



## The scaffold web spider *Nesticus helenensis* Hubert, 1977, a junior synonym of *Howaia mogera* (Yaginuma, 1972) rest. comb., with revalidation of *Howaia* Lehtinen & Saaristo, 1980 (Araneae: Nesticidae)

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Hubert (1977) described the spider *Nesticus helenensis* Hubert, 1977 based on both sexes from Fisher's Valley, Saint Helena. Lehtinen & Saaristo (1980: 53) transferred *N. helenensis* to *Howaia* Lehtinen & Saaristo, 1980, noting it may be a junior synonym of the type species—*Howaia mogera* (Yaginuma, 1972)—but not making a formal synonymy as no material from the island, including the types, could at the time be examined. Wunderlich (1986) synonymised *Howaia* with *Nesticella* Lehtinen & Saaristo, 1980. The justification of the synonymy was not extensive and *Howaia* would have been a more suitable senior synonym, as noted by Marusik & Guseinov (2003) who knew about the synonymy but did not recognise it, listing *Howaia* as a valid genus and illustrating the type species. However, Marusik & Guseinov (2003) did not include the term “comb. rest.” nor included a sentence formally stating they were revalidating the genus. The synonymy was also ignored by Gray (1989) and Saaristo (2010) when they dealt with particular *Howaia* species. Importantly, Lehtinen & Saaristo (1980) placed the genera *Nesticella* and *Howaia* into separate tribes, indicating they thought they were not closely related. Recently, we examined the type material of *Nesticus helenensis* in the Royal Museum for Central Africa (RMCA) and concur with Lehtinen & Saaristo (1980) that it is a junior synonym of *H. mogera*. Furthermore, we agree with both Lehtinen & Saaristo (1980) and Marusik & Guseinov (2003) that *Howaia* is a valid genus, *contra* Wunderlich (1986).

In this work, we revalidate *Howaia*, transferring eight species into the genus. Furthermore, we make the formal synonymy of *N. helenensis* with *H. mogera*. Abbreviations: RMCA = Royal Museum for Central Africa, Tervuren; WSC = World Spider Catalog. Photographs were taken at the RMCA using a Leica DMC500 digital camera mounted on a Leica MZ16A and stacked using the Leica Application Suite (LAS) v. 4.13. Photographs of the RMCA specimens are accessible through the RMCA Virtual Collection website (<https://virtualcol.africamuseum.be>).

