

Redescriptions of the Japanese Salticid Spiders,
Harmochirus kochiensis and *Marpissa ibarakiensis*
(Araneae: Salticidae)

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池田博明¹⁾: ナカヒラハエトリとキタヤハズハエトリ
(クモ目: ハエトリグモ科) の再記載

Abstract Two salticid spiders of Japan, *Harmochirus kochiensis* and *Marpissa ibarakiensis*, described by BOHDANOWICZ and PRÓSZYŃSKI (1987) are revised and re-described on the basis of many specimens newly obtained. The male of *H. kochiensis* is described for the first time. *Harmochirus kochiensis* closely resembles *H. pullus* (BÖSENBERG et STRAND, 1906), and *Marpissa ibarakiensis* closely resembles *M. dersuuzalai* LOGUNOV et WESOŁOWSKA, 1992, but both can be distinguished from the others by the structure of the copulatory organ, respectively.

BOHDANOWICZ and PRÓSZYŃSKI (1987) described six new species of salticid spiders collected from Japan. However, four of them, *Harmochirus kochiensis*, *Pseudicius tokaraensis*, *Marpissa ibarakiensis* and *Yaginumaella hyogoensis*, were based only on female specimens, and the males were unknown up to the present. I examined many specimens from Japan, and recognized the males of the species of *H. kochiensis* and *M. ibarakiensis*. The two species will be described in the present paper on the basis of the materials newly obtained.

Harmochirus kochiensis closely resembles *H. pullus* BÖSENBERG et STRAND, 1906, therefore, it is supposed that the specimens of the former species have been misidentified with *H. pullus* even after the description of BOHDANOWICZ and PRÓSZYŃSKI (1987). *Marpissa ibarakiensis* was known in Japan before its original description (CHIKUNI & YAGINUMA, 1976, as "species 4"; SHINKAI & TAKANO, 1984, as *Marpissa* sp.). However, it was not ascertained that they were conspecific (BOHDANOWICZ & PRÓSZYŃSKI 1987; CHIKUNI, 1989 a, b). As LOGUNOV and WESOŁOWSKA (1992) recently pointed out, all the records of the above authors were based on the same species.

In the present study, specimens were examined in 75% alcohol. The female genitalia were removed, macerated in 10% KOH for 24 hours at room temperature and mounted in Diatex.

The specimens used in this paper are partly deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

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Accepted November 25, 1993

The following abbreviations are used: ALE, anterior lateral eye; AME, anterior median eye; PLE, posterior lateral eye; PME, posterior median eye. The distances between eyes are presented with a dash, e.g., ALE–ALE indicates distance between ALEs.

Genus *Harmochirus* SIMON, 1885

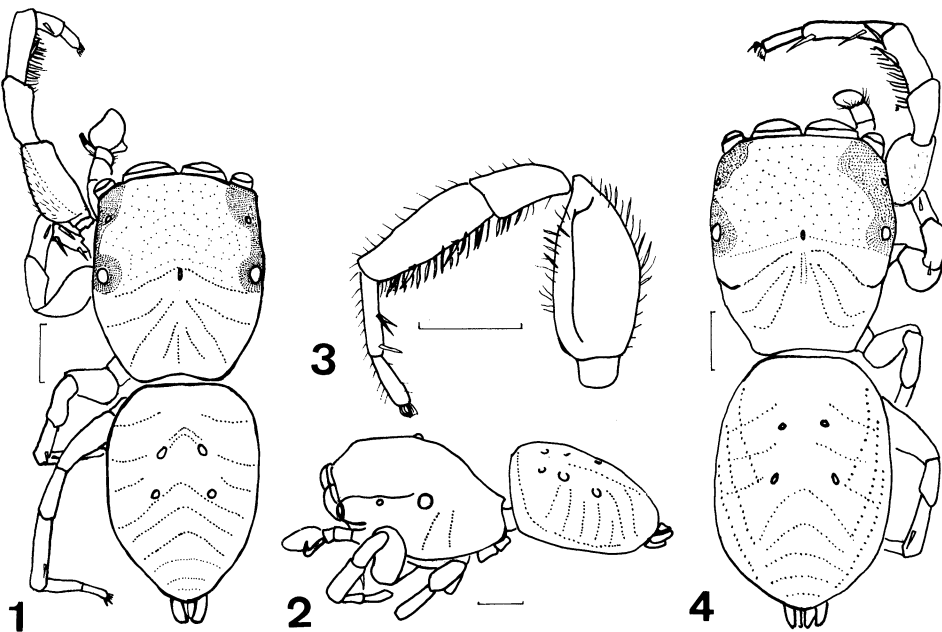
Harmochirus kochiensis BOHDANOWICZ et PRÓSZYŃSKI, 1987

