

Redescriptions of the Japanese Species of the Genus *Hololepta* (Coleoptera, Histeridae), Part 1

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Abstract The Japanese species of the genus *Hololepta* PAYKULL are revised. Male genitalia of these species are figured and a key to the species is provided. This paper is the first part of a series of redescrptions for the Japanese *Hololepta*, and contains a description of the genus, a key to the Japanese species and a redescription of *H. amurensis*.

Introduction

The genus *Hololepta* PAYKULL is a main group in the tribe Hololeptini of the subfamily Histerinae. The members of this genus are known from 117 species in the world (MAZUR, 1984), and have been divided into 2 subgenera, *Hololepta* and *Leionota*. The former occurs in Japan.

In his first study of the Japanese *Hololepta*, LEWIS (1884) recorded *amurensis* and described *depressa* and *parallela*. Afterwards, he (1894) proposed the new name *higoniae* for his *parallela*, because this name was preoccupied. ADACHI (1930) studied these species and prepared a key to them. NAKANE (1963) and HISAMATSU (1985) gave photographs of the adults of the Japanese species. Up to the present, however, the genitalia of these species have not been studied in detail.

In this study, I am also going to recognize the three species and to redescribe them. The male genitalia of the species and several taxonomic features are figured. In this part, a description of the genus and a key to the Japanese species are provided, and one of the species, *amurensis*, is redescribed. The subsequent part of this series will contain redescrptions of the other two species.

Before going further, I wish to express my cordial thanks to Dr. T. NAKANE, Chiba, for his encouragement to my study and allowing me to examine his valued collection (NA). My thanks are also due to Dr. S.-I. UÉNO of the National Science Museum (Nat. Hist.), Tokyo (NSMT), and Dr. G. A. SAMUELSON of the Bishop Museum, Hawaii (BSM), for their kindness in giving me the opportunity to examine material in the collections under their care. Deep gratitude is also expressed to the following entomologists for their kindness in offering material: Dr. K. BABA, Mr. K. HOSOKAWA, Mr. A. KASHIZAKI, Dr. M. KIUCHI, Mr. S. KONDO, Mr. S. KUDÔ, Mr. M. MORI, Dr. S. NAOMI, Mr. N. NISHIKAWA, Mr. K. MAKIHARA, Mr. K. MASUMOTO, Mr. M. SATÔ, Mr. S. SHIYAKE, Mr. H. TAKIZAWA, Mr. H. TANAKA, Prof. K. TAZOE, Mr. Y. TAKAI. Last

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Genus *Hololepta* PAYKULL, 1811

Hololepta PAYKULL, 1811, 101; ERICHSON, 1834, 87; MARSEUL, 1853, 135; 1857, 135, 155; LACOR-DAIRE, 1854, 249; JACQUELIN-DUVAL, 1858, 98; SCHMIDT, 1885, 281, 284; 1889, 72; 1907, 3, 7; GANGLBAUER, 1899, 353; REITTER, 1909, 280; JAKOBSON, 1911, 638, 642; KUHN, 1913, 365; BICKHARDT, 1916, 25; 1921, 45; CARNOCHAN, 1917, 378; DESBORDES, 1917 a, 297-301; 1917 b, 165-168; COOMAN, 1939, 61; WITZGALL, 1971, 178; KRYZHANOVSKIJ & REICHARDT, 1976, 403; VIENNA, 1980, 340; MAZUR, 1973, 50; 1981, 171; 1984, 249; HISAMATSU, 1985, 221.

Type species: *Hololepta humilis* PAYKULL, 1811. Designated by LEACH, 1817, 79.

