

Elateridae of Islands Awa-shima,  
Hegura-jima and Nanatsu-jima  
“The Snappers of Islands (IV)”

By

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# Elateridae of Islands Awa-shima, Hegura-jima and Nanatsu-jima “The Snappers of Islands (IV)”\*

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## I. Preface

The first, for the writer, and most important object to report this paper is to make as accurately as possible a list of all the species of Elaterid-beetles brought from Is. Awa-shima in Niigata Prefecture, Is. Hegura-jima and from Iss.

\* 岸井 尚 (京都平安高等学校生物学教室) : 粟島・舳倉島・セツ島の叩頭虫 “島のコマツキムシ (IV)”.

I. Elateridae of Is. Yakushima, Bull. Héian High School, No. 3, pp. 1~24, 3 plates, 2 tables. (March, 1959).

II. Elateridae of Is. Tsushima, ditto, No. 5, pp. 1~56, 11 plates, 2 tables, 8 photos. (March, 1961).

III. Elateridae of Islands Rishiri-tô, Rebun-tô and Todo-jima, ditto, No. 7, pp. 1~31, 2 tables, 8 photos. (March, 1962).

Nanatsu-jima in Ishikawa Prefecture by the members of the Biological Club of Héian High School, who made the biological survey of these islands in 1952 (Is. Hegura-jima and Iss. Nanatsu-jima) and in 1961 (Is. Awa-shima), and by Mr. Séiji Higuma<sup>1)</sup> of Nagaoka Municipal Scientific Museum in Niigata in 1961 (Is. Awa-shima). The second intention is to supplement and revise the previous works on the fauna done by some researchers, and to note and describe new forms of the clicks collected or reported from Japan.

Previous to my report, I want to express my hearty gratitude to Messrs. Ryôga Kondô<sup>2)</sup>, president of the Héian High School, Ryôtetsu Satouchi<sup>3)</sup>, exassistant president of the school in 1952 and 1961, when our expeditions were carried out, Masao Shizutani<sup>4)</sup>, assistant president of the school, Dr. Kintarô Baba<sup>5)</sup>, director of Kurokawa Hospital in Niigata, who gave many precious supports for our exploration at Is. Awa-shima in 1961, Séiji Higuma, head of the Entomological Department of Nagaoka Municipal Scientific Museum, Nobuzane Tamu<sup>6)</sup>, Kéiichi Tsukamoto<sup>7)</sup>, Sôji Inoué<sup>8)</sup>, and the members of the biological expedition of the Héian High School, for their kindness specially placing the valuable collection at my disposal and in many methods, and to Dr. Masaaki Tokunaga<sup>9)</sup>, professor of the Applied Entomological Laboratory of Kyôto Prefectural University, Dr. Mitsuhiro Sasaki<sup>10)</sup>, assistant professor of the University, Dr. Kichizô Takéuchi<sup>11)</sup> in Kyôto, Prof. Takashi Shirôzu<sup>12)</sup> of the Biological Laboratory of Kyûshû University, and Dr. Hitoo Ôhira<sup>13)</sup> of the Entomological Laboratory of Aichi Gakugei University, for their courteous helps given during the course of my researching study in various ways.

## II. On Islands Awa-shima, Hegura-jima and Nanatsu-jima

### A. Awa-shima Island

This elongate island lies on the Japan Sea about 33 kilometres to the north-north-west off Murakami City, and belongs to Iwafune District of Niigata Prefecture, accurately writing, Lat. 38° 26' 03" N. to Lat. 38° 29' 20" N. and Long. 139° 12' 45" E. to Long. 139° 15' 50" E., and stands nearly 62 kilometres to the north-east off Is. Sado-ga-shima being the largest in Japan and well-known island. It is also exactly named Awashima-ura<sup>14)</sup> Village and generally called Ao-shima<sup>15)</sup>. (This name means the blue or green island in Japanese.)

- 
- |          |         |              |          |           |          |
|----------|---------|--------------|----------|-----------|----------|
| 1) 樋熊誠治  | 2) 近藤亮雅 | 3) 里内了徹      | 4) 静谷正雄  | 5) 馬場金太郎  | 6) 丹 信実  |
| 7) 塚本珪一  | 8) 井上宗二 | 9) 徳永雅明      | 10) 笹川満宏 | 11) 竹内 吉藏 | 12) 白水 隆 |
| 13) 大平仁夫 | 14) 粟島浦 | 15) 粟生島 (青島) |          |           |          |

And, Awa-shima covers about 9.14 square kilometres in area, has 18.5 kilometres round, 7.2 kilometres distance to the northmost point from the southmost and has some 2 kilometres wide in another direction, and contains a few hills running up to the height from 100 metres to 250, among which the highest is Koshibayama<sup>16)</sup> (265 m.) and the second is Ōsaka-yama (235 m.), having a strait plain at the nearly central shore of its east side.

About 900 inhabitants (in 1960) living in this island organize two communities called Uchiura<sup>17)</sup> composed of about 90 houses and Kamatani<sup>18)</sup> of some 30 ones, and they almost get their livelihood by fishery.

The Tertiary Formation constitutes this island and two steps of Shore Terrace form the main structure of Awa-shima. (see Table I and Photographies).

### B. Hegura-jima Island

This flat desert islet belongs to Wajima City in Ishikawa Prefecture, and stands also on the Japan Sea about 47 kilometres to the north off the city, correctly speaking, it lies on Lat. 37° 50' 21" N. to Lat. 37° 51' 12" N. and Long. 136° 54' 44" E. to Long. 136° 55' 44" E. It also covers about 1 square kilometre in area, has nearly 4 kilometres in circumference and the highest point is nothing but 12.4 metres from sea level.

In general, it is an uninhabited one, although many fisher-women (Ama<sup>19)</sup> in Japanese) and their families in Wajima City stay there to gather abalone and *Undaria pinnatifida* (Wakame in Japanese) from the beginning of June to the first decade of October.

Moreover it is composed of Andesite which is Intermediate Quarternary Effusive Rock, having many hidden rocks in the circumference with nothing of sandy shore. (see Table I and Photographies).

### C. Nanatsu-jima Islands

Nanatsu-jima means a group of seven small islands in Japanese, and these islets are made up of Oh-shima<sup>20)</sup>, the largest one lying on the northmost zone among these islands, Aramiko-jima<sup>21)</sup>, Mikuriya-jima<sup>22)</sup>, Aka-jima<sup>23)</sup>, Ryūga-shima<sup>24)</sup>, Eboshi-jima<sup>25)</sup> and Karimata-jima<sup>26)</sup>.

They also stand as one group straggling on the sea with some 5 kilometres in direct distance, nearly between Is. Hegura-jima and Wajima City, and about 20 kilometres to the north off from the latter, exactly speaking, Lat. 136° 51' 22" N. to Lat. 136° 54' 13" N. and Long. 37° 34' 47" E. to Long. 37° 38' 02" E., and what is more, each islet is no more than about 30 metres in diameter. (see Table I and Photographies).

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16) 小柴山 17) 内浦 18) 釜谷 19) 海女 20) 大島 21) 荒美子島  
22) 御厨島 23) 赤島 24) 竜島 25) 烏帽子島 26) 狩又島

### III. The Samples Used

The most part of the samples from Is. Awa-shima used in my present researching came to hand through the kind courtesy of the members of the Biological Club of the Héian High School in Kyôto. They made the biological survey in 1961 from the 30th of July to the 11th of August in the islet under the management of Mr. N. Tamu, teacher in charge of the Biological Club. All the fellows constituted and the detail of the action were as showing below.

#### 1. Members' names

Leader : N. Tamu, subleaders : Sôji Inoué and the author.

Members : Masayuki Yamagata<sup>27)</sup>, Naoyuki Katô<sup>28)</sup>, Hajime Kawai<sup>29)</sup>, Hirotohi Isogawa<sup>30)</sup>, Mitsuo Uéda<sup>31)</sup>, Kenji Nabatake<sup>32)</sup>, Hideo Nishida<sup>33)</sup>, Hiroshi Nomura<sup>34)</sup> and Masaru Isobe<sup>35)</sup>.

#### 2. Action detail (see Table I)

July 31 : Kurokawa<sup>34)</sup> in Niigata proper and Uchiura in Is. Awa-shima.

August 1 : Uchiura and the adjacent area, 2 : ditto.

3 : from Hata-saki<sup>36)</sup> to Shima-saki<sup>36)</sup>.

4 : Osaka-yama<sup>37)</sup> and the adjacent area.

5 : Koshiba-yama and Uchiura.

6 : Kama-tani to Yahata-hana<sup>38)</sup>, and Uchiura.

7 : Uchiura and north-east beach.

8 : Uchiura and south-east beach.

9 and 10 : Uchiura and the adjacent area.

Fortunately, I had a chance to take part in this expedition and to collect insects, specially beetles, and found totally 7 species of the snapping-beetles which represented about 40 individuals and 6 species recorded newly from this island.

Thereafter, in spring of 1963, owing to the good will of Mr. S. Higuma in Nagaoka City, I had an opportunity to be requested to study and to identify a few materials of Elateridae brought from this island by himself from 1951 up to 1961. Among these samples of 6 species, 4 ones are new members to the fauna of this island.

In the next part, the samples from Islands Hegura-jima and Nanatsu-jima, were offered through the good will of N. Tamu and K. Tsukamoto who inquired into these islands in the middle of April and August 3 to 11 in 1952, and the materials collected by themselves represented 4 species, and 2 of them were new

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27) 山形将之 28) 加藤直幸 29) 河合 元 30) 五十川博敏 31) 上田三男 32) 菜島賢二  
33) 西田英男 34) 野村 博 35) 磯部 勝 36) 黒 川 37) 旗 崎 38) 島 崎  
37) 大阪山 38) 八幡鼻



Views of Makinotaira, northmost point, Is. Awa-shima



Views of Uchiura from the middle of Ohsaka-yama (alt. ca. 150m.), and the author, Is. Awa-shima



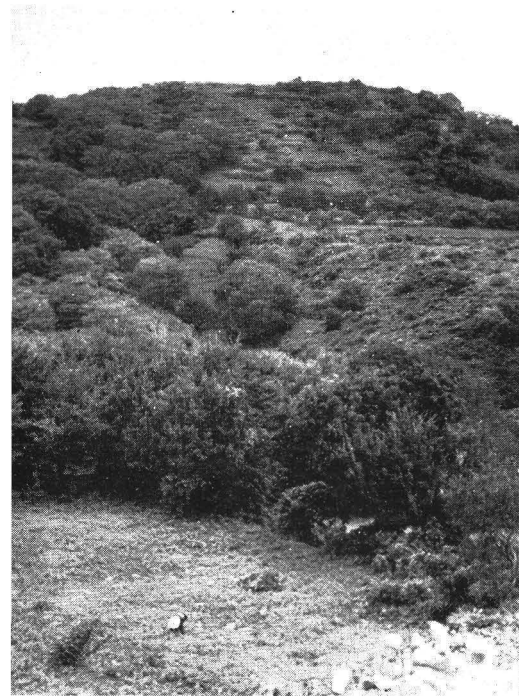
Views of Uchiura from the summit of Koshiba-yama (alt. ca. 260 m.), Is. Awa-shima

Photo. by  
T. Kishii

“Ezo-nokogiri-sô” (*Achillea Ptarmica* L, var. *yezoensis* Kitamura), perhaps southmost distribution, Is. Awa-shima

Views of Uchiura port, organized by about 90 houses and the largest, Is. Awa-shima

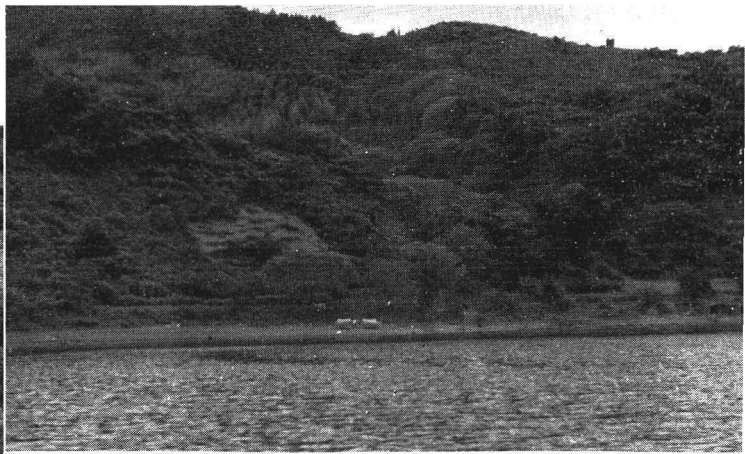
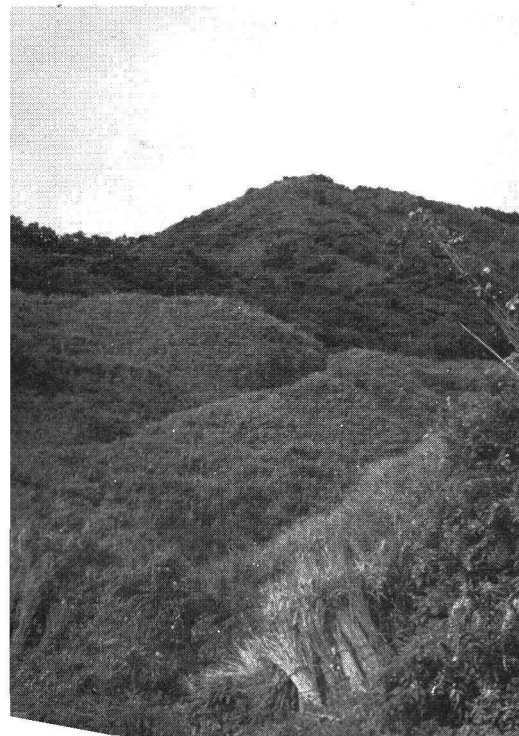




Views of Ohsaka-yama from Koshiba-yama,  
Is. Awa-shima

Photo. by            Our camp sight at the east  
T. Kishii            sea side ; right of camp  
                         Mr. N. Tamu of leader,  
                         Mr. S. Inoue of the rightest  
                         subleader, Is. Awa-shima

Senaka-daira pass at the way from Uchiura  
to Kama-tani, Is. Awa-shima



Views of east-side of island from sea, and our base camp,  
Is. Awa-shima



Views of Kamatani, organized by about 30 houses and  
situated at south-west side, Is. Awa-shima



