Karsch's 1880 Paper on Hawaiian Spiders: Ignored or Overlooked?

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In 1878, H. Lucas published the first record of a Hawaiian spider based upon an introduction identified as "*Pholcus bobonicus Vinson*" [= *Artema atlanta* Walckenaer]. Two years later, Karsch (1880) described the first native Hawaiian spiders based upon a collection made by Herrn Dr. O. Finsch on the "Sandwichinseln."

Karsch's 1880 paper seemed to have been mostly ignored (Simon 1900, 1904) or overlooked (Suman 1964). Suman (1970: 773, 827) acknowledged Karsch's *Diaea kanakana* but erroneously commented "Simon referred to some of the Hawaiian species described by Karsch . . .." In truth, Simon (1900: 444) only referred to 1 Karsch record, *Scytodes marmorata* Koch, and (1897: 56) included *Pedinopistha* Karsch as a probable synonym of *Pandercetes* Koch, a heteropodid. Perhaps Karsch's paper was overlooked because Roewer (1942–1954) listed most of the species from Australia, "Olinda" or "Polynesien", and Bonnet (1955–1959) used "Polynésie."

All specimens were deposited in the Museum für Naturkunde der Humboldt Universität zu Berlin (ZMB) and were presumed lost during bombings in World War II. In response to my inquiries, Dr. M. Moritz wrote that the Karsch Collection had been located. With the opening of the borders between East and West Berlin it was possible to visit the collection. The catalog numbers given in this paper are those of ZMB.

An updated account is herein presented for the species recorded and described by Karsch. The specimens were collected almost entirely on the island of Maui, mostly at Olinda (Ranch); 2each from "Waichu" (probably a misspelling for Waiehu, located near Olinda), Haleakala, and Grove Ranch (location unknown); 1 specimen each from Honolulu, Oahu, and Kauai.

The 18 species listed by Karsch are annotated below in the order in which he presented them.

New Records Listed by Karsch

Sarotes venatorius (Linnaeus) [= *Heteropoda venatorius* (Linnaeus)].
1M, 1F from "Waichu." Not in collection, presumably lost.

Misumena albiceris Koch.
1 immature F from "Waichu," #3306. Misidentification, known only from Australia.

Argiope aemula (Walckenaer) [= *A. trifasciata* (Forsskål)].
1M, 1 immature F from "Haleakala" #3312; 1M, 1F, 1 immature F from Olinda, #3312a; 6F, 1 immature from Grove Ranch, #3312b; 1F from Kauai, no number.

Epeira (Cyclosa) strangulata Koch [= *Cyclosa turbinata* (Walckenaer)].
16 females and immatures from Olinda, #3313. Also, 1 unidentified female theridiid unlike any other I have seen from the islands.

Theridium tepidariorum Koch [= *Achaearanea tepidariorum* (Koch)].
Numerous specimens from Olinda, #3314.

Theridium coeliferum Koch [= *Steatoda grossa* (Koch)].
An immature from Olinda, #3314.

Scytodes marmorata Koch [= *S. longipes* Lucas].
1F from "Waichu," #33l5.

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Lycosa (Arctosa) vulpecula Koch.

1M from Honolulu, #3323. Species transferred to *Avicosa* by Roewer (1954: 236). Misidentification, known only from Australia.

New Taxa Described by Karsch

Pedinopistha Karsch

Pedinopistha Karsch, 1880: 79–80. Type species: *P. petulcum* Karsch, by original designation.
Pterelas Simon, 1899: 417 (Preoccupied).
Proernus Simon, 1900: 497 (new name for *Pterelas*). Type species: *Pterelas schauinslandi* (Simon) by monotypy. **New synonymy**.

