

Athamas whitmeei (Araneae: Salticidae: Euophryini) from islands of the tropical Western Pacific Region

David E. Hill¹ and Felix Fleck²

¹ 213 Wild Horse Creek Drive, Simpsonville, South Carolina, 29680 USA, email platycryptus@yahoo.com

² www.felixfleckonline.com

The salticid genus *Athamas* O. Pickard-Cambridge 1877 presently includes seven named species (WSC 2018; see also Appendix 1 for a detailed list), widely distributed in the Western Pacific from the Caroline Islands in the west to the Pitcairn Islands in the east. The type species for this genus, *A. whitmeei* O. Pickard-Cambridge 1877, has been reported throughout the entire range of distribution for the genus (Figure 1). In their review of *Athamas*, Berry et al. (1996) noted that most of the other species placed in *Athamas* were known only from isolated specimens, and that *A. whitmeei* populations exhibited a range of character expression that might include variants used to define other species in the genus. Benton & Lehtinen (1995) suggested that there was only one species in the genus, but two additional species have since been described.

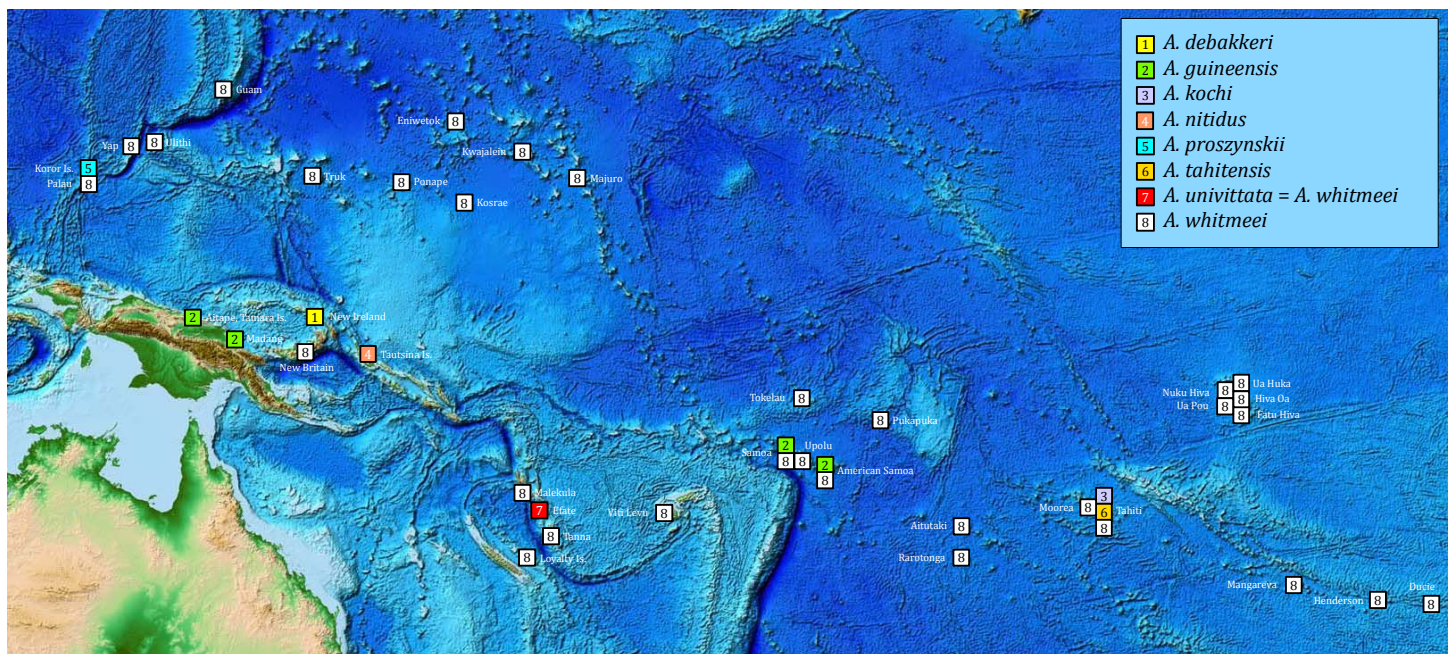


Figure 1. Distribution of *Athamas* species in the tropical western Pacific. References for each locality shown here are listed in Appendix 1. *A. univittata* was synonymized with *A. whitmeei* by Benton & Lehtinen (1995). The relief map in the background is adapted from the NOAA ETOPO1 1-arc minute global relief model.