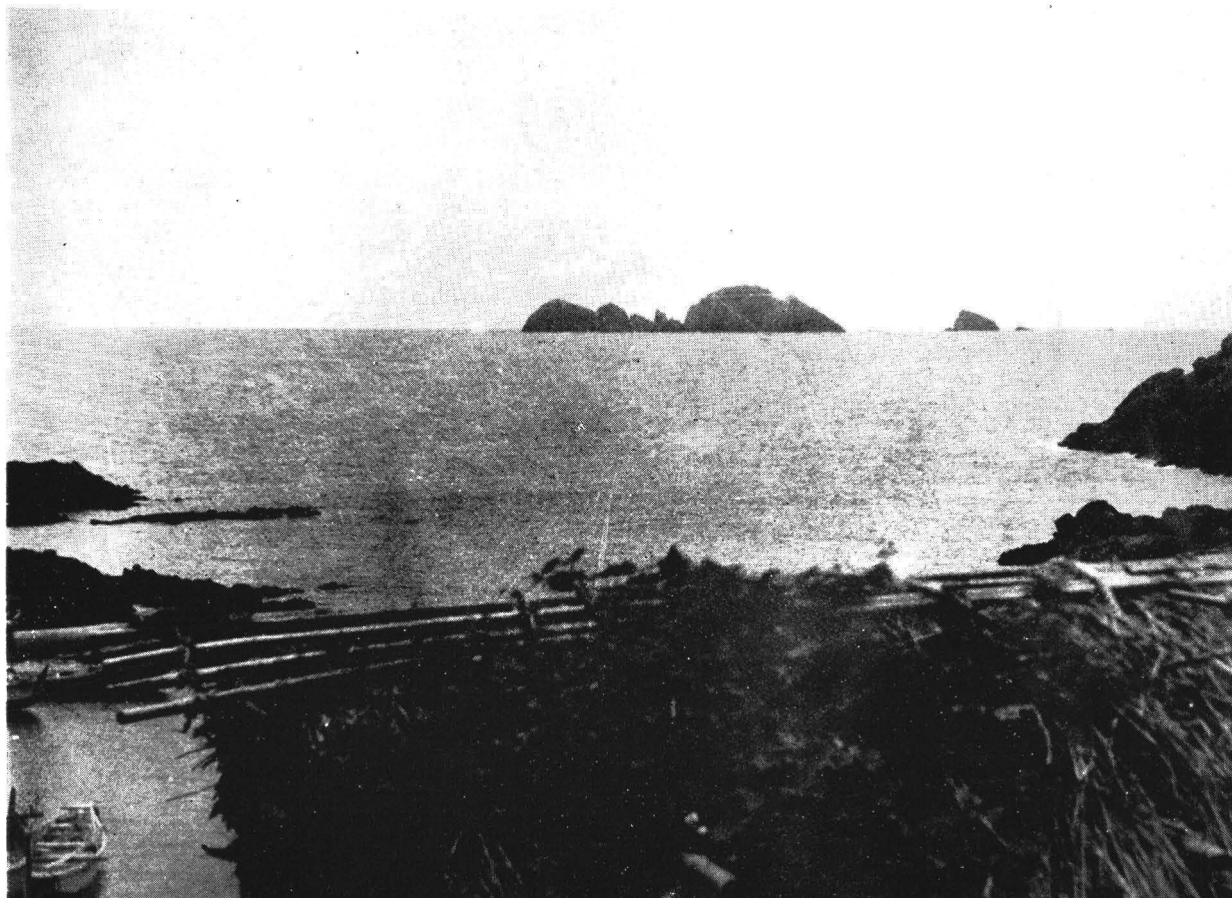




Is. Hegura-jima, nearly the center of this island

Views of Is. Aka-jima from Is. Oh-shima in Iss. Nanatsu-jima

Photo. by K. Tsukamoto





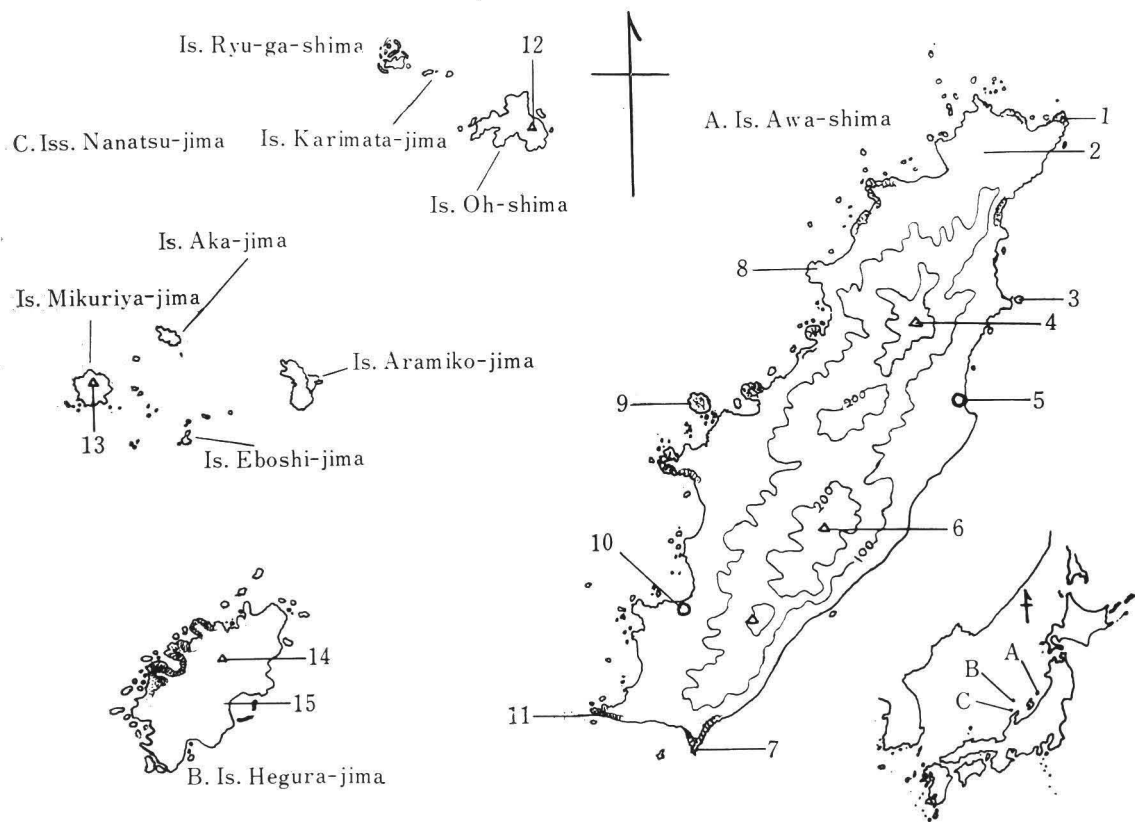


Table I. Is. Awa-shima, Is. Hegura-jima and Iss. Nanatsu-jima

A : Is. Awa-shima, B : Is. Hegura-jima, C : Iss. Nanatsu-jima

- |                       |                               |
|-----------------------|-------------------------------|
| 1. Shima-saki (島崎)    | 2. Maki-no-taira (牧平)         |
| 3. Hata-saki (旗崎)     | 4. Osaka-yama (大阪山 235.1m)    |
| 5. Uchiura (内浦)       | 6. Koshiba-yama (小柴山, 265.3m) |
| 7. Ya-ga-hana (矢ヶ鼻)   | 8. Hotoke-zaki (仏崎)           |
| 9. Tate-shima (立島)    | 10. Kama-tani (釜谷)            |
| 11. Yahata-hana (八幡鼻) | 12. 三角点 (61.7m)               |
| 13. ditto (38.9m)     | 14. ditto (12.4m)             |
| 15. Nishi-mura (西邑)   |                               |

subspecies endemic to Is. Hegura-jima.

In the upshot, all the specimens stated above in this paper are used for my studying, and these samples including the type specimens of new forms are preserved in my collection and also in the Biological Laboratory of the Héian High School.

#### IV. On the Elaterid-Fauna of Each Island

From Is. Awa-shima, concerning the examinations of the click-beetles only two works are perceived, one of which was done by Dr. K. Baba and H. Ôhira in 1956 and they reported 7 species containing a new subspecies (*Hemicrepidius jactatus babai*) indigenous to this island. Another report was by the writer in 1957 employing the collection from Niigata Prefecture captured by Dr. K. Baba, and a species was newly recorded.

Now, after all when brings together all the knowledge of the snapping-beetles from Awa-shima island stated above, the author finds 8 subfamilies and 16 species in this island as drawn up a succeeding list or table (see Table II), and when we see this list we can perceive that the fauna has the close affinity to Niigata proper, though it is also a reality that there is some peculiar modification about the clicks of this island in having an endemic Elaterid-beetle: *Hemicrepidius (Medakathous) jactatus babai* Ôhira.

From Iss. Hegura-jima and Nanatsu-jima, in the next part, with regard to the researches or reportings of this family, till 1964 the only work was the original description of a new subspecies from Is. Hegura-jima and Iss. Aka-jima and Ohshima (*Cryptolacon miyamotoi tsukamotoi*) done by the writer in 1956, making use of the samples brought by Messrs. N. Tamu and K. Tsukamoto in 1952 as stated above. (see The Samples Used, p. 4).

Now, as the result, there are found 4 species with 2 new subspecies from these islands as shown in the succeeding list and Table II.

#### V. Key to the Elaterid-Species from Islands Awa-shima, Hegura-jima and Nanatsu-jima

- 1 (8) Body covered with scales. Prosternal suturés deeply grooved plain to receive antennae for about half. Antennae serrated from 4th segments generally. Tarsi simple. (AGRYPNINAE).
- 2 (7) Body length more than 12 mm. Irregularly covered very densely with

Table II. The Distribution List of the Elaterid-Beetles from Islands Awa-shima, Hegura-jima and Nanatsu-jima (○ : distributing sign × : doubtful sign on the distribution)	Honshū													Shikoku		
	1. Kuriles	2. Hokkaidō proper	3. Proper	4. Is. Tobi-shima	5. Is. Awa-shima	6. Is. Sado-ga-shima	7. Is. Hegura-jima	8. Iss. Nanatsu-jima	9. Is. Kammuri-jima	10. Is. Oki (Dōgo)	11. Is. Izu-obshima	12. Is. Hachijō-ga-shima	13. Is. Ki-jima in Aichi	14. Proper	15. Is. Oki-no-shima	16. Is. Kashiwa-jima
1. <i>Agrypnus binodulus binodulus</i> Motschulsky ab. form. <i>tenuicollis</i> Kishii		○	○	○	○	○					○			○	○	
2. <i>Agrypnus cordicollis</i> Candèze		○	○		○	○								○		
3. <i>Sabikikorius fuliginosus</i> Candèze			○		○									○		
4. <i>Colaulon (Cryptolacon) miyamotoi</i> tsukamotoi Kishii			○			○	○	○	○			○			○	
5. <i>Pectocera fortunei</i> Candèze		○	○		○											
6. <i>Malloea suzukii hegurensis</i> Kishii							○									
7. <i>Aeoloderma agnata</i> Candèze		○	○		○	○								○		
8. <i>Hemicrepidius (Pseudathous) secessus secessus</i> Candèze			○		○	○			○		○			○		
9. <i>Hemicrepidius (Medakathous) jactatus babai</i> Ōhira					○											
10. <i>Ectamenogonus? bicarinatus</i> Candèze		○	○		○				○	○			○	○	○	
11. <i>Melanotus spernendus</i> Candèze			○		○	○								○		
12. <i>Melanotus legatus</i> Candèze	○	○	○	○	○	○	○		○					○	○	
13. <i>Melanotus lewisi</i> Schenkling			○		○	○			○					○	○	
14. <i>Spheniscosomus cete</i> Candèze			○		○	○			○					○		
15. <i>Spheniscosomus restrictus</i> Candèze			○		○	○										
16. <i>Neotrichophorus junior</i> Candèze		○	○		○				○							
17. <i>Agriotes ogurae hegurensis</i> Kishii							○									
18. <i>Paracardiophorus sequens</i> Candèze			○		○	○			○					○		○
19. <i>Dicronychus (Platynychus) adjutor</i> Candèze			○		○				○					○	○	
Total (exception of ab. form. and doubtful species on the distribution shown by ( ), )	1	7	16	2	16	11	4	1	9	1	2	1	1	12	6	1
			19										13			

Kyūshū										Loochoo			Corea		Other Distribution and Remarks
17. Proper	18. Is. Tsushima	19. Is. Iki	20. Is. Tane-ga-shima	21. Is. Yakushima	22. Is. Kuchi-no-erabu	23. Is. Takara-jima	24. Is. Naka-no-shima	25. Is. Amami-ohshima	26. Is. Okinawa	27. Is. Kume-shima	28. Is. Ishigaki-jima	29. Proper	30. Is. Saishū-tō	31. Formosa	
○	○		○	○	○			○		○		×	×		Corean ex. may be another subsp.
○															
○				○						○					China
○	○	○		○	○										Typical subsp. distributes in Iss. Tokara
○				○											
															Typical subsp. distributes in Kyōto etc.
○	○			○	○	○									Another subsp. distributes in Is. Yakushima
○															Typical subsp. distributes in Honshū proper etc.
○	○			○	○										
○	○			○											
○	○	○	○	○			○	○	×			○	○	○	China?, Kuriles : Is. Kunashiri-tō
○	○			○											
○	○			○								○		○	
○	○			○										○	Typical subsp. distributes in Honshū proper
○				○	○										
○	○			○							○	○		○	
16	11	2	2	12	5	1	1	2	(1)	2	1	3 (1)	1 (1)	4	
16									3 (1)			3 (1)	4		

elongate scales of two kinds or more in coloration. Antennal 3rd joints shorter clearly than 2nd in length. Pronotal lateral margins not crenulate, sinuate conspicuously before hind corners. Hind coxal plates gently narrowing outwards simply. Sometimes in female 5th abdominal sternite having a smooth or scaleless space.

3 (6) Body more or less flattened above, slightly expanding outwards behind the middle of body. Pronotal disc having a pair of nodules or tubercles. Pronotal lateral borders rather thin. Rear wings perfect. The 5th abdominal sternite always having a smooth or scaleless space in female. Male genitalia broad in total form. (*Agrypnus* genus).

4 (5) Body length 12~15 mm. (12~19 mm. in all the samples from Japan of my collection). Scales reddish brown and silver white to yellow. Pronotal lateral borders not dilated outwards. Rear corners of pronotum having short uncarination obsolescently. A pair of nodules on pronotum generally distinct. Scutellar posterior end more or less acute. ....  
.....A 1. *Agrypnus binodulus binodulus* Motschulsky (p. 14)

5 (4) Body length 17 mm. (12~17 mm. in all the specimens from Japan of my collection). Scales dusky brown and greyish white. Pronotal lateral borders conspicuously dilated or expanding outwards medially. Rear corners of pronotum always lacking carination. A pair of pronotal nodules indistinct. Scutellar posterior end rounded. ....  
.....A 2. *Agrypnus cordicollis* Candèze (p. 15, Pl. III, fig. 11)

6 (3) Body subcylindrical, parallel-sided. Pronotal disc always lacking nodules nor tubercles. Pronotal hind corners having no carination. Pronotal lateral margins thick. The 5th abdominal sternite lacking a smooth or scaleless space in both sexes. Male genitalia ordinarily elongate, considerably narrowing to apex. (*Sabikikorius* genus).