Description of adult. Body flat (Fig. 3 B), usually black and shining, rarely metallic shining (*Hololepta atrovirens* from Sumatra). Head not retractile, porrect, horizontal in repose; frontal stria weakly developed or absent; area behind eyes feebly excavated; ventral side of head with antennal groove along margin of eye (Fig. 1 A-C). Scape of antenna long, slender and basally geniculate; pedicel small; club flat and oval, its segmentation more or less clear, the suture being oblique and V-shaped. Mandible well developed, anteriorly directed and more or less curved at apex; on ventral side with a deep groove, into which the maxillary palp is applied. Pronotum transverse, broad and smooth, its sides usually round; marginal stria often complete laterally, but absent anteriorly, its apical end deeply excavated in male of some species; basal margin arcuate or bisinuate. Epipleura of pronotum without hair. Elytra short, their sides nearly parallel; posterior margins divergently produced posteriorly; epipleura narrow, usually elevated at middle; epipleural marginal stria usually complete; a deep longitudinal fossa present on lateral margin of elytron; dorsal stria strongly reduced, usually 1st and/or 2nd dorsal striae rudimentarily present on near basal margin. Propygidium flat, large, horizontal, and usually punctate laterally or striate. Pygidium short, transverse, vertical and strongly punctate or not punctate. Prosternal lobe short, its anterior margin variable in shape (Fig. 2 A-C), usually arcuate anteriorly; prosternal keel flat and broad in the subgenus *Hololepta*, while narrow and elevated in the subgenus *Leionota*; carinal striae absent. Anterior margin of mesosternum broadly emarginate medially, its marginal stria complete laterally but broadly interrupted anteriorly; disk short and impunctate. Metasternum broad and flat; intercoxal disk impunctate; lateral disk usually coarsely punctate; lateral metasternal stria obliquely and posteriorly extended. Intercoxal disk of 1st abdominal sternum with a stria on each side. Second abdominal sternum often with a short stria on each lateral half. Protibia broadly expanded, usually with 3 to 4 large and strong denticles on outer margin, with an S-shaped groove on dorsal surface for the reception of the tarsus, and with a large denticle near base of internal margin. Meso- and metatibiae with

one or two rows of strong spines. Profemur always with femoral marginal stria along basal margin. Tarsi 5-5-5. Aedeagus flat and strongly sclerotized; basal piece short; parameres completely fused, but shortly divided apically; gonopore opened under side. Eighth sternum (Fig. 3 G-H) of male densely with long hairs on caudal margin. Spermatheca (Fig. 3 L) of female consisting of 1 global sac and usually with a spermathecal gland. Hind wing (Fig. 3 M) with M-Cu loop basally; anal lobe not divided.

Larva and pupa. HAYASHI (1985) and MAMAYEV (1974) studied the larva and pupa of *Hololepta amurensis*.

The genus *Hololepta* is divided into two subgenera by the following characters:

- 1 (2) Prosternum usually large, flat or little elevated, its anterior margin truncate or arcuate. Posterior tibia weakly dentate. Mentum without groove. Subgenus *Hololepta*
- 2 (1) Prosternum narrow, elevated, its anterior margin acute. Posterior tibia usually dentate. Groove of mentum M-shaped. Subgenus *Leionota*

The subgenus *Hololepta* is distributed all over the world and well represented in the Neotropical Region, while *Leionota* is found in the Nearctic, Neotropical and Ethiopian Regions.

Subgenus *Hololepta* PAYKULL, 1811

This subgenus includes 80 species in the world.

