Elateridae (Insecta, Coleoptera) from Tanegashima Island (Ryukyu Islands, Japan)

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Abstract
There are few records of beetles of the family Elateridae from Tanegashima Island, in the Ōsumi Islands, in the Ryukyu Islands, Japan, and the elaterid fauna of this island has not been reviewed. We examined newly collected specimens and reviewed the previous records from the island. In field work and from a colleague’s collection, we found 27 species, of which 13 were recorded for the first time on the island. As a result, 43 species are confirmed from this island and a checklist of all elaterid species from Tanegashima Island is provided.

Key words
Elaterid beetles, new distributional records, lowland, geographical boundary, Palearctic region.

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Introduction
Tanegashima Island is the easternmost Ōsumi Islands, in the northernmost part of the Ryukyu Islands of Japan. The island is the second largest of the Ōsumi Islands, covering 444 km² with a maximum elevation of 282 m (Geospatial Information Authority of Japan 2018, Kyushu Regional Forest Office 2018). Its vegetation is lowland laurel forest. The island occupies an important position biogeographically because it has a large lowland forest near the boundary between the Palearctic and Oriental regions. Chûjo (1973), Hirashima (1989), and Kishii (1999) listed 4, 10, and 16 species, respectively, of Elateridae from Tanegashima Island. Ôhira (1998a, 2000) recorded 9 species from the island and Ôtsubo (2013) reported 8 species as new records. Currently, approximately 30 species have been recorded from this island (Kishii 1999, Ôhira 1996a, 2000, Ôtsubo 2013). In comparison, 63 elaterid species have been recorded from Japan (Ôba et al. 2015).

Moreover, there is discordance between information from the distributional records for Tanegashima Island and a checklist of the Japanese elaterid fauna (Kishii 1976b, 1999, Ôhira 2005, Ôtsubo 2013). In this study, we examined newly collected specimens of elaterid beetles, reviewed the previous records, and provide a checklist of the species from Tanegashima Island.

Methods
The authors conducted field work in 13 localities on Tanegashima Island, Kagoshima Prefecture, Japan, from 14–16 July 2017 (Fig. 1). This involved looking, spraying, picking up from rotting wood, and using a simple light trap (SLT) made by combining a flight interception trap with a 4 W fluorescent light for catching insects. The latitude and longitude of the collection localities were recorded using a global positioning system receiver.
Check List 14 (4)

(Garmin GPS Map 62s; map datum setting: WGS84) and rounded off to 4 decimal places (Table 1). Altitude was obtained from Google Earth Pro v. 7.3.0.3832 based on the recorded latitude and longitude. The specimens collected in our field work were deposited in the first author’s collection and will be transferred to Osaka Museum of Natural History, Osaka, Japan.

We also examined 3 specimens of 2 species collected by colleagues from 2 sites (Table 1: Sites 6, 7): Paraphotistus notabilis yagi Kishii, 1982 and Ampedus (Ampedus) japonicus japonicus Silfverberg, 1977. These specimens are in the personal collection of Mr Masaki, Kyoto, Japan.


A checklist was made based on Hirashima (1989) and Kishii (1999), incorporating information from Kishii (1976b), Òhira (2000, 2005), and Ôtsubo (2013), as well as from the current study.

Results

A total of 352 specimens of elaterid beetle belonging to 6 subfamilies, 21 genera, and 27 species were identified. All species have already been recorded from Japan; however, 13 species are recorded from Tanegashima Island for the first time. Additionally, the records of another 30 species for the island were confirmed based on literature.

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An asterisk (*) denotes a new record from the island.

Class Insecta
Order Coleoptera
Superfamily Elateroidea
Family Elateridae
Subfamily Agrypninae Candèze, 1857

Agrypnus (Agrypnus) binodulus binodulus
(Motschulsky, 1861)

Lacon binodulus Motschulsky 1861: 8.
Agrypnus binodulus; Ōhira 1954: 14.
Lacon albomaculatus Miwa 1934: 68.

Material examined. 1 ♂, Site 2, SLT [18A001] (Fig. 3A).

Species diagnosis. Ōhira (2002a).