Body length 17 mm. (11~22 mm. in all the individuals from Japan of my collection). Scales dusky reddish brown and greyish white. Each of 4th to 10th antennal joints not highly longer than width. Head impression wide and shallow. Pronotal disc medially furrowed longitudinally on posterior half shallowly. Pronotal rear angles a little protruded outwards. ....A 3. *Sabikikorius fuliginosus* Candèze (p. 16, Pl. III, fig. 10)

7 (2) Body length shorter than 12 mm. Regularly covered scatteredly (rather countable) with golden yellowish white tongue-shaped scales. The 3rd antennal joint subequal to 2nd in length. Pronotal lateral edges more or less crenulate. (*Colaulon* genus).

Propleura and metasternum having no grooves for tarsi. (*Cryptolacon* subgenus).

Body length 7.5~10.5 mm. (7.0~12.0 mm. in all the materials from Japan of my collection). Wholly dusky black but rarely margined brown. Pronotum widest at middle, rounded simply, weakly sinuate before hind angles. Pronotal punctation large-sized, coarse, subumbilicate partly. Scutellum pentagonal, a little wider than the length, flat. Elytral punctation on intervals among punctate-striae circular, large, very rugose, almost similar to strial punctures in size and form. Metacoxal plates angulately narrowing near middle laterally. Rear wings degenerate. ....

..... **B 1. *Colaulon* (*Cryptolacon*) *miyamotoi tsukamotoi* Kishii** (p. 23, Pl. I, figs. 3 and 9)

8 (1) Body clothed with pubescence or bare rarely. Prosternal sutures closed completely, furrowed imperfectly or opening at only anterior ends, but never grooved to keep even a part of each antenna.

9 (12) Body usually small and shorter than 10 mm., blackish, subcylindrical. Clypeus perfect, not bisected. Frontal carina complete, well margined ahead enough. Antennae filiform or hardly serrated from 3rd joints. Pronotal hind margin having a pair of conspicuous short sulci longitudinally. Scutellum cordate. Prosternum nearly as wide as each propleuron in median measurements, or a little narrower than the latter, sutures straight or incurved medially, closed entirely, single and having a fine suture along inner side of each propleuron, process very short, apex always truncate distinctly. Mesepimeron small and not touching mesocoxae. (**CARDIOPHORINAE**).

10 (11) Body small. Pronotal lateral margins complete, having no suture on each propleuron. Claws simple, not dentate. Male genitalia broad. Usually found on ground. (*Paracardiophorus* genus).

Body length 5.5~6.0 mm. (5~7 mm. in all the specimens from Japan of my collection), pubescent silver-whitely, black except only legs yellowish red or orange-colour. ....

..... **A 15. *Paracardiophorus sequens* Candèze** (p. 22, Pl. III, fig. 18)

11 (10) Body medium. Pronotal lateral margins imperfect, visible only at posterior angles, but usually having a fine suture on the outer side of each pleuron. Claws dentate. Male genitalia narrow. Always found on leaves. (*Dicronychus* genus, *Platynychus* subgenus).

Body length 9 mm. (8.5~9.5 mm. in all the samples from Japan of my collection), pubescent golden-yellowishly, black except antennae, mouth parts and legs brownish clearly. ....

..... **A 16. *Dicronychus* (*Platynychus*) *adjutor* Candèze** (p. 22, Pl. III, fig. 17)

12 (9) Body medium or large, longer than 10mm. Clypeus bisected or perfect.



Frontal carina completely margined roundly or vanished medially. Antennae filiform, serrated or flabellate. Prosternal sutures straight or incurved each other, process well developing backwards, not truncate apically. Pronotal lateral sides perfect. Scutellum moderate. Mesepimeron large, always touching visibly mesocoxae.

- 13 (22) Body robust, longer than 11mm. Antennae always ill-serrated from 4th joints. Clypeus perfect, not bisected. Frontal carina also complete, roundly margined ahead enough. Pronotal rear corners always having unication plain. Metacoxal plates gently narrowing outwards simply. Tarsal claws pectinate distinctly. (**MELANOTINAE**).
- 14 (19) Body medium or large, dark brownish or fuscous. The 3rd antennal joint small, triangular, more than 1.5 times as long as 2nd or nearly twice. Pronotal disc having a medio-longitudinal canaliculation rather obliterated. Prosternal process gradually or suddenly curved inwards behind fore coxal cavities. Mesosternum progressively inclined obliquely antero-inwards. (*Melanotus* genus).
- 15 (16) Body medium, length 12~14 mm. (11.0~14.5 mm. in all the specimens from Japan of my collection), elongate, elytra about 3.5 times as long as wide or more. Antennae slender, exceeding plain tips of hind prothoracic angles by two apical joints. Prosternal process projecting obliquely postero-inwards behind procoxal cavities. Protibiae depressed, but not falciform. ....A 9. *Melanotus spernendus* Candèze (p. 20)
- 16 (15) Body large, longer than 15mm., rather broad. Elytra about 3 times as long as wide. Antennae stout, barely exceeding tips of rear prothoracic corners. Prosternal process suddenly curved inwards behind procoxal cavities, then projecting straight rearwards. Protibiae falciform clearly, depressed conspicuously.
- 17 (18) Body large, not so robust, shiny, length 15~18 mm. (14.5~20.0 mm. in all the materials from Japan of my collection). Prothorax neither widened nor rounded in middle. Pronotal punctation comparatively sparse. ....  
.....A 10 & B 3. *Melanotus legatus* Candèze (p. 20 and 28)
- 18 (17) Body large, very robust, opaque, length 20.5 mm. (18~23 mm. in all the individuals from Japan of my collection). Prothorax widened medially, rounded anteriorly. Pronotal punctation rather dense. ....  
..... A 11. *Melanotus lewisi* Schenkling (p. 20)
- 19 (14) Body large, 15~20 mm. in length, black. The 3rd antennal joint triangular, about twice times as long as 2nd. Pronotal disc having a medio-longitudinal depression or smooth line. Prosternal process extending horizontally rearwards, not curved inwards behind procoxal cavities.

Mesosternum sunk perpendicularly inwards near middle. (*Spheniscosomus* genus).

- 20 (21) Body length 18 mm. (15~20 mm. in all the samples from Japan of my collection), rather shiny, antennae and legs brownish. Pronotum punctate more or less sparsely, disc having a medio-longitudinal shallow excavation, obscurely forwards. ....A 12. *Spheniscosomus cete* Candèze (p. 21)
- 21 (20) Body length 15.5~19.0 mm. in all the materials from Japan of my collection, rather mat, antennae and legs black wholly. Pronotum punctate densely, disc having no canaliculation, but presenting a medio-longitudinal smooth line. .... A 13. *Spheniscosomus restrictus* Candèze (p. 21)
- 22 (13) Tarsal claws usually simple.
- 23 (23) Two tarsal joints dilated or lamellate apically. Clypeus and frontal carina perfect always.
- 24 (27) Body length 9~20 mm., slender, a little depressed. The 2nd and 3rd tarsal joints dilated apically, 4th generally small, 1st as long as next two combined together or a little longer. (**ATHOINAE**).  
Antennae elongate, but not so slender, exceeding tips of prothoracic rear corners by one apical joint or more, serrated from 3rd or 4th joints, 3rd triangular, more or less longer and wider than 2nd conspicuously, each joint of 3~11 having no medio-longitudinal elevation on both sides. Head at summit broadly concave shallowly, frontal carina ill-developing, sometimes obliterate in middle. (*Hemicrepidius* genus).
- 25 (26) Antennae serrated from 3rd joints, being usually twice as long and wide as 2nd or more. Pronotum weakly longer than width, hind angles turning outwards slightly, having visible and long unicarination. Scutellum longitudinally elevated. Prosternal process in profile protruded backwards straight. (*Pseudathous* subgenus).  
Body length 9.5~19.5 mm. in all the specimens from Japan of my collection, black except antennae, legs, mouth parts, pronotal hind angles, margins of body segments more or less brownish to red. ....  
.....A 6. *Hemicrepidius (Pseudathous) secessus secessus* Candèze (p. 17)
- 26 (25) Antennae serrated from 4th joints, 3rd 1.5 times as long and wide as 2nd or less. In male eyes clearly prominent outwards. Pronotum considerably longer than width, posterior angles not turning laterally, always parallel-sided, having obsolescent unicarina, sometimes vanishing entirely. Scutellum convex above only. Prosternal process in profile rather suddenly curved inwards behind fore coxal cavities straight. (*Medakathous* subgenus nov.).  
Body length 9.5~10.0 mm., black except elytra bright reddish brown,

- legs brown, mouth parts and margins of body segments partly brownish.  
 ..... A 7. *Hemicrepidius (Medakathous) jactatus babai* Ohira (p. 18)
- 27 (24) Body length 3.5~4.5 mm., slender. The 4th tarsal joint lamellate clearly, sometimes 3rd weakly expanding apically, 1st generally shorter than next two combined together or rarely a little longer. (CONODERINAE).  
 Antennae shorter than tips of pronotal hind angles, ill-serrated from 3rd joints, 2nd and 3rd cylindrical, allied closely in form each other. Head simply convex above. Frontal margin well developing, rounded antero-downwards. Pronotum simply convex above. Prosternal sutures double, straight. Metacoxal plates suddenly narrowing in middle laterally. (*Aeoloderma* genus).
- Body yellow to orange, with head, medio-longitudinal maculation on pronotum, longitudinal variegated spots on elytra etc. black. ....  
 ..... A 5. *Aeoloderma agnata* Candèze (p. 17)
- 28 (23) Tarsal joints usually simple, 1st to 4th progressively diminishing in length.
- 29 (30) Body subcylindrical, medium. Clypeus perfect. Frontal carina also completely margined roundly, not vanished medially. Antennae serriform. Prosternal sutures double. (AMPEDINAE).  
 Antennae serrated from 3rd joints, 2nd smallest, bulbous. Pronotal hind corners having plain short bicarinations. Metacoxal plates suddenly narrowing angulately in middle outwards. (*Ectamenogonus* genus).  
 Body length 10mm. (8~14 mm. in all the specimens from Japan of my collection), usually dark brownish, antennae and legs light in colour. ....  
 ..... A 8. *Ectamenogonus bicarinatus* Candèze (p. 19)
- 30 (29) Body subcylindrical or flattened. Clypeus bisected surely, each one forming antennal scrobe. A pair of crests before eyes obliquely extending each other to labral insertion, or adjacent each other, or nearly transverse and not prominent forwards.
- 31 (34) Body medium or large, commonly depressed rather distinctly or dilated. Mouth parts always prominent anteriorly. Hind coxal plates narrowing uniformly outwards.
- 32 (33) Body large, depressed above. Clypeus almost vanishing medially. Head strongly concave rather deeply and broadly. Eyes very large, spherical, prominent outwards plain. Antennal scrobes circular. Antennae very long, in male 3rd to 10th joints elongately flabellate, in female ill-serrated, 2nd bulbous, short distinctly. (OXYNOPTERINAE, *Pectocera* genus).  
 Body length 20~32 mm. in all the individuals from Japan of my collection, brown, clothed with white pubescence, dense partly. ....  
 ..... A 4. *Pectocera fortunei* Candèze (p. 16)

33 (32) Body medium moderately depressed above. Each crest before eyes rather traverse, or a little inclined anteriorly, sometimes confluent medially each other. Each antennal scrobe opening forwards, not margined completely. Antennae serrated in both sexes. (**CTENICERINAE**).

Antennae serrated from 3rd joints. Pronotal rear angles having unication. Pronotal punctation single, dense. Prosternal process prolonged straight backwards. (*Malloea* genus).

Body 12.5~13.0 mm. in length, black with metallic luster, except elytra, legs, pronotal rear angles etc. brown, pubescence elongate, very dense, silver greyish. .... B 2.

*Malloea suzukii hegurensis* subsp. nov. (p. 26, Pl. II, fig. 6, Pl. III, fig. 14)

34 (31) Body medium or small, more or less cylindrical or a little depressed above. Mouth parts opening below. Each crest before eyes projecting downwards or obliquely, in general separated entirely by upper margin of clypeus, but sometimes approaching perfectly each other. Each pronotal posterior angle having an acute carination. Antennal scrobes limited completely.

35 (36) Body rather small, subcylindrical, weakly depressed above. Each crest before eyes extending obliquely downwards straight, not confluent with frontal margin. Antennae rather filiform. Each pronotal rear corner having an acute carina. Prosternal sutures broadly double, furrowed conspicuously at fore ends. Hind coxal plates narrowing feebly outwards. (**AGRIOTINAE**).

Antennal joints 4th to 10th ill-serrated, 3rd longer than 2nd, shorter than 4th. Pronotal lateral margins curved downwards in anterior part, reaching lower margins of eyes. The 4th tarsal joint simple, elongate. (*Agriotes* genus).

Body length 8 mm., brown with black pronotal disc wholly, head, 2nd to 5th intervals of elytra and median part of under segments of body partly. Pronotal punctation very dense, simple or subumbilicate laterally. .... B 4. *Agriotes oguræ hegurensis* subsp. nov. (p. 28, Pl. III, figs. 3 and 6)

36 (35) Body longer than 13 mm., cylindrical. Each crest before eyes projecting downwards, always approaching each other roundly at middle. Antennal scrobes limited entirely. Antennal joints 4th to 10th usually serrated exceedingly. Each prothoracic rear corner having an acute carina. Prosternal sutures double, closed completely. Hind coxal plates projecting sharply backwards near inner one-third, then suddenly narrowing. (**ELATERINAE**).

Antennae in male long extremely, exceeding conspicuously tip of each

hind pronotal corner by 3 or more apical joints, or in female by one joint or more, joints 2nd and 3rd smallest, bulbous or subspherical, 3rd a little shorter than 2nd, 4th about twice as long as 2nd and 3rd combined together. Pronotal posterior angles having 4 elongate setae at each tip. Scutellum elongate triangular, flat, oblique anteriorly. Prosternal process a little bent inwards behind procoxal cavities, then prolonged horizontally rearwards. Mesosternal cavity concave or depressed transversely and strongly at middle. (*Neotrichophorus* genus).

Body 13~17 mm. in all the samples from Japan of my collection, black except antennae and legs brownish, covered densely with fulvous pubescence. Pronotal punctures impressed longitudinally and strongly. Elytral punctate-striae visible. ....

