

**Spiders of the genus *Clubiona* Latreille, 1804
(Aranei, Clubionidae) of North Korea***

K. G. MIKHAILOV

*Zoological Museum of the Moscow State University,
Bolshaya Nikitskaya Street 6, K-9 Moscow 103009, Russia*

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Abstract. – Twenty-one species of the spider genus *Clubiona* belonging to 2 subgenera, 6 species groups and 3 species subgroups are reported from North Korea. The male of *C. hwanghakensis* PAIK, 1990 and female of *C. manschurica* SCHENKEL, 1953 are redescribed. A key for distinguishing 5 very close Oriental species of the *pallidula*-group is provided. Additional drawings are given to separate the males of *C. propinqua* L.KOCH, 1879 and *C. mayumiae* ONO, 1993. With 8 figures.

INTRODUCTION

This paper continues my research on Oriental *Clubiona* (MIKHAILOV 1990, 1991, 1995, etc.). Generally, the spider fauna of North Korea is poorly known, only some papers, mainly based on the collections of the Hungarian Natural History Museum (Budapest), are available. Nine *Clubiona* species from North Korea have been mentioned in my review of the USSR fauna (MIKHAILOV 1992) with no exact localities, seven species have been described or recorded in details later (MIKHAILOV 1995).

A review given herein is based upon the collections of two European museums, namely the Institute of Zoology, Polish Academy of Sciences, Warsaw (IZ), and the Hungarian Natural History Museum, Budapest (HNHM). Altogether, 21 *Clubiona* species are reported up-to-date from the territory of North Korea. Some necessary redescrptions are incorporated as well.

Descriptions are arranged according to a traditional pattern. The following abbreviations are accepted: Cb – cymbium, F – femur, Mt – metatarsus, Pt – patella, Spt1 – first part of spermatheca, Spt2 – second part of spermatheca, T – tarsus, Ti – tibia, d. – dorsally, lat. – laterally, rl. – retrolaterally, v. – ventrally. All measurements are given in mm.

The names of some collectors have been abbreviated as well: ADD – A. DELY-DRASKOVITS, AR – A. RIEDEL, AV – A. VOJNITS, BP – B. PISARSKI, CD – C. DZIADOSZ, EI – Expedition of IZ, EK – E. KIERYCH, HG – H. GARBARCZYK, HS – H. SZELEGIEWICZ, HSt – H. STEINMANN, JP – J. PRÓSZYNSKI, MM – M. MROCZKOWSKI, OD – O. DELY, PP – J. PAPP, SH – S. HORVATOVICH, SM – S. MAHUNKA.

* Zoological Collectings by the Hungarian Natural History Museum in Korea, No. 136.

A typical pattern of leg armature in *Clubiona* is as follows: F I–II d.1.1.2, III–IV d.1.1.3, Pt III–IV rl.1, Ti I–II v.2.2, III d.2.2, v.1.1, IV d.2.2, v.1.1.1, Mt I–II v.2, III d.2.1.2, lat.1.2, v.2.2, IV 2.1.2, lat.2.2, v.2.1.2. Only deviations are given in the descriptions.

TAXONOMIC PART

Subgenus *Bucliona* BENOIT, 1977 (= *Bicluona* MIKHAILOV, 1994)

Clubiona (Bucliona) jucunda (KARSCH, 1879)

Material. 1 ♀ (IZ), S Pyongan Prov., Songmun-ri, distr. Samsok, xerothermic locality, grass, litter, 22.05.1965, MM. – 1 ♀ (HNHM), S Pyongan Prov., Mt. Daesong-san, 12 km NE from Pyongyang, deciduous-coniferous forest, 8.08.1971, PP & SH. – 1 ♂ (IZ), N Pyongan Prov., Myohyang-san, near a stream, 5.08.1959, BP & JP. – 3 ♀ ♀ (IZ), N Hamgyong Prov., Ompho near Chonjin, 14–20.08.1959, BP & JP. – 1 ♀ (IZ), N Hamgyong Prov., Kyongsong County, Sangonpo-ri, 17.06.1990, EI.

