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## REASSESSMENT OF THE SPIDER GENUS *CLUBIONA* (ARANEI, CLUBIONIDAE)

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**Reassessment of the Spider Genus *Clubiona* (Aranei, Clubionidae).** Mikhailov K. G. — The spider genus *Clubiona* Latreille, 1804 is reestablished in its traditional scope. Taxonomical characters of infrageneric groupings are discussed. Tribes within the Clubioninae sensu Wunderlich (2011) are not accepted. Diagnosis and short description of *Clubiona* s. l., as well as a provisional key to clubionid genera, are provided. The following synonymies are established: *Epiclubiona* Lohmander, 1945, syn. n.; *Euryclubiona* Lohmander, 1945, syn. n.; *Gauroclubiona* Lohmander, 1945, syn. n.; *Heteroclubiona* Lohmander, 1945, syn. n.; *Hyloclubiona* Lohmander, 1945, syn. n.; *Microclubiona* Lohmander, 1945, syn. n.; *Porrhoclubiona* Lohmander, 1945, syn. n.; *Anaclubiona* Ono, 2010, syn. n.; *Breviclubiona* Wunderlich, 2011, syn. n.; *Marmorclubiona* Wunderlich, 2011, syn. n. = *Clubiona* Latreille, 1804, s. l.

**Key words:** taxonomy, synonymy, infrageneric groupings, spiders, *Clubiona*.

**Пересмотр рода пауков *Clubiona* (Aranei, Clubionidae).** Михайлов К. Г. — Род пауков *Clubiona* Latreille, 1804 переустановлен в традиционном объёме. Обсуждаются таксономические признаки внутриродовых группировок. Трибы внутри подсемейства Clubioninae в смысле Й. Вундерлиха (2011) не принимаются. Даны диагноз и краткое описание рода *Clubiona* s. l., а также предварительный ключ для определения родов семейства Clubionidae, близких к роду *Clubiona*. Установлена новая синонимия: *Epiclubiona* Lohmander, 1945, syn. n.; *Euryclubiona* Lohmander, 1945, syn. n.; *Gauroclubiona* Lohmander, 1945, syn. n.; *Heteroclubiona* Lohmander, 1945, syn. n.; *Hyloclubiona* Lohmander, 1945, syn. n.; *Microclubiona* Lohmander, 1945, syn. n.; *Porrhoclubiona* Lohmander, 1945, syn. n.; *Anaclubiona* Ono, 2010, syn. n.; *Breviclubiona* Wunderlich, 2011, syn. n.; *Marmorclubiona* Wunderlich, 2011, syn. n. = *Clubiona* Latreille, 1804, s. l.

**Ключевые слова:** таксономия, синонимия, внутриродовые группировки, пауки, *Clubiona*.

*Clubiona* Latreille, 1804 is a large worldwide (replaced in South America by *Elaver* O. Pickard-Cambridge, 1898) spider genus comprising ca. 400 species. Several revisions and reviews have been performed on European (Wiehle, 1965), North American (Edwards, 1958), Canadian and Alaskan faunas (Dondale, Redner, 1982). Basically, only somatic characters were used in the diagnosis and description of the genus, and, to my opinion, there is no reason to reject this grouping before a comprehensive cladistic analysis has been undertaken.

In his arachnological remarks published in 1945, H. Lohmander made an attempt to split up the European *Clubiona* into several genera/subgenera on the basis of male genitalia and provided two alternative classifications within the same paper. This system was neglected by Wiehle (1965).

Later (Mikhailov, 1995, 1997; Deeleman-Reinhold, 2001, et al.), *Clubiona* was subdivided into 4 subgenera using mostly genital characters: *Atalia* Thorell, 1887 (= *Paraclubiona* Lohmander, 1945), *Tolophus* Thorell, 1891 (= *Japoniona* Mikhailov, 1990), *Bucliona* Benoit, 1977 (= *Bicluona* Mikhailov, 1994), and *Clubiona* s. str. the

majority of species, 14 species groups in the Holarctic region). The genus *Anaclubiona* was erected by Ono (2010) for the *zilla* species group, tiny spiders, formerly in *Clubiona* s. str.

In his recent paper, Wunderlich (2011) split up the European *Clubiona* (= Clubioninae in his sense) into 3 tribes beyond a number of incertae sedis groups: Clubionini (large spiders, body length up to 10 mm), Microclubionini [small spiders, body length mostly 3–5 (rarely 6–7) mm], and Ataliini (with the genitalic characters specific to *Atalia*, the single genus included; the key characters are listed in table 1). Other characters recommended for distinguishing Clubionini and Microclubionini are slight differences in the shape of male anterior spinnerets basal articles (“cylindrical or almost so” in the former tribe and “more or less conical” in the respective diagnoses, or even “almost so” in the latter), and male chelicerae basal articles (diverging in the former tribe and “usually unmodified” in the latter, but the figures 32 and 41 in Wunderlich (2011: 126) show only slight differences). Results of my current examination of male anterior spinnerets (table 1) are evidence that the shape of these spinnerets cannot be a diagnostic character. Somatic characters are either poorly marked or variable, thus being not sufficient for distinguishing the Clubionini and Microclubionini. My data also don’t support the key difference in body length: a lot of Clubionini species, especially males, have 5–6 mm body length. And, vice versa, a lot of Microclubionini species have 4–5 mm body length. Yet, among the genitalic characters proposed by Wunderlich, no important diagnostic feature has been found to separate the aforementioned tribes (table 1). Therefore, to my opinion, there is no reason to distinguish tribes within the Clubioninae.