Pedinopistha Karsch (1880: 79) was described as a "novum genus Philodromidarum, inter genera *Opitis* [= *Philodromus*] et *Pandercetes* Koch . . ." (a heteropodid). Simon (1897: 56) questionably and erroneously treated it as a junior synonym of *Pandercetes* Koch, 1875, probably based upon Karsch's comments. The type species, based upon a 9 mm-long immature female, is undoubtedly a philodromid and not a heteropodid. Furthermore, it is synonymous with *Proernus* Simon, 1900. No other philodromid of that size is known to occur on Maui. *Proernus*, as currently understood (Suman 1970), consists of 5 species endemic to the Hawaiian islands. As noted below, 1 of these (*Proernus velox* Simon) is synonymous with *Pedinopistha finschi* Karsch. The other species remain valid, but should be reassigned to *Pedinopistha*. They are: *Pedinopistha aculeatus* (Simon), **new combination**, *P. longulus* (Simon), **new combination**, *P. schauinslandi* (Simon), **new combination**, and *P. stigmaticus* (Simon), **new combination**. Because members of this genus are incorrectly cataloged by Roewer (1954: 723) and Bonnet (1958: 3443) as Eusparassidae and Sparassidae, respectively, they were not listed by Moritz & Fischer (1984) in the type catalog of the Philodromidae at the Zoologisches Museum, Berlin.

Pedinopistha petulca Karsch, **nomen dubium**

Pedinopistha petulcum Karsch, 1880: 79–80.
Pedinopistha petulca: Bonnet, 1958: 3443.
Pandercetes petulcum: Roewer, 1954: 723.

Immature female, # 3307. No locality given but undoubtedly from the same area as other new species in the collection (Olinda). The type appears synonymous with *Proernus aculeatus* Simon, also known from Maui, but because this identification is based upon an immature female, I prefer to consider this species a *nomen dubium*. Because this taxon is the type species for *Pedinopistha*, it would be beneficial for future researchers to examine and rear *P. aculeatus*-like immatures (from Olinda) to confirm or refute the suspected synonymy.

Pedionopistha finschi Karsch

Pedinopistha finschii Karsch, 1880: 80.
Pedinopistha finschi: Bonnet, 1958: 3443.
Proernus velox Simon, 1900: 499; Roewer, 1954: 803; Bonnet, 1958: 3775; Suman, 1970: 861–63, figs. 137–41. **New synonymy**
Pandercetes finschi: Roewer, 1954: 722.

The male holotype (# 3308) and immature male (# 3309) from Olinda key out (Suman 1970: 852–53) easily to *P. velox* and fit Suman's description.

Misumenops kanakanus (Karsch)

Diaea kanakana Karsch, 1880: 80–81; Roewer, 1954: 870; Bonnet, 1956: 1414; Suman, 1970: 773; Moritz & Fischer, 1984: 94.
Diaea vitellina Simon, 1900: 497; Roewer, 1954: 872; Bonnet, 1956: 1418. **New synonymy**.
Misumenops kanakanus: Suman, 1970: 773, 791, 827.
Misumenops vitellinus: Suman, 1970: 836–39, figs. 92–96.

Karsch's holotype, a dried female (# 3310) from Haleakala was not available to Suman at the time of his 1970 study, but he suggested that the descriptions of the 2 species agreed. The distinctive epigynum of *kanakanus* corresponds with Suman's illustration of *vitellinus* (Suman 1970; figs. 95–96).

Tetragnatha olindana Karsch

Tetragnatha olindana Karsch, 1880: 81; Roewer, 1942: 987; Bonnet, 1959: 4349; Moritz & Fischer, 1986; Gillespie, 1992: 2.

Female holotype (# 3311) from Olinda. Reported as a distinct (web-building) species near *Tetragnatha hawaiensis* Simon by R.G. Gillespie, *in litt*. New collections of *T. olindana* were recorded from East Maui (Gillespie 1992) but no discussions on relationships were included.

The remaining spiders described by Karsch are all Lycosidae and appear (with 1 exception) to belong to *Lycosa*. The latter appear very similar and may represent only 1 or 2 species. I prefer for the moment to leave them as valid taxa. A taxonomic revision of the Hawaiian species of *Lycosa* is needed in order to correctly place Karsch's taxa. Very likely the male identified by Karsch as *Lycosa vulpecula* Koch is synonymous with one of these species. Karsch (1880) presented a key only to his new species of *Lycosa* and omitted *Lycosa vulpecula* Koch. Also *L. virgata* (only male known) is included in a couplet describing the "vulva". This section seemed useless to me since the epigyna of all appeared nearly identical.