Distribution. Russia – S Far East (continental), Kunashir I.; Japan; North & South Korea; Northeast & Central China.

Subgenus *Clubiona* s. str.

The *trivialis*-group

Clubiona rostrata PAIK, 1985

Material. 1 ♀ (IZ), S Pyongan Prov., Thesong, distr. Kangso, grass & shrubs, 26.05.1965, MM & AR. – 1 ♀ (IZ), N Hamgyong Prov., Ompho near Chonjin, 14–20.08.1959, BP & JP. – 1 ♀ (IZ), N Hamgyong Prov., Orang County, Changyong Lake, 17.06.1990, EI.

Distribution. Russia – S Far East (both continental and island); Japan; North & South Korea; China: Zhejiang.

The *lutescens*-group

Clubiona prozyskii MIKHAILOV, 1995

Material. 1 ♂ (holotype, IZ), Pyongyang City, near Tomb of King Tongmen, 27.06.1990, EI.

Distribution. Type locality only.

The *japonicola*-group

Clubiona japonicola BOSENBERG et STRAND, 1906

Material. 2 ♂ ♂ 1 ♀ (IZ), Pyongyang, shallow pond, grass, 15.09.1959, BP. – 1 ♀ (IZ), S-Hwanghae Prov., 20 km W of Haeju, rice field, 9.08.1987, HG. – 1 ♀ (HNHM), N Hwanghae Prov., Lake Taesong-ho, ca. 35 km SW of Pyongyang, coniferous-*Robinia* forest, 4.07.1977, OD & ADD.

Distribution. Russia – S Far East (continental); Japan; North & South Korea; China; Taiwan; Philipines.

The *obesa*-group
Clubiona paralena MIKHAILOV, 1995

Material. 1 ♂ (holotype, IZ), N Pyongan Prov., Myohyang-san, near Kumgang Cave, 10.06.1990, EI.

Distribution. Type locality only.

Clubiona kurilensis BOSENBERG et STRAND, 1906

Material. 1 ♀ (HNHM), Pyongyang, Nung-rado island in the river Te-dong, 27.05.1970, SM&HSt. – 1 ♂ 3 ♀ ♀ (HNHM), Sa Gam, ca. 30–40 km N of Pyongyang, river bank, grass and *Salix* vegetation, 5.07.1977, OD&ADD.

Distribution. Russia – S Far East (both continental and island); Japan; North & South Korea; China.

Clubiona wolchongsensis PAIK, 1990

Material. 1 ♀ (HNHM), Daesong-san, 10 km NE of Pyongyang, disturbed *Pinus densifolia* – *Acer* sp. forest, sparse undergrowth, small ponds, 1.07.1977, OD&ADD. – 1 ♀ (IZ), N Pyongan Prov., Hyangsan, Myohyang-san, river bank, 18.08.1987, HG. – 4 ♀ ♀ (IZ), Myohyang-san, valley of Hyangsan River, 22.08.1987, EK. – 1 ♀ (IZ), Myohyang-san, near Kumgang Cave, 10.06.1990, EI. – 1 ♀ (IZ), Myohyang-san, near Myohyangsan Hotel, 11.06.1990, EI. – 1 ♀ (IZ), N Hamgyong Prov., Ompho near Chonjin, 14–20.08.1959, BP&JP.

Distribution. Russia – S Far East (continental); North & South Korea; China: Liaonin.

The *sapporensis*-subgroup
Clubiona sapporensis HAYASHI, 1986

Material. 3 ♂ ♂ (IZ), S Hamgyong Prov., Hynnam, sandy place with grass, 11.06.1965, MM & AR.

Distribution. Russia – S Far East (both continental and island), Japan: Hokkaido; North Korea.

