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Nomenclatural considerations on the generic name *Siro* Latreille, 1797
(Opiliones: Cyphophthalmi)

Considerazioni nomenclaturali sul nome generico *Siro* Latreille, 1797
(Opiliones: Cyphophthalmi)

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Abstract

The nomenclatural tangle involving *Siro* Latreille 1797 and *Siro rubens* Latreille, 1802 is clarified. The accurate publication dates and availability of *Siro* and its type species are discussed. The modes and validity of the designations of type species of *Siro* are evaluated. The alleged senior homonym *Siro* Kniphof, 1759 or *Siro* Reichard, 1759 is dismissed because it is an unavailable name. The early association of the mite-harvestmen either with the flour mites (Sarcoptiformes) or with free-living soil Mesostigmata is reviewed.

Keywords: Acari, flour mite, mite-harvestmen, homonymy, designation of type species.

Riassunto

L'intrico nomenclaturale che coinvolge *Siro* Latreille 1797 e *Siro rubens* Latreille, 1802 viene chiarito. Le date accurate di pubblicazione e la disponibilità di *Siro* e della sua specie tipica sono discusse. Sono state valutate le modalità e la validità delle designazioni della specie tipica di *Siro*. Il presunto omonimo senior *Siro* Kniphof, 1759 o *Siro* Reichard, 1759 viene eliminato perché è un nome indisponibile. Viene riesaminata la primitiva associazione dei Cyphophthalmi sia con gli acari della farina (Sarcoptiformes) sia con i Mesostigmata che vivono nel suolo.

Parole chiave: Acari, acaro della farina, Cyphophthalmi, omonimia, designazione di specie tipica.

Introduction

Siro Latreille, 1797 is the oldest available generic name in the harvestmen suborder Cyphophthalmi (Giribet 2000). It is the type genus of the family Sironidae C. L. Koch, 1839 and is the subject of copious taxonomic literature (e.g., de Bivort & Giribet 2004; Karaman 2009; Giribet & Shear 2010). *Siro* comprises a number of species of mite harvestmen from USA and Europe, including two fossil species from Baltic amber and the Tertiary of Bitterfeld, Germany. The systematics of the family has been recently reviewed by Giribet *et al.* (2017).

The author and date of the genus has been recently misinterpreted by me (Kury 2010) as being Latreille, 1802, and this is discussed below; as *Siro* is the only case known to me of type designation by subsequent monotypy in the order Opiliones. There are also homonymy considerations involving the name, and another type species designation, also discussed below.

Literature citations of taxa are not exhaustive, but rather only those relevant to the purposes of this work. Complete citations for everything will be featured in the above mentioned Catalog of Opiliones of the World. The International Code of Zoological Nomenclature (International Commission on Zoological Nomenclature 1999) is herein referred to as simply ICZN Code.

Historical background and discussion

1) Linnaeus (1758: 615) described in his *Insecta Aptera* the new genus *Acarus* Linnaeus, 1758 along with several species. Among them # 15, *Acarus siro*, the flour mite, a pest of stored grains. The specific name *siro* is most probably a Latinization of the French “ciron”, which means not only this species, but anything eating holes in putrid meat, old cheese, or rotten fungi. This flour mite species is today included in the Acariformes: Sarcoptiformes.

2) Reichard (1759: 20) used the name *Siro* (arguably as a genus) for the flour mite in his main text, and the name *Siro* also appears (inflected as *Sirones*, *Sironibus* and *Sironum*) in a figure caption in an unnumbered page immediately after page 51. It appears that the author was dividing *Acarus* into different groups and one of them was named *Siro*. Alternatively, the name *Siro* could be referring to a species or group of species within *Acarus*. Both Sherborn (1902) and Neave (1942) list *Siro* Kniphof, 1759 as an available generic name (see below).

