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Nomina dubia and faunistic issues with New Zealand spiders (Araneae)

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Abstract. Attempts to clarify the identity of obscure New Zealand spider taxa have lead to the conclusion that six species are best treated as *nomina dubia* [*Philodromus rubrofrontus* Urquhart 1891 (Philodromidae); *Dictyna urquhartii* Roewer 1951, (Dictynidae); *Linyphia albiapiata* Urquhart 1891, *Linyphia cruenta* Urquhart 1891, *Linyphia multicolor* Urquhart 1891, *Linyphia pellos* Urquhart 1891 (Linyphiidae)]. Four species currently listed in *Araneus* Clerck 1757 (Araneidae) are re-affirmed as synonyms [*Araneus lineaacutus* (Urquhart 1887) = *Zealaranea crassa* (Walckenaer 1842), *Araneus powelli* (Urquhart 1894) = *Novaranea laevigata* (Urquhart 1891), *Araneus sublutius* (Urquhart 1892b) = *Zealaranea trinotata* (Urquhart 1890), *Araneus ventricosellus* (Roewer 1942) = *Eriophora heroine* (L. Koch 1871)]. An old record of *Araneus brisbanae* (L. Koch 1867b) (Araneidae) from New Zealand is a misidentification of *Eriophora decorosa* Urquhart 1894. The family Philodromidae, the genera *Dictyna* Sundevall 1833 (Dictynidae) and *Linyphia* Latreille 1804 (Linyphiidae), as well as *Tharpyna munda* L. Koch 1875 (Thomisidae) and *Araneus brisbanae* (Araneidae) are absent from New Zealand.

Key words. Species list, *nomen dubium*, destroyed types, identification problems, museum collections, curation.

Introduction

In the preparation of an identification guide to New Zealand spiders (Vink et al. in prep), we discovered several species listed for New Zealand that are not identifiable on the basis of published data. Some of these names have been overlooked by recent workers or proposed as synonyms that are not included as such in the World Spider Catalog (Platnick 2008). In addition, we noticed taxa erroneously listed for New Zealand. In order to resolve these problems, we attempted to study the type specimens but our efforts to locate this material have been mostly unsuccessful. Many of these types have apparently been destroyed or lost. In order to favor faunistic accuracy and to eliminate useless names, we report the results of our investigations.

Philodromidae

Philodromus rubrofrontus Urquhart 1891: 179, no illustration. ***Nomen dubium.***

Urquhart described four species that he placed in *Philodromus* Walckenaer 1826: *P. ambarus* Urquhart 1885, *P. sphaeroides* Urquhart 1885, *P. ovatus* Urquhart 1887, and *P. rubrofrontus* Urquhart 1891. *Philodromus ovatus* has been transferred to *Diaea* Thorell 1869 and synonymised under *Diaea albolimbata* L. Koch 1875 by Bryant (1933) (as *D. albomaculata,* lapsus). Upon examination of type specimens, she also transferred *P. ambarus* and *P. sphaeroides* to *Diaea*, but did not treat *P. rubrofrontus.* It seems likely that Bryant did not transfer the species to *Diaea* because the type specimen was not available to her or had already been lost. Urquhart's description of *P. rubrofrontus* is long but does not include illustrations and, unfortunately, it is not sufficient to recognize the species. However, the description of the legs and cephalothorax along with the predominantly green coloration indicate that it is not a member of the Philodromidae (as defined by Jocqué and Dippenaar-Schoeman 2007). It is very likely that it is a species of *Diaea,* given that Urquhart regarded this species as congeneric with his other *Philodromus* species and these have subsequently all been transferred to *Diaea*. All of Urquhart's existing types are in the Canterbury Museum, Christchurch, New Zealand (CMNZ) (Court and Forster 1988; Nicholls et al. 2000). However Hann (1994) and Millidge (1988) reported that some of Urquhart types were at the Otago Museum, Dunedin, New Zealand (OMNZ). This appears to be an error as Nicholls et al. (2000) listed all the CMNZ types, which included the Urquhart types mentioned by Hann (1994) and Millidge (1988). The reason behind this error is unknown, but we have verified that the type of *P. rubrofrontus* is not present in OMNZ. The type list of Nicholls et al. (2000) does not include *P. rubrofrontus*, which corroborates our failure to locate the type in CMNZ. Based on this information, we have reached the following conclusions: (1) *P. rubrofrontus* likely belongs in *Diaea*; (2) the original description does not allow us to recognize the species; (3) the type is lost and it is unlikely that the species will ever be recognized; (4) aside from listings in catalogues (e.g. Parrott 1946), the name has not been used since the original description; (5) *Philodromus rubrofrontus* is best considered a *nomen dubium;* (6) thus, there are no Philodromidae in New Zealand.

