

# *Prodidomus* Hentz, 1847 and *Zimiris* Simon, 1882 on Ascension Island (Araneae: Prodidomidae)

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SHERWOOD, D., GRINGET, V., MARUSIK, Y. M. & SHARP A.: *Prodidomus* Hentz, 1847 and *Zimiris* Simon, 1882 on Ascension Island (Araneae: Prodidomidae).

**Abstract:** A review of type material and newly collected material of the family Prodidomidae Simon, 1884 from Ascension Island is presented. *Prodidomus clarki* Cooke, 1964 is proposed as a junior synonym of *Prodidomus rufus* Hentz, 1847 **syn. nov.**, and *Prodidomus duffeyi* Cooke, 1964 is deemed as a valid species but known only from a single bleached specimen, further material is needed to fully clarify its identity, The third prodidomid species on the island is confirmed as *Zimiris doriae* Simon, 1882.

**Keywords:** taxonomy, synonymy, morphology, United Kingdom Overseas Territories, ground spider

## Introduction

*Prodidomus* Hentz, 1847 currently contains 55 species (WSC 2023) of which two are endemic to Ascension Island and described based on only the female sex: *P. clarki* Cooke, 1964 and *P. duffeyi* Cooke, 1964. COOKE (1964), in his revision of the Prodidomidae Simon, 1884, placed *P. clarki*, with some reservations, in “Group 4” of *Prodidomus* (also inclusive of, amongst others, the type species *P. rufus* Hentz, 1847), but does not assign *P. duffeyi* to a specific group. These two endemic taxa have hitherto not been re-examined since their original description nearly sixty years ago.

In this work, based on examination of the holotypes deposited in the Natural History Museum, London, we illustrate and discuss the types of *Prodidomus* described from Ascension Island, resulting in one new synonymy. Through opportunistic examination

of material of another prodidomid genus found on the island, *Zimiris* Simon, 1882, we confirm represented on the island thus far only from the widespread non-native *Zimiris doriae* Simon, 1882.

## Material and methods

Specimens were examined under a Leica MZ12.5 stereomicroscope. Images were made by DS using a Canon EOS 6D Mark II attached to the same microscope, with images stacked using Helicon Focus software. Drawings were made by VG, in a style similar to those of COOKE (1964) but with structures more accurately depicted.

*Abbreviations:* ASC = Ascension Island Conservation Directorate collection, Georgetown, Ascension Island (it is intended in the future that the ASC invertebrate collection will be donated and moved to the Saint Helena National Trust, Jamestown, Saint Helena); BMNH = Natural History Museum, London; imm. = immature.

## Taxonomy

### *Prodidomus rufus* Hentz, 1847

*Prodidomus rufus* Hentz, 1847: 467, pl. 30, fig. 4;

*Prodidomus rufus*: Hentz (1867): 108, pl. 18, fig. 9; Banks (1892): 259, fig. 12; Bryant (1935): 164, fig. 1; Bryant (1949): 22, fig. 1; Cooke (1964): 266, figs. 15, 29–30; Platnick (1976): 38, figs. 4–5; Hu & Wang (1981): 51, figs. 1–8; Song (1987): 342, fig. 296; Platnick & Baehr (2006): 13, figs. 24–28; Kamura (2009): 500, figs. 1–4; Yin et al. (2012): 1150, figs. 612a–i; Zhang & Wang (2017): 576, fig. 4; Al-Yacoub & Najim (2022): 240, figs. 2A–D, 3A–D.

*Miltia gulosa* Simon, 1884: 141.

*Prodidomus gulosus*: Simon, 1893: 333, figs. 296–299; Dalmas (1919): 318, fig. 26.

*Prodidomus imaidzumii* Kishida, 1914: 324, fig. 1.

*Prodidomus hispanicus* Dalmas, 1919: 318. **syn. nov.**

*Prodidomus hispanicus*: Hadjissarantos (1940): 84, fig. 30; Pérez & Blasco (1986): 156, figs. 7–9.

*Hyltonia scottae* Birabén, 1954: 13, figs. 1–7.