Clubiona microsapporensis MIKHAILOV, 1990

Material. 1 ♀ (IZ), N Hamgyong Prov., Kyongsang, 11.09.1966, CD&HS.

Distribution. Russia – S Far East (continental); North Korea.

The *bakurovi*-subgroup
Clubiona bakurovi MIKHAILOV, 1990

Material. 1 ♀ (IZ), N Hamgyong Prov., Ompho near Chonjin, 14–20.08.1959, BP&JP.
Distribution. Russia – S Far East (both continental and island); North Korea.

The *irinae*-subgroup
Clubiona irinae MIKHAILOV, 1991

Material. 1 ♀ (IZ), N Hamgyong Prov., Chonjin Town, Kyowon-ri, 16.06.1990, EI.
Distribution. Russia – S Far East (both continental and island); North Korea; China: Jilin, Heilongjiang.

The *pallidula*-group
Clubiona mandschurica SCHENKEL, 1953
 (Figs 1–2)

C. mandschurica SCHENKEL, 1953: 61–63, Fig. 29a-e (♂).
C. mandschurica – HU 1984: 294–295, Fig. 310 (1–4) (♂, ?♀).
C. mandschurica – PAIK 1990: 105–107, Figs 101–112 (♂, ?♀).
C. mandschurica – ONO 1994: 39–40, Figs 3–4 (♂).

Material. 1 ♂ (IZ), Kangwon Prov., Kungang-san, Okryu Valley, 22.06.1990, EI. – 1 ♂ 1 ♀ (HNHM), Kangwon Prov., Kungang-san, 3–4 km S from Hotel Kungang, shrubs & grass, OD & ADD. – 1 ♂ (IZ), Kaesong City, canyon of Pagon Falls, 30.06.1990, EI.

Diagnosis. The ♂ differs by a combination of the following features: the embolus somewhat attenuating, length of embolus comparable with width of bulb, very long seminal duct, and conspicuous (not *propinqua*-like) shape of tibial apophysis. The ♀ differs by the lower (horizontal) level of Spt2 in relation to Spt1 and atrium as well as by the sub-rounded shape of Spt2.

Description. Female. Total length 8.40. Carapace length 3.25, width 2.50, fulvous. Chelicerae length 1.40, chestnut-coloured. Legs straw-coloured. Leg armature: F II d.1.2.2, III d.1.3.3, Ti III d.2.2, v.2.2, IV d.2.2, v.2.2.1. Leg measurements:

	I	II	III	IV
F	2.38	2.38	2.13	2.85
Pt	1.28	1.28	1.03	1.23
Ti	2.00	2.05	1.45	2.28
Mt	1.40	1.45	1.63	2.93
T	0.88	0.88	0.70	0.83

Abdomen length 5.00, width 3.10, greyish brown. Epigyne as in Fig. 1.

Remarks. The figures of the ♀ of *C. mandshurica* presented in the papers by HU (1984) and PAIK (1990) obviously belong to different species, the former rather to *C. odesanensis* PAIK, 1990, the latter to *C. sapaikensis* PAIK, 1990.

Females of five very close Oriental species of the *pallidula*-group can be separated by the following key:

- | | | |
|----|--|---------------------------------------|
| 1. | Copulatory openings at the (vertical) level of atria | 2 |
| – | Copulatory openings at the level of Spt1 | 3 |
| 2. | Copulatory openings wide, their width equal to the width of copulatory tubes. Genital plate does not hang over genital fissure | <i>C. orientalis</i> MIKHAILOV, 1995 |
| – | Copulatory openings narrow, ca. twice narrower than the width of copulatory tubes. Genital plate hanging somewhat over genital fissure | <i>C. komissarovi</i> MIKHAILOV, 1992 |
| 3. | Spt1, Spt2, and atria at the same (horizontal) level. Spt2 ovoid | <i>C. sapaikensis</i> PAIK, 1990 |
| – | Spermathecae and atria at different levels. Spt1 + Spt2 lower than atria. Spt2 ovoid or sub-rounded | 4 |
| 4. | Spt1 and Spt2 at the same level. Spt2 ovoid | <i>C. odesanensis</i> PAIK, 1990 |
| – | Spt2 lower than Spt1 | <i>C. mandshurica</i> SCHENKEL, 1953 |

