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Creative Commons-BY-NC-ND which permits unrestricted non-commercial use, distribution, and
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A NEW SPECIES OF THE GENUS MINGUEZETES FROM RICE STUBBLE OF PADDY FIELD AFTER GRAIN HARVEST IN JAPAN (ACARI: ORIBATIDA)

by M. NOZAKI and Y. NAKAMURA

(Accepted September 2003)

SUMMARY: A new species of the genus Minguezetes was collected from rice stubble at paddy field after grain harvest of Ehime Prefecture in southern Japan.

RÉSUMÉ : Une nouvelle espèce du genre Minguezetes est décrite des chaumes de riz.


The genus Minguezetes was erected by Subías et al. (1990) designating Minguezetes conjunctus Subías, Kahwash et Ruiz, 1990, as the type. Until now, 5 species including the type species are known as the members of the present genus from the world. Among them, two species, Minguezetes hexagonus (Berlese, 1908) and Minguezetes manzanoensis (Hammer, 1958) were transferred from the genus Punctoribates by Pavlitsenko (1994). The remaining two species except for the type species, Minguezetes insignis (Berlese, 1910) and Minguezetes longiporosus (Balogh, 1963) were also transferred from the genus Punctoribates by Bayartogtokh et al. (2000).

The species of Minguezetes recorded from other countries other than Japan have been collected from the variety of places, for examples lake shore (Haarlov, 1957), horse dung in a moist meadow grown with clover and a wet meadow (Hammer, 1958), and detritus (Berlese, 1910). In Japan, M. manzanoensis or M. insignis was recorded from soil of grassland (personal communication from Fujikawa), paddy field (Kuriki, 1989; Fujita, 1995) or crop field (Fujikawa, 1972; Fujita, 1995; Fujita, 2000) or fermentation and humus horizons (Fujikawa, 1970). The present new species was collected from rice stubble of paddy field after grain harvest.

Minguezetes inecola spec. nov.
[Japanese name: Ine-maruyahazudani]

Material: Holotype (NSMT-Ac 11696): from the stubble of rice crop by means of handsorting and modified Tullgren apparatus, 14-xii-2002, Y. Nakamura leg.; 2 paratypes (NSMT-Ac 11697 & 11698): from the stubble of rice crop at the same field, 21-xii-2002, M. Nozaki leg. The field is situated in the campus of Department of Agriculture, Ehime University, 1. Laboratory of Crop Science, Department of Agriculture, Ehime University, 3-5-7 Tarumi, Matsuyama, Ehime Pref., 790-8566, JAPAN.

Fig. 1: *Minguezetes inecola* spec. nov. A. — Dorsal view (because the lamellar region is not visible, it is shown finely figs. 2 A&B); B. — Ventral view; C. — Areae porosae and dorsal setae *te* and *ti*; D. — Variation of dorsosejugal projections. (This Fig. does not contain a projection of Fig. 1A)
Fig. 2: *Minguezetes inecola* spec. nov. A. — Prodorsum flattened. *ro* (rostral seta), *le* (lamellar seta), *in* (interlamellar seta), *ss* (sensillus); B. — Prodorsal and ventral setae. *ex* (exobothridial seta), *ad* (adanal seta), *g* (genital seta) and *1b* (epimeral seta); C. — Left sensillus and bothridial region; D. — Dorsal aspect of lamellar and interlamellar region.
in Ehime Prefecture. The rice stubble and the soil were drying up, and the rice was harvested before two months of the sampling time.

**Measurements (n=6) and colour:** Body length, 429(446)471 \( \mu \text{m} \); width, 343(361)379 \( \mu \text{m} \). Reddish-brown.

**Prodorsum:** Rostral anterior edge rounded without incisions, dorsal part medially concave. Rostral setae (ro) grabrous, setiform, inserted laterally just at the level of the distal ends of tutoria. Tutoria with a sharp apex, without tooth. Lamellae extending forwards from the level of bothridia, thinner than translamella. Lamellae setae (le) inserted at the anterior end of the lamellar ridges. Translamella ribbon-shaped without cuspis. Interlamellar setae (in) inserted each on a small apophysis; apophysis connected each other by a chitinous line. Both lamellar setae and interlamellar setae minutely barbed. Setae setiform and glabrous, inserted postero-lateral to bothridia. Relative lengths and distances of prodorsal setae: \( \text{in} > \text{ss} > \text{le} > \text{ro} > \text{ex}; (\text{ro}-\text{ro}) > (\text{in}-\text{in}) \) > (le-le).

**Notogaster:** Circular in dorsal view. Pteromorphae movable, connected each other by the chitinous projection. The projection excised in a U-shaped form from the anterior border of the hysterosoma. The depth of the incursion variable, depth/width: 0.57(1.17)1.62. Lamella, interlamella, part of translamella, lamellar and interlamellar setae are concealed below the projection. Areae porosae Aa the largest among 4 pairs of areae porosae, relative dimensions: Aa:A1;A2:A3=2.4:1.0:1.0:1.2; Aa situated between setae ti and te. Setae ti and te minute, glabrous; setae ti terminating in a fine point; setae te blunt at the tip. Lyrissuture \( i_{u} \) aligned obliquely near exterior margins of notogaster. Lyrissuture \( i_{m} \) aligned obliquely laterally to \( A_{1} \).