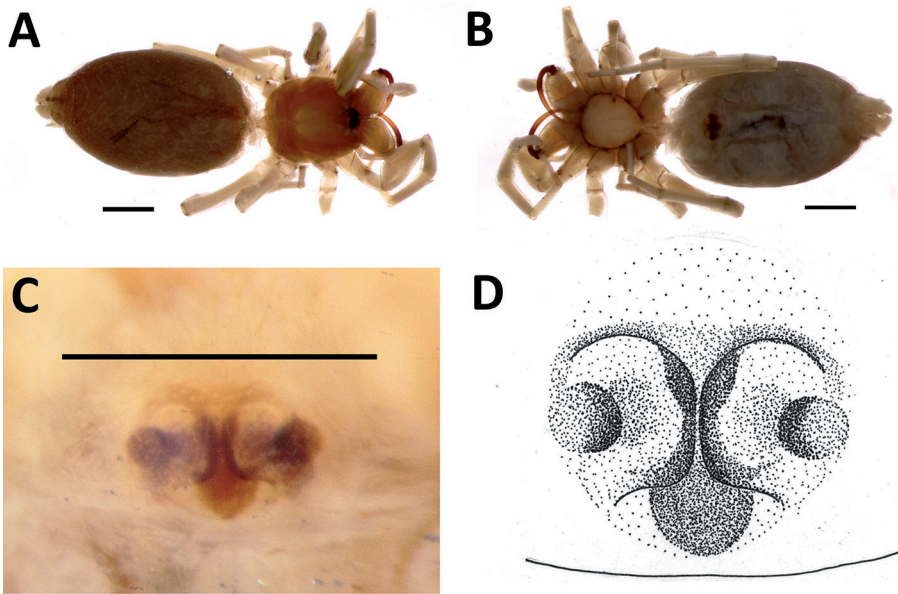
*Prodidomus clarki* Cooke, 1964: 284, fig. 19. **syn. nov.**

*Prodidomus imaidzumii*: Platnick (1976): 38, figs. 1–3; Chen & Zhang (1991): 240, figs. 250.1–5; Song, Zhu & Chen (1999): 432, figs. 14E, 258L–O

*Prodidomus* cfr. *rufus*: Ferrández & Carrillo (2018): 123, figs. 1–4.

*Type material examined:* Holotype ♀ *Prodidomus clarki* (BMNH 1961.1.18.1), Ascension Island, under a stone in coconut grove near shore, 18/08/1958, coll. E. A. Duffey; for types of other names/synonyms see COOKE (1964).

*Diagnosis:* *Prodidomus rufus* can be differentiated from other congeners, except other species of the Rufus Group, by the massive and geniculate chelicerae; *P. rufus* is clearly distinct from two of the other valid species of the Rufus Group, *P. duffeyi* and *P. redikorzevi* by the shape of the copulatory ducts; its diagnosis is less simple from the remaining presently-valid species of this group, as they are known only from females which may prove synonyms (i.e. *P. capensis* Purcell, 1904, *P. revocatus* Cooke, 1964, and *P. rollasoni* Cooke, 1964).



**Fig. 1:** *Prodidomus rufus* Hentz, 1847 (holotype female of *Prodidomus clarki* Cooke, 1964 syn. nov.). A. habitus, dorsal view. B. habitus, ventral view. C. epigyne, ventral view. D. illustration of epigyne, ventral view. Scale bars = 1mm.

*Other material examined:* 1 ♀ (ASC 118 2 HC), Green Mountain National Park, Ascension Island (-7.95, -14.35), collected by hand, 25/01/2022, coll. A. Sharp.

*Rationale for synonymy:* There is a significant concordance between the shape of the epigyne of the holotype of *P. clarki* (Figs. 1C–D) and that of *P. hispanicus* Dalmas, 1919 as illustrated by PÉREZ & BLASCO (1986). Examination against published illustrations of *P. rufus* (see all references in synonymy list) and material from nearby Saint Helena (SHERWOOD et al. in prep.) demonstrates they both lie within an acceptable range for intraspecific epigyne variation in *P. rufus*. Similarly, a more recent specimen of *P. rufus* collected from Ascension Island (see other material examined) also has this same morphology. Therefore, we propose *P. clarki* **syn. nov.** and *P. hispanicus* **syn. nov.** as junior synonyms of *P. rufus*. The holotype of *P. clarki* is fragile and bleached (Figs. 1A–B), so dissection of the epigyne was avoided to risk further damage to the specimen. The synonymy of the two aforementioned species is not surprising, as PLATNICK & BAEHR (2006: 15) hypothesised several species described by COOKE (1964) and others in what is now the Rufus Group [“Group 4” in COOKE (1964)] may be synonyms of *P. rufus* but did not take any direct taxonomic action. The suspected synonymy of *P. hispanicus* with *P. rufus* was also pondered by ZONSTEIN, MARUSIK & OMELKO (2015: 381).

