

## Three New Species of the Genus *Athemus* (Coleoptera, Cantharidae) from Japan

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**Abstract** Three new species of the genus *Athemus* are described from Japan and illustrated. Of these, *A. (Andrathemus) matsunagai* and *A. (Andrathemus) tobiranus* are collected from the Japanese mainland, and *A. (Athemellus) naokii* is collected from the Ryukyu Islands.

The genus *Athemus* LEWIS, 1895, was established for a Japanese species, *Telephorus suturellus* MOTSCHULSKY, 1860, and at the same time, *Cantharis attristata* KIESENWETTER, 1874, was transferred to it. Many Japanese species were later transferred from other genera, or added as new species, to *Athemus* by subsequent entomologists. Until now, forty-one species of *Athemus* have been recorded from Japan including the Ryukyu Islands (TAKAHASHI, 1998). However, some taxonomical problems still remain about Japanese species.

In recent years, we have reexamined the Japanese species of *Athemus* previously recorded as were unidentified, and found that at least three of them are new to science. Of these, two were collected from the Japanese mainland and should belong to the subgenus *Andrathemus* WITTMER, 1978, while the other one was collected from the southern part of the Ryukyu Islands and should belong to the subgenus *Athemellus* WITTMER, 1972 (IMASAKA & YAMAJI, 1989; IMASAKA & ABIRU, 1989; IMASAKA & NAKAMURA, 1993; anonym, 1997). They will be described in the present paper.

We wish to express our hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his critical reading of the original manuscript, and to Dr. Masataka SATÔ of Nagoya Women's University for his constant guidance and co-operation to our studies. IMASAKA also thanks Dr. Katsura MORIMOTO of Kyushu University for his continuous guidance. Our thanks are also due to Dr.

Kyoichiro UEDA (KMNH), Messrs. Martin BRENDLE (BMNH), Malcolm KERLEY (BMNH), Kazuhiro TAKAHASHI (KTC), Masami MASUMOTO (NIAES), Naoki TAKAHASHI (NTC), and Ms. Hiromi NIWA (=H. URUSHIHARA, OMM) for their kind support in loaning specimens from their institutions or private collections, and to all the collectors, in particular Messrs. Yoshiaki MATSUNAGA, Osamu YAMAJI and Hirofumi HAYAKAWA, who kindly offered invaluable specimens to us.

The type series of the new species to be described in this paper are deposited in the following institutions and personal collections, which are referred to in the text by the following abbreviations: BMNH: The Natural History Museum, London; KMNH: Kitakyushu Museum and Institute of Natural History; KUF: Kyushu University, Fukuoka; KURA: Kurashiki Museum of Natural History; NIAES: National Institute of Agro-Environmental Sciences, Tsukuba; NWU: Nagoya Women's University; OMM: Omogo Mountain Museum; KTC: Kazuhiro TAKAHASHI's collection; NTC: Naoki TAKAHASHI's collection; SIC: Shōichi IMASAKA's collection.

*Athemus (Andrathemus) matsunagai* IMASAKA et OKUSHIMA, sp. nov.

[Japanese name: Matsunaga-jōkai]

(Figs. 1–4, 7–12, Table 1)

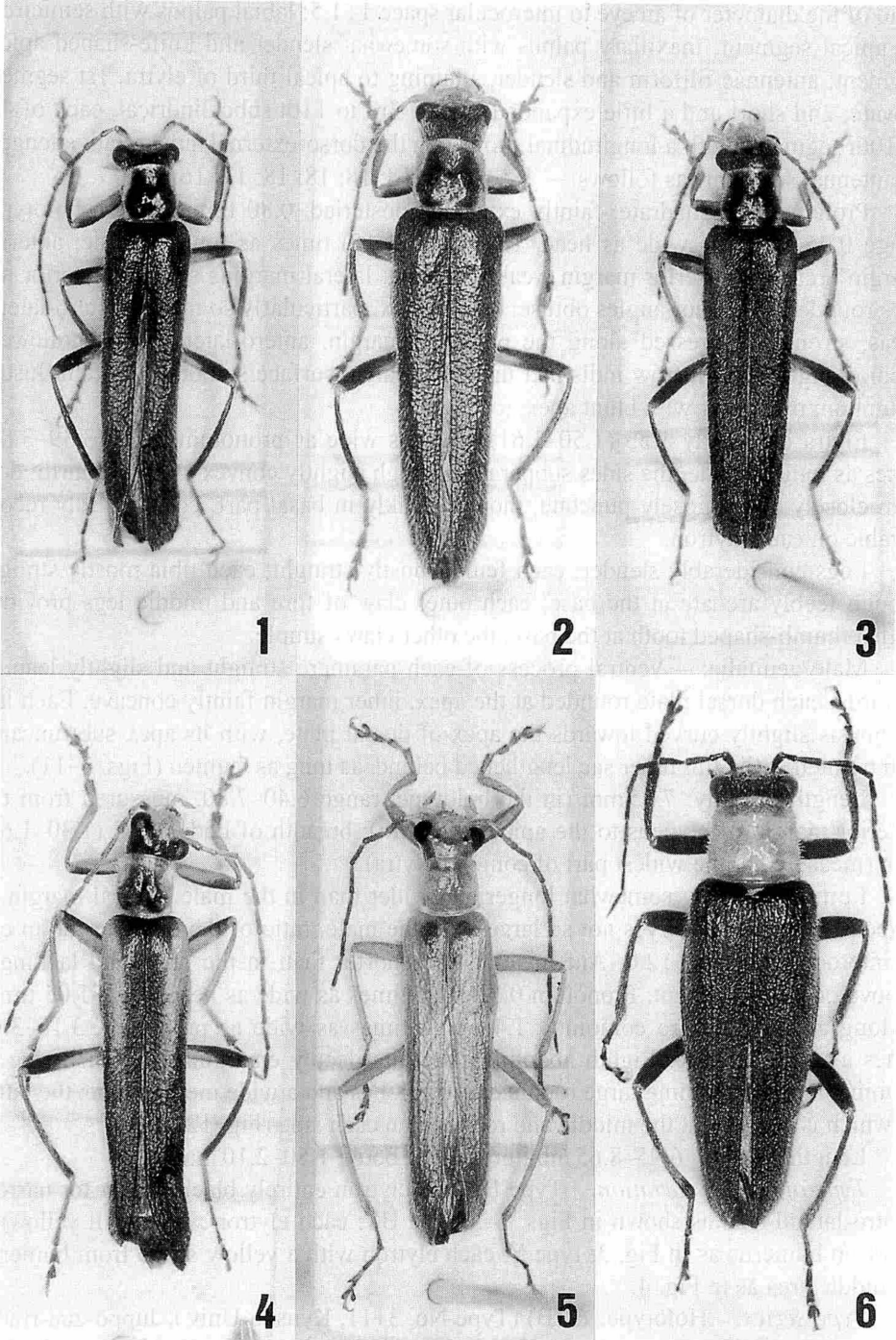
*Athemus* sp. [Matsunaga-jōkai]: IMASAKA & ABIRU, 1989, Kumamoto Konchū-Dōkōkaihō, **35** (1): 12, fig. 2–8. — IMASAKA & NAKAMURA, 1993, Misc. Rept. Hiwa Mus. nat. Hist., (31): 51, pl. 2, fig. 27, pl. 4, fig. 27. — IMASAKA & OHTSUKA, 1996, Kumamoto Konchū-Dōkōkaihō, **40** (3): 49, figs. 3–23, 5–23.

