A Revision of Some Harvestmen from Taiwan, with Descriptions of Two New Species (Arachnida, Opiliones, Leiobunidae)

Seisho SUZUKI
Zoological Laboratory, Faculty of Science, Hiroshima University, Hiroshima

ABSTRACT

After examining Taiwan opilionid specimens preserved in the Senckenberg Museum some species are revised. Both Gagrella cyanea Roewer and Gagrella formosae Roewer are correctly members of the genus Pseudogagrella Redikorzev. In the tube labeled SMF 1154 were contained two species: Pseudogagrella cyanea (Roewer) and Metagagrella roeweri n. sp. described in this paper. Also, one further species of the new genus, Pseudomelanopa taiwanana, recently collected is presented.

While staying in Frankfurt/Main I examined numerous opilionid specimens from Taiwan (Formosa) preserved in the Senckenberg Museum (SMF). All of these specimens were already published by Roewer (1911, 1912, 1915, 1923, 1927, 1938, 1949, 1954a, b, 1955, 1957), but examination of them revealed numerous faults in His identification. In this short article some of these faults are presented. In this connection, one new material recently collected is also described.

Suborder Eupnoi
Family Leiobunidae

1. Pseudogagrella cyanea (Roewer, 1915)


Other literature is not required here.

Note: The tube labeled "SMF 1154 Gagrella cyanea Rwr. Type, 2♂, 2♀" was available for this study. In spite of such indication, all four specimens contained were males, of which three males were undoubtedly Gagrella cyanea but the rest (1♀) was not that species, which will be described as Metagagrella roeweri in the following pages. After examining three males referred to as to be Gagrella cyanea by Roewer, it became evident that they had no nodules on the femora of all legs. Accordingly, these specimens are preferably placed in the genus Pseudogagrella Redikorzev, 1936.

2. Pseudogagrella formosae (Roewer, 1915)


Note: The type-specimen labeled "SMF 1153, 4♂, 3♀" were examined. Here also, all the specimens had no nodules on the femora I–IV. Thus this species is likewise to be transferred to the genus *Pseudogaglaiia*. This species was taken from the same locality as that of the foregoing species and both species had many characters in common excepting a minor difference in coloration. It is highly probable that they are conspecific. Future studies and collections will reveal the valid specific relations.

3. *Metagaglaiia roeweri* n. sp.

(Figs. 1–8, 10–11)


Note: Of the specimens labeled SMF 1154 (4♂, not 2♂, 2♀) one male is not *Pseudogaglaiia cyanae* (Roewer) (revised in this paper) but this species.

Type-series: Holotype: male, Rokko, Taiwan (collector and date unknown). The holotype is deposited in the Senckenberg Museum, Frankfurt/Main (SMF 28997).

Measurements: ♀ – cephalothorax 1.8 mm long, 3.4 mm wide; abdomen 3.3 mm wide; total body length 4.7 mm.

Palpus: Trochanter 0.25 mm wide, 0.30 mm long; femur 0.25 W, 1.28 L;
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One male his species. unknown). Fain (SMF

patella 0.34 W, 0.73 L; tibia 0.23 W, 0.89 L; tarsus 0.21 W, 1.78 L; total length 4.98.

Length of femora: I 14.9, II 25.1, III 12.9, IV 17.5 mm. Total length of legs: I 73.8, II-, III 66.5, IV 90.1 mm.

Male. -

Dorsum (Fig. 10). Moderate sized animal with very elongated legs. Body approximately ellipsoidal in outline as seen from above, almost smooth dorsally, sides of cephalothorax strongly curved above the insertions of legs; abdomen widest at about the fourth segment, bluntly pointed behind. Eye tubercle separated by two times the diameter from the front margin of cephalothorax; slants posteriorly, from above wider than long, gently rounded above, shallowly canaliculate, the carinae completely unarmed, smooth, with sparse short hairs only. Second area of scutum with a short median spine, spine being erect and smooth (Fig. 11).

Venter. Coxae smooth except for a few small tubercles limited to the proximal portion; coxae I to IV with anterior rows of tubercles; coxae I, II, and IV with similar series posteriorly; tubercles as in Fig. 3. Genital operculum nearly smooth, with a row of tubercles along lateral margins. Free sternites smooth, only with a transverse series of very short hairs.

Chelicera. Completely normal, first segment unarmed above, smooth, second segment likewise unarmed, only hairy. Supra-cheliceral lamellae small, simple, tipped with a pointed tubercle (Fig. 1).

Palpus (Figs. 4–6). All segments longer than normal, unarmed, only hairy except for but few tubercles. Trochanter armed ventrally with a single small tubercle at distal margin; femur slightly swollen distally, from the side nearly straight, a single short spine at distal margin above; patella strongly curved below at base, widened distally, disto-medial angle slightly produced into a blunt rounded process, which clothed with numerous very short hairs (Figs. 5–6, 10); tibia elongated, lightly curved below, as long as four times the width; tarsus very slender and long, but a little curved below, armed ventro-medially with only three to four small pointed tubercles at base (Fig. 5); claw with seven to eight teeth at base below.

