Arthropoda Selecta 34(2): 266–272 © ARTHROPODA SELECTA, 2025

A new species of *Cymbiapophysa* Gabriel et Sherwood, 2020 (Araneae: Theraphosidae) from North-Western Ecuador

Новый вид рода *Cymbiapophysa* Gabriel et Sherwood, 2020 (Araneae: Theraphosidae) из северо-восточного Эквадора

Pedro Peñaherrera-R.[1,2,*], Taryn Ghia[3]
П. Пеньяррера-Р.[1,2,*], Т. Гиа[3]

[1] Universidad San Francisco de Quito USFQ, Colegio de Ciencias Biológicas y Ambientales, Instituto de Biodiversidad Tropical IBIOTROP, Laboratorio de Zoología Terrestre, Museo de Zoología, Quito 170901, Ecuador.

[2] Fundación Uru, Quito, Ecuador.

[3] Museo de Zoología, Sección Invertebrados, Escuela de Ciencias Biológicas, Pontificia Universidad Católica del Ecuador, Avenida 12 de Octubre 1076 y Roca, Quito, Ecuador.

Pedro Peñaherrera-R.: pedropjpr5380@gmail.com ORCID: https://orcid.org/0000-0001-9285-3403

Taryn Ghia: taghia@puce.edu.ec ORCID: https://orcid.org/0000-0001-6212-5501

* Corresponding author

KEY WORDS: Aranei, Andes, taxonomy, Theraphosini, Theraphosinae.

КЛЮЧЕВЫЕ СЛОВА: Aranei, Анды, таксономия, Theraphosini, Theraphosinae.

ABSTRACT. A new species of *Cymbiapophysa* Gabriel et Sherwood, 2020, *C. bettycita* sp.n., is described based on a unique combination of the male palpal bulb structures. Additionally, discussion on the distribution of the new species is provided.

How to cite this paper: Peñaherrera-R. P., Ghia T. 2025. A new species of *Cymbiapophysa* Gabriel et Sherwood, 2020 (Araneae: Theraphosidae) from North-Western Ecuador // Arthropoda Selecta. Vol.34. No.2. P.266–272. doi: 10.15298/arthsel.34.2.10

РЕЗЮМЕ. Новый вид рода *Cymbiapophysa* Gabriel et Sherwood, 2020, *C. bettycita* sp.n., описывается на основании уникальной комбинации структур копулятивных органов самца. Дополнительно обсуждаются особенности распространения этого нового вида.

