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Resolution of some Freyina (Salticidae: Aelurillini) types from the Museum of Comparative Zoology

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Abstract. Types of eight species of Freyina are reviewed and illustrated. Two new combinations are made: *Freya justina* Banks, 1929 = Xanthofreya justina (Banks, 1929), **comb. nov.** and *Freya petrunkevitchi* Chickering, 1946 = *Triggella petrunkevitchi* (Chickering, 1946), **comb. nov.**

Keywords. *Cyrene*, *Freya*, *Pachomius*, *Phiale*, *Triggella*, *Xanthofreya*, new combinations

Introduction

The establishment of the Freyinae (Edwards 2015) provided a framework for this group of Neotropical jumping spiders. Subsequently it was placed as a subtribe of the Aelurillini along with two Old World subtribes in a robust phylogeny of the Salticidae (Maddison 2015). Unfortunately, not all the type specimens of all species of freyines could be examined prior to publication of Edwards' (2015) paper. Therefore, many species had to be placed from what information previously existed in the literature. Several types were borrowed from the Museum of Comparative Zoology (MCZ), and here we provide photos of those types along with confirmations or updates of their generic placement.

The following types are included here:

Cyrene formosa Banks, 1909 = *Phiale formosa* [Edwards 2015]
Cyrene gratiosa Bryant, 1923, preoccupied by *Phiale gratiosa* C.L. Koch, 1846 = *Phiale bryantae* Roewer, 1951
Freya arraijanica Chickering, 1946 = *Xanthofreya arraijanica* [Edwards 2015]
Freya justina Banks, 1929 = *Xanthofreya justina* (Banks, 1929), **comb. nov.**
Freya petrunkevitchi Chickering, 1946 = *Triggella petrunkevitchi* (Chickering, 1946), **comb. nov.**
Pachomius flavescens Peckham & Peckham, 1896
Pachomius similis Peckham & Peckham, 1896
Phiale maculosa Chickering, 1946 = *Pachomius bilobatus* [Edwards 2015]

Some of these species were already dealt with by Edwards (2015), but photographs of the types are included here to document their placement. Two species are transferred as new combinations.

Methods

The terminology and abbreviations used here follow those of Edwards (2015). Species are discussed within the genera in which they are presently placed, which are in alphabetical order. Complete synonymies can be found at the World Spider Catalog (2026) online.

Images of specimens in 75% ethanol were captured using a Macropod microphotography system (Macroscopic Solutions, Mansfield, Connecticut, USA) equipped with a Canon EOS 6D Mark II camera using 2X, 3X, 4X, and 10X magnification. Image stacks were rendered using Helicon Focus 8.2.26 Pro. Scale bars (in white) are 1.0 mm for habitus photos, 0.5 mm for palp photos, and 0.1 mm for epigynal photos.

Taxonomy

Family Salticidae Blackwall, 1841
Subfamily Salticinae Blackwall, 1841
Tribe Aelurillini Simon, 1901
Subtribe Freyina Edwards, 2015

Genus *Pachomius* Peckham & Peckham, 1896

Pachomius bilobatus F. O. Pickard-Cambridge, 1901
Figures 1-4

Cyrene bilobata F. O. Pickard-Cambridge, 1901
Phiale maculosa Chickering, 1946
Pachomius bilobatus: Edwards 2015

The synonymy of *Phiale maculosa* with *Cyrene bilobata* was established by Edwards (2015). The female type of *P. maculosa* is illustrated here for verification. The holotype male of *C. bilobata* is in the British Natural History Museum.