Male. Body mostly blackish brown or black; anterior area before eyes, mouth parts, basal parts of antennae, circumference of pronotum, prosternum, narrow ventrolateral side of each elytron, fore femora and tibia without outer margins, basal halves of middle and hind femora without outer margins, and joints of legs yellow; apical parts of mandibles and claws reddish yellow. Each elytron often with a yellow stripe from humerus to middle area, development of which is variable with individuals. Body closely covered with fine pale pubescence; apical margin of clypeus and lateral margins of pronotum fringed with pale bristles; each elytron provided with intermingled pale bristles in addition to primary pubescence, though they become much sparser in anterior half.

Body very slender. Head slightly shorter than its width; dorsum depressed along the apical margin of clypeus and in lateral areas before eyes, faintly depressed along the mid-line; surface smooth with faint lustre, closely with minute and indistinct punctures; clypeus arcuate at apical margin; eyes large, globular and strongly prominent,

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Figs. 1–6. *Athemus* spp. from Japan. — 1–4. *A. (Andrathemus) matsunagai* IMASAKA et OKUSHIMA, sp. nov.; 1, ♂ (holotype), from Hiroshima Pref.; 2, ♀ (allotype), from Hiroshima Pref.; 3, ♀ (paratype), from Okayama Pref.; 4, ♂ (paratype), from Shizuoka Pref. — 5. *A. (Andrathemus) tobiranus* OKUSHIMA et IMASAKA, sp. nov., ♂ (holotype), from Nagano Pref. — 6. *A. (Athemellus) naokii* OKUSHIMA et IMASAKA, sp. nov., ♀ (holotype), from Iriomote-jima Is.



ratio of the diameter of an eye to interocular space 1 : 1.5; labial palpus with semicircular apical segment; maxillary palpus with somewhat slender and knife-shaped apical segment; antennae filiform and slender, attaining to apical third of elytra, 1st segment clavate, 2nd short and a little expanded apicad, 3rd to 11th subcylindrical, each of 4th to 10th segments with a longitudinal groove on the dorso-external side, relative lengths of antennal segments as follows:— 18: 10: 14: 18: 18: 18: 18: 17: 16: 14: 17.

Pronotum subquadrate, faintly expanded posteriad, 0.80 times (in the holotype; range 0.75–0.83) as wide as head, 1.00 (1.00–1.15) times as long as wide; anterior margin arcuate; posterior margin weakly arcuate; lateral margins sinuate; anterior angles rounded; posterior angles obtuse; disc convex, particularly so in the postero-lateral areas, strongly depressed along the posterior margin, antero-lateral areas hollowed; medio-longitudinal furrow indistinct in anterior area; surface smooth with faint lustre. Scutellum triangular with blunt apex.

Elytra conjointly 1.55 (1.50–1.61) times as wide as pronotum, 3.71 (3.39–3.81) times as long as wide, the sides subparallel though slightly convex at basal fourth; dorsum closely and rugosely punctate, though weakly in basal part; costae hardly recognizable on each elytron.

Legs considerably slender; each femur mostly straight; each tibia mostly straight though feebly arcuate at the base; each outer claw of fore and middle legs provided with a thumb-shaped tooth at the base, the other claws simple.

Male genitalia:— Ventral process of each paramere straight and slightly leaning inwards, each dorsal plate rounded at the apex, inner margin faintly concave. Each laterophysis slightly curved towards the apex of dorsal plate, with its apex subtruncated and pointed at the tip. Inner sac lengthened behind, as long as tegmen (Figs. 7–11).

