

*The Status of the Genus Eurypelma (Order Araneæ,
Family Theraphosidæ). By ALEXANDER PETRUNKE-
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At the time when C. L. Koch proposed the subgenus *Eurypelma*, Arachnology was still in its infancy. In the fifth part of his 'Uebersicht des Arachniden Systems,' published in Nürnberg in 1850, Koch contented himself with the following summary of characters: "Etwas mehr länglicher Vorderleib, mässig grosser Hinterleib, ziemlich gleich dicke Beine; Körper und Hinterleib dicht langpelzig behaart. Die Sammetbürste der Fusssohlen sehr breit" (p. 73). Following this definition of the subgenus 33 species are listed, the first in order being *E. avicularia*, with a reference to Bd. ix. S. 73, F. 337 of his celebrated work 'Die Arachniden.' This species was originally described by Hahn in volume i. of the same work under the name *Mygale avicularia*, on page 101, and pictured in figure 75. From the point of view of modern Arachnology, both the generic and the specific

descriptions are quite inadequate because they are equally applicable to a number of species and genera. But since that species was later synonymized by Ausserer with his *Eurypelma rubropilosum*, and became the type of the genus *Eurypelma* in Simon's treatise, it is advisable to go into greater detail in reviewing the history of the species *avicularia*, and of other species which had been erroneously identified as such.

Although the spider seems to have been known already in the seventeenth century, the name *Aranea avicularia* was given by Linnæus to a species which is now known under the name of *Avicularia avicularia*. Between 1758 and 1805 several authors mentioned the species. Perhaps the best account and figures are those of Johann Heinrich Jördens, who gave also references to 42 papers ('Entomologie und Helminthologie des Menschlichen Körpers,' first volume, 1801, pp. 245-249, plate ix. figures 2 to 9). In 1802 Walckenaer proposed the genus *Mygale*. In 1818 Lamarck established the genus *Avicularia*. In 1820, and again in 1833, Hahn described and figured a spider under the name of *Mygale avicularia*. This species was synonymized by Walckenaer in 1837 with *Mygale bartholomei* Lamarck, and renamed *Mygale nigra*. It was later established that *Mygale bartholomei* Lamarck is not synonymous with either Linnæus's *Aranea avicularia* or Hahn's *Mygale avicularia*, and is at present considered to be the type of *Cyrtopholis bartholomei* (Lamarck). Hahn's figure was drawn from a male in his own collection. It does not show the spur or hook at the end of the first tibia, nor does he mention the presence of a hook in his only too brief description of the specimen on page 101 of the first volume of 'Die Arachniden.' The figure is not very good, but it does not remind one of an *Avicularia avicularia* (L.). Dissatisfied with the description and figure, Koch described the male and for the first time described and figured the female in the ninth volume in 1842. Concerning the male he states:—"Der Mann hat verhältnissmässig etwas dünnere und längere Beine, unten vor der Spitze an den Schienenbeinen des ersten Paars mit einem dicken, hakenförmig einwärts gekrümmten, borstigen Sporn. Die Taster etwas dünner als beim Weibe, das Endglied kurz, dicht, etwas filzartig behaart, und sich vorn etwas theilend; die Genitalien

nicht gross, etwas gewölbt, auswärts etwas ausgehöhlt, mit sehr langem, dünnem, gebogenem Haken." That Koch had a specimen with a single tibial spur is quite certain, because he described several species with two spurs and was unquestionably familiar with that character. That his specimen was either Hahn's original specimen, or even that it belonged to the same species, is far from certain. Koch does not state that it is the same specimen. At the same time his further remarks concerning varieties ("Abarten") of the species seems to me conclusive that he either confused several species or mistook a species living in the ground for an *Avicularia* which, as we know, is more or less arboreal in its habits. At least, he attributes the colour variations of his specimens to the type of soil in which they live. However, we may assume as certain that the two specimens, one a male, the other a female described by Koch in 1842, were the ones which he called *Mygale avicularia* when in 1850 he erected the subgenus *Eurypelma*. In 1864, in the first edition of his 'Histoire Naturelle des Araignées,' Simon still recognized the genus *Mygale* and placed under it, as the second subgenus, *Eurypelma*. In the list of species mentioned under the subgenus, *Eurypelma cancerides* occupies the first place. That species has long since been placed, in agreement with Pocock, in the genus *Phormictopus* as its genotype.

