

HYDRAENIDAE:

II. The Taiwanese and Japanese species of *Ochthebius* LEACH (Coleoptera)

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Abstract

Thirteen species of *Ochthebius* LEACH (Coleoptera: Hydraenidae) from Japan and Taiwan are treated. Six new species are described: *Ochthebius (Asiobates) formosanus* [Taiwan], *E. (? Enicocerus) japonicus* [Japan], *E. (? Enicocerus) ilanensis* [Taiwan], *O. (s.str.) jengi* [Taiwan], *O. (s.str.) nipponicus* [Japan], and *O. (s.str.) strigoides* [Taiwan]. The following new synonymies are proposed: *Ochthebius hasegawai* NAKANE & MATSUI, 1986 (= *O. mamagri* SHATROVSKIY, 1989); *Ochthebius danjo* NAKANE, 1990 (= *O. yumiae* MATSUI & DELGADO, 1997). A new species group is established for *O. jengi*. *Ochthebius strigosus* CHAMPION is transferred to *Ochthebius s.str. Ochthebius nakanei* MATSUI and *O. hasegawai* are redescribed. The aedeagus of *O. coomani* d'ORCHYMONT from Vietnam is illustrated in addition to 10 species from Taiwan and Japan. *Ochthebius inermis* is recorded for the first time from Taiwan. *Ochthebius satoi* is recorded for the first time from Nei Mongol, Shaanxi, Shandong and Hokkaido. The status of *Enicocerus* STEPHENS is briefly discussed.

Key words: Coleoptera, Hydraenidae, taxonomy, new species, new synonymy, *Ochthebius*, *Enicocerus*, China, Taiwan, Shandong, Liaoning, Japan.

Introduction

Geographically, Japan and Taiwan are connected with each other by a chain of islands along the eastern rim of the Eurasian land mass. Thus it is not surprising that the fauna of Japan is rather similar to that of Taiwan in certain respects. *Ochthebius* LEACH belongs is one of those water beetle genera which reveal close faunal affinities between Japan and Taiwan.

So far, only one species of *Ochthebius* (*O. satoi* NAKANE) was recorded from Taiwan (see JÄCH 1991, 1995). Six species of *Ochthebius* (*O. danjo* NAKANE, *O. hasegawai* NAKANE & MATSUI, *O. hokkaidensis* JÄCH, *O. inermis* SHARP, *O. nakanei* MATSUI, *O. satoi*) were recorded from Japan (see JÄCH 1991, 1992b, 1998, MATSUI 1986, NAKANE 1990, SATÔ 1985). All these species are briefly reviewed and keyed in this paper. Six new species of *Ochthebius* (two from Japan, and four from Taiwan) are described below.

Acronyms & CWBS localities:

BML	The Natural History Museum, London [formerly: British Museum (Natural History)]
CASS	Chinese Academy of Sciences, Institute of Applied Ecology, Shenyang
CMA	Coll. Matsui, Arao
CNC	Coll. Nakane, Chiba-shi
CSN	Coll. Satô, Nagoya
CWBS	China Water Beetle Survey
CWT	Coll. Wang, Taipei

CYT	Coll. Yoshitomi, Tokyo
ISNB	Institut royal des Sciences naturelles de Belgique, Bruxelles
NMW	Naturhistorisches Museum, Wien
NTU	National Taiwan University, Department of Entomology, Taipei, Taiwan
TPM	Tochigi Prefecture Museum
ZISP	Zoological Institute (Academy of Sciences), St. Petersburg

- CWBS loc. 98: **Liaoning Province**; Jinzhou City Region; Beizhen County; Yiwülü Shan, ca. 17 km NW Beizhen City; Sandao Gou He, downriver of loc. 97, where it enters the plain, 10 m wide, granite, including small pools on gravel bank, ca. 150 m a.s.l.; 23.VIII.1994; leg. Jäch, Ji & Wang; [locality number on label: 34].
- CWBS loc. 115: **Liaoning Province**; Dandong City Region; Fengcheng County; Fenghuang Shan; Xi He (= West River), near localities 112 and 113, ca. 60 m wide, slowly flowing, unshaded, slightly polluted, cobbles, no surrounding vegetation; 24.IX.1994; leg. Ji & Wang; [locality number on label: 51].
- CWBS loc. 121: **Liaoning Province**; Benxi City Region; Benxi County; ca. 92 km SE Benxi City; 5 km SE Caohekou Town; tributary of Cao He (= Grass River); small stream, 1 m wide, slowly flowing, unshaded, gravel, sand and mud, unpolluted, 20°C, ca. 200 m a.s.l.; 26.IX.1994; leg. Ji & Wang; [locality number on label: 57].
- CWBS loc. 124: **Liaoning Province**; Benxi City Region; Benxi County; ca. 50 km SE Benxi City; 5 km S Xiamatang Village; near Aiguo Village; branch of an unnamed river, 3 - 4 m wide, slowly flowing, limestone, unshaded, gravel, mud, including rock pools, slightly polluted, 20°C, vegetation mainly composed of *Quercus* sp., *Robinia* sp. and *Salix* sp.; 26.IX.1994; leg. Ji & Wang; [locality number on label: 60].
- CWBS loc. 125: **Liaoning Province**; Benxi City Region; Benxi County; ca. 50 km SE Benxi City; small stream, tributary to loc. 124, ca. 1 m wide, fast flowing, limestone, shaded, gravel, sand and stones with moss, very cold, ca. 13°C, very rich vegetation of *Juglans* sp., *Larix* sp., *Salix* sp., *Crataegus* sp., ca. 300 m a.s.l.; 26.IX.1994; leg. Ji & Wang; [locality number on label: 61].
- CWBS loc. 126: **Liaoning Province**; Dalian City; Botanical Garden in the city; man-made lake, shaded, margin with gravel and mud, decaying plant material, 20°C, *Pinus tabulaeformis* and broadleaf trees, ca. 30 m a.s.l.; 12.X.1994; leg. Ji & Wang; [locality number on label: 62].
- CWBS loc. 128: **Shandong Province**; Yantai Prefecture; Muping County; 45 km SE Yantai City; Konyü Shan National Park; small stream, ca. 3 m wide, slowly flowing, unshaded, margin with stones and gravel, including rock pools, some stones with moss, ca. 18°C, surrounding vegetation: *Pinus* sp., *Maackia* sp., *Quercus* sp., ca. 90 m a.s.l.; 13.X.1994; leg. Ji & Wang; [locality number on label: 64].
- CWBS loc. 166: **Liaoning Province**; Dandong City Region; Kuandian County; Qingshangou Forest Park; ca. 50 km NE Kuandian City; river (Beigou [= North Valley]), ca. 5 m wide, fast flowing, unshaded, sandy, rock and gravel, limestone, 300 m a.s.l.; 1.IX.1995; leg. Ji & Wang.
- CWBS loc. 330: **Nei Mongol Autonomous Region**; Ganjig Ka County; ca. 20 km SW Ganjig Ka, Daqing Shan National Park; river (tributary of Liu He), 2 - 5 m wide, sand, submerged trees and organic litter along the shores, densely shaded, slowly flowing through a ca. 50 m deep valley, forested with various broadleaf trees, ca. 180 m a.s.l.; 24.VII.1998; leg. Ji, Schönmann, Schönmann & Wang.

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Check list of *Ochthebius* from Japan and Taiwan

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|-----|--|---|
| 1. | <i>Ochthebius (Asiobates) hokkaidensis</i> JÄCH | Japan |
| 2. | <i>Ochthebius (Asiobates) formosanus</i> sp.n. | Taiwan |
| 3. | <i>Ochthebius</i> (? <i>Enicocerus</i>) <i>hasegawai</i> NAKANE & MATSUI
= <i>E. mamagri</i> SHATROVSKIY syn.n. | Japan, Russia |
| 4. | <i>Ochthebius</i> (? <i>Enicocerus</i>) <i>ilanensis</i> sp.n. | Taiwan |
| 5. | <i>Ochthebius</i> (? <i>Enicocerus</i>) <i>japonicus</i> sp.n. | Japan |
| 6. | <i>Ochthebius</i> (? <i>Enicocerus</i>) <i>nakanei</i> MATSUI | Japan |
| 7. | <i>Ochthebius</i> (s.str.) <i>danjo</i> NAKANE
= <i>O.</i> (s.str.) <i>yumiae</i> MATSUI & DELGADO syn.n. | Japan |
| 8. | <i>Ochthebius</i> (s.str.) <i>inermis</i> SHARP | Japan, Taiwan |
| 9. | <i>Ochthebius</i> (s.str.) <i>jengi</i> sp.n. | Taiwan |
| 10. | <i>Ochthebius</i> (s.str.) <i>nipponicus</i> sp.n. | Japan |
| 11. | <i>Ochthebius</i> (s.str.) <i>satoi</i> NAKANE | Japan, Taiwan, Mainland China, Russia, Mongolia |
| 12. | <i>Ochthebius</i> (s.str.) <i>strigoides</i> sp.n. | Taiwan |
| 13. | <i>Ochthebius</i> (s.str.) sp. (cf. <i>masatakasatoi</i>) | Taiwan |

Ochthebius (Asiobates) hokkaidensis JÄCH

Ochthebius (Asiobates) hokkaidensis JÄCH 1998: 180.