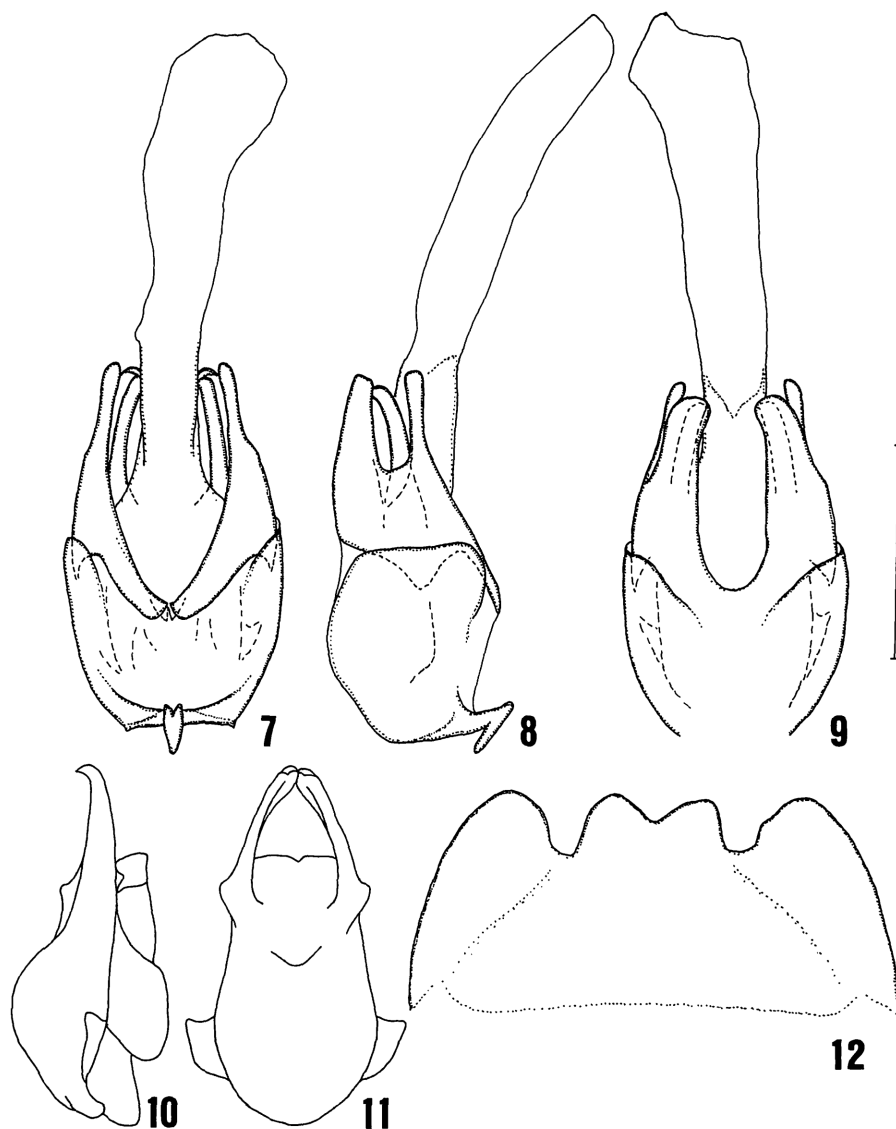
Length of body: 7.55 mm (in the holotype; range 6.40–7.80, measured from the anterior margin of clypeus to the apices of elytra); breadth of body: 1.55 (1.30–1.60) mm (measured at the widest part of conjoint elytra).

Female. Body somewhat longer and wider than in the male. Apical margin of clypeus subtruncated. Eyes not so large as in the male, ratio of the diameter of an eye to interocular space 1 : 2.0. Antennae a little shorter than in the male and lacking a groove on each segment. Pronotum 0.83–0.96 times as wide as head, 0.92–1.05 times as long as wide. Elytra conjointly 1.48–1.64 times as wide as pronotum, 3.10–3.67 times as long as wide. Eighth abdominal sternite deeply emarginate on each side of terminal margin, forming large rounded lateral lobes and a wide median lobe, the latter of which is notched at the middle and rounded on each side (Fig. 12).

Length of body: 6.95–8.65 mm; breadth of body: 1.50–2.10 mm.

*Type of colour variation.* Type B: each elytron entirely black except for narrow ventro-lateral side as shown in Figs. 1–2; type BY: each elytron with small yellowish mark on humerus as in Fig. 3; type Y: each elytron with a yellow stripe from humerus to middle area as in Fig. 4.

*Type series.* Holotype: ♂ (B) (Type No. 3111, Kyushu Univ.), Juppô-zan-rindô, Yoshiwa-mura, Hiroshima Pref., Honshu, Japan, 19–V–1989, Y. MATSUNAGA leg.



Figs. 7–12. *Athemus (Andrathemus) matsunagai* IMASAKA et OKUSHIMA, sp. nov. — 7–9, Male genitalia (6, ventral view; 7, lateral view; 8, dorsal view); 10–11, median lobe with laterophyses of male genitalia (10, lateral view; 11, dorsal view); 12, 8th abdominal sternite in female. (Scale: 0.5 mm.)

(KUF). Allotype: ♀ (B), Nakatsuya, Yoshiwa-mura, Hiroshima Pref., Honshu, Japan, 24–V–1988, S. IMASAKA leg. (KUF). Paratypes: [Honshu, Japan] Kanagawa Pref.: 1 ♀ (Y), Tennôji-one, Mt. Tanzawa-yama, 2–VII–1984, K. TAKAHASHI leg. (KTC, paratype of *A. okuyugawaranus*). Shizuoka Pref.: 1 ♀ (Y), Mt. Kurakake-yama, Kannami-chô, 30–IV–1991, H. NAGAOKA leg. (KURA); 1 ♂ (Y), Mt. Amagi-san, Izu Pen., 3–VI–

Table 1. Prefectural distribution of colour patterns of the elytra in the type series of *Athemus* (*Andrathe-mus*) *matsunagai* IMASAKA et OKUSHIMA, sp. nov.

