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**New results in the systematics of Theraphosidae
(Araneida, Mygalomorphae) (*)**

SCHMIDT G.

Von-Kleist-Weg 4 - D-21407 Deutsch Evern

RIASSUNTO

Viene proposta una nuova sistematica dei Theraphosidae confrontata con quella di RAVEN (1985) e con i risultati di SMITH (1990) e PEREZ-MILES (1992).

Parole chiave: *Theraphosidae*, Sistematica.

SUMMARY

A new system of *Theraphosidae* compared with the system of RAVEN (1985) and the results of SMITH (1990) and PEREZ-MILES (1992) is proposed.

Key words: *Theraphosidae*, Systematics.

The *Theraphosidae* are a medium-sized family containing about 90 genera and circa 800 species. The systematics is based on the studies of SIMON (1892, 1903) in his famous "Histoire naturelle des Araignées." This author divided his subfamily Aviculariinae, which corresponds with the family *Theraphosidae* of THORELL (1869), into 11 tribes. Seven or eight of them were elevated to subfamilies by subsequent authors such as ROEWER (1942) or RAVEN (1985), to whom we owe the last comprehensive revision.

The subfamilies of *Theraphosidae*

RAVEN

SCHMIDT (1993)

Ischnocolinae

Ischnocolinae

New World *Ischnocolinae*

(SCHMIDT, 1993)

Selenogyrinae

SMITH, (1990)

Theraphosinae
Aviculariinae
Eumenophorinae

Harpactirinae
Ornithoctoninae
Selenocosmiinae
Thrigmopoeinae

Theraphosinae
Aviculariinae
Eumenophorinae
Stromatopelminae (SCHMIDT, 1993)

Harpactirinae
Ornithoctoninae
Selenocosmiinae
Thrigmopoeinae

The first chart shows the subfamilies in the classification schemes of RAVEN and SCHMIDT. In 1990 SMITH created the *Selenogyrinae*, in 1993 SCHMIDT established the *Stromatopelminae* and New World *Ischnocolinae*. Which reasons led to that?

Ischnocolinae

SMITH (1990)

RAVEN (1985)

PEREZ-MILES (1992)

Chaetopelma
 Cratorrhagus
 Heterothele
 Ischnocolus
 Neoplesiophrictus
 Nesiergus
 Plesiophrictus

Hemirrhagus
 Ozopactus
 Spelopelma

Oligoxystre
 Stichoplastus

New World *Ischnocolinae* (SCHMIDT, 1993)

Acanthoplema
 Ceropelma
 Crypsidromus
 Cyclosternum
 Cyriocosmus
 Cyrtopholis
 Drytopelma
 Hapalopus
 Hapalotremus
 Hemirrhagus
 Holothele
 Homoeomma

Metriopelma (?)
 Oligoxystre
 Ozopactus
 Pseudohapalopus
 Schizopelma
 Spelopelma
 Stichoplastus

In 1990, SMITH confirmed the subfamily Ischnocolinae for the Old World genera only. *Encyocratella olivaceum* STRAND, 1907 has to be named *Chaetopelma strandi* SCHMIDT, 1991 b. Most of the New World genera were tentatively included in the *Theraphosinae* by RAVEN and PEREZ-MILES (1992a). SCHMIDT (1993b) regards the New World *Ischnocolinae* as an integrated group with a typical division of tarsal scopulae. Nevertheless he agrees with RAVEN who considers the *Ischnocolinae* to be *Theraphosidae* incertae sedis. *Cyrtopholis angustatus*, *C. longistylus* and *C. schusteriae* belong to *Stichoplastus* according to VALERIO (1980).

Selenogyrinae

SMITH (1990)

Euphrictus
 Selenogyrus

SCHMIDT (1991)

Annandaliella
 Euphrictus
 Selenogyrus

The genera *Euphrictus* and *Selenogyrus* have been included in the *Selenocosmiinae* by RAVEN, although they lack a maximillary stridulating lyra present in *Selenocosmiinae*. Their stridulating organ consists of clavate or peg-like setae on the inside of the chelicerae. They don't fit in the *Selenocosmiinae*. SCHMIDT (1991c) added *Annandaliella* in the *Selenogyrinae* on account of its stridulating organ. This genus had been included by RAVEN also in the *Selenocosmiinae* before.