TYPE LOCALITY: Shiretoko-rindo, Hokkaido, Japan.

TYPE MATERIAL: **Holotype** ♂ (CSN): "Shiretoko-rindo Hokkaido 1-VIII-1991 S.Kaneno leg.". **Paratypes** (CSN, NMW): 4 ♀♀, with same locality data as holotype; 1 ♀: "Sarobetsu Hokkaido 11-VII-1991 Y.Yasuda".

ADDITIONAL MATERIAL EXAMINED:

J A P A N: HOKKAIDO: Nopporo Forest Park, Ebetsu, 9.VI.1993, leg. K. Miyashita (CNC, NMW).

DIAGNOSIS: 1.8 - 2.0 mm long. Colouration black. A member of the *Ochthebius rugulosus* WOLLASTON complex (see JÄCH 1998).

Aedeagus: see JÄCH (1998, Fig. 7).

DISTRIBUTION: Japan (Hokkaido).

Ochthebius (Asiobates) formosanus sp.n.

TYPE LOCALITY: Creek, Chingchen, Dalu forest track, ca. 100 m a.s.l., Hsinchu Hsien, Taiwan.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TAIWAN 5.10.1991 Hsinchu Hsien Dala [= Dalu] forest Rd. \ 89 leg. M.L.Jeng". **Paratypes** (NMW, NTU, CASS, CSN, ISNB): 5 exs. with same locality data as holotype; 7 exs.: "TAIWAN 5.10.1991 Hsinchu Hsien Chingchen \ 94 leg. M.L.Jeng"; 6 exs.: "TAIWAN 10.9.1991 Ilan Hsien Yuanyang Lake \ 88 leg. M.L.Jeng"; 7 exs.: "TAIWAN 5.10.1991 Miaoli Hsien Madala Stream \ 93 leg. M.L.Jeng"; 1 ♀: "TAIWAN 1991 Tainan Hsien (101) \ Dzenwen Res. leg. Jeng 20.X."; 2 ♀♀: "Formosa Alisan July 21. 1969 Y.HORI leg.".

DIAGNOSIS: 2.0 - 2.4 mm long. Dark brown to black. Surface rather smooth, elytra of female slightly more distinctly reticulate. Male mandibles distinctly fringed with stiff setae. Front margin of male more or less entire and slightly upturned, more or less distinctly emarginate in female. Pronotum (Fig. 5) moderately densely and distinctly punctured; anterior and posterior foveae vestigial. Tarsal segments of male protarsus thickened.

Aedeagus (Fig. 20): Main piece long and slender, curved in basal half. Distal lobe elongate with a hook-like apex, which vaguely resembles those of *O. pliginskiyi* JÄCH (see JÄCH 1990, Fig. 4)

and *O. coomani* d'ORCHYMONT (see Fig. 21, and d'ORCHYMONT 1942, Fig. 5A). Parameres not very widely separated from main piece.

Externally, the new species is very similar to *O. coomani*, from which it differs in the pronotal punctures being slightly more densely arranged.

Ochthebius unimaculatus Pu has a similar pronotal punctation but can be distinguished easily by the conspicuous elytral maculation.

Ochthebius hokkaidensis can be distinguished by the smaller size and by the pronotum (Fig. 3) being distinctly convex horizontally.

ECOLOGY: This species lives in a variety of habitats: small and large streams (up to 40 m wide), mountain lakes, at elevations from 1000 - 2000 m a.s.l. Only one specimen was collected at only 200 m a.s.l. ("Dzenwen Res.").

DISTRIBUTION: So far known only from Taiwan.

ETYMOLOGY: Formosa is an old name for Taiwan.

Ochthebius (s.str.) *inermis* SHARP

Ochthebius inermis SHARP 1884: 456. - KNISCH 1924. - NAKANE 1963 (misidentification: see *Ochthebius hasegawai*). - SATÔ 1985. - MATSUI 1986. - JACH 1992b.

TYPE LOCALITY: Miyanoshita, Hakone Spa, near Odawara City, Kanagawa Prefecture, Honshu, Japan.

TYPE MATERIAL: Holotype ♂ (by monotypy): "*Ochthebius inermis* Type D.S. Miyanoshita May 1880 / Type / Miyanoshita 11.V. - 14.V.80 / Japan G.Lewis. 1910 - 320.", deposited in the BML. I have not dissected the specimen. It probably represents a male (elytra not microreticulate).

DIAGNOSIS: *Ochthebius inermis* is a member of the *O. punctatus* STEPHENS group and thus recognized by black colouration and dorsal surface covered by long, whitish adpressed hairs.

1.9 - 2.4 mm long. Pronotal foveae distinct or more or less obsolete; pronotal disc moderately densely punctate, punctures small. Elytral striae, slightly to strongly irregular, especially median ones (2 - 4) in anterior half; punctures only rarely arranged in completely regular lines; puncture density variable. Interstices glabrous or superficially shagreened, usually more strongly shagreened in females.

Aedeagus (Fig. 22, and JACH 1992b: Fig. 12): Main piece long and slender, its curvature remarkably variable in lateral aspect (even within the same population!): subangular or almost evenly arched; apex long and acute; phallobasis asymmetrical. Distal lobe constant, more or less cylindrical, very slightly flattened dorso-ventrally.

DISCUSSION: *Ochthebius inermis* is a very variable species (JACH 1992b), specimens with more or less regular elytral punctation may be found together with distinctly irregularly punctate specimens in the same population.

ECOLOGY: This species is found in stagnant or flowing water, usually associated with filamentous green algae.

DISTRIBUTION: Japan (Kyushu, Honshu), Taiwan.

ADDITIONAL MATERIAL EXAMINED:

J A P A N: KYUSHU: Nishiki T., Kuma-gun, Kumamoto Prefecture, 28.IX.1986, leg. Matsui (NMW); HONSHU: Tochigi Prefecture, Sabigawa Ohtawara, 11.VI.1990, leg. Hikida (CSN, NMW); Tochigi Prefecture, Nishinasuno, 18.X.1985, leg. Takahashi (CSN); Miyagi Prefecture, Ohtaki-gawa, 5.VI.1978, leg. Satô (CSN); Gifu Prefecture, Nigorigo, Takane-mura, 9.IX.1997, leg. Yoshitomi (NMW, CYT); Tokyo, Nakagawara, Tama-gawa, 14.VIII.1964, leg. Watanabe (CSN, NMW); Irikawa, Sado-ga-shima, 8.VII.1989, leg. Kobayashi (CSN).

CHINA: TAIWAN (first record): Taitung Hsien, farm near Taitung Airport, 31.I.1991, leg. Jeng (NMW); Hsinchu Hsien, Dalu forest track, 5.X.1991, leg. Jeng (NTU, NMW); Nantou Hsien, Hsini Sinchunghen, 620 m a.s.l., 18.XI.1991, leg. Kang (CWT); Taoyuan Hsien, Luo-Fu, 300 m a.s.l., 6.III.1998, leg. Jeng (NMW); Kaohsiung Hsien, Meishan, Weijin stream 1.XI.1992, leg. Jeng & Chou (NMW); Miaoli Hsien, Ponglai, 31.III.1991, leg. Jeng (NMW); Taroko, 30.XI.1962, leg. Baba (CSN).

Ochthebius (s.str.) *danjo* NAKANE

Ochthebius danjo NAKANE 1990: 64. - JACH 1992b.

Ochthebius yumiae MATSUI & DELGADO 1997: 72 (syn.n.).

TYPE LOCALITY: Nakanoshima, Danjo Island (W of Kyushu), Japan.

TYPE MATERIAL: Holotype ♂ (CNC), examined: "Nakanoshima Is. Danjo 24. V. 1989 Y. Ikezaki \ HOLOTYPE \ *Ochthebius danjo* m. Det. T. Nakane".

SYNONYMY: I have examined two paratypes (♂ + ♀, NMW) of *O. yumiae*: "Kagoshima Pref., 25.II.1997 leg. Matsui, E. \ Hinokami-koen, Makurazaki City, \ Paratype \ *Ochthebius yumiae* Matsui & Delgado det. Matsui E.,". The holotype is deposited in the Entomological Laboratory, Kyushu University, Fukuoka, Japan; most of the 68 paratypes are deposited in the CMA; 2 paratypes are deposited in the NMW. The female paratype which I have examined agrees in every detail with the holotype of *O. danjo*.

