

Tarentula Sundevall, 1833 and *Alopecosa* Simon, 1885:
a historical account (Aranei: Lycosidae)

Tarentula Sundevall, 1833 и *Alopecosa* Simon, 1885:
исторический обзор (Aranei: Lycosidae)

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КЛЮЧЕВЫЕ СЛОВА: *Tarentula*, *Alopecosa*, номенклатура, синонимия, пауки, Lycosidae.

ABSTRACT. History of *Tarentula* Sundevall, 1833 and *Alopecosa* Simon, 1885 is reviewed. Validity of *Alopecosa* Simon, 1885 is supported.

РЕЗЮМЕ. Дан обзор истории родовых названий *Tarentula* Sundevall, 1833 и *Alopecosa* Simon, 1885. Обоснована валидность названия *Alopecosa* Simon, 1885.

Introduction

The nomenclatorial problems concerning the generic names *Tarantula* Fabricius, 1793, *Tarentula* Sundevall, 1833 and *Alopecosa* Simon, 1885 have been discussed in the arachnological literature at least twice [Charitonov, 1931; Bonnet, 1951]. However, the arachnological community seems to have overlooked or neglected both these papers, apparently because neither of them was published in English.

The aims of the present paper are (1) to again stress the invalidity of the generic name *Tarentula* Sundevall, 1833; and (2) to briefly outline the history of *Tarentula* Sundevall, 1833 and *Alopecosa* Simon, 1885 in the 19th century in the context of the widely accepted lycosid generic classification established by Dahl [1908]. The latter was based solely on somatic characters and is here considered the “recent system”. The “modern system” of genera by Lehtinen [1967], based on characters of the copulatory organs, is omitted here as irrelevant to the earlier confusions in nomenclature.

Taxonomic part

The genus *Tarantula* was described by Fabricius [1793: vii, 432] in *Amblypygi*, but now this name is no longer used [Harvey, 2003].

The spider genus *Tarentula* (sic!) was originally proposed for several Swedish spiders by Sundevall [1833b: 181] as a *Sectio Tarentulae* within the large

genus *Lycosa* to include the following 11 species (the current species assignments follow the catalogues by Reimoser [1919], Roewer [1954a], and, especially, Bonnet [1955, 1957, 1959]):

Lycosa Fabrilis [= *Alopecosa fabrilis* (Clerck, 1758)],
L. trabalis [= *Alopecosa inquilina* (Clerck, 1758), male,
and *A. trabalis* (Clerck, 1758), female],

L. vorax?, male [= either *Alopecosa trabalis* or *A. trabalis* and *A. pulverulenta* (Clerck, 1758), according to different sources],

L. nivalis male [= *Alopecosa aculeata* (Clerck, 1758)],
L. barbipes [sp.n.] [= *Alopecosa barbipes* Sundevall,
1833, = *A. accentuata* (Latreille, 1817)],

L. cruciata female [sp.n.] [= *Alopecosa barbipes* Sundevall,
1833, = *A. accentuata* (Latreille, 1817)],

L. pulverulenta [= *Alopecosa pulverulenta*],

L. cuneata [= *Alopecosa cuneata* (Clerck, 1758)],

L. aculeata? [= *Xerolycosa nemoralis* (Westring,
1861)],

L. cinerea [= *Arctosa cinerea* (Fabricius, 1777)], and

L. ruricola [= *Trochosa terricola* Thorell, 1856].

According to Article 67.2.1 [ICZN], the type species of the genus must be chosen only amongst the aforementioned species.

In a footnote, Sundevall [1833b: 181] wrote: “*Fabricius nomen Tarentulae male adhibuit, illis Arachnidibus designandis, quae hodie nomine Phryno et Thelyphono salutantur. Rectius ideo huic sectioni, cujus speciei maxime celebri ab antiquitate nomen fuit impositum, reddendum est.*” (translated by the author: “Fabricius lamely applied the name *Tarentula* (sic!) to define those arachnids that are now usually called *Phrynus* and *Thelyphonus*. Therefore, for this section it is more correct to use the name which was given to its best-known species from the time of Antiquity.”). In other words, Sundevall regarded the slightly misspelled name *Tarantula* Fabricius as invalid, not to be applied, instead suggesting its use for another arachnid group. It may seem that Sundevall did use that name for a different arachnid group, but this was not so. In a subsequent

paper, Sundevall [1833a: 24] provided a diagnosis of the subgenus under the name *Tarentula* nob[is, = ours, Latin], with reference to the previous paper [Sundevall, 1833b; see also Blick & Kronstedt [2000], for the discussion on the date of publication of the latter work]. Therefore, Sundevall's work [1833a] can be treated at a stretch not just as a subsequent misspelled *Tarantula* of Fabricius [in the sense of Article 33, ICZN], but as an original name. Yet, the correct interpretation of Sundevall reference [1833b] is to be treated as misspelling. Therefore, according to ICZN Article 33.3, the name *Tarentula* Sundevall, 1833 is to be considered as an unavailable name.

