Elytra, *Tokyo*, New Series, **6** (1): 57–64
May 25, 2016

Revision of the *Salpingus* Species (Coleoptera, Salpingidae) from Asia, with Descriptions of Two New Species from the Ryukyus and Taiwan

Kimio Masumoto[1)], Yukihiko Hirano[2)] and Katsumi Akita[3)]

[1)] Kamezawa 3-chôme 14–13–1001, Sumida-ku, Tokyo, 130–0014 Japan

[2)] Renshôji 583–29, Odawara City, Kanagawa Pref., 250–0865 Japan

[3)] Higashitakato-machi 170–2, Tsu City, Mie Pref., 514–1136 Japan

Abstract All of the Asian *Salpingus* species, *S. caucasicus* (Reitter, 1905), *S. depressifrons* Nikitsky et Belov, 1983, and *S. morishimai* Sasaji, 1987, recorded from Japan, were re-examined. As a result, *S. morishimai* is regarded as a junior synonym of *S. depressifrons*. Records of *S. caucasicus* from Japan are treated as misidentification of *S. depressifrons*. Two examined specimens of *S. caucasicus* are considered syntypes and they are designated here for the lectotype and the paralectotype, respectively. Two new species from the Yaeyama Islands of the Ryukyus and Taiwan are described: *Salpingus yaeyamensis* sp. nov. and *S. taiwanus* sp. nov. A key to the species distributed in Asia is provided.

In the family Salpingidae, members of the genus *Salpingus* resemble some groups of rhynchit-beetles by possessing a flattened and elongated rostrum.

According to the Catalogue of Palaearctic Coleoptera (Pollock & Löbl, 2008), three species of the genus *Salpingus* are recorded from Asia: *S. caucasicus* Reitter, 1905, *S. depressifrons* Nikitsky et Belov, 1983, and *S. morishimai* Sasaji, 1987. Whilst no species has ever been known from Southeast Asia including Taiwan up until now.

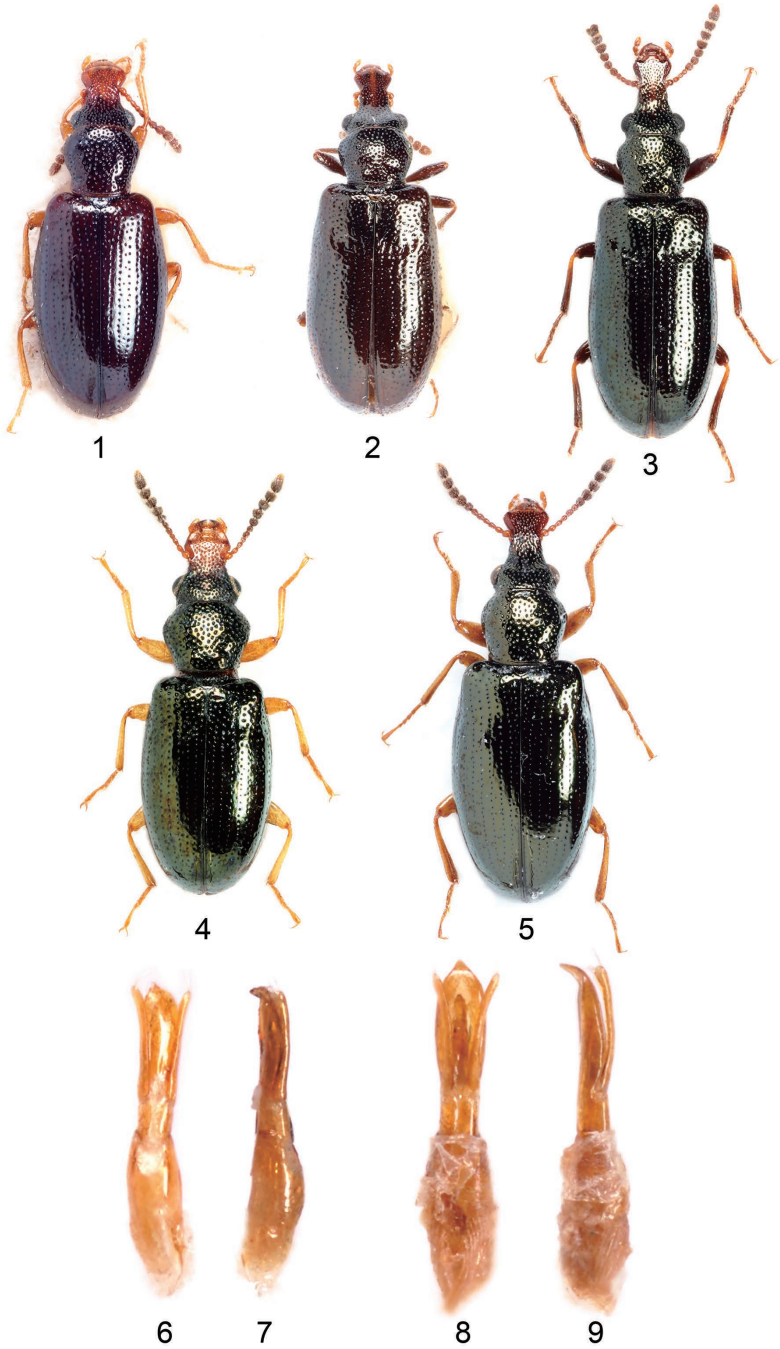
We have examined the types of Reitter, and Nikitsky and Belov preserved in the Natural History Museum, London, a specimen of the third species determined by Sasaji, and some other materials.