DIAGNOSIS: *Ochthebius danjo* is a member of the *O. punctatus* species group.

2.15 - 2.40 mm long. Labrum distinctly but not very deeply notched. Surface of clypeus microreticulate; surface of frons rugosely punctate; Pronotal disc glabrous or superficially microreticulate, sides more distinctly microreticulate; pronotal disc densely punctate; sides of pronotal "ears" rounded. Elytra oblong, almost parallel-sided, densely and more or less irregularly punctate; explanate margin moderately wide.

Aedeagus (Fig. 23): Main piece long, slender, strongly curved, almost L-shaped in lateral view. Phallobase asymmetrical. Distal lobe elongate, subtriangular. Parameres slightly separated from main piece.

DIFFERENTIAL DIAGNOSIS: *Ochthebius danjo* can be distinguished easily from *O. inermis* by the excised labrum, by the comparatively densely punctate pronotum and elytra, and by the longer, more parallel-sided elytra.

ECOLOGY: This species was collected in marine rock-pools.

DISTRIBUTION: So far known only from Danjo Island (W of Kyushu) and southern Kyushu (Kagoshima Prefecture).

Ochthebius (s.str.) *satoi* NAKANE

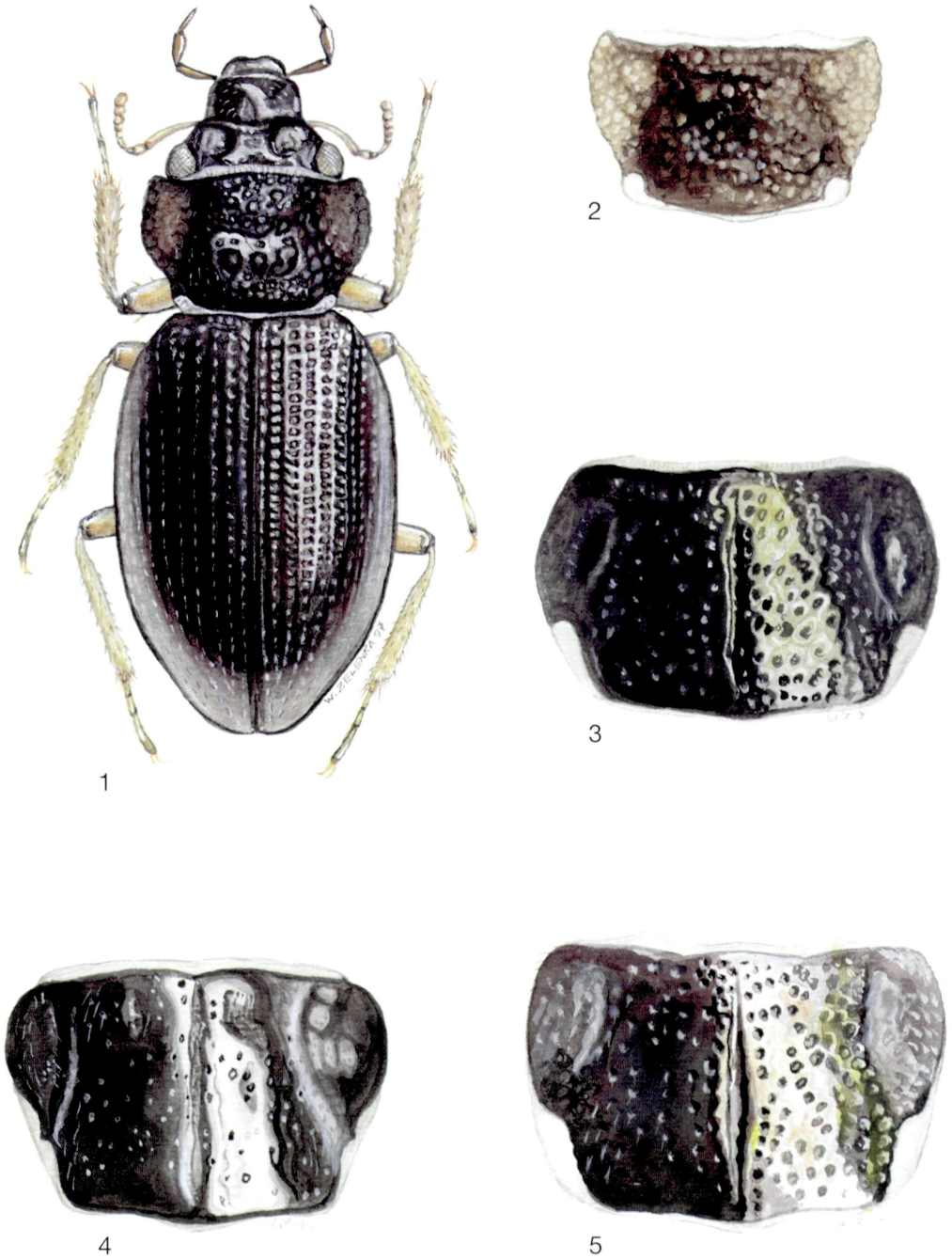
Ochthebius satoi NAKANE 1963: 63. - NAKANE 1965: 51 (formal description). - SATŌ 1985. - MATSUI 1986. - SHATROVSKIY 1989. - JACH 1991, 1995.

TYPE LOCALITY: Shigenobu river (Morimatsu), Ehime Prefecture, Shikoku, Japan.

TYPE MATERIAL: Holotype ♂ and 3 paratypes (not examined), deposited in CNC (according to e-mail of M. Satō, 30.VII.1998).

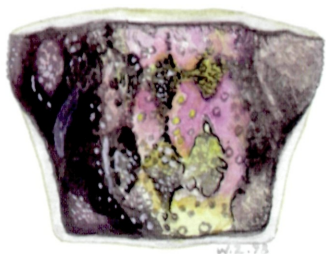
DIAGNOSIS: *Ochthebius satoi* is a member of the *O. foveolatus* GERMAR species group which was revised by JACH (1991).

1.45 - 1.85 mm long. This species is very variable; the pronotal disc can be densely chagreened or glabrous.



Figs. 1 - 2: *Ochthebius jengi*, 1) habitus; 2) pronotum, different specimen.

Figs. 3 - 5: Pronotum of 3) *Ochthebius hokkaidensis*, 4) *O. inermis*, 5) *O. formosanus*.



6



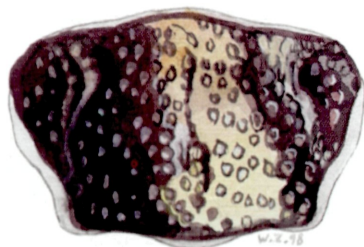
7



8



9



10



11

Figs. 6 - 11: Pronotum of 6) *Ochthebius satoi*, 7) *O. strigoides*, 8) *O. cf. masatakasatoi*, 9) *O. hasegawai*, 10) *O. japonicus*, 11) *O. nakanei*.

Aedeagus (see JÄCH 1991, Fig. 10): very similar to that of *O. mediterraneus* IENISTEA, but easily recognized by the curved left branch of the distal lobe. Apex of main piece (ventral aspect) slightly variable. Distal lobe of *O. pedicularius medius* JÄCH distinctly larger.

DISCUSSION: *Ochthebius satoi* is a very variable species and I would not be surprised if a closer examination would reveal specific (or at least subspecific) differences between some of the populations.

ECOLOGY: In Taiwan this species was collected in small pools along rivers. In Liaoning this species was almost exclusively collected in rivers and in gravel pools along these rivers (see JÄCH & Ji 1995: Fig. 22). The single Nei Mongol specimen was collected in a rather fast flowing river (see JÄCH & Ji 1998: Fig. 24).

DISTRIBUTION: Mongolia, Russian Far East, Japan (Hokkaido, Honshu, Shikoku), China (Nei Mongol, Shaanxi, Liaoning, Jilin, Henan, Shandong, Taiwan).