Agrypnus (Sabikikorius) fuliginosus (Candèze, 1865)
Lacon fuliginosus Candèze 1865: 10.
Agrypnus (Sabikikorius) fuliginosus; Nakane and Kishii 1955c: 3.
Sabikikorius fuliginosus; Kishii 1957: 84.
Adelocera (Sabikikorius) fuliginosus; Chûjô and Ōhira 1965: 3.
Material examined. 1 ♂, Site 2, SLT [18A002] (Fig. 3B).
Species diagnosis. Ôhira (2003a).

*Agrypnus (Colaulon) kusuii Ôhira, 1993
Agrypnus (Colaulon) kusuii Ôhira 1993: 249.

Material examined. 1 ♀, Site 5, spraying [18A003] (Fig. 3C); 1 ♂, 1 ♀, Site 9, spraying [18A004, 18A005]; 1 ♂, Site 12, looking [18A006].

Remarks. This species was described from Mage Island, located 20 km west of Tanegashima Island, and has been recorded from Yakushima Island and Cape Sata, Kagoshima Prefecture (Ôhira 2004). It is endemic to the area near the Ôsumi Islands.

Bionomics. At Site 9, this species was found in a crack in the gutter on the side of a road through cultivated land near the seaside (Fig. 2A), together with Heteroderes changi Ôhira 1967. At Site 12, we observed a specimen walking in the grassland at night.

Cryptalaus larvatus pini (Lewis, 1894)
Alaus pini Lewis 1894: 30.
Alaus putridus pini; Nakane and Kishii 1955a: 15.
Paracalais larvatus pini; Ôhira 1976: 32.
Cryptalaus larvatus pini; Ôhira 1990b: 21.
Alaus putridus satoi Ôhira 1964: 235.
Paracalais putridus satoi; Ôhira 1969c: 25.

Material examined. 2 ♀, Site 2, SLT [18A007, 18A008] (Fig. 3D); 1 ♂, Site 11, SLT [18A009].

Tetrigus lewisi Candèze, 1873
Tetrigus lewisi Candèze 1873: 6.
Tetrigus grandis Lewis 1879b: 155.

Material examined. 9 ♂, Site 2, SLT [18A010−18A018] (Fig. 3E); 4 ♂, 1 ♀, Site 11, SLT [18A019−18A023].

*Heteroderes changi Ôhira, 1967
Heteroderes changi Ôhira 1967: 57.

Material examined. 3 ♂, 1 ♀, Site 9, spraying [18A024−18A027] (Fig. 3F).

Remarks. This species was recorded from Kagoshima City, Kagoshima Prefecture, Japan by Arimoto et al. (2015) as a non-native species, introduced from Taiwan.

Bionomics. The specimens examined were found in a crack in the gutter on the side of a road through cultivated land near the seaside (Fig. 2A), together with Agrypnus (Colaulon) kusuii Ôhira 1993.

Subfamily Dendrometerinae Gistel, 1848

*Stenagostus umbratilis (Lewis, 1894)
Atheta umbratilis Lewis 1894: 198.
Stenagostus umbratilis; Nakane and Kishii 1955a: 15.
Stenagostus umbratilis var. obscuratus Nakane 1958: 86.

Material examined. 2 ♀, Site 2, SLT [18A028, 18A029] (Fig. 3G).

*Megathous suturalis (Candèze, 1873)
Atheta suturalis Candèze 1873: 23.
Megathous suturalis; Ôhira 2001a: 57.
Harminathous nakanei Kishii 1955: 79.

Material examined. 1 ♂, Site 2, SLT [18A030] (Fig. 3H).
Species diagnosis. Ôhira (2001a).

*Paraphotistus notabilis yagi Kishii, 1982

Material examined. 2 ♀, Site 6, Tomoji Mikage leg. [18A031, 18A032] (Fig. 3I).

Subfamily Elaterinae Leach, 1815

Procaerus (Agaripenthes) helvolus (Candèze, 1873)
Agriotes helvolus Candèze 1873: 30.
Procaerus helvolus; Nakane and Kishii 1955c: 5.
Procaerus (Agaripenthes) helvolus; Ôhira 1970: 84.
Agaripenthes helvolus; Garijeva 1979: 115.
Megapenthes flavus Fleutiaux 1902: 19.

Material examined. 1 ♂, Site 2, SLT [18A033]; 1 ♀, Site 11, SLT [18A034] (Fig. 3J).
Species diagnosis. Ôhira (1998b).


