

The identity and distribution of *Macrolea japana* (Jacoby) (Coleoptera, Chrysomelidae, Donaciinae)

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キイロネクイハムシの分類と分布について
(昆虫綱：鞘翅目：ハムシ科：ネクイハムシ亜科)

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抄録：キイロネクイハムシ *Macrolea japana* (Jacoby) はこれまで、*Macrolea mutica* (Fabricius) の亜種として扱うのが一般的であったが、これはおそらく、両者の比較検討が不十分であったためである。本研究では、日本および中国産のものが、前胸背板の表面構造および斑紋、上翅会合部間室の色彩、跗節の形状、および体形により、欧州からシベリア東部に産するものと明確に区別され、種レベルの差異と見なせることを明らかにした。

Abstract: A Japanese donaciine species, *Macrolea japana* (Jacoby) has so far been generally treated as a subspecies of an European species, *M. mutica*. The treatment was probably due to the insufficient comparison between them. After the observations on the pigmentation on pronotum, the coloration of sutural interval on elytra, the shape of tarsomeres and the general shape of body, the species from Japan to China can be considered to be efficiently different in species level from the one from Europe to Eastern Siberia.

Key Words: Donaciinae; *Macrolea japana*; *Macrolea mutica*; Haemoniini

Macrolea japana was originally described as *Haemonia japana* by Martin Jacoby in 1885. The systematic position and the distributional range have, however, been in some confusion, since the Russian scientists treated a *Macrolea* species from Mongolia and Siberia as identical with the Japanese one (Dubieshko, 1973; Medvedev, 1992). In those papers, they downgraded *japana* as a subspecies of *M. mutica* (Fabricius), which is widely distributed in the Palearctic region. Though Kimoto (1984, 1986) and Kimoto and Takizawa (1994) followed the treatment by the Russian scientists, Komiya (1989) suggested that they seem to be enough different in many features.

In this paper, we will redescribe *M. japana* based on the specimens from Japan and

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China, including the holotype, and will refer to its identification and distributional range.

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Abbreviation of the depositories

BMNH: Natural History Museum, London.

IBSV: Institute of Biology and Soil Sciences, Russian Academy of Sciences, Vladivostok.

NSMT: National Science Museum, Tokyo.

OMNH: Osaka Museum of Natural History, Osaka. Those with asterisks were brought by scientific exchange of specimens with European museums and scientists.

Macroplea japana (Jacoby)

(Figs.1-15, 25)

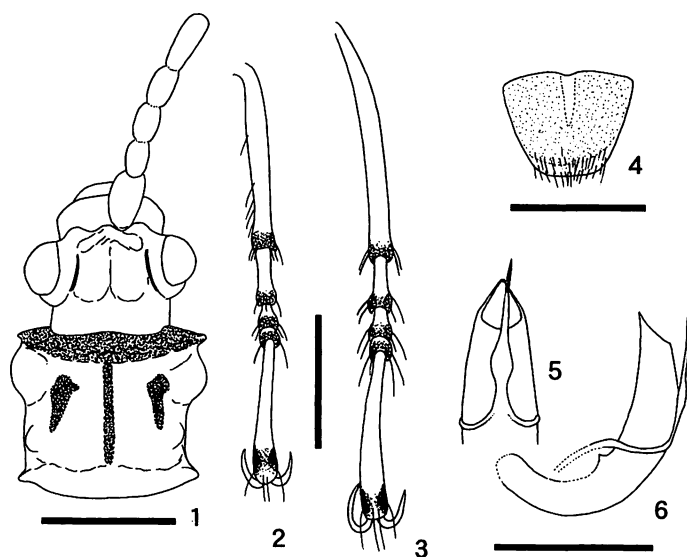
Haemonia japana Jacoby, 1885: 190; Jacoby and Clavareau, 1904: 2 [Genera Ins. (21)]; Yuasa, 1926: 125 [Kontyû 4]; Chûjô, 1934: 522.