MATERIAL EXAMINED:

M O N G O L I A: Chovd aimak, 3 km N Somon Uenc, 1450 m, 3.VIII.1966, leg. Kaszab (TMB, NMW, CSN); Chovd aimak, river Bulgan gol, 15 km N Somon Bulgan, 1300 m, 7.VII.1966, leg. Kaszab (ISNB, NMW).
 R U S S I A: PRIMORSK Region: Amba River, 5 km W Zanadvorovka, 10.-11.VII.1992, leg. Nilsson (NMW); Tigrovyi, 19.-21.VIII.1992, leg. Boukal (NMW); Partizansk distr., Alexeyevsky Krevet, Andreyevka River, 20 km E Sergejevka, ca. 400 m a.s.l., 26.-29.VI.1993, leg. Pütz & Wrase (NMW).
 J A P A N: HOKKAIDO (first record): Shibechea, 18.VII.1976, leg. Satô (CSN); HONSHU: Inabe river, Fujihara, Mie Prefecture, 20.IV.1958, leg. Naruse (CSN); Murakami, Echigo, 8.VIII.1961, leg. Satô (CSN); Fussa Tokyo, Tamagawa, 3.X.1964, leg. Watanabe (TMB); SHIKOKU: Yoshino-gawa river, Tokushima City, 14.VIII.1968, leg. Sakai (CSN); Akiugawa river, Tokushima Prefecture, 23.VIII.1969, leg. Sakai (CSN).
 C H I N A: NEI MONGOL (first record): CWBS loc. 330; SHAANXI (first record): 7 km E Zhouzhi, 108°17'E, 34°08'N, 400 m a.s.l., 24.VIII.1995, leg. Schülke (NMW); LIAONING: CWBS loc. 98, 115, 121, 124, 125, 126, 166; SHANDONG (first record): CWBS loc. 128; HENAN: Loyang, 6.VIII.1966, leg. Hammond (BML); TAIWAN: Taitung Hsien, farm near Taitung Airport, 31.I.1991, leg. Jeng (NMW); Nantou Hsien, Hsio-fong, Chingsuigo stream, 22.II.1991, leg. Jeng (NMW); Hsini Sinchunghen, 620 m a.s.l., 18.XI.1991, leg. S.-C. Kang (CWT); Guoshing, Gango, 9.XII.1997, leg. Jeng (NMW); Hsinchu Hsien, Shangping, 31.III.1991, leg. Jeng (NMW); Ilan Hsien, Luenbei, 39.III.1991, leg. Jeng (NMW); Hwallien Hsien, Tailuker, 6.XI.1992, leg. Chou & Wang (NMW); Shofong, Sueylien, 2.XII.1997, leg. Jeng (NMW); Taoyuan Hsien, Palin, 24°40'34"N 121°23'19"E, 18.III.1996, leg. Wang (CWT); Luo-Fu, 300 m a.s.l., 6.III.1998, leg. Jeng (NMW, preserved in alcohol); Taroko, 30.XI.1962, leg. Baba (CSN).

Ochthebius (s.str.) jengi sp.n.

TYPE LOCALITY: Creek with sand and pebbles, about 200 m from sea shore, Fongchaesha, Pingtung Hsien, Taiwan.

TYPE MATERIAL: Holotype ♂ (NMW): "1993 \ TAIWAN-Pingtung Fongchaesha 12.III. leg.M.L.Jeng (111)". Paratypes (NMW, NTU, CSN): 20 exs., same label data as holotype; 1 ♀: "TAIWAN 27.X.1991 Tainan Hsien (102) Gweidan, leg. Jeng".

DESCRIPTION: Habitus (Fig. 1). 1.35 - 1.50 mm long. Head black (ocelli often dark brown), pronotum and elytra brown or dark brown; body appendages usually paler brown or yellowish. Upper surface only very sparsely pubescent.

Labrum wider than long; anterior margin gently emarginate (male) or shallowly excised (female), upturned in male. Fronto-clypeal suture gently arched. Frons sparsely to densely punctate. Ocular grooves deeply impressed, ocelli and eyes well developed. Terminal segment of labial palpi elongate, only slightly shorter than penultimate one. Antennae (Fig. 31): segment 3 petiolate and rather short; segments 6 - 9 slightly asymmetrical.

Pronotum (Figs. 1, 2) distinctly wider than long, widest near anterior 0.25, evenly arcuately constricted to approximately posterior 0.15 and then abruptly and conspicuously excised. Anterior

margin emarginated behind eyes. Lateral margin subcrenulate. Posterior margin rather evenly arched. Hyaline membrane narrow, confined to anterior and posterior margin and posterior excision. Dorsal surface moderately densely to densely punctate, smooth or microreticulate between punctures. Disc with two transverse, densely punctate impressions, which are not distinctly defined; posterior impression usually somewhat arched.

Elytra long and slender, apically elongate and acuminate (in females usually more distinctly acuminate than in males); distinctly convex in cross section. Disc with six rows of punctures between suture and shoulder; rows straight and regular; punctures small but deeply impressed; rows separated by less than a puncture diameter; intervals between rows flat or gently convex, smooth. Lateral margins rather narrowly explanate.

Hypomeral antennal grooves deep and narrow, confined to anterior 0.5. Metasternal disc with glabrous area in posterior third to posterior half. Ventrites I - II (III) entirely pubescent, ventrites IV (III) - V at least postero-medially glabrous, ventrites VI and VII entirely glabrous. Apical margin of last abdominal tergite of female with a fringe of stiff bristles. Anterior legs of males slightly more robust than fore legs of females, fore claws of males distinctly larger.

Aedeagus (Fig. 24): Main piece long and slender, ventrally curved (lateral view); with ca. six micropores near base of distal lobe; subapical setae moderately long. Distal lobe elongate, curved; ventral margin subangulate. Parameres symmetrical, close to main piece, inserted near basal 0.4 of main piece; apices slightly widened, with moderately long setae.

DISCUSSION: I was so far not able to place *Ochthebius jengi* in one of the presently acknowledged species groups. I propose to establish a new species group for *O. jengi* and *O. nipponicus* sp.n. (described below). The *O. jengi* species group is characterized by following combination of characters: 1) pronotal membrane reduced to anterior and posterior margin (including posterior excision), 2) lateral margin of pronotum with small but conspicuous excision, 3) pronotal disc with two transverse impressions, without median groove, 4) ventrite V at least medially glabrous.

ECOLOGY: This species was collected from pebbles in streams at elevations of 10 - 200 m a.s.l.

DISTRIBUTION: So far known only from southern Taiwan (Pingtung, Tainan).

ETYMOLOGY: Named for my friend Ming-Luen Jeng.

Ochthebius (s.str.) *nipponicus* sp.n.

TYPE LOCALITY: Suzaki, Izu Peninsula, Shizuoka Prefecture, Honshu, Japan.

TYPE MATERIAL: **Holotype** ♂ (CSN): "(HONSHU) Suzaki Izu JAPAN 30. Sept. 1980 M. Tomokuni". **Paratype** ♂ (NMW), same locality data as holotype.

DIAGNOSIS: 1.5 mm long. Very similar to and obviously very closely related to *O. jengi*. It can be reliably distinguished from *O. jengi* only by the aedeagus (Fig. 25): apex of main piece more distinctly curved ventrad; ventral margin of distal lobe more evenly arched.

Fourth ventrite entirely pubescent in the two specimens examined.

Female unknown.

ECOLOGY: This species was collected in fresh water on a cliff at the sea shore.

DISTRIBUTION: So far known only from Japan (Honshu).

ETYMOLOGY: Named for the country of origin.

Ochthebius (s.str.) *strigoides* sp.n.

TYPE LOCALITY: Small pools along stream, Luenbei, Ilan Hsien, Taiwan.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TAIWAN 29.3.1991 Ilan Hsien Luenbei \ 53 leg. M.-L.Jang [= Jeng]".
Paratypes (NMW, NTU, CMA): 43 exs., same locality labels as holotype; 4 exs.: "TAIWAN-Pingtung 1993 Fongchaesha 12.III. leg.M.L.Jeng (110)"; 6 exs.: "TAIWAN: Taipei Co. Hodong, 100m 20.2.1998 leg. M.L. Jeng".

DESCRIPTION: 1.40 - 1.65 mm long. Black; body appendages usually paler brown or dark brown; knees and tarsi often darker than remaining parts of legs. Upper surface sparsely covered by short whitish semierect or adpressed hairs.

Labrum wider than long; anterior margin slightly excised, hardly perceptibly upturned in male. Fronto-clypeal suture gently arched. Frons usually densely punctate. Ocular grooves deeply impressed; ocelli and eyes well developed; ocelli close to eyes. Terminal segment of labial palpi short and peg-like, ca. 0.4 times as long as penultimate one. Antennae (Fig. 32): segment 2 subtruncate apically; segment 3 petiolate and short; segments 6 - 9 slightly asymmetrical.

Pronotum (Fig. 7) distinctly heart-shaped, wider than long, widest near anterior 0.3, with widely explanate "ears"; lateral margin abruptly arcuately constricted in posterior half. Anterior margin emarginated behind eyes; postocular tooth present. Lateral margin of "ears" subcrenulate. Posterior margin rather evenly arched. Hyaline membrane narrow, confined to anterior and posterior margin and postero-lateral emargination. Surface of disc and lateral margin of "ears" very densely punctate; remainder of "ears" more or less glabrous. Disc strongly convex in cross section; median groove present, but quite shallow in middle, not reaching anterior and posterior margin; anterior discal foveae rounded; posterior discal foveae often obliquely elongate.