(Figs. 1–7, 11–12)

Harmochirus kochiensis BOHDANOWICZ et PRÓSZYŃSKI, 1987: 60–61, figs. 45–48.

Specimens examined. 1♂, Hikosan, Fukuoka Pref., Japan, 4~9–VIII–1958, C. OKUMA leg. (NSMT–Ar 3082); 5♀, same locality, 27~31–V–1959, C. OKUMA leg. (2♀: NSMT–Ar 3083); 1♀, same locality, 13~16–III–1960, C. OKUMA leg. (NSMT–Ar 3084); 1♂, Lake Tazawa, Akita Pref., Japan, 19–VIII–1990, A. TANIKAWA leg. (NSMT–Ar 3085); 1♂, Ogisu, Suzuka-shi, Mie Pref., 5–V–1980, A. UEMURA leg. (NSMT–Ar 3086). 1♂, Shiraitono-taki, Kosuge-shi, Yamanashi Pref., 23–IV–1982, K. KUMADA leg. (NSMT–Ar 3087).

Comparative materials. *Harmochirus pullus* (BÖSENBERG et STRAND, 1906): 1♂, Nanakuma, Fukuoka Pref., Japan, 13–VI–1954, C. OKUMA leg.; 1♀, 4~9–VIII–1958, C. OKUMA leg. 2♂ 1♀, Hikosan, Fukuoka Pref., 27~31–V–1959, C. OKUMA



Figs. 1–4. *Harmochirus kochiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987.—1, Male, dorsal view; 2, same, lateral view; 3, 1st leg of male, retrolateral view; 4, female, dorsal view. (Scales: 0.5 mm.)

leg. (NSMT-Ar 3088); 2♂, Izunuma, Tome-gun, Miyagi Pref., 6-VII-1986, A. TANIKAWA leg. (NSMT-Ar 3089); 1♂, Sirakawano-seki-ato, Fukushima Pref., 24-VI-1990, A. TANIKAWA leg. (NSMT-Ar 3090).

Description. Measurement (in mm) [mean, ♂ N=4, ♀ N=6]. Body length ♂ 3.03–3.46 [3.33], ♀ 3.84–4.87 [4.18]; prosoma length ♂ 1.49–1.70 [1.64], ♀ 1.60–1.89 [1.72], width ♂ 1.32–1.44 [1.42], ♀ 1.38–1.60 [1.53], height ♂ 0.85–1.02 [0.94], ♀ 0.84–1.02 [0.94]; opisthosoma length ♂ 1.60–1.83 [1.75], ♀ 2.11–2.62 [2.36], width ♂ 1.24–1.59 [1.39], ♀ 1.57–1.92 [1.75].

Eye fields: ALE–ALE ♂ 1.12–1.27 [1.22], ♀ 1.22–1.33 [1.28], PLE–PLE ♂ 1.30–1.48 [1.40], ♀ 1.36–1.54 [1.48], ALE–PLE ♂ 0.90–0.96 [0.93], ♀ 0.85–1.02 [0.95], ALE–PME ♂ 0.40–0.50 [0.45], ♀ 0.40–0.50 [0.48], AME diameter ♂ 0.38–0.42 [0.40], ♀ 0.36–0.46 [0.42]; ratio ALE/AME ♂ 0.52–0.58 [0.55], ♀ 0.48–0.54 [0.52], ALE/PLE ♂ 1.08–1.40 [1.23], ♀ 1.00–1.22 [1.14], PME/PLE ♂ 0.21–0.30 [0.25], ♀ 0.24–0.26 [0.25].