Key to the Japanese Species of *Hololepta*

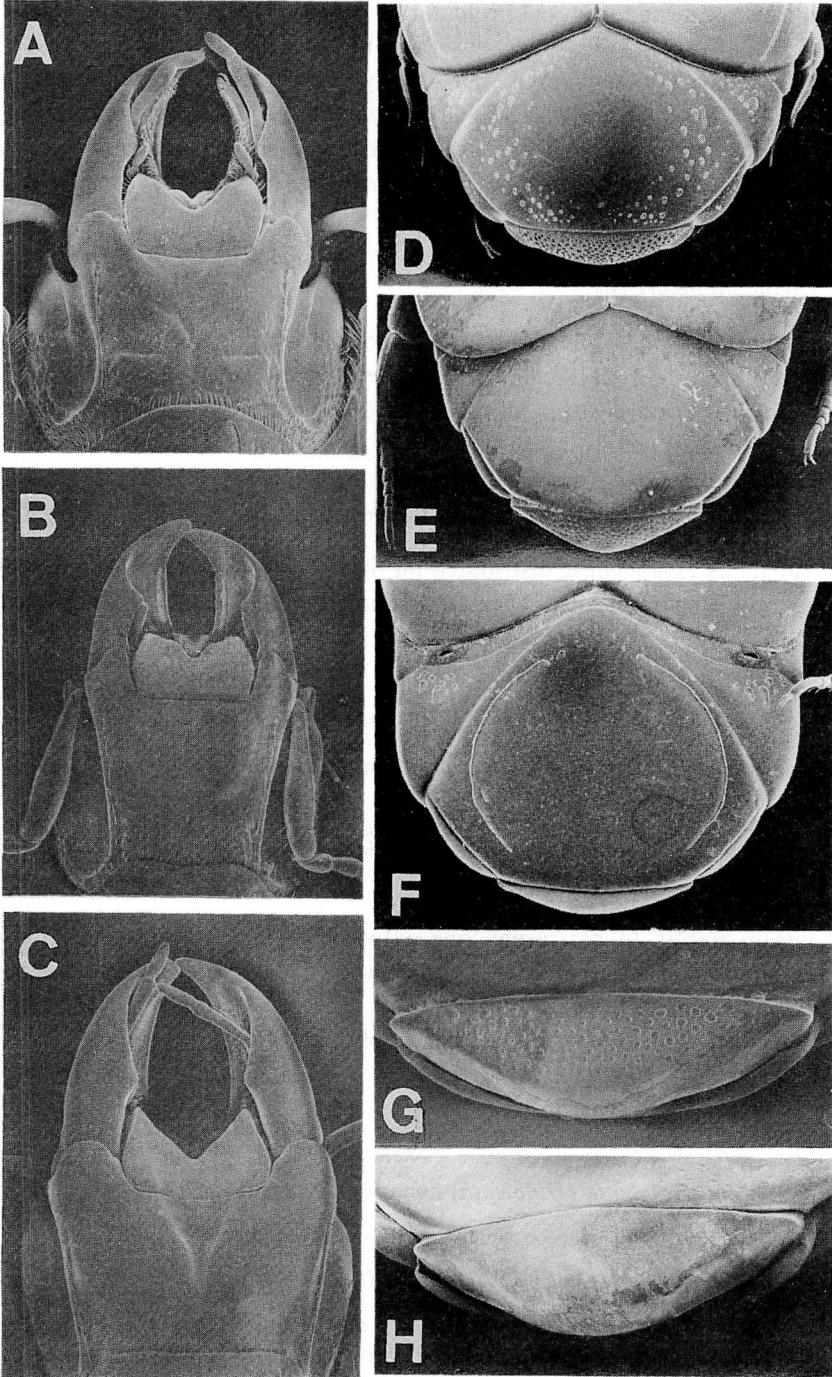
- 1 (4) Propygidium without stria (Fig. 1 D-E).
- 2 (3) Anterior margin of prosternal lobe outwardly arcuate (Fig. 2 A). Body size (head excluded) larger, 7.3-8.7 mm. Large fovea present on pronotal anterior angle in male. *H. amurensis* REITTER, 1879.
- 3 (2) Anterior margin of prosternal lobe feebly emarginate (Fig. 2 B). Body size smaller, 5.7-7.0 mm. *H. depressa* LEWIS, 1884.
- 4 (1) Propygidium with stria on each side (Fig. 1 F). *H. higoniae* LEWIS, 1894.

***Hololepta (Hololepta) amurensis* REITTER, 1897**

[Japanese name: Ô-hirata-emmamushi]

(Figs. 1 A, D, 2 A, D, 3-4)

Hololepta amurensis REITTER, 1879, 213 [East Siberia; "Amuland"]; LEWIS, 1884, 133 ["common in all the forest of Japan of moderate elevation"]; JAKOBSON, 1911, 133; ADACHI, 1930, 251 [key; noted]; NAKANE, 1963, 69, pl. 35, fig. 3 [noted; photo]; KRYZHANOVSKIJ & REICHARDT, 1976, 406 [key; figured; noted]; HISAMATSU, 1985, 230, pl. 40, fig. 33 [noted; photo].