*Hayekpenthes pallidus pallidus (Lewis, 1894)
Megapenthes pallidus Lewis 1894: 46.
Pengamepheres pallidus; Miwa 1933: 70.
Hayekpenthes pallidus; Ôhira 1970: 87.
Hayekpenthes pallidus pallidus; Ôhira 1998c: 11.

Material examined. 2 ♂, 1 ♀, Site 2, SLT [18A035−18A037] (Fig. 3K).
Species diagnosis. Ôhira (1998c).

Haterumelater bicornatus yaku Kishii, 1976
Haterumelater bicornatus yaku Kishii 1976b: 49.

Material examined. 2 ♀, Site 13, picking up from rotting wood [18A038, 18A039] (Fig. 3L).
Species diagnosis. Ôhira (2005).

Bionomics. The specimens examined were collected from rotting wood on a sandy beach (Fig. 2E), together with Suzukielater babai Kishii & Ôhira, 1956.

Ampedus (Ampedus) japonicus Silfverberg, 1977
Elater rufipes Lewis 1894: 40.

Material examined. 1 ♀, Site 7, Kazue Ito leg. [18A040] (Fig. 4A).
Species diagnosis. Ōhira and Suzuki (1985).

Remarks. Silfverberg (1977) stated that Elater rufipes Lewis, 1894 was a junior homonym of Elater rufipes Goeze, 1777 and proposed Ampedus japonicus as a replacement name.

*Nipponoeleater sieboldi sieboldi* (Candèze, 1873)

Ludius sieboldi Candèze 1873: 27.
Orthostethus sieboldi sieboldi; Ōhira 1997b: 37.
Nipponoeleater sieboldi sieboldi; Kishii 1998: 3.
Aphanopous unicolor Fleutiaux 1900: 357.

Material examined. 1♂, 1♀, Site 2, SLT [18A041–18A051] (Fig. 4B).

Species diagnosis. Ōhira (1997b).

*Mulsanteus linteatus linteatus* (Candèze, 1873)

Ludius linteatus Candèze 1873: 28.
Neotrichophorus linteatus linteatus; Ōhira 1998a: 24.
Mulsanteus linteatus linteatus; Kishii 1999: 81.
Ludius ligatus Candèze 1891: 190.
Neotrichophorus aureopilosus yamamotai Nakane and Kishii 1955b: 44.

Material examined. 3♂, 1♀, Site 2, SLT [18A053–18A056] (Fig. 4D); 3♂, 1♀, Site 11, SLT [18A057–18A060].

Species diagnosis. Ōhira (1996b).

*Suzukielater babai* (Kishii & Ōhira, 1956)

Sphenimerus babai Kishii and Ōhira 1956: 82.
Suzukielater babai; Kishii 1987: 10.

Material examined. 1♂, Site 11, SLT [18A061]; 50♂, 9♀, Site 13, looking and picking up from rotting wood [18A062–18A120] (Fig. 4E).

Species diagnosis. Ōhira (2001b).

Remarks. Suzukielater babai has been recorded from 11 locations in Japan (Ōhira 2002b, Kido 2004, Ozaki et al. 2006). Tanegashima Island is the twelfth collecting locality of this species. This species was found only twice on the Pacific coast side of Japan (Ōhira 2002b, Kido 2004, Kido and Oda 2004).

Ōhira (2001b) mentioned a record of this species from “Iki Island, Fukuoka Prefecture”, referring to Miyata et al. (1977). In fact, Miyata et al. (1977) recorded this species from “Okinoshima Island, Fukuoka Prefecture”, and Iki Island is in Nagasaki Prefecture. Ōhira (2002b) revised the mention in Ōhira (2001b) as from “Okinoshima Island, Fukuoka Prefecture”. Kido (2004) stated that there is a record of this species from Iki Island, but his statement seemed to be based on the error in Ōhira (2001b).

Bionomics. At Site 13, some adults and larvae were found in rotting wood lying on a sandy beach (Fig. 2E, F). Many adults were found at night on the surface of rotting wood on the same beach. We will report the details of the ecology and morphology of this species in another paper.