Legs. Length of legs of 1♂ (NSMT-Ar 3082; prosoma width 1.49 mm) and 1♀ (NSMT-Ar 3084; prosoma width 1.60 mm) as shown in Table 1. Spiniformation of legs of the same specimens as shown in Table 2.

Male palp (Figs. 5–7). Typical for the genus, but tibial apophysis long and strongly curved as hook.

Female genitalia (Figs. 11–12). The margin of epigynal opening and the central depression round. Seminal ducts short.

Coloration and markings (Figs. 1–4). Male: Prosoma brown to dark brown, surroundings of eyes black, adherent white hairs on lateral surface, especially on

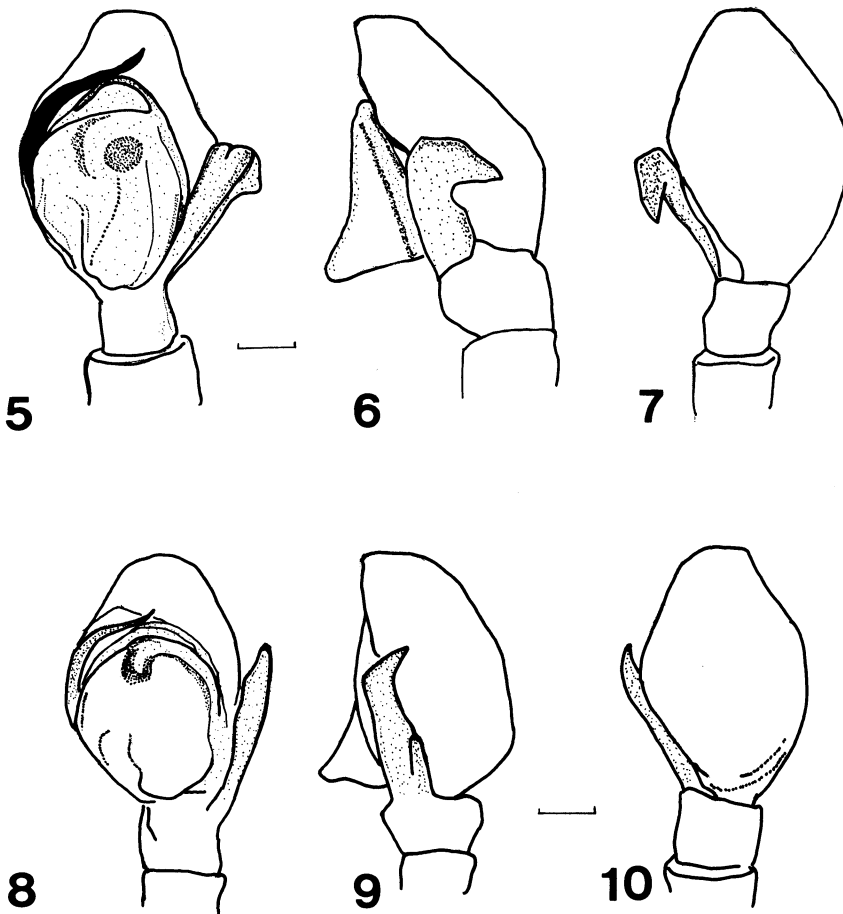
Table 1. Measurement of leg segments of *Harmochirus kochiensis* (in mm; ♂/♀).

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	1.28/1.34	0.80/0.56	1.01/0.72	0.64/0.54	0.50/0.40	4.23/3.56
II	0.85/0.82	0.50/0.56	0.61/0.58	0.48/0.45	0.40/0.36	2.84/2.77
III	1.07/0.96	0.53/0.48	0.51/0.51	0.56/0.56	0.38/0.40	3.05/2.91
IV	1.07/1.12	0.50/0.48	0.64/0.72	0.72/0.72	0.40/0.40	3.33/3.44

Table 2. Spiniformation of legs of *Harmochirus kochiensis* (dorsal/ventral; none=no spine, r=retrolateral, p=prolateral).