Introduction

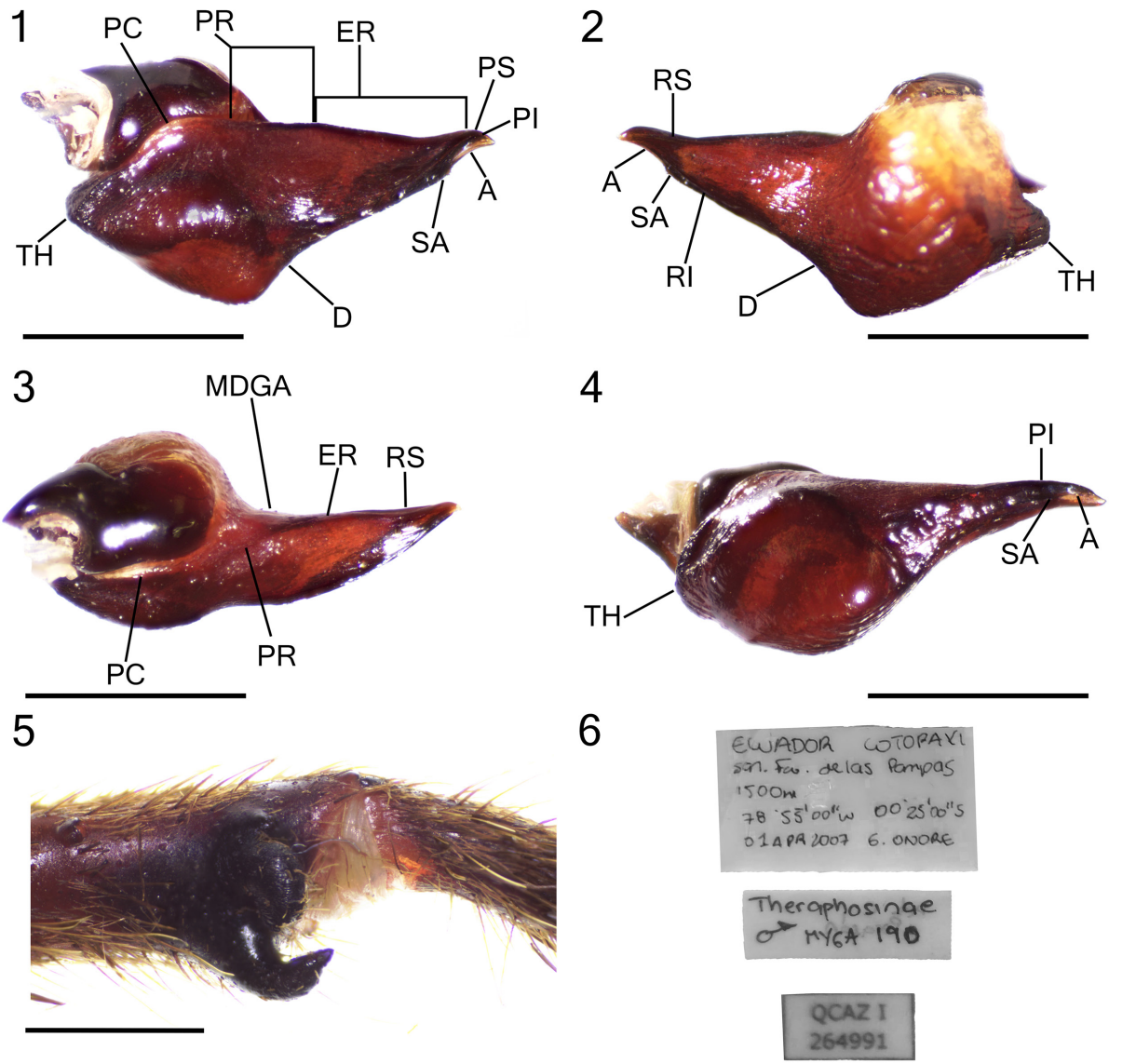
The genus *Cymbiapophysa* Gabriel et Sherwood, 2020 was described in order to accommodate the species *Metriopelma velox* Pocock, 1903 (type species) and a new species, *Cymbiapophysa yimana* Gabriel et Sherwood, 2020 [Gabriel, Sherwood, 2020]. Primarily, the genus was differentiated by the presence of a distal-retrolateral apophysis on the male cymbium and twin spermathecae with the presence of guard plates [Gabriel, Sherwood, 2020]. One year later, Sherwood and her colleagues included the ventral median depression of the male palpal bulb as a diagnostic character for *Cymbiapophysa* [Sherwood *et al*., 2021]. In 2023, Peñaherrera-R. [2023] provided further information on somatic morphology of modified setae on the coxae, trochanters, and maxilla as well as the presence of a weakly developed ventro-basal dilatation of coxae I and II. At the beginning of 2024, Peñaherrera-R. *et al*. [2024] identified the presence of a subapical keel, previously considered by previous workers as a prolateral inferior keel, and reclassified the keels of the male palpal bulb in this genus. This work provided even further hypotheses on accessorial structures found on the male palpal bulb of *Cymbiapophysa* linked to its putative morpho-functional and evolutionary scenarios [Peñaherrera-R. *et al.* 2024]. Additionally, an updated diagnosis for *Cymbiapophysa* was presented, bringing more stability to this group and comparing *Cymbiapophysa* to recently reviewed and new genera with similar palpal bulb morphology (i.e. *Proshapalopus* Mello-Leitão, 1923 = *Crypsidromus* Ausserer, 1871; *Pterinopelma* Pocock, 1901; *Lasiocyano* Galleti-Lima, Hamilton, Borges et Guadanucci, 2023; and *Vitalius* Lucas, Silva et Bertani, 1993).

Over nearly five years, twelve new species of *Cymbiapophys*a have been described from different regions, ecosystems, and bioprovinces of the Cordillera Occidental of the Andes of Ecuador and Colombia [Gabriel, Sherwood, 2020; Sherwood *et al.,* 2021; Sherwood, Gabriel, 2023; Peñaherrera-R., 2023; Peñaherrera-R. *et al*., 2024]. Thus, the diversity of currently known species was increased by 83% in a little under half a decade, demonstrating *Cymbiapophysa* to be a highly diverse genus with extremely short ranges of endemism between the valleys of the Andes.

In this work, we describe the thirteenth new species from Ecuador, based on a specimen housed in the invertebrate collection of Museo de Zoología, Pontificia Universidad Católica del Ecuador.

Materials and Methods

The specimen was examined and measured under an Olympus SZX16 stereomicroscope with an Olympus DP73 digital camera. Measurements were recorded with Micro Imaging Software CellSens for Olympus. Images were obtained by



Figs 1–6. *Cymbiapophysa bettycita* sp.n., holotype male (QCAZI 264991). Palpal bulb, left hand side (1–4), tibial apophysis (5), and specimen labels (6). 1 — prolateral view; 2 — retrolateral; 3 — dorsal; 4 — ventral. 5 — ventro-prolateral. Scale bars: 0.5 mm (1–4), 1.5 mm (5).

Рис. 1–6. *Cymbiapophysa bettycita* sp.n., самец голотип (QCAZI 264991). Бульбус левой пальпы (1–4), вырост голени пальпы (5) и сопроводительные этикетки (6). 1 — с внутренней стороны; 2 — снаружи; 3 — сверху; 4 — снизу. 5 — снизу и с внутренней стороны. Масштаб: 0,5 мм (1–4), 1,5 мм (5).

stacking a series of photographs taken at different depths and then processed with Helicon Focus. All measurements are in millimetres. Biogeographical classification follows the framework by Morrone [2014], with specifications for the Western Ecuador biogeographic province provided by Cisneros-Heredia & Yánez-Muñoz [2007] and Cisneros-Heredia [2006, 2007, 2019]. Ecuadorian classification of ecosystems follows MAE [2013]. General description and measurements follow standards proposed by Gabriel & Sherwood [2020] and Sherwood *et al*. [2021] with additions proposed by Peñaherrera-R. [2023] for the genus *Cymbiapophysa*. Spination follows Petrunkevitch [1925] with the modifications proposed by Bertani [2001]. Palpal bulb terminology follows the standardisation proposed by Peñaherrera-R. *et al*. [2024], which built upon Bertani [2000], Gabriel [2016], Gabriel & Sherwood [2020], Sherwood *et al*. [2021], Peñaherrera-R. *et al*. [2023], Sherwood & Gabriel [2023], in addition to Ferretti *et al*. [2023], with modifications. Classification and sub-types of urticating setae follows Kaderka *et al*. [2019].