Judging only by the drawings of the male genitalia of *C. zacharovi* MIKHAILOV, 1991 (MIKHAILOV 1991: Figs 52–53) and *C. mandshurica* (MIKHAILOV 1995: Figs 17–19), the two species appear to be closely related. But actually *C. zacharovi* has larger body size, differing also in the length of the embolus being larger than the bulb width, by the tibial apophysis being more flat with a top of the ventral branch of more complicated shape and attenuating.

Distribution. Japan: Honshu; North & South Korea; China: Jilin.

Clubiona venusta PAIK, 1985

Material. 1 ♀ (IZ), Kaesong City, Haesong, near Tomb of King Kongmin, 14.08.1987, EK.

Distribution. North & South Korea.

Clubiona orientalis MIKHAILOV, 1995.

Material. 1 ♀ (holotype, IZ), Kumgang Mts, Okryn Valley, 26.08.1987, EK. – Paratype: 1 ♀ (IZ), N Hamgyong Prov., Kyongsang County, Sang-onpo-ri, 17.06.1990, EI.

Distribution. Type localities only.

Clubiona sopaikensis PAIK, 1990

Material. 1 ♀ (IZ), S Hamgyong Prov., Hyingpong-ri, distr. Hamju, ca. 15 km W of Hamgyong, young pine afforestation, 12.06.1965, MM & AR.

Distribution. Russia – S Far East (both continental and island); North & South Korea.

Clubiona odesanensis PAIK, 1990

Material. 1 ♂ (HNHM), Pyongyang, Nung-ra do (island in the river Te-dong), park, grass, 14.08.1971, PP&SH. – 2 ♀ ♀ (IZ), Kaesong, near hotel, 28.06.1990, EI. – 1 ♀ (IZ), Kaesong City, canyon at Pagon Falls, 30.06.1990, EI. – 1 ♂ 1 ♀ (IZ), N Pyongan Prov., Myohyang-san, 6.08.1959, BP&JP. – 1 ♂ (IZ), Myohyang-san, near Kumgang Cave, 10.06.1990, EI. – 2 ♂ ♂ (IZ), Myohyang-san, near Myohyangsan Hotel, 11.06.1990, EI. – 1 ♂ (IZ), N Hamgyong Prov., Kyongsong County, Sangonpo-ri, 17.06.1990, EI. – 1 ♂ 1 ♀ (IZ), N Hamgyong Prov., Ompho near Chonjin, 14–20.08.1959, BP&JP.

Distribution. Russia – S Far East (continental); North & South Korea.

Clubiona komissarovi MIKHAILOV, 1992

Material. 1 ♀ (IZ), N Hamgyong Prov., Chonjin, Chonma Mt., 2.09.1987, EK.

Distribution. Russia – S Far East (island); North Korea.

