NEORIBATES AURANTIACUS IN JAPAN
(ACARIDA: ORIBATIDA)

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Synopsis


I described Neoribates rimosus as a new species in 1978, having stated that Japanese neoribatid species which were recorded in that time could be listed as N. aurantiacus and N. macrosacculatus.

As a result of adjustment in the present study, it is revealed that Neoribates aurantiacus sensu Aoki, 1966 is the synonym of N. roubali (Berlese, 1910). The Japanese neoribatid species can be resumed as N. macrosacculatus, N. rimosus and N. roubali.

Neoribates aurantiacus, its bibliographical history.—This species was described by Oudemans (1914) under the name Galumna aurantiaca. In this paper he did not show its figure. After the description its name appeared in several literatures as follows:

Neoribates aurantiacus (Oudemans, 1914)


Neoribates aurantiaca : Oudemans, 1917, p. 16, figs. 14-23; Sellnick, 1928, p. 9, fig. 9.

Neoribates aurantiacus : Willmann, 1931, p. 178, fig. 305; Hammer, p. 61, fig. 95; Schweizer, 1956, p. 356, fig. 330a, b; Kunst, 1959, p. 39, 1952, fig. 3B.

In Arch. Natw. 82 (1917), Oudemans drew several illustrations of the species and stated on detailed morphological characters as “Behaarung für eine Galumna ungewöhnlich lang. Drei Sternalpaare, drei Coxalpaare (I, II, IV), keine Ventralpaare, zwei auf jeder Genitalklappe, zwei auf jeder Analklappe, zwei noch langere Paare postanal” on the page 18. His figure No. 15 (figure 1A of the
present paper was redrawn from his figure) on the page 17 shows clearly the existence of two pairs of long adanal setae and the absence of aggenital setae, even their setal pores.

**Neoribates aurantiacus sensu Aoki, 1966.**—Aoki (1966) described 12 galumnoids. In the study *N. aurantiacus* was reported with several illustrations. His *N. aurantiacus* has a pair of aggenital setae and has no long adanal setae, but possesses \( ad_{1-3} \) of normal length. It is obvious from the above evidence that *N. aurantiacus* sensu Aoki is not the same species as the Oudemans’s *N. aurantiacus*.

Berlese (1910) recorded and described *Oribates roubali* from Bohemia. Four years later, he established the subgenus *Neoribates* under the genus *Oribates* with *roubali* as the type species. In his work in 1914 we can see a brief description and a single figure. In comparision with the Japanese *N. aurantiacus* sensu Aoki, *N. roubali* (Berlese, 1910) is very similar to the Aoki’s aurantiacus. Berlese (1914) stated that “Lamellae nullae, ne dente anteriord quiem significatae. Pteromorphae dense canaliculato-nervosae. Organa pseudo-stigm. sat roubste clavata, apice acuta”. The shape of sensillar head of *N. aurantiacus* sensu Aoki well agrees with his description and his illustration. Pteromorphal vein structure, as Trave (1972) stated, is quite distinct in the adult stase which does not pass enough time from the last molting. The explanation “Lamellae nullae” is very important, and the following fact is also important: in Berlese’s description of *Oribates* (Neoribates) fissuratus in the same page, whereas he used the same expression “Lamellae nullae, ne dente anteriord quiem significatae”, his figure of the species shows well discernible lamellae.

From the above mentioned points I think that there is a enough reason to consider that *roubali* has lamellae, and it is adequate to recognize Japanese *N. aurantiacus* sensu Aoki, 1966 is the synonym of *N. roubali* (Berlese, 1910). Therefor, the Japanese neoribatid species can be resumed as follows:

1. *Neoribates macrosacculatus* Aoki, 1966
2. *Neoribates rimosus* Suzuki, 1978
3. *Neoribates roubali* (Berlese, 1910)

Supplementary description to *N. roubali.*—Aoki’s description (1966) is detailed and useful for identification on the species. I supplement only the pedal chaetotaxy to it.

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Fig. 1 Problematical neoribatid species.

A) An illustration of *Neoribates aurantiacus* redrawn after Oudemans (1917); there are no aggenital setae; two pairs of long adanal setae are distinct.

B) The right tibia II of the Japanese *N. roubali* (= *N. aurantiacus* sensu Aoki, 1966); this segment is strongly curved ventrad.

C) The right tarsus I of the same species mentioned above; this segment has 19 setae and two solenidia, there is a single accessory lateral seta l*A*.
Chaetotaxy and solenidiotaxy can be described as follows: I (1-5-3-4-1-3), II (1-5-3-3-15-3), III (2-3-1-3-15-3), IV (1-2-2-4-12-3); I (1-2-2), II (1-1-2), III (1-0), IV (0-0-0). Tarsal chaetotaxy of leg I is common to N. rimosus and N. aurantiacus\(^1\) in having 19 setae. Two pairs of setae, (it) and (tc), have weak distal curls (Fig. 1C). Eupathidios (p), (u) and s: the seta s remarkable in its straight profile; the former species has normal gently curved seta s, but the present species possesses sharply pointed and straight s. Solenidion \(\omega_1\) rather thin and has not so blunt tip as observed in N. gracilis and N. rimosus. Genu II strongly curved ventrad like in Fig. 1B, having not smooth dorsal surface. The dorsal surface slightly wrinkled transversely.

