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THE PROPOSED RE-ESTABLISHMENT OF *SINCORAEA*

by Herb Plever

The latest BSI Journal has an article with a new botanical description of *Sincoraea*, formerly synonymized under *Orthophytum*, which elevates it to full genus status - separate from *Orthophytum*.

You may well ask why I am summarizing that important article when it is fully covered in the Journal. I'm doing it to bring to the attention of our readers a very worrisome situation - the BSI membership has precipitously fallen to about 700 members (and Journal recipients). So most of the thousands of bromeliad growers around the world do not read the Journal. This represents an almost 50% drop from our membership 2 years ago.

President Lyn Wegner of South Africa and V.P. Rick Ryals of Florida have led discussions with the BSI Board of Directors about the reasons for this, and what they (and we) can do about it. Some directors would like to consider reducing the \$40 annual fee, but that creates a Catch-22 situation - a reduction in the annual fee would reduce our operating budget which already is strained. In fact BSI is trying to raise \$25,000 in an emergency fund; a generous donor has proffered an equal amount if we could match it. I urge readers who would like to see BSI survive and grow to contribute to Emergency Fund 66 (for our 66th year as an organization). Go to www.bsi.org for details.



Sincoraea amoema

The BSI as the parent organization of all affiliates, is the glue that connects growers from Brazil, Argentina, Venezuela, Ecuador, Central America, the U.S., Hawaii, the UK, Holland, Belgium, South Africa, Australia, New Zealand, Singapore, etc. through the Journal, the World Conferences and establishing the rules and schools for judging and accrediting judges.

One of the great benefits of attending a World Conference is that you get to meet growers from those areas and exchange information and plant, besides seeing many new plants and learning important information from the seminars.

Evidently the Journal has not been able to maintain that connection, especially now that we have been forced by economics to publish only quarterly - and its issues are not current and up to date.

Many other membership organizations have also suffered losses in membership which indicates to me that economics is an underlying major cause. Growing bromeliads is an expensive hobby, and in the recent and current depressed economy people have to watch their expenditures. But the scary and unacceptable fact is that about 90% of the officers, directors and members of the local affiliates are not and have not been for some time members of BSI.

NEXT MEETING - Tuesday, March 7th, 2017 promptly at 7:00 pm at the Ripley-Grier Studios, 520 - 8th Avenue (betw. 36th & 37th Ave) **Room 16M**
SELECTED BROMS FROM 29 GENERA & SOME BIGENERICS,
with emphasis on plants that will fit and grow in indoor setups - A video of blooming plants with discussion of their cultural needs and tips.

*Sincoraea albopicta**Sincoraea hatschbacchii*

Statewide Councils and Guilds have their necessary functions and perform them very well, but only BSI can connect nationally and internationally. There is no conflict - growers should support their clubs and the BSI.

Growers are still buying expensive plants. If they take their families to the movies, the price of admission, popcorn, soda and eating out will be from \$40 to \$100, depending on the size of the family. Come on bromelphiles, skip just one outing a year and you can pay for your BSI membership. The latest Journal has many articles you'll find interesting, so join now and get it.

I don't apologize for this digression because these issues need to be discussed openly to find ways to increase membership.

Now back to the topic of *Sincoraea*. Brazilian biologists/taxonomists Rafael Louzada and Maria das Graças L. Wanderley have written a formal botanical description of *Sincoraea* in the latest Journal (Vol. 66 No. 1) in which they propose to re-establish *Sincoraea* as a genus with 11 species, that heretofore were in *Orthophytum*.

The authors state: "*Sincoraea* was first described with a single rupicolous species (*Sincoraea amoena*), characterized by leaves totally or partially red during anthesis and the total absence of a peduncle rendering sessile inflorescences. (Ed. note - Species short caulescent with sessile flowers that emerge from the top of a short, and an inconspicuous stem - whereas in

other species of the genus *Orthophytum* the flowers are spread along the scape or peduncle,, or a long caulescent stem.) Later, *Sincoraea* was synonymized under the genus *Orthophytum*. Many more new species, having the same features as *S. amoena*, were described under *Orthophytum* in subsequent years. Herein we re-establish the genus *Sincoraea* based on morphological analysis and the monophyly of the clade including all species with sessile inflorescences, and the geographic restriction of this group to the northern portion of the Espinhaço Mountain Range."