N.I. Platnick (pers. comm.) interpreted Sundevall's footnote (i.e., "the best-known species from the time of Antiquity") as a clear indication that *Lycosa tarantula* (Linnaeus, 1758) was the central member of the section. However, the paper by Sundevall [1833b] included only Swedish species, whereas *L. tarantula* is only known from the Mediterranean region. Perhaps this was the reason for the absence of *L. tarantula* from the original list of *Tarentula* species. In any event, according to ICZN Article 67.2.1, since the name *L. tarantula* was absent from the initial list, it cannot be the type species of *Tarentula*.

C.L. Koch [1847: 96–97] used the name *Tarantula* (sic!, cited either as *Tarentula* by numerous subsequent students or as *Tarantula* by Ohlert [1867]) as a subgenus of *Lycosa*. Compared to the Sundevall list, C.L. Koch included a different set of 30 species distributed worldwide. The name *Tarantula* was used in a short species list on p. 97, whereas *Lycosa* (*Tarantula*) was used in extended species descriptions elsewhere in the book, as well as both in the index and figure captions. The modern names are given after Bonnet [1959] and Platnick [2013], the distribution data follow C.L. Koch [1847]:

- Tarantula praegrans* [*Lycosa praegrans* C.L. Koch, 1836], Greece.
T. Narbonensis [*L. narbonensis* Walckenaer in Latreille, 1806], France.
T. Apuliae [= *Lycosa tarantula* (Linnaeus, 1758)], Italy, Spain, Portugal.
T. Helleniae [*Lycosa hellenica* C.L. Koch, 1836, now = *Hogna radiata* (Latreille, 1817)], Greece: Nauplia.
T. erythrostoma [= *Lycosa raptoria* Walckenaer, 1837, now *L. erythrognatha* Lucas, 1836], Brazil.
T. poliostoma [*Lycosa poliostoma* C.L. Koch, 1847], Uruguay.
T. isabellina [= *Hogna radiata*], France.
T. rufimana [= *Lycosa raptoria*, now *L. erythrognatha*], Uruguay.
T. funesta [*Venatrix funesta* (C.L. Koch, 1847)], Australia.
T. obsoleta [*Alopecosa obsoleta* (C.L. Koch, 1847)], Uzbekistan: Bukhara.
T. helvola [*Agalenocosa helvola* (C.L. Koch, 1847)], Colombia: St. Cruz.
T. ornata [*Hogna ornata* (Perty, 1833)], Brazil.
T. Pertyi [= *Lycosa tarantuloides* Perty, 1833], Brazil.

- T. vulpina* [*Hogna vulpina* (C.L. Koch, 1847)], Brazil.
T. xyliina [?= *Hogna radiata*], Algeria.
T. rubiginosa [= *Lycosa tarantula*], Italy.
T. grisea [*T. grisea* C.L. Koch, 1847, praecoc.; now *Hogna graeca* (Roewer, 1951)], Greece: Nauplia.
T. famelica [= *Hogna radiata*], Greece.
T. fabrilis [*Alopecosa fabrilis* (Clerck, 1758)], Sweden, Germany, France.
T. inquilina [*Alopecosa accentuata* (Latreille, 1817)], Germany, Sweden.
T. vorax [= *Alopecosa trabalis* (Clerck, 1758)], Europe north of the Alps.
T. sagittata [= *Alopecosa albofasciata* (Brullé, 1832)], Greece: Nauplia.
T. taeniata [*Alopecosa taeniata* C.L. Koch, 1835], Germany, France.
T. fuscipes [*Alopecosa fuscipes* (C.L. Koch, 1847), *nomen dubium*], Greece: Nauplia.
T. cuneata [*Alopecosa cuneata* (Clerck, 1758), or = *A. pulverulenta* (Clerck, 1758)], Sweden, Germany, France.
T. Gasteinensis [= *Alopecosa pulverulenta* (Clerck, 1758)], Austria.
T. clavipes [= *Alopecosa cuneata* (Clerck, 1758)], France, Germany, Sweden.
T. alpica [= *Alopecosa cuneata* (Clerck, 1758)], Germany.
T. miniata [= *Xerolycosa miniata* (C.L. Koch, 1834)], Germany.
T. nivalis [= *Xerolycosa nemoralis* (Westring, 1861)], Germany, Sweden.

