracenia*.



**Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 742.

by Stewart McPherson



The varietal epithet is derived from the Latin *ornatus* (embellished), with reference to the ornate venation that dominates the surface of the pitchers. Extensive, reticulate, dark red or purple veins are concentrated on the upper parts of the tubular portion of the pitcher and often inside the pitcher opening. The veins run vertically, but are connected with a network of smaller secondary branches, in stark contrast to all other varieties of *Sarracenia alata*, wherein any venation present exhibits a pinstripe pattern. The leaves of this variety are greenish-yellow, or golden yellow in strong sunlight, contrasting with the darkly coloured veins, as well as the yellowish green lip of the pitchers.

The reticulate venation of *S. alata* var. *ornata* is unusual for *S. alata*, and can resemble that of many members of the *S. rubra* complex. However, floral morphology and colour is a reliable diagnostic characteristic. Within the species, comparable venation only arises in *S. alata* var. *rubrioperculata*, but in that variety, the lower surface of the lid is entirely reddish-purple.

Populations of *S. alata* var. *ornata* occur in Mississippi and eastern Louisiana sporadically; they are generally small and localised, and the plant is rare overall. It has been observed often growing sympatrically with all other varieties of *S. alata* except *S. alata* f. *viridescens*, and hybrids with these taxa are common where the plants coincide.

#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 743.



by Stewart McPherson

The varietal epithet is derived from the Latin *ruber* (red) and *operculum* (lid), with reference to the distinctive reddish-purple colour on the lower surface of the lid, and sometimes parts of the pitcher opening. Prominent, reticulate or pinstripe dark red or purple venation may be present on the exterior and interior of the leaves, and throughout the pitcher opening, column, and on both surfaces of the lid, in a manner reminiscent of *Sarracenia alata* var. *ornata*, although usually without the same intensity or concentration. All remaining parts of the foliage are greenish-yellow, or golden yellow in strong sunlight. The vivid background colouration of the leaves maximises the contrast with the veins, as does the lip, which is usually entirely dark red or purple.

The pure red or purple underside of the lid distinguishes *S. alata* var. *rubrioperculata* from all other *Sarracenia*. The developing leaves may appear very similar to *S. alata* var. *ornata* before the red lid colouration develops, but as soon as the foliage is mature, the two taxa are easily discriminated. *Sarracenia alata* var. *rubrioperculata* can be distinguished from *S. alata* var. *nigropurpurea* since its distinctive colouration never approaches black, nor does any pigment suffuse across the pitcher exterior. Furthermore, *S. alata* var. *nigropurpurea* has comparatively little venation and it is never reticulate.

Small and localised populations of *S. alata* var. *rubrioperculata* occur in Mississippi and eastern Louisiana. It is often sympatric with all other varieties of *S. alata*, except *S. alata* f. *viridescens*.

#### Description:

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 744.



by Stewart McPherson



The forma epithet is derived from the Latin *viridescens* (becoming green), and indicates that this plant is incapable of producing red anthocyanins. As a result, all parts of its leaves and flowers appear yellowish green. In all other respects, this form is identical to *Sarracenia alata* var. *alata*.

*Sarracenia alata* f. *viridescens* is readily distinguished from all other varieties of *S. alata* by the colouration of its foliage and inflorescence. In particular, the bases of the petioles and the rhizome scales are consistently yellowish green, whereas in all other varieties of *S. alata* these parts always produce red colouration to varying extents, even in plants growing in heavy shade.

*Sarracenia alata* f. *viridescens* is extremely rare in the wild, and only a few of populations consisting of single or isolated clumps of plants have ever been discovered. The first specimen ever observed was found in Washington County, Alabama, in 2001, where this form was represented by just one clump among many examples of the typical form. Since then, at least one other small population of *S. alata* f. *viridescens* has been discovered, but it is not known whether either population is extant. Further populations of this variety may exist in the wild, but none have been reported to date. The taxon is conserved ex situ in horticultural collections across North America and in the United Kingdom.