Athamas is now placed in a clade of unusual tropical Australasian euophryines (Maddison 2015; Zhang & Maddison 2015). *Athamas whitmeei* males are colorful and quite remarkable, with large ALE placed almost directly above the AME (Figure 2). This placement of the ALE led O. Pickard-Cambridge (1877) to decide, in error, that *Athamas* was closely related to the Neotropical genus *Lyssomanes*. Peckham et al. (1888) also placed this genus in the Lyssomaninae.



Figure 2. Adult male *Athamas whitmeei* from Tanna Island, Tafea Province, Vanuatu (19.53°S, 169.26°E), 25 FEB 2011. Note the high carapace (3) and position of the large ALE above the AME (5, detail from 4). Photographs © Felix Fleck, subject to a Creative Commons Attribution Noncommercial 4.0 International license ([CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/)).

The appearance of male specimens in alcohol differs considerably from that of the live animal (Figure 2). The carapace and opisthosoma of the living animal are black on the sides, shiny and bright blue dorsally, and bear a series of bright red-orange spots (Figure 2). In preserved specimens the carapace and opisthosoma are dark brown with white spots (Berry et al. 1996). These are small salticids and the body length of both males and females is about 3 mm (2.4-3.4 mm) (O. Pickard-Cambridge 1877; Peckham et al. 1888; Berland 1938; Prószyński 1984; Berry et al. 1996). Peña (2009), however, reported a length of 5.8 mm for *A. whitmeei* (sex not specified) from Mo'orea.

Little is known of the ecology and behavior of *A. whitmeei*. Peña (2009) found that there was a highly significant tendency for this species to be found in "mid and high elevation habitats as opposed to low elevation ones" and suggested that it might prefer "gently forested inclines" on Mo'orea in the Society Islands. Berland (1935) recorded *A. whitmeei* at elevations from 1000-1300 m ASL (above sea level) on Nuku Hiva, Ua Huku and Ua Pou in the Marquesas Islands. Benton & Lehtinen (1995) wrote that *A. whitmeei*, which they reported from Henderson Island in the Pitcairn Islands, "is one of the few Polynesian spiders that can be found from mountain tops to weakly disturbed lowland habitats".

Apart from the unanswered question of function related to the position and size of its ALE, the question of just how *Athamas whitmeei* found its way to all of these remote islands deserves serious study. Benton & Lehtinen noted that non-flying arthropods on islands in the Western Pacific tend to originate in areas further to the west (like New Guinea), and might be transported by either rafting or introduction by human travellers. Of course with spiders aerial transport (ballooning) is also an alternative, but we presently know nothing of related adaptations or behavior by *A. whitmeei*. A predilection for undisturbed areas and higher elevations does suggest aerial transport, however. Patoleta & Žabka (1999) discussed the possibilities of aerial dispersal and human transport with reference to the migration of salticids to islands off of the Australian continent. They also mentioned the possibility of rafting and the presence of past connections between islands. Although relevant to movement between Australia, Tasmania, New Guinea and a number of islands near Australia, the later would not be relevant to dispersal of species to remote island groups. We presently have no knowledge of any synanthropic tendencies that might predispose *A. whitmeei* to human transport, but this remains a possibility. Whatever this species has done to disperse itself in the past, *A. whitmeei* has done it exceptionally well.