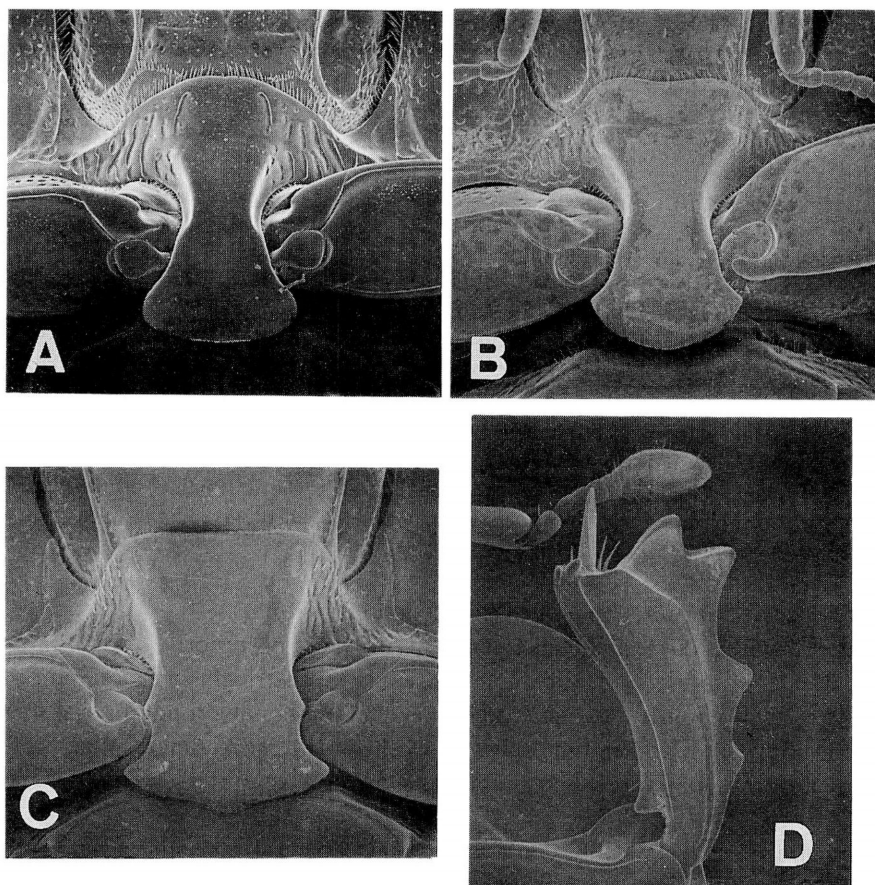


Fig. 1 (on p. 104). A–C, Head, ventral view; D–F, propygidium; G, H, pygidium.—A, D, *Hololepta amurensis* REITTER. B, E, G, *H. depressa* LEWIS. C, F, *H. higoniae* LEWIS. H, *H. plana* (SULZER).

Fig. 2 (on p. 105). A–C, Prosternum; D, protibia, ventral view. — A, D, *Hololepta amurensis* REITTER. B, *H. depressa* LEWIS. C, *H. higoniae* LEWIS.

Hololepta (Hololepta) amurensis: BICKHARDT, 1910, 5 [catalogued]; BICKHARDT, 1916, 26 [catalogued]; MAZUR, 1984, 259 [catalogued].

Description. Male (Fig. 3 A) and female. Body length: PPL (=length between anterior angles of pronotum and apex of pygidium) male, 6.8–8.1 mm, female, 6.15–7.7 mm, PEL (=length between anterior angles of pronotum and apices of elytra) male, 4.85–5.7 mm, female, 4.3–5.3 mm. Width: male, 4.0–5.4 mm, female, 3.9–5.4 mm. Biometric data are given in Table 1. Body depressed, oblong, black and shining; tarsi, maxillary palpi and antennae rufopiceous.

Surface of head sparsely clothed with fine punctures which are separated by about four times their diameters, and roundly depressed on each side behind eye. Mandible

Table 1. Biometric data for *Hololepta amurensis* REITTER.

Part measured	Male	Female
APW	1.7-2.2 (2.04±0.017) 49	1.8-2.5 (2.20±0.027) 47
PW	3.7-5.0 (4.47±0.042) 49	3.7-5.25 (4.62±0.053) 47
PL	2.0-2.6 (2.36±0.023) 49	2.0-2.7 (2.38±0.026) 47
EL	2.3-3.1 (2.73±0.026) 49	2.2-3.0 (2.67±0.029) 47
EW	4.0-5.4 (4.84±0.045) 49	3.9-5.4 (4.82±0.053) 47
ProW	2.8-3.9 (3.40±0.035) 49	2.75-3.8 (3.31±0.036) 47
ProL	1.8-2.7 (2.32±0.027) 49	1.7-2.5 (2.12±0.028) 47
PTL	1.1-1.8 (1.51±0.020) 48	1.2-1.8 (1.57±0.020) 47
MSTL	1.0-1.6 (1.28±0.017) 49	1.0-1.7 (1.28±0.020) 47
MTTL	1.1-1.7 (1.43±0.016) 49	1.1-1.8 (1.40±0.019) 47

Measurements in mm. APW — width between anterior angles of pronotum; PW — maximal width between lateral margins of pronotum; PL — length of pronotum in middle; EL — length of elytron along sutural line; EW — maximal width between outer margins of elytra; ProW — maximal width of propygidium; ProL — length of propygidium in mesial; PTL — length of protibia; MSTL — length of mesotibia; MTTL — length of metatibia. The table reads: observed limits (mean ± standard error) number observations.

well developed. Labrum with a deep impression on mid-line.