Wunderlich (2011) also followed Lohmander (1945) and divided the European *Clubiona* s. str. into several genera: *Euryclubiona* Lohmander, 1945 (= the *reclusa* species group), *Gauroclubiona* Lohmander, 1945 (= the *caerulescens* species group), *Marmorclubiona* Wunderlich, 2011 (= the *marmorata* species group), *Microclubiona* Lohmander, 1945 (= the *trivialis* species group), *Breviclubiona* Wunderlich, 2011 (= the *brevipes* species group), *Hyloclubiona* Lohmander, 1945 (= the *comta* group, with *genevensis* subgroup), *Porrhocclubiona* Lohmander, 1945 (= the *genevensis* subgroup), the four latest genera are united into the tribe Microclubionini. *Atalia*, *Tolophus* and

**Table 1. Diagnostic characters of the tribes within Clubioninae proposed by J. Wunderlich (2011)**

**Таблица 1. Диагностические признаки триб в подсемействе Clubioninae, предложенные Й. Вундерлихом (Wunderlich, 2011)**

Sources	Clubionini	Microclubionini	Ataliini
After Wunderlich (2011)	Probably basically divided tibial apophysis of the male palp; paired epigynal groove	Usually conical male anterior spinnerets; low body length	Very large bulbus; anterior position of the copulatory openings
Present data	Not basically divided tibial apophysis in <i>C. propinqua</i> L. Koch, 1879, <i>C. hummeli</i> Schenkel, 1936, <i>C. ezoensis</i> Hayashi, 1987, <i>C. odesanensis</i> Paik, 1990, <i>C. sopaikensis</i> Paik, 1990, <i>C. zacharovi</i> Mikhailov, 1991, <i>C. mayumi</i> Ono, 1993, etc. Not paired epigynal groove at least in <i>C. germanica</i> Thorell, 1871, <i>C. papillata</i> Schenkel, 1936, <i>C. bakurovi</i> Mikhailov, 1990, <i>C. chabarovi</i> Mikhailov, 1991	Cylindrical male anterior spinnerets in the <i>C. genevensis</i> group and <i>C. comta</i> C. L. Koch, 1839; conical in <i>C. diversa</i> O. Pickard-Cambridge, 1862 and <i>C. subtilis</i> L. Koch, 1867; both conical and cylindrical in <i>C. trivialis</i> C. L. Koch, 1843; not examined in <i>C. brevipes</i> Blackwall, 1841. Basically divided tibial apophysis in <i>C. hyrcanica</i> Mikhailov, 1990. Paired epigynal groove in several N-American representatives of <i>C. trivialis</i> and <i>C. abboti</i> groups	Moderate bulbus at least in <i>C. bandoi</i> Hayashi, 1995 and <i>C. applanata</i> Liu, Yan, Griswold et Ubick, 2007

*Bicluona* (sic!) are regarded as genera, with *Atalia* assigning to the tribe Ataliini, and two others being treated as Clubionidae incertae sedis. *Clubiona* sensu Wunderlich encompasses three subgenera, *Clubiona* s. strictissimo (= the *pallidula* species group), *Epiclubiona* Lohmander, 1945 (= the *similis* species group), and *Heteroclubiona* Lohmander, 1945 (= the *lutescens* species group). As a result, the reestablished *Clubiona* s. strictissimo lacks any reliable diagnostic character: viz., “pedipalp different”, “vulva with long(er) and wide introductory ducts” (but the same in *Breviclubiona*! — K. M.), as indicated in the key provided by Wunderlich.

The bulk of extra-European *Clubiona* were not assign by Wunderlich to any genera, leaving them for a further study. Following his methods, we are to erect genera at least for the *abboti* group, the *maritima* group (both North-American), and the *chabarovi* group (the Russian Far East). Two other groups, “*obesa*” and “*japonicola*”, should be assigned to *Clubiona* s. strictissimo and constitute two subgenera. Such subgroups of the *obesa* group as “*latericia*”, “*sapporensis*”, “*corrugata*”, “*akagiensis*”, “*bakurovi*” and “*irinae*”, as well as *hummeli* subgroup of the *pallidula* group should also constitute subgenera within *Clubiona*; in such case the subgenera comprising other representatives of the *obesa* and *pallidula* groups, respectively, will have only negative diagnostic characters: viz., the genitalia are just otherwise compared to the genera in the respective subgroups.