.....A 14. *Neotrichophorus junior* Candèze (p. 21, Pl. III, fig. 16)

## VI. List of the Elateridae from Islands Awa-shima, Hegura-jima and Nanatsu-jima with Some Notes

### A. List of Island Awa-shima

#### I. Subfamily AGRYPNINAE Fleutiaux "Sabikikori aka"

*Agrypninae* Fleutiaux, Voy. Alluaud and Jeannel, Afr. or. Col., XIII, p. 6, (1919).

#### Genus *Agrypnus* Eschscholtz "Sabikikori zoku"

*Agrypnus* Eschscholtz, In Thon, Ent. Archiv., Vol. 2, No. 1, p. 32, (1829) (Type: *Elater murinus* Linnaeus, 1758).

#### 1. *Agrypnus binodulus binodulus* Motschulsky "Sabikikori"

*Lacon binodulus* Motschulsky, Etud., IX, p. 8, (1860) (Japan).

*Agrypnus binodulus* Ôhira, New Ent., III (2~3), p. 4, (1954).

The reporting of this common click-beetle from this island has been hitherto unknown entirely to me, and the samples are separated into 2 aberrant forms as following.

#### 1) ab. form. *typicus*

Specimen examined : 1 female, July 31 to August 11, 1961, S. Inoué leg.

Distribution : Japan (Hokkaidô, Honshû, Is. Tobi-shima in Yamagata Pref., Is. Awa-shima, Is. Sado-ga-shima, Is. Ôshima in Izu-shichitô, Shikoku, Is. Oki-no-shima, Kyûshû, Is. Tsushima, Is. Tane-ga-shima, Is. Yakushima, Is. Kuchi-no-erabu, Is. Amami-ôshima and Is. Kume-shima) and Corea (Suigen and Is. Saishû-tô)?

Lately, I had a chance to examine some materials from 3 new districts as follows.

1. Is. Ôshima in Iss. Izu-shichitô, Tôkyô, 2 males, July 26, 1937.
2. Is. Oki-no-shima in Kôchi Prefecture, 1 male, July 24 to August 8, 1960, T. Kishii leg.
3. Is. Kuchi-no-erabu in Kagoshima Prefecture, 1 male and 7 females, July 29 to August 13, 1963, T. Kishii leg.

2) **ab. form. *tenuicollis* Kishii**

*Agrypnus binodulus binodulus* Motschulsky, ab. form. *tenuicollis* Kishii, Bull. Héian High Sch., Kyôto, No. 5, p.23 and 24, Pl. I, fig. 3, (1961) (Sôunkyô, Akan lake, Tappi cape, Kurokawa, Kinoto sea shore, Yoshigahira, Marunuma, Serio valley, Arashiyama, Inariyama, and Mt. Daisen).

The samples from this island, on my study have larger body in size (11.5~14.0 mm. in length) and darker or more fuscous coloured scales as compared with the typical *tenuicollis*, but in other characters specially at pronotal features the present samples of Is. Awa-shima are surely contained with in this aberrant form mentioned above.

Specimens examined : 10 males and 5 females, July 31 to August 11, 1961, N. Tamu, S. Inoué and T. Kishii leg. ; 1 male, August 4, 1959, S. Higuma leg.

Distribution : Japan (Hokkaidô, Honshû and Is. Awa-shima).

2. ***Agrypnus cordicollis* Candèze** (Pl. III, fig. 11) "Muna-biro sabikikori"

*Lacon cordicollis* Candèze, Elat. nouv., I, (Mèm. Acad. Belg.), p.9, (1865) (Japan).

*Agrypnus cordicollis* Ôhira, New Ent., Vol. 3, Nos. 2~3, p.4, (1954).

*Paralacón cordicollis* Ôhira, Trans. Ent. Soc. Chûbu, No.4, p.15, (1954).

It is a new member to this island's fauna. Up to date, this *Agrypnus*-species has not been reported from Is. Sado-ga-shima in Niigata Prefecture, but recently, I had a chance — through the courtesy of Dr. K. Baba in Niigata — to get an example from this island as showing below :

1 male, Myôken-zan, June 24, 1962, M. Kasai leg.

Specimen examined : 1 female, July 26, 1951, S. Higuma leg.

Distribution : Japan (Hokkaidô, Honshû, Is. Awa-shima, Is. Sado-ga-shima, Shikoku and Kyûshû).

**Genus *Sabikikorius* Nakane et Kishii** "Hoso-sabikikori zoku"

*Sabikikorius* Nakane et Kishii, Bull. Ôsaka Mun. Mus. Nat. Hist., No. 2, p.3, (1955) (Type : *Lacon fuliginosus* Candèze, 1865). Described originally as a subgenus of the genus *Agrypnus* Eschscholtz.

In 1959 (Gensei, No.9, p. 65) and in 1960 (Kontyû, Vol. 23, No. 1, p. 27), Dr. Ôhira referred this species to the genus *Adelocera* Latreille 1829, and also treated *Sabikikorius* as a subgenus of the genus. But the general structures of its type-species *fuliginosus*, according to my researching, are plain not those of



*Adelocera*, in particular in the features of under surface of body. Namely, its propleuron and metasternum having no tarsal grooves, I think, are an important distinction in the generic category.

And moreover, it may be accepted as a pertinent disposal that *Sabikikorius* are an established genus being independent of the genus *Agrypnus* Eschscholtz in the combination of the body characteristics as showing next ; body always narrow and subcylindrical, pronotal disc having no nodule nor tubercle, posterior corners having no carination, rather thick pronotal lateral borders, simple 5th abdominal sternite in both sexes etc.

### 3. *Sabikikorius fuliginosus* Candèze (Pl. III, fig. 10) "Hoso-sabikikori"

*Lacon fuliginosus* Candèze, *Elat. nouv.*, I, (Mém. Acad. Belg.), p.10, (1865) (Japan).

*Agrypnus fuliginosus* Ôhira, *New Ent.*, III (2~3), p.4, (1954).

*Agrypnus (Sabikikorius) fuliginosus* Nakane et Kishii, *Bull. Ôsaka Mun. Mus. Nat. Hist.*, (2) Coleopt. (Elat.), p.3, (1955).

*Sabikikorius fuliginosus* Kishii, *AKITU*, VI (4), p.84, (1957) (Nachi sea shore).

*Agrypnus ? fuliginosus* Ôhira, *Kontyû*, 26 (2), p.84, (1958) (Okazaki, Gifu and Kôchi).

*Adelocera (Sabikikorius) fuliginosus* Ôhira, *Gensei*, No.9, p.65, (1959) (Motoyama).

Up to date, the report of this species from Is. Awa-shima has not been given out quite.

Specimen examined : 1 female, July 31 to August 11, 1961, T. Kishii leg.

Distribution : Japan (Honshû, Is. Awa-shima, Shikoku, Kyûshû, Is. Yakushima and Is. Kume-shima) and China (Peking) ?

## II. Subfamily OXYNOPTERINAE Schenkling "Hige-kometsuki aka"

*Oxynopterinae* Schenkling, in *Junk, Col. Cat.*, 80, *Elat.* p.68, (1925).

### Genus *Pectocera* Hope "Hige-kometsuki zoku"

*Pectocera* Hope, *Proc. Zool. Soc. London*, p.79, (1842) (Type : *Pectocera cantori* Hope, 1842).

### 4. *Pectocera fortunei* Candèze "Hige-kometsuki"

*Pectocera fortunei* Candèze, *Mém. Soc. Sc. Liège*, (2) V, p.6, (1873) (China : Chusan and Japan : Hiogo).

This large snappers' report from this island has been hitherto published by Dr. K. Baba and H. Ôhira (1956, *Kontyû*, Vol.24, No.1, p.16, a male, July 7, 1937, K. Baba leg.).

Distribution : Japan (Hokkaidô, Honshû, Is. Awa-shima, Kyûshû and Is. Yakushima).

## III. Subfamily CONODERINAE Fleutiaux "Chibi kometsuki aka"

*Conoderinae* Fleutiaux, *Voy. Alluaud and Jeannel, Afr. or. Col.*, XIII, pp.6 and 58, (1919).

## Genus *Aeoloderma* Fleutiaux "Chibi kometsuki zoku"

*Aeoloderma* Fleutiaux, *Encycl. Ent., Col.*, p. 33, (1929) (Type : *Elater crucifer* Rossi, 1790).

### 5. *Aeoloderma agnata* Candèze "Madara chibi kometsuki"

*Aeolus agnatus* Candèze, *Mém. Soc. Sc. Liège*, (2) V, p. 8, (1873) (Japan).

*Heteroderes agnatus* Candèze, *Cat. Elat.*, p. 83, (1891) (Japan).

*Monocrepidius agnatus* Schwarz, *Gen. Insect.*, XLVI, *Elat.*, p. 100, (1906).

*Conoderus agnatus* Schenkling, in *Junk's Col. Cat.*, 80, *Elat. I*, p. 109, (1925) (Japan).

*Aeoloderma agnata* Miwa, *Trans. Nat. Hist. Soc. Formosa*, XIX (103), pp. 341 and 344, (1929) (Is. Kuchinoerabu-shima).

*Prodrasterius agnatus* Matsumura, 6000 *Illustr. Ins. Japan*, 441, p. 188, (1931) (Japan).

This minute click has been hitherto reported originally by Dr. K. Baba and H. Ôhira (1956, *Kontyû*, Vol. 24, No. 1, p. 17, 1 example, July 12, 1932, K. Baba leg.) from this island.

Distribution : Japan (Hokkaidô, Honshû, Is. Awa-shima, Is. Sado-ga-shima, Shikoku, Kyûshû, Is. Tsushima, Is. Kuchi-no-erabu, Is. Yakushima and Is. Takara-jima in Iss. Tokara-shotô).

## IV. Subfamily ATHOINAE C. Schaufuss "Tsuya-hada kometsuki aka"

*Athoinae* C. Schaufuss, in *Calwer, Käferb.*, ed. 6, 1907~1916, p. 657, (1911).

### Genus *Hemicrepidius* Germar "Tsuya-hada kometsuki zoku"

*Hemicrepidius* Germar, *Zeit. f. d. Ent.*, Vol. I, p. 212, (1839) (Type : *Hemicrepidius thomasi* Germar, 1839).

### Subgenus *Pseudathous* Mequignon

*Pseudathous* Mequignon, *Bull. Soc. Ent. France*, p. 95, (1930) (Type : *Elater hirtus* Herbst, 1784).

### 6. *Hemicrepidius (Pseudathous) secessus secessus* Candèze

"Kuro tsuya-hada kometsuki"

*Athous secessus* Candèze, *Mém. Soc. Sc. Liège*, (2) V, p. 23, (1873) (Hiogo).

*Athous* (s. str.) *secessus* Reitter, *Best. -Tab. Col.*, LVI, pp. 37 and 115 (nota 1), (1905).

*Hemicrepidius (Pseudathous) secessus* Baba et Ôhira, *Kontyû*, XXIV (1), p. 10 and 17, (1956) (Is. Sado and Is. Awa).

*Pseudathous secessus* Nakane, *Bull. Res. Sci.*, Nos. 46~47, p. 86, (1958) (Aomori).

This species has been hitherto informed from this island by Dr. K. Baba and H. Ôhira (1956, *Kontyû*, Vol. 24, No. 1, p. 17, 1 male and 1 female, July 11, 1932, K. Baba and Z. Sawano leg. ; 1 example, July 12, 1932, K. Baba leg. ; 1 male, July 7, 1937, K. Baba and Z. Sawano leg.).

Distribution : Japan (Honshû, Is. Awa-shima, Is. Sado-ga-shima, Is. Kammuri-jima in Kyôto Pref., Is. Ôshima in Izu-shichitô, Shikoku and Kyûshû).

### Subgenus *Medakathous* subgen. nov.

This new subgenus resembles closely *Pseudathous*, but the following structures serve to divide them.

1. The 3rd antennal joints small, similar to 2nd in shape, a little longer and broader than 2nd, 4th always twice as long as 3rd or more.
2. Eyes strongly prominent outwards in male considerably.
3. Each pronotal posterior corner flattened, obsolescently uncarinate.
4. Pronotal, prosternal and propleural punctures generally dense, large and umbilicate partly.
5. Scutellum convex above simply.
6. Prosternal sutures double conspicuously at rear half.
7. Prosternal process in profile rather suddenly curved postero-inwards behind procoxal cavities straight.
8. Lateral sides of mesosternal cavity concave strongly at middle.

Subgenotype : *Athous jactatus* Lewis, 1894.

In the general appearances this new subgenus also is similar to the genus *Yukara*, although in the latter propleural hind edges are emarginate clearly, and in the former and in *Hemicrepidius*-group have usually straight or rather a trifle expanding edges posteriorly.

Present new subgenus is represented by the only one species *Athous jactatus* of Lewis designated here as subgenotype.

Formerly, Ôhira (1956) used *Ainuathous* (MS) as the subgeneric name for *jactatus*, though in 1958 he included it to the subgenus *Pseudathous*, thereupon I name for this subgenus here.

**7. *Hemicrepidius (Medakathous) jactatus babai* Ôhira, comb. nov.**

“Medaka tsuya-hada kometsuki”

*Hemicrepidius (Ainuathous) jactatus babai* Ôhira, Kontyû, Vol. 24, No. 1, p. 17, Pl. 4, figs. 1 and 2, Pl. 5, fig. 5, (1956) (Is. Awa).

This subspecies has been described from this district originally by Dr. H. Ôhira, and up to date, it is endemic to this small island only. The female specimen of this subspecies has not been hitherto unknown, but recently I had fortunately an opportunity to study a female individual from this island through the kindness of Mr. S. Higuma. According to my studying, the structures of the female specimen differ slightly from the female of subspecies *jactatus* as showing below : body robust and large (11 mm. in length), rather subcylindrical in particular at prothorax, pronotal lateral sides strongly rounded outwards, pronotal punctures denser, body coloration darker and brownish, pronotal hind angle visibly carinate but very short.

Moreover there are a few differentiations in the body characteristics between the male and female of this subspecies *babai* as follows : in female body more convex above, antennae shorter and robuster than in male, and each posterior hind angle of pronotum in female having a short carination.

In general outline of body features, this subspecies from Is. Awa-shima is allied more closely to *Hemicrepidius (Pseudathous) terukoanus* Kishii than the typical subspecies, although both the species may be easily separated in the discrepancies of the ration of each antennal joint, in the appearance of body surface punctation, in the state of prosternal sutures etc.

Specimens examined : 2 males and 1 female, July 15, 1961, S. Higuma leg.

## V. Subfamily AMPEDINAE Fleutiaux "Kometsuki aka"

*Ampedinae* Fleutiaux, Encycl. ent., Col. III, p.43, (1928).

### Genus *Ectamenogonus* Buysson "Chyairo kometsuki zoku"

*Ectamenogonus* Buysson, Bull. Soc. Ent. France, p.314, (1893) (Type : *Ludius montandoni* Buysson, 1888).

