



On the identity of *Opopaea euphorbicola* Strand, 1909 and first records of three other non-native goblin spiders from Ascension Island (Araneae: Oonopidae)

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Strand (1909) described *Opopaea euphorbicola* Strand, 1909 from Ascension Island, stating “Zwei ♀♀ von Ascension 14.IX.03, unter *Euphorbia organoides*” (Strand, 1909: 549) indicating the habitat from which it was collected and clarifying there were two [syntypic] females. This material was collected by the 1901–1903 German South Polar Expedition, which also collected spiders on nearby Saint Helena (Strand 1909; Sherwood & Fowler 2023). Strand’s description focuses mostly on somatic characters and does little to establish the identity of this species, given the lack of illustrations, which is common for his descriptions (Nentwig *et al.* 2020).

Duffey (1964) mentions *O. euphorbicola* as one of the most common spiders in the island’s *Euphorbia* habitat, and states “D. J. Clark of the British Museum (Natural History), after examining the types, considers, however, that this name is probably a synonym for *O. deserticola* Simon, an Old-World species which has been introduced into many countries.” (Duffey, 1964: 240). The loan of material from the Museum für Naturkunde, Berlin, where Strand’s types were deposited, has been confirmed by database checks (JD pers. obs.).

Ashmole & Ashmole (1997) collected specimens of what they thought was *O. euphorbicola* and sent them to John Murphy for identification. They further state: “*Opopaea euphorbicola* Strand was described from Ascension (Strand, 1909). Duffey suggested that this species might not be truly endemic, but our specimens from barren lava sites appear distinct from other members of the genus known from the same region (J. Murphy, in lit.). Endemic.” (Ashmole & Ashmole, 1997: 577), which cast doubts on whether this species was in fact distinct and not a synonym.

Recently, the Eric Duffey (Stonehouse 1960) collection of Ascension Island spiders, housed at the Natural History Museum, London has been recurated and completely databased by the senior author. In this collection is the non-type *Opopaea* material examined by Doug Clark. This collection was studied alongside fresher material collected by Philip and Myrtle Ashmole, and very recent material from Adam Sharp, also sent to her for identification. Our investigation also considers that the type specimens of *O. euphorbicola* are now, regrettably, lost.

Platnick *et al.* (2011) revised the genus *Brignolia* Dumitrescu & Georgescu, 1983 and described *B. dasystema* Platnick, Dupérré, Ott & Kranz-Baltensperger, 2011 from the United States. Brescovit *et al.* (2019) recorded this species for the first time from Brazil. Hitherto, *B. dasystema* has not been recorded outside of the New World.

In this work, we elucidate the taxonomic identity of *Opopaea euphorbicola* (= *O. deserticola* Simon, 1892) and designate a neotype to stabilise its taxonomy and nomenclature. We also newly record three other oonopid spiders from Ascension Island. The goblin spiders of Ascension are unremarkable; all constitute non-native and widespread species which are well-known in the prior taxonomic literature. Nevertheless, three constitute new genus and species records for the island, and all the data is valuable for consideration in future management plans of non-native species on the island. The absence of endemics is also mirrored on neighbouring Saint Helena, which also had its endemic species synonymised (Sherwood & Fowler 2022; Sherwood *et al.* 2023).

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. Abbreviations (collections

personnel in parentheses): ASC = Ascension Island Conservation Directorate collection, Georgetown, Ascension Island (Adam Sharp) ; BMNH = Natural History Museum, London (Jan Beccaloni and Danniella Sherwood); coll. = collected by; colln. = collection; imm. = immature(s); No. = number; ZMB = Museum für Naturkunde, Berlin, Germany (Jason Dunlop). 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, until then they are on long-term loan to the senior author in London.

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Taxonomy

Opopaea deserticola Simon, 1892 (Figs. 1 A–G)

Opopaea deserticola Simon, 1892: 560, pl. 42, fig. 5 (♂♀).

Opopaea euphorbicola Strand, 1909 549 (♀). **syn. nov.**

Opopaea euphorbicola: Duffey, 1964: 239–240, 250.

Opopaea ?euphorbicola: Ashmole & Ashmole, 1997: 556. [sic!]

Opopaea euphorbicola: Ashmole & Ashmole, 1997: 566, 577.

