A review of K. Kishida's pseudoscorpion taxa (Arachnida, Chelonethi)

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Abstract — Attention is drawn to the pseudoscorpion taxa published by Kyukichi Kishida (1927, 1929, 1940, 1947), which have been largely ignored in the literature outside Japan. Kishida (1929) was the first author to employ the names Chthonioidea Daday, 1888, Cheliferoidea Risso, 1826, Fealloidea Ellingsen, 1906, Garypoidea Simon, 1879 and Olpioidea Banks, 1895 at the superfamilial rank, and the first to use the names Olpiidae Banks, 1895 and Pseudogarypidae Chamberlin, 1923 at the familial rank. He was also the first to propose a family-group name based on the genus *Atemnus* Canestrini, 1884, and is therefore the author of the family Atemnidae Kishida, 1929 and the coordinate subfamily Atemninae Kishida, 1929. The suborders Schizonota Kishida, 1929 and Holonota Kishida, 1929 are polyphyletic. *Chelanops nipponicus* (Kishida, 1927) is synonymized with *Haplochernes boncicus* (Karsch, 1881) (new subjective synonymy). *Chelifer chamberlini* Kishida, 1940, which was apparently described from Harbin, China, is considered a *species inquirenda*. The pseudoscorpion *nomina nuda* published by Kishida are listed.

Key words — Pseudoscorpions, taxonomy, classification, Japan, China

Introduction

Kyukichi Kishida (1888–1968) was a pioneer of the study of pseudoscorpions in Japan, publishing several papers on this group between 1915 and 1966. However, little attention has been paid to these papers, even in his own country. Chelonethologists had little motivation to search for them because Morikawa (1960) dismissed all but one of Kishida's pseudoscorpion taxa as invalid, writing that “they have never been described scientifically”. The exception was *Microcreagris cyclica* Kishida, 1928, which Morikawa regarded as synonym of *Microcreagris japonicus* Ellingsen, 1907. It is therefore not surprising that Kishida's other pseudoscorpion names have been ignored. The catalogues of Harvey (1991, 2009) list *M. cyclica* (as a synonym of *B. japonica*) and two *nomina nuda*: *Chelifer nipponicus* Kishida, 1927 and *Orideobisium takanoanum* Kishida, 1966. Contrary to Morikawa's (1960) interpretation, however, several taxa named by Kishida were validly published in terms of the International Code of Zoological Nomenclature (1999), which means that their status needs to be reconsidered.

Kishida wrote prolifically on a wide variety of animal groups (Ono 2005), but there are a number of problems with his publications, particularly those that appeared (or were supposed to appear) in *Lansania* (subtitled *Journal of arachnology and zoology*), which he edited from 1921 to 1949 (Ono 2005; Tennent *et al.* 2008). This journal had a limited distribution and is now extremely rare (Tennent, Yasuda & Morimoto 2008). Unfortunately, Kishida often

cited unpublished manuscripts as though they were published, sometimes even giving the name of the journal and the volume number. An example of this is provided by Kishida's (1966) reference to a paper by him entitled “Biotic systems of Chelonethida”, which was supposedly published in *Lansania* volume 20 (part 3), in 1942. In fact, no such volume of *Lansania* ever appeared (Tennent *et al.* 2008) and it is clear that this paper was never published in terms of the requirements of the International Code of Zoological Nomenclature. As explained by Tennent *et al.* (2008), Kishida considered it quite normal to cite papers that were scheduled for publication, with the year given being that of the completion or submission of the manuscript. In other cases, when the place of publication is given simply as “Tokyo” it is usually safe to assume that the reference concerns a manuscript. As far as I have been able to determine, nine articles on pseudoscorpions were actually published by Kishida (1915, 1927, 1928, 1929a, 1929b, 1940, 1947, 1948, 1966).

The interpretation of names published in *Lansania* varies between different authors and taxonomic groups. Tennent *et al.* (2008: footnote 15) wrote that the “Overall scarcity and highly restricted distribution of *Lansania* raises a question of whether new names proposed in some parts of the journal can be considered to have been formally published, in the sense of what is recognised as a publication by the International Commission on Zoological Nomenclature.” For a work to be validly published, the Code requires that it satisfies the following conditions:
“8.1.1. it must be issued for the purpose of providing a

- public and permanent scientific record,
- 8.1.2. it must be obtainable, when first issued, free of charge or by purchase, and
 - 8.1.3. it must have been produced in an edition containing simultaneously obtainable copies by a method that assures numerous identical and durable copies.”