We are going to describe those species recorded from the main islands of Japan in the past. Two examined specimens of *S. caucasicus* are considered syntypes, so we are going to designate them for the lectotype and the paralectotype, respectively. Besides, we recently knew two unknown species from the Yaeyama Isls. (Iriomote-jima Is. and Ishigaki-jima Is.), and Taiwan. After a careful examination, we concluded that the two species are new to science and are going to describe them in the present paper.

We deeply thank Dr. Keiichi Takahashi, Ibaraki Pref., Mr. Tadafumi Nakata, Okinawa Pref., Dr. Hiroshi Ooki, Kanagawa Pref., and Mr. Fu-Sheng Huang and Mr. Sin-Yan Shih, National Chung Hsing University, for offering the materials to be designated as type series. We cordially thank Mr. Maxwell V. L. Barclay and Dr. Michael F. Geiser, the Natural History Museum, London, for permitting us to borrow the type specimens and additional materials from Taiwan.

Thanks should also be expressed to Dr. Makoto Kiuchi for taking very fine photographs inserted in the present paper. Finally, we deeply appreciate Dr. Jun-ichi Aoki for his critical reading through our manuscript and giving invaluable suggestions.

The holotypes to be designated will be deposited in the National Museum of Nature and Science, Tsukuba (NSMT) and the National Museum of Natural Science, Taichung (NMNST). Paratypes will



Figs. 1–9. *Salpingus* spp. —— 1, *Salpingus caucasicus* (Reitter, 1905), lectotype, female; 2, *S. depressifrons* Nikitsky et Belov, 1983, paratype, male; 3, ditto, male, (*S. morishimai* Sasaji, 1987, det. by H. Sasaji, 1996); 4, 6, 7, *S. yaeyamensis* sp. nov., holotype, male; 5, 8, 9, *S. taiwanus* sp. nov., holotype, male. —— 1–5, Habitus; 6–9, male genitalia (6 & 8, dorsal view; 7 & 9, lateral view).

be deposited in the Natural History Museum, London (NHML), and some other museums and institutes.

I. Examination Result of the Recorded Species

As we mentioned in the introduction, three species are recorded from Asia: Japan and Far East Russia particularly.

The first species, *Salpingus caucasicus* (Reitter, 1905), is distributed in Armenia, South European territory of Russia, the Caucasus, and was recorded for the first time from Japan by Seidlitz (1917). Nikitsky and Belov (1983) noted, however, that the above record was incorrect, and the corresponding species might be *S. depressifrons* Nikitsky et Belov, 1983. Besides, Iablokoff-Khnzorian (1985) recorded again *S. caucasicus* from Japan (Tokyo), which should also be regarded as *S. depressifrons*.