#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 745.

by Stewart McPherson

The forma epithet is derived from the Latin *viridescens* (becoming green), and indicates that this plant is incapable of producing red anthocyanins. As a result, both the leaves and flowers appear yellowish green. In all other respects this form is identical to *Sarracenia flava* var. *flava*.

*Sarracenia flava* f. *viridescens* is easily distinguished from all other varieties of *S. flava* by the colouration of its foliage and inflorescence. In all other varieties, the petioles and rhizome scales always bear some red colouration, even in those plants growing in heavy shade; in *S. flava* f. *viridescens*, however, these parts are entirely yellowish green.

This variety was first discovered in Colquitt County, Georgia, in 1998, and a further specimen discovered in 2004 near to the town of Ash, Brunswick County, North Carolina. Seeds germinated from these populations have demonstrated that the inability to produce anthocyanins is genetic. Recently, further examples of this form have also been discovered in the wild as isolated populations of one or a few individuals, whilst others have arisen spontaneously from seed germinated in cultivation by horticulturists. Given its rarity in the wild, no hybrids with other varieties are known, though the anthocyanin-free habit is usually a recessive trait and therefore likely to be masked. It is not known whether populations of this rare form persist in the wild.

#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 746.





• *Sarracenia leucophylla* var. *alba* (Hort. T. Baines ex R. Hogg & T. Moore) J. Pietropaolo & P. Pietropaolo ex S. McPherson & D. E. Schnell, *comb. nov.*

by Stewart McPherson



The varietal epithet *alba* is derived from the Latin *albus* (white) and refers to the entirely white extremities of the pitcher leaves. *Sarracenia leucophylla* var. *alba* differs from *S. leucophylla* var. *leucophylla* in that the veins on the interior surface of the pitcher are extremely thin and lack discernible colouration; as a result, the inner surfaces of the pitcher opening, the nectar roll and column appear white, with no apparent venation at all. In the most extreme strains of *S. leucophylla* var. *alba*, all parts of the uppermost third of the leaf may be pure white.

The leaves of *S. leucophylla* var. *alba* may also exhibit reduced and hardly discernible venation on the exterior of the pitcher opening below the nectar roll, and on the upper and lower surfaces of the lid, but this is not consistent and cannot therefore be used as a reliable diagnostic feature. The lower parts of the foliage are usually olive green, and may turn tan or orange over the course of summer, as in *S. leucophylla* var. *leucophylla*. The edge of the ala is usually the only part of the leaf of *S. leucophylla* var. *alba* that develops truly red colouration. The flowers are red, as in the typical form.

Populations of *S. leucophylla* var. *alba* occur sporadically in stands of *S. leucophylla*, but usually as an extreme minority. This variety is known only from southern Alabama, where it appears to be endemic; it has been observed in Washington County, including at Deer Park, and in at least three separate populations in Baldwin County.

#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 747.

by Stewart McPherson

The forma epithet is derived from the Latin *viridescens* (becoming green), and indicates that this plant is incapable of producing red anthocyanins. As a result, all parts of its leaves and flowers appear yellowish green. The areoles on the leaves are pure white, and in strong sunlight the non-areolated parts of the foliage may become a buttery yellow colour in some strains. The petals are generally a lighter yellowish green colour than the sepals. In all other respects, including size and proportions of the leaf, this form is identical to *Sarracenia leucophylla* var. *leucophylla*.

*Sarracenia leucophylla* f. *viridescens* is reliably distinguished from all other varieties of *S. leucophylla* by the colouration of its foliage and inflorescence. In particular, the petioles, rhizome scales and petals are always yellowish green, whereas in *S. leucophylla* var. *leucophylla* and *S. leucophylla* var. *alba*, even plants growing in heavy shade exhibit red pigment in these areas.

A single, non-flowering specimen of this taxon was discovered in August, 1993, in Baldwin County, Alabama, and two separate plants were found in the same area in 1994. Self- and cross-pollination of the flowers resulted in anthocyanin-free offspring which are now relatively widespread among North American and European horticulturists. Further wild specimens have been discovered since, but their continued persistence in the wild is uncertain. Whatever the case, this form is exceedingly rare and thus highly susceptible to disturbance.

