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On three monotypic nursery web spider genera from Madagascar with first description of the male of *Tallonia picta* Simon, 1889 and redescription of the type-species of *Paracladycnis* Blandin, 1979 and *Thalassiopsis* Roewer, 1955 (Araneae: Lycosoidea: Pisauridae)

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With 333 described species, the Pisauridae is a moderately species-rich spider family. The family is world wide in distribution and its members exhibit an exceptionally wide range of foraging and prey capture behavior, from web-based hunters, water surface hunters to ambusher hunters in the vegetation. While some pisaurid genera are diverse, boasting numerous species, such as *Dolomedes* with 96 described species, nearly half of pisaurid genera (22/48) are monotypic (Platnick 2013). Recent collecting and biodiversity research has uncovered several new species, especially from heretofore poorly collected regions in Africa (including Madagascar) and Asia (e.g. Jaeger 2011, Jocqué 1994). Initial steps have been undertaken to develop a phylogenetic framework for parts of the family, e.g., Sierwald 1987; Santos 2007. However, no phylogenetic analysis exists that includes a representatively wide range of genera. The clade Pisaurinae (see Sierwald 1997) appears to be well supported by morphological characters, while the relationships among non-pisaurine genera remain uncertain.

Recent collections in Madagascar by the California Academy of Sciences (CAS, San Francisco, USA) uncovered new pisaurid material, which has enabled us to clarify the identities of three Malagasy pisaurid species, currently placed in the monotypic genera *Tallonia* Simon, 1889, *Paracladycnis* Blandin, 1979 and *Thalassiopsis* Roewer, 1955. Thus far the following pisaurid genera have been recorded from Madagascar: *Caripetella* Strand, 1928, *Dolomedes* Latreille, 1804, *Hala* Jocqué, 1994, *Hygropoda* Thorell, 1894, *Maypaci* Simon, 1898, *Nilus* O. Pickard-Cambridge, 1876 (see Sierwald 1984) and *Tolma* Jocqué, 1994.

In this work, the male of *Tallonia picta* Simon, 1889 is described and illustrated for the first time; females are redescribed and illustrated using SEM images. *Thalassiopsis* and *Paracladycnis* were each based on the description of single specimens, a male and a female respectively. Several specimens of both male *Thalassiopsis* and female *Paracladycnis* were collected together, demonstrating that these two species occur in the same habitat. Significant differences in the eye pattern of the *Thalassiopsis* male and the *Paracladycnis* female, as described below, indicate that these males and females are unlikely to be conspecific. Thus, both species are here maintained as separate taxa, each known from one sex only. The generic affinities of these two species cannot be determined without the characters of the opposite sex, and consequently, both generic names are retained for the time being.

Specimens were examined using a Zeiss Stemi SV 6 stereomicroscope equipped with a camera lucida. For scanning electron microscopy (SEM), structures were excised, air-dried and mounted on stubs with double-sided adhesive copper tape. Specimens were sputter coated with gold and examined using a Philips XL 30. To study the excised epigyna, the soft tissue was removed by a combination of dissection with a small surgical blade and immersion in the trypsin enzyme for 48 hours at 25°C (Silva & Carico 2012). The structures of the male palpus and female epigynum did not shrink or deform during the SEM process. All measurements are in millimeters. The nomenclature of the male palp and epigynum structures follows Sierwald (1989, 1990, 1997). Photographs were made using a Sony W560 attached to the stereomicroscope. Distributional maps were made with the programs Google Earth 7.2 and Croizat version 1.16b (Cavalcanti 2009).

The material examined is deposited in the following institutions (curators in parenthesis): **CAS**, California Academy of Sciences, San Francisco, USA (C.E. Griswold), **SMF**, Senckenberg Research Institute, Frankfurt, Germany (P. Jäger) and **MNHN**, Muséum National d'Histoire Naturelle, Paris, France (C. Rollard).