Abbreviations: Somatic characters: ALE — anterior lateral eyes, AME — anterior median eyes, PLE — posterior lateral eyes, PME — posterior median eyes. Male palpal bulb: A — apical keel, D — ventral median depression, PI — prolateral inferior keel, PS — prolateral superior keel, PACK — prolateral accessory central keel, PASK — prolateral accessory superior keel, PAIK — prolateral accessory inferior keel, RI — retrolateral inferior keel, RS — retrolateral superior keel, ER — embolic ridge, PC — prolateral crease, PR — prolateral ridge, PAR — prolateral apical ridge, TH — tegular heel, MDGA — median dorsal granular area. Depositories: QCAZI — Museo de Zoología Sección Invertebrados, Pontificia Universidad Católica del Ecuador, Quito, Ecuador; ZSFQ — Museo de Zoología, Universidad San Francisco de Quito, Quito, Ecuador.

Comparative material. For comparative diagnosis of the new species, the updated information of *Cymbiapophysa* male

palpal bulb morphology compiled by Peñaherrera-R. *et al*. [2024] was used, in addition to direct examination of the following type specimens.

Holotype ♂ *Cymbiapophysa carmencita* (ZFSQ-i11578), Padrewasi, Ecuador, coll. M. López-García, J. Montalvo, D. Brito-Zapata & C. Reyes-Puig.

Holotype ♂ and paratype ♂ *Cymbiapophysa falconi* (AE-0005 and AE-0004, respectively) [see remarks for the species in Peñaherrera-R. [2023] for further information of specimen code], Valley of Yunguilla, Ecuador, coll. J. M. Falcón-Reibán & A. Velez.

Holotype ♂ *Cymbiapophysa homeroi* (ZSFQ-i11577), Reserve Rio Guajalito, Ecuador, coll. M. Costales.

Holotype ♂ *Cymbiapophysa matildae* (QCAZI 274338), Mindo, Ecuador, coll. E. Bejarano.

Holotype ♂ *Cymbiapophysa otongachi* (ZSFQ-i12376), Reserva Otongachi - Fundación Otonga, Ecuador, coll. P. Espinosa.

Holotype ♂ *Cymbiapophysa yumbos* (QCAZI 265178), Las Tolas, Ecuador, coll. M. A. Trujillo.

Paratype ♂ *Cymbiapophysa yumbos* (QCAZI 265189), Tulipe – La Independencia, Ecuador, coll M. Ormasa.

Taxonomy

Family Theraphosidae Thorell, 1869
Subfamily Theraphosinae Thorell, 1869
Genus *Cymbiapophysa* Gabriel et Sherwood, 2020
Cymbiapophysa bettycita **sp.n.**
Figs 1–6; Table 1.

TYPE MATERIAL. Holotype ♂: Republic of Ecuador, Province of Cotopaxi, Parish of Palo Quemado, San Francisco de las Pampas, 00°25′00″S 78°53′00″W, 1500 m [sic = 1250 m], 01 April 2007, leg. G. Onore. (QCAZI 264991).

DIAGNOSIS. Males of *Cymbiaophysa bettycita* sp.n. resemble those of *C. otongachi* by the presence of a MDGA, continuous PI keel, PS keel longer than PI keel, developed D, elongated embolus, and presence of a tibial apophysis. Nonetheless, males of *Cymbiapophysa bettycita* sp.n. differ from *C. otongachi* by having the SA keel longer than PI keel, developed PI, PS, and RS keels, PI and SA serrated, MDGA present over dorso-retrolateral face of bulb, and absence of PAIK and RI keels (SA of equal length to PI, well developed PI, PS, and RS, developed PAIK, weakly developed RI, smooth SA and slightly serrated PI, MDGA present over dorso-prolateral and dorso-retrolateral faces of bulb in *C. otongachi*).

ETYMOLOGY. The specific epithet is a noun in apposition and honour of Taryn's mother, Betty Zoraida Quezada Moreno (with love, bettycita), who has always been a feisty woman, her best friend, and advisor.