**Ventral region:** Ano-genital region with 2 pairs of anal, 3 pairs of adanal, 6 pairs of genital and 1 pair of aggenital setae. Adanal setae (ad) setiform and glabrous. Setae ad1, inserted at the level of the middle portion between setae an1 and an2. Adanal lyrissutures iad situated parallel to the lateral margin of anal plates. Genital plates bearing microsculpture of striae. Epimeral setation: (3-1(0)-3-3(2)); setae variable in number.

**Legs:** Legs heterotridactylous; claws without dent. Leg chaetotaxy including famulus, but excluding solenidia: I (1-5-3-4-16); II (1-5-3-4-16); III (1-3-1-3-15); IV (1-2-2-3-12). Solenidiotaxy: I (1-2-2); II (1-1-2); III (1-1-0); IV (0-1-0). On tarsus II, all tibiae, genu I, genu III, femur II and femur III bearing a projection; on tarsus II, a large pointed projection situated slightly anterior to solenidia \( \omega_{1} \) and \( \omega_{2} \); solenidion \( \omega_{1} \) as long as \( \omega_{2} \). On tibia I, solenidion \( \tau_{1} \) about 12.0 \times as long as \( \tau_{2} \). Femur IV with a large leg-fin.

**Remarks:** The new species is distinguished from *Minguezetes conjunctus* by size of body, shape of hysterosoma, pteromorphal projection and areae porosae Aa, direction of lyrissutures \( i_{m} \) and relative length of lamellar and interlamellar setae, from *M. hexagonus* by length of translamella, shape of areae porosae and the presence of dorsal blade on tarsi II, from *M. insignis* by shape of setae ro, relative length of mutual distances of setae ro and in and direction of lyrissuture \( i_{m} \), from *M. longiporosus* by relative length of lamellar and interlamellar setae, the presence of microsculpture of striae on genital plates, from *M. manzanoensis* by relative length of lamellar and interlamellar setae, direction of lyrissiture \( i_{m} \), and situation of dorsal blade on tarsus II (original descriptions, Bayartogtokh et al. (2000), Fujikawa (1972; 1981), Haarlov (1957), Hammer (1967), Mahunka & Mahunka-Papp (1995), Pavlitschenko (1994), Rajski (1968), Sellnick (1928)). According to Fujikawa (private information), the specimen identified as *M. manzanoensis* by Fujikawa (1972) has a dorsal projection not between the solenidia but at the side of \( \omega_{2} \) on tarsi II. The record of *M. manzanoensis* from Hokkaido (Fujikawa, 1970) should be removed from the list (Fujikawa et al., 1993) and other Japanese specimen identified as *M. manzanoensis* need to be restudied.

**Key to the species of the genus Minguezetes**

1. Ovoid hysterosoma; Dorsosejugal projection V-shaped.

*... Minguezetes conjunctus* Subías, Kahwash et Ruiz, 1990, Spain.
Fig. 3: Leg I of *Minguezetes incola* spec. nov. A. — Tarsus; B. — Tibia; C. — Genu; D. — Femur and a part of trochanter.
Fig. 4: Leg II of *Minguezetes incola* spec. nov. A. — Tarsus; B. — Tibia; C. — Genu; D. — Femur and a part of trochanter.
Fig. 5: *Minguezetes ineola* spec. nov. A-E. — Leg III; F-I. — Leg IV; A & F. — Tarsi; B & G. — Tibiae; C & H. — Genu; D. — Femur; E. — Trochanter; I. — Femur and a part of trochanter.
FIG. 6: *Minguezetes inecola* spec. nov. Scanning electron micrographs: A. — Dorsal view (× 200); B. — Projection (white arrow) and solenidia (ω) on tarsus II (× 5000); C. — Microsculpture of striae on genital plates (× 2000); D. — Leg-fin of femur IV (white arrow) (× 800).

— Circular hysterosoma; Dorsosejugal projection U-shaped ........................................... 2

2. Interlamellar setae much longer than lamellar setae; in > 2 × le ........  M. longiporosus (Balogh, 1963), Angola.
— Interlamellar setae slightly longer than lamellar setae; in < 1.5 × le ................................................................. 3

3. Tarsi II without dorsal blade ...................................... 3

4. Dorsal blade on tarsi II situated between solenidia ........  M. manzanoensis (Hammer, 1958), Argentine, New Zealand, Ukraine.
— Dorsal blade on tarsi II situated anterior to solenidia .............................................................. 5

5. Rostral setae barbed ........................................ M. insignis (Berlese, 1910), Italy, Japan.
— Rostral setae smooth.  *Minguezetes inecola* spec. nov.

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