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References

- Blandin, P. (1979) Études sur les Pisauridae africaines XI. Genres peu connus ou nouveaux des Iles Canaries, du continent africain et de Madagascar (Araneae, Pisauridae). *Revue de Zoologie Africaine*, 93, 347–375.
- Carico, J.E. (1976) The spider genus *Timus* (Pisauridae). *Psyche*, 83, 63–78.
<http://dx.doi.org/10.1155/1976/79585>
- Cavalcanti, M.J. (2009) Croizat: A software package for quantitative analysis in Panbiogeography. *Biogeografia*, 4, 4–6.
- Jäger, P. (2011) Revision of the spider genera *Nilus* O. Pickard-Cambridge 1876, *Sphedamus* Thorell 1877 and *Dendrolycosa* Doleschall 1859 (Araneae: Pisauridae). *Zootaxa*, 3046, 1–38.
- Jocqué, R. (1994) Halidae, a new spider family from Madagascar (Araneae). *Bulletin of the British Arachnological Society*, 9, 281–289.
- Platnick, N.I. (2013) *The World Spider Catalog, version 14.0*. American Museum of Natural History. Available from: <http://research.amnh.org/iz/spiders/catalog> (accessed 24 July 2013)
- Roewer, C.F. (1955a) Araneae Lycosaeformia I. (Agelenidae, Hahniidae, Pisauridae) mit Berücksichtigung aller Arten der äthiopischen Region. *Exploration du Parc National de l'Upemba, Mission G. F. de Witte*, 30, 1–420.
- Roewer, C.F. (1955b) *Katalog der Araneae von 1758 bis 1940, bzw. 1954*. Bruxelles 2, 1–1751.
- Santos, A.J. (2007) A phylogenetic analysis of the nursery-web spider family Pisauridae, with emphasis on the genera *Architis* and *Staberius* (Araneae : Lycosoidea). *Zoologica Scripta*, 36, 489–509.
<http://dx.doi.org/10.1111/j.1463-6409.2007.00291.x>
- Sierwald, P. (1989) Morphology and ontogeny of female copulatory organs in American Pisauridae, with special reference to homologous features (Arachnida: Araneae). *Smithsonian Contributions to Zoology*, 484, 1–24.
<http://dx.doi.org/10.5479/si.00810282.484>
- Sierwald, P. (1990) Morphology and homologous features in the male palpal organ in Pisauridae and other spider families, with notes on the taxonomy of Pisauridae (Arachnida: Araneae). *Nemouria, Occasional Papers of the Delaware Museum of Natural History*, 35, 1–59.
- Sierwald, P. (1997) Phylogenetic analysis of pisaurine nursery web spiders, with revisions of *Tetragonophthalma* and *Perenethis* (Araneae, Lycosoidea, Pisauridae). *Journal of Arachnology*, 25, 361–407.
- Silva, E.L.C. & Carico, J.E. (2012) Revision of the Neotropical nursery-web spider genus *Thaumasia* Perty, 1833 (Araneae: Lycosoidea: Pisauridae: Thaumasiinae) *Zootaxa*, 3567, 1–64.
- Simon, E. (1898) *Histoire naturelle des Araignées, seconde édition. Tome 2, Fascicule 2*. Libraire encyclopédique de Roret, Paris, 2, 193–380.
- Simon, E. (1889) Études arachnologiques. 21e Mémoire. XXXI. Descriptions d'espèces et the genres nouveaux de Madagascar et de Mayotte *Annales de la Société Entomologique de France*, 8, 223–236.
- Strand, E. (1907) Diagnosen neuer Spinnen aus Madagaskar und Sansibar. *Zoologischer Anzeiger*, 31, 725–748.
- Zhang, J.X., Zhu, M.S. & Song, D.X. (2004) A review of the Chinese nursery-web spiders (Araneae, Pisauridae). *Journal of Arachnology*, 32, 353–417.
<http://dx.doi.org/10.1636/m02-58>