DESCRIPTION. MALE (holotype). Total length including chelicerae: 21.51. Carapace length 8.86, width 8.2. Caput slightly raised. Ocular tubercle slightly raised, length 1.0 width 1.3. Eyes: AME > PLE > ALE > PME, anterior eye row slightly procurved, posterior row recurved. Clypeus thin; clypeal fringe long. Fovea deep with horizontal line. Chelicera length 3.38, width 2.09. Abdomen length 9.27, width 6.37. Maxilla with 55–100 cuspules covering approximately 25% of the proximal edge; disperse maxillary spiniform setae in posterior margin and medial to apical section. Labium length 0.93, width 1.18, with 15-21 cuspules separated 0.25 a 0.75 width of each cuspule on the labium. Labio-sternal mounds: separate. Sternum length 3.89, width 3.44, with three pairs of sigilla. Tarsi I–IV divided by narrow strip of longer and thicker setae. Metatarsal scopulae: I 80%; II 80%; III 75%; IV 75%. Lengths of legs and palpal segments: see Table 1, leg formula 4123. Spination: Femur: I p 0-0-2, III p 0-1-1, r 0-2-1,d 0-2-2, IV p 0-0-1, r 0-1-1, d 0-0-1; palp p 2-0-1, r 0-1-0-(1 apical); Patella: I p 1–0-0, r 0-1-0, II p 0-2-0, r 0-1-0, III p 0-1-0, r 0-1-0, IV p 0-1-0, r 0-1-0; palp p 0-1-0; Tibia: I p 0-1-1, r 1-2-1, v 1-0-0, II p 1-2-2, v 1-1-2 (1 apical), III p 1-1-1, r 0-2-1, v 0-1-2, IV p 1-2-1, r 2-2-2 (1 apical), v 2-1-1 (1 apical); palp p 0-2-2 (1 apical), r 0-0-1, d 0-0-2; Metatarsus: I p 0-1-1 (1 apical), r 0-1-0, v 0-2-0, , II p 0-1-1, r 0-0-0 (1 apical), v 2-2-1 (1 apical), III p 1-1-1, r 0-1-1, v 2-2-2 (2 apical), d 0-0-0 (1 apical), IV p 0-2-2 (2 apical), r 0-2-2 (2 apical), v 2-2-1, d 0-1-2 (1 apical). Weakly developed ventro-basal dilatation of coxae III and IV. Weakly developed coxal spinules extended over basal area of prolateral face in coxae I and II. Palpal cymbium with rounded weakly developed retrolateral apophysis. Tibia I with paired apophysis situated pro-ventrally (Fig. 5), RB slightly longer than PB, RB with a single apical megaspine and PB with one retrolateral megaspine, RB curved slightly inwards. Palpal bulb (Figs. 1–4) with developed and triangular TH. PS, PI and RS keels developed; SA, A, and RI keels weakly developed. PI shorter than PS and SA keels, PS and SA keel with equal length and extending almost two third of the embolus length. PS and PI keels smooth, SA keel serrated and more developed apically. ER disjunct and very distant from PC, forming an elongated PR. PC narrow, short, without constriction. Retrolateral face of palpal bulb rugulose. PASK, PACK, and PAIK keels and PAR absent. Posterior lateral spinnerets with three segments: basal 1.17, medial 1.39, apical 1.60. Posterior medial spinnerets 0.87. Urticating setae: Type Ia present dorsally. Colour overall alcohol-preserved brown, abdomen setae pale brown.

Table 1. *Cymbiapophysa bettycita* sp.n., holotype male (QCAZI 264991), podomere measurements.
Таблица 1. *Cymbiapophysa bettycita* sp.n., самец голотип (QCAZI 264991), длина члеников ног.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	8.41	4.84	7.25	6.82	4.69	32.01
II	8.42	3.81	6.36	6.56	4.18	29.33
III	7.97	3.32	7.31	4.21	3.50	26.31
IV	8.66	4.38	7.06	10.64	4.24	34.98
Palp	5.21	2.88	4.00	–	1.85	13.94

DISTRIBUTION. *Cymbiapophysa bettycita* sp.n. is known only from the type locality (Figs 6–8; see Discussion), in the northern part of the Cordillera Occidental of the Andes of Ecuador at 1250 m.

ECOLOGY. The type locality is in the Foothill Evergreen Forest of the Cordillera Occidental of the Andes of Ecuador [*sensu* MAE, 2013], in the Northern Andes biogeographic province.

Discussion

As seen on the specimen label (Fig. 6), the holotype male of *Cymbiapophysa bettycita* sp.n. was collected in San Francisco de Las Pampas. A concurrent locality, in the province of Cotopaxi, a locality with high density of species descriptions (*e.g.* Bellò & Osella [2008]; Guayasamin *et al*. [2017]; Tigrero & Norrbom [2020]). Nevertheless, the coordinates provided in the same label indicate a