Opopaea deserticola: Brescovit *et al.* 2019: 10, figs. 36–40 (♂♀).

For a full synonymy list, see World Spider Catalog (2023).

Type material. Syntypes 2 ♀♀ *Opopaea euphorbicola* (ZMB 35217, lost), Ascension Island, from *Euphorbicola origanoides*, 14/09/1903, coll. German South Polar Expedition, presumably lost; neotype (designated herein) ♂ *Opopaea euphorbicola* (BMNH), Ascension Island, 1957, coll. E. A. Duffey, tube No. 4; for details on types of other synonyms and of the original specimens of Simon (1892) see Brescovit *et al.* (2019).

Diagnosis and description. See Brescovit *et al.* (2019).

Other material examined. 1 ♂ (ASC L16 1 PFJ), Ascension Island (-7.94, -14.33), Trachyte and rhyolite flows and domes, pitfall trap baited with jam, 24/02/2022, coll. A. Sharp; 1 ♀ (ASC L16 1 LC), same data as preceding; 1 ♂ (ASC L16 2 PFF), same data as preceding; 1 ♀ (ASC L16 1 PFM), same data as preceding; 1 ♂ (ASC L16 1 PFU), same data as preceding; 1 ♀ (ASC I17 1 PFF), same data as preceding except baited with fish, 21/01/2022, coll. A. Sharp; 1 ♂ (ASC M17 3 LC), same data as preceding except non-baited pitfall trap, 25/02/2022; 1 ♀ (ASC M17 3 PFM), same data as preceding except pitfall trap baited with meat, 25/02/2022; 1 ♀ (ASC J15 3 PFM), Ascension Island (-7.93, 14.34), Silicic pyroclastic deposits, non-baited pitfall trap, 24/01/2022, coll. A. Sharp; 1 ♀ (ASC J15 1 PFJ), same data as preceding except pitfall trap baited with jam, 24/01/2022; 1 ♀ (ASC H12 1 PFU), Ascension Island (-7.90, -14.36), Intermediate Zr/Nb mafic flows (older), non-baited pitfall trap, 10/03/2022, coll. A. Sharp; 1 ♀ (ASC H14 3 LC), Ascension Island (-7.92, -14.36), Superficial deposits, litter extraction, 27/01/2022, coll. A. Sharp; 1 ♀ (ASC F17 1 HPF), Ascension Island (-7.95, -14.38), Intermediate Zr/Nb mafic flows (younger), hanging pitfall baited with fish, 03/03/2022, coll. A. Sharp; 1 ♀ (ASC 01783), South Gannet Hill, Ascension Island (-7.9781, -14.3947), 11/06/2012, coll. L. F. White; 1 ♂ (ASC 0425), same data, except 10/06/2012; 1 ♀ (ASC 0227), same data, except 01/06/2012; 1 ♂ (ASC 0821), South Gannet, off lava, 23–27 March 1990, coll. and colln. P. Ashmole and M. Ashmole; 1 ♀ (ASC 0392), South Gannet, lava inland, 20 March 1996, coll. and colln. P. Ashmole and M. Ashmole; 3 ♂♂, 3 ♀♀ (BMNH), Ascension Island, 12–31/09/1957, coll. E. A. Duffey, tube No. 52; 2 ♀♀ (BMNH), same data, except tube No. 23; 6 ♂♂, 4 ♀♀, 6 imm. (BMNH), same data, except tube No. 101; 1 ♀ (BMNH), same data, except tube No. 129.

Distribution. Pantropical (WSC 2023), inclusive of Ascension Island.

Remarks. A recent search of the ZMB collections and consultation of the database has revealed the loan of the syntypes of *O. euphorbicola* to Doug Clark is still outstanding (JD pers. obs., 2023). Searches at BMNH have failed to find the loaned syntypes (DS pers. obs., 2023) and they can therefore be regarded as lost, given it has been more than half a century since their exact whereabouts were precisely known. Furthermore, the morphology of females of *Opopaea* species is very often interspecifically indistinguishable and thus a certain, species-level, identity cannot be ascertained from the written description of Strand (1909). Therefore, the designation of a neotype is necessary.