*Remarks:* To avoid repetition, we summarise the taxonomic history of *P. rufus* in the synonymy list. As can be seen, species from across the world have been described and subsequently synonymised with *P. rufus*. PLATNICK & BAEHR (2006) state *P. rufus* likely originates from the Mediterranean more generally and is “probably” widespread in Africa. It is introduced to Argentina, Ascension Island, Chile, China, Cuba, Japan, New

Caledonia, Saint Helena, and United States. Recently, it was tentatively reported from Spain. FERRÁNDEZ & CARRILLO (2018) had great difficulty initially assigning their male to *P. rufus*, considering it shares many characters with other Mediterranean *Prodidomus* species. We therefore suspect that further synonymies of species within the Rufus Group (see diagnosis) may be required in the future, as *P. rufus* has been proven to vary intraspecifically to a great degree. However, in our opinion re-examination of types and sufficient other material of *P. capensis*, *P. revocatus* and *P. rollasoni* is necessary before making any taxonomic decisions.

Interestingly, FERRÁNDEZ & CARRILLO (2018) also note differences in the illustrations of Caribbean specimens in comparison to *P. rufus* from other areas of the world, which should be examined more closely. Molecular analysis of *P. rufus* specimens from across their recorded range would be an interesting avenue for future workers, to ascertain the genetic distances of the known populations and if cryptic species exist.

***Prodidomus duffeyi* Cooke, 1964**

*Prodidomus duffeyi* Cooke, 1964: 286, fig. 10.

*Type material examined:* Holotype ♀ *Prodidomus duffeyi* (BMNH 1961.1.18.12), Ascension Island, in kitchen hut, coll. E. A. Duffey, ‘tube 8’.

*Remarks:* The holotype of *P. duffeyi* is bleached, more so than *P. clarki* (Figs. 2A–B). However, the epigyne has a different morphology, with a different course to the copulatory ducts, which can be seen very clearly as the specimen is considerably bleached (Figs. 2C–D). Again, given the fragility of the specimen, dissection was not performed. We have yet to see other specimens of *Prodidomus* with this particular morphology of the copulatory ducts, nor have we seen any depictions in the literature of similar morphology in other known species. Therefore, we consider the species as valid here but there is an urgent need for new material to be collected to more securely elucidate its identity. Recent collecting efforts on the island by AS have not been successful in finding this species.

***Zimiris doriae* Simon, 1882**

*Zimiris doriae* Simon, 1882: 240, pl. 8, figs. 12–15.

*Zimiris doriai*: Platnick & Penney, 2004: 8, figs. 1–8, 12–19; Rodrigues & Rheims, 2020: 669, figs. 6F, 10F,L, 11O, 18H, 21K, 23L, 24L, 25L, 28L, 29L.

For full synonymy list see WSC (2023).

*Material examined:* 1 ♂ (ASC E12 2 PFU), Ascension Island (-7.9, -14.39), from unbaited pitfall trap, 17/02/2022, coll. A. Sharp; 1 ♀ (ASC H12 1 PFF), Ascension Island (-7.9, -14.36), pitfall trap baited with fish, 10/03/2022, coll. A. Sharp; 1 ♀ (ASC 01865), White Horse Hill, Ascension Island (-7.9481, -14.3118), 25/06/2013, coll. L. F. White; 1 ♀ (ASC 01235), [same data except 07/03/2013]; 1 ♀ (ASC 01148), [same data except 07/02/2013]; 1 imm. (ASC 01718), [same data except 27/05/2013, placed in same tube as ASC 01635 which is from another locality]; 1 ♀ (ASC 01635), North East Bay, Ascension Island (-7.9229, -14.3392), 21/05/2013, coll. L. F. White [in same tube as ASC 01718 which is from another locality].