Clubiona hwanghakensis PAIK, 1990

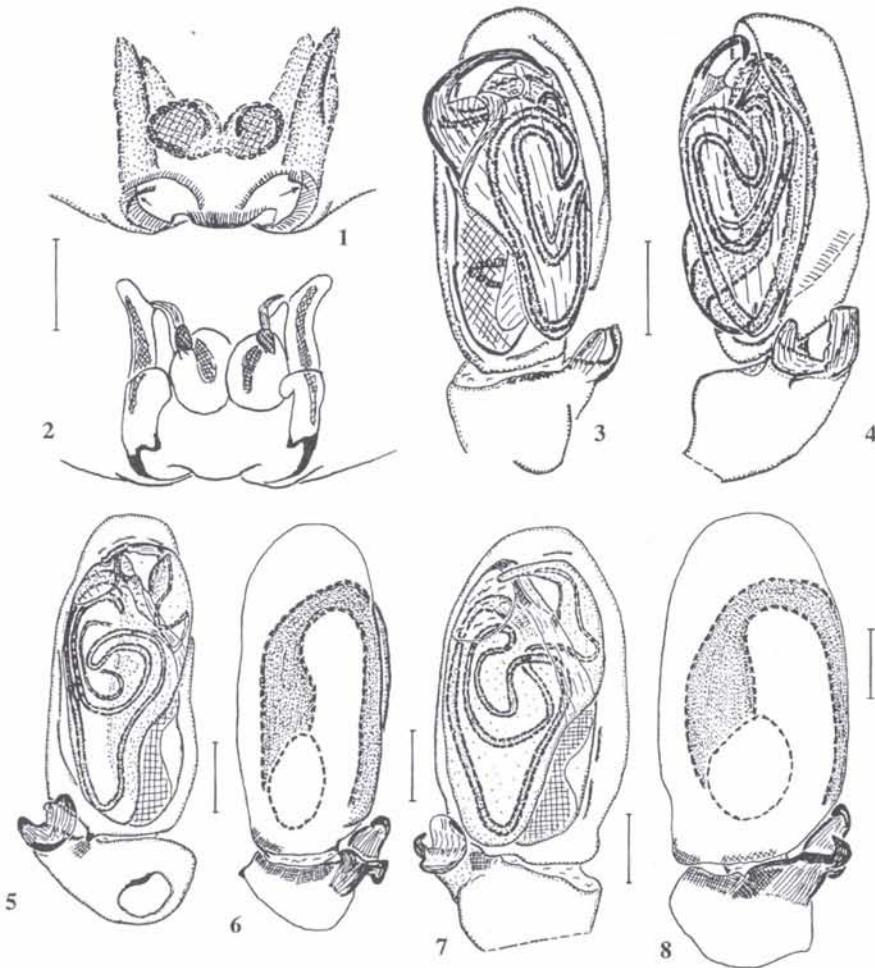
(Figs 3–4)

Material. 1 ♂ (HNHM), Mt. Daesong-san, 10 km NE of Pyongyang, disturbed *Pinus densifolia* – *Acer* sp. forest, sparse undergrowth, small ponds, 1.07.1977, OD&ADD.

Diagnosis. The male is close to both *obesa*- and *pallidula*-groups differing by the characteristic shape of the tibial apophysis and medium length of thin embolus being equal to the bulb width.

Description. Male. Total length 3.75. Carapace length 1.85, width 1.25, fulvous. Chelicerae length 0.85, chestnut-coloured. Legs straw-coloured. Leg armature: F I–II d.1.1.3, Ti III d.2.2. v.1.1(1), IV d.2.2, v.1.1. Leg measurements:

	I	II	III	IV
F	1.33	1.30	1.08	1.75
Pt	0.63	0.63	0.58	0.70
Ti	1.30	1.30	0.88	1.38
Mt	0.93	0.88	0.95	1.85
T	0.50	0.53	0.35	0.48



Figs 1-8. Figs 1-2. *Clubiona mandshurica* SCHENKEL, 1953, ♀, 1 = epigyne, 2 = vulva. – Figs 3-4. *C. hwanghakensis* PAIK, 1990, left palp of ♂, 3 = ventrally, 4 = ventrolaterally. – Figs 5-6. *C. propinqua* L. KOCH, 1879, Egvekinot, Chukotka Peninsula, Russia, right palp of ♂, 5 = ventrally, 6 = dorsally. – Figs 7-8. *C. mayumiae* ONO, 1993, Petropavlovsk, Kamchatka Peninsula, Russia, right palp of ♂, 7 = ventrally, 8 = dorsally. Scale bar 0.14 (1-4, 7-8) and 0.25 (5-6) mm

Palp as in Figs 1–2. Length of femur, patella, tibia, and cymbium are 0.53, 0.25, 0.18, and 0.60, respectively.