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### Taxonomy

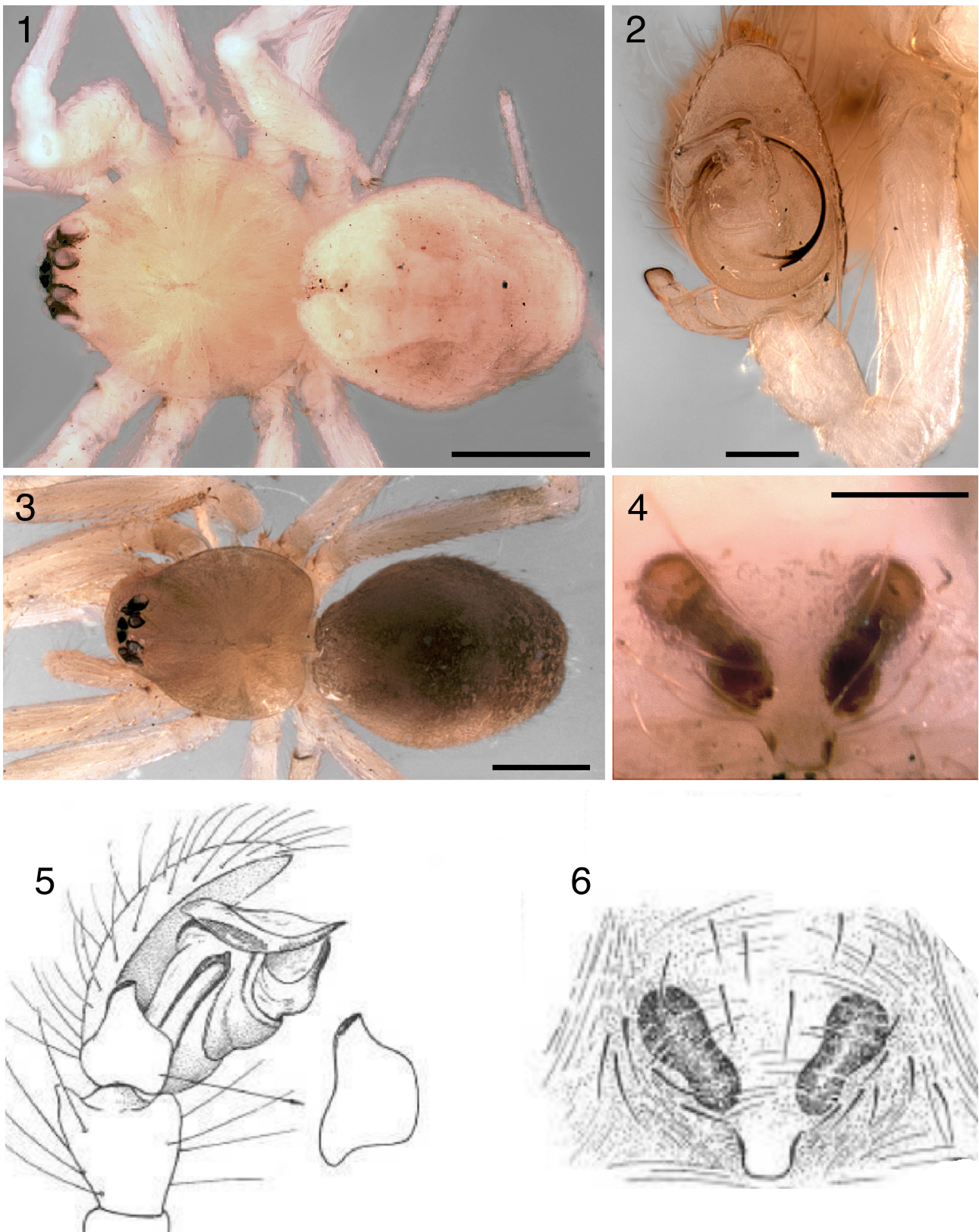
#### Nesticidae Simon, 1894

#### *Howaia* Lehtinen & Saaristo, 1980 gen. rest.

*Nesticus*: Yaginuma (1972): 390 (in part).

*Howaia* Lehtinen & Saaristo, 1980: 53.

*Nesticella*: Wunderlich (1986): 93. (synonymy of *Howaia* with *Nesticella*)  
*Howaia*: Marusik & Guseinov (2003): 37. (considered valid but not explicitly revalidated)  
For full synonymy list, see WSC, 2023.



**FIGURES 1–6.** Holotype female (BE\_RMCA\_ARA.Ara.129084) and paratype male (BE\_RMCA\_ARA.Ara.133336) of *Nesticus helenensis* Hubert, 1977 [= *Howaia mogera* (Yaginuma, 1972) **n. syn.**]. **1**, Male habitus, dorsal. **2**, Male palp, ventral. **3**, Female habitus, dorsal. **4**, Epigynum, ventral. **5**, Male palp, retrolateral (modified from Hubert, 1977). **6**, Epigynum, ventral (modified from Hubert, 1977).



**Type species.** *Nesticus mogera* Yaginuma, 1972 by original designation (Lehtinen & Saaristo, 1980).

**Diagnosis.** (Adapted from Lin *et al.*, 2016) *Howaia* can be distinguished from *Nesticella sensu stricto* (i.e. the *nepalensis*-group of Lin *et al.*, 2016) by a combination of the following characters. In males: (1) paracymbium with presence of a single ventral apophysis without lobed processes, and the squared distal process (*vs.* ventral apophysis with two lobed processes and distal process not squared in *Nesticella*); (2) a basally broad and rugulose terminal apophysis, normally flattened (*vs.* terminal apophysis elongate and not basally broad in *Nesticella*), and (3) absence of a tegular apophysis (*vs.* present in *Nesticella*) In females: (1) copulatory ducts straight and almost parallel (*vs.* copulatory ducts bent in *Nesticella*), and (2) scape quadrate and strongly protruding (*vs.* scape narrow, non-quadrate and short in *Nesticella*).

**Remarks.** In addition to the morphological evidence given above, molecular data also support the validity of *Howaia* as a valid genus (Ballarin & Li, 2018). Therefore, based on the morphological and molecular evidence, we formally revalidate the genus *Howaia* **rest. gen.** here, restricting it solely to the *mogera*-group *sensu* Lin *et al.* (2016).

**Species included.** *Howaia apiculata* Liu & Li, 2013 **n. comb.**, *H. fuliangensis* Lin, Ballarin & Li, 2016 **n. comb.**, *H. huomachongensis* Lin, Ballarin & Li, 2016 **n. comb.**, *H. mogera* (Yaginuma, 1972) **comb. rest.**, *H. rongtangensis* Lin, Ballarin & Li, 2016 **n. comb.**, *H. wanzaiensis* Lin, Ballarin & Li, 2016 **n. comb.**, *H. yanbeiensis* Lin, Ballarin & Li, 2016 **n. comb.**, and *H. yintiaoling* Wang, Zheng & Zhang, 2022 **n. comb.**

**Distribution.** Eurasian, and introduced to Hawaii and Saint Helena

### ***Howaia mogera* (Yaginuma, 1972) **rest. comb.****

*Nesticus terrestris*: Yaginuma, 1970: 390, fig. 7 (♂, misidentification).