#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 750.



- *Sarracenia minor* var. *minor* f. *viridescens* S. McPherson & D. E. Schnell, f. nov.

by Stewart McPherson

The forma epithet is derived from the Latin *viridescens* (becoming green), and indicates that this plant is incapable of producing red anthocyanins. All parts of its leaves and flowers are thus yellowish green. The areoles on the leaves are pure white. In all other respects, including size and leaf proportions, this form is identical to *Sarracenia minor* var. *minor*.

*Sarracenia minor* var. *minor* f. *viridescens* is reliably distinguished from all other varieties of *S. minor* by the colour of its foliage and inflorescence. The petioles and rhizome scales are always yellowish green in *S. minor* var. *minor* f. *viridescens*, but those of *S. minor* var. *minor* and *S. minor* var. *okefenokeensis* always bear some red colouration, even when growing in heavy shade. An anthocyanin-free variant of *S. minor* var. *okefenokeensis* has not been discovered, but would most probably differ from this taxon in having foliage that is taller and proportionately broader, in line with the morphological characteristics of that distinct variety.

A small population of *S. minor* var. *minor* f. *viridescens* was originally discovered in Worth County, Georgia, in 1993. Further specimens have since been discovered in the same area, and offspring are now in many collections in North America and Europe. Even so, it is not known whether populations of this rare form persist in the wild.



#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 751.



by Stewart McPherson



The varietal epithet is derived from the Latin *ornatus* (embellished), a reference to the ornate venation that dominates the pitcher exterior. The leaves are yellowish green, or vivid yellow in direct sunlight, and lined with vivid, dark red or purple reticulate veins. This venation varies in its extent, but the vibrant veins are particularly prominent on the uppermost parts of the pitcher exterior, the interior of the pitcher opening, and on both surfaces of the column and lid. The pitcher interior may become suffused with orange, red or purple. In all other respects, this variety is identical to *Sarracenia oreophila* var. *oreophila*.

The distinctive veins that line the exterior of the tubular portion of the pitcher distinguish this variety from *S. oreophila* var. *oreophila*. Whilst the former usually has veins on the upper surface of the lid, this is seldom if ever the case in the latter. Further, where the interior of the pitcher opening may also be flushed dark red or purple in *S. oreophila* var. *ornata*, in the type form this part is only ever a faint, reddish-purple, if any red pigments are apparent at all.

Once present throughout the range of *S. oreophila*, this variety has unfortunately been rendered close to extinction, largely through selective poaching. *Sarracenia oreophila* var. *ornata* is now extremely rare in the wild, and the last known population survives within a single, remote, stream-side bog in the Little River Canyon National Preserve, Alabama.

#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 752.

• *Sarracenia psittacina* var. *psittacina* f. *viridescens* S. McPherson & D. E. Schnell, f. *nov.*



by Stewart McPherson

*psittacina* var. *psittacina* and attains maturity slowly, producing narrow pitchers no larger than 15 cm in length; it displays the tendency to frequently produce offshoots, thus forming compact, dense clusters of short leaves. This form differs in overall size from var. *okefenokeensis*; the two plants can be distinguished using a numerical index: divide the length of the pitcher by the width of the dome; if the result is less than 3.5 we have var. *okefenokeensis*, otherwise var. *psittacina*.

This form has been recorded many times in northern Florida, particularly in Gulf and Bay Counties, and once in Baldwin County, Alabama.

**Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 753.

• *Sarracenia psittacina* var. *okefenokeensis* S. McPherson & D. E. Schnell, var. *nov.*

by Stewart McPherson

This variety, best known from the Okefenokee National Wildlife Refuge in Georgia where it was first observed, produces radically larger, proportionally distinct leaves that differ from those of the type variety. Very broad pitchers with large domes, 25–35 cm long are not uncommon, and some may attain 40 cm if etiolated. The wing is very broad and semi-circular.

In general, plants that can produce leaves 30 cm or more long represent this variety, though in some populations are shorter. It can be distinguished from *Sarracenia psittacina* var. *psittacina* using the numerical index described above. Other differences include



reduced areolation and a tendency to produce red leaves.