Leg	Femur	Tibia	Metatarsus
I ♂	none/none	none/1r-2-1p	none/0-2-2
I ♀	none/none	none/1r-2-1p	none/0-2-2
II ♂	0-1p-2p/none	0-1p-0/0-1r-1r	none/2-0-2
II ♀	0-0-1p/none	0-1p-0/0-1r-1r	0-0-2/2-0-2
III ♂	0-0-2p/none	0-2-0/0-2-1p	2-0-2/2-0-2
III ♀	0-0-2p/none	0-2-0/0-0-1p	0-1r-2/2-0-2
IV ♂	0-0-1p/none	0-1r-0/0-1p-0	0-0-2/0-0-2
IV ♀	none/none	0-1r-0/none	0-0-2/0-0-2

[No spine on patellae.]

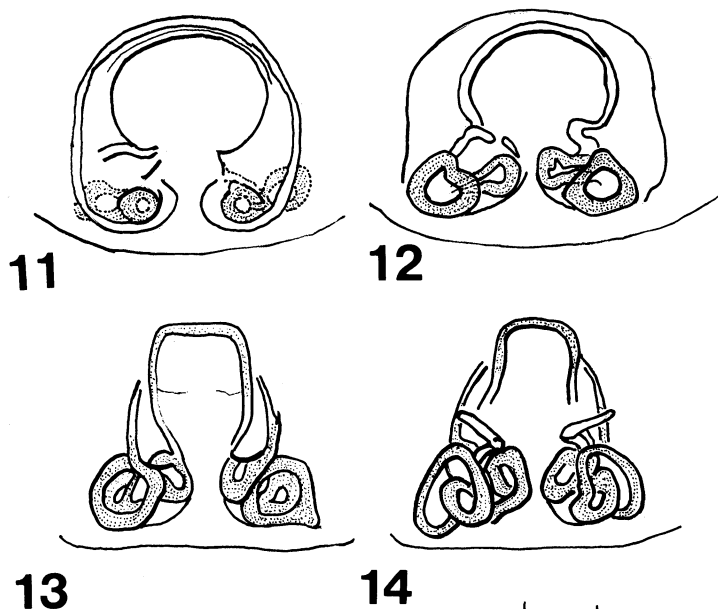


Figs. 5–10. 5–7, *Harmochirus kochiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987; 8–10, *Harmochirus pullus* (BÖSENBERG et STRAND, 1906).—5, 8, Male palps, ventral view; 6, 9, same, retrolateral view; 7, 10, same, dorsal view. (Scales: 0.1 mm.)

brown clypeus and behind the posterior eyes. Sternum pale brown, chelicerae brown, labium and maxillae brown with light brown margins. Legs I femora, patellae, and tibiae brown, coxae, metatarsi and tarsi light brown; rows of scale-like black setae present on ventral and dorsal surfaces of femora and on ventral surfaces of patellae and tibiae (Fig. 3). Remaining legs yellowish brown. Opisthosoma uniformly greyish brown to greyish fawn with gleaming scutum and brown setae.

Female: Same as in male with the exception of tibiae of palp with white hairs and of scale-like black setae lacking on femora and sparse on ventral surfaces of patellae and tibiae.

Remarks. *Harmochirus kochiensis* resembles *H. pullus*, but can be distinguished from the latter by the characteristics given in Table 3. The shape of tibial apophysis



Figs. 11–14. 11–12, *Harmochirus kochiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987; 13–14, *Harmochirus pullus* (BÖSENBERG et STRAND, 1906).—11, 13, Female genitalia, ventral view; 12, 14, same, dorsal view. (Scale: 0.1 mm.)

Table 3. Comparison between *H. kochiensis* and *H. pullus* based on the specimens from Hikosan.