*Nesticus mogera* Yaginuma, 1972: 621, fig. 1 (♂♀).

*Nesticus helenensis* Hubert, 1977: 153, figs. 67a–h. (♂♀) **n. syn.**

*Howaia mogera*: Lehtinen & Saaristo (1980): 53, figs. 7–9, 22–23, 29b (♂♀, transfer from *Nesticus*).

*Howaia mogera*: Marusik & Guseinov (2003): 38, figs. 17–21 (♂♀, not explicitly revalidated).

For full synonymy list, see WSC (2023).

**Material examined.** Type material of *Nesticus helenensis*: holotype ♀, paratype ♀ (BE\_RMCA\_ARA.Ara.129084), Fisher's Valley, Saint Helena, 1,000ft., 14.XII.1965–15.XII.1965, coll. P. Basilewsky, P. L. G. Benoit and N. Leleup, examined; paratype ♂ [allotype] (BE\_RMCA\_ARA.Ara.133336), Fisher's Valley, Saint Helena, 1,000ft., 26.I.1967, coll. J. Decelle and N. Leleup, examined; paratype ♀ (BE\_RMCA\_ARA.Ara.129205), The Briars [listed as Prosperous Bay, Bryan's Rock in Hubert (1977)], 1,000ft., 6.I.1966, coll. P. Basilewsky, P. L. G. Benoit and N. Leleup, examined; paratype ♀ (BE\_RMCA\_ARA.Ara.129183), Prosperous Bay, Bryan's Rock, 1,000ft., 14.XI.1965, coll. P. Basilewsky, P. L. G. Benoit and N. Leleup, examined; paratype ♀ (BE\_RMCA\_ARA.Ara.129171), Fisher's Valley, Saint Helena, 1,000ft., 6.I.1966, coll. P. Basilewsky, P. L. G. Benoit and N. Leleup, examined; paratype ♀ (BE\_RMCA\_ARA.Ara.129425), Fisher's Valley, Saint Helena, 1,000ft., 19.XII.1965, coll. P. Basilewsky, P. L. G. Benoit and N. Leleup, examined; paratype imm. ♂ (BE\_RMCA\_ARA.Ara.135896), Fisher's Valley, Saint Helena, 1,000ft., 14.XII.1965–15.XII.1965, coll. P. Basilewsky, P. L. G. Benoit and N. Leleup, examined.

**Diagnosis.** (Adapted from Lin *et al.*, 2016) *Howaia mogera* can be distinguished from most known male congeners based on the thin ventral apophysis, and blunted paracymbial process (*vs.* ventral apophysis wider and paracymbial process not blunted in most known congeners, except *H. rongtangensis*). Females can be distinguished by the short, robust and conspicuously protruding scape (*vs.* scape not short, robust and conspicuously protruding in known congeners). *Howaia mogera* is distinguished from *H. rongtangensis* in both sexes by the presence of eyes (*vs.* eyes absent in both sexes of *H. rongtangensis*).

**Description.** For detailed description, see Lin *et al.* (2016). However, it is important to state that all recent works illustrating and/or redescribing *H. mogera* **n. comb.** have focused on non-Japanese material (e.g., Azerbaijan (Marusik & Guisenov, 2003), China (Gong & Zhu, 1982; Liu & Li, 2013), Fiji (Lehtinen & Saaristo, 1980), the Hawaiian Islands (Gertsch, 1984), Italy (Pantini *et al.*, 2020), Korea (Kim *et al.*, 1999; Kim & Lee, 2018) and Saint Helena (Hubert, 1977) [the latter as *N. helenensis*]).

**Rationale for synonymy.** The palp morphology of the paratype male of *Nesticus helenensis* (Figs. 2, 5) is in agreement with all prior published illustrations of the male palp of *Howaia mogera*. Similarly, the epigynal morphology of the holotype (Figs. 4, 6) fits with previously published illustrations of *H. mogera*. The habitus (Figs. 1, 3) is also congruent with that of preserved specimens of *H. mogera* (DS pers. obs.). The potential for synonymy was already recognised by Lehtinen & Saaristo (1980), but no formal synonymy was made. We hereby formally make the synonymy: *Nesticus helenensis* Hubert, 1977 = *Howaia mogera* (Yaginuma, 1972) **n. syn.**

**Distribution.** United Kingdom to Japan, introduced to Hawaii and Saint Helena (Nentwig *et al.*, 2023; WSC, 2023).

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