#### 8. *Ectamenogonus* ? *bicarinatus* Candèze "Chyairo kometsuki"

*Elater bicarinatus* Candèze, Mém. Soc. Sc. Liège, (2) V, p.9, (1873) (Japan).

*Elater (Ectamenogonus) bicarinatus* Miwa, Gov. Res. Inst. Formosa, Dep. Agr., Rep.65, p.81, Pl. II, fig.18, (1934) (Shizuoka, Ichinotani and Koyadaira).

*Ampedus* ? *bicarinatus* Kishii et Ôhira, AKITU, V (3), p.76, (1956) (Niigata).

*Ectamenogonus* ? *bicarinatus* Nakane et Kishii, Sci. Rep. Saikyô Univ. (Nat. Sci. Liv. Sci.), II (5), p.38, (1958) (Is. Yakushima).

This species is a new member to the fauna of this island.

Specimen examined : 1 male, July 31 to August 11, 1961, T. Kishii leg.

Distribution : Japan (Hokkaidô, Honshû, Is. Awa-shima, Is. Kammuri-jima in Kyôto Pref., Is. Oki—Dôgo—in Shimane Pref., Is. Ki-jima in Aichi Pref., Shikoku, Is. Oki-no-shima in Kôchi Pref., Kyûshû, Is. Tsushima, Is. Yakushima and Is. Kuchi-no-erabu).

Lately, I had an opportunity to gain and research many specimens from 3 islands showing below, and its distributing record has not been hitherto given out entirely.

1. Is. Oki (Dôgo) in Shimane Prefecture, 1 male, July 31 to August 6, 1955, K. Tsukamoto leg.
2. Is. Ki-jima in Aichi Prefecture, 1 male, August 11, 1953, N. Tamu leg.
3. Is. Kuchi-no-erabu in Kagoshima Prefecture, 5 examples, July 29 to August 13, 1963, T. Kishii leg.

## VI. Subfamily MELANOTINAE Jakobson "Kushi kometsuki aka"

*Melanotinae* Jakobson, Zuki Rossiji, 1906~1916, pp.733 and 754, (1913).

### Genus *Melanotus* Eschscholtz "Kushi kometsuki zoku"

*Melanotus* Eschscholtz, Thon. Arch., II (1), p.32, (1829) (Type : *Elater fuscipes* Gyllenhal, 1817).

9. *Melanotus spernendus* Candèze "Naga-chya kushi kometsuki"

*Melanotus spernendus* Candèze, Mém. Soc. Sc. Liège, (2) V, p. 21, (1873) (Nagasaki).

It has been hitherto not reported from this island.

Specimens examined : 2 examples, July 15, 1961, S. Higuma leg.

Distribution : Japan (Honshû, Is. Awa-shima, Is. Sado-ga-shima, Shikoku, Kyûshû, Is. Tsushima and Is. Yakushima).

10. *Melanotus legatus* Candèze "Kushi kometsuki"

*Melanotus legatus* Candèze, Mon., III, p. 323, (1860) (Japan).

*Melanotus laticollis* Motschulsky, Etud. Ent., IX, p. 9, (1860) (Japan).

*Melanotus annosus* (nec. Candèze, 1894) Okamoto, Bull. Agr. Ex. St., I (2), p. 182, (1924) (Is. Saishû-tô).

This large click is new to the fauna of this region.

Specimens examined : 2 examples, July 15, 1961, S. Higuma leg. ; 10 examples, July 31 to August 6, 1961, T. Kishii leg.

Distribution : Iss. Kuriles (Is. Kunashiri-tô), Japan (Hokkaidô, Honshû, Is. Tobu-shima in Yamagata Pref., Is. Awa-shima, Is. Sado-ga-shima, Is. Hegura-jima in Ishikawa Pref., Is. Kammuri-jima in Kyôto Pref., Shikoku, Is. Oki-no-shima in Kôchi Pref., Kyûshû, Is. Iki in Nagasaki Pref., Is. Tsushima, Is. Tane-ga-shima, Is. Yakushima, Is. Nako-no-shima in Iss. Tokara-shotô, Is. Amami-ôshima and Iss. Loo-choo?), Corea (Seoul and Is. Saishû-tô), Formosa ? and China.

Recently, I had an occasion to examine some specimens from new distributing islands as follows.

1. Is. Hegura-jima in Ishikawa Prefecture, vide fauna of Iss. Hegura, p. 28.
2. Is. Iki in Nagasaki Prefecture, Yumoto, 1 female, May 28, 1957, K. Baba leg.
3. Is. Amami-ôshima, Ikari, in Kagoshima Prefecture, 1 example, July 2, 1961, T. Shibata leg.

I wish to acknowledge my indebtedness to Mr. T. Shibata who sent me the samples.

11. *Melanotus lewisi* Schenkling "Lewis kushi kometsuki"

*Melanotus lewisi* Schenkling, in Junk's Col. Cat., 88, Elat. II, p. 277, (1927) (nom. nov.).

*Melanotus longipennis* (nec. Küst., 1848) Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 192, (1894) (Kobe and Kioto).

Up to date, the information of this snappers from this island has not been quite given out.

Specimen examined : 1 female, July 15, 1961, S. Higuma leg.

Distribution : Japan (Honshû, Is. Awa-shima, Is. Sado-ga-shima, Is. Kammuri-jima in Kyôto Pref., Shikoku, Is. Oki-no-shima in Kôchi Pref., Kyûshû and Is. Tsushima).

The following datum is the first record from Is. Oki-no-shima in Kôchi Prefecture : 3 males and 5 females, July 24 to August 8, 1960, T. Kishii leg. Moreover, I correct here the mistaken identify on *Melanotus legatus* in my former report titled as "Elateridae of Is. Tsushima — The Snappers of Island (II)" (Bull. Héian High School, No. 5, p. 44, 1961), that is, two individuals among 4 materials from Izuhara (July 21 to 31, 1959, T. Kishii leg.) are accurately small specimens

of *Melanotus lewisi*. Therefore, this species must be newly added to the Elaterid-fauna of Is. Tsushima.

**Genus *Spheniscosomus* Schwarz** "Oh-kushi kometsuki zoku"

*Spheniscosomus* Schwarz, Wien Ent. Zeit., p. 132, (1892) (Type : *Melanotus cuneiformis* Baudi, 1871).

**12. *Spheniscosomus cete* Candèze** "Aka-ashi oh-kushi kometsuki"

*Melanotus cete* Candèze, Mon., III, p. 332, (1860) (Japan).

*Spheniscosomus cete* Schwarz, Deutsche Ent. Zeit., p. 150, nota 1, (1891).

*Melanotopsis cete* Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 192, (1894) (Nagasaki, Kobe and Yokohama).

*Melanotus (Spheniscosomus) cete* Ôhira, Kontyû, Vol. 28, No. 2, p. 31, (1960).

It has been hitherto recorded from this island by Dr. K. Baba and H. Ôhira (1956, Kontyû, Vol. 24, No. 1, p. 17, 1 male and 1 female, July 11, 1932, K. Baba leg.).

Specimen examined : 1 female, July 31 to August 6, 1961, N. Tamu leg.

Distribution : Japan (Honshû, Is. Awa-shima, Is. Sado-ga-shima, Is. Kammuri-jima in Kyôto Pref., Shikoku, Kyûshû, Is. Tsushima and Is. Yakushima).

**13. *Spheniscosomus restrictus* Candèze** "Oh-kushi kometsuki"

*Melanotus restrictus* Candèze, Elat. nouv., I, (Mém. Acad. Belg.), p. 47, (1865) (Japan).

*Spheniscosomus restrictus* Schwarz, Wien Ent. Zeit., XI, p. 132, (1892).

*Melanotopsis restrictus* Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 191, (1894).

It has been already reported from this region by Dr. K. Baba and H. Ôhira (1956, Kontyû, Vol. 24, No. 1, p. 17, 1 female, July 7, 1937, K. Baba and Z. Sawano leg.).

Distribution : Japan (Honshû, Is. Awa-shima, Is. Sado-ga-shima, Kyûshû and Is. Tsushima), Korea (Jinsen and Suigen) and Formosa (Baibara).

**VII. Subfamily ELATERINAE Fleutiaux**

"Oh-naga kometsuki aka"

*Elaterinae* Fleutiaux, Ann. Soc. Ent. France, CV, p. 293, (1936).

**Genus *Neotrichophorus* Jakobson** "Hige-naga kometsuki zoku"

*Neotrichophorus* Jakobson, Käfer Russ., Vol. X, p. 742, (1913) (Type : *Trichophorus guillenbergi* Mulsant, 1838).

**14. *Neotrichophorus junior* Candèze** (Pl. III, fig. 16) "Hige-naga kometsuki"

*Ludius junior* Candèze, Mém. Soc. Sc. Liège, (2) V, p. 27, (1873) (Japan).

*Crigmus junior* Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 266, (1894) (Yuyama, Ichiuchi, Kashiwagi and Sapporo).

*Trichophorus junior* Schwarz, Gen. Ins., XCVI, Elat., p. 256, (1907).

*Neotrichophorus junior* Miwa, Ins. Mats., III (1), p. 42, (1928) (Tokyo, Narita, Sapporo and Formosa).

The report of this unique snapper from Is. Awa-shima has been hitherto recorded by T. Kishii and H. Ôhira (1957, AKITU, Vol. VI, No. 4, p. 73, 1 example).

^  
Baba



Distribution : Japan (Hokkaidô, Honshû, Is. Awa-shima, Is. Kammuri-jima in Kyôto Pref., Kyûshû, Is. Tsushima and Is. Yakushima) and Formosa.

### VIII. Subfamily CARDIOPHORINAE Leng "Hana kometsuki aka"

*Cardiophorinae* Leng, Cat. Col. Amer., p. 175, (1910).

#### Genus *Paracardiophorus* Schwarz "Ko-hana kometsuki zoku"

*Paracardiophorus* Schwarz, Deutsche Ent. Zeit., p. 59, (1895) (Type : *Cardiophorus musculus* Erichson, 1840).

#### 15. *Paracardiophorus sequens* Candèze (Pl. III, fig. 18)

"Aka-ashi ko-hana kometsuki"

*Cardiophorus sequens* Candèze, Mém. Soc. Sc. Liège, (2) V, p. 16, (1873) (Japan).

*Paracardiophorus sequens* Miwa, Gov. Res. Inst. Formosa, Dep. Agr., Rep. 65, p. 95, Pl. III, fig. 28, (1934) (Kiga, Gifu, Seto, Kobe, Takamatsu, Beppu and Kagoshima).

This sea shore click from this island has not been hitherto given out entirely. And Is. Awa-shima is the northmost habitat of this species.

Specimens examined : 4 examples, July 31 to August 11, 1961, T. Kishii leg.

Distribution : Japan (Honshû, Is. Awa-shima, Is. Sado-ga-shima, Is. Kammuri-jima in Kyôto Pref., Shikoku, Is. Kashiwa-jima in Kôchi Pref., Kyûshû, Is. Yakushima and Is. Kuchi-no-erabu).

Lately, I had an opportunity to research some specimens from 3 habitats as follows, and the information of the distribution, up to date, has been unknown entirely.

1. Is. Sado-ga-shima in Niigata Prefecture, Mano sea shore, 4 examples, March 6, 1931, H. Kuwano leg. All the specimens are brought me through the courtesy of Dr. K. Baba.
2. Is. Kashiwa-jima in Kôchi Prefecture, 14 examples, July 24 to 30, 1960, T. Kishii leg.
3. Is. Kuchi-no-erabu in Kagoshima Prefecture, 3 examples, July 29 to August 13, 1933, T. Kishii.

#### Genus *Dicronychus* Castelnau "Hana kometsuki zoku"

*Dicronychus* Castelnau, Dejean, Cat., ed. 3, p. 88, (1833) (Type : *Dicronychus senegalensis* Laporte de Castelnau, 1840).

#### Subgenus *Platynychus* Motschulsky

*Platynychus* Motschulsky, Etudes Ent., Vol. VII, p. 58, (1858) (Type : *Platynychus indicus* Motschulsky, 1858).

#### 16. *Dicronychus (Platynychus) adjutor* Candèze (Pl. III, fig. 17)

"Aka-ashi hana kometsuki"

*Cardiophorus adjutor* Candèze, Mém. Soc. Sc. Liège, (2) V, p. 17, (1873) (Japan).

*Paracardiophorus adjutor* Schwarz, Deutsche Ent. Zeit., p. 37, (1895).

*Platynychus adjutor* Miwa, Mushi, VI (1), p. 29, (1933) (Tsushima).

*Dicronychus adjutor* Nakane et Kishii, Coloured Illustr. Ins. Japan, (Col.) (pub. Hoikusha) Enl. Rev. ed., p. 210, fig. 1480, (1955) (Kyoto).

*Dicronychus (Platynychus) adjutor* Kishii, AKITU, V (3), p. 77, (1956) (Niigata).

This snapper from this island has been already reported by Dr. K. Baba and H. Ôhira (1956, Kontyû, Vol. 24, No. 1, p. 17, 1 female, July 11, 1932, K. Baba leg.).

Specimen examined : 1 example, July 15, 1961, S. Higuma leg.

Distribution : Japan (Honshû, Is. Awa-shima, Is. Kammuri-jima in Kyôto Pref., Shikoku, Is. Oki-no-shima in Kôchi Pref., Kyûshû, Is. Tsushima, Is. Yakushima and Is. Ishigaki-jima), Corea (Pusan) and Formosa (Musha, Kizan, Tainan and Shinkwa).

## B. List of Islands Hegura-jima and Nanatsu-jima

### I. Subfamily AGRYPNINAE Fleutiaux

Vide fauna of Is. Awa-shima, p. 14.

#### Genus *Colaulon* Arnett "Hime sabikikori zoku"

*Colaulon* Arnett, Wasmann Journ. Biol., Vol. X, p. 116, (1952) (Type : *Elater rectangularis* Say, 1825).

#### Subgenus *Cryptolacon* Nakane et Kishii

*Cryptolacon* Nakane et Kishii, Bull. Ôsaka Mun. Mus. Nat. Hist., No. 2, p. 1, (1955) (Type : *Cryptolacon miyamotoi* Nakane et Kishii, 1955). Described as a genus.

#### 1. *Colaulon (Cryptolacon) miyamotoi tsukamotoi* Kishii (Pl. I, figs. 3 and 9)

"Hamabe hime sabikikori"

*Cryptolacon miyamotoi tsukamotoi* Kishii, AKITU, V (1), pp. 17 and 18, (1956) (Is. Hegura, Is. Ohshima, Is. Akajima, Is. Kammuri-jima, Is. Kushima, Cape Sata and Is. Yakushima).