3) Authorship. That paper (Reichard 1759) was actually a doctoral thesis supervised by Johann Hieronymus Kniphof, and defended by Christoph W.E. Reichard, which deals with several pests and parasites. There are many examples in the literature of conflicting attribution of authorship for the generic name of the nematode *Dracunculus* (Guinea worm) erected in the same work and which has an extensive use in medical literature – either Reichard in Kniphof, 1759 or Reichard, 1759 or even Kniphof, 1759. I concur with

ICZN's interpretation that Reichard is the author. I quote from ICZN (1958: 207): "The work published in 1759 to which the name *Dracunculus* was attributed in Opinion 66 is a doctoral thesis of the type commonly found in the XVIII century. The thesis was presented by Reichard who had studied under Kniphof, whose name, as that of the professor concerned, appears on the title page as well as that of Reichard. The title of this thesis was: *De Pediculis inguinalibus, insectis, et vermibus homini molestis*. Since this thesis was published in Germany (Erfurt), new names in it are attributable to Reichard and not to his professor (Kniphof), for the system under which theses were written by the professor and not by the student which was universal in Sweden in the XVIII century is believed not to have obtained in Germany."

4) Availability: by not being consistently binominal, Reichard's work has been rejected, and all names it contains are unavailable (excepted for the nematode *Dracunculus*, which was made a particular case for salvage by being widely used in medical literature). Again I quote from ICZN (1958: 205): "The titles of the under-mentioned works are hereby placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature with the Title Numbers severally specified below: — (a) Reichard (J. J.), 1759, *De Pediculis inguinalibus, insectis, et vermibus homini molestis* [Praeses: Kniphof (J.H.)] (Title N. 57)".

5) In a paper often cited as of 1796 in the opilionological literature (e.g., Roewer 1923; Giribet 2000; Kury 2010), but demonstrated to be of January 1797 by Evenhuis (1997), Latreille (1797: 185) cited the flour mite in his genus 17 as *Tyroglyphus siro*. On the same page he created the genus 18, "Ciron – Siro" without any included species. Latreille wrote his book as an introduction before he started describing species in later books, therefore some of his new names did not have included species. The genus *Siro* Latreille, 1797, even without any included species, is available because it was described before 1931 (ICZN Code Art. 12, 13). Also important is the fact that Latreille was not referring to the flour mite under the name *Siro*. Most authors correctly recognized this as the description making *Siro* available (e.g., Simon 1879: 144; Hansen & Sørensen 1904: 107; Roewer 1923: 52; Martens 1978: 60; Giribet 2000: 57, Karaman 2009: 264), but only Hansen & Sørensen cited the correct date 1797.

6) Latreille (1802: 62) referred to the genus *Siro* (which he also translated as "ciron") and included a single new species, *Siro rubens* Latreille, 1802. This is at first glance a *nomen nudum* (and widely regarded as such in the literature), but the description in the paragraph preceding the name validates *Siro rubens*. No matter where or how the description is placed, if it refers to this name (and apart for the genus, which is included), in this case *Siro rubens*, the latter is available. The description applies to it, since it is the only species, unambiguously, making the name available and also making it the type of *Siro* by subsequent monotypy. Latreille also mentioned that this arachnid is to be found beneath stones, and has a superficial resemblance to a pseudoscorpion, which reinforces its non-identity with the flour mite.