That analysis and conclusion makes good sense to me. The uniformly sessile inflorescences and confined biogeographical habitat strongly support the change. The authors refer to a DNA clade showing *Sincoraea* is monophylogenetic as the 11 species have the same single, recent, common ancestor. They note that the species are rosettes, and I would add that every one of the 11 species is a many-leaved rosette unlike any of the other pedunculate species in *Orthophytum*. See my further comments at the bottom of page 6.

Specific details with respect to leaf color can be seen from the photos of the 11 species: the leaves of *S. humilis* are mostly lavender at flowering. The leaves of most species are medium to bright red or maroon before flowering, but even brighter red at anthesis. A section of their inner leaves are colored intense, bright red in *S. amoena*, *S. mucugensis*, *S. burle-marxii*, *S. navioides* and *S. Ophiuroides*. The inner section of the leaves is white in *S. albopicta* and *S. ulei*, and green

*Sincoraea burle-marxii*

Its color is quite variable in collections

*Sincoraea navioides**Sincoraea heleniceae*

in *S. Hatschbachii* and *S. heleniceae*, and green or yellow-green in *S. rafaelii*. *S. amoena* is the type specimen for the genus.

In 1955 Lyman B. Smith proposed the synonymy of the then known *Cryptanthopsis navioides* and *Sincoraea amoena* under the genus *Orthophytum* (*Orthophytum navioides* (L.B. Sm.) and *Orthophytum amoenum* (Ule) L.B. Sm.). Louzada points out that with this decision, *Orthophytum* now included species characterizing two morphological groups, one with sessile inflorescences and other with pedunculate inflorescences.

Orthophytum roseum had been described as a new species morphologically related to *O. burle-marxii*, differing in the size of vegetative and flower parts. However, Louzada and Wanderley have synonymized *O. roseum* under *O. burle-marxii* because the dimensions cited in the protologue of *O. roseum* as diagnostic overlap with *O. burle-marxii*.

I await the responses of taxonomists and biologists around the globe to this re-establishment of *Sincoraea* as a genus.

I have been growing *Sincoraea navioides* for many years - it is one of my favorite broms. In a recent short piece in *Bromeliana* about how to establish its pups I pointed out that its pups are stoloniferous, and I showed a photo of the stolon (reproduced here on page 6). You should retain the entire length of the stolon when removing the pup, so that it can act as a stabilizing anchor in the medium. The botanical description indicates that all 11 species have stolons. I have only grown *S. navioides*, and I plan on ordering some other *Sincoraeas*, though they seem to be expensive. The only place I've found any of the species at prices I can manage is Michael's Bromeliads. He has four species available: *Sincoraea burle-marxii*, *S. navioides*, *S. ophiuroides* and *S. rafaelii*. I hope that Michael will start developing a collection of the others, especially *S. humilis* and *S. albopicta*.

Rafael has produced a taxonomic key that uses

*Sincoraea ophiuroides**Sincoraea humilis*



Sincorea rafaellii



Sincorea mucugensis



Sincorea ulei

morphological characters to distinguish each species from the others. The botanical description and the key are reprinted on pages 5-6. For readers unfamiliar with botanical terms here is a brief glossary of the words used in the key:

Saxicolous - Grows on or between rocks.

Simple inflorescence - one spike with all the flowers.

Compound inflorescence - 2 or more spikes.

Glandular trichome - an imbedded scale or hair that has a small ball on top that secretes oils, etc.

Non-glandular trichome - trichome without a ball.

Narrowly triangular - triangular shape much longer than wide in proportion of 3-6 to 1.