The second species, *S. depressifrons*, originally described from Far East Russia, was recorded by Yasuda (1985) from Hokkaido (Sôunkyo), northern Japan, and determined by the late Dr. T. Nakane.

The third species, *S. morishimai* Sasaji, 1987 (Fig. 3), was described from Nikkô (Kirifuri), central Japan. This species is widely distributed in Japan and well resembles *S. depressifrons* according to Sasaji (1987).

We examined the types of the first two species, and the third one was determined by the author with several additional materials from various areas in Japan. Since we are not able to find any Japanese specimens surely determined as *Salpingus caucasicus*, we agree with Nikitsky and Belov's opinion that records of *S. caucasicus* from Japan were misidentified, and the corresponding species is *S. depressifrons*.

Meanwhile, we are not able to find any distinguishable characteristics between *Salpingus depressifrons* and *S. morishimai*. Thus, we treat the latter as a junior synonym of the former.

Salpingus caucasicus (Reitter, 1905)

(Fig. 1)

Rhinosimus caucasicus Reitter, 1905: 312.
Salpingus (*Rhinosimus*) *caucasicus*: Nikitksky et Belov: 1983: 516.
Salpingus caucasicus: Pollock et Löbl, 2008: 419.

Notes. The species can be distinguished from other Asian species by characteristics mentioned in the key below.

Type specimens examined. Syntypes: 2 ♀♀ (NHML).

Lectotype designation: Of two syntypes, we chose the specimen labeled "Caucasus, Leder, Kraatz Coll., *Rhinosimus caucasicus* Reitt. in Deuts. Ent. Mus., Deuts. Ent. Mus., B. M., 1922-111" as the lectotype, and the other specimen labeled "Caucasus, Leder, Kraaz Coll., B. M. 1922-122" as the paralectotype.

Salpingus depressifrons Nikitsky et Belov, 1983

[Japanese name: Kuchinaga-chibikikawamushi]

(Figs. 2 & 3)

Salpingus (*Rhinosimus*) *depressifrons* Nikitsky et Belov, 1983: 523.
Salpingus (*Salpingus*) *morishimai* Sasaji, 1989: 30. *Syn. nov.*

Rhinosimus caucasicus: Seidlitz, 1917: 81; Iablokoff-Khnzorian, 1985: 222.
Salpingus depressifrons: Pollock & Löbl, 2008: 419.

Notes. The species can be distinguished from other Asian species by characteristics mentioned in the key below.

Type specimen examined. Paratype: Far East Russia: 1 ex., "Ussuriysky rayon, s. Kamenushka, 25.VI.82, N. Nikitsky (In Russian), Brit. Mus. 1983-268", Paratypus, *Salpingus depressifrons* Nikitsky".

Specimens examined. Japan: Hokkaido: 3 exs., Sapporo-shi, Hyakumatsuzawa, Hokkaido, 19.X. 2000, K. Ueda leg.; 1 ex., Tokoro-chô, Isekinomori, 15.VI.2005, Y. Hirano leg.; 1 ex., Shintoku-chô, Tomuraushi spa, 23.X.2010, Y. Hirano leg.; 2 exs., ditto, 8–14.VI.2012, Y. Hirano leg.; 1 ex., ditto, 18–23.IX.2013, Y. Hirano leg.; 1 ex., Shintoku-chô, Yûtomuraushi-rindô, 23.IX.2014, Y. Hirano leg.; 1 ex., Shintoku-chô, Tonokarishukaribetsu-gawa Riv., 23.IX.2015, Y. Hirano leg.; 1 ex., Shintoku-chô, Akebono-bashi–hiokunotaki, 23.IX.2011, Y. Hirano leg.; Honshu: 1 ex., Iwate-ken, Yahaba-chô, 16.III.2012, C. Ito leg.; 1 ex., Fukushima-ken, Ten'ei-mura, Futamata, 3.VI.2005, Y. Hirano leg.; 3 exs., Yamanashi-ken, Enzan-shi, Yanagisawa-tôge Pass, 22.V.–5.VII.2015, S. Nomura leg.; 1 ex., Kanagawa-ken, Hakone-machi, Daigatake, 14.IX.2014, Y. Hirano leg.; 1 ex., Shizuoka-ken, Mt. Ômuro-yama, 10.VI.2010, H. Ooki leg.; 1 ex., Kannami-genseirin, 24.VI.2012, H. Ooki leg.; 1 ♂ (Fig. 3), 1 ♀, Mie-ken, Kameyama-shi, Mt. Nonobori-san, 750–800 m, 7.V.1994, K. Akita leg. ("*Salpingus morishimai* Sasaji, 1987, Det. H. Sasaji, 1996"); Sado Is.: 1 ex., Yashikidaira, 9.VI.2012, H. Ooki leg.; 2 exs., Mt. Myôken-zan, 9.VI.2012, H. Ooki leg.; 1 ex., Otowa-ike, 9.VI.2012, H. Ooki leg.; Oki Isls.: 1 ex., Dôgo Is., Mt. Yokoo-yama, 3.VI.2008, Y. Notsu leg.