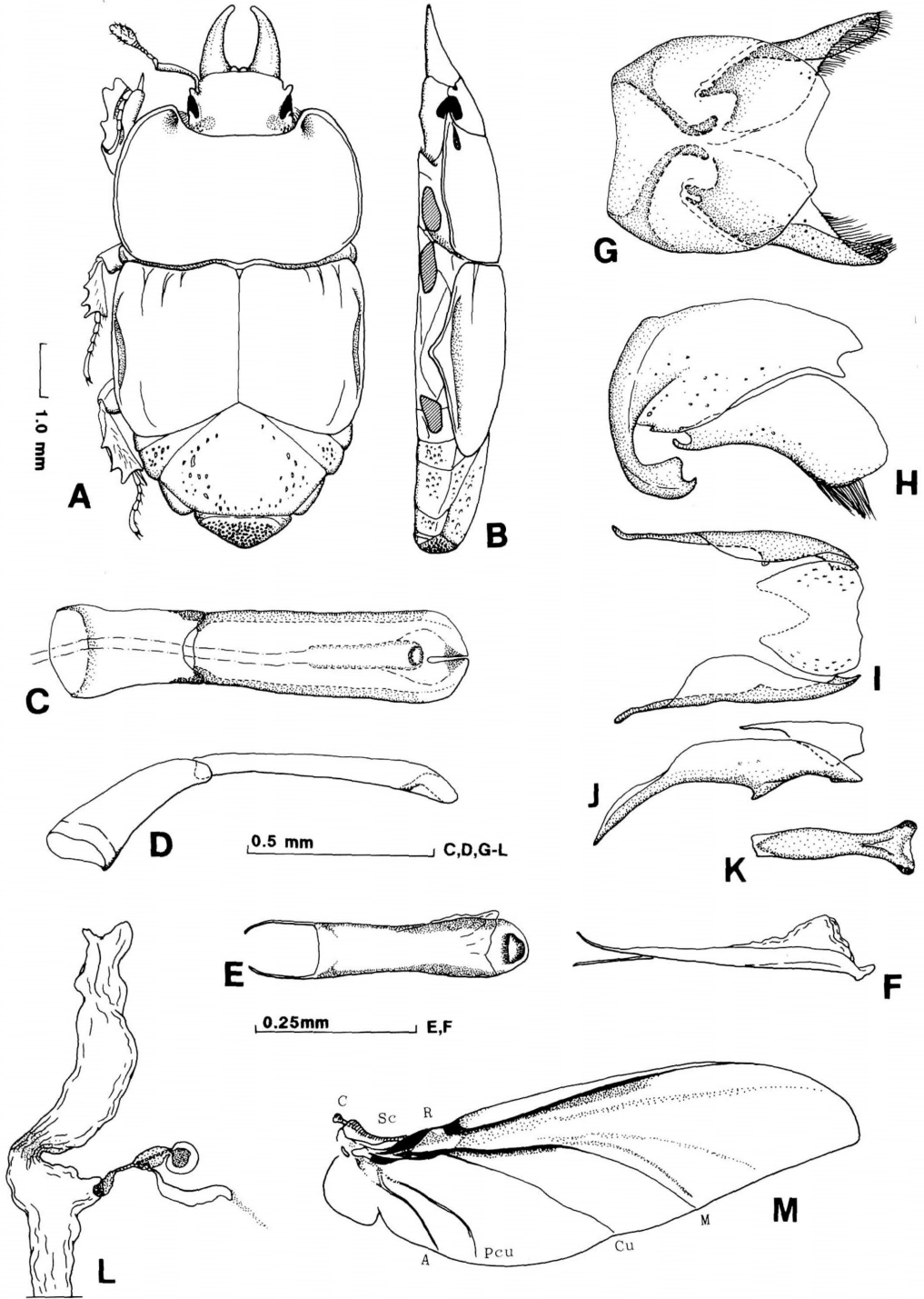
Pronotal sides arcuate and convergent anteriorly and posteriorly. Anterior angles round. Marginal pronotal stria complete laterally and strongly carinate, bent at anterior angle, then ending. In male, apical end of marginal pronotal stria strongly excavated. Surface of pronotum sparsely clothed with microscopic punctures like that of head, and sometimes other, coarse, punctures sparsely scattered on lateral third.

Epipleura of elytron feebly depressed along epipleural marginal stria, and with alutaceous ground sculpture. Marginal epipleural stria complete and strongly carinate. Margin of elytron with a large and deep longitudinal fossa occupying middle four-sixths; area inside the fossa covered with alutaceous microsculpture. First dorsal stria broadly interrupted at middle. Rudimentary 2nd and 3rd striae present on basal eighth. Surface of elytra sparsely clothed with microscopic punctures, which are separated by three times or more their diameters.