Elytra moderately long and slender; strongly convex in cross section. Disc with six rows of punctures between suture and shoulder; rows straight and regular; punctures small but deeply impressed and very densely arranged; rows separated by less than a puncture diameter; intervals between rows flat or weakly convex, smooth. Lateral margins moderately widely explanate. Epipleura almost reaching elytral apex.

Hypomer al antennal grooves deep, confined to anterior 0.5; hypomer al hyaline membrane and anterior hypomer al setae as in *O. metallescens* ROSENHAUER (Figs. 17, 18). Metasternal disc entirely pubescent. Ventrites I - V pubescent, ventrites VI and VII glabrous. Apical margin of last abdominal tergite of female with a fringe of stiff bristles. Legs only moderately long.

Aedeagus (Fig. 26): Main piece long and slender, ventrally curved (lateral view); with ca. 8 - 10 micropores near base of distal lobe; subapical setae very short and inconspicuous; phallobase distinctly asymmetrical (ventral view). Distal lobe elongate, more or less straight; laterally depressed; ventrally enlarged apically. Parameres more or less symmetrical, close to main piece, inserted ventrally near basal 0.4 of main piece; apices slightly widened, with moderately long setae; right paramere slightly longer than left one.

DISCUSSION: *Ochthebius strigoides* is obviously very closely related to *O. strigosus* CHAMPION from North India (Uttar Pradesh), of which I was able to examine a female syntype. In the absence of male specimens *O. strigosus* had been transferred from *Ochthebius* s.str. to *Asiobates* THOMSON on account of pronotal characters by JÄCH (1989). However, due to the overall similarity between *O. strigosus*, *O. strigoides* and four undescribed species from mainland China (Fujian, Shaanxi, Sichuan) I believe that *O. strigosus* must be placed in *Ochthebius* s.str. and I propose to establish a separate subgroup within the *O. metallescens* species group, i.e. the *O. strigosus* subgroup for these six species.

This subgroup is characterized by the shape of the (somewhat *Asiobates*-like) pronotum (strongly cordiform, disc convex, "ears" widely explanate, lateral emargination confined to the posterior half), by the densely punctate elytra, by the long epipleura, by the short terminal labial segment,

and by the subtruncate apex of antennal segment 2.

ECOLOGY: This species was collected from small pools along streams (type locality), moss on boulders above the water line ("Hodong"), creek with sand and pebbles near sea shore ("Fongchaesha"). All localities are below 200 m a.s.l.

DISTRIBUTION: So far known only from Taiwan (Taipei, Ilan, Pingtung).

ETYMOLOGY: Named in reference to the close systematic relationship with *Ochthebius strigosus*.

Ochthebius (s.str.) sp. (cf. *masatakasatoi* JÄCH)

MATERIAL EXAMINED: One ♀ (ISBNB): "♀ \ Coll. R. I. Sc. N. B. Formose Coll. A.d'Orchymont \ A.d'Orchymont det. *Ochthebius* (s.str.) formosanus m. \ TYPE".

DISCUSSION: This female belongs to an undescribed species of the *O. marinus* LEACH species group. It is obviously very closely related to or belonging to the same species as some 38 specimens collected by the CWBS in Hainan in 1996. It is very similar to *O. masatakasatoi*. Its pronotum is depicted in Fig. 8.

The Hainan species and *O. masatakasatoi* were collected in coastal marshes. The same habitat can be assumed for the Taiwanese species.

Enicocerus STEPHENS

The west Palearctic species of *Enicocerus* were revised taxonomically by JÄCH (1992a).

Unfortunately, the generic classification of the Ochthebiinae has never been revised with modern cladistic methods. Despite of that, *Enicocerus* was elevated to generic rank and a separate subtribe (Enicocerina) was even established for it by PERKINS (1997). The conclusions of PERKINS (1997) are based on the examination of only two species of *Enicocerus* (*E. exculptus* GERMAR and *E. benefossus* LECONTE) and on a very limited character set: 1) postocular pores distributed on a postocular secretion shelf (in a secretion sulcus in *Ochthebius*); 2) postocular setae short with brush-like tips (long and tapering in *Ochthebius*); 3) hypomerale hyaline membrane produced anteriorly, hypomerale setae relatively short, consequently the hypomerale hyaline membrane (and not the pocket setae as in *Ochthebius*) contacts the postocular setae.

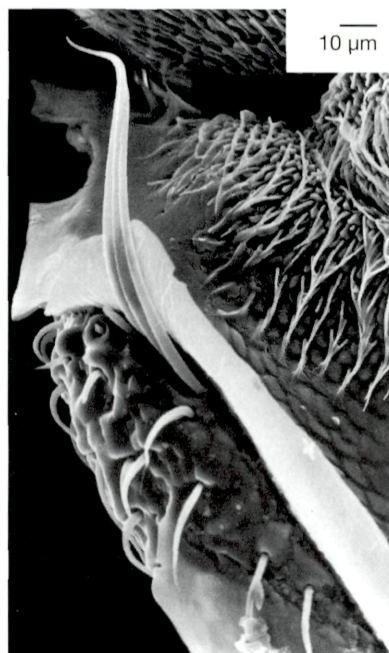
None of the east Asian or Himalayan species, which had hitherto been included in *Enicocerus* was examined by PERKINS (1997).

Examination of the East Asian species which were hitherto assigned to *Enicocerus* reveals that their postocular setae and their hypomerale membrane (see Figs. 12 - 16) do not at all agree with those of European *Enicocerus* and *O. benefossus* but were instead found to be very similar to those of *O. s.str.* (see Figs. 17 - 19). I found no trace of a postocular secretion sulcus in East Asian "*Enicocerus*", but the so-called postocular secretion sulcus seems to be generally very variable and not always well defined in *Ochthebius s.str.*

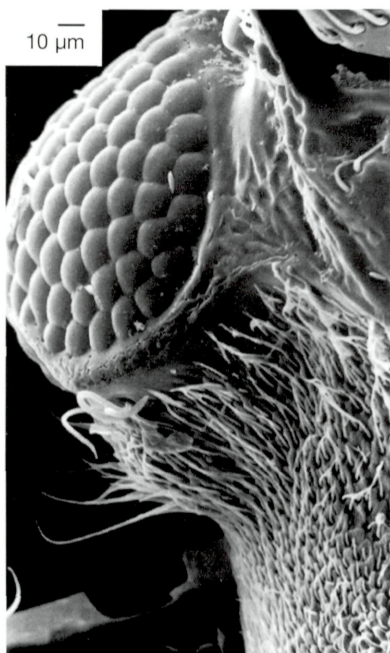
With regard to other characters, the Asian "*Enicocerus*" agree with European *Enicocerus* in the general appearance, the terminal segment of maxillary palpi being short, in the wide epipleura (more or less reaching the clytral apex), and in aedeagal similarities (reduction of parameres). They differ from the European species in the second antennal segment being not cup-shaped, and in the ocelli being not very close to the eyes.



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13



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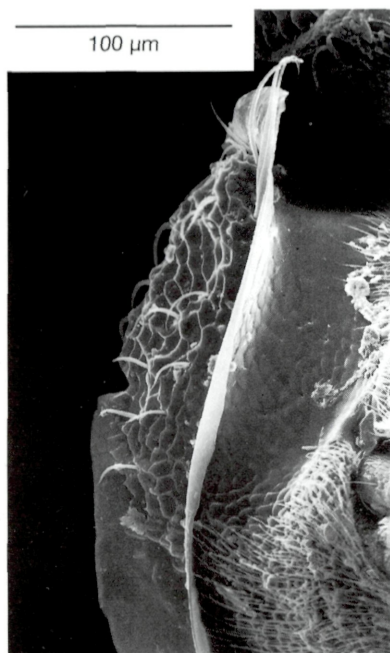


15

Figs. 12 - 15: *Ochthebius ilanensis*, underside, SEM photographs, 12) head and prothorax, right side, 13) anterior half of right hypomeron, 14) posterior half of right side of head, 15) same, postocular area enlarged.