Of the 30 aforementioned species names, ten belong to *Alopecosa* in its modern scope (cf. *Tarentula sensu* Dahl [1908]).

Walckenaer [1837] presented a complicated artificial system of lycosids, with families given within genera, and races within families. His fifth lycosid genus, *Lycosa*, included the family Terrenides with five races; the first four being important for the current discussion.

1st Race. *Tarentulae*.

- Lycosa tarentula Apuliae* [*L. tarantula* (Linnaeus, 1758)]. Italy, Spain.
- Lycosa tarentula Narbonensis* (*L. narbonensis* Walckenaer in Latreille, 1806). France, Italy, Greece, Germany.
(without number) *Lycosa tarentula hellenica* [= *Hogna radiata* (Latreille, 1817)]. Greece.
- Lycosa tarentula Hispanica* [*Hogna hispanica* (Walckenaer, 1837)]. Spain.
- Lycosa tarentula Carolinensis* [*Hogna carolinensis* (Walckenaer, 1805)]. USA.
- Lycosa tarentula Georgiana* (= *Hogna carolinensis*). USA.
- Lycosa tarentula suspecta* (*nomen oblitum*; = *Dolomedes albineus* Hentz, 1845). USA.

2nd Race. *Tarentuloides*.

- Lycosa tarentuloides singoriensis* [*Allohogna singoriensis* (Laxmann, 1770)]. Russia, Cyprus.
- Lycosa tarentuloides Liguriensis* (= *Hogna radiata*). Italy.

8. *Lycosa tarentuloides Georgicola* [*Tigrosa georgicola* (Walckenaer, 1837)]. USA.
9. *Lycosa tarentuloides Philadelphiana* (*L. philadelphia* Walckenaer, 1837). USA.
10. *Lycosa tarentuloides encarpata* [*Dolomedes encarpatus* (Walckenaer, 1837), *nomen dubium*]. USA.
11. *Lycosa tarentuloides Maderiana* [= *Hogna maderiana* (Walckenaer, 1837)]. Madeira.
3rd Race. *Tarentulinae*.
12. *Lycosa tarentulina* [*Allocosa tarentulina* (Audouin, 1826)]. France, Egypt.
13. *Lycosa captans* (= *Hogna radiata*). Italy, Germany.
14. *Lycosa fabrilis* [*Alopecosa fabrilis* (Clerck, 1758)]. France, Italy, Sweden, Germany.
15. *Lycosa ornata* [*Hogna ornata* (Perty, 1833)]. Brazil.
16. *Lycosa Pelusiana* [*Alopecosa pelusiana* (Audouin, 1826)]. Egypt.
4th Race. *Insignatae*.
17. *Lycosa Agretyca* [= *Trochosa ruricola* (De Geer, 1778)]. France, Germany, Sweden.
18. *Lycosa campestris* (*nomen dubium*, after Roewer [1954b], or = *Pardosa amentata* (Clerck, 1758), after Bonnet [1958]; the name is omitted in Platnick [2013]). France, Great Britain.
19. *Lycosa trucidatoria* (*nomen dubium*, after Roewer [1954b], or = *Alopecosa pulverulenta* (Clerck, 1758), after Bonnet [1955] and Platnick [2013]). Egypt, France, Italy.
20. *Lycosa accentuata* [*Alopecosa accentuata* (Latreille, 1817)]. France.
21. *Lycosa graminicola* [= *Alopecosa pulverulenta*]. France.
22. *Lycosa vorax* (with six varieties) (= *Alopecosa pulverulenta* + *A. trabalis* (Clerck, 1758), after Bonnet [1955], or *A. trabalis* only [Roewer, 1954b; Platnick, 2013]). France, Germany, Sweden.
23. *Lycosa Andrenivora* [= *Alopecosa accentuata*]. France, Germany, Greece.
24. *Lycosa Armillata* [= *Alopecosa cuneata* (Clerck, 1757)]. France, Sweden.
25. *Lycosa agilis* (= *Alopecosa trabalis*, after Roewer [1954b] and Platnick [2013], or *Pardosa palustris* (L., 1758), after Bonnet [1957, 1958]). France.
26. *Lycosa perita* [*Arctosa perita* (Latreille, 1799)]. France.
27. *Lycosa velox* (= *Arctosa perita*). France, Italy, Germany, Egypt.
28. *Lycosa solers* (= *Pardosa monticola* (Clerck, 1758) after Roewer [1954b] and Platnick [2013], or *P. palustris* after Bonnet [1957, 1958]). France, Germany.
29. *Lycosa rabida* [*Rabidosa rabida* (Walckenaer, 1837)]. USA.
30. *Lycosa mordax* (*L. mordax* Walckenaer, 1837). USA.
31. *Lycosa avida* [*Schizocosa avida* (Walckenaer, 1837)]. USA.
32. *Lycosa crassipes* [*Schizocosa crassipes* (Walckenaer, 1837)]. USA.
33. *Lycosa vehemens* (= *Hogna carolinensis*). USA.
34. *Lycosa impavida* (missing in basic catalogues and even in Banks [1910]; should be *nomen dubium*). USA.
35. *Lycosa irrotata* (*nomen dubium*). Australia.
36. *Lycosa Laperousi* (*nomen dubium*). Solomon Islands: Vanicoro.