Ausserer published his first revision of Territelariæ in 1871. In that celebrated paper he raised Koch's subgenus *Eurypelma* to the rank of a genus with four subgenera: *Lasiadora*, *Lasiocnemus*, *Homæomma*, and *Eurypelma*. He gave a definition of the genus and of each of the four subgenera, but failed to designate types. Nine species are listed by Ausserer under his subgenus *Eurypelma*, the first two being species newly described by him, the third the *E. rubropilosa* which he considered to be synonymous with Koch's *Mygale avicularia*, but not with Linnæus's *Aranea avicularia*, with which he considered Hahn's *Mygale avicularia* to be synonymous. Ausserer described a female. There is no evidence to show that he examined Koch's specimens. In the introduction he states that he studied the collection of the Vienna Museum, and thanks Dr. L. Koch only for his contribution of European species. The collection of C. L. Koch must have been at that time the property

of Dr. L. Koch, whose heirs later offered it for sale in 1908 or 1909. In his definition of the genus *Eurypelma*, Ausserer gives, on p. 208, as one of the characters the presence of two spurs on the first tibiae of the male. He does not mention that character in his definition of the subgenus *Eurypelma*, but we have to assume that the character of the genus was equally applicable to the subgenus. As a substantiation of this we find two spurs mentioned in the description of all males of *Eurypelma* described by him, namely *E. mordax*, *E. striatipes*, *E. leio-gaster*, and *E. vagans*, *E. steindachneri* and *E. rapax*, described in his second paper in 1875.

In 1892 Simon raised Ausserer's subgenera *Lasiadora*, *Lasiocnemus* (nomen preocc., *Lasiopelma*, nom. nov., Simon), *Homœomma* and *Eurypelma* to the rank of genera. He gave new definitions and assigned to each genus a type-species. To *Eurypelma* he assigned as type-species Ausserer's *E. rubropilosum*, accepting Ausserer's synonymy of that species with Koch's (not Hahn's) *Mygale avicularia*. Under 30, ii. g, of the Rules of Nomenclature "such designation is not subject to change." Unfortunately, Simon's definition of *Eurypelma* was still too broad, and included distinctly not congeneric species. Moreover, his selection of the genotype was still more unfortunate. He accepted Ausserer's synonymy, but apparently did not consult Koch's original description. This oversight did not escape Pocock's scrutiny. In his paper on "Some new and old Genera of S. American Aviculariidae," published in 1901, Pocock called attention to the fact that Koch's description of the male contains the definite statement of the presence of a single tibial spur, "a feature (to quote Pocock) which is characteristic of *Avicularia* or perhaps *Acanthoscurria*, but not of *Eurypelma* as recognized by Ausserer in 1871 and Simon in 1892 . . . In view, then, of the obscurity in which *Eurypelma* is wrapped, I have ignored it altogether in the following pages as a 'genus ignotum,' at all events for the time being." In the second volume of the 'Histoire Naturelle des Araignées,' published in 1903, Simon recognized the validity of some of Pocock's genera, but still retained the genus *Eurypelma* and treated Pocock's "*Pterinopelma*, *Aphonopelma* et (?) *Plesiopelma*" as synonyms of *Eurypelma*. However, he still considered

Ausserer's *E. rubropilosum* to be synonymous with Koch's *E. avicularia*, although he adds: "je dois dire cependant que je n'ai aucune certitude quant à la détermination de l'espèce (commune dans les Guyanes et le nord du Brésil) que je regarde comme *E. rubropilosum* Ausserer."

In 1923, in his monumental work 'Theraphosoideas do Brasil,' Mello-Leitao accepted Pocock's classification and genera, dropped the genus *Eurypelma*, and at the same time gave a description of a species which is common in the North of Brazil and which agrees with the description of *E. rubropilosum* Ausserer. However, he was not absolutely certain that his specimens were identical with either Ausserer's species, or with the species described by Simon as *E. rubropilosum*. Mello-Leitao placed his specimens in the genus *Pterinopelma*. He also gave a key to Pocock's genera, but unfortunately the key contains some errors.

In considering the status of the genus *Eurypelma* we are now confronted with several peculiar and important facts:—(1) Ausserer's *E. rubropilosum* is not Koch's *E. avicularia*; (2) it is impossible to determine the generic characters of Koch's *E. avicularia* unless the original specimen were re-examined; (3) assuming that the original specimen is still in existence and could be re-described, Koch's genus *Eurypelma* would have to have it for genotype and would automatically exclude all species described since Ausserer's time under *Eurypelma*; (4) under the Rules of Nomenclature, no other species than Koch's *E. avicularia* may be assigned as genotype of *Eurypelma*; (5) until the original specimen of Koch's *E. avicularia* has been re-described in accordance with modern ideas of valid generic characterization, the genus *Eurypelma* must remain a *genus incertum* and *invalidum*; (6) Pocock's genera must be used as the only valid ones; (7) all species described under *Eurypelma* must be placed either in one or another of Pocock's genera; or else, if their characters do not permit it, in a new genus with a properly chosen genotype; (8) species inadequately described must remain for the present *incertæ sedis*.