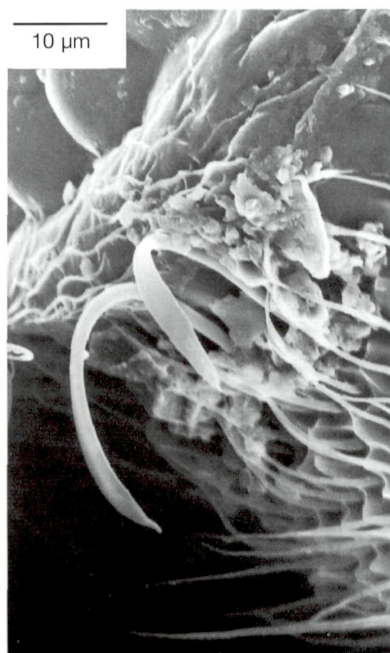
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Figs. 16 - 19: SEM photographs, 16) *Ochthebius ilanensis*, postocular setae; 17 - 19) *Ochthebius metallescens*, 17) right hypomeron and right postocular area, 18) anterior part of right hypomeron, 19) postocular area.

Certainly, more detailed studies on the phylogeny of *Ochthebius* is needed to determine the status of *Enicocerus*. As long as no cladistic analyses have been carried out I regard *Enicocerus* as a subgenus of *Ochthebius*.

ECOLOGY: The species of *Enicocerus* usually live on half-submerged rocks or boulders in rather fast flowing streams, usually in riffle areas. They are frequently found a little above the water line in the wet splash zone. They can be easily collected by "washing" the surface of these rocks. Few species (e.g., *O. gibbosus* GERMAR) are found also in gravel banks along streams and rivers.

Ochthebius (? *Enicocerus*) *hasegawai* NAKANE & MATSUI

Ochthebius hasegawai NAKANE & MATSUI in MATSUI 1986: 81 (described in subgenus "*Henicocerus*").

Ochthebius inermis - NAKANE 1963 (misidentification).

Ochthebius mamagri SHATROVSKIY 1989: 263 (described in subgenus "*Henicocerus*") (syn.n.). - SHATROVSKIY 1992.

TYPE LOCALITY: Kobotoke Pass, Takao, Tokyo Prefecture, Honshu, Japan.

TYPE MATERIAL: Holotype ♀ (CNC): "Kobotoke-toge [= Kobotoke Pass (in Japanese script)] 16-I-1950 H Hasegawa \ HOLOTYPE \ 32-I \ Ochthebius hasegawai Nak.& Matsui Det. T. Nakane". According to the original description (NAKANE & MATSUI in MATSUI 1986: 81) there are no paratypes.

ADDITIONAL MATERIAL EXAMINED:

J A P A N: HOKKAIDO: Jozankei, 19.VII.1976, leg. Satō (CSN); Horoman, 3.VIII.1985, leg. Satō (CSN, NMW); Shiretoko-goko, 17.VII.1976, leg. Satō (CSN); Peshuppe R., Penkeru, 4.VI.1989, leg. Miyamori (CSN, NMW); Iwaonai, Asahi-chō, 5.IX.1997, leg. Yoshitomi (NMW, CYT); Sapporo, 2.VI.1978, leg. T. Hattori (CNC); HONSHU: Gifu Prefecture, Tokuyama Dum, 26.IV.1992, leg. Satō (CSN, NMW); Gifu Prefecture, Akigami, 4.VIII.1966, leg. Satō (CSN); Tochigi Prefecture, Takakukou Nashu, 11.VI.1990, leg. Hikida (CSN); Nagano Prefecture, Shigakogen, VIII.1978, leg. Satō (CSN); Mie Prefecture, Hirakura, Misugi-mura, 22.VI.1997, leg. Yoshitomi (NMW, CYT); KYUSHU: Oita Prefecture, Shiiren, Shonai-machi, 31.V.1998, leg. Matsui (NMW, CMA).

R U S S I A: Primorskij Krai, Ussurijsk, Kajmanovka, 1.-4.VIII.1990, leg. Snižek (NMW); Primorskij Krai, Ussurijsk, Kajmanovka, 2.-9.VIII.1992, leg. Boukal (NMW).

SYNONYMY: I have examined the holotype ♂ of *O. mamagri* (ZISP), with Cyrillic label data, described from the Russian Far East (Primorskij Krai, Komarovka River, 15 km E Kamenushka, 5.VII.1984, leg. Vshivkova). Genitally, this specimen agrees fairly well with the material from Japan. Hence I propose this synonymy. However, there are a few external differences between the Russian and the Japanese specimens (see below). More Russian specimens must be examined to find out whether the Russian populations should be regarded as a subspecies. I have not seen the paratype ♀.

DIAGNOSIS: 2.2 - 2.4 mm long. Anterior margin of labrum rather deeply emarginate. Anterior corners of clypeus spiniform. Middle of frons smooth between punctures. Pronotum (see Fig. 9). Elytra transversally impressed before middle. Aedeagus (Fig. 27): Main piece long, only slightly curved ventrally; with ca. eight subapical micropores on right side; apex short, with ca. three minute setae; phallobase more or less symmetrical. Distal lobe moderately long, slender, more or less straight (lateral view). Parameres very short inserted near apical 0.2; apices with comparatively long setae.

VARIABILITY: Apical lobes of labrum variable in both sexes: evenly rounded, subtruncate, acuminately rounded or acutely produced. The posterior pronotal foveae can be medially confluent to form a straight transverse impression or a "U" or "V", or they may be rarely distinct (round or slanting).

The Russian specimens differ in the smaller size (2.1 mm long) and in the somewhat microreticulate pronotal disc.

DISTRIBUTION: Russian Far East, Japan (Hokkaido, Honshu, Kyushu).

Ochthebius (? *Enicocerus*) *ilanensis* sp.n.

TYPE LOCALITY: Stream near Ming-chi, Ilan Hsien, northern Taiwan.

TYPE MATERIAL: **Holotype** ♂ (NMW): "TAIWAN: Ilan Hsien creek near Ming-chi 21.II.1997, 1200 m leg. M.L. Jeng". **Paratypes** (NMW, NTU, CMA, CSN, CNC): 61 exs. with same locality data as holotype; 1 ♀ (NMW): "TAIWAN Ilan Chiduan-Suling \ 26.VI.1992 leg. Chi-Feng Lee"; 1 ♀ (NMW): "TAIWAN 29.3.1991 Ilan Hs., Suling leg. M.L. Jang [= Jeng]".

DIAGNOSIS: 2.1 - 2.3 mm long. Very similar to *E. hasegawai* from which it can be distinguished by the following characters: Anterior margin of labrum only slightly excised; anterior lobes always evenly rounded. Middle of frons strongly microreticulate, mat. Pronotal disc very densely punctate; intervals between punctures usually smaller than a puncture diameter; anterior pronotal foveae small and distinct; posterior pronotal foveae confluent.

Aedeagus (Fig. 28): Distal lobe shorter than in *E. hasegawai*. Curvature of main piece slightly variable, but dorsal margin (lateral view) always more straight subapically.

DISTRIBUTION: So far known only from Taiwan (Ilan Hsien).

ETYMOLOGY: Named in reference to the geographical distribution.

Ochthebius (? *Enicocerus*) *japonicus* sp.n.

TYPE LOCALITY: Wara-gawa, Gifu Prefecture, Honshu, Japan.

TYPE MATERIAL: **Holotype** ♂ (CSN): "Wara-gawa Gifu Pref. Aug. 24, 1967 M. Sato leg.". **Paratypes** (CSN, NMW, CMA, CYT, CNC, TPM): 22 exs., same locality data as holotype; 9 exs.: "Oppara Gifu Pref. 15, VI, 1978 M. Sato leg."; 4 exs.: "Akou Gifu Pref. 17.VIII.1967 M. Sato leg."; 13 exs.: "Nishimura Dam Gifu Pref. Aug. 25, 1967 M. Sato leg."; 1 ex.: "Hirakura Misugi-mura Mie Pref., Japan \ 22. VI. 1997 H. Yoshitomi leg."; 29 exs.: "Tochigi Pref., Jpn 3. VII. 1998 K. Sato leg. \ Omoigawa (Riv.) Nishikata-Machi".

DESCRIPTION: 1.7 - 2.0 mm long. Upper surface black, usually with distinct metallic (greenish, coppery blueish) tinge; body appendages usually paler brown or yellowish; knees and tarsi often darker than remaining parts of legs. Upper surface very sparsely and inconspicuously covered by short whitish adpressed hairs.

Labrum wider than long; anterior margin deeply excised, slightly upturned in male; apical lobes variable in both sexes: evenly rounded, subtruncate, acuminate rounded or acutely produced. Anterior corners of clypeus spiniform. Fronto-clypeal suture gently arched. Frons usually densely punctate laterally, sparsely punctate medially; ocular grooves deeply impressed; ocelli and eyes well developed. Lateral margin of mandible of male provided with a row of strong bristles. Terminal segment of labial palpi very short and peg-like, ca. 0.4 times as long as penultimate one. Antennae (Fig. 34): segment 2 short.

