



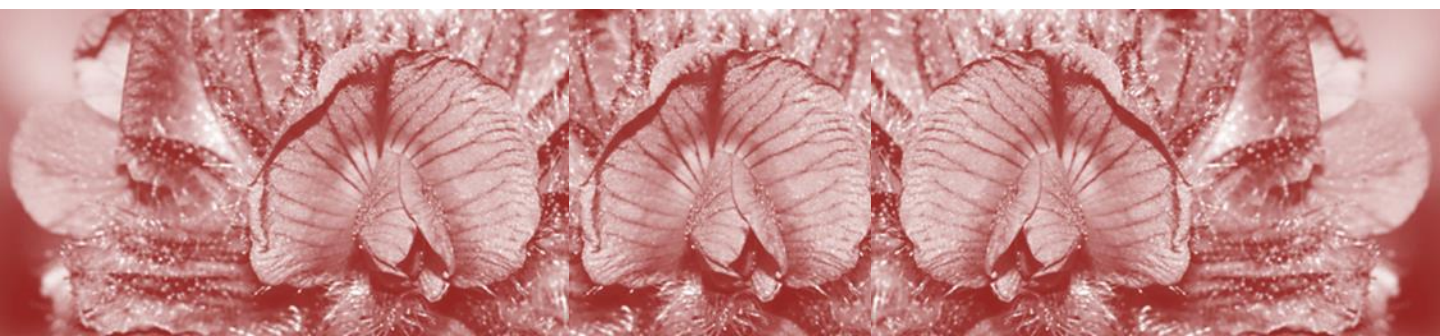
The Bean Bag

**A newsletter to promote communication among research scientists
concerned with the systematics of the Leguminosae/Fabaceae**

Issue 66, Year 2019

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Letter from the Editor

Dear Bean Bag Fellow

I hope your 2020 has had a great start so far! And my apologies for the delay in getting this issue to you.

First of all, some news from the BB Newsletter: we call for a new editor of the BB Newsletter. Yes, that is right: After five years of having the honour of being the Editor of this wonderful newsletter, it is now time to pass on this enriching opportunity and legacy to another legume researcher. See the call on page 3.

Let's have a look to the rest of this issue: A lot has been going on in 2019 in the legume world, as is usual for such a large and fascinating family!

This issue starts with a reminder to the new look of the BB Website and to current and past issues online. Afterwards, we look at "Reports from the legume world" with beautiful stories about *Rhynchosia* and *Psoralea* species, from India and South Africa, respectively, and one look into 2020 with a message from the Legume Phylogeny Working Group.

In this issue, two beautiful photographs of legumes will delight you. And also those of the Gran Chaco with its *Prosopis* species. In conclusion, as always, you'll find the traditional list of recent legume bibliography.

Despite the new webpage, the Bean Bag Newsletter is still sent out through the BB Google Group, which is the only purpose of this google group. For correspondence about the BB, members are invited to email the editorial email: beanbag.kew@gmail.com.

Finally, I am very grateful to Gwil Lewis (Kew Garden) for its editorial assistance and to all contributors of this issue for sharing their news, insights, images and publication citations, making this another colourful issue!

Thank you for your attention.

Kind regards,

Brigitte Marazzi

The Bean Bag Newsletter on the Web

The present and most recent past newsletters are made available for online download on the BB webpage, and issues 1-54 are found in the digital library: www.biodiversitylibrary.org/bibliography/122385#/summary

Join us on Google Group : groups.google.com/forum/?hl=en#!forum/thebeanbag
Find us on the Facebook: www.facebook.com/groups/1484192248560637/

GOOD TO KNOW

CALL FOR NEW EDITOR OF THE BEAN BAG NEWSLETTER



Are you an enthusiastic legume researcher interested in a unique opportunity to stay tuned on legume research from around the world and connected with other legume researchers worldwide?

Then you are a perfect candidate for becoming the next editor and take care of the annual Bean Bag Newsletter and its readership of over 200 members from all over the world!

