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Elateridae of Islands Rishiri-tô, Rebun-tô and Todo-jima

"The Snappers of Islands (III)"*

By

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Elateridae of Islands Rishiri-tô, Rebun-tô and Todo-jima "The Snappers of Islands (III)"*

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CONTENTS

I. Preface

The writer's most important intention to publish this paper is to make as correctly as possible a list of all the species of the snapping-beetles brought from Is. Rishiri-tô, Is. Rebun-tô and Is. Todo-jima in Hokkaidô (henceforth these three islands are briefly represented by Iss. Rishiri) by the members of the Biological Club of Héian High School, who made a biological expedition of these islands in 1958, and by Dr. Kintarô Baba[1] of Niigata prefecture in 1936, in the 2nd place, I wish I add and revise the previous works on the Elaterid-fauna done by some researchers, and to note and describe newly species or aberrant forms of the snappers caught or reported from Japan and the adjacent areas, including

* 岸井 尚（京都平安高等学校生物学教室）：利尻島・礼文島・海馬島の叩頭虫 "島のコメツキムシ (III)".

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. "Bull. Héian High School, No. 5, pp. 1～56, 11 plates, 2 tables, 8 photographies (March, 1961).

1) 馬場金太郎

some corrections about words or phrases of the prior papers in this series by the author.

Before going further, I want to express my hearty thanks to Messrs. Ryôga Kondô[2], president of the Héian High School, Ryôtetsu Satouchi[3], assistant president of the school, Fukumatsu Soramoto[4], ditto, Dr. K. Baba, director of Kurokawa Hospital in Niigata, Nobuzane Tamu[5], Keiichi Tsukamoto[6], Sôji Inoué[7], Yukiko Tsukamoto[8] and the members of the biological survey of the Héian High School as showing below, and Dr. Mitsuhiro Sasakawa[9], assistant professor of the Applied Entomological Laboratory of Kyôto Prefectural University, who participated in the expedition of the school as mentioned above as one of the chief members, for their kindness specially in placing the valuable collection at my disposal and in many ways, and to Dr. Masaaki Tokunaga[10], professor of the Applied Entomological Laboratory of Kyôto Prefectural University, Dr. Kichizô Takeuchi[11] in Yamashina, Kyôto, Dr. Chihisa Watanabe[12], assistant professor of the Entomological Laboratory of Hokkaidô University, Prof. Takashi Shirôzu[13] of the Biological Laboratory of Kyûshû University, Messrs. Teitarô Horio[14] in Kyôto, Yoshitsugu Tarui[15], teacher of the Attached Middle School of Kyôto Gakugei University, and Sanji Ichikawa[16], teacher of Hachigaoka Middle School in Kyôto, for their courteous helps given during the course of my study in various methods. Moreover I wish I acknowledge my indebtness to Assist. Prof. Masami Iguchi[17], head of the branch office of the 1st Teshio Experimental Plantation of Hokkaidô University, Mr. Shizuo Takahashi[18], head of secretary of the plantation, Mr. Kiyoshi Mase[19], chairman of Higashi-Rishiri village, Mr. Mizuho Yamanoi[20], teacher of Motodomari Elementary School, Mr. Kakuo Chiba[21], schoolmaster of Rishiri Elementary School, Mr. Haruo Shishido[22], head-teacher of Kutsugata Elementary School, Mr. Kanzaburô Mukaize[23], headman of Rebun village, Dr. Shinkichi Horié[24], director of Kafuka Hospital, and to all the participants of the Nishi-Honganji Branch Temple in Sapporo, of the branch office of the 1st Teshio Experimental Plantation of Hokkaidô University, of Wakkanai Agency of the Forestry Bureau, of Motodomari Elementary School, of Kutsugata E. S., of Rebun E. S. and of Sukoton E. S., and to the members of the Biological Club of the Héian High School for their many useful helps (not in order).