*Parasilesis musculus musculus* (Candèze, 1873)

Silesis musculus Candèze 1873: 31.
Silesis musculus var. flavipennis Lewis 1894: 315.
Silesis musculus var. flaricollis Fleutiaux 1902: 23.
Parasilesis musculus; Ōhira 1990a: 75.
Agriotes ferrugineipennis Motschulsky 1866: 166.
Agriotes candaezei Lewis 1879a: 16.
Dolopius candaezei; Miwa 1928: 49.
Silesis crocatus Candèze 1893: 68.
Silesis harmandi Fleutiaux 1900: 358.

Material examined. 1♀, Site 2, SLT [18A121] (Fig. 4F).

Species diagnosis. Ōhira (1988).

Remarks. Because Agriotes ferrugineipennis Motschulsky, 1866 is a junior homonym of Agriotes ferrugineipennis LeConte, 1861, Lewis (1879a) proposed Agriotes candaezei as a replacement name. Ōhira (1969a) synonymized Agriotes candaezei with Silesis musculus var. flavipennis Lewis, 1894.

Ōhira (1990a) compared Silesis musculus with Silesis hilaris Candèze, 1863, the type species of the genus Silesis Candèze, 1863, and established the genus Parasilesis based on S. musculus. Kishii (1999) synonymized Parasilesis with Silesis, but that publication is just a checklist of the Japanese elaterid beetles and does not contain any evidence or discussion. In this study, we follow the treatment of Ōhira (1990a).

This species exhibits variation of pronotum color, which can be black or red (Ōhira 1996a). The specimen examined had the reddish pronotal type.

*Glyphonyx bicolor bicolor* Candèze, 1893

Glyphonyx bicolor Candèze 1893: 66.

Material examined. 1♂, Site 2, SLT [18A122] (Fig. 4G).

Species diagnosis. Ōhira (2002c).

Subfamily Melanotinae Candèze, 1859

*Melanotus* (Melanotus) legatus ogatai Kishii, 1988

Melanotus (Melanotus) akasekiyamae Ōhira 1997c: 346.

Material examined. 6♀, Site 11, SLT [18A123–18A128] (Fig. 4H).


Remarks. Schenkeling (1927) stated that Melanotus longipennis Lewis, 1894 was a junior homonym of Cratony-
chus longipennis Küster, 1848 (=Melanotus longipennis) and proposed Melanotus lewisi as a replacement name.

*Melanotus (Melanotus) legatoides Kishii, 1975
Melanotus (Melanotus) legatoides Kishii 1975: 5.
Material examined. 2♂, 1♀, Site 2, SLT [18A264, 18A265] (Fig. 4J).

Subfamily Negastriinae Nakane & Kishii, 1956

*Zorochros (Pronegastrius) humeralis yakuensis (Kishii, 1976)
Negastrius humeralis (Candèze, 1873); Nakane and Kishii 1958: 36.
Pronegastrius (Pronegastrius) humeralis yakuensis Kishii 1976a: 29.
Zorochros (Pronegastrius) humeralis yakuensis; Kishii 1999: 105.
Material examined. 1♀, Site 8, spraying [18A266] (Fig. 4K).
Remarks. Nakane and Kishii (1958) recorded Negas-trius humeralis for the first time. Kishii (1976a) described Pronegastrius (Pronegastrius) humeralis yakuensis based on specimens from Yakushima Island and assigned the Negastrius humeralis population from Yakushima Island to the sub-species name.

Bionomics. The specimen examined was collected under rotting wood (Fig. 2E), where Suzukielater babai was found, together with Paracardiophorus sequens sequens (Candèze, 1873).

* Quasimus uguiensis heianus Kishii, 1970
Quasimus (Quasimus) uguiensis Kishii 1970: 24.
Quasimus (Quasimus) uguiensis heianus Kishii 1970: 25.
Material examined. 1♀, Site 8, spraying [18A272] (Fig. 5A).
Remarks. Quasimus uguiensis was divided into 3 subspecies: Quasimus uguiensis uguiensis Kishii, 1970 from Uguru Island, Shikoku; Q. uguiensis okicola Kishii, 1970 from Okinoshima Island, Shikoku; and Q. uguien-sis heianus from Kuchinoerabu Island, in the Ôsumi Islands. The 3 subspecies are similar in the shape of the male aedeagus, but differ in the hind angle of the prothorax, scutellum, and metasternum (Kishii 1976a). The specimen examined is similar to the specimens of the type series of Quasimus uguiensis heianus in the shape of the scutellum (Kishii 1970) and differs from the type series by the sinuate hind angle of the prothorax and the carina of the metasternum obscure posteriorly. There are no detailed studies of morphological variation either among allopatric populations or among sympatric specimens because there are few records of this species. Future efforts to collect more specimens are needed to understand the morphological variation of this species. In this study, we determined that the specimens examined were Q. uguiensis heianus based on similar scutellum and its distribution.

