

APPENDIX S1. List of additional museum specimens examined.

Institution acronyms are as follows: AMNH = American Museum of Natural History, New York, USA; CPI = Coastal Plains Institute and Land Conservancy, Tallahassee, USA; IRSNB = Royal Belgian Institute of Natural Sciences, Brussels, Belgium; MBUCV = Universidad Central de Venezuela, Caracas, Venezuela; MHNLS = Museo de Historia Natural La Salle, Caracas, Venezuela; ROM = Royal Ontario Museum, Toronto, Canada.

Stefania ginesi clade

Stefania ginesi (n = 2): IRSNB 16736-16737 (including μ CT scans), summit of Chimantá-tepui, Bolívar State, Venezuela.

Stefania satelles (n = 7): MHNLS 10433 (holotype), IRSNB 16728 (including μ CT scans), IRSNB 16729, IRSNB 19015 (including μ CT scans), 19016-19018, summit of Aprada-tepui, Bolívar State, Venezuela.

Stefania riveroi clade

Stefania ayangannae (n = 45): CPI 10473-10474, CPI 10656-10657 (including μ CT scans), CPI 10818-10830, CPI 10911, CPI 10986-10992, CPI 11030-11032, CPI 11040-11041, CPI 11070-11085, Mount Wokomung, Cuyuni-Mazaruni, Guyana.

Stefania coxi (n = 3): ROM 39479-39480 (paratypes, including μ CT scans), Mount Ayanganna, Cuyuni-Mazaruni, Guyana; CPI 11093, Mount Wokomung, Cuyuni-Mazaruni, Guyana.

Stefania riveroi (n = 24): MHNLS 10413 (holotype), MHNLS 10414-10416 (paratypes), MHNLS 11160 (paratype), IRSNB 15703, IRSNB 15715-15726, IRSNB 15727 (including μ CT scans), IRSNB 15728-15729, IRSNB 15730 (including μ CT scans), IRSNB 15740-15741, summit of Yuruaní-tepui, Bolívar State, Venezuela.

Stefania evansi clade

Stefania evansi (n = 1): IRSNB 16738 (including μ CT scans), Pakatau Creek, Potaro-Siparuni, Guyana.

Stefania scalae (n = 6): IRSNB 15674, IRSNB 15693, IRSNB 15694 (including μ CT scans), La Escalera, Bolívar State, Venezuela; IRSNB 16724, El Danto, Bolívar State, Venezuela; CPI 10933 and CPI 10943 (including μ CT scans), Kamarang Great Falls, Cuyuni-Mazaruni, Guyana.

Stefania woodleyi clade

Stefania woodleyi (n = 3): IRSNB 13799, IRSNB 13800 (including μ CT scans), IRSNB 13805 (including μ CT scans), Kaieteur National Park, Potaro-Siparuni, Guyana.

Stefania roraimae (n = 5): IRSNB 15872, IRSNB 15873-15874 (including μ CT scans), IRSNB 15875, IRSNB 15876 (including μ CT scans), slopes of Maringma-tepui, Cuyuni-Mazaruni, Guyana.

Incertae sedis

Stefania breweri (n = 1): MBUCV 6574 (holotype), summit of Cerro Autana, Amazonas State, Venezuela.

Stefania goini (n = 1): AMNH 23193 (holotype), Mount Duida, Amazonas State, Venezuela.

Stefania oculosa (n = 1): MHNLS 12961 (holotype), Jaua-tepui, Bolívar State, Venezuela.

Stefania percristata (n = 1): MHNLS 12952 (holotype), Jaua-tepui, Bolívar State, Venezuela.

Stefania schuberti (n = 3): MHNLS 12917 (holotype), IRSNB 16732 (including μ CT scans), IRSNB 16733, Auyán-tepui, Bolívar State, Venezuela.

Stefania tamacuarina (n = 2): AMNH 131428 (holotype), MBUCV 6448 (paratype), Pico Tamacuari, Amazonas State, Venezuela.

Table S1. μ CT scan data for the male holotype and one female paratype of *Stefania lathropae* sp. nov. and for comparative species in the *S. ginesi* clade.

Species	Museum n°	Field n°	Sex	Resolution (voxel size)	Source
<i>Stefania lathropae</i> sp. nov.	IRSNB 4208	PK3657	M	24.5 μ m	https://www.morphosource.org/concern/media/000515542
<i>Stefania lathropae</i> sp. nov.	IRSNB 4210	PK3652	F	50.5 μ m	https://www.morphosource.org/concern/media/000515552
<i>Stefania ginesi</i>	IRSNB 16736	PK3766	M	37.03 μ m	https://sketchfab.com/3d-models/be-rbins-vert-amp-pk3766-stefania-sp-cranium-3d68fd6cbbc3468790b737a85b0d8578
<i>Stefania ginesi</i>	IRSNB 16737	PK3771	M	41.12 μ m	https://sketchfab.com/3d-models/be-rbins-vert-amp-pk3771-stefania-sp-cranium-ebadb105cca74123a96003992fbd529c
<i>Stefania satelles</i>	IRSNB 16728	PK3634	F	44.03 μ m	https://sketchfab.com/3d-models/be-rbins-vert-amp-pk3634-stefania-sp-cranium-b64de6cc59c94aa3ba3761e94da01827
<i>Stefania satelles</i>	IRSNB 19015	PK3638	M	36.90 μ m	https://sketchfab.com/3d-models/be-rbins-vert-amp-pk3638-stefania-sp-cranium-819ea8db18be49a79f2627f20420575c