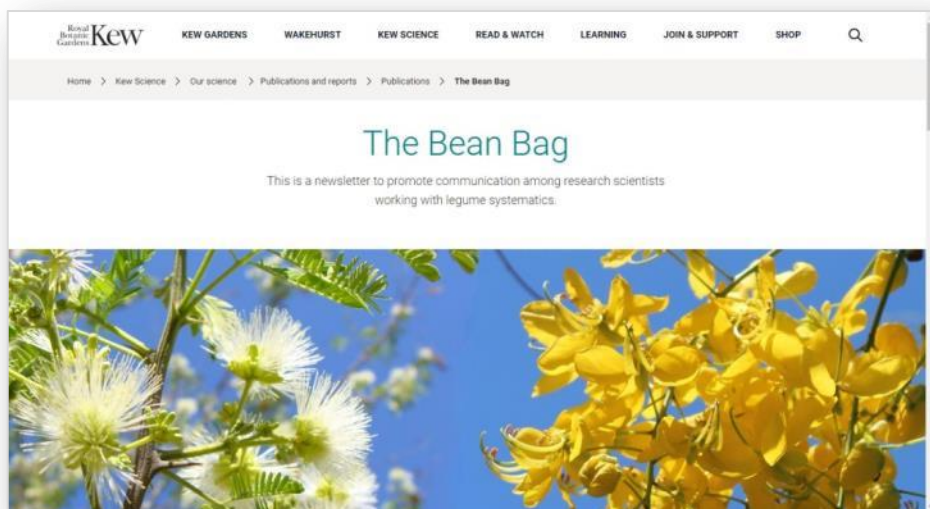
All you need to do is: send a call-email for contributions once a year (usually October), collect contributions, compile the BB Newsletter, and, finally, send the new issue to the community. Management of and communication to the community is made very easy thanks to Google Groups and Gmail.

Information & Application:

Simply email who you are and your motivation to beanbag.kew@gmail.com

NEW LOOK FOR THE BEAN BAG WEBPAGE AT KEW.ORG

Communicated by Brigitte Marazzi, Editor BB Newsletter



The Bean Bag webpage has been back on track for over a year, kindly hosted on Kew's website, and continuing the legacy!

Check out its new look:

www.kew.org/science/who-we-are-and-what-we-do/publications/bean-bag-newsletter



Issues 1-54 are found on the digital library:

www.biodiversitylibrary.org/bibliography/122385#summary

RHYNCHOSIA LOUR. IN INDIA: TOWARDS A TAXONOMIC REVISION AND MOLECULAR PHYLOGENY

Communicated by Sandip K. Gavade, Department of Botany, Jaysingpur College, India.

The genus *Rhynchosia* Lour. is a large genus of the subfamily Papilionoideae consisting of c. 230 species and distributed in the tropics, 26 species occur in India (including also one subspecies and one variety). Of these, seven species are endemic to India (*Rhynchosia beddomei*, *R. filipes*., *R. fischeri*, *R. hainesiana*, *R. heynei*, *R. jacobii*, *R. meeboldii*).

The Indian species are currently grouped under six sections: sect. *Phyllomatia* Wight & Arn., sect. *Nomismia* Wight & Arn., sect. *Ptychocentrum* Wight & Arn., sect. *Cyanospermum* Wight & Arn., sect. *Pseudo-cajan* Benth. and sect. *Eurhynchosia* Wight & Arn.).

The taxonomic history of *Rhynchosia* in India started with 22 species listed in the Flora of British India in 1876. After that work, several authors worked on Indian *Rhynchosia* by synonymizing species names and especially by adding new species.

In the last 50 years five new Indian species were described by different authors (*R. jacobii* in 1976, *R. fischeri*, *R. hainesiana* and *R. meeboldii* in 1986, and *R. ravii* in 2014), and *R. fischeri* was synonymised under *R. ganesanii*. In addition, we hypothesize that *R. harae* shows close resemblance to and could be conspecific with *R. meeboldii*.

Work is in progress to unravel the taxonomy and phylogenetic relationships of Indian *Rhynchosia*, as there is no comprehensive taxonomic account of the genus, which includes many wild relatives of the pigeonpea, *Cajanus cajan* (L.) Millsp. Furthermore, some species are used in the brewing of beer.



Rhynchosua minima
from India.

Photo by
Sandip Gavade

Sandip K. Gavade is carrying out this research on *Rhynchosia* in collaboration with Dr. Manoj M. Lekhak (the Angiosperm Taxonomy Laboratory, Department of Botany, Shivaji University, India) and with L. J. G. van der Maesen (Naturalis Biodiversity Center, in Leiden, The Netherlands).