Species	<i>H. kochiensis</i>	<i>H. pullus</i>
the shape of male tibial apophysis	short, wide and curved right-angled (Fig. 6)	long, narrow and gently curved (Fig. 9)
the shape of central depression of epigynum	round, wider than long	rectangular, longer than wide
colour of opisthosoma	pale brown	black
number of tibial spines of 1st leg	4	5
black tibial setae of female 1st leg	sparse	dense

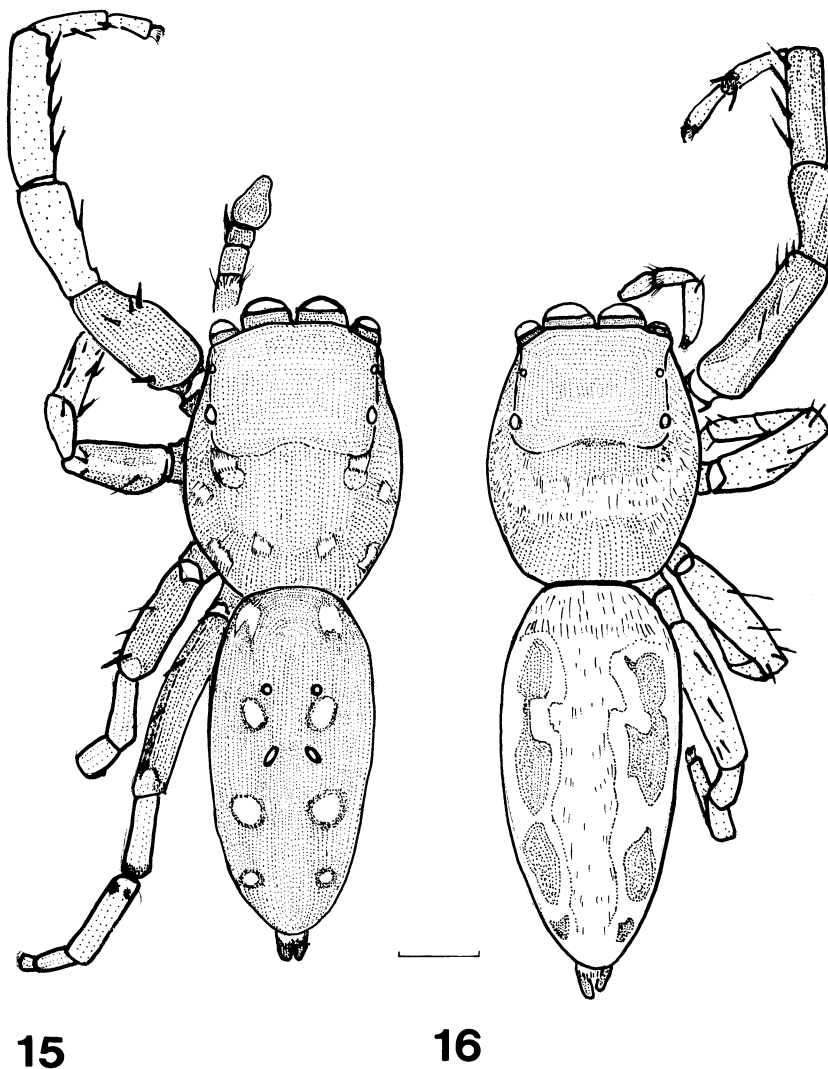
of *H. pullus* is narrower (Figs. 8–10) than that of *H. kochiensis*. The central depression of epigynum of *H. kochiensis* is wider and the seminal duct is simpler than that of *H. pullus* (Figs. 11–12 and 13–14). Though the number of ventral spines of the tibia of 1st leg is five in the holotype, that is variable in the present specimens (1r–2–1p in the specimens from Hikosan, Ogisu and Shiraitono-taki; 1r–2–2 in 1♂ from Lake Tazawa). BOHDANOWICZ and PRÓSZYŃSKI (1987) pointed out that the five spines of 1st tibia was the remark of *H. kochiensis*. However, that character is variable and cannot be used for identification, because the number of the spines in *H. pullus* is variable from three to five.