Stromatopelminae

SCHMIDT (1993)

Heteroscodra
Stromatopelma

Stromatopelma and *Heteroscodra* could be found in *Poecilotherieae* (SIMON, 1892), *Avicularieae* (SIMON, 1903) and *Eumenophorinae* (RAVEN, 1985; SMITH, 1990). But they lack the typical stridulating organ on coxa and trochanter of palps and legs which are present in *Eumenophorinae*. Therefore they had to be excluded from this subfamily.

Theraphosinae

RAVEN (1985)

Acanthopelma
Acanthoscurria
Ceropelma
Citharacanthus

Crypsidromus
Cyclosternum
Cyriocosmus
Cyrtopholis
Drytopelma
Ephebopus
Euathlus
Eupalaestrus
Grammostola
Hapalopus
Hapalotremus
Holothele

Homoeomma
Lasiodora
Megaphobema
Mygalarachne

SCHMIDT (1993)

Acanthoscurria
Aphonopelma
Brachypelma
Brachypelmides
(SCHMIDT, 1993)

Citharacanthus
Euathlus
Eupalaestrus
Grammostola
Lasiodora
Megaphobema
Nhandu
Pamphobeteus
Paraphysa
Phormictopus
Phrixotrichus
Pseudotheraphosa
(TINTER, 1991)

Rhechostica
Sericopelma
Sphaerobothria
Theraphosa

Oligoxystre

Pamphobeteus

Paraphysa

Phormictopus

Phrixotrichus

Rhechostica

Schizopelma

Sphaerobothria

Stichoplastus

Theraphosa

Xenesthis

Vitalius

(LUCAS, 1993)

Xenesthis

The *Theraphosinae* sensu RAVEN consist of many genera included by SCHMIDT (1993b) in the *Ischnocolinae* and the New World *Ischnocolinae* and *Ephebopus* as well. Some of RAVEN's synonymies were refused. The following genera have been restored: *Aphonopelma* instead of *Rhechostica* (International Commission on Zoological Nomenclature, 1991, application of LEVI & KRAUS), *Brachypelma* by SCHMIDT (1991a, 1992a) instead of *Euathlus*, *Harpaxictis* by SCHMIDT (1990) instead of *Mygalarachne* (retransferred to *Ischnocolinae* incertis sedis) *Nhandu* by SCHMIDT (1989) instead of *Mygalarachne*, *Pseudohapalopus* by SCHMIDT (1991d) instead of *Paraphysa* (retransferred to New World *Ischnocolinae*) and *Sericopelma* by LUCAS, SCHMIDT *et al.* (1991a) instead of *Mygalarachne*.

Avicularia caniceps, *A. lanceolata*, *A. serrata* and *A. truncata* belong to *Aphonopelma* (according to SCHMIDT, 1989, 1993b).

Pterinopelma was removed from the synonymy with *Rhechostica* by PEREZ-MILES (1992b). *P. weijenberghi* and *P. vitiosum* were transferred to *Eupalaestrus* by this author. *P. saltator* is synonymous with *E. weijenberghi* according to PEREZ-MILES (1992b). *Eurypelma pallidum* was transferred to *Aphonopelma*, *E. aureocephus*, *E. embrithes* and *E. epicuraneum* were transferred to *Brachypelma* by SMITH (1993). *Eurypelma mesomelas* belongs to *Megaphobema* according to SCHMIDT (1991a). *Euathlus truculentus* SMITH, 1992 is *Brachypelma andrewi* SCHMIDT, 1992b. *Sphaerobothria gibbosa* Bryant 1940 has been retransferred to *Cyrtopholis* by SCHMIDT, 1993a. *Ephebopus* was transferred from *Theraphosinae* to *Aviculariinae* by LUCAS *et al.*

(1991b). *Lasiopelma* is a synonym of *Grammostola* (SCHMIDT, unpublished).

Brachypelmides SCHMIDT, 1993b differs from *Brachypelma* by its tapered embolus, bipartite spermatheca and by plumose hairs on femur IV. *Pseudotheraphosa* TINTER, 1991 has stridulating bristles on coxa I and II. In the male are tibial spurs.