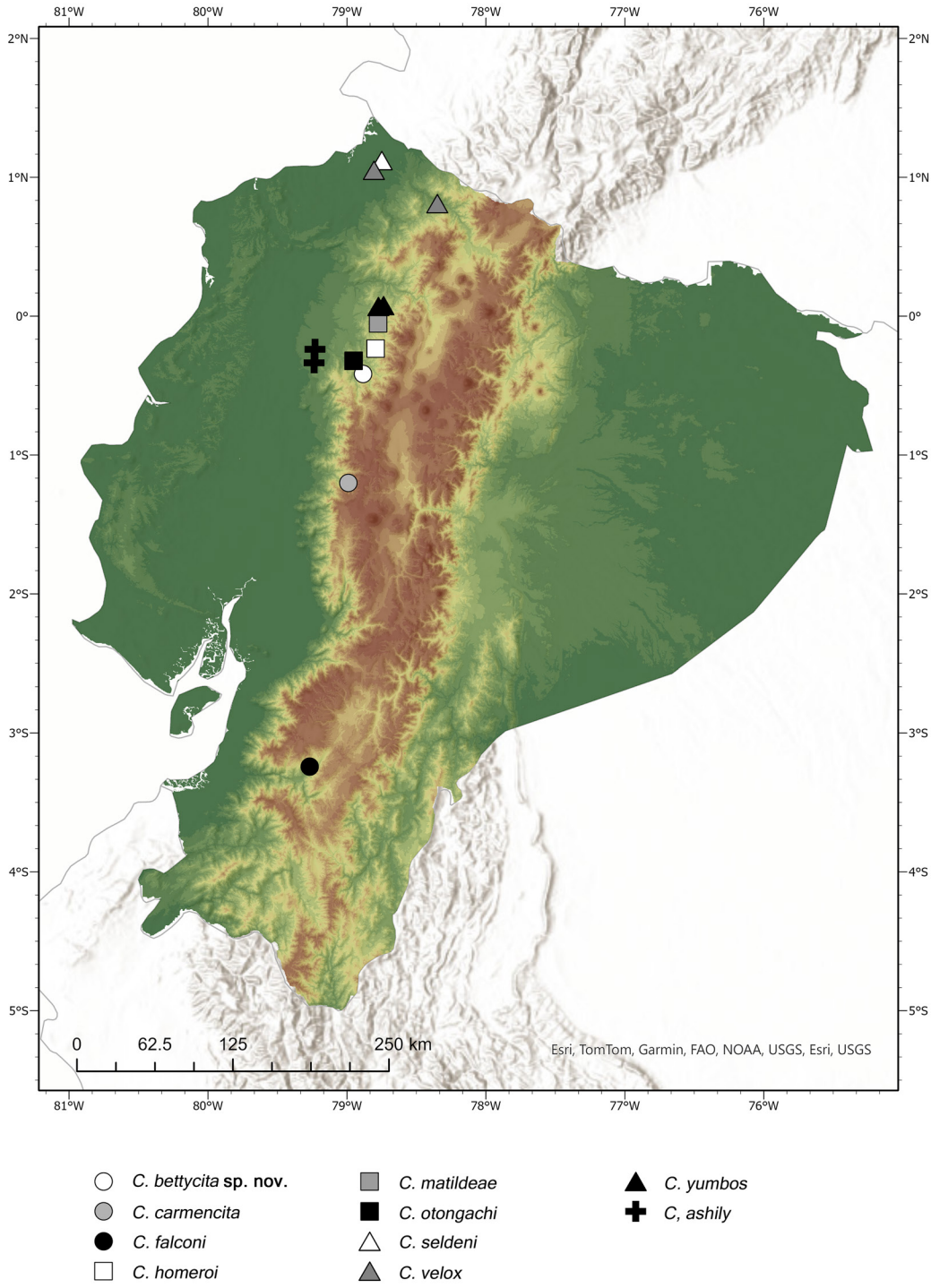


Fig. 7. Distribution of the genus *Cymbiapophysa* Gabriel et Sherwood, 2020 in Ecuador.
Рис 7. Распространение видов рода *Cymbiapophysa* Gabriel et Sherwood, 2020 в Эквадоре.

distant point from the textual locality — being ~10 km east-northeast (ENE) separated from San Francisco de Las Pampas. According to Cisneros-Heredia & Touzet [2004], specimens collected from this locality by G. Onore (Fig. 6) seem to be uncertain about the exact point of collection of each specimen, both for vertebrates and invertebrates [Cisneros-Heredia pers. comm. to PP-R.]. Concerned about the ambiguous geographical reference to this locality the authors suggested that San Francisco de las Pampas should be considered as a wide area, between 600–2000 m, instead of a certain locality [Coloma, 1995; Cisneros-Heredia, Touzet, 2004].

Based on the available information, since coordinates were provided and fits within the altitudinal range consid-