Dictynidae

Linyphia decolora Urquhart 1894: 208, no illustrations (now *Dictyna urquhartii* Roewer 1951: 454). ***Nomen dubium.***

Linyphia decolora Urquhart 1894 was described from a single specimen from the Powell collection, no data or locality given. Upon examination of the type, Bryant (1933) transferred it to *Dictyna* and proposed that *Dictyna nigella* Dalmas 1917 was a junior synonym, a placement followed by Chamberlain (1946: 92) and Marples (1959: 358), but the latter noted that this synonymy was unlikely. Forster (1970: 130) rejected the synonymy under *D. decolor* without any justification and listed *D. nigella* as a junior synonym of *D. cornigera* Dalmas 1917 (now *Arangina cornigera*).

Dictyna decolor was preoccupied by Westring (1861) and Roewer (1951) provided a replacement name for it: *Dictyna urquhartii*, under which it is still known today. Marples (1959) gave a detailed description and a rough illustration of the female epigynum (as *Dictyna decolor*), but there was no indication that he examined the type. Marples (1959) noted that his description of *D. decolor* corresponded to *D. nigella*

Dalmas 1917, and that the descriptions of Dalmas (1917) and Urquhart (1894) were contradictory and thus doubted the synonymy of Bryant (1933), but still used *D. decolor* as the name of the species he described.

There are two possible explanations:

(Scenario 1) Marples (1959) examined Urquhart's type and, therefore, his description is of *D. urquhartii* Roewer 1951. Marples (1959) noted that in many characters, the species resembled other members of the *Ixeuticus* species group III that he described in the same paper [*Ixeuticus angustiae* Marples (now *Dunstanoides angustiae*), *Ixeuticus nuntius* Marples (now *Dunstanoides nuntia*) and *Ixeuticus vallus* Marples (now *Oparara vallus*)], all currently placed in the Amphinectidae (Forster and Wilton 1973). In a revision of the New Zealand Dictynidae, Forster (1970) stated that all known New Zealand species are placed in three endemic genera, and did not make any reference to *Dictyna* or *Dictyna urquhartii.* Based on Marples' statements, it is possible that Forster considered the species to belong to another family, probably the Amphinectidae, and did not mention it in his revision of dictynids. However, in a revision of New Zealand Amphinectidae, Forster and Wilton (1973) did not mention *D. urquhartii* either. Provided that the statements of Marples (1959) are correct, and that Forster and Wilton (1973) overlooked *Dictyna urquhartii*, this species would likely be a senior synonym of another species in the Amphinectidae.

(Scenario 2) Marples (1959) did not examine the type, and provided a description of a female specimen that he believed was conspecific. This seems likely as he stated that the female he examined was from Lake McKerrow, but did not mentioned the specimen belonged to the Powell collection, as Urquhart did. In this case, the description he gives cannot be used to clarify the identity of *D. urquhartii*.

We were able to locate the type specimen (under *Linyphia decolora*) at CMNZ (see Nicholls et al. 2000), but the specimen is in very poor condition and the female genitalia are missing. Apparently, after Ray Forster left in 1956 (see Patrick et al. 2000), the collection at CMNZ went through a phase without proper curation and many specimens deteriorated (P.M. Johns pers. comm.). The type label did not include any locality data, which supports scenario 2 that Marples (1959) provided a description of a specimen he believed to be conspecific, otherwise he could not have provided a locality. In an attempt to investigate whether scenario 1 was possible, we tried to match Marples' illustration (1959, fig. 9) of the female genitalia with Amphinectidae illustrations of Forster and Wilton (1973), but we were not successful; a few species may be a match, but we could not be certain enough to reliably recognize the species.

Therefore, we have reached the following conclusions: (1) while the type specimen of *Linyphia decolora* has been found and examined, it was unrecognizable due to its poor condition, even to the family level; (2) Marples' (1959) description is not of *D. urquhartii*; (3) the species described by Marples (1959) could be an amphinectid redescribed under another name; (4) the most recent work on New Zealand Dictynidae and Amphinectidae (Forster 1970; Forster and Wilton 1973) both ignored *D. urquhartii* and it is doubtful that the species will ever be recognized or that it is known under another name [in which case, Marples' (1959) *D. urquhartii* is a simple misidentification]; (5) *Dictyna urquhartii* is best considered a *nomen dubium*; (6) thus, there are no *Dictyna* in New Zealand.

