Elytra, *Tokyo*, **38**(1): 11–17, May 31, 2010

Descriptions of Two *Catoptyx* Species (Coleoptera, Corylophidae) from Japan

Kota Furukawa

Systematic Entomology, Graduate School of Agriculture,
Hokkaido University, Sapporo, 060–8589 Japan
E-mail: furu-404@res.agr.hokudai.ac.jp

Abstract *Lewisium magnum* Nakane, 1963 is transferred to the genus *Catoptyx* Matthews, 1887 as *Catoptyx magnum* comb. nov., and redescribed based on the specimens of the Nakane collection and collected by myself in the Ryukyus, Japan. The lectotype is designated. A new species *C. ishigakiensis* collected from Ishigaki-jima Is. is described. Both the species are distinguished from *C. matthewsi*, which is the other species recorded in Japan, by the body size and the shape of spermatheca. *Catoptyx magnum* and *C. ishigakiensis* are very similar, but they are distinguished from each other by the shape of penis and metasternum of male and spermatheca of female.

Introduction

Genus *Catoptyx* Matthews, 1887 is characterized mainly by the pronotum with thickened edge and the ridge-like prosternum (Bowestead, 1999; 2003). In Japan, only *Catoptyx matthewsi* Bowestead, 2003 has been recorded as a member of this genus.

Recently I had an opportunity to examine the Nakane Collection (in The Hokkaido University Museum, Japan) including a specimen identified as *Lewisium magnum* Nakane, 1963 by T. Nakane himself [the genus *Lewisium* is a junior synonym of the genus *Gloeosoma* (Bowestead, 1999)]. The original description of this species was written in Japanese and has little information. As a result of my examination, I found that this species apparently belonged to the genus *Catoptyx*. In addition, by my research in Okinawa-jima Is., Ishigaki-jima Is. and Iriomote-jima Is., the Ryukyus in 2007 and 2009, I was able to collect a number of specimens of *C. magnum*. I also found a similar *Catoptyx* species in Ishigaki-jima Is. at that time.

In this paper, I am going to redescribe *Catoptyx magnum* and describe a new species under the name of *Catoptyx ishigakiensis* based on the specimens in the Nakane Collection and from the Ryukyus.

Descriptions

Catoptyx magnum (NAKANE) comb. nov.

[Japanese name: Ô-akamaru-mijin-mushi]

(Figs. 1 A, 2–3)

Lewisium magnum NAKANE, 1963, 215; SASAJI, 1985, 237.

Description. Male: length 1.52–1.74 mm, width 1.21–1.40 mm. Female: length 1.50–1.69 mm, width 1.16–1.35 mm. Body oval (Figs. 1 A, 2 A), strongly convex (Fig. 2 B). Dorsal surface uniformly red-brown to black-brown, usually pronotum slightly paler; ventral surface red-brown to yellow-brown with red-brown meso- and metasterna and middle part of 1st abdominal ventrite; antennae, mouthparts and legs yellow-brown.

Anterior margin of pronotum emarginated in frontal aspect and thickened ventrally. Punctures of pronotum dense and fine, with fine and short pubescence, in shallow depressions; interspace smooth and shining (Fig. 2 C). Scutellum transverse with slightly rounded side. Punctures of elytral disc also fine and dense, especially denser around scutellum, with fine and short pubescence, in shallow depressions; interspace smooth and shining (Fig. 2 C). Sutural stria extending to about 1/3 from elytral apex. Antennae 11-segmented (Fig. 2 E). Labrum trapeziform with anterior margin nearly straight. Apex of mandible bifid. Prosternal process absent; procoxae isolated only by a central ridge. Profemor of male distinctly emarginated at base (Fig. 1 F). Protibia of male with hook-like projection at apex (Fig. 1 F). Metasternum of male with longitudinally elongated median depression (Fig. 1 D). Hindwing present.

Penis as shown in Figs. 3 A, B; in ventral aspect, asymmetrical with extremely slender 1/3 part from apex, with rounded apex; in lateral aspect, weakly arched evenly, with pointed apex.