Genus *Marpissa* C. L. KOCH, 1846*Marpissa ibarakiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987

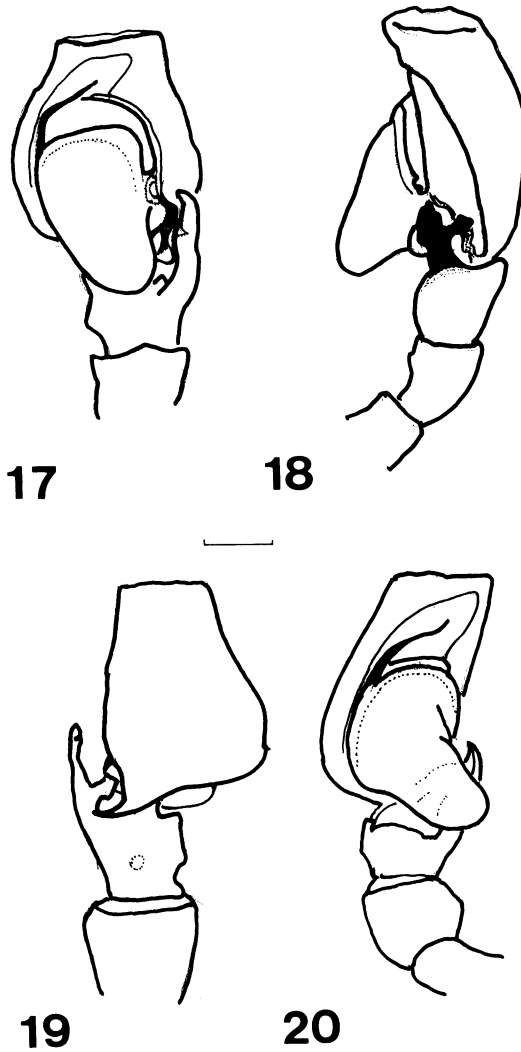
(Figs. 15-22)

Marpissa sp.: CHIKUNI & YAGINUMA, 1976: 35, pl. 1, —SHINKAI & TAKANO, 1984: 151. —
TANIKAWA & TAZOE, 1988: 215. —CHIKUNI, 1989a: 156, 284, fig. 45; 1989b: 149, figs. 16D,
17D.

Marpissa ibarakiensis BOHDANOWICZ et PRÓSZYŃSKI, 1987: 81-82, figs. 106-111.

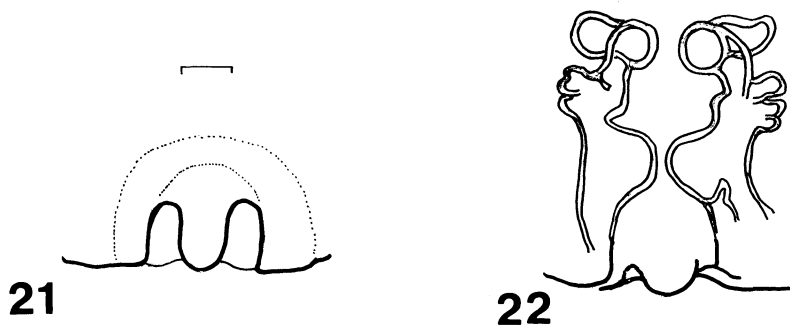


Figs. 15-16. *Marpissa ibarakiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987. —15, Male, dorsal view; 16, female, dorsal view. (Scale: 1 mm.)



Figs. 17–20. *Marpissa ibarakiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987.—17, Male palp, ventral view; 18, same, retrolateral view; 19, same, dorsal view, 20, same, prolateral view. (Scale: 0.2 mm.)