- 7) Latreille (1804: 329) provided what many authors consider to be the first valid description of *Siro rubens*. Perhaps the phrase “je ne crois pas qu’il ait été décrit” helped swaying the subsequent reviewers into thinking that it was the first description of the species. Most authors considered *Siro rubens* availability first being given by Latreille, 1804, and in fact it is the standard in the literature: Simon (1879: 145), Hansen & Sørensen (1904: 108), Roewer (1923: 53), Martens (1978: 61) and Karaman (2009: 264).
- 8) Hermann (1804: 15) misspelled *Siro* as *Scirus*, including it along with *Acarus* and *Phalangium* in his *Holetra*. He described two new species of *Acarus* – *A. crassipes* and *A. testudinarius*.
- 9) Lamarck (1818: 69) was the first to mix harvestmen and mites in this hitherto monotypic genus *Siro* by joining *Siro rubens* Latreille, 1804 with *Siro crassipes* (Hermann, 1804) and *Siro testudinarius* (Hermann, 1804).
- 10) Gervais (1844: 214–219) listed *Siro* as a synonym (or subgenus) of *Gamasus*, combining both of Hermann’s species under *Gamasus*, but ignoring *Siro rubens*, which he obviously did not know. He also commented that *Siro* was not an opilion (“faucheur”) and that the type species (designated by him therewith) *Acarus crassipes* was a true *Gamasus*. This species is today part of the Parasitiformes: Mesostigmata. This type species designation is unnecessary because of the previous designation by Latreille (1802). Gervais missed Latreille’s subsequent monotypy designation of another species so he was doing it correctly with the information he had, but his designation is invalid only because Latreille designated another species as the first included species was prior to his; otherwise *Siro* would be now a genus of Acari.
- 11) Sherborn’s *Index Animalium* (1902: 909) lists *Siro* as a good genus with Kniphof as the author and on page “52”. There are only 51 numbered pages, so he is referring to the first page on plate explanations, which would be 52.
- 12) Neave’s *Nomenclator* (1940: 208) gives two entries as available names: (a) *Siro* Kniphof 1759, *De Pedic.*, 52; Latreille 1796, *Free. Car. Ins.*, 185.-*Arachn. (Opil.)* and (b) *Siro* Gervais 1844, in Walckenaer & Gervais, *Hist. Apt.*, 3, 214, 215.-*Arachn. (Acar.)*. Likewise, the online version of the *Nomenclator* (uBio 2017) indicates homonymy between them. The authorship of *Siro* ascribed to Gervais as a separate genus is a misconception, because Gervais explicitly mentioned that he was using the genus *Siro* authored by Latreille.
- 13) Evenhuis (1997) established the correct date of Latreille’s work “*Précis des caractères génériques des insectes*” to be January 1797.
- 14) Giribet (2000), following the mainstream, presented Latreille (1796 and 1804) as the works giving availability for *Siro* and *Siro rubens*, although he overlooked the oldest *Siro* of Kniphof/Reichard and Evenhuis’s (1997) work regarding the precise date 1797.
- 15) I have (Kury 2010) in error stated that *Siro* Latreille, “1796” was an unavailable name, by misreading ICZN Code Art. 12.1. The article clearly states that (beyond items in Art. 11)

either of three conditions is enough for availability of a genus: (a) to have a description, (b) to have a definition, (c) to have an indication [of included species]. Therefore, *Siro* was originally created (and made available) without any included species, but containing a description, and only later a species was added, configuring a case of subsequent monotypy (ICZN Code Art. 69.3). On the other hand, I was the first to contend that *Siro rubens* Latreille 1802 was NOT a *nomen nudum*.

Taxonomic summary

Cyphophthalmi

Sironidae C. L. Koch, 1839

Siro Latreille, 1797

Siro Reichard 1759: 20 (Acari) [name unavailable because work not strictly binominal; ICZN Art. 11.4].

Siro Latreille 1797: 185; Latreille 1802: 62; Latreille 1804: 329; C.L. Koch 1839: 7 [type species: *Siro rubens* Latreille, 1802, by subsequent monotypy; ICZN Art. 69.3; subsequent designation of *Acarus crassipes* Hermann, 1804 by Gervais (1844) is superfluous].

Etymology. Latinization of the French *ciron*, which conveys the idea of mite-like arthropods. Gender masculine.

Placement. *Siro* originally included in Classe Onzième: Acéphales, without family designation. Included in Famille Troisième: Phalangiens by Latreille (1802). Made type of new family Zangenkanker – Sironides by C.L. Koch (1839).

Siro rubens Latreille, 1802

Siro rubens Latreille 1802: 62; Latreille 1804: 329.

Type data. Syntypes (whereabouts unknown), from France: Massif Central.

Conclusions

- 1) *Siro* Kniphof, 1759, as cited in the literature should have its authority ascribed to Reichard instead.
- 2) *Siro* Reichard, 1759 is an unavailable name thus does not compete with *Siro* Latreille, 1797 for homonymy.
- 3) *Siro* Latreille, 1797 is an available genus name, which originally did not include any species. Publication dates of the first availability of the name are mistakenly given in the literature as 1796 (e.g., Giribet & Shear 2010), 1802 (e.g., Kury 2010) and 1804 (e.g., Juberthie 1958).
- 4) *Siro rubens* Latreille, 1802 is not a *nomen nudum*, in spite of having been widely considered as such and it is the first description of this species, making it available and the

type of *Siro* Latreille, 1797 by subsequent monotypy.

5) *Siro rubens* Latreille, 1804, in spite of having been widely considered the first description of *Siro rubens*, is not the work making this name available.

6) Gervais's (1844) designation of *Acarus crassipes* Hermann, 1804 as type species of *Siro* Latreille, 1797 is unnecessary.

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