Colour types of elytra		Honshu						
		Kanagawa	Shizuoka	Mie	Kyoto	Hyôgo	Nara	Shimane
Y	Male		3	4			1	
	Female	1	3	2	1	2	15	
BY	Male					1		
	Female					2		
B	Male							1
	Female							

Colour types of elytra		Honshu			Shikoku		
		Okayama	Hiroshima		Tokushima	Ehime	Kôchi
Y	Male				5	2	
	Female				4	5	1
BY	Male				3	2	
	Female	2			1		
B	Male		14			2	1
	Female		8				

Colour types of elytra		Kyushu					
		Nagasaki	Kumamoto	Ôita	Miyazaki	Kagoshima	Yaku-shima
Y	Male			1			
	Female	1	1	1			
BY	Male	1	1	9			
	Female	1	1	15	1		
B	Male	3	18	12	2	5	4
	Female	7	29	12		3	8

1990, H. KOJIMA leg. (KURA); 1 ♂ (Y), Mt. Amagi-san, Izu Pen., 8-VI-1991, H. NAGAOKA leg. (KURA); 1 ♂ (Y), 1 ♀ (Y), Mt. Amagi-san, Izu Pen., 8-VI-1991, no collector's name (KURA); 1 ♀ (Y), Mt. Amagi-san, Izu Pen., 9-VI-1991, H. NAGAOKA leg. (KURA). Mie Pref.: 1 ♀ (Y), Hirakura, Misugi-mura, 14-V-1967, H. ICHIHASHI leg. (NWU); 1 ♀ (Y), Hirakura, Misugi-mura, 4-V-1987, T. IMAMURA leg. (NWU); 1 ♂ (Y), Hirakura, Misugi-mura, 3-V-1988, K. AKITA leg. (NWU); 1 ♂ (Y), Hirakura, Misugi-mura, 4-V-1988, M. SAITO leg. (SIC); 1 ♂ (Y), Hirakura, Misugi-mura, 27-V-1988, N. KANIE leg. (NWU); 1 ♂ (Y), Chichigatani, Miyagawa-mura, 5-V-1989, N. NARUKAWA leg. (NWU). Kyoto Pref.: 1 ♀ (Y), Ashiu, Miyama-chô, 6-VI-1991, K.

MASAKI leg. (SIC). Hyôgo Pref.: 3 ♀♀ (2Y, 1BY), Akasai-keikoku, Haga-chô, 13-V-1993, H. OKADA leg. (SIC); 1 ♂ (BY), 1 ♀ (BY), Akasai-keikoku, Haga-chô, 16-V-1993, H. OKADA leg. (SIC). Nara Pref.: 2 ♀♀ (Y), Mt. Ôdaigahara, Kamikitayama-mura, 29-VI-1975, K. MIZUNO leg. (SIC); 1 ♀ (Y), Mt. Ôdaigahara, Kamikitayama-mura, 19-VI-1977, K. MIZUNO leg. (SIC); 1 ♂ (Y), 1 ♀ (Y), Mt. Ôdaigahara, Kamikitayama-mura, 16-VI-1985, K. URATA leg. (SIC); 1 ♀ (Y), Mt. Ôdaigahara, Kamikitayama-mura, 14-V-1986, N. NARUKAWA leg. (SIC); 1 ♀ (Y), Mt. Ôdaigahara, Kamikitayama-mura, 21-VI-1987, N. NARUKAWA leg. (NWU); 1 ♀ (Y), Mt. Ôdaigahara, Kamikitayama-mura, 26-VI-1992, K. MATSUMOTO leg. (KURA); 1 ♀ (Y), Shirakawamata, Kamikitayama-mura, 4-V-1980, K. MIZUNO leg. (SIC); 2 ♀♀ (Y), Mt. Misen, Ômine Mts., 21-VI-1987, K. MIZUNO leg. (SIC); 1 ♀ (Y), Mt. Obako-dake, Yoshinogun, 11-V-1986, T. HATAYAMA leg. (SIC); 4 ♀♀ (Y), Mt. Obako-dake, Yoshinogun, 1-VI-1986, T. HATAYAMA leg. (SIC). Shimane Pref.: 1 ♀ (B), Ai, Nita-chô, 11-V-1960, T. FUJIMURA leg. (NIAES). Okayama Pref.: 1 ♀ (BY), Okutsugawa, Shôhoku-chô, 19-V-1996, A. WATANABE leg. (KURA); 1 ♀ (BY), Shimotsugawa, Kamo-chô, 11-V-1997, O. YAMAJI leg. (KURA). Hiroshima Pref.: 1 ♂ (B), 1 ♀ (B), same data as for the holotype (SIC); 1 ♀ (B), Nakatsuya, Yoshiwa-mura, 27-V-1984, H. OKADA leg. (SIC); 4 ♂♂ (B), 1 ♀ (B), Nakatsuya, Yoshiwa-mura, 23-V-1988, S. IMASAKA leg. (SIC); 8 ♂♂ (B), 4 ♀♀ (B), same data as for the allotype (SIC). [Shikoku, Japan] Tokushima Pref.: 3 ♀♀ (Y), Mt. Takagi-san, Kisawa-son, 15-VI-1986, A. WATANABE leg. (SIC); 2 ♂♂ (Y), 1 ♀ (Y), Dosu-tôge, Kisawa-son, 17-V-1987, A. WATANABE leg. (SIC); 1 ♂ (Y), Minokoshi, Higashiiyayama-son, 20-V-1993, Y. OKUSHIMA leg. (KURA); 1 ♂ (BY), Kuwadaira-Tsurugi-san, Ichiu-son, 20-VI-1993, S. MANO leg. (KTC); 1 ♀ (BY), Mt. Tsurugi-san, Ichiu-son, 20-VI-1993, S. MANO leg. (KTC); 4 ♂♂ (2Y, 2BY), Mt. Tsurugi-san, alt. 1,600-1,900 m, 22-V-1998, M. YOSHIDA leg. (SIC). Ehime Pref.: 2 ♂♂ (BY), Nibukawa, Tamagawa-chô, 3-V-1996, M. SHIRAIISHI leg. (SIC); 2 ♂♂ (B), Mt. Narahara-yama, Tamagawa-chô, 26-IV-1998, M. SHIRAIISHI leg. (SIC); 1 ♂ (Y), 3 ♀♀ (Y), Jôju-sha, Mt. Ishizuchi-san, 26-VI-1994, M. SHIRAIISHI leg. (SIC); 1 ♂ (Y), Mt. Ishizuchi-san, 27-V-1990, H. KUSUNOKI leg. (OMM); 1 ♀ (Y), Odamiyama, Oda-chô, 6-V-1995, N. OHBAYASHI leg. (NWU); 1 ♀ (Y), Odamiyama, Oda-chô, 6-V-1995, K. AITA leg. (NWU). Kôchi Pref.: 1 ♂ (B), fork of Naka-gawa & Nishi-kawa-Senbon-yama-tozan-guchi, Umaji-mura, 2-V-1988, K. HAGA leg. (KTC); 1 ♀ (Y), Tengu-kôgen, Higashitsuno-mura, 13-VI-1995, Y. OKUSHIMA leg. (KURA). [Kyushu, Japan] Nagasaki Pref.: 4 ♀♀ (B), Mt. Unzen-dake, Obama-chô, 12-VI-1986, S. IMASAKA leg. (SIC); 1 ♂ (B), 2 ♀♀ (B), Mt. Unzen-dake, Obama-chô, 28-V-1987, S. IMASAKA leg. (SIC); 3 ♂♂ (1BY, 2B), 3 ♀♀ (1Y, 1BY, 1B), Mt. Unzen-dake, Obama-chô, 31-V-1989, S. IMASAKA leg. (SIC). Kumamoto Pref.: 5 ♂♂ (1BY, 4B), 7 ♀♀ (B), Shiiya-tôge, Yabe-chô, 6-VI-1989, S. IMASAKA leg. (KURA); 2 ♀♀ (B), Shiiya-tôge, Yabe-chô, 6-VI-1995, S. IMASAKA leg. (SIC); 1 ♀ (B), Naidajin-kyô, Yabe-chô, 12-V-1984, S. OGATA leg. (SIC); 1 ♂ (B), Hagi, Izumi-mura, 19-V-1996, S. IMASAKA leg. (KURA); 3 ♂♂ (B), 2 ♀♀ (B), Hagi, Izumi-mura, 4-V-1997, S. IMASAKA leg. (SIC); 2 ♀♀ (B), Mt. Hakuchô-zan, Izumi-mura, 17-VI-1984, S. IMASAKA leg. (KURA); 4 ♀♀ (1BY, 3B),