Walckenaer's [1837] system was repeated in Simon's [1864] "Histoire naturelle": *Lycosa*, "1^{er} sous-genre" *Tarentula* included the first three races of Walckenaer's *Lycosa*. Of the 38 species/subspecies names, only nine belong to the true *Alopecosa*.

Several arachnologists rejected subgeneric subdivision within *Lycosa*. Thus, Blackwall [1861] listed all British *Lycosa* species and cited *Tarentula* only as its synonym. Likewise, Becker [1882: 88] accepted solely *Lycosa* and regarded all other (sub)generic names such as *Tarentula*, *Trochosa*, *Arctosa*, etc. only as its synonyms.

From the 1860's to 1890's, the name *Tarentula* was used by most authors. Westring [1861] recognized it as Sectio II (*Tarentulae* Auct.) of the genus *Lycosa* and included the following Swedish species: *Lycosa fabrilis* (Clerck), *L. inquilina* (Clerck), *L. pinetorum* (Thorell), *L. barbipes* (Sundevall), *L. trabalis* (Clerck), *L. taeniata* (C.L. Koch), *L. cursor* (Hahn), *L. pulverulenta* (Clerck), *L. cuneata* (Clerck), *L. leopardus* (Sundevall), *L. cinerea* (F.), *L. picta* (Hahn), *L. ruricola* (De Geer? C.L. Koch), *L. terricola* (Thorell), *L. piscatoria* (Clerck), *L. piratica* (Clerck), *L. uliginosa* (Thorell); i.e., *Alopecosa* in its modern scope (9 species), *Arctosa* (3 species), *Trochosa* (2 species) and *Pirata* (3 species).

Among the 'Prussian' lycosids, Menge [1879] distinguished the following genera: *Pirata*, *Arctosa*, *Tarentula*, *Trochosa*, and *Pardosa* (under the name *Lycosa*). Nine species names were listed in *Tarentula* (pp. 519–534; the synonymy follows Roewer [1954b]): *T. andrenivora* (= *Alopecosa pulverulenta*), *T. fabrilis* [female = *Alopecosa schmidtii* (Hahn, 1835)], *T. inquilina*, *T. trabalis*, *T. aculeata* (male = *Alopecosa accentuata*), *T. pulverulenta*, *T. meridiana* (= *Xerolycosa nemoralis*), *T. clavipes* (= *Alopecosa cuneata*), and *T. cuneata* (male = *Alopecosa aculeata*, female = *Alopecosa pulverulenta*).

Herman [1879: 261–273] listed 12 species of *Tarentula*, with only two of them not belonging to the true *Alopecosa*: *T. radiata* (now in *Hogna*) and *T. nebulosa* (now in *Pardosa*).

Pickard-Cambridge [1881: 364–369] accepted the genus *Tarentula* almost in its current form (= *Alopecosa*), separately from *Pirata* and *Trochosa* (*Arctosa* included), and distinguished four species in Dorset, England: *T. pulverulenta*, *T. cuneata*, *T. andrenivora* (= *T. accentuata*) and *T. fabrilis*. He also added further three species (p. 624) to the systematic list of British spiders: *T. miniata* (= *Xerolycosa miniata*), *T. aculeata*, and *T. trabalis*.

Chyzer & Kulczyński (1891: 69–72) listed 16 species in the genus *Tarentula*, including the modern *Alope-*

cosa and *Xerolycosa*, together with *T. Apuliae* (= *L. tarantula*) and *T. radiata* (now in *Hogna*). In addition, *Alopecosa sulzeri* (Pavesi, 1873), the 17th species of the genus, was cited as *Trochosa Sulzeri*. Bösenberg [1903] reported 13 species of *Tarentula* from Germany, of which two are currently assigned to *Xerolycosa*.