Macroplea japana: Chûjô and Kimoto, 1961: 122 [Pacific Ins. 3]; Kimoto, 1961: 160 [Kontyû, 29]; Kimoto, 1964: 111 [J. Fac. Agr. Kyushu Univ. (13)]; Kimoto, 1983: 7 [Entomol. Rev. Japan, 38]; Kimoto and Gressitt, 1966: 489 [Pacific Ins. 8]; Borowiec, 1984: 450 [Polskie Pismo ent., 53]; Fossil Insect Research Group for Nojiri-ko Excavation, 1985: 7 [Atlas of the Japanese Donaciinae, Osaka]; Tan et al., 1985: 65 [Economic Ins. Fauna China, 18]; Askevold, 1990: 648.

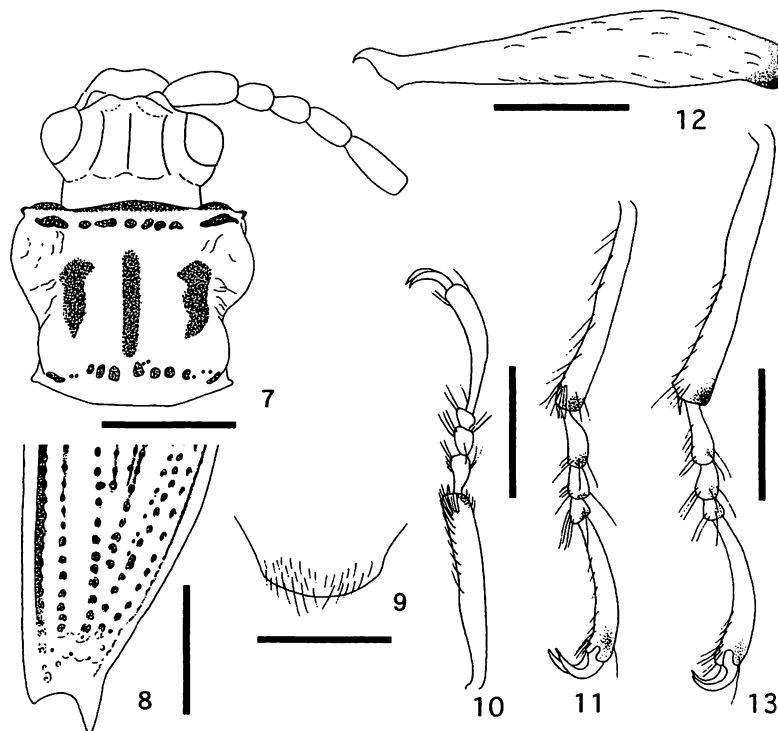
Macroplea mutica japana: Kimoto, 1984: 150 [The Coleoptera of Japan in Color, 4]; Kimoto, 1986: 22 [Nat. and Ins., Tokyo, 13(21)]; Kimoto and Takizawa, 1994: 100.

Description: Head and antenna gray; pronotum entirely reddish yellow, frontal margin and median line black with two black stripes on disk side by side; elytron entirely reddish yellow, strial punctures black but disappearing apically, sutural interval reddish yellow; all legs entirely reddish yellow, apices of femora, tibiae and tarsi dark yellow or black; under side entirely dark gray; pygidium rufous.

Body slender, sides of elytra sub-parallelled from base to middle, gradually narrowing to apex. Eye and its marginal part convex; supraocular furrow distinct; vertex with median line; antennomere 2nd as long as 3rd and shorter than 4th. Pronotal disk smooth, more or less wrinkled; pronotal median line shallow; frontal disk with indistinct and sparse punctures;



Figs. 1–6, *M. japana* from China (male): 1, head and pronotum; 2, right middle leg; 3, left hind leg; 4, pygidium; 5–6, male genitalia (5, apical part; 6, lateral view). Scale bars = 0.5mm.