Surface of propygidium (Fig. 1 D) flat and sparsely covered with large, longitudinal oblong and shallow punctures laterally. Pygidium short, and densely covered with round, deep and coarse punctures.

Prosternal lobe (Fig. 2 A) rounded at apex, without marginal stria; disk impunctate medially, and with longitudinal depressions laterally. Prosternal keel flat, narrowest at middle, becoming broader posteriorly; posterior margin of the keel feebly and

Fig. 3. *Hololepta amurensis* REITTER. — A, Adult, male, dorsal view; B, ditto, lateral view; C, aedeagus, dorsal view; D, ditto, lateral view; E, median lobe of aedeagus, dorsal view; F, ditto, lateral view; G, male genitalia, 8th tergite and sternum, dorsal view; H, ditto, lateral view; I, ninth and 10th tergites, dorsal view; J, ditto, lateral view; K, spicules, dorsal view; L, spermatheca and bursa copulatrix, lateral view; M, right hind wing.



posteriorly arcuate, the margin overhanging the anterior area of mesosternum; disk impunctate.

Anterior margin of mesosternum covered with prosternal keel, the covered area depressed in a fan-shape to fit the margin of prosternal keel; marginal stria of mesosternum separated onto each side of anterior margin, and abbreviated on posterior half of lateral margin. Meso-metasternal suture complete, obtusely angulate at middle. Lateral stria of metasternum extending posteriorly, outwardly arcuate, the apical end attaining to near the anterior margin of hind coxa. Intercostal disk of meso- and metasterna impunctate. Lateral disk of metasternum densely covered with large, round and shallow punctures which usually continue to one another on basal half, and with hairs.

Intercostal disk of 1st abdominal sternum impunctate, and with a complete stria on each side. Second abdominal sternum with a stria on each lateral half.

Protibia (Fig. 2 D) with 4 denticles on outer margin. Ventral side of profemur completely with posterior femoral stria. Meso- and metatibiae with 3 denticles on outer margin.

Male genitalia as shown in Fig. 3 C-K.

Female genitalia as shown in Fig. 3 L.

Specimens examined. 44 ♂♂, 59 ♀♀ and 11 exs.

[Hokkaido] 2 ♀♀, Okushibetsu, Kamikawa, Teshio, 24-VII-1947, 6-VIII-1949, T. HASEGAWA leg. (NSMT); 1 ♀, Oketo, Okushibetsu, 25-VII-1941, H. UCHIDA leg. (NSMT); 2 ♂♂, Mizugami, Abashiri, 9-VIII-1951, T. KUMATA leg. (EIHU); 5 exs., Sapporo, 13-VI, 4-VII-1965, 17-VII-1966, 26-V, 24-VIII-1968, H. TAKIZAWA leg.; 1 ex., ditto, VIII-1923, J. F. ILLINGWORTH leg. (BSM); 1 ♀, ditto, 20-VIII-1927, K. SATÔ leg. (NSMT); 1 ♂, 1 ♀, Maruyama, Sapporo, 4-VI-1942, Y. NISHIO leg. (NA); 1 ♀, ditto, VI-1987, M. SATÔ leg.; 1 ♂, ditto, 25-V-1989, S. SHIYAKE leg.; 1 ♂, ditto, 25-VI-1979, S. KUDÔ leg.; 1 ♂, Nishikibashi, Sapporo, 9-VII-1982, K. HOSOKAWA leg.; 1 ♂, Heiwano-taki, Sapporo, 23-VII-1979, T. FUJISAWA leg. (EIHU); 1 ♂, 1 ♀, Misumai, Sapporo, 2-VII-1975, M. MORI leg.; 1 ♀, Jôzankei, 12-VIII-1943, T. HASEGAWA leg. (NA); 1 ♀, ditto, 18-VI-1985, M. ÔHARA leg.; 1 ♂, ditto, 11-VII-1953, Y. KUROSAWA leg. (NSMT); 1 ♀, ditto, 12-VIII-1943, T. HASEGAWA leg. (NSMT); 2 ♀♀, ditto, 17-IX-1954, T. KUMATA leg. (EIHU); 1 ♂, ditto, 27-VI-1951, M. KONISHI leg. (EIHU); 1 ♂, ditto, 17-VI-1954, Y. TASE leg.; 1 ♂, Toyotaki, Sapporo, 23-V-1979, T. FUJISAWA leg. (EIHU); 2 ♂♂, 1 ♀, Hakkenzan, Sapporo, 5, 7-VI-1977, 1-VII-1978, N. NISHIKAWA leg.; 1 ♀, Horumi, Sapporo, 18-V-1952, T. KUMATA leg. (EIHU); 1 ex., Asari-mura, 5-VIII-1950, T. HASEGAWA leg. (NSMT); 2 ♂♂, Otaru, 1-VIII-1954, T. KUMATA leg. (EIHU); 1 ♀, Makkari-sanroku, 18-VIII-1921, no collector's name (NSMT); 1 ♀, Mt. Muine-yama, 20-VII-1964, S. UÉNO leg. (NSMT); 1 ♂, 1 ♀, Hidaka, 1955, S. WATANABE leg. (NA); 1 ♂, Kamikawa, 21-VI-1934, T. OKUTANI leg. (NA); 1 ♂, 1 ♀, Toyomae, Kiritachi-tôge, 17-VII-1986, T. NISHIDA leg.; 3 ♀♀, Tomakomai, 27-VII-1974, A. KASHIZAKI leg.; 1 ♂, 1 ♀, Eniwa, Isari-gawa, 16-VI-1986, M. MORI leg.; 1 ♂, 1 ♀