Alternatively, Simon [1876: 233] rejected the name *Tarentula* for several reasons, starting from what he thought was the homonymy of Fabricius' *Tarentula* [sic!] and Sundevall's *Tarentula*. Besides this, Simon disapproved of the situation when the type species of *Tarentula*, erected by Thorell [1870], based on *Lycosa tarantula* Rossi, 1790 [= *L. tarantula* (Linnaeus, 1758)], had even earlier been used by Latreille as the type species of *Lycosa*. Later, Simon [1885: 10] established a new subgeneric name *Alopecosa* for the 7th species-group of *Lycosa* which contained two species only: the type species *L. fabrilis* (number 1 in the initial *Tarentula* species list of Sundevall [1833b]) and *L. albofasciata* Brullé, 1832. However, in the concluding volume 6 of "Arachnides de France" [Simon, 1937: 1088], in the "4^e Groupe" of the genus *Lycosa*, that author referred quite inconsistently to *Lycosa pulverulenta*, not *L. fabrilis*, as the type species, also adding in a footnote related to the "4^e Groupe" that it corresponded to the subgenus *Alopecosa* Simon, 1885.

To summarise, complicated artificial systems prevailed in spider taxonomy, including that of lycosids, across the 19th century. For example, a similarly confused taxonomic history of *Pardosa* was described by Zyuzin [1979]. The lycosid generic categories similar to the modern one were established by Dahl [1908], who described the recent genera *Acantholycosa*, *Hygrolycosa*, and *Xerolycosa*. His system, with minor nomenclatorial changes (e.g. *Pardosa* instead of *Lycosa*), was widely accepted by European arachnologists during the entire 20th century. In Dahl's revision, *Alopecosa* was synonymized with *Tarentula*.

Further confusion to the *Tarentula/Alopecosa* problem was added by Petrunkevitch [1928] who treated *Tarentula* as a junior synonym of *Lycosa*, possibly on the basis of the incorrect choice of the type species *Lycosa tarantula*, with *Alopecosa* accepted as a valid genus.

The name *Tarentula* was accepted by Reimoser [1919] and other arachnologists in the 1930's (local catalogues by Charitonov, Drensky, etc.) and even later [Holm, 1947], but rejected in two basic spider catalogues: Roewer [1954a] and Bonnet [1955]. For this reason, since the 1960's, the name *Alopecosa* has prevailed. Nevertheless, *Tarentula* had been correctly typified [Bonnet, 1959]. Platnick [2013] lists 162 species or subspecies of *Alopecosa*, only mentioning the synonymy of *Tarentula* under *Alopecosa*. Two attempts at reviving the name *Tarentula*, by Prószyński & Staręga [1971] and Mikhailov [1997], both apparently without proper justification, have been neglected.

Meanwhile, the nomenclatorial ideas of Bonnet were far from always consistent with ICZN rules, i.e., his

numerous species name "improvements" proposed in the Bulletin of Zoological Nomenclature [1950, Vol.3, Parts 7/9: 173–199].

Dondale & Redner [1979] correctly rejected the name *Tarentula*, referring to it as a subsequent spelling, following the Sundevall's [1833b] footnote that was not properly translated from Latin there. This viewpoint is shared by T. Kronstedt (pers. comm.).

Formally, according to Article 56.2 [ICZN], the names *Tarantula* Fabricius, 1793 and *Tarentula* Sundevall, 1833 are not homonymous, both being available and actually representing a case of pseudo-homonymy. Yet, the availability, but not validity, of the name *Alopecosa* Simon, 1885 was additionally supported by Opinion 2049 [2003].

Conclusions

To summarize, the only correct reason for rejecting the name *Tarentula* Sundevall, 1833 is its misspelling with *Tarantula* Fabricius, 1793. The former name is therefore invalid. The name *Alopecosa* Simon, 1885, including *Tarentula* as its long established objective junior synonym, is a valid name, especially in terms of its current common usage. *Lycosa tarantula* Rossi, 1790 established by Thorell [1870] as the type species of *Tarentula* cannot be accepted as such, because this contradicts Article 67.2.1 [ICZN] due to the absence of this species from the initial list of *Tarentula* species by Sundevall [1833b]. The correct type species of *Tarentula* is *Araneus fabrilis* Clerck, 1758, which Sundevall [1833b] included as the first in his list [according to ICZN, Article 67.2.2], subsequently typified by Bonnet [1959]. The earlier attempts of the author [Mikhailov, 1996, 1997] to re-establish the name *Tarentula* Sundevall, 1833 should be rejected.

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