Figs. 7–13, *M. japana* from Japan (female): 7, head and pronotum; 8, apex of right elytron; 9, pygidium; 10, left front leg; 11, right middle leg; 12–13, left hind leg (12, femur; 13, tibia and tarsus). Scale bars = 0.5 mm.

pronotal calli, front and hind angles prominent. Elytron slender, outer apical margin with a spine; disk with 10 complete punctate striae and a scutellar striole, all intervals smooth, more or less wrinkled. Legs slender, sparsely pubescent; ventral margins of metafemora without deep emargination; ventral margin of tibia shallowly emarginate; claw segment simple and elongate, longer than tarsomeres I - III jointed; tarsomere I the longest among I to III; tarsomere II longer than III, claw simple and slender. Pygidial apex pubescent, truncate in male and rounded in female. Male genitalia with a median lobe and a tegmen; apex of median line acute, without a median lip; a cap of tegmen narrowed apically, robust in median to basal part.

Body length: Male 3.8 mm (1 ♂ from Wuxi); female, 4.5 - 4.6mm (2 ♀♀ from Takarazuka).

Specimens examined: Six specimens from Japan (Honshû) and China (Jiangsu). Holotype: Japan., G. Lewis., 1910-320. / TYPE, H. T. / *Haemonia japana* Jacoby [BMNH]; 1 ♂ 1 ♀, Hyotan-ike, Takarazuka City, Hyôgo Pref., Japan, 15.IV.1949, S. Uéno leg. [NSMT]; 2 ♀ ♀, Takarazuka, Hyôgo Pref., Japan, 15.IV.1949, Mitsuo Gotô leg. [OMNH]; 1 ♂ (elytra lost), Wuxi, Jiangsu, China, 20.III.1952 [OMNH].

Distribution: Japan: Honshû (Chiba, Kanagawa and Hyôgo Prefs.), Kyûshû (Fukuoka Pref.); Okinawa?¹⁾ China: Jiangsu Prov.

Remarks: According to Jacoby (1885) and Chûjô (1934), the holotype was collected at "Bukenji" in April in 1880, which is assumed to be a temple in Yokohama City (Chûjô, 1934; Kubota, 1987).

This species is designated as an endangered species in Japan. No reliable record has been known in recent years.

Other species treated in comparison

Macrolea mutica (Fabricius)

(Figs. 16-22; 26)

Rhagium mutica Fabricius, 1792: 306 [Ent. Syst. I (2)].

Macrolea mutica japana: Dubieshko, 1973: 154; Lopatin, 1975: 192 [Nasekomye Mongolii, 3]; Medvedev, 1978: 190 [Geographiya i dinamika rastitelynogo i jibotnogo mira MNR]; Medvedev 1992: 544. (nec *japana* Jacoby, 1885)

Specimens examined: One specimen from Far Eastern Russia and 5 specimens from Europe. 1 ex., Hasan, Primorie, 3.VIII.1974, A. Lelei leg. [IBSV]; 1 ♀, Germania, *Haemonia mutica* F. det. Sze'kessy [OMNH*]; 3 ♂♂ 1 ♀, Patria?, Coll. Prof. Dr. Noesske, Ankauf 1947

¹⁾ Kubota (1987) doubted a record from Okinawa by Chûjô (1934). Subsequently, Kimoto and Takizawa (1994) eliminated the distributional record in their article.



Figs. 14-15. The holotype of *M. japana* (in BMNH).

[OMNH*].