Pachomius flavescens Peckham & Peckham, 1896
Figures 5-8

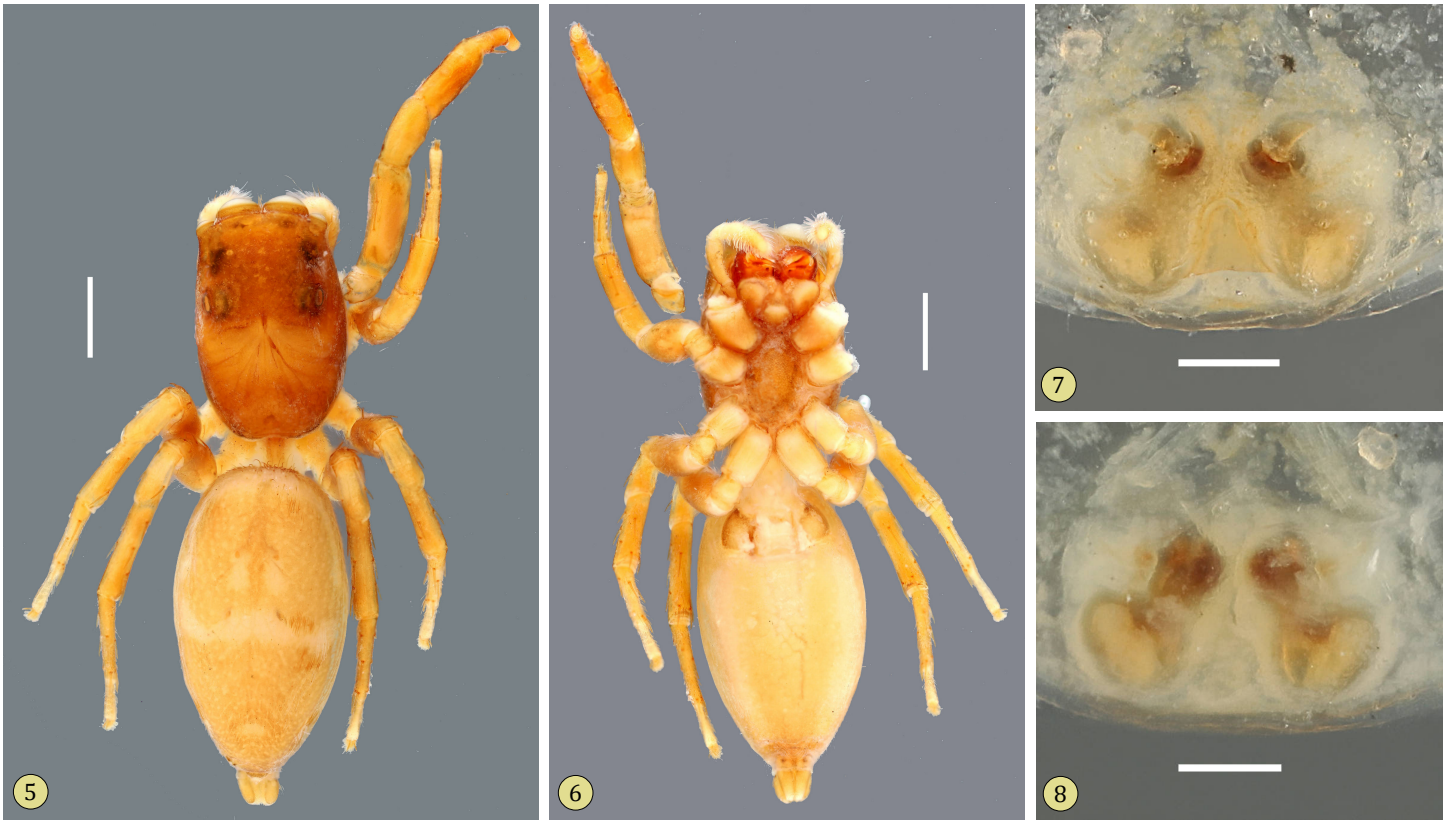
Although the holotypes of *P. flavescens* and *P. similis* were examined by Edwards (2015), no figures of these types were included for space considerations.

Pachomius similis Peckham & Peckham, 1896
Figures 9-12

The type of *P. similis* was dried at one time, and the body parts distorted and faded. Nevertheless, the epigyne, especially the copulatory openings, seems to be distinctive.