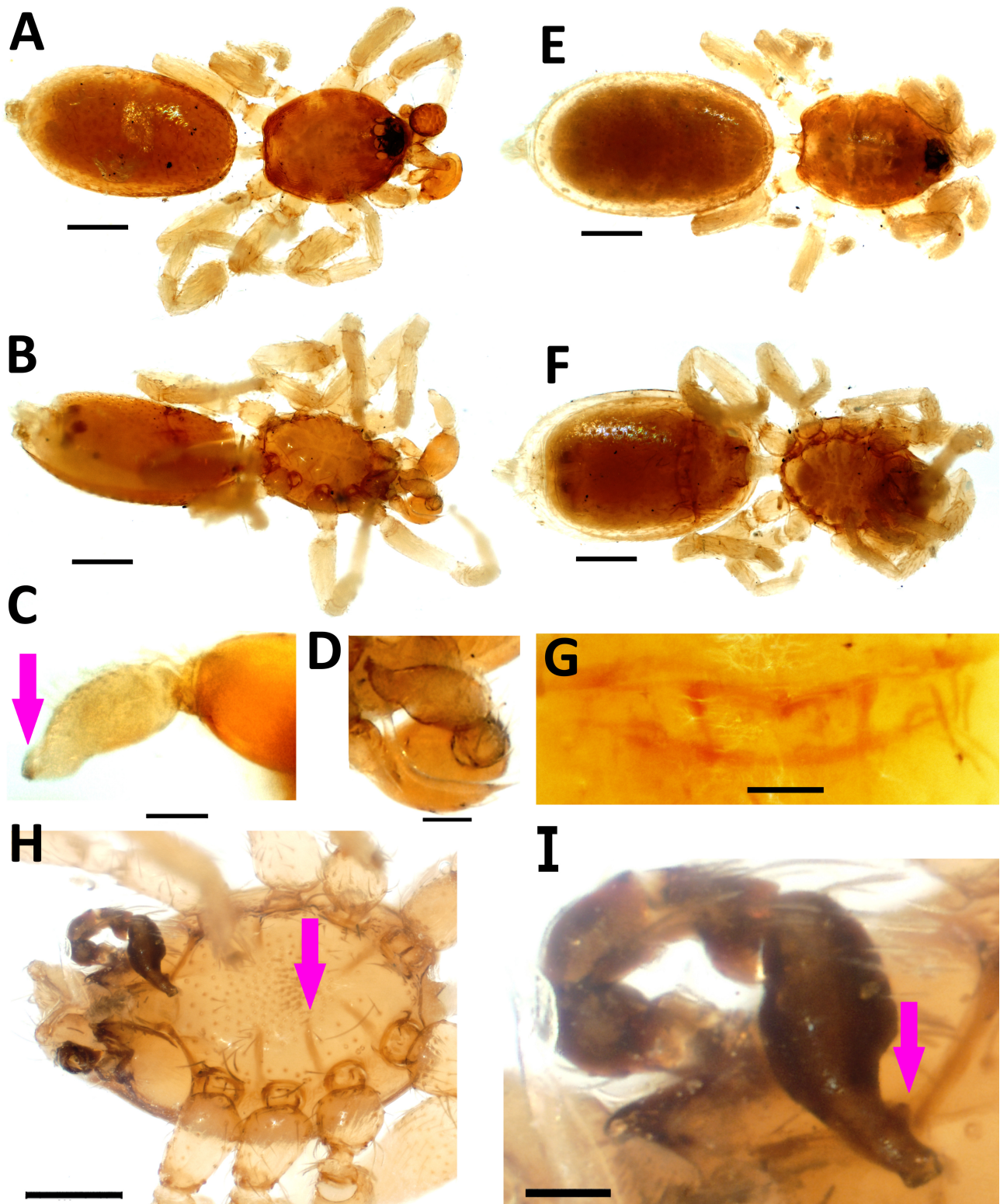


FIGURE 1. Ascension oonopids. **A–G** *Opopaea euphorbicola* Stand, 1909 (BMNH), **H–I** *Brignolia dasystema* Platnick, Dupérré, Ott & Kranz-Baltensperger, 2011 (ASC K17 2 LC). **A–D** neotype male (designated herein) of *O. euphorbicola*, **A** habitus, dorsal view, **B** same, ventral view, **C** palp, prolateral view, pink arrow indicates keel at tip of palpal bulb, **D** same, dorso-retrolateral view. **E–G** non-type female of *O. euphorbicola*, **E** habitus, dorsal view, **F** same, ventral view, **G** epigyne, ventral view. **H–I** *B. dasystema*, **H** cephalothorax, ventral view, showcasing distinctive sternal morphology, indicated by pink arrow, **I** close-up of palp in dorso-prolateral view, pink arrow indicates keel at tip of palpal bulb. Scale bars = 0.2mm (A–B, E–F, H), 0.05mm (C–D, G, I).