Coloration. Color above deep reddish brown to dark brown with metallic luster; cephalothorax margined with silvery-white on either side, there is a silvery-white median area in front of eye tubercle, on this area present two short pale brownish lines at center of the front margin. Eye tubercle reddish brown, silvery-white at front surface and along median furrow, eye rings black. Central figure of abdomen indistinctly developed, extending from the first to fifth segment, bordered segmentally with a faint transverse line; sides of abdomen lighter; free tergites dark brown with paired rounded silvery-white spots. Venter whitish; coxae dark brown proximally, front and rear margins likewise dark; fourth coxae with an enlarged silvery-white patch on the dark brown prolateral surface. Usually all coxae clothed with thick greyish white secretion. Genital operculum

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and sternites dirty white; borders of sternites margined with brown. Chelicera and palpus pale yellowish brown. Trochanters of all legs deep reddish brown to blackish with one or two whitish spots at distal margin above; femora same color as trochanters, somewhat paler distally; patellae to tarsi reddish to yellowish brown.

Penis. Penis shaft considerably widened, gradually reduces in width toward tip, alate, wings as in Figs. 7-8.

Female. — Not known.
Remarks: This species somewhat resembles Metagagrella formosa Roewer, 1911 from Taiwan, but differing from the latter in having the smooth body integument, much longer legs, and the first cheliceral segment completely smooth. Moreover, the penis is distinct enough to separate it from M. formosa. (Compare Figs. 7–8 with Fig. 9).

Pseudomelanopa n. gen.

Gagrelleae: Femora I–IV without nodules; only second area of scutum with one median spine; eye tubercle unarmed, no enlarged tooth or spine; first and third femora cylindrical and shorter than the body.

Type-species: Pseudomelanopa taiwana n. sp.

Note: Except for that the first to fourth femora have no nodules, this genus is completely similar to the Melanopa Thorell, 1889. Relating to the absence of nodules in the femora of all legs it is alike to the Pseudogagrella, but differing from the latter by having first and third femora shorter than the body. These two genera are undoubtedly intermediates between the Leiobuninae and Gagrel- liae.

4. Pseudomelanopa taiwana n. sp.

(Figs. 12–22)

Type-series: Holotype: female, Chitou, Taiwan (taken among fallen leaves in the secondary woods, at about 1,200 m in altitude), 30-VII–1968 (S. Suzuki). The holotype is deposited in the Zoological Laboratory of Hiroshima University.

Measurements: ♀—Cephalothorax 2.1 mm long, abdomen 5.6 mm long, 4.7 mm wide; total body length 7.7 mm.

Length of palpus and legs:

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Female.

Dorsum (Fig. 12). Moderate sized animal, of nearly oval outline; sides of cephalothorax slightly indented above the insertions of coxae, abdomen widest at about the fifth segment, bluntly pointed posteriorly. First five tergites united to form a dorsal scutum, which armed with a single median spine on the second area, spine being short and erect. Surface of the dorsum somewhat hardened, uniformly granular; there are three to four small low tubercles on each side of the central area in front of eye tubercle (Fig. 14). Eye tubercle separated by one and half of the diameter from the front margin of cephalothorax, from laterally

distally, distomedially with a short blunt hump, as long as three times the width, armed on both sides with scattered small denticles; tarsus slender, elongated, a little widened distally, nearly straight from laterally, only hairy; claw with a few short teeth at base below.

Legs. Relatively short, strong. Trochanters armed with pointed teeth on both lateral surfaces. Femora I-IV cylindrical, swollen distally, particularly so I and III, somewhat club-shaped; I and III shorter than the body; all femora without nodules, armed with several rows of sharp-pointed spines along entire length (Fig. 21); patellae likewise with rows of less strong spines; in addition femora and patellae with two and three prominent spines respectively along distal margin above; tibiae with rows of very short spines; metatarsi and tarsi unarmed, only hairy.

Coloration. Ground color above yellow to golden yellow, spotted and mottled with tan and brown; a short light median band between the front margin of carapace and eye tubercle; eye tubercle rusty yellow, golden yellow above, black around eyes. A central figure of yellowish brown to dark brown is well developed; central figure starts at the ridge back of eye tubercle, being constricted at the first scutal segment and then wider posteriorly, extending to the hind margin of fourth segment; abdominal segments, laterad of central figure with numerous small pale spots. Venter concolorous with dorsum; coxae dark brown distally, with a golden yellow blotch of irregular outline at center; free sternites each with a transverse series of small golden yellow spots along the border. Chelicera whitish yellow, the claws black-tipped. Femur of palpus dark brown, lighter at base and distal margin above; patella and tibia same color as femur, with whitish golden yellow spot at distal margin above, tarsus pale yellow. Legs. Trochanters golden yellow, reticulated above, dark brown beneath; femora rusty yellow, darker distally, caputs golden yellow above, dark brown below; patellae, tibiae and metatarsi yellowish to dark brown, usually reticulated with golden yellow above; tarsi paler.

Ovipositor. Three pairs of forceps segments and twenty-three normal segments, of which first nine armed with a complete whirl of eight spines, the tenth with only one spine; seminal receptacles between the second and third segments; two enlarged ampullae as illustrated in Fig. 22.

Male. — Not known.

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LITERATURE

times the width, slender, elongated, a claw with a few pointed teeth on tally, particularly body; all femora fines along entire in addition fem- vely along distal and tarsi unarmed, mottled and mottled the hind margin of carap- with numerous brown distally, nitites each with tars. Chelicera brown, lighter as femur, with yellow. Legs. femora: brown below; reticulated with reticines, the tenth third segments;