Suggested references

- Chandrabose M. and B. V. Shetty. 1976. A new species of *Rhynchosia* Lour. (Papilionaceae) from south India. Bulletin of the Botanical Survey of India. 15(1&2): 139–141.
- Kottaimuthu R. and N. Vasudevan. 2015. *Rhynchosia ganesanii*, a new name for *Rhynchosia fischeri* P. Satyanar. & Thoth. (Leguminosae: Papilionoideae), from India. Phytotaxa. 201 (1): 109–110.
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REPORTS FROM THE LEGUME WORLD

THE SEARCH FOR EXTINCT PSORALEAS

Communicated by Charles Stirton,
Honorary Research Associate, University of Cape Town, South Africa

The genus *Psoralea* L. comprises some 75-80 species. Two species are recognised as extinct (Raimondo & Stirton 2019).

The first of these is *Psoralea guenzii* Harv. (Fl. Cap. 2: 145 (1862)). Very little is known about this species. Apart from some early collections in the 1800s the most recent collections from the wild were made by A.V. Duthie in 1925. The species was last seen as a single wild specimen in 1925 in the seasonal swamp at the back of the Dag Breek Student residence of Stellenbosch University. Cuttings were taken by H. Herre for the University Gardens in Stellenbosch and clearly survived until 1929 when J. Thode made a herbarium specimen of the garden material. Despite extensive searches in the area I have not been able to re-find this species and it is presumed extinct as the swamp area has been drained and built over.

The second, initially presumed, extinct species is *Psoralea cataracta* C.H. Stirt. which had not been seen since the early 1800s¹. I have been searching for this species for over 40 years, mostly in the Tulbagh waterfall area, to no avail. Originally described as *Hallia filiformis* Harv. (Fl. Cap. 2: 232 (1862)) it required a name change when included in *Psoralea* since *P. filiformis* Poir. (Encycl. 5: 682 1804) had priority.

Hallia filiformis Harv. was thought of as an “aberrant monstrosity” of *Hallia alata* by Harvey but he nonetheless published an apt name for it. When I first investigated the type I was inclined to agree with Harvey that it was an aberrant taxon but it was the combination of the leaf shape and long flexuous flower stalks that suggested that it might be a real species. Very little else was known and no other collections had been made. I decided to uphold the species but transferred it to *Psoralea*, along with all the other Hallias. I created the new name *Psoralea cataracta* C.H. Stirt. as the only recorded locality was Tulbagh Waterfall and given its morphology (delicate and flexuous) it appeared to be associated with water or stream edges. How wrong one can be! As it turned out I was looking for it in quite the wrong place. It has not been seen since its initial discovery and now nearly 200 years later it has been rediscovered by Brian du Preez, a young University of Cape Town Ph.D. student, close to mountain streams but in the northern foothills of the Tulbagh Valley, almost 18 km Northeastwards from the presumed southwestern Tulbagh Waterfall.



Herbarium specimen of
extinct *Psoralea guenzii*.

¹ See Red List: redlist.sanbi.org/species.php?species=327-24



Brian du Preez rediscovering *Psoralea cataracta*.

Seeing photographs of *Psoralea cataracta* for the first time was a thrill given its rounded smooth stems, distinctive very long subulate claspings stipules, acute linear folded leaflets, solitary very long filiform pedunculate flowers greatly exceeding the subtending leaflet, brownish green calyces and a distinctive flower colour in the genus *Psoralea*. This is a significant find as it underlines how the Greater Cape Floristic Region is still relatively unexplored on many mountain ranges. Given that many species of the Cape Flora only appear briefly after fires, fading quickly, and that sometimes these fires are irregular, the chance of being in an area at the right time is slim. When one further considers the hundreds of kilometres of the extensive Cape fold mountain ranges, the paucity of road passes over them, the propensity of botanists to collect along roads, and the drop off in field work in recent years, it is perhaps not surprising that many new species of legumes are appearing, found mostly by intrepid collectors like Jan Vlok, Nick Helme, Douglas Euston-Brown, Odette Curtis, and Brian du Preez, plus many citizen scientists like Nicky van Berkel (*Psoralea vonberkelae*) and Di Turner (*Psoralea diturnerae*) of C.R.E.W. (Custodians of Rare and Endangered Wildflowers).