Populations have been encountered in the Okefenokee reserve, as well as in Ware, Charlton and Marion Counties, Georgia, in Washington and Baldwin Counties, Ala-

bama, and at scattered localities in Florida, including Wakulla, Liberty, Bay, Calhoun and Okaloosa Counties. At these sites, this variety tends to predominate.

#### Description:

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 754.

- *Sarracenia psittacina* var. *okefenokeensis* f. *luteoviridis* S. McPherson & D. E. Schnell, f. nov.

by Stewart McPherson



The forma epithet is derived from the Latin *luteus* (yellow) and *viridis* (green), and denotes the pure yellowish green colouration of all parts of this anthocyanin free taxon. In all respects other than colour, this form is identical to *Sarracenia psittacina* var. *okefenokeensis*.

It can be distinguished from *S. psittacina* var. *psittacina* f. *viridescens* using the numerical index detailed in the *S. psittacina* var. *okefenokeensis* section. Whereas it has longer leaves, up to 40 cm in length or more (*S. psittacina* var. *psittacina* f. *viridescens* ones are generally less than 15 cm long) and often have much wider pitcher tubes and larger domed heads. It is reliably distinguished from *S. psittacina* var. *okefenokeensis* by the colouration of

its foliage and inflorescence. In particular, the petiole bases, rhizome scales and petals always bear some red colouration in *S. psittacina* var. *okefenokeensis*, even in plants growing in heavy shade. In *S. psittacina* var. *okefenokeensis* f. *luteoviridis*, these parts are consistently pure yellowish green.

Small stands of this plant have been found growing amongst *S. psittacina* var. *okefenokeensis* in the Okefenokee National Wildlife Refuge in Georgia.

#### Description:

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 755.



- *Sarracenia purpurea* subsp. *venosa* var. *venosa* f. *pallidiflora* S. McPherson & D. E. Schnell, f. *nov.*

by Stewart McPherson

The forma epithet "*pallidiflora*" (with pale flowers) refers to the pallid petals of this plant. *Sarracenia purpurea* subsp. *venosa* var. *venosa* f. *pallidiflora* is genetically incapable of producing red anthocyanins; all parts of the foliage and inflorescence are yellowish green

*venosa* f. *pallidiflora* is reliably distinguished from *S. purpurea* subsp. *venosa* var. *venosa* by the colour of its foliage and inflorescence. The petioles, rhizome scales and petals are always yellowish green to white, whereas in *S. purpurea* subsp. *venosa* var. *venosa*, even plants growing in heavy shade produce some red pigmentation.

Only a few examples of *S. purpurea* subsp. *venosa* var. *venosa* f. *pallidiflora* have ever been discovered, all of which were raised in cultivation from seed derived from heterozygous plants. No examples of this rare form have ever been found in the wild, and although it may well exist in nature, it is likely to be extremely rare.

#### Description:

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 756.



in colour, except for the petals, which are white, cream or pale, yellowish green. The petals often lighten as they age and can appear white before they wither. In all other respects, this form is morphologically and ecologically identical to *S. purpurea* subsp. *venosa* var. *venosa*.

*Sarracenia purpurea* subsp. *venosa* var.



• *Sarracenia rubra* subsp. *alabamensis* (Case & R. B. Case) S. McPherson & D. E. Schnell, *comb. nov.*

by Stewart McPherson

The sub-specific epithet refers to the state of Alabama, to which this species is endemic. The distinctive summer pitchers of *Sarracenia rubra* subsp. *alabamensis* are erect, tubular, up to 49 cm tall and 4.5 cm wide, rarely up to 72 cm tall and 6.7 cm wide. The lower part is slender, broadening gradually from the leaf base to the midsection, then more widely towards the wide pitcher opening, which is wider than in all other *S. rubra* taxa. The column is short and as broad as or slightly narrower than the pitcher opening and lid. The broad lid is ovate or heart-shaped, with slightly undulating margins and fine tip. The lid is usually slightly longer than broad, occasionally elongate, and basally reflexed into the column. The faint, translucent areoles near the top of the pitcher are more prominent than in all typical *S. rubra* subspecies. The petiole may be up to one quarter of the length of the leaf. The pitcher walls are flexible, soft, and lined with a dense, fine, often velvety indumentum. Pitchers are typically yellowish or olive green, and fine, dark red, dark maroon or brownish, reticulate venation marks the interior of the pitcher and lower surface of the lid, less often the exterior surfaces.