At least the first two volumes of *Lansania* appear to meet these conditions (see Tennent *et al.* 2008 for a discussion of problems with later volumes). The names and nomenclatural acts published by Kishida (1929b) are therefore considered available here. The names of taxa described in *Lansania* are currently treated as valid for other groups, such as flies (Sabrosky 1999) and spiders (Platnick 2009).

Kishida's 1929 classification of Chelonethi

Historical accounts of the various classifications proposed for pseudoscorpions have been given by Chamberlin (1931), Harvey (1988) and Muriene *et al.* (2008), but none of these mentions Kishida's (1929b) classification. Indeed, despite being summarized in the more widely available paper of Takashima (1949), no author outside Japan has referred to Kishida's classification in a taxonomic context. Harvey (1991) listed most of Kishida's papers (along with three unpublished manuscripts), but the only ones he had consulted were Kishida 1928 and 1966. Because Kishida's classification contains a number of nomenclatural acts, it needs to be taken into account.

The classification of pseudoscorpions presented by Kishida (1929b) was based on that of Banks (1895), which he had adopted in an earlier publication (Kishida 1915). Banks' classification, which was originally proposed in the form of a key, is summarized below, with authors and dates of taxa added (generic names in parentheses are those assigned to the higher groups by Banks, who only treated the genera recorded in North America):

Order Pseudoscorpionida

- Family Cheliferidae Risso, 1826
 - Subfamily Garypinae Simon, 1879 (*Garypus* L. Koch, 1873)
 - Subfamily Cheliferinae Risso, 1826 (*Chelifer* Geoffroy, 1762; *Chelanops* Gervais, 1849)
- Family Obisiidae Sundevall, 1833
 - Subfamily Olpiinae Banks, 1895 (*Olpium* L. Koch, 1873; *Atemnus* Canestrini, 1884)
 - Subfamily Obisiinae Sundevall, 1833
 - Tribe Ideobisiini Banks, 1895 (*Ideobisium* Balzan, 1892; *Ideoroncus* Balzan, 1887)
 - Tribe Chthoniini Daday, 1888 (*Chthonius* C. L. Koch, 1843; *Lechytia* Balzan, 1892)
 - Tribe Obisiini Sundevall, 1833 (*Obisium* Leach, 1817; *Blothrus* Schiödte 1847)

Kishida's (1929b) classification, published in tabular form, was as follows (authors and dates of taxa added; asterisk indicates first use of coordinate name at given rank):

Order Chelonethida

- Suborder Schizonota Kishida, 1929
 - Superfamily Cheliferoidea Risso, 1826*
 - Family Cheliferidae Risso, 1826
 - Superfamily Garypoidea Simon, 1879*
 - Family Garypidae Simon, 1879
 - Family Cheiridiidae Hansen, 1894*
- Suborder Holonota Kishida, 1929
 - Superfamily Atemnoidea Kishida, 1929
 - Family Atemnidae Kishida, 1929
 - Superfamily Feaelloidea Ellingsen, 1906*
 - Family Feaellidae Ellingsen, 1906
 - Family Pseudogarypidae Chamberlin, 1923*
 - Superfamily Chthonioidea Daday, 1888*
 - Family Tridenchthoniidae Balzan, 1892
 - Family Chthoniidae Daday, 1888
 - Superfamily Ideobisioidea Banks, 1895*
 - Family Ideobisiidae Banks, 1895
 - Superfamily Olpioidea Banks, 1895*
 - Family Olpiidae Banks, 1895*
 - Superfamily Obisioidea Sundevall, 1833*
 - Family Obisiidae Sundevall, 1833

The novelty of this scheme lies in the elevation of the ranks of most of the groups recognized in Banks' classification. Thus families, subfamilies and tribes became suborders, superfamilies and families, respectively. The composition of Feaelloidea followed Chamberlin (1923a), while that of Chthonioidea followed Hansen (1894). Chamberlin's (1923b) introduction of Sternophorinae as a subfamily of Cheliferidae seems to have been overlooked.