Specimens examined. 1♂ 1♀, Lake Izunuma, Tome-gun, Miyagi Pref. Japan, 20–VII–1986, A. TANIKAWA leg.; 3♀ 3 subadult ♀, same locality, 7–VII–1985, A. TANIKAWA leg.; 1♂, same locality, 1–IX–1985, A. TANIKAWA leg.; 4♀, same locality, 15–VI–1986, A. TANIKAWA leg.; 2♀, same locality, 6–VII–1986, A. TANIKAWA leg.; 1♀, same locality, 10–VIII–1986, A. TANIKAWA leg.; 1♂, same locality, 19–VIII–1986, A. TANIKAWA leg.; 3♀, same locality, 10–X–1986, A. TANIKAWA leg.; 1♀, same locality, 19–VII–1987, A. TANIKAWA leg.; 1♀, Lake Uchinuma, Tome-gun,



Figs. 21–22. *Marpissa ibarakiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987.—21, Epigynum; 22, female genitalia, dorsal view. (Scale: 0.2 mm.)

Table 4. Measurement of leg segments of *Marpissa ibarakiensis* (in mm; ♂/♀).

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	2.36/2.02	1.59/1.10	2.25/1.84	1.66/1.31	0.69/0.64	8.55/6.91
II	1.69/1.54	0.92/0.90	1.28/1.15	1.15/0.97	0.64/0.54	5.68/5.10
III	1.82/1.74	0.87/0.85	1.02/0.95	1.23/0.83	0.64/0.64	5.58/5.01
IV	2.05/2.05	1.02/1.00	1.54/1.54	1.41/1.31	0.67/0.64	6.69/6.54

Table 5. Spiniformation of legs of *Marpissa ibarakiensis* (dorsal/ventral; none=no spine, r=retrolateral, p=prolateral).

Leg	Femur	Patella	Tibia	Metatarsus
I ♂	0-1-3p-0/none	0-1p-0/none	0-1p-0-0-0/0-2-2-2	none/0-2-2
I ♀	0-1-3p-0/none	none	0-1p-0-0-0/0-2-2-2	none/0-2-2
II ♂	0-1-3p-0/none	none	0-1p-1p-1p-0/0-0-1r-2-2	none/0-2-2
II ♀	1-1-2p-0/none	none	none/0-0-1r-2-2	none/0-2-2
III ♂	1-2p-4-0/none	none	1r-1r-1r-0/1p-0-1p-2	0-2-0-2/0-0-0-4
III ♀	1-1-3-0/none	none	none/0-0-0-1p	none/0-0-0-4
IV ♂	1-1-1-1r-0/none	none	0-1r-0-0/1p-0-1p-2	none/0-0-0-2
IV ♀	1-1-1-1r-0/none	none	none/1p-0-0-2	none/0-0-0-3

Miyagi Pref. 31-VIII-1985, A. TANIKAWA leg.; 1♂, Shirakawano-seki, Fukushima Pref., Japan, 24-VI-1990, A. TANIKAWA leg. (NSMT-Ar 3091-3102).

Description. Measurement (in mm) [mean, ♂ N=4, ♀ N=16]. Body length ♂ 6.86–7.59 [7.13], ♀ 7.68–11.24 [9.30]; prosoma length ♂ 2.88–3.36 [3.14], ♀ 2.88–3.84 [3.37], width ♂ 2.43–2.56 [2.50], ♀ 2.37–3.01 [2.70]; opisthosoma length ♂ 3.58–4.16 [3.86], ♀ 4.42–6.85 [5.44], width ♂ 1.92–2.05 [1.98], ♀ 2.11–3.58 [2.79].

Eye fields: ALE-ALE ♂ 1.21–1.28 [1.25], ♀ 1.15–1.43 [1.31], PLE-PLE ♂ 1.79–1.94 [1.89], ♀ 1.81–2.26 [2.03], ALE-PLE ♂ 1.28–1.32 [1.30], ♀ 1.21–1.49

[1.37], ALE/PME ♂ 0.64–0.67 [0.66], ♀ 0.49–0.74 [0.68], AME diameter ♂ 0.61–0.64 [0.63], ♀ 0.56–0.70 [0.62]; ratio ALE/AME ♂ 0.45–0.50 [0.48], ♀ 0.39–0.47 [0.51], ALE/PLE ♂ 1.13–1.27 [1.21], ♀ 1.07–1.31 [1.18], PME/PLE ♂ 0.31–0.33 [0.32], ♀ 0.29–0.36 [0.30].