Distribution. Far East Russia, Japan (Hokkaido, Honshu, Sado Is. (new record), Oki Is. and Kyushu).

II. Descriptions of New Species from Yaeyama Islands and Taiwan

Salpingus yaeyamensis sp. nov.

[Japanese name: Yaeyama-kuchinaga-chibikikawamushi]

(Figs. 4, 6, 7)

M a l e. Body elongated gourd-shape, moderately convex postero-dorsad. Major portions of dorsal surface dark copper-colored with greenish luster, anterior portion of head, mandibles, four basal segments of antennae yellowish brown, mouth parts and legs yellow and partly darkened, ventral surface blackish brown; major portions of dorsal surface strongly, vitreously shining, antennae with four basal segments moderately shining, and with seven apical segments almost mat, ventral surface moderately, weakly vitreously shining; major portions of dorsal surface glabrous, antennae haired, particularly five apical segments densely haired, ventral surface mostly glabrous, sparsely haired partly.

Head somewhat elongated triangular, protruded apicad and forming distinct rostrum, gently inclined anteriad in basal 1/3, flattened in apical 2/3, noticeably constricted in middle part in dorsal view, rather strongly dilated apicad from the narrowest point, fairly closely and strongly punctate; frons weakly triangularly bordered; areas behind the frontal borders weakly convex; distance between eye and antennal socket obviously shorter than longitudinal eye's diameter. Eyes slightly obliquely convex laterad, distance between them about 3.5 times the width of eye's transverse diameter. Antennae clavate, five apical segments forming distinct club, tip of terminal one reaching basal 1/3 of pronotum, length ratio from basal to apical segments: 0.09, 0.07, 0.08, 0.04, 0.07, 0.04, 0.06, 0.07, 0.09, 0.08, 0.17.

Pronotum subcordiform, slightly wider than long (9: 8), widest slightly behind apical 2/5, rather strongly narrowed anteriad and posteriad from the widest point, sinuate at basal 1/4; apex nearly straight, not margined; base weakly produced, inconspicuously margined, the margin partly disappeared; sides fairly strongly prominent laterad in widest areas, steeply inclined in the remaining areas; front angles indistinct, hind angles obtuse with rounded corners; disc gently convex, weakly depressed at basal 1/4 in lateral portions, sparsely punctate, the punctures in central portion large and often fused with one another, those in the remaining portions becoming smaller. Scutellum somewhat short-cordate, flattened, and scattered with microscopic punctures.

Elytra somewhat oblong-ovate, 1.63 times as long as wide, 3.04 times the length and 1.59 times the width of pronotum, widest at basal 3/7, moderately roundly narrowed anteriad and posteriad from the widest point; dorsum moderately convex, highest at basal 3/8, transversely depressed at basal 1/4; disc with rows of round punctures, the punctures in rows becoming sparser in lateral portions, and smaller and sparser in posterior portions; intervals nearly flat to very slightly convex, very sparsely, irregularly scattered with punctures; humeri obliquely swollen; apices moderately rounded.