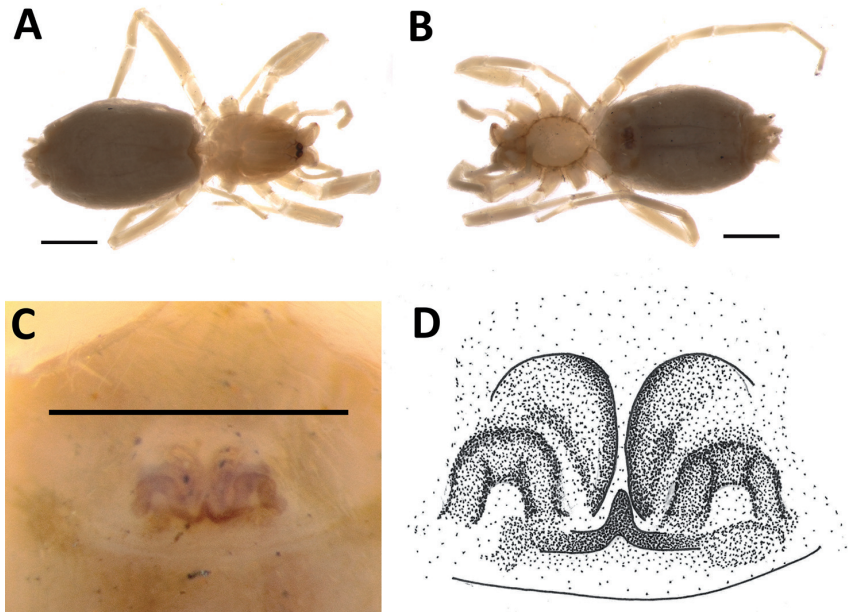


Fig. 2: *Prodidomus duffeyi* Cooke, 1964 holotype female, A. habitus, dorsal view. B. habitus, ventral view. C. epigyne, ventral view. D. illustration of epigyne, ventral view. Scale bars = 1mm.

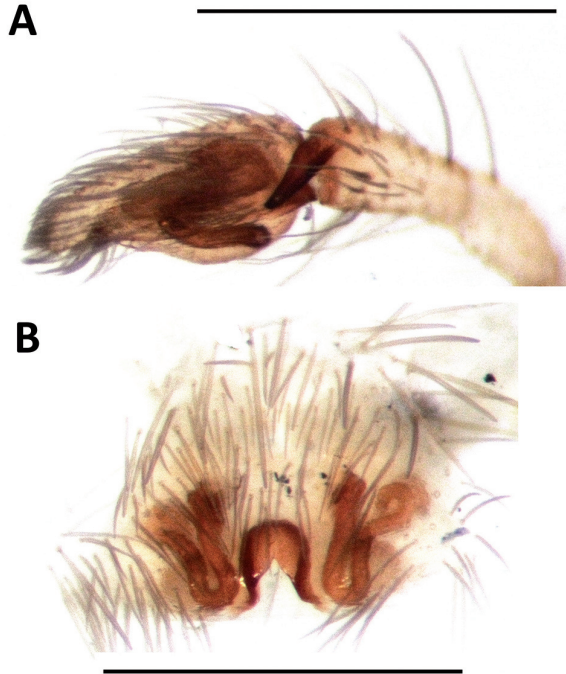


Fig. 3: *Zimiris doriae* Simon, 1882, non-type male (A) and female (B) from Ascension Island. A. palp, retrolateral view. B. epigyne, ventral view. Scale bars = 1mm.

*Diagnosis:* *Zimiris doriae* is readily differentiated from *Z. diffusa* by the curved retro-lateral tibial apophysis (vs. straight) and the comparatively longer and more rounded shape of the epigynal midpiece (vs. shorter and triangular), as outlined by PLATNICK & PENNEY (2004).

*Remarks:* Given the presence of the closely related *Z. diffusa* Platnick & Penney, 2004 on nearby Saint Helena Island, we closely examined specimens of this genus from Ascension Island (see above). Based on the shape of the retrolateral tibial apophysis (Fig. 3A) and the epigyne (Fig. 3B), it is clear that they belong instead to the more widely distributed *Z. doriae* Simon, 1882 which is the type species of *Zimiris* Simon, 1882 (World Spider Catalog 2023).

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