Mt. Hakuchô-zan, Izumi-mura, 18-VI-1984, S. IMASAKA leg. (SIC); 4♂♂ (B), 9♀♀ (8B, 1Y), Mt. Hakuchô-zan, Izumi-mura, 5-V-1998, R. NODA leg. (SIC); 4♂♂ (B), 1♀ (B), Mt. Shiraga-dake, Ue-mura, 31-V-1994, S. IMASAKA leg. (SIC); 2♂♂ (B), 3♀♀ (B), Mt. Shiraga-dake, Ue-mura, 17-V-1997, S. IMASAKA leg. (SIC). Ôita Pref.: 1♂ (BY), Taisen-rindô, Mt. Hiji-dake, 18-V-1982, S. SASAKI leg. (SIC); 1♀ (BY), Mt. Kuro-dake, Shônai-chô, 10-V-1983, Y. TAKAKURA leg. (KMNH); 1♀ (BY), Mt. Kuro-dake, Kujû Mts., 9-V-1987, S. OGATA leg. (SIC); 1♂ (BY), 4♀♀ (3BY, 1B), Mt. Kuro-dake, Kujû Mts., 16-V-1989, S. IMASAKA leg. (SIC); 2♂♂ (1BY, 1B), 6♀♀ (4BY, 2B), Mt. Kuro-dake, Kujû Mts., 20-V-1992, M. NISHIDA leg. (SIC); 2♀♀ (1BY, 1B), Mt. Kuro-dake, Kujû Mts., 25-V-1996, S. IMASAKA leg. (SIC); 5♂♂ (1Y, 1BY, 3B), 1♀ (Y), Taisen-rindô, Kujû Mts., 7-V-1989, M. NISHIDA leg. (SIC); 2♂♂ (B), 8♀♀ (5BY, 3B), Mt. Katamuki-yama, 30-IV-1990, S. SASAKI leg. (KURA); 4♂♂ (3BY, 1B), 1♀ (B), Hôei-rindô, Mt. Katamuki-yama, 26-IV-1998, R. NODA leg. (KURA); 6♂♂ (1BY, 5B), 4♀♀ (B), Hôei-rindô, Ogata-machi, 29-IV-1999, R. NODA leg. (SIC); 1♂ (BY), Mt. Sobo-san, 24-V-1995, N. TAKAHASHI leg. (NTC). Miyazaki Pref.: 1♀ (BY), Mt. Goyô-dake, Hinokage-chô, 15-VI-1996, S. IMASAKA leg. (SIC); 1♂ (B), Mt. Shiraiwa-yama, Gokase-chô, 18-V-1991, A. NAGAI leg. (SIC); 1♂ (B), Ebino-kôgen, Ebino-shi, 24-V-1990, A. NAGAI leg. (SIC). Kagoshima Pref.: 5♂♂ (B), 2♀♀ (B), Mt. Shibi-san, Miyanojô-chô, 14-V-1991, S. IMASAKA leg. (KURA, SIC); 1♀ (B), Mt. Kirishima-yama, 13-V-1991, S. IMASAKA leg. (SIC); 2♂♂ (B), Yodogawa-rindô, alt. 1,300 m, Yaku-shima Is., 17-V-1988, Y. MATSUNAGA leg. (SIC); 2♂♂ (B), 6♀♀ (B), Yodogawa-goya, Yaku-shima Is., 7-VI-1988, S. IMASAKA leg. (SIC); 1♀ (B), Yodogawa-goya, Yaku-shima Is., 9-VI-1988, S. IMASAKA leg. (SIC); 1♀ (B), Shiratanian-sui-kyô - Tsuji-no-tôge, Yaku-shima Is., 4-V-1998, N. TAKAHASHI leg. (NTC). [No detailed data] 1♂ (Y), "Japan./ G. Lewis./ 1910-320." (BMNH).