Aviculariinae

RAVEN (1985)

Avicularia
Iridopelma
Pachistopelma
Tapinauchenius

SCHMIDT (1993)

Avicularia
Ephebopus
Pachistopelma
Psalmopoeus
Tapinauchenius

In the *Aviculariinae* sensu RAVEN, 1985 *Iridopelma* is placed in the synonymy of *Avicularia* by SCHMIDT (1993b) because there are no differences in the genitals. The number of spurs on the tibia of the males is not constant in this genus. *Avicularia minatrix* and *A. veriscolor* bear no spurs. Most species have one spur on tibia I. *Avicularia hirsuta* has spurs on tibia I and II. The position of *Psalmopoeus* is in accordance with SIMON (1903), ROEWER (1942) and LUCAS (personal communication). Geographical reasons are also against RAVEN's view that *Psalmopoeus* belongs to the *Selenocosmiinae*. Then all other *Selenocosmiinae* species are distributed to the Oriental, Indian and Australian region. Another question is whether the genus is really homogeneous. In my opinion, only *Psalmopoeus cambridgei* is a genuine *Psalmopoeus* and all the other species have to be removed from this genus because of their genitals.

Eumenophorinae

RAVEN (1985)

Citharischius
Encyocrates
Eumenophorus

SCHMIDT (1993)

Anoploscelus
Batesiella
Citharischius

Heteroscodra
Hysterocrates
Loxomphalia
Loxoptygus
Monocentropus
Myostola
Phoneyusa
Stromatopelma

Encyocrates
Eumenophorus
Hysterocrates
Loxomphalia
Loxoptygus
Monocentropus
Myostola
Phoneyusa
Polyspina
(SCHMIDT, 1993)

In the *Eumenophorinae* *Anoploscelus* and *Batesiella* were restored by SMITH (1990). The genera *Heteroscodra* and *Stromatopelma* were excluded by SCHMIDT (1993b) and placed in the new subfamily *Stromatopelminae*. The new genus *Polyspina* SCHMIDT (1993b) bears stridulating spikes on the coxae of the palps and of all legs.

Harpactirinae

RAVEN (1985)

Brachionopus
Ceratogyrus
Coelogenium
Eucratoscelus
Harpactira
Harpactirella
Pterinochilus

SCHMIDT (1986)

Ceratogyrus
Coelogenium
Eucratoscelus
Harpactira
Pterinochilus

Now to the subfamily *Harpactirinae*. The genera *Brachionopus* and *Harpactirella* belong to the family *Barychelidae* (SCHMIDT, 1989). They differ from *Harpactirinae* by lacking stridulating bristles and a pad of plumose hairs on the chelicerae. In *Brachionopus* there are no tibial spurs in the males and in both of the genera the cuspules on the labium are reduced in number.

Ornithohtoninae

RAVEN (1985)

Citharognathus

SCHMIDT (1989)

Cyriopagopus
 Haplopelma
 Lampropelma
 Ornithoctonus
 Phormingochilus

The problem in *Ornithoctoninae* in an exact separation of the genera *Haplopelma*, *Cyriopagopus* and *Ornithoctonus* by the shape of spermathecae, because in *Haplopelma* spermathecae occur either undivided or with a notch as in *Ornithoctonus* and *Cyriopagopus*. Therefore some species such as *Haplopelma minax* can be found in each of these three genera. *Ornithoctonus gadgili* TIKADER, 1977 is a synonym of *Poecilotheria regalis* POCOCK, 1899 according to von WIRTH (1991).

Selenocosmiinae

RAVEN (1985)

Annandaliella
 Chilobrachys

Coremiocnemis
Euphrictus
 Lyrognathus
 Orphnaeus
 Phlogiellus
 Poecilotheria
Psalmopoeus
 Selenocosmia
Selenogyrus
 Selenostholus
 Selenotypus

SCHMIDT (1993)

Chilobrachys
 Chilocosmia (SCHMIDT
 & v. WIRTH, 1992)
 Coremiocnemis
 Lyrognathus
 Orphnaeus
 Phlogiellus
 Poecilotheria
 Selenocosmia
 Selenostholus
 Selenotypus

Thrigmopoeinae

RAVEN (1985)

Hapoclastus
 Thrigmopoeus

SCHMIDT (1993)

Concerning the underlined genera in the *Selenocosmiinae* I refer to the *Selenogyriinae* and *Aviculariinae*. The genus *Chilocosmia* was established by SCHMIDT & von WIRTH (1992b) for species with a striulating organ containing elements we can find in *Selenocosmia* and *Chilobrachys*. It seems to be possible that many of the Australian species of *Selenocosmia* belong to the new genus. *Lyrognathus liewi* WEST, 1991, is a synonym of *L. robustus* SMITH, 1988 (SCHMIDT & Von WIRTH, 1992a). The genus *Poecilotheria* is considered here as a tribe of the *Selenocosmiinae*. But it might just as well be put in the rank of a new subfamily.

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