Bionomics. The specimen examined was collected under a stone near the mouth of a river, together with Zorochros (Pronegastrius) humeralis yakuensis (Kishii 1976a).

Zorochros (Yamatostrius) osawai (Ôhira, 1972)
Monadicus (Yamatostrius) osawai; Kishii 1976a: 27.
Zorochros (Yamatostrius) osawai; Kishii 1999: 105.
Material examined. 3♂, 2♀, Site 13, looking and spray-ing [18A267–18A271] (Fig. 4L).

Bionomics. The specimen examined was collected under a stone near the mouth of a river, together with Zorochros (Pronegastrius) humeralis yakuensis (Kishii 1976a).

Subfamily Cardiophorinae Candèze, 1859

Figure 5. Elaterid species, habitus, dorsal view. A. Quasimus uguiensis heianus Kishii, 1970, female [18A272], abdomen removed. B. Paracardiophorus pullatus pullatus (Candèze, 1873), male [18A273]. C. Paracardiophorus sequens sequens (Candèze, 1873), female [18A312].
**Paracardiophorus pullatus pullatus** (Candèze, 1873)  
*Cardiophorus* pullatus Candèze 1873: 16.  
*Paracardiophorus pullatus*; Schwarz 1895: 39.  
*Paracardiophorus pullatus pullatus*; Ôhira 1997a: 3.  
*Paracardiophorus subaeneus* Fleutiaux 1902; Ôhira 1986: 36 [misidentification].

**Material examined.** 3♂, 1♀, Site 9, looking and spraying [18A273–18A276] (Fig. 5B).

**Species diagnosis.** Ôhira (1997a).

**Remarks.** Ôhira (1969a) synonymized *Cardiophorus subaeneus* Fleutiaux, 1902 (=*Paracardiophorus subaeneus*) with *Paracardiophorus sequens sequens* (Candèze, 1873), but later, Ôhira (1986) revalidated *P. subaeneus*. However, Ôhira (1997a) stated that the specimen that was identified as *P. subaeneus* by Ôhira (1986) was actually *Paracardiophorus pullatus pullatus* (Candèze, 1873) and concluded that *P. subaeneus* was a junior synonym of *P. sequens*.

*Paracardiophorus pullatus pullatus* exhibits variation in leg coloration, which can be black or yellow. The legs of 1 of the specimens examined were black, while those of the remaining 3 specimens were yellow.

**Bionomics.** The specimens examined were found in the spaces between small stones in the open space beside cultivated land near the seaside (Fig. 2B).

**Paracardiophorus sequens sequens** (Candèze, 1873)  
*Cardiophorus sequens* Candèze 1873: 16.  
*Paracardiophorus sequens*; Schwarz 1895: 39.  
*Paracardiophorus sequens sequens*; Ôhira 1997a: 3.  
*Cardiophorus subaeneus* Fleutiaux 1902: 20.

**Material examined.** 21♂, 13♀, Site 1, spraying [18A277–18A310]; 1♀, Site 4, spraying [18A311]; 3♀, Site 8, spraying [18A312–18A314] (Fig. 5C); 24♂, 9♀, Site 10, looking [18A315–18A347]; 3♂, 2♀, Site 13, looking and spraying [18A348–18A352].

**Species diagnosis.** Ôhira (1997a).

**Bionomics.** At Site 10 (Fig. 2C), we observed, during the day, 32 specimens of *Paracardiophorus sequens* in 30 min, on leaves of *Ipomea pes-caprae* (family Convolvulaceae) on a sandy beach. The insects did not move from the leaves during our observations. We also found one specimen of the false blister beetle *Asessinia flavomarginata* (Miyatake, 1985) and some Diptera and Hymenoptera. The Diptera and Hymenoptera specimens were observed flying actively and landing on leaves briefly. Only *P. sequens* seemed to occupy the leaves of *I. pes-caprae*. Each *I. pes-caprae* leave is typically folded at the mid-vein. Most of the specimens of *P. sequens* stayed in the shadow at the mid-vein thrown by the fold (Fig. 2D). Several specimens held onto stems. Usually, *Paracardiophorus* species tend to hide under or between stones (Arimoto 2014), while *P. sequens* hides near the roots of grasses or just under the surface of sandy ground on beaches where there are few stones (Arimoto 2016). We postulate therefore that this behavior helps the beetles to avoid the heat of the sand on the beach under the blazing sun.