Many mountainous legume species are still only known from collections made by the legendary collector Elsie Esterhuysen. So well done to Brian (Mr_Fab on iNaturalist) for a wonderful find as he had previously searched for it unsuccessfully in the Tulbagh Waterfall area with members of C.R.E.W. Brian is an intrepid explorer and Fabaceae enthusiast developing a reputation for finding rare and presumed extinct species such as *Polhillia ignota* and *Aspalathus cordicarpa*, last seen in 1928 and the 1950s respectively. He and I are both members of the Cape Legumes Research Group, at the University of Cape Town, focussing primarily on the Tribes Psoraleae and Crotalariae.

Psoralea cataracta has had an interesting and somewhat puzzling history. The type collection was made by Pappe, the cited collector. He was born in 1803 and probably collected it between 1850 -1858 although the exact date is uncertain. However, there is also considerable doubt whether Pappe actually collected the type specimen and although he did make a single collecting trip to the Tulbagh Waterfall area this is well west and south of the now known locality of the species.

Some detective work (Gunn & Codd 1981) suggests that it is more likely that Zeyher was the collector as he and Sonder had made rich collections of specimens in Tulbagh and the surrounding mountains: e.g., Tulbaghskloof (Nieuwekloof), Tulbaghshal, foot of Wintershoekberg, Witsenberg and Vogelvlei – Drège's collecting locality notation was used: 3319 (IV,B,b; III,D,a). I cannot find any Zeyher collections in the region after he split up with Ecklon and given that he died of smallpox in 1858 it must have been collected before that. Interestingly, Dr. W. Sonder, who joined William Harvey as joint author of their *Flora Capensis* Vols 1-3, acquired Zeyher's Herbarium and assisted Zeyher to return to South Africa in about 1837/1838 and Zeyher made hardly any further collections after his return. Harvey, in his protologue, refers to a Pappe collection in Herb.D. (now TCD) as the type from Tulbagh Waterfall. This might have been part of the material Sonder received from Zeyher as one of the many sets of specimens he had taken overseas for distribution via Drège, whom he visited.

It is now known that many of Pappe's herbarium collections are really Zeyher specimens as when Zeyher returned from Europe, and after visiting

Drège he was in debt and this was settled by Sonder and Pappe. In part exchange, Pappe took the balance of Zeyher's herbarium and duplicates in lieu of his debt. Prior to the trip Pappe had already purchased a large number of Zeyher collections for his herbarium in Ludwigsburg, 21 Loop Street, Cape Town and fraudulently renamed them all as Pappe collections, destroying the old labels. These specimens are now part of SAM in the Compton Herbarium (NBG). As he destroyed all Zeyher's labels replacing them with his own it is hard to know which are Pappe and which Zeyher collections. So, where did Pappe collect his specimen? He did not do a lot of collecting beyond Houwhoek and his forays were to Tulbagh and Knysna. I think the Pappe Tulbagh Waterfall material is genuine Pappe material. As this area has been extensively collected by many collectors it is unlikely that *P. cataracta* ever occurred there. There is no *P. cataracta* in his herbarium.

Thanks go to John Parnell (TCD) and Brian du Preez for information and permission to publish his photos.

A LOOK INTO 2020

FOLLOWING UP WITH A LEGUME CHARACTER STATEMENT LIST

Communicated by Leonardo Borges on behalf of the Legume Phylogeny Working Group (LPWG)

Following the goals of the LPWG, in 2018 we returned to the plan of developing a comprehensive character statements list for the Leguminosae.

This project is still alive and we plan to set it back on track early in 2020. Hopefully some new tools released last year will help us speed up this task. If you are part of the team working on the character list, we will get in touch with you soon.

If you would like to contribute to this project get in touch with Leonardo Borges at: legume.morphology@gmail.com aquitemcaqui@gmail.com



LEGUME SHOTS OF THE YEAR

Flemingia mukerjeeana

S.K. Gavade, Survesw., Maesen & Lekhak

This is a recently described tuberous legume species from India, restricted to the Maharashtra state.

Robust decumbent herbs with 12–25 flowers in terminal heads.

It grows at high altitudes (c. 1100–1200 m) on a lateritic plateau in the northern Western Ghats of Maharashtra.

Photo by: Sandip K. Gavade



Astragalus excapus

This Swiss *Astragalus* species flowers close to the ground and can be found during hikes on mountains in Canton Wallis.