*Sarracenia rubra* subsp. *alabamensis* is threatened with extinction and is included in Appendix I of CITES and on the U.S. List of Endangered and Threatened Plants. Only twelve populations survive among the Fall Line Sand Hills of Chilton, Autauga, and Elmore Counties, Alabama, north of the Alabama River in an area roughly bounded by the Coosa River to the east, and the Mulberry River to the west.



**Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 757.

• *Sarracenia rubra* subsp. *gulfensis* f. *luteoviridis* S. McPherson & D. E. Schnell, f. nov.

by Stewart McPherson

The forma epithet is derived from the Latin *luteus* (yellow) and *viridis* (green), and refers to the yellowish green colour of all parts of this anthocyanin-free taxon. The upper parts of the pitchers are variably areolated, with irregular patches of white or light yellow

tissue. This areolation may also occur on the column and lid to varying extents. In some plants, areolation may dominate parts of the foliage, particularly just below the pitcher opening, whereas in others, the areolation may be practically absent and the pitchers a uniform, yellowish green. It is not clear whether areolation is common to all plants of this form, but it does appear to be the case in all plants that have been studied thus far. In all other respects, including size, leaf proportions and ecology, this form is identical to *Sarracenia rubra* subsp. *gulfensis*.

*Sarracenia rubra* subsp. *gulfensis* f. *luteoviridis* is reliably distinguished from *S. rubra* subsp. *gulfensis* by the colouration of its foliage and inflorescence. In *S. rubra* subsp. *gulfensis* the petioles, rhizome scales and petals always bear some red colouration, even where plants grow in heavy shade. This form lacks such red pigmentation entirely, the parts in question remaining yellowish green. The leaves of *S. rubra* subsp. *gulfensis* f. *luteoviridis* are shorter and stouter than those of *S. rubra* subsp. *jonesii* f. *viridescens*, allowing these anthocyanin-free forms to be readily told apart.

This form has been recorded at a number of sites in Florida, but is generally very rare.

**Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 758.





• *Sarracenia rubra* subsp. *jonesii* f. *viridescens* S. McPherson & D. E. Schnell, f. nov.

The forma epithet is derived from the Latin *viridescens* (becoming green), and refers to the fact that this taxon is incapable of producing red anthocyanins. As a result, all parts of its leaves and flowers appear yellowish green. In all other respects, including size and proportions of the leaf, this form is identical to *Sarracenia rubra* subsp. *jonesii*.



by Stewart McPherson

The upper parts of the pitchers are often faintly areolated, giving rise to irregular patches of pale tissue, much like that seen in *S. rubra* subsp. *gulfensis* f. *luteoviridis*. It may also occur on the column and lid to varying extents, but the degree to which it is expressed differs greatly between individuals.

*Sarracenia rubra* subsp. *jonesii* f. *viridescens* is reliably distinguished from *S. rubra* subsp. *jonesii* by the colouration of its foliage and inflorescence; in the latter, the petioles, rhizome scales and petals always bear some red colouration, whereas in this form they are consistently yellowish green.

Unusually, *S. rubra* subsp. *jonesii* f. *viridescens* originally formed significant stands, outnumbering the typical form in some localities. It is at least as vigorous as the typical variety, reproducing readily through sexual and asexual means. Poaching for horticulture in the Carolinas has wiped out the population in Pickens County, and those in Henderson County are close to extirpation, mainly through illegal poaching and displacement resulting from a lack of wildfire activity.

#### **Description:**

McPherson, S., D. E. Schnell (2011). In Appendix of S. McPherson, D. E. Schnell (2011), *Sarraceniaceae of North America*: 759.