Shikotsuko, 28-VI-1976, M. MORI leg.

[Honshu] <Aomori-ken> 1 ♂, 1 ♀, Minami-tsugaru, 18-VII-1954, K. SHIMOYAMA leg. (NSMT); 2 ♂♂, 2 ♀♀, Kokitaira, Takedate, Minami-tsugaru, 16-VI, 5, 10-VIII-1952, K. SHIMOYAMA leg. (NSMT); 1 ♂, Heiroku, ditto, 20-VI-1952, K. SHIMOYAMA leg. (NSMT); 1 ♂, ditto, 12-VI, 7-VII-1961, A. ABE leg. (NA). <Fukushima-ken> 2 ♀♀, Kotoribi, Narahara, Minami-aizu, 5-VII-1949, Y. KUROSAWA leg. (NSMT). <Saitama-ken> 2 exs., Izugatake, 28-IV-1969, H. TAKIZAWA leg. <Tokyo-to> 1 ♀, Takaosan, 11-VI-1963, S. KONDO leg.; 1 ♀, ditto, 4-VIII-1971, K. MASUMOTO leg.; 2 ♂♂, 1 ♀, ditto, 25-VI-1962, S. NOMURA leg. (NSMT); 1 ♀, Aoiwa, Okutama, 8~10-VIII-1951, S. NOMURA leg. (NSMT); 2 ♀♀, Okutama, 17-V-1955, Y. KUROSAWA leg. (NSMT); 1 ♂, Nippara, 26-VII-1966, Y. KUROSAWA leg. (NSMT). <Kanagawa-ken> 1 ♂, Keyakitaira, Tanzawa, 20-VI-1940, D. MATSUSHITA leg. (NA). <Niigata-ken> 1 ♂, 1 ♀, Kurokawa, 24~26-VI-1983, K. Baba leg. <Nagano-ken> 1 ♂, 1 ♀, Yokokawa Valley, Tatsuno, 28-IX-1990, S. SHIYAKE leg.; 1 ex., Shirakaba-ko, 6~7-VI-1987, H. TAKIZAWA leg.; 1 ♂, Sanosaka, Hakuba, 8-V-1983, M. KIUCHI leg.; 2 ♂♂, 1 ♀, Fukushima, Kiso, 6-VIII-1966, T. NAKANE leg. (NA); 1 ♀, Shimashima, 2-VIII-1948, S. ÔSAWA leg. (NA); 1 ♂, Tokura, 6-VII-1950, S. UÉNO leg. (NA); 1 ♂, Tokura-Hatomachi, 9-VII-1951, T. NAKANE leg. (NA); 1 ♀, Tobira, Matsumoto, 18-VI-1982, M. KIUCHI leg.; 2 ♀♀, Karuisawa, 31-VII-1951, no collector's name (NSMT). <Gumma-ken> 1 ♂, 1 ♀, Osawa, 15-VI-1963, S. KONDO leg. <Yamanashi-ken> 1 ♂, Daibosatsu, 11-VIII-1962, S. KONDO leg. <Gifu-ken> 1 ♀, Kujôgun, 18-VI-1978, Y. TAKAI leg. <Nara-ken> 2 ♀♀, Kasuga, 28-IX-1983, YOKOYAMA leg. (NA). <Shiga-ken> 1 ♂, Meiodani, 1-VI-1984, H. ASHIDA leg. <Wakayama-ken> 2 ♀♀, Mt. Otousan, 16~19-VII-1982, H. MAKIHARA leg. <Kyoto-fu> 1 ♀, Kurama, 14-V-1950, T. NAKANE leg. (NA); 1 ♀, Daihizan, 7-VIII-1940, T. OKADA leg.; 1 ♀, Sasari, 8-IV-1964, Y. KISHII leg. (NA). <Hyôgo-ken> 1 ♀, Sasayama, Tanba, 30-VI-1950, K. IWATA leg. (NA). <Okayama-ken> 1 ♀, Kamba, 19-V-1940, T. OKUTANI leg. (NSMT).