*Distribution.* Japan: Honshu (west of Kanagawa Pref.), Shikoku, Kyushu, Yaku-shima Is.

*Notes.* This new species closely resembles *A. (Andrathemus) okuyugawaranus* TAKAHASHI, 1992 from Kanagawa Pref., Honshu, particularly in the yellow striped type (Y), but can be distinguished from the latter by the colour of the middle and hind femora which are blackish along the outer margins, and the structure of the male genitalia, above all in the broader dorsal plates. The blackish type (B) can be easily distinguished from *A. (Andrathemus) okuyugawaranus* TAKAHASHI by the characteristic colour.

The colour of the body shows a tendency to become blackish in the southwestern area of the distributional range of the species, and to become yellowish in the eastern area (Table 1). However, this merely shows geographical variation within the same species, because it is continuous and no morphological difference has been observed except for coloration.

It has become clear by our reexamination that one of the paratypes of *A. (Andrathemus) okuyugawaranus* TAKAHASHI actually belongs to this new species.

This species is collected on various flowers (*Palura chinensis* KOIDZ. var. *pilosa*



NAKAI, *Cornus controversa* HEMSLEY, etc.) in the upper lucidophyllous to the lower cool temperate deciduous broadleaved forests. Living individuals look like *Encyclops olivacea* BATES, a longicorn beetle, on forest flowers.

The specific name is given in honour of Mr. Yoshiaki MATSUNAGA who collected a part of the type series including the holotype of this interesting new species.

*Athemus (Andrathemus) tobiranus* OKUSHIMA et IMASAKA, sp. nov.

[Japanese name: Tobira-jôkai]

(Figs. 5, 13–15)

*Athemus* sp. [Tobira-jôkai]: anon., 1997, Matsumoto-shi no Konchû, Matsumoto-shishi Shizen-bumon Chôsa-hôkoku-sho, Matsumoto-shi, 1, p. 47.

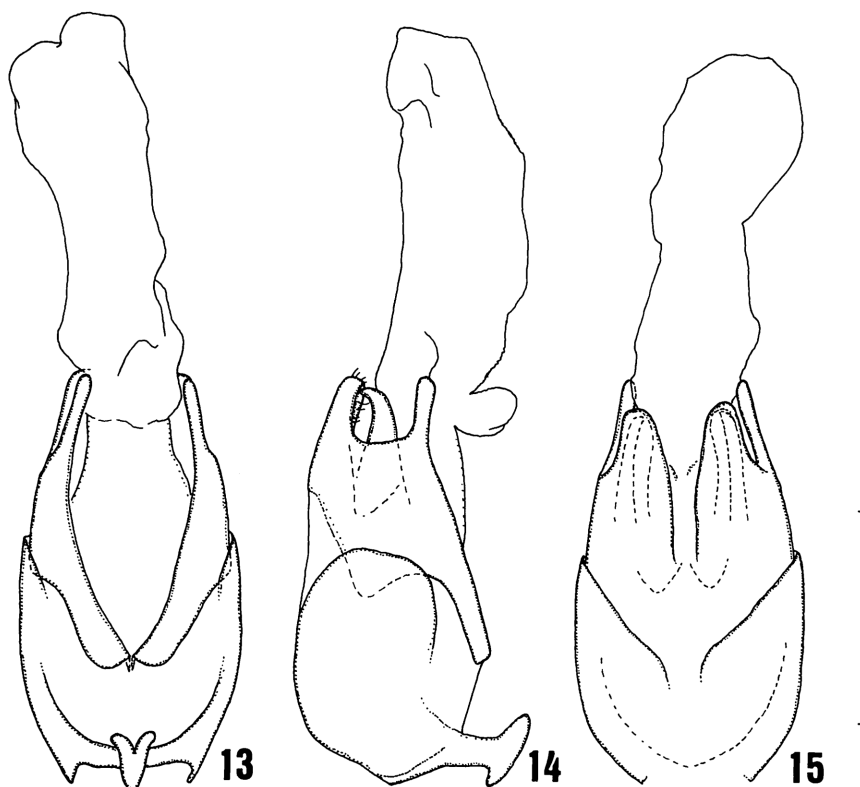
Male. Body mostly yellow. Eyes black; mandibles and claws faintly reddish; antennae, tarsi, metasternum and abdominal sternites somewhat dusky. Body closely covered with fine yellowish pubescence; apical margin of clypeus fringed with yellowish bristles; each elytron with intermingled yellowish bristles in addition to primary pubescence.

Body very slender. Head slightly shorter than its width; dorsum depressed along the apical margin of clypeus and in lateral areas before eyes; surface smooth with faint lustre, sparsely with minute and indistinct punctures; apical margin of clypeus arcuate with its centre faintly indented; eyes large, globular and strongly prominent, ratio of the diameter of an eye to interocular space 1 : 1.5; labial palpus with semicircular apical segment; maxillary palpus with somewhat slender and knife-shaped apical segment; antennae filiform and slender, attaining to apical third of elytra, 1st segment clavate, 2nd short and a little expanded apicad, 3rd to 11th subcylindrical, each of 4th to 10th segments with a longitudinal groove on the dorso-external side, but that on the 4th is short, relative lengths of antennal segments as follows:— 15: 10: 12: 14: 17: 16: 16: 16: 14: 15.