*Colaulon (Cryptolacon) miyamotoi tsukamotoi* Kishii, AKITU, VI (3), p. 71, (1957) (Is. Sado).

This *Colaulon*-species was described from these islands as the type-localities.

Specimens examined : Is. Hegura-jima, a holo-, an allotopo- and 31 paratopotypes, August 9, 1952, N. Tamu and K. Tsukamoto leg. : Is. Oh-shima, 3 male paratypes, August 4, 1952, N. Tamu and K. Tsukamoto leg. : Is. Aka-jima, 2 male paratypes, August 4, 1952, N. Tamu and K. Tsukamoto leg.

Distribution: Japan (Is. Sado-ga-shima, Is. Hegura-jima, Is. Oh-shima, Is. Aka-jima, Is. Kammuri-jima in Kyôto Pref., Chiba Pref., Is. Hachijô-ga-shima in Tôkyô, Wakayama Pref., Is. Oki-no-shima in Kôchi Pref., Fukuoka Pref., Is. Tsushima, Is. Iki, Cape Sata, Is. Yakushima and Is. Kuchi-no-erabu).

Recently, I had fortunately a chance to get and examine from a few new habitats as showing next.

1. Is. Kuchi-no-erabu in Kagoshima Prefecture, 11 examples, July 29 to August 11, 1963, T. Kishii leg.
2. Is. Iki in Nagasaki Prefecture, 1 male, May 28, 1957, K. Baba leg.

3. Hakata City in Fukuoka Prefecture, 3 examples, May 22, 1957, K. Baba leg.
4. Is. Hachijō-ga-shima in Tōkyō, 2 examples, July 24, 1962, T. Kishii leg.

Seijing on this occasion, I wish to consolidate all the *Colaulon*-species from Japan with two new species and to make a key to this elaterid-group.

### Key to the *Colaulon*-group from Japan

1. Propleura and metasternum having very conspicuously limited tarsal grooves. **Subgenus *Sagojyo* nov.** (description vide Addendum, p.30). .....2.
- 1'. Propleura and metasternum generally simple, sometimes only the former having indistinctly limited tarsal grooves. ....3.
2. Body rather narrow. Pronotum as wide as long in median measurement, simply convex, having no nodules nor longitudinal impressions. Tarsal grooves on propleura and metasternum deep, having very clearly limited edges at outer ends. Elytral lateral borders being contiguous to metepisternum narrow, about 5 times longer than width in length. Scales grieseous. Body 9.5~10.5 mm. in length. ....***sakaguchii* Miwa** (Pl. II, figs. 4 and 5)  
*Lacon sakaguchii* Miwa, Ins. Mats., II, No. 1, p.14, Pl. I, f. 3, (1928) (Okinawa).  
 Distribution: Japan (Is. Okinawa — Naha) and Formosa (Shinchiku, Hinokiyama, Urai and Horisha).
- 2'. Body broad. Pronotum slightly wider than length in median measurement, having a pair of transverse smooth nodules medially, and longitudinally depressed between the nodules. Tarsal grooves on propleura and metasternum rather shallow, edges at outer ends indistinctly limited. Elytral lateral borders being contiguous to metepisternum nearly 3.5 times longer than width in length. Scales golden yellow. Body 11mm. ....  
 .....***yuppe* sp. nov.** (Pl. II, figs. 1, 2, 7 and 9)  
 (description vide Addendum, p.31)
3. Propleura having indistinctly limited tarsal grooves. **Subgenus *Colaulon* s. str.**, distribute in USA.
- 3'. Propleura clearly simple, having no tarsal grooves. **Subgenus *Cryptolacon* Nakane et Kishii.** ....4.
4. Hind wings usually degenerate. Body black to rusty reddish or brown. Scales yellowish white. Pronotal lateral margins sinuate, not parallel to each other at near posterior angles. Pronotal punctation large-sized, coarse, subumbilicate partly. Scutellum pentagonal, a little broader than the length, flat. Elytral punctation on intervals among punctate-striae circular, large, very rugose, almost similar to strial punctures in size and form. Interspaces among elytral punctures perfectly smooth, but generally waxy by covering matter on whole surface. Always found on external sea shore with influence of

- warm current. .... *miyamotoi* Nakane et Kishii
- Cryptolacon miyamotoi* Nakane et Kishii, Bull. Ôsaka Mun. Mus. Nat. Hist., No. 2, pp. 2 and 3, Pl. I, figs. 1 and 8, Pl. II, figs. 6, 11, 13 and 20, (1955) (Takara-jima and Naka-no-shima).  
 Body rather short (7~9.5 mm. in length, 8.5 mm. on an average), wholly reddish brown or rusty. Elytral punctation deep, coarse, varied in size. ...  
 .... *miyamotoi miyamotoi* Nakane et Kishii (Pl. I, figs. 2 and 8)
- Cryptolacon miyamotoi miyamotoi* Kishii, AKITU, Vol. V, No. 1, p. 18, (1956).  
 Distribution : Japan (Tokara archipelago and Is. Amami-ohshima ?).  
 Body relatively large (7~11.5 mm. in length, 9.5 mm. on an average), wholly dusky black or rarely margined red-brownishly. Elytral punctation a little shallow, almost similar in size. ....  
 .... *miyamotoi tsukamotoi* Kishii (Pl. I, figs. 3 and 9, Pl. III, fig. 8)
- 4'. Hind wings perfect. Body usually dusky black, sometimes exceptionally brownish wholly or partly. Scales rusty brownish or rarely yellowish. Pronotal punctation moderate, not umbilicate. Scutellum pentagonal or circular, as wide as long or rather more or less longer. Elytral punctation on intervals among punctate-striae small, shallow, longitudinal, generally sparse, smaller than strial punctures having very minute creases, but waxy by covering matter. Found on the ground of inland or river sides. ....5.
5. Body rather narrow, 10.5 mm. in length. Scales brown to yellowish. Legs brown wholly. Pronotal hind angles not extending backwards, subparallel to each other at outer margins of angles only, then weakly widening forwards. Scutellum pentagonal, surely but slightly concave, a little longer than width. Elytral punctures on intervals among punctate-striae coarse, punctate near strial punctures only, rather resembling in size. ....  
 .... *musculus* Candèze (Pl. I, figs. 4 and 10)
- Lacon musculus* Candèze, Mon., I, p. 141, (1857) (China).  
*Lacon depressus* (nec. Candèze, 1874) Miwa, Trans. Nat. Hist. Soc. Formosa, XXI, No. 116, p. 259, (1931) (Loo-choo).  
*Lacon scrofa* (nec. Candèze, 1873) Miwa, Trans. Nat. Hist. Soc. Formosa, XIX, No. 102, p. 229, (1929) (Formosa).  
*Lacon shirakii* Matsumura, Mém. Soc. Ent. Belg., XVIII, p. 146, (1911) (Formosa).  
*Cryptolacon musculus* Nakane et Kishii, Bull. Ôsaka Mun. Mus. Nat. Hist., No. 2, p. 2, (1955).  
*Colaulon (Cryptolacon) musculus* Kishii, AKITU, Vol. VIII, No. 3, p. 57, (1959) (Is. Amami-ohshima).  
 Distribution : South China, Formosa and Japan (Is. Kume-shima and Is. Amami-ohshima).
- 5'. Body rather broad compared with length. Scales usually dusky brown. Legs black generally with exception of tibiae and tarsi. Scutellum flat or a little convex, circular or elongate pentagonal. Elytral punctures on intervals among punctate-striae shallow, sparse rather, even, plainly smaller than strial punctures in size. ....6.
6. Body large (8.0~11.5 mm. in length, 9.5 mm. on an average), depressed

above. Pronotal rear angles a trifle extending backwards, not parallel-sided to each other, then gradually widening to anterior 2-3rds. Pronotal punctation moderate. Scutellum nearly circular or subpentagonal, as wide as long, flat distinctly. Elytral intervals among punctate-striations clearly flattened. ....  
..... **scrofa** Candèze (Pl. I, figs. 1 and 6, Pl. II, fig. 8, Pl. III, fig. 7)

*Lacon scrofa* Candèze, Mém. Soc. Sc. Liège, (2) V, p. 4, (1873) (Japan).

*Cryptolacon scrofa* Nakane et Kishii, Bull. Ôsaka Mun. Mus. Nat. Hist., No. 2, p. 2, (1955).

*Agrypnus scrofa* Ôhira, New Ent., Vol. III, Nos. 2~3, p. 4, (1954).

*Colaulon (Cryptolacon) scrofa* Kishii, AKITU, Vol. V, No. 4, p. 72, (1956) (Niigata).

*Colaulon scrofa* Ôhira, New Ent., Vol. VII, No. 1, p. 31, Pls. I and II, (1958) (Okazaki, Gifu and Kochi).

Distribution: Japan (Hokkaidô, Honshû, Shikoku, Kyûshû and Is. Amami-ohshima?) and Korea (Seoul).

- 6'. Body small (6~9 mm. in length, 7 mm. on an average), slightly convex above, not flattened. Pronotal posterior corners not extending rearwards, conspicuously parallel-sided to each other towards middle. Pronotal punctation coarse, large sized rather. Scutellum pentagonal, surely longer than width, a little convex. Elytral interspaces among punctate-striations more or less convex longitudinally. .... **hypnicola** *sp. nov.* (Pl. I, figs. 5 and 7, Pl. III, fig. 9)  
(description vide Addendum, p. 33)

## II. Subfamily CTENICERINAE Fleutiaux "Hirata kometsuki aka"

*Ctenicerinae* Fleutiaux, Ann. Soc. Ent. France, CV, p. 279, (1936).

### Genus *Malloea* Arnett "Shimofuri kometsuki zoku"

*Malloea* Arnett, Proc. U.S. Nat. Mus., Vol. 103, No. 3336, p. 600, (1955) (Type: *Elater sjaelandicus* Müller, 1764). Originally described as a subgenus of the genus *Ctenicera* Latreille.

2. *Malloea suzukii hegurensis* *subsp. nov.* (Pl. II, fig. 6, Pl. III, fig. 14)

"Suzuki shimofuri kometsuki"

The present new subspecies from Is. Hegura-jima may be divided from the typical subspecies by the combination of following structures.

1. Body a little broader, slightly depressed above.
2. Antennae rather slender, root of each segment from 3rd to 10th lengthened weakly and clearly visible instead of entire disappearance one in the typical subspecies. Basal two joints usually brownish for black in the typical.
3. Pronotal medio-longitudinal depression broader and more distinct than that of the typical subspecies.
4. Elytral punctation clear brown to red.
5. Intervals among the elytral punctate-striae very minutely and sparsely punctured in behalf of dense and a little large sized punctures in the typical

subspecies.

6. Legs reddish brown wholly.
7. The tips of lateral lobes in male genitalia wider considerably than those of subspecies *suzukii*.

Body length 12.5 mm., width 3.8 mm.

Described from a male holotype and a male paratopotype, Is. Hegura-jima in Ishikawa Prefecture, April 14, 1952, N. Tamu and K. Tsukamoto leg. All the types are in my collection.

### Note on *Malloea suzukii* Miwa, *comb. nov.*

(Pl. II, figs. 3 and 6, Pl. III, figs. 14 and 15)

*Corymbites suzukii* Miwa, Ins. Mats., II, No. 3, p. 140, Pl. V, f. 14, (1928) (Kyoto).

*Corymbites (Actenicerus) pruinosus* Motschulsky, 1860, var. *suzukii* Miwa, Gov. Res. Inst. Formosa, Dep. Agr., Rep. 65, p. 116, (1934).

Originally this species was described as a valid species by Dr. Y. Miwa (1928), but after then (1934) he reduced it to a variety of *Corymbites pruinosus* of Motschulsky by means of the samples seemed to be in a condition right after moulting. Although in my collection, there are about 90 snapping-beetles gathered from Kyôto City being the type-locality, and these samples are not only compatible perfectly with the original description of *suzukii*, but also they are undoubtedly an available species of *Malloea*.

The combination of the reddish brown elytra, long ashy and very dense pubescence covering on whole body, and the shape of male genitalia is unique to this species among *Malloea*-species. Since original description, this species has not been reported quite, though I have some examples from some new habitats as showing next.

1. Toriimoto near Arashiyama, Kyôto : 2 males, 18. IV, 1956 ; 9 males and a female, 24. IV, 1956 ; 27 males and 4 females, 26. IV, 1956 ; 20 males and 6 females, 1. V, 1956 ; 9 males and 5 females, 3. V, 1956 ; 1 male, 5. V, 1956 ; 2 females, 11. V, 1956 ; 1 female, 17. VI, 1956, T. Kishii leg.
2. Daigakuji, Kyôto : 1 female, 1. V, 1960, T. Kishii leg.
3. Oh-e Village, Kyôto : 1 male, 15. V, 1961, H. Yamamoto leg.
4. Ushio-zan, Kyôto : 1 male, 10. V, 1959, Y. Yoshida leg.
5. Midoro-ga-ike, Kyôto : 1 male, 2. V, 1950, T. Kishii leg.
6. Kizugawa, Kyôto : 3 males and 1 female, 29. IV, 1962, H. Yamamoto leg.
7. Uji City, Kyôto : 1 male, 13. V, 1962, H. Yamamoto leg.
8. Ishiyama, Shiga : 2 males, 29. IV, 1959, Y. Yoshida leg.
9. Higashiyama, Nagoya : 1 male, 28. V, 1948, S. Ohsawa leg.



### III. Subfamily MELANOTINAE Jakobson

Vide fauna of Is. Awa-shima, p. 19.

#### Genus *Melanotus* Eschscholtz

Vide fauna of Is. Awa-shima, p. 19.

#### 3. *Melanotus legatus* Candèze

Vide fauna of Is. Awa-shima, p. 20.

It is a new member to the fauna of this island.

Specimen examined : Is. Hegura-jima, 1 example, August 10, 1952, K. Tsukamoto leg.

Distribution : vide fauna of Is. Awa-shima, p. 20.

### IV. Subfamily AGRIOTINAE Fleutiaux "Munaboso kometsuki aka"

*Agriotinae* Fleutiaux, Ann. Soc. Ent. France, CVIII, p. 121, (1939).

#### Genus *Agriotes* Eschscholtz "Munaboso kometsuki zoku"

*Agriotes* Eschscholtz, in Thon, Ent. Arch., II, 1, p. 34, (1829) (Type : *Elater sputator* Linnaeus, 1758).

#### 4 *Agriotes oguræ hegurensis* subsp. nov. (Pl. III, figs. 3 and 6)

"Tobi-iro munaboso kometsuki"

The present new subspecies from Is. Hegura-jima collected by Mr. K. Tsukamoto who is one of my cronies, of which typical subspecies is called *Agriotes oguræ* of Lewis may be divided from the typical subspecies by the combination of the following characteristics.