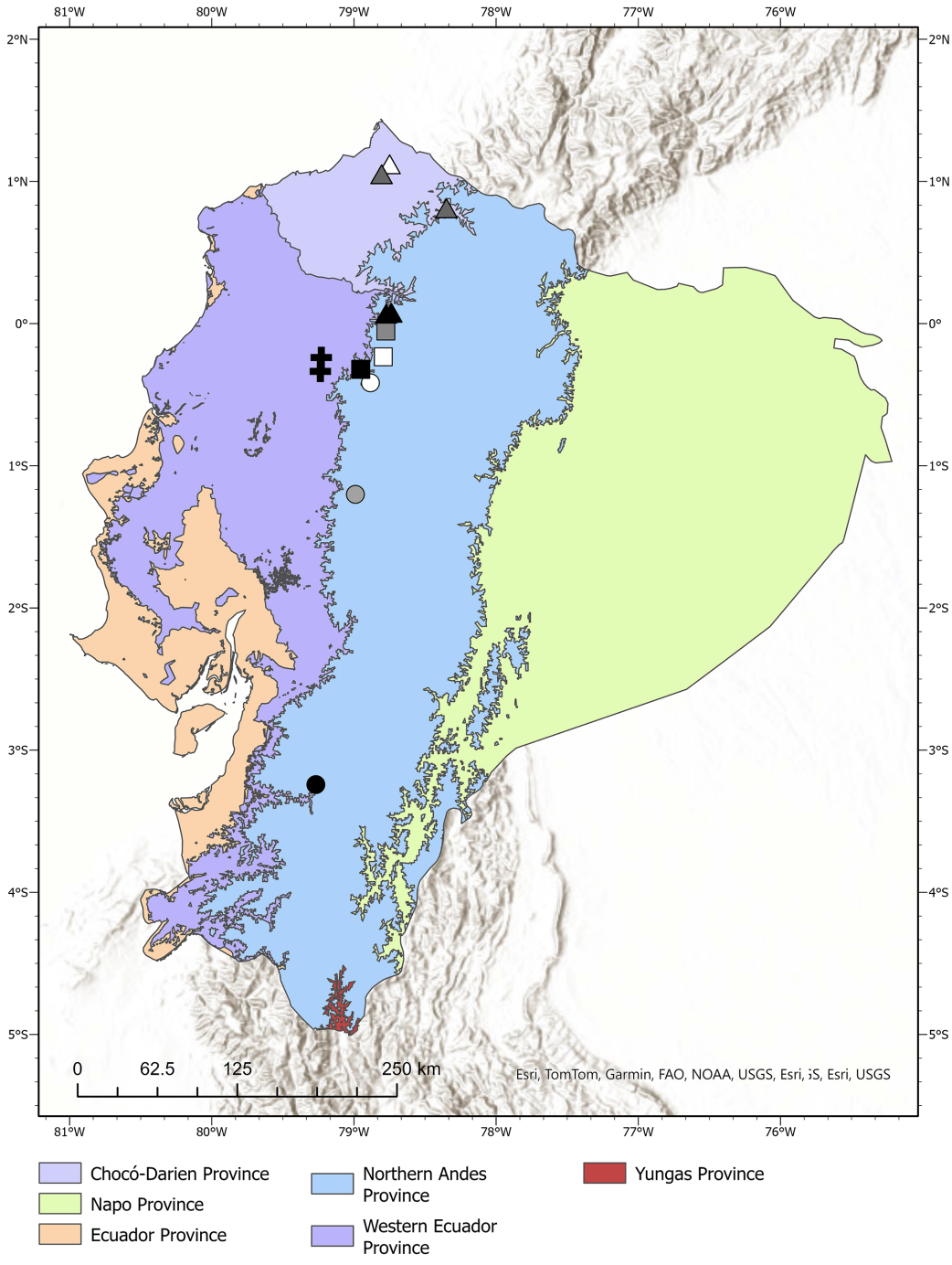


Fig. 8. Biogeographic distribution of the genus *Cymbiapophysa* Gabriel et Sherwood, 2020 in Ecuador: *C. falconi* (black circle), *C. carmencita* (grey circle), *C. bettycita* sp.n. (white circle), *C. otongachi* (black square), *C. ashily* (black crosses), *C. homeroi* (white square), *C. matildeae* (grey square), *C. yumbos* (black triangle), *C. velox* (grey triangles), *C. seldeni* (white triangle).

Рис. 8. Биогеографическое распространение видов рода *Cymbiapophysa* Gabriel et Sherwood, 2020 в Эквадоре: *C. falconi* (черный кружок), *C. carmencita* (серый кружок), *C. bettycita* sp.n. (белый кружок), *C. otongachi* (черный квадрат), *C. ashily* (черные крестики), *C. homeroi* (белый квадрат), *C. matildeae* (серый квадрат), *C. yumbos* (черный треугольник), *C. velox* (серые треугольники), *C. seldeni* (белый треугольник).

ered by Coloma [1995] and Cisneros-Heredia & Touzet [2004], we assume that the type locality of *C. bettycita* sp.n. should be, at this moment, restricted as follows: ~10 km ENE from San Francisco de Las Pampas, near the Sarapullo River (00°25′00″S 78°53′00″W), Province of Cotopaxi, Foothill Evergreen Forest of the Cordillera Occidental of the Andes of Ecuador, Northern Andes biogeographic province. It should be stressed that we do not ignore the suggestion made by Cisneros-Heredia & Touzet [2004] and facing the possibility that *C. bettycita*

sp.n. could be distributed somewhere between 600–2000 m in the surroundings of San Francisco de Las Pampas. Therefore, further research and collection of fresh material, from San Francisco de Las Pampas (wide area locality, 600–2000 m) and the herein restricted type locality, should be necessary to assign a population under the name of the new species. Likewise, the description of the unknown female of *C. bettycita* sp.n. would only be assured from the population where males match with the morphology of the palpal bulb of the holotype (Figs 1–5).

The discovery of *C. bettycita* sp.n. increases the number of known species of *Cymbiapophysa* to thirteen. The type locality of *C. bettycita* sp.n. is situated approximately 10–13 km SE from the next closest species, *C. otongachi* Peñaherrera-R., Ghia, Sherwood et Gabriel, 2024 (Figs 7–8). Highlighting, again, the high diversity of this group in short geographical ranges and altitudinal gradients across the Cordillera Occidental of the Andes. Additionally, in total, 22 new species of mygalomorphs have been described from this region in the last nine years in the following families: Dipluridae Simon, 1889 (8 species), Cyrthaucheniidae Simon, 1889 (5 species), Theraphosidae Thorell, 1869 (6 species), and Paratropididae Simon, 1889 (3 species) [Dupérré, 2015, 2023; Dupérré, Tapia, 2015, 2023, 2024; Peñaherrera-R., 2023; Peñaherrera-R., *et al*., 2024].