Pronotum subquadrate, faintly expanded posteriad, 0.87 times as wide as head, 0.96 times as long as wide; anterior margin arcuate; posterior margin weakly arcuate; lateral margins sinuate, weakly hollowed behind anterior angles and constricted just before posterior angles; anterior angles rounded; posterior angles rectangular and slightly projected; disc convex, particularly so in the postero-lateral areas, strongly depressed along the posterior margin, antero-lateral areas hollowed; medio-longitudinal furrow distinct only in central area; surface smooth with faint lustre. Scutellum triangular, with blunt apex.

Elytra conjointly 1.54 times as wide as pronotum, 3.4 times as long as wide, the sides subparallel though slightly convex at basal fourth; dorsum closely and rugosely punctate, though weakly in basal part; each elytron provided with two vague costae.

Legs considerably slender; each femur mostly straight; each tibia mostly straight though feebly arcuate at the base; each outer claw of fore and middle legs provided with a thumb-shaped tooth at the base, the other claws simple.



Figs. 13–15. Male genitalia of *Athemus (Andrathemus) tobiranus* OKUSHIMA et IMASAKA, sp. nov.; 13, ventral view; 14, lateral view; 15, dorsal view. (Scale: 0.5 mm.)

Male genitalia:— Ventral process of each paramere straight and leaning inwards, each dorsal plate rounded at the apex, slightly expanded inwards. Each laterophysis curved towards the apex of each dorsal plate, pointed at the tip. Inner sac lengthened behind, as long as tegmen (Figs. 13–15).

Length of body: 9.0 mm (measured from the anterior margin of clypeus to the apices of elytra); breadth of body: 2.0 mm (measured at the widest part of conjoint elytra).

Female. Unknown.

*Type specimen.* Holotype: ♂ (Type No. 3112, Kyushu Univ.), Tobira, Matsumoto-shi, Nagano Pref., Honshu, Japan, 12–VI–1995, H. HAYAKAWA leg. (KUF).

*Distribution.* Japan: central Honshu (Nagano Pref.).

*Notes.* This new species somewhat resembles *A. (Andrathemus) okuyugawaranus* TAKAHASHI, 1992 from Kanagawa Pref., Honshu, but can easily be distinguished from the latter by the wholly yellow body and the dorsal plates of the male genitalia slightly expanded inwards.

The two apical segments of the left antenna are missing in the holotype.  
The specific name is given after the name of the type locality.

*Athemus (Athemellus) naokii* OKUSHIMA et IMASAKA, sp. nov.

[Japanese name: Ishigaki-kubiaka-jōkai]

(Figs. 6, 16)

*Athemellus* sp. [Ishigaki-kubiaka-jōkai]: IMASAKA & YAMAJI, 1989, Gekkan-Mushi, Tokyo, (226): 15, fig. 4.

Male. Unknown.

Female. Body mostly black. Eyes blackish brown, lateral areas before eyes yellowish brown, mandibles and claws reddish brown, pronotum reddish orange, scutellum reddish orange though the posterior margin is dusky, abdominal sternites orange yellow. Body closely covered with fine whitish pubescence intermingled with blackish bristles in addition to primary pubescence; apical margin of clypeus fringed with yellowish bristles.

Body somewhat stout. Head slightly shorter than its width; dorsum depressed along the apical margin of clypeus and in lateral areas before eyes; surface smooth with faint lustre; apical margin of clypeus arcuate as a whole though slightly sinuate with its centre faintly indented; eyes large, globular and moderately prominent, ratio of the diameter of an eye to interocular space 1 : 1.9; labial palpus with triangular apical segment; maxillary palpus with somewhat wide and securiform apical segment; antennae filiform and slender, attaining to the middle of elytra, 1st segment clavate, 2nd short and a little expanded apicad, 3rd to 11th subcylindrical, lacking groove on each segment, relative lengths of antennal segments as follows:— 20: 10: 16: 18: 18: 18: 18: 18: 17: 16: 20.

Pronotum subquadrate slightly expanded posteriad, 1.03 times (in the holotype; range 0.97–1.03) as wide as head, 0.92 (0.92–1.00) times as long as wide; anterior margin arcuate; posterior margin weakly arcuate; lateral margins faintly sinuate; anterior angles rounded; posterior angles rectangular; disc convex, particularly so in the postero-lateral areas, strongly depressed along the posterior margin, antero-lateral areas hollowed; medio-longitudinal furrow distinct only in central area; surface smooth with faint lustre. Scutellum triangular with rounded apex.

Elytra conjointly 1.51 (1.50–1.51) times as wide as pronotum, 2.47 (2.47–2.69) times as long as wide, the sides subparallel though slightly convex at basal third, and gradually and slightly convergent apicad; dorsum closely and rugosely punctate; each elytron provided with two vague costae.

Legs moderately slender; each femur mostly straight; each tibia mostly straight though feebly arcuate at the base; each outer claw of fore legs provided with a minute tooth at the base, the other claws simple.

Eighth abdominal sternite deeply and rather narrowly emarginate on each side of terminal margin, forming two round lateral lobes and moderately wide median lobe,

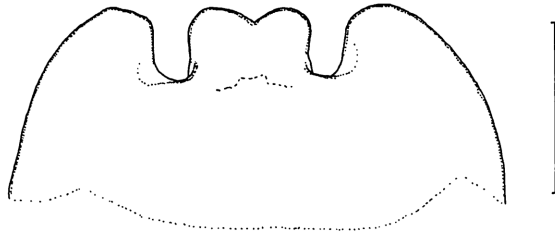


Fig. 16. Eighth abdominal sternite in the female of *Athemus (Athemellus) naokii* OKUSHIMA et IMASAKA, sp. nov. (Scale: 0.5 mm.)

the latter of which is rounded on each side, forms a re-entrant angle at the centre, and is slightly constricted at the base (Fig. 16).

Length of body: 10.4 mm (in the holotype; range 8.55–10.4, measured from the anterior margin of clypeus to the apices of elytra); breadth of body: 2.95 (2.25–2.95) mm (measured at the widest part of conjoint elytra).