Following this line of thought necessitated by the facts, I have re-examined several species from specimens in my collection and placed them in their proper genera. I have.

furthermore, placed several American species in their proper genera by careful selection of characters given in the original descriptions. For several species which cannot be placed in any valid genus I propose the new genus *Delopelma*, with *D. (Eurypelma) marxi* (Simon) as genotype. This species is well known to me and cannot be confused with any other species. All these species are listed in their proper genera in the first part of my 'Catalogue of American Spiders,' published by the Connecticut Academy. It is unfortunate that many species have been so poorly described by their authors that they cannot be assigned to any genus in the subfamily to which they belong.

The following key does not include several genera listed in my 'Systema Araneorum' under the subfamily Grammostolinæ. Of these genera, *Sphærobothria* Karsch has been removed by me to the subfamily Ischnocolinæ, after examination of specimens in the Harvard Museum; the genera *Davus* Cambridge, *Euathlus* Ausserer, *Lasiopelma* Simon (= *Lasiocnemus* Ausserer, *nomen pre-occupatum*) and *Mygalarachne* Ausserer, are insufficiently described even for safe inclusion in the subfamily; the genus *Eurypelma* Koch (Ausserer, Simon) remains *incertæ sedis* for reasons explained above.

Key to the Genera of the Subfamily Grammostolinæ.

1. A true lyra present, with two rows of vibrating chords on the coxa of the first leg and catching pins on the coxa of the pedipalp 2.
*A true lyra wanting 7.
2. No auxiliary stridulating apparatus on the trochanter of palp and first leg. Sternum normal *Grammostola* Simon.
- *An auxiliary stridulating apparatus on the trochanter of palp and first leg. Sternum strongly narrowed in front and convex.. *Sorata* Strand.
3. Coxa and trochanter of palp and first leg clothed with simple or plumose hair and bristles 4.
*Short spines or spines ending in bristles present on either coxa or trochanter of palp and first leg 10.
4. Lip with few scattered granules 5.
*Lip with numerous granules 6.
5. Metatarsus of first leg shorter than tibia, scopulate to base. The two spurs of the first tibia of male subcontiguous, blunt.. *Paraphysa* Simon.
- *Metatarsus of first leg at least as long as or longer than tibia, scopulate only in distal

- half. The inferior spur of the first tibia of male much longer, curved..... *Phryxotrichus* Simon.
6. First tarsus scopulate only in distal two-thirds. Posterior median eyes much smaller than anterior median eyes and far removed from the latter *Rhecostica* Simon.
- *First tarsus scopulate to base 7.
7. Plumose hair present on trochanter of palp and of first leg 8.
*Plumose hair wanting on trochanter of palp and of first leg 9.
8. Plumose hair present on the inner surface of the femur of the first leg *Brachypelma* Simon.
*Plumose hair wanting on the inner surface of the femur of the first leg *Pterinopelma* Pocock.
9. Coxa of first leg clothed in front with simple slender bristles intermixed with erect pin-like hairs, trochanter with slender ragged bristles. Metatarsus of first leg of male passes between the two tibial spurs..... *Plesiopelma* Pocock.
*Coxa of first leg as well as trochanter clothed with simple, recumbent hair. Metatarsus of first leg of male passes outside of both tibial spurs *Delopelma*, nov.
10. Short spines or spines ending in a bristle are present on the posterior surface of the coxa of the palp and the anterior surface of the coxa of the first leg..... 11.
*Short spines and spines ending in a bristle are present only on the anterior surface of the coxa of the first leg, but not on the posterior surface of the coxa of the palp. *Aphonopelma* Pocock.
11. Stout plumose stridulating bristles present on the posterior surface of the trochanter of the palp and on the anterior surface of the trochanter of the first leg *Citharacanthus* Pocock.
*Not so 12.
12. Trochanter of palp with spines ending in a fine bristle. Fourth metatarsus without scopula. *Eurypelmella* Strand.
*Trochanter of palp clothed only with simple hair and delicately plumose bristles. Fourth metatarsus scopulate in distal third *Dugesiella* Pocock.

Genus DELOPELMA, nov.

Closely related to *Pterinopelma* and *Brachypelma*, from which it differs by the complete absence of plumose hair. All tarsi scopulate to base, the scopulæ not divided longitudinally by bristles. First and second metatarsi scopulate to base, third in distal half, fourth in distal third. All coxæ and trochanters clothed with simple hair and simple bristles. True lyra wanting. Short spines and spines ending in a bristle, characteristic of

several other genera, also completely wanting. Lip with numerous granules at tip, maxillæ with numerous granules near base. Eyes on a joint-tubercle. The two tibial spurs of the male unequal in length, the metatarsus when flexed passes on the outside of both spurs.

Type, *D. marxi* (Simon).