Triangular - triangular shape with proportion of 2 long to 1 wide or 3 long to 2 wide.

Marginal prickles - spines.

Sepals and bracts - see drawing opposite column.

Anther - the part on top of the stalk of the stamen that produces pollen.

Stamen - the male fertilizing organ of a flower, typically consisting of a pollen-containing anther and a filament. All bromeliad flowers have 6 stamens.

Abaxial - the underside of the leaf blade

Adaxial - the top side of the leaf blade

Lepidote - coated with trichome scales

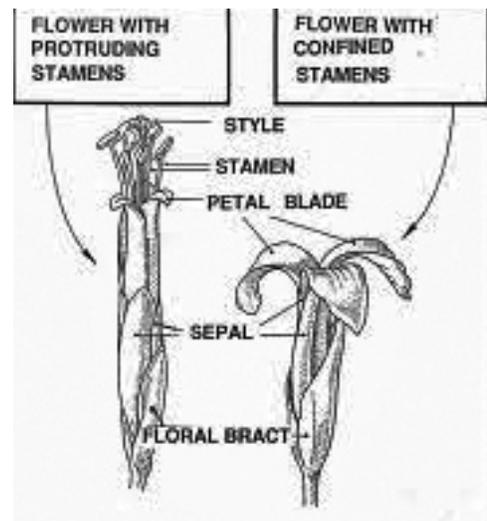
Subacute - Leaf apex margins form an angle of slightly less than 45°. Acute apex would have an angle of between 45° and 90°.

Pungent - Apex tip sharp, pointy

Obtuse - Leaf apex is blunt or rounded.

Densely Serrate - Sawlike spines on the leaf margins like teeth pointing forward and close together.

Laxly Serrate - Fewer sawlike spines with discernable gaps between each spine.



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Serrulate - finely sawlike spines

Arcuate - leaves curved like the arc of a circle

Falcate - leaves curved like the blade of a scythe

Imbricate - sheaths overlapping or layered

Glabrous - without trichomes or only a few

Sessile flowers - without a stem

Sepals free - the three sepals and not connected to each other
Sepals asymmetric - one margin has a different shape from the other margin

Coriaceous - leathery in texture - Sub - nearly so.

Primary Bracts - A leaf-like structures attached to the peduncle (scape) or main stem of the inflorescence; the upper bracts subtend the flower spikes.

Primary bracts foliaceous - On what little inflorescence there may be, the primary bracts resemble a leaf, or sub - nearly so.

Acuminate - the sepal margins gradually taper to an extended point.

Mucronate - the apex of the sepal ends in a projected tooth-like tip

Mucronulate - finely mucronate

Spatulate - petals shaped like a spoon

Callosite - a thickened callus

Filament - the stamen stalk that connects to the

anther

Entire - the petal margins are without spines

Petal appendages - two "nectar" scales that are attached to base of the inner side of the petals

Epigonous Tube - a very long, narrow perianth tube that arises from the top of the inferior ovary

Stamens included - they are down in the center of the flower, lower than the petals

Filaments filiform - threadlike, long and slender

Whorl - the floral bracts, sepals and petals arranged so that radiate from the point where they are attached to the stem. In a free whorl they are free, not attached to each other. When they are adnate, they are closely attached to some part of their margins.

Stamen Included - The stamens are down in the center; the tops of the stamens are lower than the tops of the leaves

Stigma - The stigma is part of the female reproductive part of a flower, the pistil. The stigma is on top of the style. The stigma can be either hairy or sticky, both to trap pollen. When the pollen lands on the stigma, the pollen will grow a pollen tube down the style, and into the ovary of the pistil.