Figures 1-4. *Pachomius bilobatus* (F. O. Pickard-Cambridge, 1901): Female holotype of *Phiale maculosa* Chickering, 1946. **1,** Dorsal view. **2,** Ventral view. **3,** Epigyne ventral view. **4,** Epigyne dorsal view.



Figures 5-8. *Pachomius flavescens* Peckham & Peckham, 1896: Female holotype. **5,** Dorsal view. **6,** Ventral view. **7,** Epigyne ventral view. **8,** Epigyne dorsal view.



Figures 9-12. *Pachomius similis* Peckham & Peckham, 1896: Female holotype. **9,** Dorsal view. **10,** Ventral view. **11,** Epigyne ventral view. **12,** Epigyne dorsal view.

Genus *Phiale* C. L. Koch, 1846

Phiale bryantae Roewer, 1951
Figures 13-16

Cyrene gratiosa Bryant, 1923, preoccupied by *Phiale gratiosa* C. L. Koch, 1846
Phiale bryantae Roewer, 1951

This species was listed as *incertae sedis* in Edwards (2015). Examination of the type female reveals an epigyne that seems to conform to *Phiale*, and possibly it belongs to the *mimica* group.

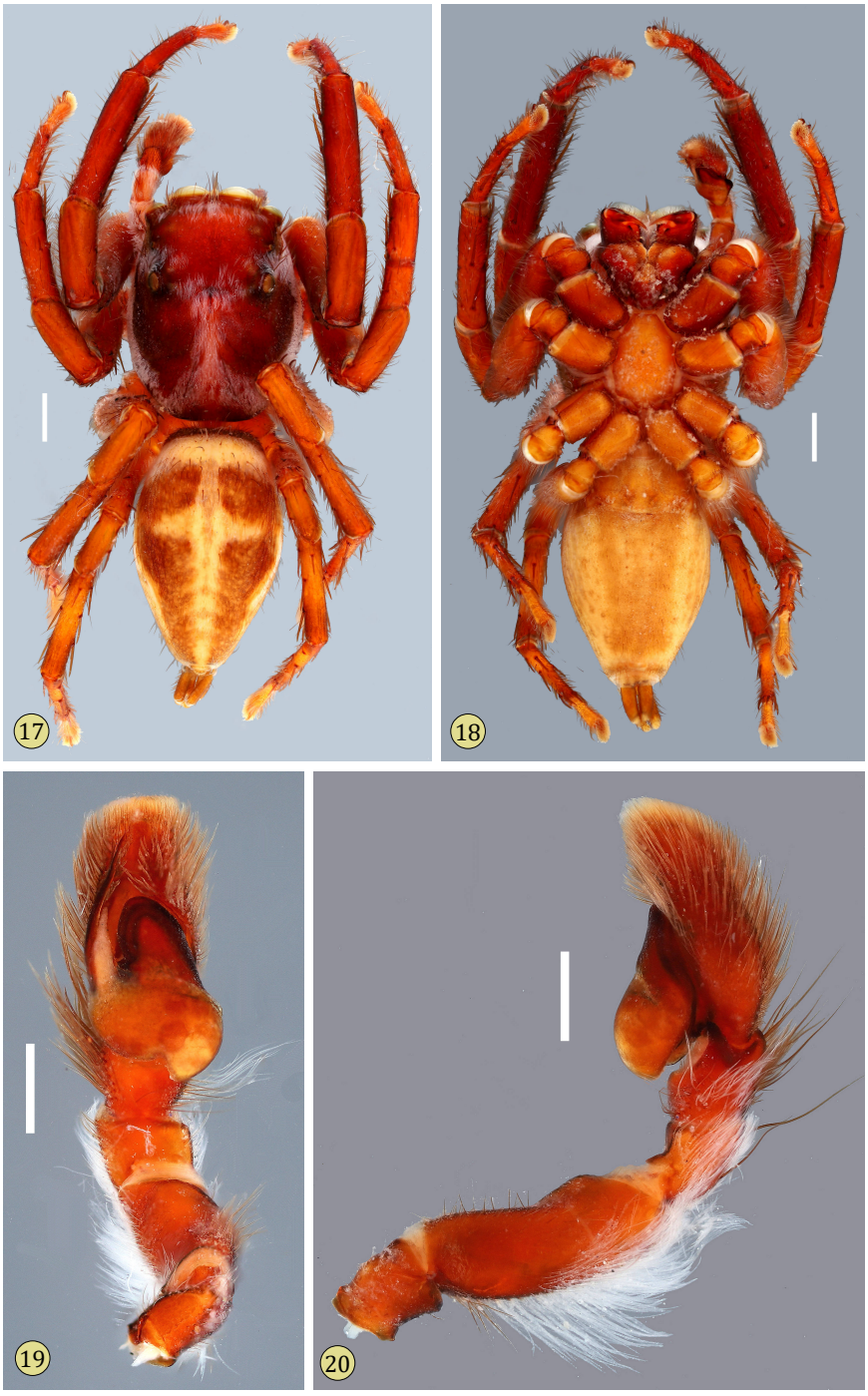


Figures 13-16. *Phiale bryantae* Roewer, 1951: Female holotype. **13,** Dorsal view. **14,** Ventral view. **15,** Epigyne ventral view. **16,** Epigyne dorsal view.

Phiale formosa (Banks, 1909)
Figures 17-20

Cyrene formosa Banks, 1909
Phiale formosa: Petrunkevitch 1911; Edwards 2015

Although previously well-illustrated, the type is presented here for confirmation. This is a relatively large species that is common in lowland rainforest in Costa Rica.



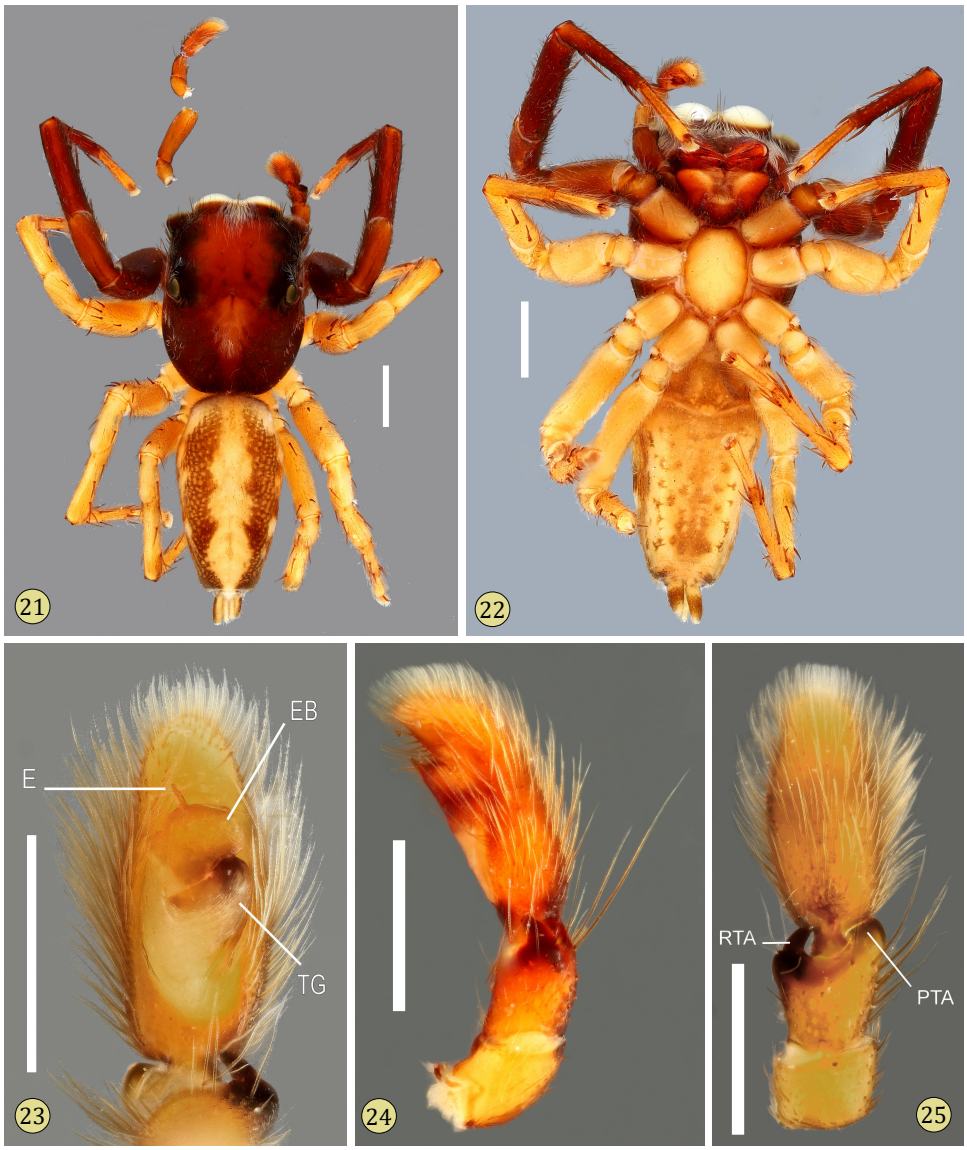
Figures 17-20. *Phiale formosa* (Banks, 1909): Male holotype. **17,** Dorsal view. **18,** Ventral view. **19**, Palp ventral view. **20,** Palp retrolateral view.