We hereby designate a neotype to clarify the taxonomic status of *Opopaea euphorbicola* Strand, 1909. As allowed by Article 75.3.5 of the International Code of Zoological Nomenclature (ICZN, 2012), the neotype here designated is of opposite sex to the syntypes mentioned by Strand (1909) and is deposited at the Natural History Museum, London, a public institution which allows access to its collections. The fact the neotype was collected on the same island as the female syntypes, and shares near-identical morphology with additional non-type males in BMNH which were collected alongside females which are all indiscernible in morphology is sufficient evidence for conspecificity. Many of these non-types were themselves identified on written labels as *O. euphorbicola* by Doug Clark (DS pers. obs.), indicating they were possibly directly compared against the syntypes. For this reason, we prefer to assign a neotype to the name *O. euphorbicola* based on material examined by the last known loanee of the missing syntypes rather than from more recent material. Having the name-bearing type be a male determined as this species by Clark allows for an unambiguous identification of this name. The neotype male is illustrated herein (Figs. 1A–D) and matches the morphology of *O. deserticola* as illustrated by previous workers (e.g. Brescovit *et al.* 2019: figs. 36–40). Based on the morphology of the genitalia of the neotype male, and further examinations of conspecific non-type males and females (e.g. Figs. 1E–G) (see Other material examined), *O. euphorbicola* is proposed as a junior synonym of *Opopaea deserticola* Simon, 1892 **syn. nov.**

New distribution records

***Brignolia dasystema* Platnick, Dupérré, Ott & Kranz-Baltensperger, 2011 (Figs. 1H–I)**

Brignolia dasystema Platnick *et al.* 2011: 32, figs. 95–141 (♂♀).

Brignolia dasystema: Brescovit *et al.* 2019b: 2, figs. 1–6 (♂).

Diagnosis and description. See Platnick *et al.* (2011).

Material examined. 2 ♂♂ (ASC K17 2 LC), Ascension Island (-7.95, -14.34), Volcanic breccia, non-baited pitfall trap, 24/03/2022, coll. A. Sharp.

Distribution. Ascension Island (new record, introduced), Brazil (introduced, Brescovit *et al.* 2019), and USA (Platnick *et al.* 2011).

Remarks. *Brignolia dasystema* seems to be a more recent introduction to Ascension from the United States, in keeping with other recently discovered non-native species (Sherwood *et al.* in prep). It is not present in older samples. The habitus and genitalia of this species has been excellently illustrated elsewhere (Platnick *et al.* 2011; Brescovit *et al.* 2019), complete with comprehensive descriptions. Therefore, we simply provide here two complimentary photographs showing the key characters to identify male *B. dasystema*: the modified setae of the sternum (Fig. 1H) and the medial keel of the dark and elongate palpal bulb (Fig. 1I).

***Heteroonops spinimanus* (Simon, 1892) (Figs. 2 A–B)**

Oonops spinimanus Simon, 1892: 563, pl. 42, fig. 6 (♀).

Heteroonops spinimanus: Platnick & Dupérré, 2009: 22, figs. 79–139 (♂♀) For full synonymy list, see WSC (2023).

Diagnosis and description. See Platnick & Dupérré (2009).

Material examined. 1 ♀ (ASC NE500), Scout's Campsite, Ascension Island (-7.945305, -14.339148), 02/08/2022, coll. Adam Sharp.

Distribution. Pantropical (WSC 2023), inclusive of Ascension Island (new record, introduced).

Remarks. An unsurprising new addition to the island's fauna as this taxon was previously known from Saint Helena (Benoit 1977; Sherwood & Fowler 2022)..

***Ischnothyreus peltifer* (Simon, 1892) (Figs. 2 C–D)**

Ischnaspis peltifer Simon, 1892: 562 (♀).

Ischnothyreus peltifer: Platnick *et al.*, 2012: 7, figs. 1–99 (♂♀).