Photo by
Brigitte Marazzi



LEGUME BIBLIOGRAPHY UNDER THE SPOTLIGHT

ADVANCES IN LEGUME SYSTEMATICS PART 13

Communicated by

Dan Murphy, Royal Botanic Gardens Victoria, Australia

Colin Hughes, University of Zürich, Switzerland

Ashley N. Egan, Utah Valley University

Tadashi Kajita, University of the Ryukyus, Japan

The editors of the latest Advances in Legume Systematics volume (ALS Part 13) are happy to announce the publication of the volume and its Open Access availability in perpetuity. This volume comprises papers arising from the 7th International Legume Conference held in Sendai, Japan (29 August - 2 September 2018), and a subsequent call for papers. This attracted a mix of important legume papers from across a wide

range of research areas including fossils, morphology, classification, taxonomy, ethnobotany, genomics and informatics.

ALS Part 13 was published as a Special Issue of *Australian Systematic Botany*, and we thank CSIRO Publishing and all contributors, including the generous funding support they contributed on behalf of the legume research community to allow Open Access.

The Advances in Legume Systematics part 13 volume is available here:

<https://www.publish.csiro.au/SB/issue/9463>



LEGUME BIBLIOGRAPHY UNDER THE SPOTLIGHT

DIVERSITY OF LEGUMES FROM GRAN CHACO

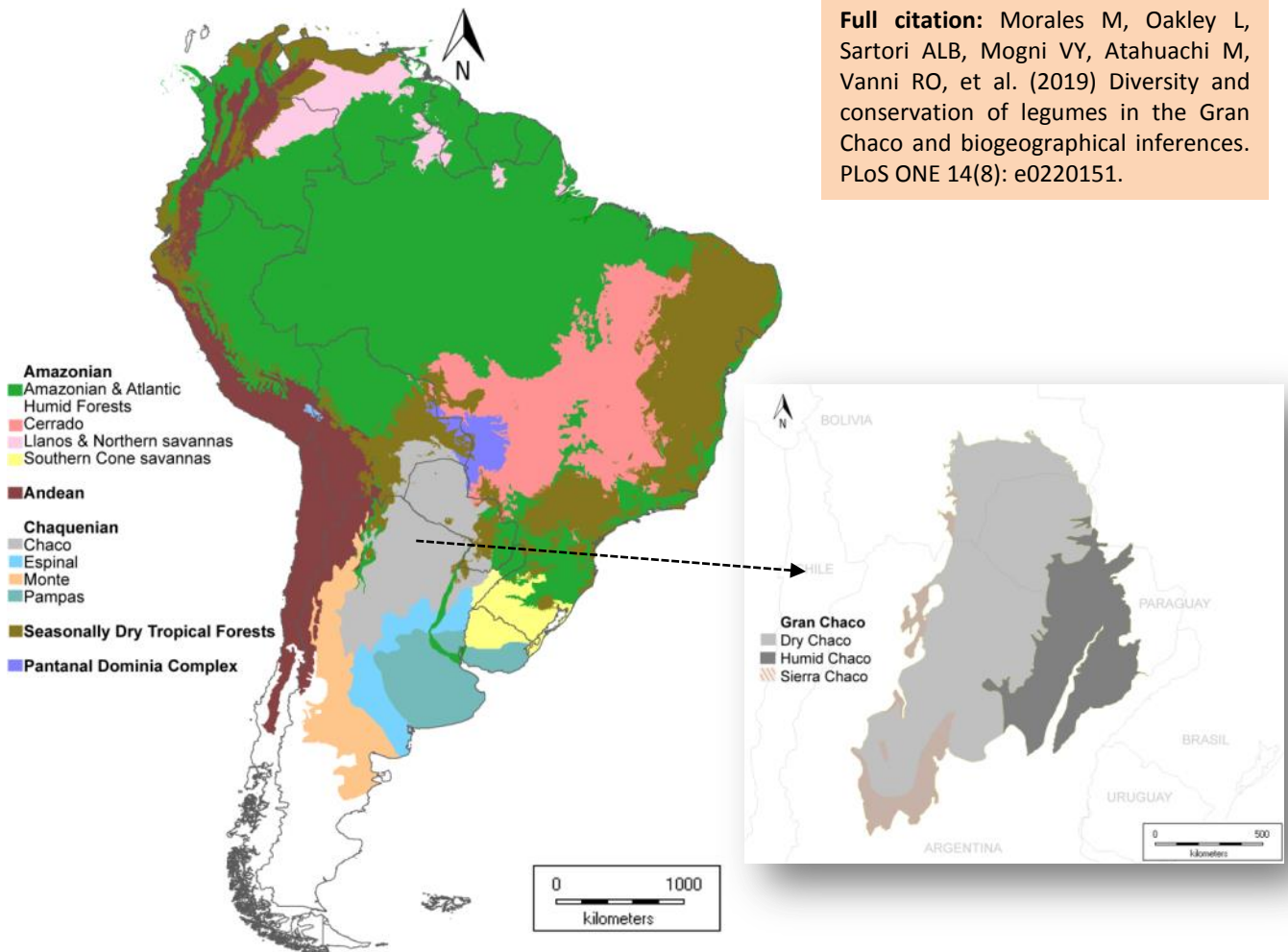
Communicated by Matías Morales, CIRN–CNIA, INTA, CONICET, and Universidad de Morón, Argentina