Abdomen length 2.00, width 1.25, grey chocolate.

Remarks. *C. hwanghakensis* male and *C. wolchongsensis* female are found in the same locality, but I see no reasons to synonymize them due to enormous differences in size: ca. 2 times instead of 0.3–0.5 times traditional in the genus.

Distribution. North & South Korea.

The *propinqua*-subgroup
Clubiona propinqua L. KOCH, 1879
(Figs 5–6)

Material. 2 ♀ ♀ (IZ), N Pyongan Prov., Myohyang-san, bank of a stream, 5.08.1959, BP&JP. – 1 ♀ (IZ), N Hamgyong Prov., Musan-rjong, ca. 60 km N of Chonjin, leaved forest, litter, 2.06.1965, MM&AR.

Remarks. Very similar males of *C. propinqua* (Figs 5–6) and *C. mayumiae* ONO, 1993 (Figs 7–8) can be separated by the following features: 1) total length of *C. propinqua* male is ca. 8.00 mm, whereas the same for *C. mayumiae* male is ca. 4.50 mm, 2) the cymbium of *C. propinqua* is longer and thinner, 3) the embolus of *C. mayumiae* is more smooth and rounded, 4) the shape of the tibial apophysis is different, especially in a dorsal view.

Distribution. Russia – Siberia E of Yenisey, Far East; North Korea.

Clubiona pseudogermanica SCHENKEL, 1936

C. pseudogermanica SCHENKEL, 1936: 55–56, Fig. 53a, b (♂).

C. hummeli SCHENKEL, 1936: 159–162, Fig. 55c-d (♀, non ♂).

C. salictum NAMKUNG & KIM, 1987: 24–26, Figs 1–11 (♂ ♀).

C. hummeli – PAIK 1990: 107–108, Figs 113–120 (♀).

C. propinqua (♀, non ♂!) – CHEN & ZHANG 1991: 246–247, Fig. 257: 1–2 (♀).

non *C. pseudogermanica* – MIKHAILOV 1991: 219–220, Figs 39–43 (♂ ♀; both sexes are *C. mayumiae* ONO, 1993).

Material. 1 ♂ (IZ), Kaesong, near Zoological Garden, 29.06.1990, EI. – 1 ♀ (IZ), Pyongyang, Mt. Moran, under stones & in litter, near foots of rocks, 19.05.1965, MM & AR. – 1 ♀ (IZ), N Hwanghae Prov., Sinchkhon, grass and under stones, near foots of rocks, 25.05.1965, MM & AR. – 1 ♀ (IZ), Pyongyang, Marangbong Park, 23.08.1966, CD & HS.

Distribution. Russia – S Far East (continental); Japan: Honshu; North & South Korea; China.

The *reclusa*-group
Clubiona kulczynskii LESSERT, 190?

Material. 1 ♂ (HNHM), Ryanggang Prov., Chann-Pay Plateau, 24 km NW from Samjiyon along the road to Mt. Paekdu-san, 2000 m., *Larix-Betula* forest, 24.07.1975, PP&AV.

Distribution. Boreomontane. Central Europe (sporadic), North Europe; Russia – N-European part, Urals, all Siberia, N- (and mountainous) Far East; Japan: Hokkaido; North Korea; N-America from Alaska to Colorado and N-Carolina, USA.

* * *

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Catalogue of Palaeartic Diptera

edited by Á. SOÓS and L. PAPP

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Contents: Explication to distribution. Type-species designations in Volume 13. New name proposed in Volume 13. Families: Anthomyiidae (Á. DELY-DRASKOVITS). Rhinophoridae (B. HERTING). Tachinidae (B. HERTING and Á. DELY-DRASKOVITS). Bibliography. Index.

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