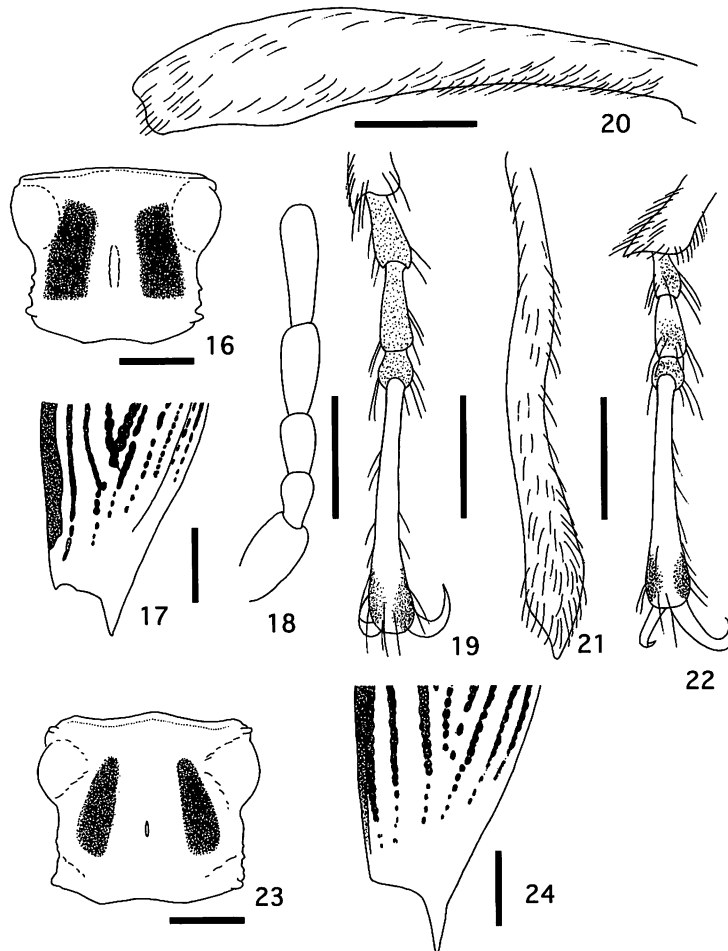
Distribution: Europe, Middle Asia, Mongolia, Siberia (Baikal and Primorskij).

Macrolea appendiculata (Panzer)

Specimens examined: Eight specimens from Europe: 1♂, Xerr pond near, Salmanovice, Bohemia mer., CZ, 21.VI.1998, F. Kantner leg [OMNH*]; 1♂, Nove Hradky env., Salmanovice, Bohemia mer., 21.VI.1998, F. Kantner leg [OMNH*]. 1♂2♀♀, Patria? / Sammlung H. Kokschi, Ankauf 1953 [OMNH*]; 1♂, Patria? / Sammlung K. Hânel, Ankauf 1947 [OMNH*]; 1♀, Patria? / Coll. Prof. Dr. Noesske, Ankauf 1947 [OMNH*]; 1♂, Germania / Samml. K. F. Hartmann, Ankauf 1941.1 [OMNH*].

Discussions

The genus *Macrolea* comprises four species from the Palearctic region (Askevold,



Figs. 16–24, *Macroplea* spp. from Europe. 14–20: *M. mutica* from Germany (female): 16, pronotum; 17, apex of right elytron; 18, antennomeres I–V; 19, left hind leg; 20–21, right hinds leg (20, femur; 21, tibia; 22 tarsus). 23–24: *M. appendiculata* from Czech (male): 23, pronotum; and 24, apex of right elytron. Scale bars = 0.5 mm.