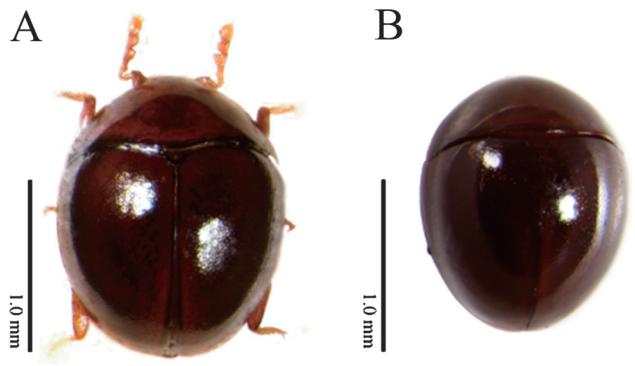

Fig. 1. *Catoptyx* spp. —— A, Habitus of *Catoptyx magnum* (NAKANE), dorsal view (lectotype); B, habitus of *Catoptyx ishigakiensis* sp. nov., dorsal view (holotype).

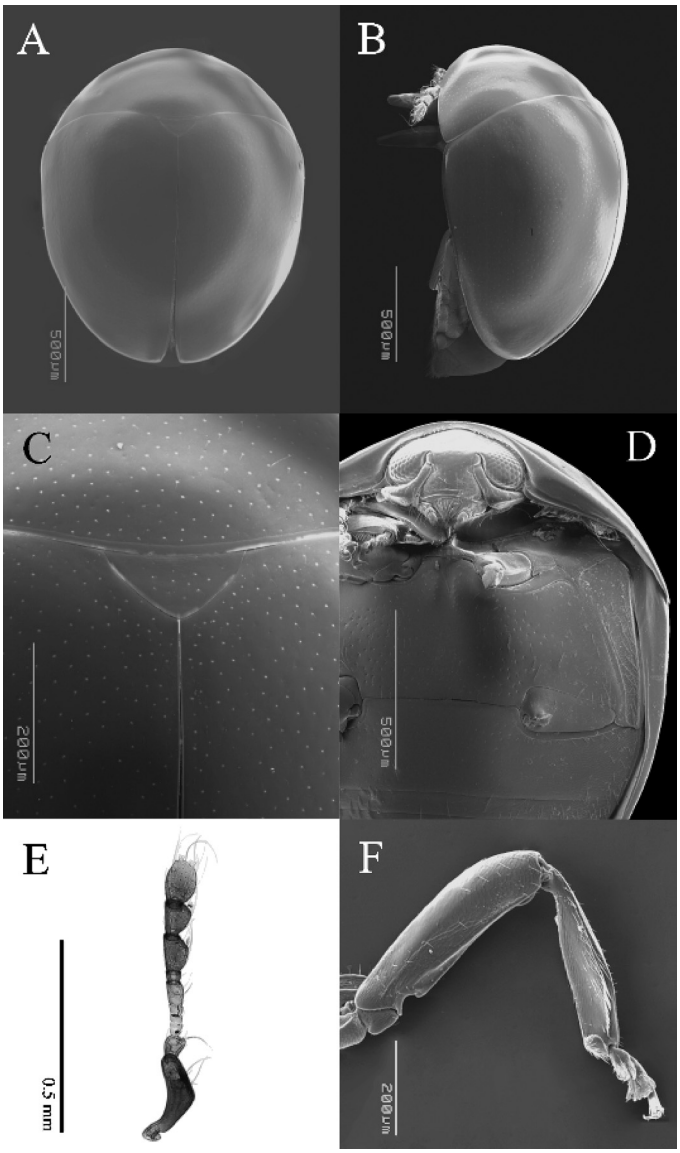

Fig. 2. *Catoptyx magnum* (NAKANE). —— A, Habitus, dorsal view; B, ditto, lateral view; D, microsculpture near scutellum; E, habitus of male, ventral view; F, antennae, ventral view; G, proleg of male, ventral view.

Spermatheca as shown in Fig. 3 C; body globose and annulate; gland duct lobe globose; apical lobe nearly parallel-sided, without apical sheath.