To sum up, before a careful examination Southeast-Asian representatives of the genus and their cladistic analysis have been done, it is better to re-establish the spider genus *Clubiona* on the basis of somatic characters, as it was made earlier by a number of scholars starting with Simon (1897). By recent data, no single synapomorphy supports this large genus. There is no single character specific to all species, but rather a combination of characters that can be diagnostic for the genus. The Indo-Malayan speciation center of *Clubiona*-like spiders has not yet been investigated properly; only the most interesting species have been described by Deeleman-Reinhold (2001) and few other experts. Yet, even the generic rank of *Atalia* (= *Paraclubiona*) and *Tolophus* (= *Japoniona*) is open to question. For instance, the male genitalia of *Atalia* are variable enough, sometimes with the modified palpal patella and the moderately protruding tegulum (table 1); even in females, the genital openings can be situated close to the epigastric furrow, like in *C. subparallela* Zhang, Zhu et Song, 2007.

### *Clubiona* Latreille, 1804

= *Epiclubiona* Lohmander, 1945, syn. n.; *Euryclubiona* Lohmander, 1945, syn. n.; *Gauroclubiona* Lohmander, 1945, syn. n.; *Heteroclubiona* Lohmander, 1945, syn. n.; *Hyloclubiona* Lohmander, 1945, syn. n.; *Microclubiona* Lohmander, 1945 syn. n.; *Porrhoclubiona* Lohmander 1945, syn. n.; *Anaclubiona* Ono, 2010, syn. n.; *Breviclubiona* Wunderlich, 2011, syn. n.; *Marmorclubiona* Wunderlich, 2011, syn. n.

Type species: *Aranea pallidula* Clerck, 1758.

Diagnosis. Clubionid spiders with convex (not flattened, at least in the Holarctics) carapace narrowing to the head, relatively short legs (femur I not longer than carapace width), and ovoid abdomen in females. Trochanters without notches. Femur I with one prolateral macroseta. Regular leg armature, proved for Holarctic representatives, as follows: femur I–II dorsally 1. 1. 2, III–IV dorsally 1. 1. 3, patella III–IV retrolaterally 1, tibia I–II ventrally 2. 2, III dorsally 2. 2, ventrally 1. 1. 1, IV dorsally 2. 2, ventrally 1. 1. 0, metatarsus I–II ventrally 2, III dorsally 2. 1. 2, laterally 1. 2, ventrally 2. 2, IV dorsally 2. 1. 2, laterally 2. 2, ventrally 2. 1. 2.

Remark. To my opinion, the more useful characters for the diagnosing of *Clubiona* are indices of paired relative lengths of leg articles. Although numerous measurements have already been made by me, this study is not yet completed.

Description. Total length 1. 8–12 mm. Yellow, brown or greenish (mostly brown and yellowbrownish, with carapace paler than abdomen in the Holarctics) clubionid

species with convex ovoid carapace and wide head, posterior eye row wider than anterior one, anterior eyes equidistant or anterior medians closer to each other than to laterals, posterior median eyes typically closer to laterals than to each other. Eyes nearly uniform in size. Chelicerae long and slender in males, relatively shorter and stouter in females; promargin of fang furrow usually with four or five teeth and retromargin with three of four. Palp-coxal lobes longer than wide, concave on lateral margin. Legs with dense claw tufts and thin scopulae; leg I shorter than leg II. Abdomen with numerous long erect setae at the anterior end. Patella of male palpus with blunt apophysis at its prolaterodistal angle.

**Distribution.** Almost worldwide; absent from South America.

The following key can be proposed for distinguishing the true *Clubiona* from other *Clubiona*-like spiders (= the Clubioninae sensu Wunderlich, 2011), combined after Dondale et Redner, 1982, and Deeleman-Reinhold, 2001; Southeast-Asian genera are not discussed.

#### Key to genera of *Clubiona*-like spiders

##### Таблица для определения родов пауков, близких к *Clubiona*

1. Carapace flat and wide, barely narrowing towards the head; distance between posterior median eyes 2–3 times as long as between posterior median and lateral eyes; small spiders (3–4 mm) .....  
..... *Simalio* Simon, 1897, *Pteroneta* Deeleman-Reinhold, 2001, *Scopelio* Deeleman-Reinhold, 2001  
— Carapace not so flat, narrowing towards the head; spiders usually larger than 3.5 mm. .... 2
2. Living spiders pale green, slender and elongate and carapace more or less flattened, with thin teguments, pale yellow or greenish in alcohol; head width as 2/3 carapace width or less; femur I longer than carapace width (except in some females of *Malamatidia*), abdomen lanceolate or v-shaped. ....  
..... *Matidia* Thorell, 1878, *Pristidia* Deeleman-Reinhold, 2001, *Malamatidia* Deeleman-Reinhold, 2001, *Nusatidia* Deeleman-Reinhold, 2001.  
— Living spiders yellow or brownish, head wider, convex (sometimes narrowing, not in Holarctics), legs short, femur I regularly not longer than carapace width; abdomen oval in females. .... 3
3. Femur I with one prolateral spine (= macroseta sensu Dondale et Redner, 1982). Epigyne without scape. .... *Clubiona* Latreille, 1804  
— Femur I with two or three prolateral spines. Epigyne with scape. ....  
..... *Elaver* O. Pickard-Cambridge, 1898

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