Pronotum (Fig. 10) heart-shaped, wider than long, widest near anterior 0.3 - 0.4. Anterior margin bisinuous; without postocular tooth. Posterior margin rather evenly arched. Hyaline membrane narrow along anterior and posterior margin; rather wide along lateral margin, not reaching anterior angles. Surface quite densely punctate; punctures separated approximately by puncture diameter. Disc with median groove present, but quite shallow or effaced in middle, not reaching anterior and posterior margin; anterior and posterior discal foveae more or less effaced, reduced to shallow transverse impressions.

Elytra moderately long, oval. Disc with six rows of punctures between suture and shoulder; rows straight and regular; punctures small but deeply impressed and rather densely arranged; rows separated by approximately one puncture diameter; intervals between rows weakly convex, smooth and glabrous. Lateral margins moderately widely explanate. Epipleura almost reaching elytral apex.

Hypomeral antennal grooves deep, confined to anterior 0.5. Metasternal disc entirely pubescent. Ventrites I - V pubescent, ventrites VI and VII glabrous. Apical margin of last abdominal tergite of female with a fringe of stiff bristles. Legs only moderately long.

Aedeagus (Fig. 29): Main piece slender, gently bisinuous (lateral view); with ca. eight subapical micropores on right side; apex short, with ca. two minute setae; phallobase more or less symmetrical. Distal lobe short, simple, apically truncate (lateral view). Parameres reduced to very short stumps inserted near distal lobe; apices with comparatively long setae.

DIFFERENTIAL DIAGNOSIS: *Enicocerus japonicus* can be distinguished from *E. hasegawai* by the following characters: 1) body length shorter; 2) elytral and pronotal punctation more regular; 3) elytra very rarely impressed transversally before middle; 4) aedeagus distinctly smaller and less evenly curved (lateral view).

DISTRIBUTION: Japan (Honshu).

ETYMOLOGY: Named for the country of origin.

Ochthebius (? *Enicocerus*) *nakanei* MATSUI

Ochthebius nakanei MATSUI 1986: 83 (described in subgenus "*Henicocerus*").

TYPE LOCALITY: Valley of Kikuchigawa River, Kumamoto Prefecture, Kyushu, Japan.

TYPE MATERIAL: I have examined the holotype ♀ (CNC): "KIKUCHI KEIKOKU 17.IX.1985 leg. MATSUI \ HOLOTYPE \ *Ochthebius nakanei* Matsui Det. T. Nakane". According to the original description (MATSUI 1986) there are no paratypes.

Additional Material Examined:

J A P A N: HONSHU: Niigata Prefecture, Renge Onsen, 20.VIII.1986, leg. Satō (CSN, NMW).

DESCRIPTION: 2.4 - 2.5 mm long. Upper surface black, usually with distinct metallic (usually greenish) tinge; body appendages usually paler brown or yellowish. Anterior margin of labrum moderately deeply excised, slightly upturned in male; apical lobes evenly rounded. Anterior corners of clypeus spiniform. Frons sparsely punctate medially; smooth between punctures. Lateral margin of mandible of male provided with a row of strong bristles.

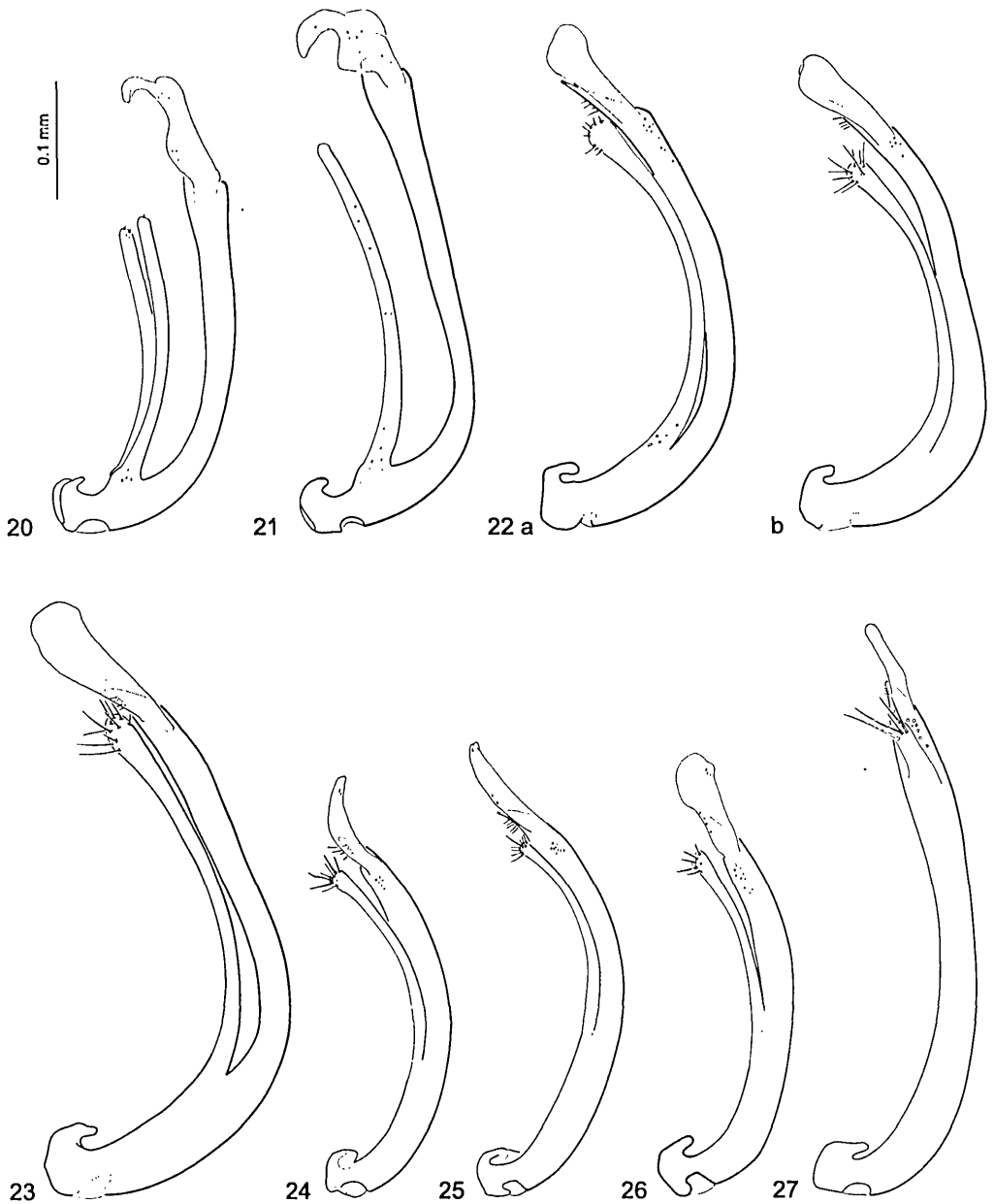
Pronotum (Fig. 11) heart-shaped, only slightly wider than long. Hyaline membrane very narrow, hardly detectable along lateral margin. Surface moderately densely punctate. Disc with median groove, but quite shallow or effaced near middle, not reaching anterior and posterior margin; anterior discal foveae rounded; posterior foveae elongate and oblique, sometimes confluent and "V"-shaped.

Elytra ovoid. Disc transversally impressed before middle; with six rows of punctures between suture and shoulder; rows straight and regular; punctures small; rows separated by more than one puncture diameter; intervals between rows flat, smooth and glabrous. Lateral margins moderately widely explanate. Epipleura almost reaching elytral apex.