Linyphiidae

Linyphia albiapiata Urquhart 1891: 143, no illustration. ***Nomen dubium***.
Linyphia cruenta Urquhart 1891: 142, no illustration. ***Nomen dubium.***
Linyphia multicolor Urquhart 1891: 140, no illustration. ***Nomen dubium.***
Linyphia pellos Urquhart 1891: 146, pl. XXI, fig. 10. ***Nomen dubium.***

In his 1891 paper, Urquhart described five species that he placed in the genus *Linyphia*. One of these species was fairly well illustrated and is now placed in Mimetidae as *Mimetus sennio* (Urquhart 1891). Unfortunately, he did not provide illustrations for the other species except a dorsal view of the male palpal tibia of *L. pellos*. The text descriptions of Urquhart are long but do not allow the recognition of these species. All Urquhart's known types are housed at CMNZ, but the types of these species could not be located (Nicholls et al. 2000) and are now considered lost or destroyed. Given that New Zealand Linyphiidae have received recent taxonomic attention (Blest 1979; Millidge 1988; Blest and Vink 2002, 2003) and that the species described by Urquhart are likely redescribed under another name, it seems best to conclude the following: (1) Urquhart's original descriptions are inadequate for the recognition of these species; (2)

the types are lost or destroyed; (3) these four species are best considered *nomina dubia*; (4) thus, there are no *Linyphia* in New Zealand.

Araneidae

Araneus lineaacutus (Urquhart 1887: 90) = *Zealaranea crassa* (Walckenaer 1842) **re-affirmed synonymy.**
Araneus powelli (Urquhart 1894: 214) = *Novaranea laevigata* (Urquhart 1891) **re-affirmed synonymy.**
Araneus sublutius (Urquhart 1892b: 241) = *Zealaranea trinotata* (Urquhart 1890) **re-affirmed synonymy.**
Araneus ventricosellus (Roewer 1942: 835) = *Eriophora heroine* (L. Koch 1871) **re-affirmed synonymy.**

Court and Forster (1988) addressed the identity of all New Zealand species included in *Araneus* and synomymised or transferred these species to other genera, but a few *Araneus* species are still listed for New Zealand in the World Spider Catalog (Platnick 2008). We report here the conclusion of Court and Forster (1988) who studied the type material of Urquhart kept at CMNZ and/or recognized species based on Urquhart's original descriptions. *Araneus lineaacutus* (Urquhart 1887) was declared a synonym of *Zealaranea crassa* (Walckenaer 1842: 127) in the summary table of Court and Forster (1988: 69) [as *linea acuta*] but was omitted in the species synonymy given on page 70. Similarly, *Araneus powelli* (Urquhart 1894) is a synonym of *Novaranea laevigata* (Urquhart 1891: 171) but was omitted in species synonymy (page 114); *Araneus sublutius* (Urquhart 1892b) is a synonym of *Zealaranea trinotata* (Urquhart 1890: 247) [as *sublutia*] but was omitted in the species synonymy (page 72); *Araneus ventricosellus* (Roewer 1942) is a replacement name for *Epeira ventriosa* Urquhart 1892b: 243 (preoccupied), and declared a synonym of *Eriophora heroine* (L. Koch 1871: 49) but was omitted in the species synonymy (page 100). These omissions in Court and Forster (1988) were accidental and did not reflect taxonomic uncertainty. In order to provide accurate faunistic data for New Zealand we re-affirm these synonyms.

Araneus brisbanae (L. Koch 1867: 176) from New Zealand. **Misidentification.**

The original and only record of *A. brisbanae* in New Zealand is from Keyserling (1887: 164) who stated: "Mr Bradley sammelte dieselbe Art in Neu Seeland." (Mr. Bradley collected the same species in New Zealand). After studying specimens of *A. brisbanae* from Australia, Court and Forster (1988: 113) concluded that the species does not occur in New Zealand and the specimens Bradley collected in New Zealand were misidentified and were likely to have been *Eriophora decorosa* Urquhart 1894. *Araneus brisbanae* is a well-known Australian species that belongs in an undescribed genus (V.W. Framenau, pers. comm.).

Thomisidae

Tharpyna munda L. Koch 1875: 600, plate 47, fig. 3. **Erroneously reported in New Zealand.**

Koch's description does not include any locality but mentions "Ein Exemplar in Mr. Bradley's Sammlung". Mr. Bradley collected some spiders in New Zealand (see comments above for *Araneus brisbanae*), and Simon (1895: 1014) concluded that the species occurs in New Zealand, possibly because of the comments of Keyserling (1887). This interpretation was repeated in Roewer (1955) and Platnick (2008) but in contrast, the New Zealand species lists of Urquhart (1892a), Hutton (1904), and Parrott (1946) do not mention this species or any other *Tharpyna*. Rainbow (1911) and Bonnet (1959: 4414) reported the species from Australia only, which appears the correct interpretation. In the light of actual data, we conclude that the description and illustration of *Tharpyna munda,* which are quite distinctive (see fig. 3 of Koch 1875), do not match any known species from New Zealand, and that the record is best considered erroneous.

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