Jacobina-BA - an area in Bahia, Brazil

Mucugê-BA - an area in Bahia, Brazil

BOTANICAL DESCRIPTION OF *SINCORAEA*

Sincoraea Ule, Bot. Jahrb. Syst. 42: 191. 1908. Type:— *S. amoena* Ule Plants saxicolous, stoloniferous in all populations observed, with inconspicuous short stems covered by the leaf sheaths. Leaves forming a distinct rosette, straight, arcuate or falcate; leaf sheaths imbricate, triangular, white-greenish, lepidote to glabrous, margins serrate; leaf blades coriaceous to subcoriaceous, linear-triangular to narrowly-triangular, flat to concave, lepidote to sparsely lepidote on both surfaces, margins serrate, prickles densely or laxly arranged. Inflorescence sessile, simple or compound; primary bracts foliaceous or subfoliaceous. Floral bracts green or red, margins serrate to serrulate, apex pungent. Flowers sessile; sepals free, erect to suberect, asymmetric or rarely symmetric, apex acute, acuminate, mucronate or mucronulate; petals free, white, spatulate, with two callosities laterally placed to the filaments, margins entire, apex obtuse. Petal appendages sacciform, lacerate or digitate. Epigynous tube present or absent. Stamen included; filaments filiform, first whorl free, second whorl adnate to the petals; anthers, dorsifixed obtuse. Stigma simple-erect. Fruits ovoid, with persistent sepals. Seeds ovoid, striate.

ARTIFICIAL KEY TO THE SPECIES OF *SINCORAEA*

- 1 Inflorescence simple.....2
- Inflorescence compound (rarely simple in *S. lei*).....5
- 2 Sepals without glandular trichomes

-*S. hatschbachii*
- Sepals with glandular trichomes.....3
- 3 Sepals narrowly triangular (6:1 or 3:1).....*S. humilis*
- Sepals triangular (2:1 or 3:2).....44 Leaf blades 2–2.3 × 0.4–0.7 cm; petals c. 2.5 cm long;
-*S. navioides*
- Leaf blades 2.5–7 × 0.3–0.4 cm; petals c. 2 cm long;*S. mucugensis*
- 5 Floral bracts and sepals pink to red6
- Floral bracts and sepals green.....9
- 6 Leaf blades abaxially densely lepidote (completely covered by scales).....7
- Leaf blade abaxially laxly lepidote.....8
- 7 Leaf blades adaxially glabrous or sparsely lepidote at the base;
- petal apex subacute*S. burle-marxii*
- Leaf blades adaxially densely lepidote at the base; petal apex obuse
-*S. ulei*
- 8 Leaf blades 0.5–1 cm wide, marginal prickles 1.5–3 mm long;
- floral bracts c. 1.8 × 1 cm, anthers 3.2–3.5 mm long.....*S. amoena*
- Leaf blades 0.2–0.4 cm wide; marginal prickles 0.3–0.4 mm long;
- floral bracts 0.9–1.2 × 0.7; anthers c. 2.5 cm long*S. ophiuroides*
- 9 Leaf blades with a white wooly-lepidote ring surrounding the inflorescence
-*S. albopicta*
- Leaf blades with a green and glabrous ring surrounding the inflorescence.....10
- 10 Leaf blades c. 1,5 cm wide, margins densely serrate*S. heleniceae*
- Leaf blades 0,4–0,7 cm wide, margins laxly serrate*S. rafaelii*

FURTHER COMMENTS: Your acceptance of this proposal to re-establish *Sincoraea* as a separate genus may come down to whether you are a lumpner or a splitter, and the importance to you of monophyly. When I juxtapose the pedunculate species *Orthophytum gurkenii*, with its flowers and sessile, proliferating pups atop a prominent peduncle and a 10 leaved rosette, against say the totally sessile *O. navioides*, a rosette with about 50 or more leaves and with stoloniferous pups that emerge from the base of the plant, I intuitively become a splitter. (See photos below.) I would bet that the two plants do not come from a single, recent parent, ie. together they are not monophyletic. Query: Is *Orthophytum* polyphyletic and does removing these 11 species from *Orthophytum* improve the monophyly of the genus?



Orthophytum gurkenii



O. gurkenii inflor.



Orthophytum/Sincoraea navioides



Pup on long stolon