At Site 13, *P. sequens* was collected under rotting wood (Fig. 2E), where *Suzukielater babai* was found, together with *Zorochros* (*Yamatostris*) *osawai* (Ôhira, 1972).

**Discussion**

Hirashima (1989) and Kishii (1999) did not confirm *Haterumelater bicarinatus yaku* Kishii, 1976 from Tanegashima Island. Kishii (1976b) had already recorded a male of *H. bicarinatus* from the island, although he did not specify which subspecies. Ôhira (1976) recorded the subspecies as the nominotypical subspecies. Ôhira (2005) subsequently changed the subspecies name to *H. bicarinatus yaku*.

Ôtsubo (2013) treated 8 species as new records from Tanegashima Island, but 4 of them (*H. bicarinatus yaku*, *Ampedus* (*Ampepus*) *japonicus* Silfverberg, 1977, *Ampedus* (*Ampepus*) *vestitus vestitus* (Lewis, 1894), and *Melanotus* (*Melanotus*) *senilis senilis* Candèze, 1865) had been recorded already by Kishii (1976b) or Ôhira (2000). Moreover, Ôtsubo (2013) confused the correspondences between the Japanese and scientific names of *A. (A.) vestitus vestitus*, *Melanotus* (*M.*) *correctus correctus* Candèze, 1865, and *M. (M.) senilis senilis*. We assumed that he intended the Japanese names because the paper was written in Japanese, except for the scientific names.

We confirmed a total of 43 elaterid species from Tanegashima Island, including 13 newly recorded species (Table 2). There is no endemic species or subspecies from this Island. Thirty-nine species (90.7% of those from Tanegashima Island) are also distributed on Yakushima Island, which is located 18 km west of Tanegashima Island.

The Ōsumi Islands are the southern limit of the distribution of about 50 elaterid species (Arimoto unpublished data), and Yakushima Island is the southern limit of the distribution for almost all of them because Yakushima Island is located at south of Tanegashima Island. As result, Tanegashima Island is the southern limit of the distribution of only 3 species (*Meristhus* (*Sulcimerus*) *niponensis* Lewis, 1894; *Parasilesis musculus musculus* Candèze, 1873; and *Glyphonyx illepidus* Candèze, 1873). Ôtsubo (2013) recognized Tanegashima Island as the southern limit of the distribution of *Ectinoides insignitus insignitus* (Lewis, 1894), although the correct southern limit is Yakushima Island (Kishii 1999). Tanegashima Island is not the northern limit of the distribution of any elaterid species.