**Known distribution in Japan.**—Hokkaido: Higashi-misumai (C412392-14)\(^2\), Ishikari-hama (C412432-23), Moashoro (C434433-21), Kikonaï (C404215-31), Noppro (C412431-42), Mt. Taïsetse (C42435-30); Aomori-kén: Okuyagén (C41143-12); Miyagi-kén: Onagawa (C412383-43); Niigata-kén: Kurokawa (C393381-11), Yuzawa (C384366-13); Fukushima-kén: Mt. Bandaï (C401374-23), Goshikinuma (C401374-24), Tsuchiyu (C402375-21); Tochigi-kén: Sénjō-gahara (C392365-43), San-no pass (C392365-44), Yumoto (C392366-42), Lake Chuzénji (C392365-42), Mt. Hantsuki (C392365-41); Gunma-kén: Mt. Haruna (C384363-24), Lake Marunuma (C392365-24), Minakami (C384365-43), Mt. Tanigawadake (C384365-43); Ibaraki-kén: Namasé (C402365-33); Chiba-kén: Kasîwa (C394365-41), Mt. Kiyosumi (C401351-34); Tokyo-to: Hinohara (C391355-22), Kokubunji (C392355-44), Mt. Kagénobu (C391354-44), Kazuma (C391355-12), Mt. Jinba (C391354-34), the Meiji Shrine (C393355-41), Machida (C393354-33), Onkata (C391355-41), Mt. Takao (C391354-43), Sénju (C394355-12); Kanagawa-kén: Ubako (C391352-12), Sêngokuhara (C391352-13), Hakoné-én (C391352-12), Mt. Kintoki (C391352-13), Hatajuku (C391352-21), Tomioka, Yokohama City (C393353-31); Shiomi-daï (C393354-13), Cape Manazuru (C391354-34); Shizuoka-kén: Amagi pass (C391346-11), Nanataru (C384414-34), Shimogamo spa (C384344-24); Yamashina-kén: Sasago, Ohtsuki City (C384354-23), Hinokapé, Katsunuma City (C394354-14), Mt. Mitsutogé (C384354-12), Aokigahara (C383353-34), Mt. Ashiwada (C383353-44), Lake Yamanaka (C384353-22); Nagano-kén: Kirigamíné (C381361-33), Utsukushigahara (C381362-32), Lake Shirakoma (C382361-22),

\(^{1}\) TRAVE's statement (1972) based on OUDEMANS's specimens.
\(^{2}\) Henceforth Locality Index of KANAI (1972) is used for the permanent indication of locality. This method is used for various purposes in statistical and computer operation.
Neoribates aurantiacus in Japan

This figure shows the wide distribution of the species from the northernmost Hokkaido to the southernmost Iriomote Island. A: Yonaguni Island, B: Iriomote Island, C: Ishigaki Island, D: Miyako Island, E: Yaku Island, F: Tsushima Islands.

Fig. 2 Distribution of *N. roubali* in Japan.

Tatéshina [C381361-12], Kita-karuizawa [C383363-24], Mt. Madarao [C382366-11]; Wakayama-ken: Mt. Koya [C355542-22], Hashimoto [C352343-23]; Shimane-ken: Oki Island [C361546-43]; Yamaguchi-ken: Hagi [C312343-32]; Oh-ita-ken: Tsuédaté [C311332-11]; Nagasaki-ken: Mt. Mitaké, Tsushima Islands [C292344-32]; Miyazaki-ken: Takachiho [C312325-12]; Kagoshima-ken: Mt. Miyanouradaké, Yaku Island [C303302-14]; Okinawa-ken: Sakiédaonzaki, Ishigaki Island [C241243-23], Mt. Hoshinomangé, Ishigaki Island [C241243-43], Mt. Kimbu, Ishigaki Island [C242243-14], Mt. Koza, Iriomoté Island [C234234-21], Mt. Urabé, Yonaguni Island [C231243-13].
The network of geoquadrat based on the 1:50000 map is indexed as follows. A geoquadrat is expressed with a 6 figured number. The 1st and the 2nd figures indicate the longitude with the omission of its 3rd order, and the 3rd figure does one of 4 sectors within the longitude. The 4th and the 5th figures indicate the latitude and the 6th figure does one of 6 sectors within the latitude. For example, Lake Chuzenji is expressed by locality index as [392365].

A geoquadrat is further divided into 4 sectors longitudinally and latitudinally, and a 2 figured number indicating a proper sector is suffixed with hyphen in order to express smaller region. Thus, Mt. Hantsuki by Lake Chuzenji is [392365-41] in locality index. Eight alphabetical letters from A to H can be prefixed in order to distinguish the localities, expressed with the same index, in 8 regions on the globe. Thus, the index of Mt. Hantsuki, Lake Chuzenji is [C392365-41].

References


\(^{3)}\) Modified from Kanai (1972).


——, 1978f. A new species of the genus *Neoribates* (Berlese, 1914), *Neoribates*