Acknowledgements

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References

This list includes references for records presented in Appendix 1

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Appendix 1

This table shows records of species placed in the euphryine genus *Athamas* O. Pickard-Cambridge 1877, with key references (WSC 2018). Localities listed here are shown in the distribution map (Figure 1).

species	locality	references
<i>A. debakkeri</i> Szüts 2003	PAPUA NEW GUINEA: New Ireland, Lemkamin	Szüts 2003
<i>A. guineensis</i> Jendrzejewska 1995	PAPUA NEW GUINEA: Madang	Jendrzejewska 1995
	PAPUA NEW GUINEA: Aitape, Tamara	Szüts 2003
	SAMOAN ISLANDS: American Samoa, West Samoa	Szüts 2003
<i>A. kochi</i> Jendrzejewska 1995	SOCIETY ISLANDS: Tahiti	Jendrzejewska 1995
<i>A. nitidus</i> Jendrzejewska 1995	SOLOMON ISLANDS: Tautsina Island, Kieta	Jendrzejewska 1995
<i>A. proszynskii</i> Ono 2011	CAROLINE ISLANDS: Palau, Koror Island (7°20'N, 134°30'E)	Ono 2011
<i>A. tahitensis</i> Jendrzejewska 1995	SOCIETY ISLANDS: Tahiti, Tarawaocote	Jendrzejewska 1995
<i>A. univittata</i> Berland 1938 = <i>A. whitmeei</i>	VANUATU: Efate, Port Vila	Berland 1938; Jendrzejewska 1995; Berry et al. 1996
<i>A. whitmeei</i> O. Pickard-Cambridge 1877	SAMOAN ISLANDS: Samoa	O. Pickard-Cambridge 1877; Peckham et al. 1888; Simon 1903; Marples 1957; Prószyński 1984; Jendrzejewska 1995; Berry et al. 1996
	SAMOAN ISLANDS: Upolu	Koch 1879; Peckham et al. 1888
	SAMOAN ISLANDS: American Samoa, Tutuila	Berry et al. 1996
	CAROLINE ISLANDS: Palau District, Yap, Ulithi, Truk, Ponape, Kosrae (Kusaie)	Berry et al. 1996
	COOK ISLANDS: Aitutaki	Berry et al. 1996; CIDB 2018
	COOK ISLANDS: Rarotonga	Marples 1955; Berry et al. 1996; CIDB 2018
	COOK ISLANDS: Pukapuka	Marples 1955; CIDB 2018
	FIJI ISLANDS: Viti Levu	Berry et al. 1996
	GAMBIER ISLANDS: Mangareva	Berry et al. 1996
	LOYALTY ISLANDS	Berry et al. 1996
	MARQUESAS ISLANDS: Fatu Hiva, Nuku Hiva	Berry et al. 1996
	MARQUESAS ISLANDS: Nuku Hiva	Berland 1935
	MARQUESAS ISLANDS: Hiva Oa	Berland 1935; Berry et al. 1996
	MARQUESAS ISLANDS: Ua Huka, Ua Pou	Berland 1935
	MARSHALL ISLANDS: Eniwetok, Kwajalein, Majuro	Berry et al. 1996
	NORTHERN MARIANA ISLANDS: Guam	Kerr 2013
	PAPUA NEW GUINEA: New Britain	Masterfile 2018
	PITCAIRN ISLANDS: Henderson Island	Benton & Lehtinen 1995; Berry et al. 1996
	PITCAIRN ISLANDS: Ducie	Benton & Lehtinen 1995
	SOCIETY ISLANDS: Mo'orea	Berry et al. 1996; Peña 2009
	SOCIETY ISLANDS: Tahiti	Koch 1879; Peckham et al. 1888; Simon 1903; Prószyński 1984; Berry et al. 1996
	TOKELAU ISLANDS: Tokelau	Marples 1955; Berry et al. 1996
	VANUATU: Malekula	Berland 1938
VANUATU: Tafea Province, Tanna Island (19.53°S, 169.26°E)	this paper	