The Gran Chaco of South America comprises parts of northern Argentina, western Paraguay, southern Bolivia and the southwestern extreme of Brazil. This subtropical region with sedimentary soils has been dramatically threatened by expansion of agriculture and cattle ranching and deforestation, especially in the last two decades.

An exhaustive Legume Checklist of this region was performed, including the potential conservation status for specific and infraspecific taxa. Additionally, new maps improved the delimitation of this ecoregion in transitional areas with Cerrado and Seasonally Dry Tropical Forest formations.



Full citation: Morales M, Oakley L, Sartori ALB, Mogni VY, Atahuachi M, Vanni RO, et al. (2019) Diversity and conservation of legumes in the Gran Chaco and biogeographical inferences. *PLoS ONE* 14(8): e0220151.



(Figures from Morales et al. 2019)



Algarrobal (forest of *Prosopis* species). Relict of Chaco Sierra forest in Ancajan, Santiago del Estero, Argentina.

Photo by Matias Morales

The checklist recorded 98 legume genera, 362 species and 404 specific and infraspecific taxa. Endemic and typical taxa were 17%, comparable to adjacent tropical formations. Caesalpinioideae was the subfamily with the highest percentage of endemic taxa (24%). Among the Gran Chaco subregions, the most diverse by number of taxa

was the Humid Chaco, although Dry Chaco and Sierra Chaco showed the highest percentages of endemic or typical species. The conservation status of nearly one third of the endemic and typical taxa is assessed as 'Critically Endangered (CR), and mainly in genera of high economic interest, such as *Arachis*, *Mimosa* and *Prosopis*.



Inflorescence of *Prosopis nigra*, a representative legume of Dry Chaco (image from Bolivia).

Photo by Matias Morales



Inflorescence of *Prosopis rubriflora*, a representative legume of Humid Chaco (image from Porto Murтинho, Mato Grosso do Sul, Brazil).

Photo by Matias Morales

Link to the full paper by Morales et al. (2019):

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0220151>

PUBLICATION NEWS

FROM THE WORLD OF LEGUME SYSTEMATICS

Compiled by Brigitte Marazzi, Editor BB Newsletter

A list of the year's legume publications is here provided. Special thanks go to authors who sent us their references. Please accept my apologies if any citation is missing. This collection of studies and the papers highlighted another vibrant year of research in the Systematics and Biology of Leguminosae. In **bold** are articles of the ALS 13 special issue (see on page 9 of this BB Newsletter).