Genus *Triggella* Edwards, 2015

Triggella petrunkevitchi (Chickering, 1946), **comb. nov.**
Figures 21-25

*Freya petrunkevitch*i Chickering, 1946

Although it has an unusual tegular shoulder and appears to be missing the terminal apophysis and proximal retrolateral lobe of the tegulum which is present in other members of *Triggella*, I place it here because of the following synapomorphies with other members of the genus: (1) distal half of RTA broadly triangular and bent inward toward the cymbium, (2) prominent truncate PTA present, (3) color pattern virtually identical to *T. bifida*. It also has a short embolus like members of the *bifida* group, although it appears to have a large embolus base unlike the other members of the genus. Given the differences from the other species in the genus, it probably should belong in its own species group.



Figures 21-25. *Triggella petrunkevitchi* (Chickering, 1946), **comb. nov.** Holotype male. **21,** Dorsal view. **22,** Ventral view. **23,** Palp ventral view. **24,** Palp retrolateral view. **25,** Palp dorsal view. E = embolus, EB = embolus base, PTA = prolateral tibial apophysis, RTA = retrolateral tibial apophysis, TG = tegular shoulder.

Genus *Xanthofreya* Edwards, 2015

Xanthofreya arraijanica (Chickering, 1946)
Figures 26-32

Freya arraijanica Chickering, 1946
Xanthofreya arraijanica: Edwards 2015

This species, previously transferred and illustrated by Edwards (2015), has the types included here for confirmation. We inadvertently did not photograph the dorsal side of the epigyne, but it is distinctive nevertheless.