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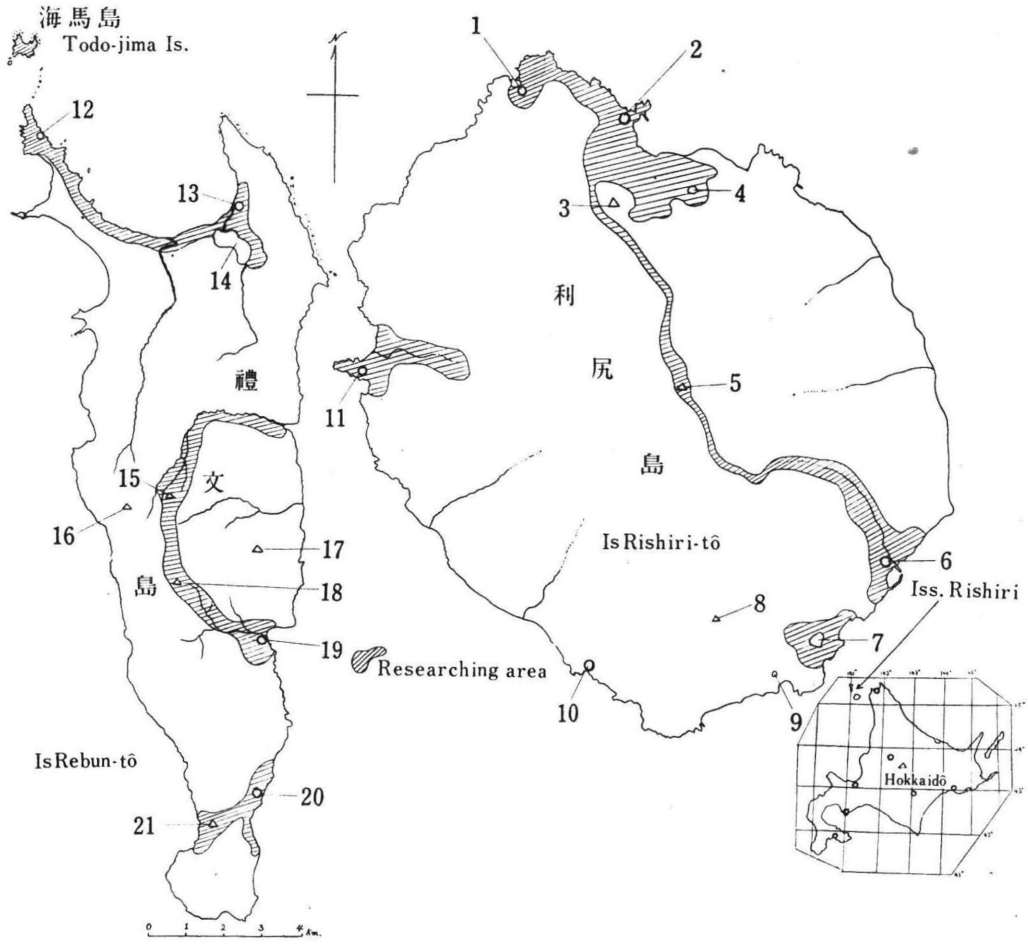
2) 近藤亮雅　3) 里内了徹　4) 空本福松　5) 丹　信実　6) 塚本珪一　7) 井上宗二
8) 塚本幸子　9) 笹川満宏　10) 徳永雅明　11) 竹内吉蔵　12) 渡辺千尚　13) 白水　隆
14) 堀尾貞太郎　15) 垂井由継　16) 市河三次　17) 猪口正巳　18) 高橋静雄　19) 間瀬　清
20) 山野井端穂　21) 千葉覚雄　22) 宍戸春雄　23) 向瀬貫三郎　24) 堀江信吉

Table I. Iss. Rishiri-tô, Rebun-tô and Todo-jima, and the Researching Area in the Expedition of the Héian High School