Ventral side of head rather sparsely scattered with strong punctures, sparsely pubescent. Gula parabolically bordered, weakly, somewhat transversely convex in middle, fairly smooth.

Prosternum inclined apicad, sparsely scattered with strong punctures, with apex finely grooved; procoxal cavities connected with each other. Mesoventrite rather short, weakly raised posteriad, scattered with strong punctures, which are smaller than those on prosternum; mesocoxal cavities approximate but not connected with each other. Metaventrite fairly large, moderately convex widely in middle, sparsely scattered with small punctures, which become closer in lateral portions. Abdomen scattered with small punctures, which are clothed with fine decumbent hairs; two basal ventrites smooth, three apical ventrites sericeous; anal ventrite rather short, weakly, transversely depressed in middle, sparsely scattered with minute punctures, and finely haired.

Legs without special modification. Femora subclavate, minutely punctate and finely haired. Tibiae weakly becoming bolder apicad, minutely punctate and finely haired, densely haired on interoventral faces. Tarsi very minutely punctate and finely haired, densely haired on ventral faces, length ratios from basal to apical segments of pro-, meso- and metatarsi: 0.08, 0.06, 0.05, 0.02, 0.16; 0.09, 0.07, 0.04, 0.03, 0.14; 0.16, 0.06, 0.04, 0.22.

Genitalia elongate, about 0.4 mm in length; basale subelliptical in dorsal view; apicale elongated spatulate, about 0.2 mm in length, with a pair of elongate accessory parts in lateral portions; penis minutely hooked at apex.

F e m a l e. The external morphological difference by sexuality is indistinct, though, generally speaking, the antennae shorter and less strongly clavate, the rostrum shorter and mandibles less developed, and the pronotum less strongly widened and the tibiae less slender. Therefore, we check the genitalia if needed.

Body length: 2.8–3.6 mm.

Type series. Holotype: ♂, "Mt. Omoto-dake, Ishigaki Is., Okinawa Pref., JAPAN, 30. XI. 2014, Tadafumi NAKATA leg." (NSMT). Paratypes: 9 exs., same collecting data as for the holotype; 1 ♀, "Iriomote-jima Is.: Shirahama Rindo, Okinawa, Japan, 21-23.IV.2015, K. TAKAHASHI leg."

Distribution. Japan: The Ryukyus: Yaeyama Isls. (Ishigaki-jima Is. and Iriomote-jima Is.).

Notes. The new species resembles *Salpingus depressifrons* NIKITSKY et BELOV, 1983 from Far East Russia and Japan, but can be distinguished from the latter by characteristics mentioned in the key.

Etymology. The specific name of the present new species is given after the Yaeyama Islands (Ishigaki-jima Is. and Iriomote-jima Is.), the Ryukyus, where the type series were collected.

Salpingus taiwanus sp. nov.

[Japanese name: Taiwan-kuchinaga-chibikikawamushi]

(Figs. 5, 8, 9)

The new species closely resembles the preceding new species, *Salpingus yaeyamensis* sp. nov., but can be distinguished from the latter by the following characteristics:

M a l e. Body with a little stronger greenish luster. Anterior portion of head dark brown; legs yellowish brown.

Head with rostrum more protruded anteriad, more closely and finely punctate, more noticeably dilated apicad, distance between eye and antennal socket obviously longer than longitudinal eye's diameter. Eyes smaller and gently convex laterad, distance between them about 5 times the width of eye's transverse diameter. Antennae slightly bolder, tip of terminal one reaching basal 2/5 of pronotum, length ratio from basal to apical segments: 0.09, 0.08, 0.08, 0.05, 0.06, 0.04, 0.06, 0.08, 0.08, 0.09, 0.16.

Pronotum less strongly widened, widest at apical 1/3, comparatively moderately narrowed posteriad from the widest point; apex and base weakly margined; disc weakly depressed at basal 1/4 and apical 1/3 in lateral portions, with punctures slightly smaller and sparser than those in *S. yaeyamensis*. Scutellum triangular with rounded sides, flattened, and rather closely scattered with microscopic punctures.