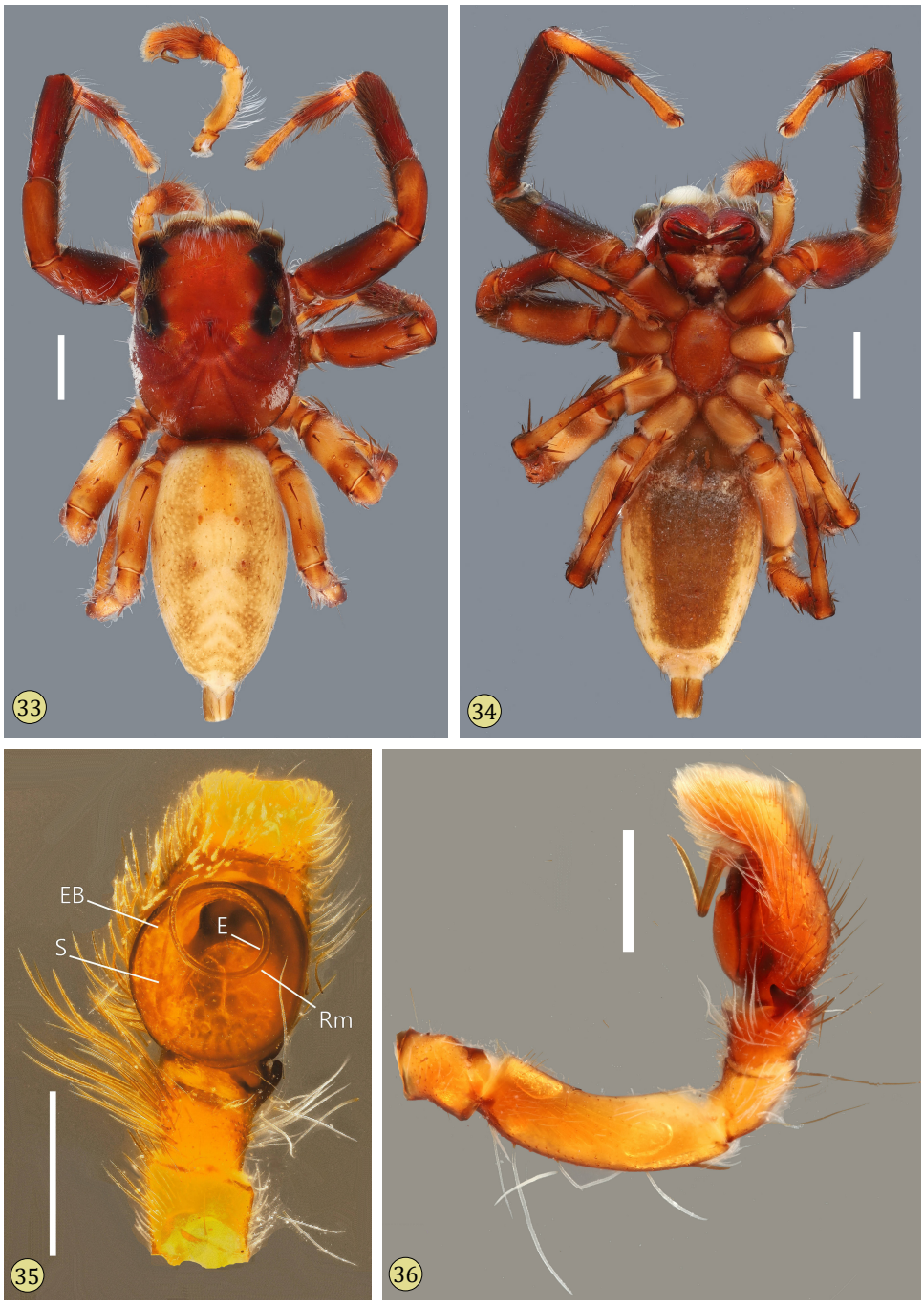


Figures 26-32. *Xanthofreya arraijanica* (Chickering, 1946). Holotype male: **26,** Dorsal view. **27,** Ventral view. **28,** Palp ventral view. **29,** Palp retrolateral view. Allotype female: **30,** Dorsal view. **31,** Ventral view. **32,** Epigyne ventral view.

Xanthofreya justina (Banks, 1929), **comb. nov.**
Figures 33-36

Freya justina Banks, 1929

As was previously suggested (Edwards 2015), *F. justina* belongs in *Xanthofreya*. The species in this genus tend to have unusual genital structure, and *F. justina* is no exception. However, it follows the same pattern of the other species, with a ramus splitting off from the embolus distal to the embolus base, and the spermophore continuing through the more posterior of the two projections from the base, even though the embolus and ramus uniquely are closely appressed together their entire length.



Figures 33-36. *Xanthofreya justina* (Banks, 1929), **comb. nov.** Holotype male. **33,** Dorsal view. **34,** Ventral view. **35,** Palp ventral view. **36,** Palp retrolateral view. E = embolus, EB = embolus base, Rm = ramus, S = spermophore.

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