The elaterid fauna of Tanegashima Island has been characterized by the absence of species in elevated land or riversides until this study. A lack of research may have resulted in the absence of records from riverside species because we found 2 species under stones by a river: *Quasimimus teguriensis heianus* and *Zorochros* (*Pronegastris*) *humeralis yakuensis*. 
<table>
<thead>
<tr>
<th>No.</th>
<th>Species name</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Merinthus (Sulcimerus) nipponensis Lewis, 1894</td>
<td>†</td>
</tr>
<tr>
<td>2</td>
<td>Agrypnus (Agrypnus) binodulus binodulus (Motschulsky, 1861)</td>
<td>§</td>
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<tr>
<td>3</td>
<td>Agrypnus (Sabiikrikorius) fuliginosus (Candèze, 1865)</td>
<td>§</td>
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<tr>
<td>4</td>
<td>Agrypnus (Colaulon) tsukamotoi (Kishii, 1956)</td>
<td>§</td>
</tr>
<tr>
<td>5</td>
<td>Agrypnus (Colaulon) kusaii Ohira, 1993</td>
<td>*, §</td>
</tr>
<tr>
<td>6</td>
<td>Cryptalus berus (Candèze, 1865)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Cryptalus larvatus pini (Lewis, 1894)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Tetrugus lewisi Candèze, 1873</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Prodrasterus agnates (Candèze, 1873)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Aeoloderma brachmana (Candèze, 1859)</td>
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<tr>
<td>11</td>
<td>Heteroderes changi Ohira, 1967</td>
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</tr>
<tr>
<td>12</td>
<td>Stenagnostus umbratilis (Lewis, 1894)</td>
<td>*, §</td>
</tr>
<tr>
<td>13</td>
<td>Megathous suturalis (Candèze, 1873)</td>
<td>*, §</td>
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<tr>
<td>14</td>
<td>Hemicrepidius (Hemicrepidius) secessus secessus (Candèze, 1873)</td>
<td>§</td>
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<td>15</td>
<td>Paraphotistus notabilis yagi Kishii, 1982</td>
<td>*, §</td>
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<tr>
<td>16</td>
<td>Ischiiodontus kawaiii Ohira, 1967</td>
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<td>17</td>
<td>Procarceus (Agaripenthes) helvulus (Candèze, 1873)</td>
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<td>18</td>
<td>Hayekpenthes pallidus pallidus (Lewis, 1894)</td>
<td>*, §</td>
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<td>19</td>
<td>Haterumelater bicaninatus yaku Kishii, 1976</td>
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<td>20</td>
<td>Ampedus (Ampedus) japonicus japonicas Silfverberg, 1977</td>
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<tr>
<td>21</td>
<td>Ampedus (Ampedus) vestitus vestitus (Lewis, 1894)</td>
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<tr>
<td>22</td>
<td>Podorinus australis ryukyuensis (Ohira, 1968)</td>
<td>§</td>
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<tr>
<td>23</td>
<td>Nipponoelater sieboldi sieboldi (Candèze, 1873)</td>
<td>*, §</td>
</tr>
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<td>24</td>
<td>Mulisanthes junior junior (Candèze, 1873)</td>
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<tr>
<td>25</td>
<td>Mulisanthes linteatus linteatus (Candèze, 1873)</td>
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<td>26</td>
<td>Suzukierat babai (Kishii &amp; Ohira, 1956)</td>
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<td>27</td>
<td>Ectinoides insignis insignis (Lewis, 1894)</td>
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<td>28</td>
<td>Parasilesus musculus musculus Candèze, 1873</td>
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<td>29</td>
<td>Glyphonyx illepudius Candèze, 1873</td>
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<td>30</td>
<td>Glyphonyx bicolor bicolor Candèze, 1893</td>
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<td>31</td>
<td>Melanotus (Melanotus) legatus agatai Kishii, 1988</td>
<td>§</td>
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<td>32</td>
<td>Melanotus (Melanotus) lewisi lewisi Schenkling, 1927</td>
<td>*, §</td>
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<td>33</td>
<td>Melanotus (Melanotus) legatoidei Kishii, 1975</td>
<td>*, §</td>
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<td>34</td>
<td>Melanotus (Melanotus) correctus correctus Candèze, 1865</td>
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<tr>
<td>35</td>
<td>Melanotus (Melanotus) senilis senilis Candèze, 1865</td>
<td>§</td>
</tr>
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<td>36</td>
<td>Melanotus (Melanotus) satoi Ohira, 1967</td>
<td>§</td>
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<tr>
<td>37</td>
<td>Melanotus (Sphenicosomus) cete cete Candèze, 1860</td>
<td>§</td>
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<td>38</td>
<td>Zorochros (Yamatostrius) osawai (Ohira, 1972)</td>
<td>§</td>
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<td>39</td>
<td>Zorochros (Pronegastrius) humeralis yakuensis (Kishii, 1976)</td>
<td>*, §</td>
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<tr>
<td>40</td>
<td>Quasimus uguerius heianus Kishii, 1970</td>
<td>*, §</td>
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<td>41</td>
<td>Platynychus nothus (Candèze, 1865)</td>
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<td>42</td>
<td>Paracardiophorus pullatus pullatus (Candèze, 1873)</td>
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<tr>
<td>43</td>
<td>Paracardiophorus sequens sequens (Candèze, 1873)</td>
<td>§</td>
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</tbody>
</table>

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Authors’ Contributions

KA identified specimens, made the map, wrote the text, and took photographs. KA and RI collected the specimens.

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