Integrative taxonomy of araneomorph spiders: Breathing new life into an old science

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Curriculum Vitae

Andrés was born in Mexico City, Mexico on March 7th 1990. He started pursuing his career in Biology when he joined the National Autonomous University of Mexico (UNAM) in 2009. He began working on spiders for a short project in 2010, after which he joined Fernando Alvarez-Padilla's Lab in the Faculty of Sciences UNAM. Between 2012 and 2013 he worked on his Bachelor's thesis, earning his B.Sc. diploma in May 2013. During this project he described the richness of cob-web spiders (Theridiidae) in a remnant tropical forest in a mountain range on the Center-East state of San Luis Potosí, Mexico. Also, during this time, he did a three month' internship at the California Academy of Sciences, San Francisco, US. Andrés joined the graduate school of the Faculty of Sciences, UNAM in 2013 and got his M. Sc. by the end of 2015. This time, he worked on the diversity of a two families of wandering spiders (Anyphaenidae and Corinnidae) from three sub-tropical mountain forests in the eastern states of San Luis Potosí and Veracruz, Mexico. During this period he presented his partial results in one American Arachnological Society Meeting in Ohio, US and was awarded with the Ernst Mayr travel grant to revise collection material in the Museum of Comparative Zoology MCZ, Harvard, US.

Andrés moved to the Netherlands in October 2016 to start his Ph.D. at Naturalis Biodiversity Center, and enrolled at the University of Leiden. He continued to work on spiders, but this time, looking at their systematics and sexual character evolution, mainly focusing on the family Liocranidae, under the supervision of Jeremy Miller and Menno Schilthuizen. Jeremy and Andrés carried out a one month' fieldwork in Thailand, sampling in several National Parks and natural reserves and also conducting experiments on the sexual behavior of one group of liocranid spiders. The studies that make up this thesis are mainly the result of the analysis of data extracted from legacy taxonomic literature, as well as analysis, material and data gathered during fieldwork. Collection material deposited in Naturalis, along with material borrowed from other international collections (CAS, FMNH, SMF, MCZ, among others) was also analyzed. Different stages of the data presented here were also presented in international meetings and congresses in Mexico, New Zealand, the Netherlands, and the US. During his time at Naturalis, Andrés was involved in teaching activities being twice teaching assistant on the Integrative Taxonomy M.Sc. course at Leiden University, co-organizing the "Spider identification day" at Naturalis in Nov 2019 and being supervisor of one M.Sc. project. Andres was also an active member of the student community co-organizing sports activities, organizing for a short period the Endless Forms Journal club, and participating in the Ph.D. Council from 2018 to 2020.

List of publications

• **L. van der Jagt, F. A. Rivera-Quiroz, H. Ortega-Salas and Jeremy A. Miller.** "Magnitude, Richness and Uniqueness: an analysis of lestid damselfly (Insecta: Odonata) records in GBIF". (*In prep.*).

• **F. A. Rivera-Quiroz and Jeremy A. Miller.** "Systematics of the spider family Liocranidae (Araneae Araneomorphae)". (*In prep.*).

• **F. A. Rivera-Quiroz, Petcharad, B. and Jeremy A. Miller. 2020.** "First records and a new genus of Comb-tailed spiders (Araneae: Hahniidae) from Thailand with comments on the six-eyed species of this family". *European Journal of Taxonomy*. 724:51-69. doi:10.5852/ejt.2020.724.1157

• **F. A. Rivera-Quiroz, Petcharad, B. and Jeremy A. Miller. 2021.** "First records and three new species of the family Symphytognathidae (Arachnida: Araneae) from Thailand, and the circumscription of the genus *Crassignatha* Wunderlich, 1995". *ZooKeys* 1012: 21–53. doi.org/10.3897/zookeys.1012.57047

• **F. A. Rivera-Quiroz, Petcharad, B. and Jeremy A. Miller. 2020.** "Mining data from legacy taxonomic literature and application for sampling spiders of the *Teutamus* group (Araneae; Liocranidae) in Southeast Asia". *Scientific Reports* 10:15787. doi:10.1038/s41598-020-72549-8

• **F. A. Rivera-Quiroz, Schilthuizen, M., Petcharad, B. and Jeremy A. Miller. 2020.** "Imperfect and askew: A review of asymmetric genitalia in araneomorph spiders (Araneae: Araneomorphae)". *PLoS One*. 15(6, e0220354): 1-26. doi:10.1371/journal.pone.0220354

• **F. A. Rivera-Quiroz, and F. Alvarez-Padilla. 2019.** "Description of five new *Wulfila* (Araneae, Anyphaenidae) species from Mexico with comments on the taxonomy of the genus". *Zootaxa*. 4712(2): 269-289. doi:10.11646/zootaxa.4712.2.6

• **F. A. Rivera-Quiroz, and Jeremy A. Miller. 2019.** "Extracting Data from Legacy Taxonomic Literature: Applications for planning field work". *Biodiversity Information Science and Standards* 3: e37082. doi: 10.3897/biss.3.37082

• **F. A. Rivera-Quiroz, U. Garcilazo-Cruz and F. Alvarez-Padilla. 2016.** "Spider cyberdiversity (Araneae: Araneomorphae) in an ecotouristic tropical forest fragment in Xilitla, Mexico". *Revista Mexicana de Biodiversidad*. 87 (2016) 1023–1032. doi: 10.1016/j.rmb.2016.07.011

• **F. A. Rivera-Quiroz, and F. Alvarez-Padilla. 2015.** "New species of the genus *Trachelas* (Araneae: Trachelidae) from an oak forest inside a biodiversity hotspot in Mexico". *Zootaxa* 3999(1) 95-110. doi: 10.11646/zootaxa.3999.1.6

International meetings

• **November 2020.** Magnitude, Richness and Uniqueness: a global analysis of lestid damselfly (Insecta: Odonata) records in GBIF. (Oral presentation). Entomological Society of America. Virtual Meeting.

• **June 2020.** Mobilizing data from taxonomic literature: process, tools and applications. (Oral presentation). American Arachnological Society. Virtual Symposium.

• **October 2019.** Extracting Data from Legacy Taxonomic Literature: Applications for planning field work. (Oral presentation). Biodiversity Next International Conference. Leiden, The Netherlands.

• **February 2019.** Asymmetric genitalia in spiders, an overview of this rare phenomenon with emphasis on *Teutamus politus* Thorell 1890 (Araneae; Liocranidae). (Oral presentation). International Congress of Arachnology. Christchurch, New Zealand.

• **July 2017.** Old papers, new data: Application of document mark-up to liocranid spiders (Liocranidae Araneae). (Oral presentation). American Arachnological Society. Queretaro, Mexico.

• **June 2014.** Spider diversity of three families of the Dionycha clade (Araneae: Anyphaenidae, Corinnidae and Salticidae) in two mountain ecosystems of Mexico. (Poster presentation). American Arachnological Society. Ohio, USA.

• **June 2014.** Faunistic inventories of Araneomorphae (Arachnida: Araneae) in Mexico: A comparative approach. (Oral presentation). American Arachnological Society. Ohio, USA.

• **November 2013.** Cave Arachnids. (Oral presentation). XIII Semana de Cuevas, Facultad de Ciencias, UNAM. Queretaro, Mexico.

• **June 2013.** Spider (Araneae Araneomorphae) diversity in the Edward James Garden tropical forest, Xilitla, San Luis Potosí. (Oral presentation). Mexican Society of Entomology (Sociedad Mexicana de Entomología). Guerrero, Mexico.

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