Undoubtedly, the surroundings and valleys originating across the mountain passages between the Atacazo-Ninahuilca volcanic complex, Corazón volcano, and the Ilinizas volcanic complex have shown a high diversity of mygalomorphs in recent years. This is possibly due to the isolation that these small valleys may present as well as the diversification of niches along the Foothill (misidentified as Foothill Evergreen Forest of the Chocó Region of Ecuador by Dupérré & Tapia [2024] for *Psalmopoeus pristirana* Dupérre et Tapia, 2024), Low Montane (misidentified as Low Evergreen Forest of the Chocó Region of Ecuador by Dupérré & Tapia [2024] for *Psalmopoeus satanas* Peñaherrera-R. et León-E., 2023), and Evergreen Forests of the Cordillera Occidental of the Andes of Ecuador across a pronounced altitudinal gradient of the Western Ecuador and Northern Andes biogeographical provinces. Indeed, there is a great potential for mygalomorph diversity in this area that has yet to be discovered.

Compliance with ethical standards

Conflict of interests: The authors declare that they have no conflict of interest.

Ethical approval: No ethical issues were raised during our research.

Acknowledgements. We thank Rafael E. Cárdenas (QCAZ), María Fernanda Checa (QCAZ), Maria Fernanda Salazar (QCAZ), Margarita López (ZSFQ), Emilia Peñaherrera-Romero (ZSFQ), and Jorge Montalvo (ZSFQ) for their support and allowing the use of their equipment, infrastructure, and access to each respective collection. Special thanks to Danniella Sherwood (Arachnology Research Association, United Kingdom) and Diego F. Cisneros-Heredia (Universidad San Francisco de Quito, Ecuador) for their valuable help providing comments on the first draft of the manuscript. Danniella Sherwood is thanked for the valuable input during peer review. The holotype male specimen deposited at the Museo de Zoología, Pontificia Universidad Católica del Ecuador was received as donations to the invertebrate collection.

References

Ausserer A. 1871. Beiträge zur Kenntniss der Arachniden-Familie der Territelariae Thorell (Mygalidae Autor) // Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien. Bd.21. S.117–224.

Bellò C., Osella G. 2008. Two new species of *Howdeniola* Osella (1980) from Ecuador (Coleoptera Curculionidae Cossoninae) // Biodiversity of South America, I. Memoirs on Biodiversity. Vol.1. P.469–476.

Bertani R. 2000. Male palpal bulbs and homologous features in Theraphosinae (Araneae, Theraphosidae) // Journal of Arachnology. Vol.28. P.29–42.

Bertani R. 2001. Revision, cladistic analysis, and zoogeography of *Vitalius, Nhandu,* and *Proshapalopus*; with notes on other theraphosine genera (Araneae, Theraphosidae) // Arquivos de Zoologia. Vol.36. No.3. P.265–346.

Cisneros-Heredia D.F. 2006. Distribution and ecology of the western Ecuador frog *Leptodactylus labrosus* (Amphibia: Anura: Leptodactylidae) // Zoological Research. Vol.27. P.225–234.

Cisneros-Heredia D.F. 2007. Distribution and natural history of the Ecuadorian snake *Dipsas andiana* (Boulenger, 1896) (Colubridae: Dipsadinae) with considerations on its conservation status // Russian Journal of Herpetology. Vol.14. P.199–202.

Cisneros-Heredia D.F. 2019. Spatial patterns and impact of habitat change on the vertebrate diversity of north-western South America. Ph.D. thesis. King's College London.

Cisneros-Heredia D.F., Touzet J.M. 2004. Distribution and conservation status of *Bothrops asper* (Garman, 1884) in Ecuador // Herpetozoa. Vol.17. No.3/4. P.135–141.

Cisneros-Heredia D.F., Yánez-Muñóz M.H. 2007. A new species of glassfrog (Centrolenidae) from the southern Andean foothills on the west Ecuadorian region // South American Journal of Herpetology. Vol.2. P.1–10.

Coloma L.A. 1995. Ecuadorian frogs of the genus *Colostethus* (Anura: Dendrobatidae) // Miscellaneous Publication University of Kansas Museum of Natural History. No.87. P.1–72.

Dupérré N. 2015. Description of the first visually cryptic species of *Paratropis* (Araneae: Paratropididae) from Ecuador // Journal of Arachnology. Vol.43. No.3. P.327–330.

Dupérré N. 2023. Review of the American genus *Bolostromus* Ausserer, 1875 with the description of fourteen new species (Araneae, Cyrtaucheniidae) // Zootaxa. Vol.5317. No.1. P.1–88.

Dupérré N., Tapia E. 2015. Descriptions of four kleptoparasitic spiders of the genus *Mysmenopsis* (Araneae, Mysmenidae) and their potential host spider species in the genus *Linothele* (Araneae, Dipluridae) from Ecuador // Zootaxa. Vol.3972. No.3. P.343–368.

Dupérré N., Tapia E. 2020. On the putatively incorrect identification and "redescription" of *Paratropis elicioi* Dupérré 2015 (Paratropididae, Araneae) with the description of two new sympatric species from Ecuador // Zootaxa. Vol.4869. No.3. P.326–346.

Dupérré N., Tapia E. 2024. Description of a new *Psalmopoeus* Pocock, 1895 species (Araneae, Theraphosidae, Psalmopoeinae) from the Chocó region of Ecuador // Zootaxa. Vol.5437. No.4. P.495–509.