Kishida's classification, like that of Banks, is clearly artificial, dividing pseudoscorpions into two groups according to the presence or absence of carapacic furrows. Kishida (1929b) interpreted the presence of furrows as a primitive feature, reflecting the original separation of distinct sclerites, and proposed the suborder Schizonota Kishida, 1929, for this group. Those families without furrows were assigned to the new suborder Holonota Kishida, 1929¹. The presence of furrows is now generally acknowledged to be a derived feature in pseudoscorpions (e.g. Chamberlin 1931). Except for the position of the family Atemnidae, the suborders Schizonota and Holonota correspond to Balzan's (1892) Panctenodactyli and Hemictenodactyli, respectively. The homonymous name Holonota Balogh, 1972 has been proposed for an unranked group of oribatid mites (Balogh 1972; Haumann 1991).

Taxa validly published by Kishida

Cheliferoidea Risso, 1826

Cheliferides Risso 1826: 157.

Atemnoidea Kishida 1929b: 124.

¹ The name Schizonota was erroneously repeated instead of Holonota in Kishida's (1929b) table; this error was corrected by Takashima (1949).

Cheliferoidea Chamberlin 1931: 239–240.

No other author has followed Kishida's (1929b) concept of a superfamily Atemnoidea. The family Atemnidae clearly belongs in the Cheliferoidea, hence Atemnoidea Kishida, 1929 is a junior subjective synonym of Cheliferoidea Risso, 1826. This synonymy was implicitly made by Chamberlin (1931), when he treated Atemnidae as a family of the Cheliferoidea.

Atemnidae Kishida, 1929

Atemnidae Kishida 1929b: 124; Chamberlin 1931: 243–244.

Authorship of the name Atemnidae has been universally attributed to Chamberlin (1931). However, Kishida's (1929b) Atemnidae and Atemnoidea are the earliest family-group names based on the generic name *Atemnus* Canestrini, 1884 and thus have priority over Atemnidae Chamberlin, 1931. Authorship of the co-ordinate names Atemnidae and Atemninae must therefore be attributed to Kishida, 1929.

Bisetocreagris japonica (Ellingsen, 1907)

Microcreagris gigas var. *japonica* Ellingsen 1907: 7.

Microcreagris gigas japonica (Ellingsen, 1907): Kishida 1915: 367.

Microcreagris japonica (Ellingsen, 1907): Kishida 1928: 408.

***Microcreagris cyclica* Kishida 1928: 409–411, figs. 1–2.**

Microcreagris ishiharanus Morikawa 1952b: 255–256, figs 10–12 (synonymized with *Microcreagris cyclica* by Morikawa 1955: 216–217).

Bisetocreagris japonica (Ellingsen, 1907): Ćurčić, Dimitrijević, Makarov & Lučić 1994: 158–159, tab. 1, figs 22–37.

See Harvey (1991, 2009) for other citations of *Bisetocreagris japonica*.

Kishida's (1928) description and figures of *M. cyclica* are better than those published in most of his other papers. Morikawa (1955) synonymized *Microcreagris ishiharanus* Morikawa, 1952 with *M. cyclica* and later (Morikawa 1960) considered both names to be synonyms of *M. japonica* Ellingsen, 1907. Morikawa's (1955, 1960) suggestion that the holotype of *M. cyclica* was immature is not borne out by Kishida's figure (1928: fig. 1), which shows a trichobothrium in the position expected for *isb*, which only appears in the adult. The difference in body length can instead be explained by the strong contraction of the body, which is evident in Kishida's drawing. It is also worth noting that Kishida was the first author to raise Ellingsen's (1907) 'variety' *japonica* to subspecific (Kishida 1915) and later specific (Kishida 1928) rank.

Haplochernes boncicus (Karsch, 1881)

Chelifer nipponicus Kishida 1915: 367. *Nomen nudum*.

***Chelifer nipponicus* Kishida 1927: 955 figs 1–2 (left). New synonymy.**

Chelanops nipponicus (Kishida, 1927); Kishida 1947: 1001, fig. 2845; Kishida 1948: 176, fig. 550; Takashima 1949: 21, 22. See Harvey (1991, 2009) for other citations of *H. boncicus*.