Elytra slightly slenderer, 1.75 times as long as wide, 2.83 times the length and 1.62 times the width of pronotum, widest at basal 2/5; dorsum highest at basal 2/5, transversely depressed at basal 1/5; disc with round punctures in rows a little smaller than those on *S. yaeyamensis*.

Ventral side of head more closely scattered with small punctures. Gula weakly transversely aciculate, and sparsely scattered with microscopic punctures.

Prosternum inclined apicad, moderately scattered with strong punctures, with apex obviously grooved. Mesoventrite more strongly raised posteriad, more closely scattered with strong punctures, which are smaller than those on prosternum; mesocoxal cavities oblique. Metaventrite convex widely in middle and posterior portions, almost impunctate in middle, scattered with small punctures in lateral portions. Abdomen very weakly sericeous.

Legs similar shape to those of *S. yaeyamensis*. Tibiae more becoming bolder apicad than in the former species. Tarsi with different length ratios of pro-, meso- and metatarsal segments: 0.07, 0.05, 0.06, 0.03, 0.19; 0.15, 0.08, 0.06, 0.04, 0.18; 0.19, 0.08, 0.04, 0.16.

Genitalia with structure basically similar to that of *S. yaeyamensis*, about 0.56 mm in length; apicale about 0.25 mm in length (Figs. 6, 7).

F e m a l e. As mentioned in the description of *S. yaeyamensis*, the external morphological difference by sexuality is indistinct, so we check the genitalia if needed.

Compared with the female of *S. yaeyamensis* sp. nov., the body wider, the dorsal surface scattered with smaller punctures and the rostrum obviously longer.

Body length: 3.5–4.3 mm.

Type series. Holotype: ♂, "北東眼山 (Beidongyan-shan), 南投縣 (Nantou Co.), 台灣 (Taiwan), 9. IX. 2013, 黃福盛採集 (Fu-Sheng Huang leg.)" (NMNST). Paratypes: 4 exs., same data as for the holotype; Taiwan: 1 ex., Nantou Co., Beidongyan-shan (北東眼山), F.-S. Huang leg.; 1 ex., Pingdong Co., Tianchiduan, Nanhengguan-gonglu (天池段南橫貫公路), 12.X.2012, F.-S. Huang leg.; 1 ♂, 1 ♀, "Nantou Co., Len-ai Vil., sheep farm, 7.VIII.2008, 1916m alt., hand, N24˚03.121, E121˚09.643, M. V. L. Barclay & H. Mendel, BMNH(E), 2008-85" (NHML); 12 exs., Miaoli Co., Tai-an Township, Meiyuan Vil., Xuejian Recreation Area (雪見森林遊憩區), (Migration Trap), 7.XI.2015, S.-Y. Shih leg.;

19 exs., same locality and collector, (Migration Trap), 4.XII.2015.

Distribution. Taiwan.

Notes. The characteristics of this species are mentioned in the above description and in the key below.

Etymology. The specific name of the present new species is given after Taiwan where the type materials were collected.

III. Key to the *Salpingus* Species from Asia

We herein present a key to the *Salpingus* species from Asia.

1(2) Except for anterior portion of head, dorsal surface blackish and more or less with luster; antennae with five to seven apical segments widened; elytra depressed in area of basal 1/5 ····· 3

2(1) Except for anterior portion of head, dorsal surface dark brown and without metallic luster; antennae with four apical segments widened; elytra without depressed area. Distribution: Armenia, South European territory of Russia, "Caucasus" ····· *S. caucasicus* (Reitter, 1905)

3(4) Legs yellow-brown; dorsal surface with strong greenish luster; eyes larger and not so strongly convex laterad; antennae with five apical segments widened; pronotum rather sparsely punctate, apex and base weakly or not margined; elytra fairly strongly convex, strongly rounded laterally, widest at middle ····· 5

4(3) Legs dark brown, with basal parts of tibiae lighter in color; dorsal surface without strong luster; eyes smaller and strongly convex laterad; antennae with seven apical segments widened; pronotum rather closely punctate, apex and base obviously margined; elytra weakly flattened, not so rounded laterally, widest behind middle. Distribution: Far East Russia, Japan ····· *S. depressifrons* Nikitsky et Belov, 1983