Body is darker and robuster (8 mm. in length), the 2nd antennal joints are slightly longer than the 3rd instead of those of the typical are clearly longer, pronotal punctures are coarser and denser visibly, pronotal lateral margins are parallel even at hind corners for the subspecies *oguræ* has always more or less turning outwards, and the uncarination on each pronotal rear angle is very short.

Described a female holotype, Is. Hegura-jima in Ishikawa Prefecture, August 10, 1952, K. Tsukamoto leg. The type is deposited in my collection.

Distribution : Japan (Is. Hegura-jima).

#### Note on *Agriotes oguræ* Lewis

*Agriotes oguræ* Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 313, (1894) (Ogura lake).

*Agriotet! oguræ* Kishii, AKITU, Vol. VIII, No. 3, p. 64, (1859) (Yodo-gawa river).

Till quite lately, this species has been found only in Kyôto City and the vicinity, and, in Japan, is also the representative of true *Agriotes*-snappers, which

inhabits widely from Europe to Siberia, together with *Agriotes fuscicollis* of Miwa. Well, according to my recent studying, *Agriotes fuscicollis* may be a geographical race of *Agriotes ogurae* for the reasons of the closely resembling general body features and of only some differentiations which are unimportant, I think, to classify *fuscicollis* as a valid species. Hereupon their main differentiations are such as mentioned below.

1. Body coloration : *fuscicollis* is always darker specially at elytra than *ogurae*, *hegurensis* is rather allied to *fuscicollis*. More there are two females of *ogurae* that pronotal coloration is yellowish red completely (ab. form. *unicolor* nov.).
2. Dimension of antennal joints 2nd and 3rd : 2nd is usually a little longer than 3rd, although the extent of difference is the smallest in *ogurae*, next is *hegurensis*, and *fuscicollis* in order.
3. Degree on pronotal punctation : *fuscicollis* is more regular in density and sparser than *ogurae*, *hegurensis* is the coarsest and the densest. (Pl. III, figs. 4, 5 and 6)
4. Lateral margins at hind angles : *hegurensis* is parallel-sided, and the others are always turning outwards a little.

Moreover, in my materials the condition of elytral interstices is rather closely allied to each other, and body measurements are also resembling. And I adjust here the conclusion of my researching as following.

*Agriotes ogurae ogurae* Lewis (Pl. III, figs. 1, 4 and 12)

*Agriotes ogurae* Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 313, (1894) (Ogura lake).

Specimens examined : 1 male, Yodo-gawa river in Ôsaka, April, 1956, B. Oh-e leg. ; 1 male, Yodo-gawa river in Kyôto, August 27, 1958, H. Ishida leg. ; 1 male, ditto, September 27, 1958, Y. Hama leg. ; 3 males, ditto, September 28, 1958, H. Ishida leg. ; 1 example, Higashiyama in Kyôto, August 7, 1960, A. Kanemoto leg.

ab. form. *unicolor* Kishii, ab. nov.

Specimens examined : 1 female, Yodo-gawa river in Ôsaka, April 27, 1952, K. Sawada leg. ; 1 female, ditto, October 1, 1958, Y. Hama leg.

Distribution : Japan (Honshû — Yodo-gawa river in Kyôto Prefecture and Ôsaka and the vicinity).

*Agriotes ogurae fuscicollis* Miwa, comb. nov. (Pl. III, figs. 2, 5 and 13)

*Agriotes fuscicollis* Miwa, Ins. Mats., III, No. 1, p. 44, Pl. I, f. 9, (1928) (Kyôto : local. errat., correctly Hokkaidô).

Specimens examined : 4 males and 5 females, Horomui in Hokkaidô, June 19, 1949, Y. Nishijima leg.

Distribution : Japan (Hokkaidô) and Saghalien.

*Agriotes ogurae hegurensis* Kishii, subsp. nov. (Pl. III, figs. 3 and 6)

See the description mentioned above.

## VII. Addendum

### 1. On a new subgenus *Sagojyo*

#### *Sagojyo* subgen. nov.

Elongate fusiform or broad ellipticity in general features, obviously depressed above as well as below, subparallel-sided but usually the widest behind elytral bases namely at nearly an anterior quarter of elytra, clothed with short regular and tongue-shaped scales scatteredly.

Head broad having a distinct impression between eyes, which are always and almost hidden by fore pronotal corners. Antennal scrobes shallow, circular, each crest before eyes traverse, short, carinate rather weakly, clypeus not limited medially, narrow.

Antennae serrated from 4th joints to 10th, 2nd subcylindrical, each of them having a very conspicuous incision near basal inner part, subequal to obconical 3rd, 4th a little longer than 3rd and as well as 5th in length.

Pronotum simply convex, having a pair of nodules transversely or nothing, punctated regularly with large-sized punctation. Lateral margins crenulate, generally subparallel-sided or a little sinuate beyond hind angles, being rather orthogonal, apices cut off obliquely, having no carination. Anterior corners conspicuously expanding forwards. Rear edge biemarginate slightly, having no ante-scutellar elevation.

Scutellum pentagonal, flat, not carinate.

Elytral bases well-developed at outer corners, hind wings perfect, obliteratedly punctate-striate.

Prosternal sutures straight, distinctly furrowed at anterior two-thirds or more deeply. Propleura having tarsal grooves to receive fore tarsi very plain, which are starting from coxae and extending roundly towards pronotal lateral sides, each posterior border concave widely and transversely to keep each fore tibia and femur. Prosternal process straight, both lateral sides having a longitudinal canaliculation on each of them.

Metasternum having also deep and clear tarsal grooves to keep mesotarsi which are starting metacoxae and developing to rear lateral corners, bearing also broad and rather shallow furrows on fore borders of metathoracic under surface and on antero-latero-under parts of elytral margins to put up median tibiae and femora.

Metacoxal plates gently narrowing laterally.

Legs moderate, tarsi simple, each claw bearing a long stiff hair at inner

basal part.

Both sexes having no sexual character on 5th abdominal sternite.

Subgenotype : *Colaulon (Sagojyo) yuppe* Kishii, *sp. nov.*

The present new subgenus easily may be distinguishable from other subgenera of this genus *Colaulon* Arnett as following below.

1. Body a little expanding outwards behind elytral bases or at an anterior quarter of elytral lateral sides.
2. Propleura and metasternum usually distinctly having tarsal grooves, and femoral and tibial furrows to receive fore and median legs.
3. Pronotum sometimes having a pair of nodules.
4. Metacoxal plates always narrowing progressively towards lateral sides, not suddenly narrowing near middle at posterior edges.

According to my views, next 3 species : *Lacon afflictus* Candèze, 1874, from Malacca, Siam, Cochinchine, Cambodge, Annam and Tonkin ; *Adelocera tonkinensis* Fleutiaux, 1927, from Tonkin and Hoa-Binh ; *Adelocera incurvata* Fleutiaux, 1927, from Tonkin and Hoa-Binh —, all of which were included to the genus *Adelocera* by Fleutiaux in 1947 (Bull. Mus. Heude, Not. D'ent. Chinoise, Vol. XI, No. 8, 268 ~269), may be belonged under the present new subgenus *Sagojyo* being inferred from their original descriptions. Moreover Miwa's species *Lacon uraiensis* from Formosa (Trans. Nat. Hist. Soc. Formosa, XIX, No. 102, p. 231, 1929) is perhaps combined with this group, and his *Lacon sakaguchii* (Ins. Mats., II, No. 1, p. 14, Pl. I, f. 3, 1928) from Okinawa is also proposed to this new subgenus.

New name is based on the name of a good monster living into river, that is one of the leading staffs of a chinese ancient fairy tale "Sai-yû-ki".

## 2. On a New Species of the Subgenus *Sagojyo* from Island Kuchi-no-erabu

*Colaulon (Sagojyo) yuppe* Kishii, *sp. nov.* (Pl. II, figs. 1, 2, 7 and 9)

"Mizo-mune hime sabikikori"

Female 11.0×3.8 mm. in median measurement, broad ellipticity, distinctly flattened above as well as below, subparallel-sided, widest behind elytral bases plain opaque completely by the waxy matter covering on whole surface. Scales golden-yellow, elongate tongue-shape, sprouting from each puncture on whole surface except the punctation of elytral striae, each apex acute, clothed scatteredly. Dusky black to brownish, usually more or less paler at antennae, lateral margins of pronotum, elytral margins, under surface of body and legs.

Head broadly pentagonal, considerably concave large between eyes, punctation coarse, rather dense, large-sized. Antennal scrobes circular, shallow, rather small. Each carina upon eyes carinate vividly at base, extending to middle traversely,

but not confluent to each other. Clypeus narrow, frontal margin a little protruded forwards roundly. Eyes small, imperfectly hidden by pronotal anterior angles.

Antennae moderate, rather ill-serrated from 4th joints to 10th, among which 4th the largest in form and others similar in shape and all the dimensions, sufficiently failing to attain to the tips of pronotal hind angles, basal joints robust, clubbed, plain longer than 2nd and 3rd combined together, 2nd as long and wide as 3rd, but in form the one subcylindrical having a clear incision at basal inner side, and the other subtriangular.

Pronotum quadrate, surely wider than length in median dimension, simply convex above, having sufficiently a pair of traverse and impunctate nodules which are clearly smooth, but having very narrow minute creases at each of summit, presenting an extinct medio-longitudinal impression between the nodules and behind. Pronotal punctation simple, deep and circular, clearer and larger than that on head, but progressively smaller and denser laterally, interspaces among the punctures generally smooth, though always waxy matter covering on whole surface. Frontal edge of pronotum broadly emarginate. Each angles at pronotal antero-lateral part clearly expanding forwards. Lateral margins of pronotum crenulate moderately, subparallel to each other or a little sinuate just beyond each posterior corner, which are thin, orthogonal, obtuse at apex, having no carination, not turning outwards and rather parallel-sided to each other.

Scutellum pentagonal considerably, the broadest at middle rather obtuse at apex, lateral sides weakly impressed inwards behind the anterior angles, flattened, punctation smaller and sparser conspicuously than that on pronotum.

Elytra ovate, a little convex above medially, outer angles of bases very plain developing roundly, lateral edges the widest behind bases and rather expanding outwards, having a shallow broad excavation on each. Punctate-striae visible, clothed with regularly subcircular punctures, which are smaller than those on pronotal disc. Punctation on spaces among striae considerably more minute than strial punctation, but distinctly larger and denser than that on scutellum, irregular in density. Intervals among punctures smooth, but generally seem to opaque by means of waxy matter covering on whole surface. Each apex round.

Prosternum the widest at base of anterior rim, being semicircular, oblique, simply convex below longitudinally, punctation resembling on pronotal disc, a little smaller and coarser. Process jutting straight backwards from between procoxal cavities, having a medio-longitudinal canaliculation on each side. Sutures deeply grooved anterior two-thirds or more to receive antennae.

Propleuron surely wider than prosternum in each broadest part, protarsal groove distinct, shallow, non-carinate at both edges, very obvious at base and extinct laterally, posterior border widely furrowed shallowly to put up protibia and

profemur having scaleless part transversely with minute creases.

Mesosternal cavity parallel-sided, horizontal.

Mesepimeron and anterior corner of elytral latero-under part shallowly concave clearly to receive median tibia and femur.

Metasternum having visible mesotarsal grooves to keep mesotarsi, of which edges carinate near bases, punctation similar to that on prosternum, though slightly shallower, distinctly diminishing in dimension towards lateral borders specially hind margin.

Hind coxal plates simply narrowing laterally.

Abdominal sternite punctate more minute, denser and shallower than that on prosternum.

Legs simple, moderate.

Male unknown.

Described from a female holotype, Is. Kuchi-no-erabu in Kagoshima Prefecture, July 29, 1933, T. Kishii leg.

In the general appearances this new click is easily separated from other *Colaulon*-species from Japan and the adjacent area by the pronotal nodules, tarsal grooves on propleura and metasternum, wider body, gently narrowing metacoxal plates laterally etc. (See the key to the *Colaulon*-group from Japan, pp. 24~26).

New name is based on the pet name of my daughter Yûko, who only celebrated just her 5th birthday when I was writing this manuscript.

### 3. On a New Species of the Subgenus *Cryptolacon* from Japan

*Colaulon (Cryptolacon) hypnicola* Kishii, *sp. nov.*

(Pl. I, figs. 5 and 7, Pl. III, fig. 9) "Kogata hime sabikikori"

This new species, in general features, is very intimately allied to other *Colaulon*-beetles from Japan, specially to *Colaulon (Cryptolacon) scrofa* of Candèze, although, after all, present new snapper may be divided from them by the combination of the body structures as showing below.

1. Body length 9.0~6.0 mm., 7 mm. on an average. Subparallel-sided. The smallest species among Japanese *Colaulon*-group.
2. Generally a little convex above as well as below, in special, on body posterior half considerably, not flattened at elytra.
3. Dusky black except mouth parts, antennae, pronotal rear corners, prosternum medially, mesosternum partly, median part of metasternum and legs more or less brownish to red.
4. Scales dusky brown, short.
5. Head almost flattened or scarcely concave medially.
6. Antennae very short, distinctly serrated from 4th joints to 10th which are

- similar to each other in shape and dimensions, 3rd a little longer than 2nd, basal joints subequal to succeeding 3 joints combined together in length.
7. Pronotum simply convex above, having no nodules, canaliculations nor antescutellar elevation.
  8. Pronotal punctation dense, coarse, large sized, progressively denser and smaller laterally.
  9. Pronotal hind angles not extending, parallel-sided sufficiently to each other.
  10. Scutellum pentagonal, surely longer than width, a little convex, punctation resembling that on pronotal lateral borders.
  11. Latero-anterior angles of elytra pointed conspicuously, angurately.
  12. Elytral punctate-striae fine, punctated irregularly.
  13. Intervals among punctate-striations of elytra more or less convex above longitudinally, punctate rather sparsely.
  14. Hind wings perfect, not degenerate.
  15. Under surface of body simple, having no tarsal grooves.
  16. Punctures on under surface allied to that on pronotal disc.

Described from a male holo-, a female allotopo- and 121 paratopotypes, Kizugawa river side in Ide, Kyôto Prefecture, April 6, 1962, H. Yamamoto leg. ; 71 paratypes, ditto, January 31, 1962, ditto ; 19 paratypes, ditto, February 10, 1962, ditto ; 42 paratypes, ditto, March 11, 1962, ditto ; 38 paratypes ditto, March 12, 1962, ditto ; 68 paratypes, ditto, February 10, 1963, ditto ; 1 female paratype, Hozukyô Gorge in Kyôto City, April 17, 1953, T. Kishii leg. ; 1 male paratype, Yamato-gawa river side in Ôsaka Prefecture, January 13, 1956, T. Horio leg. ; 1 male paratype, Katsura river side in Kyôto City, March 30, 1955, H. Hasegawa leg. ; 1 male paratype, Yodo-gawa river side in Ôsaka Prefecture, September 28, 1958, H. Ishida leg. ; 2 paratypes, ditto, K. Ueda leg. (this exs. in coll. T. Shibata).