The general appearance of *Chelifer nipponicus* Kishida 1927 and the fact that it was found under bark suggest that it probably belongs in the Chernetidae. Kishida's (1947) transfer of the species to the chernetid genus *Chelanops* Gervais, 1849 is consistent with this position, even if it included a rather heterogeneous assemblage of cheliferoids in the past. As now understood (Muchmore 1999), *Chelanops* is restricted to the New World. The form of the palps and the apparent absence of carapacic furrows suggest *Haplochernes* Beier amongst the genera known from Japan. The only obstacles to placing *nipponicus* in this genus are the form of the tergites, which are illustrated by Kishida (1927, 1947, 1948) as being undivided (as opposed to divided in *Haplochernes*), and the form of the spinneret, shown as simple or weakly bifid (as opposed to having several short rami in *Haplochernes*). I assume that these discrepancies are due to observational errors, because none of the known Japanese pseudoscorpions corresponds to Kishida's descriptions in all respects. Only one species of *Haplochernes*, *H. boncicus* (Karsch, 1881), is known from mainland Japan (another species, *H. boninensis* Beier, 1957, is restricted to the Ogasawara Is.). Rather than leaving *C. nipponicus* in taxonomic limbo as a *nomen dubium*, it seems preferable to synonymize it with *Haplochernes boncicus* (Karsch, 1881).

Chelifer chamberlini Kishida, 1940 *species inquirenda*

***Chelifer chamberlini* Kishida 1940: 112–115, unnumbered figs on pp. 113 & 114;** Takashima 1949: 22.

Chelifer chamberlini Kishida, 1940 has been overlooked by all authors except Takashima (1949). This species was described by Kishida (1940) in a popular science magazine (*Kagaku-gahou*). Kishida (1940) attributed authorship of the name to "Kishida 1939", but this is probably another example of his dating species to the time of submission of a manuscript. The type locality appears to be Harbin, Heilongjiang Province, Northeast China, where the collector (Yasuhisa Shinotsuka) was living and studying at the Junior High School (Shinotsuka 1940; Kishida 1940). Kishida's figures (reproduced here as Figs 1–2) show two somewhat different cheliferids. The first (Fig. 1) has a more elongate body and palps, and the paraxial margin of the chela is more rounded. These differences might reflect sexual dimorphism, different developmental stages, or a confusion of two species. Because Harbin has a cold winter climate, it is unlikely that *C. chamberlini* belongs to any of the tropical or subtropical Asian genera of Cheliferidae. One possibility is that it belongs to the genus *Macrochelifer* Vachon, which is present in Tibet (Vachon 1940) and the Tien Shan region of China (unpubl. obs.). Because the type material is presumably lost, a certain attribution will only be possible when

Figs. 1–2. *Chelifer chamberlini* Kishida, 1940 (*species inquirenda*). — 1, photograph reproduced from Kishida (1940: 113); 2, photograph reproduced from Kishida (1940: 114).

topotypic material becomes available.

***Nomina nuda* published by Kishida**

Kishida (1915: 367) introduced six species names without providing descriptions:

Chelifer ellingseni Kishida, 1915, *nomen nudum* [junior homonym of *Chelifer ellingsenii* With, 1908];
Chelifer nipponicus Kishida, 1915, *nomen nudum*;
Chelifer odateanus Kishida, 1915, *nomen nudum*;
Chelifer sasakii Kishida, 1915, *nomen nudum*;
Chthonius yatsui Kishida, 1915, *nomen nudum*;
Ideobisium nipponicum Kishida, 1915, *nomen nudum*.

All of these names were cited by Takashima (1949) and Morikawa (1960), but they were not included in the list of *nomina nuda* given by Harvey (1991, 2009). Only *C. nipponicus* appears to have been made available later, as *Chelifer nipponicus* Kishida, 1927.

Kishida (1947) used the combination *Gnathochthonius japonicus* (Ellingsen, 1907) without explanation. Because no diagnosis of the genus was provided, *Gnathochthonius* Kishida, 1947 is a *nomen nudum*. Kishida's (1927, 1947) identification of the species as *japonicus* was also probably incorrect. The posteriorly constricted carapace and the numerous carapacic setae shown in his figures (1927: unnumbered fig.; 1947: fig. 2847) suggest a species of the genus *Allochthonius* Chamberlin, 1929, which is common in Japan. *Chthonius japonicus* Ellingsen, 1907 has only recently been confirmed as belonging to the genus *Tyrannochthonius* Chamberlin, 1929 (as first suggested by Beier 1932) by Sakayori (2002), who showed that *Tyrannochthonius japonicus* (Ellingsen) *sensu* Morikawa (1960) was misidentified.

Finally, Kishida (1966: 7) referred to an undescribed genus and species of Ideobisiidae, based on an unpublished manuscript by him, entitled “*Biotic systems of Chelonethida*” and dated 1942:

Orideobisium Kishida, 1966 *nomen nudum*.

Orideobisium takanoanum Kishida, 1966 *nomen nudum*.

Because no description of *takanoanum* has been published and no valid species has been associated with *Orideobisium*, both names are invalid.

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