5(6) Anterior portion of head yellowish brown to brown; eyes larger; antennae with segment 6 obviously smaller than segment 5; anterior portion of head wider and shorter, distance between eye and antennal socket obviously shorter than the longitudinal eye's diameter; apex of pronotum not margined, base of pronotum inconspicuously margined and often disappeared in dorsal view; sides of pronotum fairly strongly prominent laterad in widest area. Distribution: The Ryukyus: Yaeyama Isls. (Ishigaki-jima Is. and Iriomote-jima Is.) ····· *S. yaeyamensis* sp. nov.

6(5) Anterior portion of head dark brown; eyes smaller; antennae with segment 6 slightly smaller than segment 5; anterior portion of head narrower and longer, distance between eye and antennal socket obviously longer than the longitudinal eye's diameter; apex and base of pronotum weakly margined in dorsal view; sides of pronotum less strongly prominent laterad in widest areas. Distribution: Taiwan ····· *S. taiwanus* sp. nov.

要　　約

益本仁雄・平野幸彦・秋田勝己：アジア産チビキカワムシ科クチナガチビキカワムシ属（鞘翅目）の再検討，および琉球列島と台湾の2新種について．———— クチナガチビキカワムシ属 *Salpingus* はアジアから *S. caucasicus* (Reitter, 1905), *S. depressifrons* Nikitsky et Belov, 1983, および *S. morishimai* Sasaji, 1987 の3種が知られており，そのいずれもが日本からも記録されている．今回われわれは，それらについて再検討を行った．その結果，*S. morishimai* は，*S. depressifrons* の新参シノニムであり，また，*S. caucasicus* の記録は，*S. depressifrons* の誤同定によるものであることが明らかになった．さらに，検討した *S. caucasicus* の2標本は，ラベ

ルからシンタイプであると判断されたので，レクトタイプの指定をおこなった．琉球列島八重山諸島および台湾から得られた本属の種を検討したところ新種であったので，前者をヤエヤマクチナガチビキカワムシ *Salpingus yaeyamensis* sp. nov., 後者をタイワンクチナガチビキカワムシ *S. taiwanus* sp. nov. として命名記載した．さらにアジア産本属種の検索表を付した．

References

Iablokoff-Khnzorian, S. M., 1985. Les Pythidae paléarctiques (Coleoptera). *Deutsche Entomologische Zeitschrift* (N. F.), **32**: 193–229.

Nikitsky, N. B., & V. V. Belov, 1983. Palearkticheskie vidy roda *Salpingus* III. (Col. Salpingidae). *Zoologicheskiy Zhurnal*, **62**: 516–529. (In Russian.)

Pollock, D. A., & I. Löbl, 2008. Salpinginae. Pp. 418–420. *In* Löbl, I., & A. Smetana (eds.), *Catalogue of Palaearctic Coleoptera*, **5**. *Tenebrionoidea*. 670 pp. Apollo Books, Stenstrup.

Reitter, E., 1905. Drei neue Coleopteren aus der plaearcktischen Fauna. *Wiener Entomologische Zeitung*, **24**: 311–312.

Sasaji, H., 1987. Contribution to the taxonomy of the superfamily Cucujoidea (Coleoptera) of Japan and her adjacent districts, III. *Memoirs of the Faculty of Education, Fukui University,* Series II (Nat. Sci.), **37**: 23–55.

Seidlitz, G. C. von, 1917. Die letzten Familien der Heteromeren (Col.). *Deutche Entomologische Zeitschrift*, **1917**: 65–116.

Yasuda, N., 1985. Coleoptera in Kamikawa Town (Mt. Taisetsu-san & the source area of River Ishikari) X. Pp. 111–167. *Nature of Kamikawa Town*, *A checklist of living things*. 2 + 2 + 1 map + 1–168 pp. (In Japanese.)

Manuscript received 30 January 2016;
revised and accepted 8 March 2016.