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## IX. Summary

本著は、日本列島における日本海沿岸に位置する、新潟県粟島地方及び石川県舩倉島並びに七つ島地方に分布する叩頭虫科甲虫類について、主としてその純分類学的見地から、これらの地方における分布相について論述したものであり、平安学園生物科担当教員一同（丹信実・塚本圭一・井上宗二並びに筆者等）の共同研究である。日本列島周辺小島嶼の生物地理学的研究の一環をなすものである。

用いられた標本は主として平安学園生物クラブによる調査行によるもので、下記の通りである。

1. 丹 信実・塚本圭一両氏による第一次舩倉島調査による標本：1952年4月中旬に同島で採集したものであるが、本科の甲虫は1種1頭だけ得られた。而しこの標本は本論にあるように新亜種として記録されるものであった。
2. 同上第二次舩倉島並びに、七つ島諸島調査による資料：1952年8月3～11日の調査行による資料であり、舩倉島からは3種35頭のを、七つ島諸島中の大島及び赤島から1種5頭を発見した。これらの内、1種は筆者によりすでに（1956, あきつ, 五巻一号17頁）新亜種として発表したものであり、他に更に1種を今回新亜種として命名記載した。
3. 1961年度夏期生物クラブ遠征調査によるもの：新潟県粟島地方において同年7月30日より8月11日までの約2週間調査した際（附表 I 参照）得られたもので7種40頭余の叩頭虫科甲虫を蒐集し得た。内6種は本地方未記録のものである。
4. 以上の他に、長岡市立自然科学博物館昆虫部の種熊誠治氏の御厚意による、同氏自身が1951年から1961年までの間に、粟島より集められた資料があるが、これは6種よりなり、内4種は同島新記録種であった。

これらを総合し、且つ従来の研究者によるこれら地方からの数少ない研究報告をも纏めると、舩倉島・七つ島地方よりは4種のもが記録されることになり、内2種は舩倉島地方固有の亜種である。（附表 II 参照, pp. 6～7）。又、粟島からは16種が知られることになり、内1種は同地方固有亜種とされた。これら2群の島嶼は共に日本海にあり、何れも本土に近いにかかわらず、その叩頭虫相は互に異質のものようであるのは興味深い。もっとも舩倉島・七つ島は植物相も極めて貧弱であるのに反し、粟島は標高もある程度あり、植物相もむしろ豊富であるための差とも云えるが、本土とその関連性という点からすると後者の方がより密接な関連性を持つように見える。少くとも叩頭虫科甲虫相からはそう云えよう。唯一種 *Hemicrepidius (Medakathous) jactatus babai* が別亜種であるのを除く他は凡て新潟県本土に分布しており、而も前者においては4種中1種のみが石川県本土に分布し、1種は極めて暖地性の強い而も島嶼性昆虫の代表者の一つとも云える *Colaulon (Cryptolacon) miyamotoi tsukamotoi* であり、他の2種中一つは原亜種がこれ迄の所京都・名古屋周辺よりからのみしか発見されておらず、他の一つは原亜種が京都周辺のみ、別亜種が北海道並びに樺太からのみ見出されているという両者ともに隔離分布を如実に示す興味深いものであった。（*Malloea suzukii hegurensis* 及び *Agriotes ogurae hegurensis*）。而し何れにしる両地

方共に調査不足の感をおおい得ない。

なお、本研究には本邦産 *Colaulon* 属の検索表と、この属の新亜属 1 と、新種 2 の記載を附したが、他に筆者の最近の入手資料による本邦周辺地方よりの新分布記録も本著に関する種について存在したものに關し、本論文中に載録してある。

文末で失礼であるが、本研究を遂行するにあたり、資料の面、文献の点で種々御世話になった各方面の方々に紙上深く感謝するものであります。

## X. Plates and Figures

### Plate I

*Colaulon (Cryptolacon) scrofa* Candèze : fig. 1 (above surface of body), fig. 6 (punctuation on left elytron).

*Colaulon (Cryptolacon) miyamotoi miyamotoi* Nakane et Kishii : fig. 2 (above surface of body), fig. 8 (punctuation on left elytron).

*Colaulon (Cryptolacon) miyamotci tsukamotoi* Kishii : fig. 3 (above surface of body), fig. 9 (punctuation on left elytron).

*Colaulon (Cryptolacon) musculus* Candèze : fig. 4 (above surface of body), fig. 10 (punctuation on left elytron).

*Colaulon (Cryptolacon) hypnicola* Kishii, *sp. nov.* : fig. 5 (above surface of body), fig. 7 (punctuation on left elytron).

### Plate II

*Colaulon (Cryptolacon) scrofa* Candèze : fig. 8 (right hind wings).

*Colaulon (Sagojyo) yuppe* Kishii, *subgen. et sp. nov.* : fig. 1 (above surface of body), fig. 2 (under surface of body), fig. 7 (left propleuron), fig. 9 (left metasternum).

*Colaulon (Sagojyo) sakaguchii* Miwa, *comb. nov.* : fig. 4 (above surface of body), fig. 5 (under surface of thorax).

*Malloea suzukii suzukii* Miwa, *comb. nov.* : fig. 3 (above surface of body).

*Malloea suzukii hegurensis* Kishii, *subsp. nov.* : fig. 6 (above surface of body).

### Plate III

*Agriotes ogurae ogurae* Lewis : fig. 1 (above surface of body), fig. 4 (punctuation on pronotal disc), fig. 12 (male genitalia).

*Agriotes ogurae fuscicollis* Miwa : fig. 2 (above surface of body), fig. 5 (punctuation on pronotal disc), fig. 13 (male genitalia).

*Agriotes ogurae hegurensis* Kishii, *subsp. nov.* : fig. 3 (above surface of body), fig. 6 (punctuation on pronotal disc).

*Colaulon (Cryptolacon) scrofa* Candèze : fig. 7 (male genitalia).

*Colaulon (Cryptolacon) miyamotoi tsukamotoi* Kishii : fig. 8 (male genitalia).

- Colaulon (Cryptolacon) hypnicola* Kishii, *sp. nov.* : fig. 9 (male genitalia).  
*Sabikikorius fuliginosus* Candèze : fig. 10 (male genitalia).  
*Agrypnus cordicollis* Candèze : fig. 11 (male genitalia).  
*Malloea suzukii hegyurensis* Kishii, *subsp. nov.* : fig. 14 (male genitalia).  
*Malloea suzukii suzukii* Miwa : fig. 15 (male genitalia).  
*Neotrichophorus junior* Candèze : fig. 16 (male genitalia).  
*Dicronychus (Platynychus) adjutor* Candèze : fig. 17 (male genitalia).  
*Paracardiophorus sequens* Candèze : fig. 18 (male genitalia).

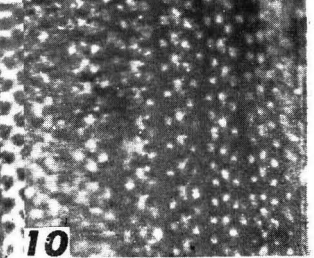
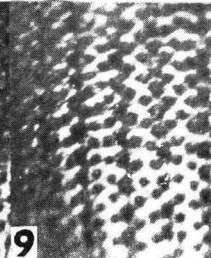
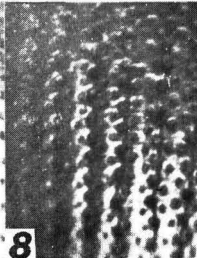
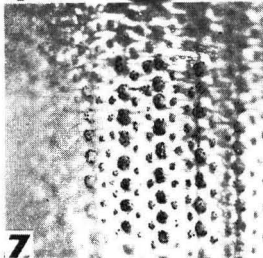
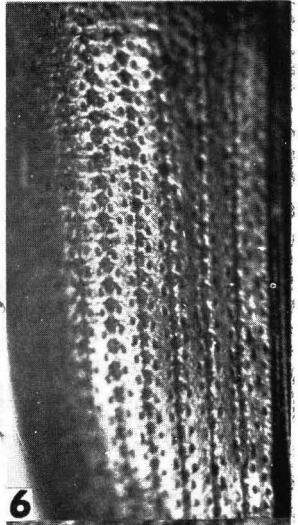
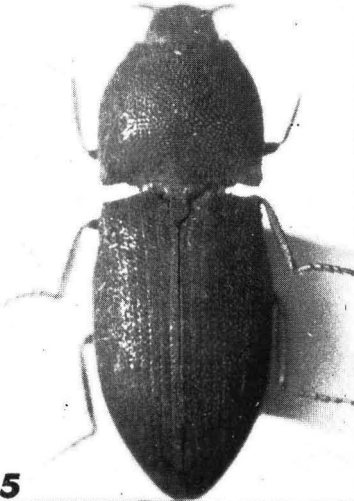
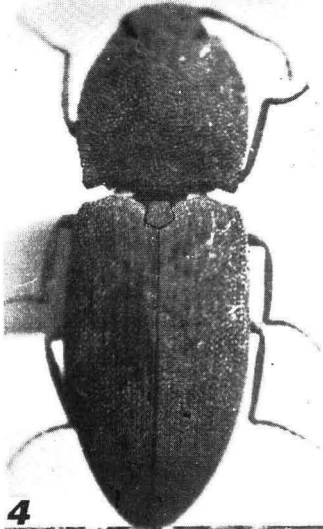
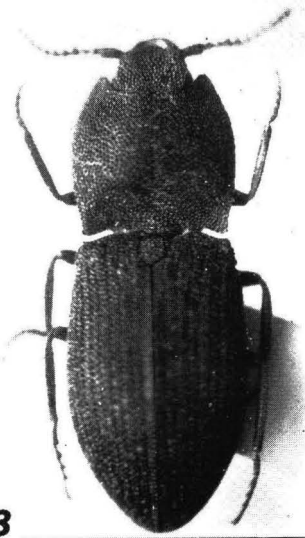
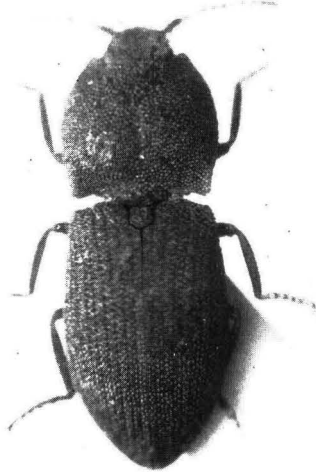
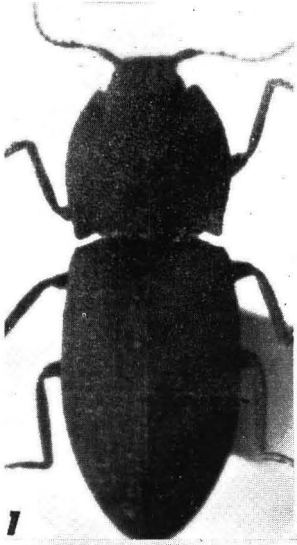


Plate II

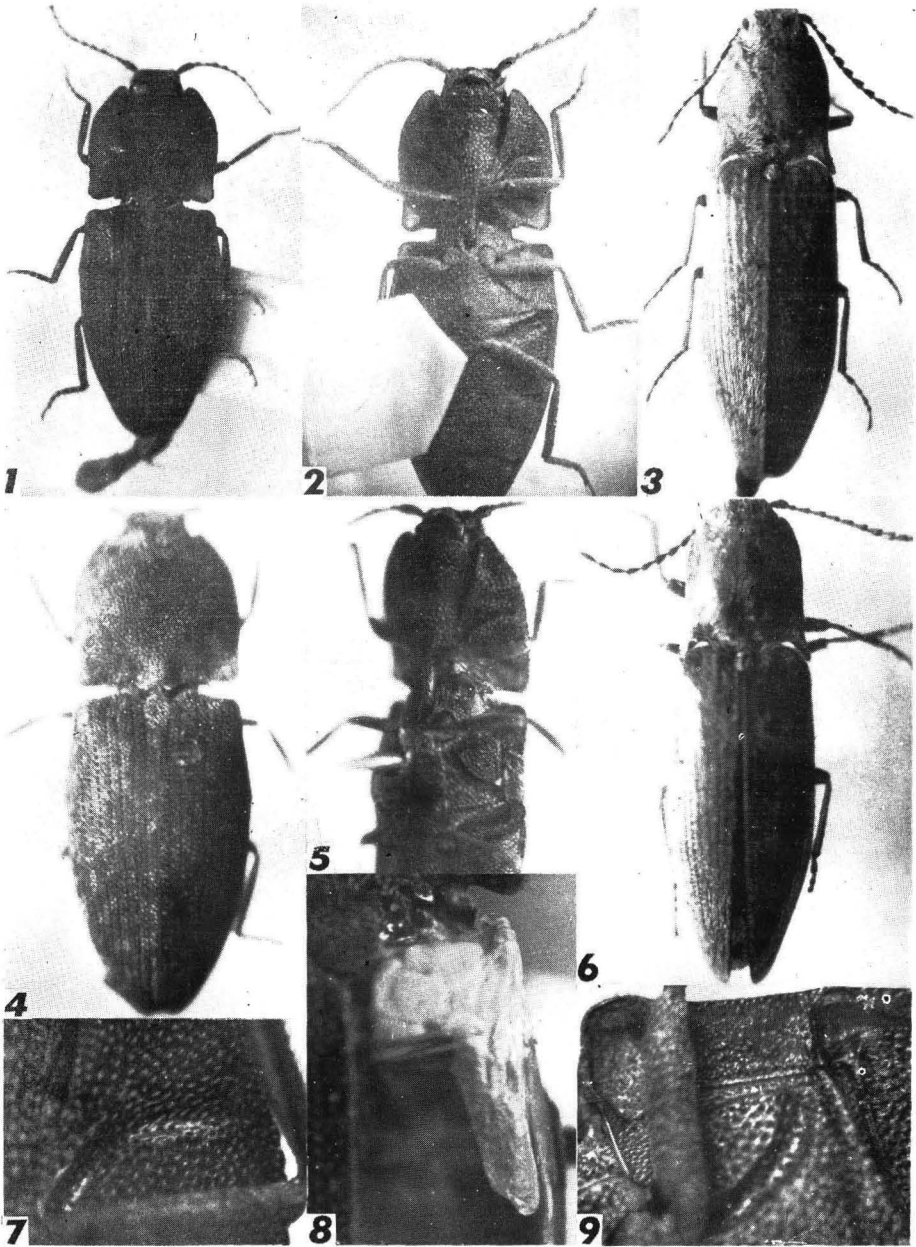


Plate III