Legs. Length of legs of 1♂ (NSMT–Ar 3091; prosoma width 2.51 mm) and 1♀ (NSMT–Ar 3099; prosoma width 2.48 mm) from Izunuma as shown in Table 4. Spiniformation of legs of the same specimens as shown in Table 5.

Male palp (Figs. 17–20). The tibial apophysis unique in shape, with a dorsal projection.

Female genitalia (Figs. 21–22). Seminal ducts long, slightly coiled.

Coloration and markings. Male (Fig. 15): Prosoma black, with pairs of spots in front of PLEs, eight spots formed by white hairs behind eye field, and tuft of black setae below each PME. Clypeus black, very narrow. Sternum black, labium and maxillae dark brown with light margins. Chelicerae black. Opisthosomal dorsum black, shining in bright gold and with four pairs of white spots surrounded by mat black rings. Opisthosoma covered with black setae, black hairs and white scales. Venter of opisthosoma black and covered with white hairs. Spinnerets black. Legs I: coxae and femora dark brown, patellae, tibiae, metatarsi, and tarsi brown. Legs II–IV: coxae dorsally, femora laterally, distal ends of patellae IV prolaterally, proximal and distal ends of tibiae prolaterally dark brown, remaining parts of legs light brown.

Female (Fig. 16): Prosoma black, with white hairs behind eye field, tuft of black setae below each PME, dense white setae on clypeus and palpal segments. Sternum black, labium and maxillae black with light margins. Chelicerae black. Opisthosoma dorsally black, covered with white hairs, bright white scales, black setae and four pairs of black spots surrounded by golden shine scales; laterally brown with white hairs and black setae; ventrally black, covered with white hairs. Spinnerets black. Legs I: lateral surfaces of femora, patellae and tibiae dark brown, remaining parts of legs light brown.

Remarks. *Marpissa ibarakiensis* closely resembles *M. derusuuzarai* LOGUNOV et WESOŁOWSKA, 1992, and *M. pulchra* PRÓSZYŃSKI, 1976, but can be distinguished from these species by the shape of male tibial apophysis and the female genitalia. The genus *Hycitia* SIMON, 1876, was regarded as a synonym of *Marpissa* C. L. KOCH, 1846. According to my examination, however, *Hycitia* should stand as an independent genus, to which *M. ibarakiensis* and other related species of Japan belong. Further revision of the relationship between these two genera is required.

Acknowledgements

I wish to express my hearty thanks to Dr. Hirotsugu ONO, National Science Museum (Nat. Hist.), Tokyo, for his constant guidance and for critically reading the manuscript of this paper, and to Dr. Chiyoko OKUMA, Fukuoka, Mr. Akio TANIKAWA, Kanagawa, and Mr. Ken-ichi KUMADA, Kanagawa, for offering and loaning the specimens used in this paper.

摘 要

日本産のハエトリグモ科のクモのうち、生息状況がよくわからなかった2種、*Harmochirus kochiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987 (ナカヒラハエトリ) と *Marpissa ibarakiensis* BOHDANOWICZ et PRÓSZYŃSKI, 1987 (キタヤハズハエトリ) を多くの標本に基づいて分類学的に検討し、両性を記載した。ナカヒラハエトリはキレワハエトリ *Harmochirus pullus* (BÖSENBERG et STRAND, 1906) に類似し、キタヤハズハエトリはハバロフスク (ロシア) から記載された *M. dersuuzalai* LOGUNOV et WESOŁOWSKA, 1992 や、シナノヤハズハエトリ *M. pulchra* PRÓSZYŃSKI, 1976 に類似するが、雄の触肢の特徴的な脛節突起の形態や、雌の生殖器の形態により区別できる。

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