For full synonymy list, see WSC (2023).

Diagnosis and description. See Platnick *et al.* (2012).

Material examined. 1 ♀ (ASC L17 2 PFJ), Ascension Island (-7.95, -14.35), Silicic pyroclastic deposits, pitfall trap baited with jam, 28/01/2022, coll. A. Sharp.

Distribution. Pantropical (WSC 2023), inclusive of Ascension Island (new record, introduced).

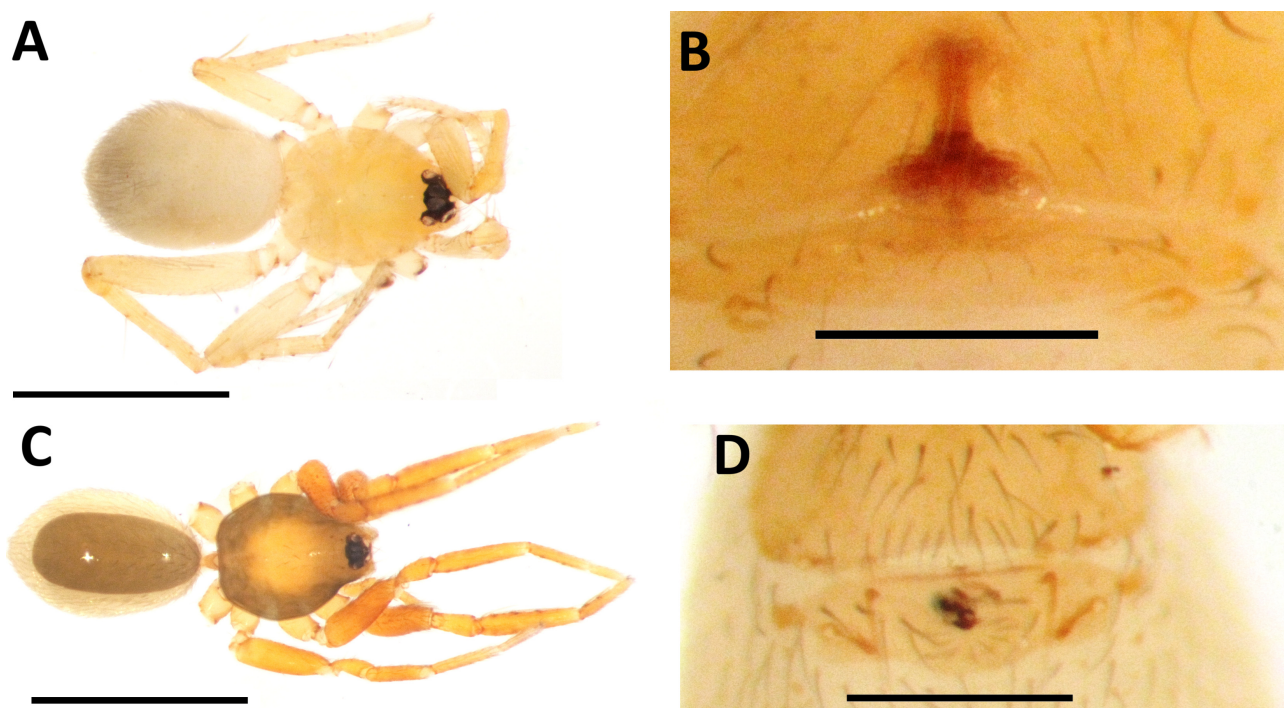


FIGURE 2. Ascension oonopids, cont. **A–B** *Heteroonops spinimanus* (Simon, 1892) (ASC NE500), **C–D** *Ischnothyreus peltifer* (Simon, 1892) (ASC L17 2 PFJ). **A, C** habitus, dorsal view. **B, D** epigyne (undissected), ventral view. Scale bars = 1mm (A, C), 0.2mm (B, D).

Remarks. The epigyne of the examined specimen matches well with published illustrations (Platnick *et al.* 2012) and we therefore determine the Ascension specimen as *I. peltifer*. This species is also recorded for Saint Helena (see Benoit, 1977) but Platnick *et al.* (2012) express doubts about the identity of the Saint Helenian material. It is outside the scope of the current work to investigate this matter but the senior author is investigating it in the near future on another grant (Sherwood *et al.* in prep.).

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