Dupérré N., Tapia E., Bond J.E. 2023. Review of the spider genus *Linothele* (Mygalomorphae, Dipluridae) from Ecuador — an exceptional case of speciation in the Andes // Arthropoda. Vol.1. No.3. P.68–341.

Ferretti N., Chaparro J. C., Ochoa J.A., West R. 2023. A new tarantula (Mygalomorphae: Theraphosidae) genus endemic from Peru with a novel genitalic morphology among theraphosinae and its phylogenetic placement // Zoologischer Anzeiger. Vol.302. P.102–112.

Gabriel R., Sherwood D. 2020. Revised taxonomic placement of *Pseudhapalopus* Strand, 1907, with notes on some related taxa (Araneae: Theraphosidae) // Arachnology. Vol.18. Pt.4. P.301–316.

Galleti-Lima A., Hamilton C.A., Borges L.M., Guadanucci J.P.L. 2023. Phylogenomics of Lasiodoriforms: reclassification of the South American genus *Vitalius* Lucas, Silva and Bertani and allied genera (Araneae: Theraphosidae) // Frontiers in Ecology and Evolution. Vol.11. Art.e1177627. P.1–19.

Guayasamin J.M., Hutter C.R., Tapia E.E., Culebras J., Peñafiel N., Pyron R.A., Moroschz C., Funk W.C., Arteaga A. 2017. Diversification of the rainfrog *Pristimantis ornatissimus* in the lowlands and Andean foothills of Ecuador // PloS One. Vol.12. Art.3e0172615. P.1–21.

Kaderka R., Bulantová J., Heneberg P., Řezáč M. 2019. Urticating setae of tarantulas (Araneae: Theraphosidae): morphology, revision of typology and terminology and implications for taxonomy // PLoS One. Vol.14, Art.11e0224384. P.1–43.

Lucas S., Silva Jr. P.I. da, Bertani R. 1993. *Vitalius* a new genus of the subfamily Theraphosinae Thorell, 1870 from Brazil (Araneae, Theraphosidae) // Spixiana. Vol.16. P.241–245.

MAE. 2013. Sistema de clasificación de los ecosistemas del Ecuador continental. Ministerio del Ambiental del Ecuador, Subsecretaríade Patrimonio Natural.

Morrone J. 2014. Biogeographical regionalisation of the Neotropical region // Zootaxa. Vol.3782. P.1–110.

Peñaherrera-R. P. 2023. Increasing knowledge of *Cymbiapophysa* Gabriel & Sherwood, 2020 (Araneae, Theraphosidae): general distribution, key to species, and three new species from Ecuador // ZooKeys. Vol.1178. P.17–38.

Peñaherrera-R. P., Ghia T., Sherwood D., Gabriel R. 2024. New insights on male palpal bulb morphology in *Cymbiapophysa* Gabriel & Sherwood, 2020, with four new species from Ecuador (Araneae: Theraphosidae) // Arachnology. Vol.19. Pt.7. P.1003–1017.

Peñaherrera-R. P., Guerrero-Campoverde A., León-E. R.J., Pinos-Sanchez A. Falcón-Reibán J.M. 2023. Two new species of *Neischnocolus* Petrunkevitch, 1925 (Araneae: Theraphosidae) from eastern and western Ecuador // Zootaxa. Vol.5351. No.4. P.483–493.

Peñaherrera-R. P., León-E R.J. 2023. On *Psalmopoeus* Pocock, 1895 (Araneae, Theraphosidae) species and tarantula conservation in Ecuador // ZooKeys. Vol.1186. P.185–205.

Petrunkevitch A. 1925. Arachnida from Panama // Transactions of the Connecticut Academy of Arts and Sciences. Vol.27. P.51–248.

Pocock R.I. 1901. Some new and old genera of S.-American Avicularidae // Annals and Magazine of Natural History. Ser.7. Vol.8. No.48. P.540–555.

Sherwood D., Gabriel R. 2023. *Cymbiapophysa seldeni*, a new theraphosine species from Ecuador (Araneae: Theraphosidae) // Arachnology. Vol.19 No.5. P.777–779.

Sherwood D., Gabriel R., Brescovit A.D., Lucas S.M. 2021. A new species of *Cymbiapophysa* Gabriel & Sherwood, 2020 from Colombia and a transfer from *Proshapalopus* Mello-Leitão, 1923 (Araneae: Theraphosidae) // Arachnology. Vol.18. Pt.8. P.838–843.

Simon E. 1889. Voyage de M. E. Simon au Venezuela (Décembre 1887–Avril 1888). 4e Mémoire. Arachnides // Annales de la Société Entomologique de France. Vol.9. No.6. P.169–220.

Thorell T. 1869. On European spiders. Review of the European genera of spiders, preceded by some observations on zoological nomenclature // Nova Acta Regiae Societatis Scientiarum Upsaliensis. Ser.3. Vol.7. P.1–108.

Tigrero J.O., Norrbom A.L. 2020. A new species of *Anastrepha* (Diptera: Tephritidae) reared from *Passiflora putumayensi*s (Passifloraceae) in Ecuador // Proceedings of the Entomological Society of Washington. Vol.122. No.4. P.982–991.

Responsible editor S.L. Zonstein