Type series. Lectotype: female. "Sata, Ohsumi"/"30.V.1952"/"T. Nakane"//

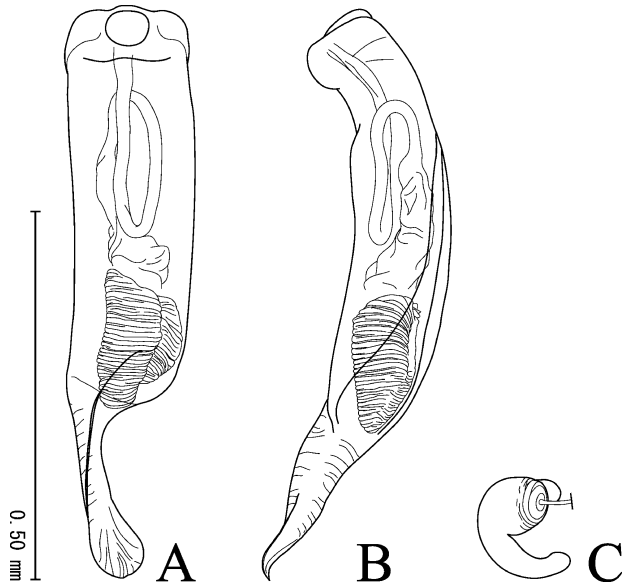

Fig. 3. *Catoptyx magnum* (NAKANE). —— A, Penis, ventral view; B, ditto, lateral view; C, spermatheca, dorsal view.

"*Lewisium magnum* Nak."/"Det. T. Nakane"//"108–7"//"NAKANE Coll."/"SEHU JAPAN"/"1999" (Systematic Entomology, Hokkaido University, Sapporo). NAKANE (1963) did not designate the holotype. I therefore designated here the specimen examined by NAKANE (1963) as the lectotype.

Further specimens examined. [Kyusyu] Miyazaki Pref.: 1 ex., Ôshima, 3–XII–1989, A. NAGAI leg. Kagoshima Pref.: 1 ex., Kirishima-Jingû, 9–V–1981, T. & T. NAKANE leg.; 2 exs., Ôdomari, 29–III–1982, T. & T. NAKANE leg. [The Ryukyus.] Amami-Ôshima Is.: 1 ex., Hatsuno, 28–VII–1962, J. NAGAO leg. Okinawa-jima Is.: 2 exs., Mt. Ishikawa-dake, 1–XII–2009, K. FURUKAWA leg. Ishigaki-jima Is.: 1 ex., Mt. Nosoko-dake, 13–XII–2009, K. FURUKAWA leg.; 9 exs., Mt. Omoto-dake, 13–XII–2009, K. FURUKAWA leg.; 2 exs., Mt. Banna-dake, 9–XII–2009, K. FURUKAWA leg. Iriomote-jima Is.: 20 exs., Mt. Komi-dake, 27–II–2007, K. FURUKAWA leg.; 12 exs., Mt. Komi-dake, 6–XII–2009, K. FURUKAWA leg.; 11 exs., Ôtomi, 7–XII–2009, K. FURUKAWA leg.

Diagnosis. In the genus *Catoptyx*, only one species, *C. matthewsi* BOWESTEAD, 2003 has been recorded from Japan. *Catoptyx magnum* is easily distinguished from *C. matthewsi* by the shape of spermatheca and the much larger size [*C. matthewsi* is 1.00 mm in size (BOWESTEAD, 2003)].

Distribution. Japan (Kyushu, the Ryukyus: Okinawa-jima Is., Ishigaki-jima Is., Iriomote-jima Is.). This species was also recorded from Shikoku, Tokunoshima Is., Tsushima Is. (SASAJI, 1985), although I cannot examine these specimens.

Biological Note. This species is captured mainly on dead leaves and branches.

Catoptyx ishigakiensis sp. nov.

[Japanese name: Ishigaki-akamaru-mijin-mushi]

(Figs. 1 B, 4–5)

Description. M a l e: length 1.48–1.60 mm, width 1.20–1.24 mm. F e m a l e: length 1.48–1.52 mm, width 1.20–1.22 mm. Body oval (Figs. 1 B, 4 A), strongly convex (Fig. 4 B). Dorsal surfaces uniformly red-brown, usually pronotum slightly paler; ventral surface red-brown to yellow-brown with red-brown meso- and metasterna and middle part of 1st abdominal ventrite; antennae, mouthparts and legs yellow-brown.