- Abair, A., Hughes, C.E., Bailey, C.D. (2019). The evolutionary history of *Leucaena*: recent research, genomic resources and future directions. *Tropical Grasslands - Forrajes Tropicales* 7: 65-73. doi: [https://doi.org/10.17138/tgft\(7\)65-73](https://doi.org/10.17138/tgft(7)65-73)
- Amini, Elham, Kazempour-Osaloo, Shahrokh, Maassoumi, Ali Asghar, Zare-Maivan, Hassan (2019) Phylogeny, biogeography and divergence times of *Astragalus* section *Incani* DC. (Fabaceae) inferred from nrDNA ITS and plastid rpl32-trnI (UAG) sequences. *Nordic Journal of Botany* 37.
- Antonio-Domingues, Higor, Queiroz, Rubens Teixeira de, Rossi, Mônica Lanzoni, Martinelli, Adriana Pinheiro, da Luz, Cynthia Fernandes Pinto (2019) Pollen morphology and ultrastructure of *Tephrosia* Pers. (Leguminosae–Papilionoideae–Millettieae): a taxonomic approach for native and cultivated species in Brazil. *Grana* 58: 159-173.
- Arenas-Navarro, Maribel, Téllez-Valdés, Oswaldo, López-Segoviano, Gabriel, Murguía-Romero, Miguel, Tello, J Sebastián (2019) Environmental correlates of Leguminosae species richness in Mexico: Quantifying the contributions of energy and environmental seasonality. *Biotropica* 52: 70-80.
- Azani, Nasim, Bruneau, Anne, Wojciechowski, Martin F, Zarre, Shahin (2019) Miocene climate change as a driving force for multiple origins of annual species in *Astragalus* (Fabaceae, Papilionoideae). *Molecular Phylogenetics and Evolution* 137: 210-221.
- Bagheri, Ali, Akhavan Roofgar, Azadeh, Abbasi, Shabnam, Maassoumi, Ali Asghar, Rutten, Twan, Blattner, Frank R (2019) Pollen morphology of *Astragalus* section *Hymenostegis* (Fabaceae) and evaluation of its systematic implications. *Grana* 58: 328-336.
- Bezerra, Luísa Maria de Paula Alves, de Vargas Wanderleia, Cândido Elisa Silva, Monteiro, Thiago Cobra, Vatanparast Mohammad, Perez, Ana Paula Fortuna (2019) *Rhynchosia mineira* (Leguminosae: Papilionoideae), a new and critically endangered species from Minas Gerais, Brazil. *Kew Bulletin* 74: 62.
- Brottier, L., Chaintreuil, C., Simion, P., Scornavacca, C., Rivallan, R., Mournet, P., Moulin, L., Lewis, G.P., Fardoux, J., Brown, S.C., Gomez-Pacheco M., Bourges, M., Hervouet, C., Gueye, M., Duponnois, R., Ramanankierana, H., Randriambanona, H., Vandrot, H., Zabelatta, M., DasGupta, M., D'Hont, A., Giraud, E., Arrighi, J.-F. (2018). A phylogenetic framework of the legume genus *Aeschynomene* for comparative genetic analysis of the Nod-dependent and Nod-independent symbioses. *BMC Plant Biology* 18: 333 (pages 1–15). <https://doi.org/10.1186/s12870-018-1567-z>
- Bruneau A, Borges LM, Ailkin R, Egan AN, de la Estrella M, Javadi F, Klitgaard B, Miller JT, Murphy DJ, Sinou C, Vatanparast M, Zhang R (2019) Towards a new online species-information system for legumes. *Australian Systematic Botany* 32: 495–518. [Paper compiled under the umbrella of the Legume Phylogeny Working Group, LPWG].**
- Bueno, Erika, Kisha, Ted, Maki, Sonja L, von Wettberg, Eric JB, Singer, Susan (2019) Genetic diversity of *Chamaecrista fasciculata* (Fabaceae) from the USDA germplasm collection. *BMC Research Notes* 12: 117.
- Bunma, Saowalak, Balslev, Henrik (2019) A Review of the Economic Botany of *Sesbania* (Leguminosae). *The Botanical Review* 85: 185-251.
- Cândido, E.S., de Vargas, W., de Paula Alves Bezerra, L.M., de Freitas Mansano, V., Vatanparast, M., Lewis, G.P., de Azevedo Tozzi, A.M.G., Fortuna-Perez, A.P. (2019). Taxonomic Synopsis of *Eriosema* (Leguminosae: Papilionoideae, Phaseoleae) in Brazil. *Phytotaxa* 416: 91–137. <https://doi.org/10.11646/phytotaxa.416.2.1>
- Choi, In-Su, Schwarz, Erika N, Ruhlman, Tracey A, Khiyami, Mohammad A, Sabir, Jamal SM, Hajarrah, Nahid H, Sabir, Mernan J, Rabah, Samar O, Jansen, Robert K (2019) Fluctuations in Fabaceae mitochondrial genome size and content are both ancient and recent. *BMC Plant Biology* 19: 15-ene.
- Coley, Phyllis D, Endara, María-José, Ghabash, Gabrielle, Kidner, Catherine A, Nicholls, James A, Pennington, R Toby, Mills, Anthony G, Soule, Abrianna J, Lemes, Maristerra R, Stone, Graham N (2019) Macroevolutionary patterns in overexpression of tyrosine: An anti-herbivore defence in a speciose tropical tree genus, *Inga* (Fabaceae). *Journal of Ecology* 107: 1620-1632.
- Compton, James A, Schrire, Brian D, Könyves, Kálmán, Forest, Félix, Malakasi, Panagiota, Mattapha, Sawai, Sirichamorn, Yotsawate (2019) The *Callerya* Group redefined and Tribe *Wisterieae* (Fabaceae) emended based on morphology and data from nuclear and chloroplast DNA sequences. *Phytokeys* 125: 1.
- Cooper, Wendy E, Crayn, Darren M, Zich, Frank A, Miller, Rebecca E, Harrison, Melissa, Nauheimer, Lars (2019) A review of *Austrocallerya* and *Pongamia* (Leguminosae subfamily Papilionoideae) in Australia, and the description of a new monotypic genus, *Ibatiria*. *Australian Systematic Botany* 32: 363-384.