*Type series.* Holotype: ♀ (Type No. 3113, Kyushu Univ.), Gunkan-iwa – Kanpira-no-taki, above 800 m alt., Iriomote-jima Is., Okinawa Pref., Ryukyus, Japan, 17–IV–1996, N. TAKAHASHI leg. (KUF). Paratype: 1 ♀, Mt. Omoto-dake, Ishigaki-jima Is., Okinawa Pref., Ryukyus, Japan, 3–V–1977, O. YAMAJI leg. (SIC).

*Distribution.* Japan: Yaeyama group (Ishigaki-jima Is., Iriomote-jima Is.) of the Ryukyu Islands.

*Notes.* This new species very closely resembles *A. (Athemellus) sauteri* (PIC, 1926) from Taiwan, but can easily be distinguished from the latter by the wholly reddish orange pronotum and the 8th abdominal sternite in female with the median lobe bearing rounded projections.

The members of the subgenus *Athemellus* WITTMER are usually provided with no tooth on their claws. Though this new species has a minute tooth on each outer claw of the fore legs, at least in the female, it is tentatively placed in the subgenus *Athemellus*, at least for the time being, since *A. sauteri* (PIC) also has a minute tooth on each outer claw of only fore legs in the female.

The specific name is given in honour of our friend, Mr. Naoki TAKAHASHI, a taxonomist of the Cantharidae, who kindly provided us with a strange specimen.

## 要 約

奥島雄一・今坂正一：日本産ジョウカイボン属の3新種。——日本のジョウカイボン属には、近年になって多くの種がほかの属から移されたり、新種として記載されたりして追加されている。今回、これまでに不明種として記録が公表されている日本産の3種を検討した結果、いずれも新種と認められたので、それぞれマツナガジョウカイ *Athemus (Andrathemus) matsunagai* IMASAKA et OKUSHIMA, sp. nov., トビラジョウカイ *Athemus (Andrathemus) tobiranus* OKUSHIMA et IMASAKA, sp. nov., イシガキクビアカジョウカイ *Athemus (Athemellus) naokii* OKUSHIMA et IMASAKA,

sp. nov. として命名記載した。マツナガジョウカイは上翅の色彩に黒色型と黄筋型があり、とくに後者は神奈川県から記載されたホソニセヒメジョウカイ *A. (Andrathemus) okuyugawaranus* TAKAHASHI, 1992 に酷似しているが、中・後脚腿節外側が基部から黒ずむこと、および雄交尾器の背板がいくぶん幅広いことで区別できる。トビラジョウカイもまたホソニセヒメジョウカイにいくぶん似ているが、体全体が黄色いことおよび雄交尾器の背板が内側に広がることで容易に区別できる。イシガキクビアカジョウカイは、台湾から記載された *A. (Athemellus) sauteri* (PIC, 1926) にきわめてよく似ているが、前胸背板全体が橙赤色であることおよび雌の第8腹板の中央片が丸くてふたつの山状に突き出ることによって区別できる。

なお、和名はそれぞれ不明種として発表された時にすでに使用されているものを採用した。

## References

- Anonym, 1997. Matsumoto-shi no Konchû. *Matsumoto-shishi Shizen-bumon Chôsa-hôkoku-sho*, 1. 150 pp. Matsumoto-shi. (In Japanese.)
- IMASAKA, S., & N. ABIRU, 1989. Beetles collected from Kumamoto Prefecture in 1989. *Kumamoto Konchû-Dôkôkaihô*, **35** (1): 1–32, fig. 2. (In Japanese.)
- & S. NAKAMURA, 1993. The fauna of Cantharidae (Coleoptera) from Hiroshima Prefecture (Primary report). *Misc. Rept. Hiwa Mus. nat. Hist.*, (31): 43–65, pls. 1–4. (In Japanese.)
- & O. YAMAJI, 1989. Records of nine species of the Cantharidae from the Ryukyu Islands. *Gekkan-Mushi, Tokyo*, (226): 14–15. (In Japanese.)
- & I. OHTSUKA, 1996. The family of Cantharidae (Coleoptera) from Kumamoto Prefecture, Kyushu, Japan. *Kumamoto Konchû-Dôkôkaihô*, **40** (3): 33–71. (In Japanese.)
- KIESENWETTER, H., 1874. Die Malacodermen Japans nach dem Ergebnisse der Sammlungen des Herrn G. LEWIS während der Jahre 1869–1871. *Berl. ent. Z.*, **18**: 241–288.
- LEWIS, G., 1895. On the Dascillidae and malacoderm Coleoptera of Japan. *Ann. Mag. nat. Hist.*, (6), **16**: 98–122, pl. 6.
- MOTSCHULSKY, V. DE, 1860. Insectes du Japon. *Étud. ent., Helsingfors*, **9**: 4–39.
- PIC, M., 1926. H. SAUTER's Formosa-Ausbeute. Mordellidae, Lycidae, Cantharidae. *Ent. Mitt., Berlin*, **15**: 67–69.
- TAKAHASHI, K., 1992. The fauna of family Cantharidae (Coleoptera) in Kanagawa Prefecture, Japan. *Kanagawa-Chûhō, Yokohama*, (100): 71–124.
- 1998. Check-list of Cantharidae of Japan. *Kanagawa-Chûhō, Odawara*, (122): 29–48.
- WITTMER, W., 1972. 55. Beitrag zur Kenntnis der palaearktischen Cantharidae und Malachiidae (Col.). *Ent. Arb. Mus. Frey*, **23**: 122–141.
- 1978. Ergebnisse der Bhutan-Expedition 1972 des Naturhistorisches Museum in Basel, Coleoptera: Fam. Cantharidae (4. Teil) und Bemerkungen zu einigen Arten aus angrenzenden Gebieten. *Ent. basil.*, **3**: 151–161.