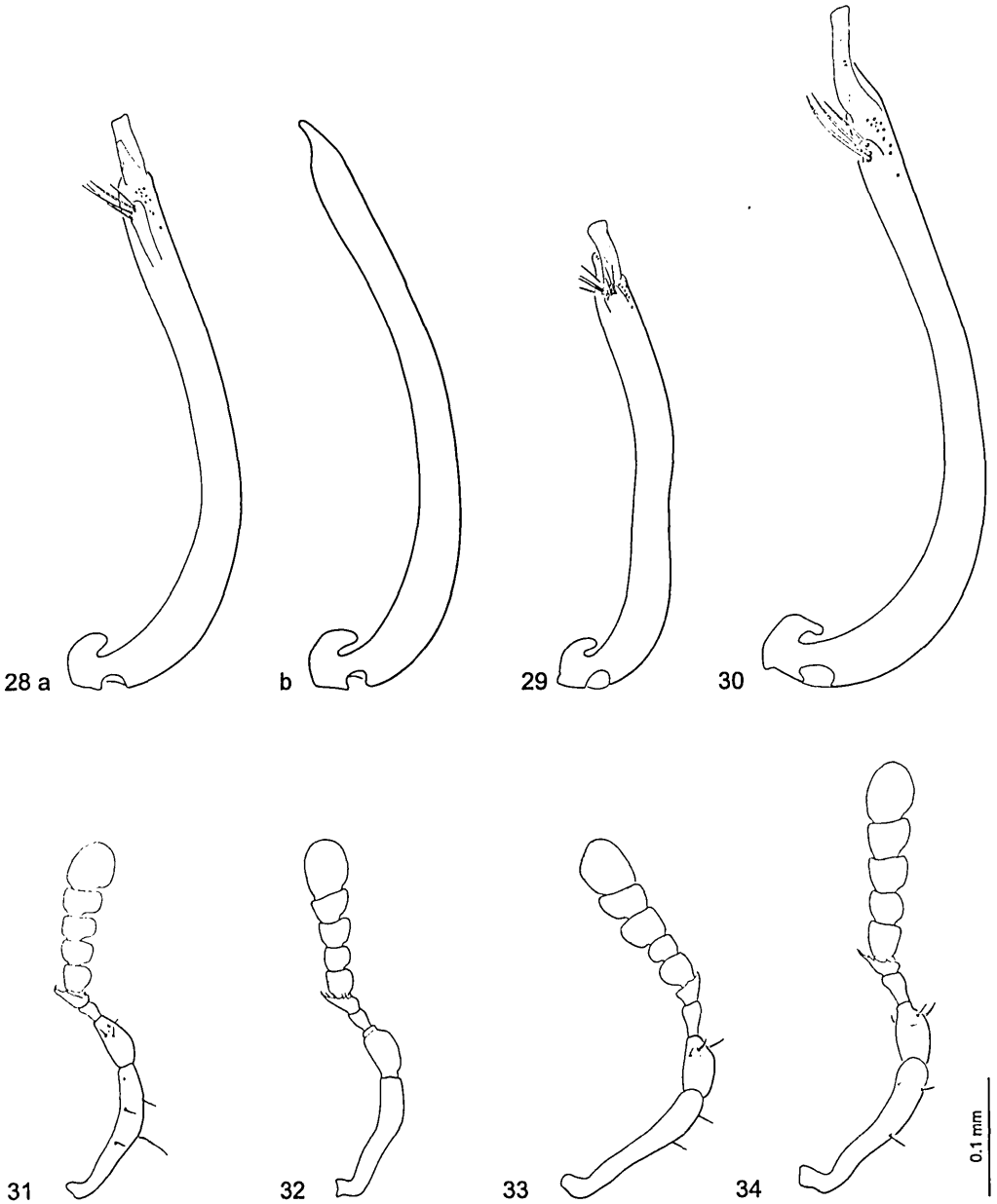
Ventrites I - V pubescent, ventrites VI and VII glabrous. Apical margin of last abdominal tergite of female with a fringe of stiff bristles.

Aedeagus (Fig. 30): Main piece long and slender, distinctly curved in basal half (lateral view); with ca. 12 subapical micropores on right side; apex elongate, with ca. two minute setae; phallobase more or less symmetrical. Distal lobe moderately long, slender, apically truncate (lateral view). Parameres reduced to very short stumps inserted near distal lobe; apices with long setae.

DIAGNOSIS: *Enicocerus nakanei* is characterised by the shape of the pronotum, by the very narrow lateral pronotal membrane, by the sparsely punctate elytra and by the aedeagus.



Figs. 20 - 27: Aedeagus, lateral view, 20) *Ochthebius formosanus*, 21) *O. coomani*, 22) *O. inermis*, a) Taiwan, Miaoli, Ponglai, b) Taiwan, Hsinchu, Dalu, 23) *O. danjo*, 24) *O. jengi*, 25) *O. nipponicus*, 26) *O. strigoides*, 27) *O. hasegawai*.



Figs. 28 - 30: Aedeagus, lateral view, 28) *Ochthebius ilanensis*, a) from the type locality, b) same locality, different specimen, 29) *O. japonicus*, 30) *O. nakanei*.

Figs. 31 - 34: Antennae of 31) *Ochthebius jengi*, 32) *O. strigoides*, 33) *O. benefossus*, 34) *O. japonicus*.

DISCUSSION: The holotype from Kyushu differs from the Honshu material in the anterior pronotal foveae being almost completely reduced, and in the posterior pronotal foveae being very distinct and deeply impressed. Since the shape of the pronotal foveae is generally quite variable in the Asian species of *Enicocerus* I do not think that this character will be found to be sufficient for a specific or subspecific separation.

DISTRIBUTION: Japan (Honshu, Kyushu).

Discussion

By now, eight species of *Ochthebius* are recorded from Japan (*O. danjo*, *O. hasegawai*, *O. hokkaidensis*, *O. inermis*, *O. japonicus*, *O. nakanei*, *O. nipponicus*, *O. satoi*) and six species of *Ochthebius* are recorded from Taiwan (*O. formosanus*, *O. ilanensis*, *O. inermis*, *O. jengi*, *O. satoi*, *O. strigoides*).

Apart from the two species (*O. inermis* and *O. satoi*) that are found in both of these countries, the close relationship between the ochthebiine faunas of Japan and Taiwan is corroborated by the presence of two pairs of sister species, *O. jengi* (Taiwan) - *O. nipponicus* (Japan), *O. ilanensis* (Taiwan) - *O. hasegawai* (Japan). While *O. satoi* is widely distributed in East Asia, *O. inermis* is so far known only from Japan and Taiwan.

Most remarkably, no species of *Ochthebius* have so far been recorded from the Ryukyu Archipelago (Nansei-shoto).

Additional "northern" species with wide Palearctic distribution or species from NE China and the Russian Far East can be expected to occur in Japan. Several species of *Ochthebius* are common in continental NE Asia: *O. angusi* JÄCH, *O. costatellus* REITTER, and *O. marinus* PAYKULL. Their occurrence in northern Japan would not be surprising.

Key to the Taiwanese and Japanese species of *Ochthebius*

- | | | |
|---|---|------------------------------------|
| 1 | Anterior corners of clypeus produced into small spines | 2 |
| - | Anterior corners of clypeus not produced | 5 |
| 2 | Japanese species | 3 |
| - | Taiwanese species | <i>ilanensis</i> |
| 3 | Pronotum as in Fig. 11, only ca. 1.2 times wider than long; elytra sparsely punctate, rows separated by more than a puncture diameter; aedeagus very long, parameres very short (Fig. 30) | <i>nakanei</i> |
| - | Pronotum as in Figs. 9, 10, about 1.4 - 1.5 times wider than long; elytra more densely punctate, rows separated by ca. one puncture diameter; aedeagus shorter, parameres longer (Figs. 27, 29) | 4 |
| 4 | Body length ca. 2.2 - 2.4 mm; pronotum as in Fig. 9, punctation more irregular; aedeagus longer (Fig. 27) | <i>hasegawai</i> |
| - | Body length ca. 1.7 - 2.0 mm; pronotum as in Fig. 10, punctation more regular; aedeagus comparatively short (Fig. 29) | <i>japonicus</i> |
| 5 | Pronotum evenly arcuately constricted to approximately posterior 0.15 and then abruptly and conspicuously excised (Figs. 1, 2) | (<i>O. jengi</i> species group) 6 |
| - | Pronotum different (see Figs. 3 - 8) | 7 |
| 6 | Japanese species | <i>nipponicus</i> |
| - | Taiwanese species | <i>jengi</i> |

- 7 Pronotum without admedian foveae (Figs. 3, 5); parameres distinctly separated from main piece (Fig. 20) (*Asiobates*) 8
- Pronotum at least with traces of admedian foveae (Figs. 4, 6, 8); parameres close to main piece (Figs. 22, 23, 26) 9
- 8 Japanese species *hokkaidensis*
- Taiwanese species *formosanus*
- 9 Anterior margin of labrum more or less truncate or hardly perceptibly emarginate 10
- Anterior margin of labrum distinctly excised 11
- 10 Pronotum brown, usually with slight metallic reflections (Fig. 8); elytra yellowish, striae darkened ...
..... sp. (cf. *masatakasatoi*)
- Pronotum (Fig. 4) and elytra black; aedeagus as in Fig. 22 *inermis*
- 11 Body length less than 2 mm; pronotum as in Figs. 6, 7; elytral punctation regular 12
- Body length more than 2 mm; pronotum more or less as in Fig. 4, but more densely punctate; elytral punctation irregular (at least on disc); aedeagus as in Fig. 23 *danjo*
- 12 Pronotum strongly heart-shaped, densely punctate, black without metallic reflections (Fig. 7); aedeagus as in Fig. 26 *strigoides*
- Pronotum less distinctly heart-shaped, sparsely punctate, brown or black with metallic reflections (Fig. 6); aedeagus as in JÄCH (1991: Fig. 10) *satoi*

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