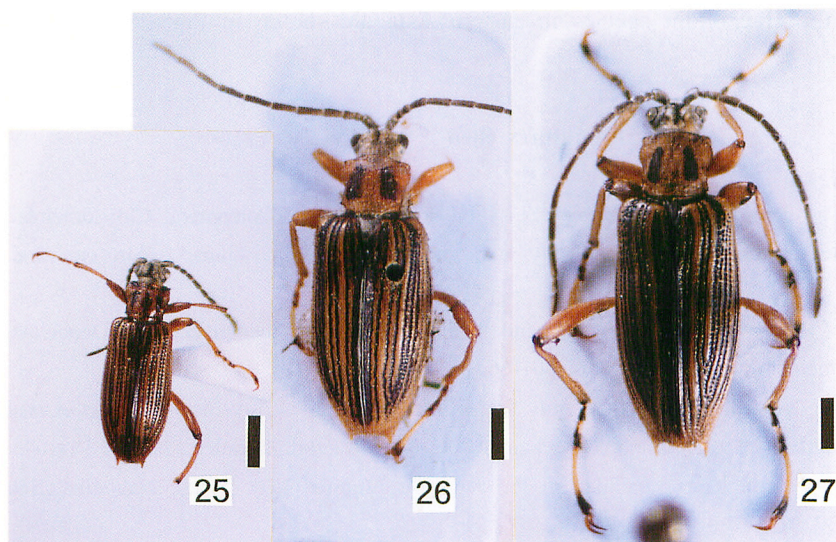
1990): *M. appendiculata* (Panzer), *M. japana* (Jacoby), *M. mutica* (Fabricius) and *M. pubipennis* (Reuter).

M. japana can clearly be distinguished from *M. mutica* and *M. appendiculata* in the following features, therefore these should be treated in different species.

- A. Pronotal disk is smooth, with three black stripes. Frontal margin is black (Figs. 1, 7). Elytral sutural interval is reddish yellow (Fig. 8). Tarsomere I is the longest among I to III, and tarsomere II is longer than III (Figs. 2, 3, 10, 11, 13). Body length is 3.5–4.7 mm.

-----*M. japana*

- A'. Pronotal disk is dull, with two black spots. Frontal margin is not



Figs. 25–27. *Macrolepa* spp.: 25, *M. japana* (Takarazuka, Hyogo Pref.); 26, *M. mutica*; 27, *M. appendiculata*. Scale bars = 1.0 mm.

pigmented (Figs. 16, 23). Elytral sutural interval is black (Figs. 17, 24). Tarsomere II is the longest among I to III, and tarsomere I is longer than III (Figs. 19, 22). Body is longer than 4.5mm.

----- *M. mutica* and *M. appendiculata*

Keys to species of *M. mutica* and *M. appendiculata* are already shown by the European scientists (e. g. Mohr, 1985; Warchalowski, 1985; Menzies and Cox, 1996).

M. japana is slenderer than *M. mutica* in shape of body, and is the smallest in these three species (Figs. 25–27).

According to Askevold (1988), *M. pubipennis* from Kansu, China, differs from the other congeners in densely pubescent pronotum, absence of distinct elytral spines and deeply emarginate metatibia.

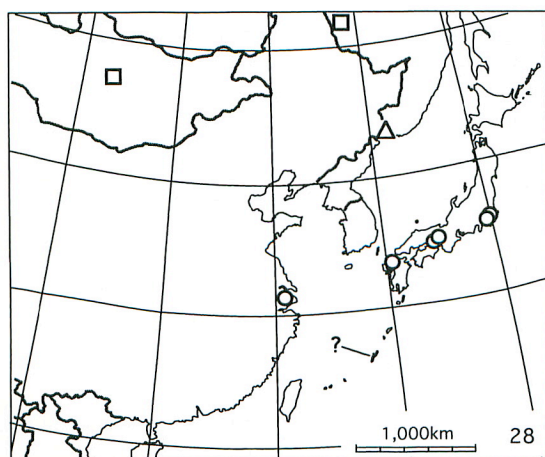


Fig. 28. Distribution of Haemoniini species in eastern Asia: *Macrolepa japana* (○; ?-Okinawa), *M. mutica* (△) and *Neohaemonia voronovae* Medvedev (□). Data are quoted from Gressitt and Kimoto (1961), Medvedev, (1977, 1982, 1992), Kubota (1987), Askevold (1990), Bien'kowski (1997) and the present paper. *M. pubipennis* (Reuter), known from Kansu, China, is not treated here, because we have no detailed information on the species.

Distributions of the Haenoniini species in eastern Asia are shown in Fig. 28.

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