# Utricularia

• *Utricularia densiflora* Baleeiro & C. P. Bove, *sp. nov.*

by Claudia P. Bove and Paulo C. Baleeiro Souza

While conducting field work to evaluate the diversity of Lentibulariaceae in the Brazilian savanna-like “Cerrado”, we found a new species of *Utricularia* inhabiting a shallow pool of water (ca. 7 cm deep) among grasslands with an also new species of the piperwort family Eriocaulaceae (nowadays under description).

*Utricularia densiflora* Baleeiro & C. P. Bove is morphologically most similar to *U. erectiflora* and *U. meyeri* due to the upper corolla lobe shape, recurved calyx margin with decurrent base, and very narrow leaf lamina with rounded apex. The lower corolla lobe of *U. densiflora* resembles that of *U. meyeri*, which has less congested inflorescences. *Utricularia densiflora* is unique in having several dormant buds subtended by bracts along the peduncle, that looks like large scales at first glance; numerous sessile glands near the peduncle base becoming scarce towards the apex; spur as long as the lower calyx lobe and rhizoid branches somewhat ramified, and highly congested inflorescence. This latter characteristic gave us the inspiration to the specific epithet.

The Cerrado is a hotspot for conservation due to its great biological diversity and high endemic index (ca. 44% of the species), but unfortunately under great human impacts (about 55% of their original territory was lost), with only small areas under protection. Although this species was found just in one locality, this is luckily inside the federal conservation unit Chapada dos Veadeiros National Park, in the Brazilian state of Goiás. According to the IUCN Red List Categories and Criteria, *U. densiflora* is classified as Near Threatened (NT).



## Description:

Baleeiro Souza, P. C., C. P. Bove (2011), “A new species of *Utricularia* (Lentibulariaceae) from Chapada dos Veadeiros (Central Brazil)”. *Systematic Botany* 36(2): 465-469.



# Philcoxia

## a new genus of carnivorous plant

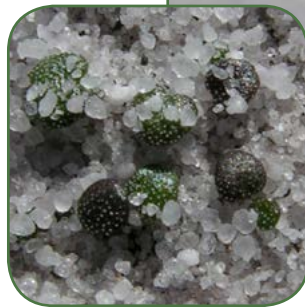
by Andreas Fleischmann

*Philcoxia* is a genus consisting of three perennial and rare species: *Philcoxia bahiensis* from Bahia, *P. goiasensis* from Goiás, and *P. minensis* from Minas Gerais, each named for the Brazilian state to which it is endemic (Taylor et al. 2000).

They grow in well drained open plain patches consisting of deep and white silica sand, that remain very dry for most of the year. The leaves of the rosette are tiny and peltate (1-3 mm in diameter), lined with stalked, sticky glandular hairs on their upper surface, and lie flat on the ground, usually covered by a thin layer of sand grains, where they are protected from intense radiation and heat, and where they might receive some moisture from nocturnal condensation. The erect, many-flowered and multiply-branched inflorescence, up to 30 cm tall, bears lilac to purple flowers.

Large numbers of dead nematodes have been found adhering to the glandular leaves of herbarium specimens. A detailed study by Pereira et al. (2012; published online in December 2011), shows compelling evidence for carnivory in *Philcoxia* thanks to positive results for enzyme activity in the leaf glands of *Philcoxia minensis*, and the even more convincing isotope tracing experiments of the same study demonstrate the uptake of nitrogen originating from the nematode prey into the plant tissue directly.

*Philcoxia minensis*



### References:

Taylor, P., V. C. Souza, A. M. Giulietti, R. M. Harley (2000), "*Philcoxia*: A new genus of Scrophulariaceae with three new species from Eastern Brazil". *Kew Bulletin*, 55(1): 155-163.

Pereira, C. G., D. P. Almenara, C. E. Winter, P.W. Fritsch, H. Lambers, R. S. Oliveira (2012), "Underground leaves of *Philcoxia* trap and digest nematodes". *Proc. Natl. Acad. Sci. USA*.