Roewer (1954) placed most of the following species in various lycosid genera without explanation. I have followed Karsch's usage of *Lycosa*.

Lycosa (Arctosa) versicula Karsch, **nomen dubium**

Lycosa (Arctosa) versicula Karsch, 1880: 81–82.
Arctosa versicula: Bonnet, 1954: 662.
Trochosomma versicula: Roewer, 1954: 304.

Penultimate F holotype (# 3316) from Olinda, apparently *Lycosella*.

Lycosa calvata Karsch, **nomen dubium**

Lycosa calvata Karsch, 1880: 82; Bonnet, 1957: 2637.
Trochosa calvata: Roewer, 1954: 301.

2F from Olinda, not in collection, probably lost.

Lycosa virgata Karsch

Lycosa virgata Karsch, 1880: 82; Bonnet, 1957: 2669.
Trochosa virgata: Roewer, 1954: 301.

Male holotype (# 3318) and 1 immature F from Olinda.

Lycosa caduca Karsch

Lycosa caduca Karsch, 1880: 82–83; Bonnet, 1957: 2636.
Trochosa caduca: Roewer, 1954: 301.

1F holotype (# 3319) from Olinda.

Lycosa aliusmodi Karsch

Lycosa aliusmodi Karsch, 1880: 83; Bonnet, 1957: 2633.
Arctosa aliusmodi: Roewer, 1954: 230.

3F syntypes (# 3320) from Olinda.

Lycosa bruta Karsch

Lycosa bruta Karsch, 1880: 83; Bonnet, 1957: 2636.
Trochosa bruta: Roewer, 1954: 301.

2M, 2F, 1 immature M, syntypes (# 3321) from Olinda.

Lycosa bruta filicum Karsch
Lycosa bruta filicum Karsch, 1880: 83.
Trochosa bruta filicum: Roewer, 1954: 301.

2F syntypes, # 3322. This variety was overlooked by Bonnet (1957).

Acknowledgment

Special thanks are extended to M. Moritz (ZMB) for courtesies and assistance during the trying times shortly after the unification of Germany.

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Invalid and Unavailable Names in *Eupetinus* (Coleoptera: Nitidulidae)

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David Sharp with, in part, Hugh Scott [1908, IV. Coleoptera (various). *Fauna Hawaiiensis* 3(5): 461–74] proposed and applied the same varietal name, *dimidiatus*, to various species of *Eupetinus* in the same publication. Applications of this name in 10 species are deemed unavailable to zoological nomenclature. The 1 application that was found to be available, *Eupetinus impressus dimidiatus* Sharp, is herein synonymized with the nominate subspecies.

Sharp explained (p. 461): "A curious variation occurs in several species, inasmuch as the black colour of the elytra and abdomen may be concentrated chiefly on the anterior parts, leaving the hinder portion of the two parts more or less clear yellow. In this variation the elytra are quite black in front and yellow behind; we have subsequently spoken of this form as var. *dimidiatus* (Pl. 14, fig. 20)."

Sharp clearly made *Eupetinus impressus dimidiatus* available. Under *E. impressus* (Sharp) Sharp wrote (p. 464): "Var. *dimidiatus*, var. nov. A series of about 20 specimens have the basal portion of the elytra dark—nearly or quite black-and the apical portion pale testaceous, the line of division between the two colours being not straight but irregular (Pl. 14, fig. 20). One specimen of this colour variety from Waianae is so aberrant that it may prove to be another species." "The species varies so much in colour that it is not possible to treat this variety as a species; especially as a similar variation occurs in several of the other species, though in some cases not in so striking a manner."

It is probable that Sharp had wished to anchor the varietal epithet to only 1 of the species. Anyway, the "var. nov." assignment was applied only to *E. impressus*, which is also the species figured on Pl. 14, fig. 20. The varietal name is hereby synonymized.