PUBLICATION NEWS

FROM THE WORLD OF LEGUME SYSTEMATICS

(Cont.)

- Da Silva, Marcos J, de Souza, Alessandro O, Alonso, Alexandre A (2019) A new species for the legume genus *Chamaecrista* (Fabaceae, Caesalpinioideae) supported by molecular, morphological, and anatomical data. *Plant Systematics and Evolution* 305: 325-340.
- Dalavi, Jagdish Vishnu, Bramhadande, Sneha, Pokle, Deelip, Yadav, Shrirang (2019) *Alysicarpus bhuibavadensis* (Fabaceae) a new species from Western Ghats of India. *Phytotaxa* 427: 285-290.
- de la Estrella M, Wieringa JJ, Breteler FJ, Ojeda DI (2019) Re-evaluation of the genus *Englerodendron* (Leguminosae–Detarioideae), including *Isomacrobium* and *Pseudomacrobium*. *Australian Systematic Botany* 32: 564–570.**
- de Queiroz RT, de Moura TM, Gereau RE, Lewis GP, de Azevedo Tozzi AMG (2019) Resolving nomenclatural ambiguity in South American *Tephrosia* (Leguminosae, Papilionoideae, Millettieae), including the description of a new species. *Australian Systematic Botany* 32: 555–563.**
- Dehshiri, Mohammad Mehdi (2019) *Onobrychis garinensis* (Hedysareae, Fabaceae), a new species from Iran. *Phytotaxa* 397: 237-245.
- Donkpegan, Armel SL, Piñeiro, Rosalía, Heuertz, Myriam, Duminil, Jérôme, Daïnou, Kasso, Doucet, Jean-Louis, Hardy, Olivier J (2019) Population genomics of the widespread African savannah trees *Azelia africana* and *Azelia quanzensis* (Caesalpinioideae, Fabaceae) reveals no significant past fragmentation of their distribution ranges. *Biorxiv*:730911.
- Dos Santos Braga, Ramilla, Pinto, Rafael Barbosa, Chaves, Lázaro José, Diniz-Filho, José Alexandre Felizola, Soares, Thannya Nascimento, Collevatti, Rosane Garcia, de Campos Telles, Mariana Pires (2019) Hierarchical genetic and spatial structure among varieties and populations of *Hymenaea stigonocarpa* (Fabaceae) in Brazilian savannah. *Tree Genetics and Genomes* 15: 84.
- Dos Santos, Kelly Cristina Moreira, Dos Santos, Gabriel Uriel Cruz Araújo, Barros, Claudia Franca, de Lima, Haroldo Cavalcante, Callado, Cátia Henriques (2019) Wood anatomy of seven *Stryphnodendron* species (Mimosoid clade-Caesalpinioideae-Leguminosae). *IAWA Journal* 40: 43-57.
- Duan, Lei, Zhang, Zhi-Rong, Deng, Shuang-Wen, Chen, Hong-Feng (2019) The complete chloroplast genomes of rare medical herb *Glycyrrhiza inflata* and its relative *G. Aspera* (Fabaceae). *Mitochondrial DNA Part B* 4: 4083-4084.
- Egan AN, Vatanparast M (2019) Advances in legume research in the genomics era. *Australian Systematic Botany* 32: 459–483.**
- Evrard, Quentin, Hardy, Olivier J, Tagg, Nikki, Doucet, Jean-Louis (2019) Removal and predation of aril-covered seeds: the case of *Azelia bipindensis* (Fabaceae–Detarioideae). *Plant Ecology and Evolution* 152: 460-469.
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