[Kyushu] <Kumamoto-ken> 1 ♂, Ichifusayama, 1~2-VIII-1988, S. NAOMI leg. <Kagoshima-ken> 1 ♀, Sata-Ôsumi, 25-V-1952, T. NAKANE leg. (NA). <Miyazaki-ken> 1 ♀, Miike, 14-X-1984, M. ÔHARA leg.; 1 ♂, 1 ♀, Shiiba, 1-VIII-1970, A. NAGAI leg. <Tsushima Is.> 1 ♀, Uchiyama, 17-VII-1960, T. NAKANE leg.; 1 ♀, Mt. Ôboshiyama, Mine, 5~9-VI-1983, H. MAKIHARA leg.; 1 ex., Are, 18-IX-1982, H. TANAKA leg.; 1 ♀, Meborô, Mt. Mitake, 15~18-VII-1968, S. MIYAMOTO & A. NAKASHIMA leg. (NSMT).

[Nansei Iss.] <Yakushima Is.> 1 ♀, Ôkawa-rindô, 2-VII-1975, H. MAKIHARA leg.

[Taiwan] 1 ♂, Wushe, 20-VI-1940, no collector's name.

[Korea] 1 ♂, Kwang-neung, central Korea, no date and collector's name. (NSMT).

Distribution (Fig. 4). Japan (Hokkaido; Honshu; Shikoku; Kyushu; Sado Is.; Izu Islands; Tsushima Is.; Yakushima Is.); East Siberia; Primorskij Kray; Korea; Taiwan; China. New to Taiwan.

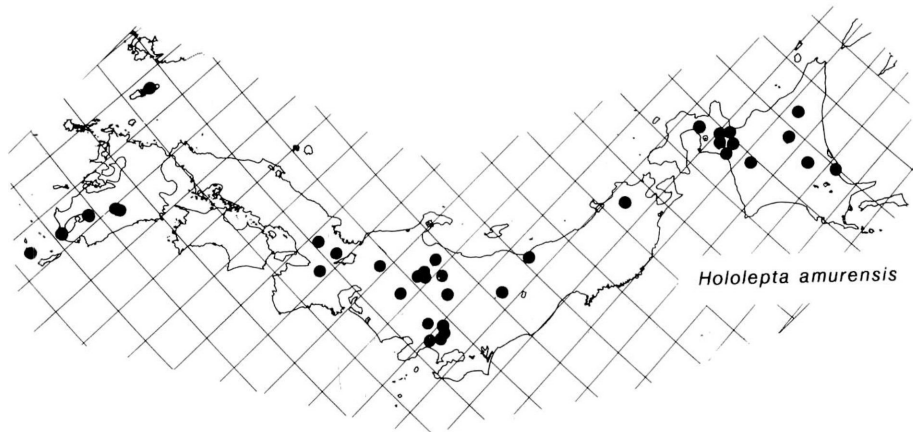


Fig. 4. Collection sites of *Hololepta amurensis* in Japan.

Remarks. In general appearance *H. amurensis* resembles *H. depressa*. However, it is distinguished from the latter by the body larger, the punctuation of propygidium coarser (Fig. 1 D) and the anterior margin of prosternal lobe outwardly arcuate (Fig. 2 A).

要 約

大原昌宏：日本産ヒラタエンマムシ属の再記載，1。——ヒラタエンマムシ属 *Hololepta* にふくまれる日本産3種の検索表を作成し，属の記載をおこなった。これら3種は，前尾節板 (Fig. 1 D-F) と前胸腹板ののど板前縁 (Fig. 2 A-C) の形質状態によって区別できる。また，オオヒラタエンマムシ *H. amurensis* の再記載をおこない，雌雄交尾器，後翅を図示した。

[**Note.** The references cited in the present paper will be given in the later part of the series.]