Anterior margin of pronotum emarginated in frontal aspect and thickened ventrally. Punctures of pronotum dense and fine, with fine and short pubescence, in shallow depressions; interspace smooth and shining (Fig. 4 C). Scutellum transverse with

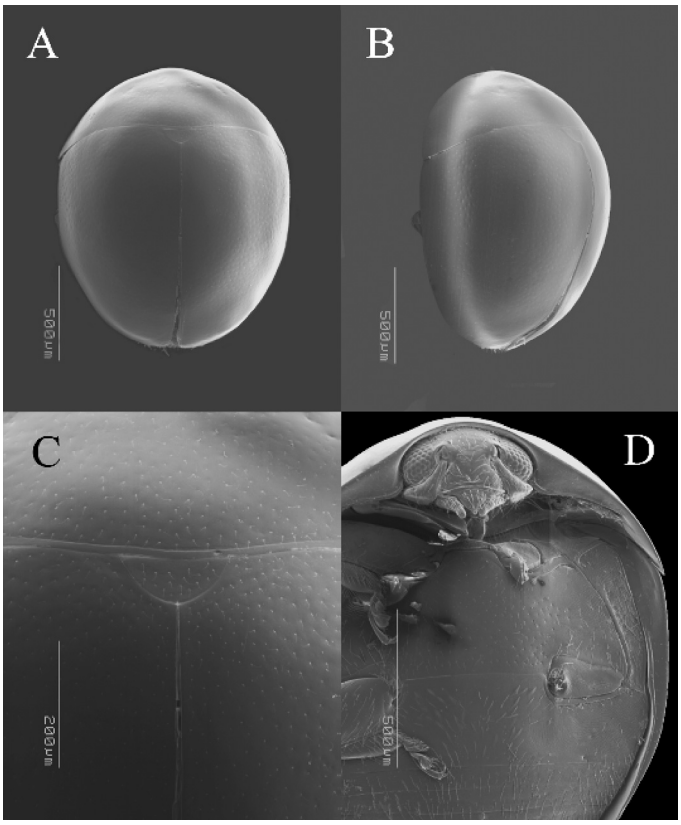

Fig. 4. *Catoptyx ishigakiensis* FURUKAWA, sp. nov. —— A, Habitus, dorsal view; B, ditto, lateral view; C, microsculpture near scutellum; D, habitus of male, ventral view.

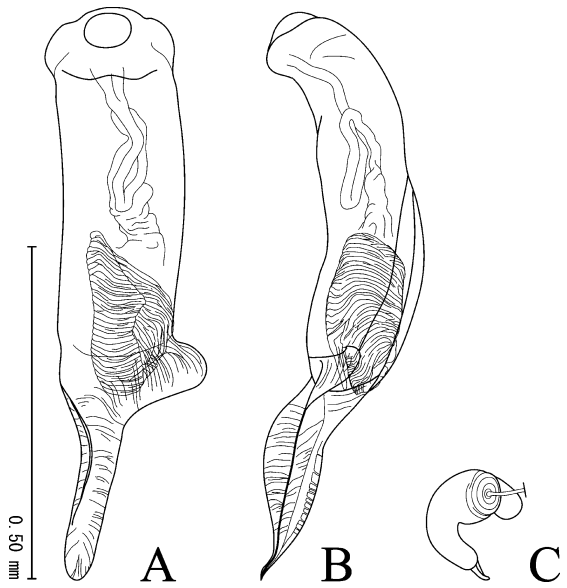

Fig. 5. *Catoptyx ishigakiensis* FURUKAWA, sp. nov. —— A, Penis, ventral view; B, ditto, lateral view; C, spermatheca, dorsal view.

slightly rounded side. Punctures of elytral disc also fine and dense, especially denser around scutellum, with fine and short pubescence, in shallow depressions; interspace smooth and shining (Fig. 4 C). Sutural stria extending to about 1/3 from elytral apex. Antennae 11-segmented. Labrum trapeziform with anterior margin nearly straight. Apex of mandible bifid. Prosternal process absent; procoxae isolated only by a central ridge. Profemur of male distinctly emarginate at base. Protibia of male with hook-like projection at apex. Hindwing present. Metasternum of both sexes without median depression (Fig. 4 D).

Penis as shown in Figs. 5 A, B; in ventral aspect asymmetrical with fin-like elaboration expanding laterally, with rounded apex; in lateral aspect, weakly arched evenly, with pointed apex.

Spermatheca as shown in Fig. 5 C; body globose and annulate; gland duct lobe globose; apical lobe with triangular apical sheaths.

Type series. Holotype: male, "Mt. Yarabe-dake"/"Ishigaki-jima Is."/"Okinawa Pref."/"10–XII–2009"/"K. FURUKAWA leg."//"*Catoptyx ishigakiensis*"/"K. FURUKAWA Det." (Systematic Entomology, Hokkaido University, Sapporo). Paratypes: 3 males, 2 females, same data as the holotype (Systematic Entomology, Hokkaido University, Sapporo). 1 male, 1 female, "Mt. Nosoko-dake"/"Ishigaki-jima Is."/"Okinawa Pref."/"13–XII–2009"/"K. FURUKAWA leg."//"*Catoptyx ishigakiensis*"/"K. FURUKAWA Det." (Systematic Entomology, Hokkaido University, Sapporo).

Diagnosis. This species is similar to *C. magnum*. In male, *C. ishigakiensis* is easily

distinguished from *C. magnum* by the characteristic penis with the fin-like elaboration expanding laterally in ventral view and the metasternum without the distinct elongate depression. In female, it is difficult to distinguish them by the external aspect. The apical lobe of the spermatheca with the sheath is a reliable character to identify this species.

Etymology. This species was named after the locality.

Distribution. Japan (the Ryukyus: Ishigaki-jima Is.)

Biological note. This species was captured on dead silver grasses.

Acknowledgements

I wish to express my cordial thanks to Dr. Shun-Ichi UÉNO (National Museum of Nature and Science, Tokyo) and Dr. Masahiro ÔHARA (Hokkaido University, Sapporo) for their careful reading of the manuscript, suggestions and advice. I also thank Mr. Tomoyuki TSURU, Mr. Yûsuke MINOSHIMA, and Dr. Norio KOBAYASHI (Hokkaido University, Sapporo) for their valuable advice.

要　　約

古川恒太：日本産 *Catoptyx* 属（コウチュウ目ミジンムシ科）の 2 種の記載．—— 中根コレクションと琉球諸島で採集された標本に基づき，これまでオオアカマルミジンムシ *Lewsium magnum* NAKANE, 1963 とされていた種を *Catoptyx* 属に移し，再記載し，そのレクトタイプを指定した．また，石垣島より採集された新種イシガキアカマルミジンムシ（新称）*C. Ishigakiensis* を記載した．両種は日本から記録されているマシューズマルミジンムシ（新称）*C. matthewsi* とは，体の大きさ，雌の受精嚢の形態によって容易に区別される．オオアカマルミジンムシとイシガキアカマルミジンムシは非常に類似しているが，雄の挿入器と後胸腹板，および雌の受精嚢の形態によって明瞭に区別される．

References

BOWESTEAD, S., 1999. A revision of the Corylophidae (Coleoptera) of the West Palaearctic Region. *Instrumenta Biodiversitatis*, **3**, 203 pp. Muséum d'Histoire naturelle, Genève.

———— 2003. A contribution to the knowledge of the Corylophidae of the Palaearctic Region (Coleoptera). *Mem. Ent. Int*., **17**: 943–955.

MATTHEWS, A., 1887. New genera and species of Corylophidae in the collection of the British Museum. *Ann. Mag. nat. Hist*., (5) **19**: 105–116.

NAKANE, T., 1963. Corylophidae. *In* NAKANE, T., K. OHBAYASHI, S. NOMURA & Y. KUROSAWA. (eds.), *Iconographia Insectorum Japonicorum Colore naturali edita*, **2** [Coleoptera]: 215 [incl. pl. 108]. Hokuryûkan, Tokyo. (In Japanese, with Latin booktitle.)

SASAJI, H., 1985. Corylophidae. *In* KUROSAWA, Y., S. HISAMATSU & H. SASAJI (eds.), *The Coleoptera of Japan in Color*, **3**: 235–237 [incl. pl. 38]. Hoikusha, Osaka. (In Japanese, with English book title and summaries.)