1. Motodomari
2. Oshidomari
3. Pon-yama (44m)
4. Hime-numa
5. Mt. Rishiri (1718 m)
6. Oniwaki
7. Otadomari-numa
8. Sembôshi pon-yama (32 m)
9. Menu-ushyoro-numa
10. Sembôshi
11. Kutsugata
12. Cape Sukoton
13. Funadomari
14. Kusu-ko Lake
15. Mt. Rebun-dake (490 m)
16. Mt. Sasadomari (360 m)
17. Summit of 299 m.
18. Mt. Futanami-yama (314 m)
19. Kafukai
20. Kafuka
21. Momo-iwa (249.5 m)

II. On Islands Rishiri

A. Rishiri-tô Island

This circular island belongs to Sôya Branch Office of Hokkaidô together with two other islands (Rebun-tô and Todo-jima). It lies on the Japan Sea to the west off the Cape of Noshappu[25], exactly speaking, it stands also Lat. 45°05′46″N. to Lat. 45°15′37″ N. and Long. 141°08′05″ E., to Long. 141°20′27″ E., and Oshidomari[26] being the mainest port of this island is situated about 37 kilometres to the south-west by west off Wakkanai city[27] which is the northmost city in Japan, and contains the main peak — Mt. Rishiri[28] (or Rishiri-fuji)[29], standing at the central portion and attaining to the height of 1718.7 metres, and has no plain. It also covers about 184 square kilometres in area, has 70.7 kilometres round, 16.4 kilometres distance to the northmost point from the southmost and has some 18.1 kilometres wide in another direction.

This island is also an extinct volcanic one, viz. oceanic island, located at the northmost end of Nasu Volcanic Zone and is composed by Pyrexene Andesite which is Intermediate Quaternary Effusive Rock, and by volcanic ashes.

B. Rebun-tô Island

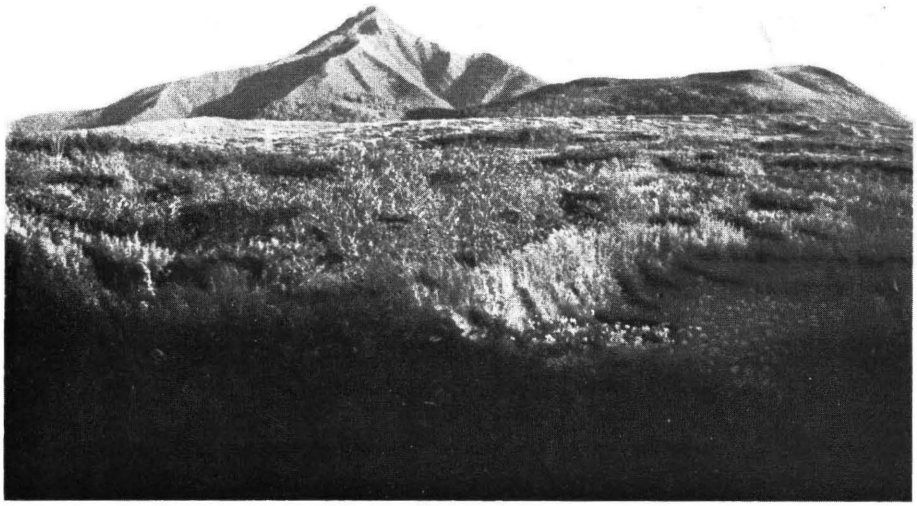
It stands about 46 kilometres to the west off Wakkanai city, accurately writing, Lat. 45°06′17″ N. to Lat. 45°27′45″ N. and Long. 140°57′56″ E. to Long. 141°04′16″ E., and lies to the north-west by north off Is. Rishiri-tô being in the Rebun Channel[30] of some 9 kilometres wide. It also covers about 83 square kilometres, has nearly 70 kilometres in circumference, 20.5 kilometres distance from the northernmost end to the southernmost, about 5.8 kilometres wide in middle measurements, and contains many hills (or small mountains) running up to the height from 200 metres to 500, among which the notable ones are as following : Rebun-dake[31] (490.0 m.) being the heighest in this island, Futanami-yama[32] (314 m.), Sasadomari-yama[33] (360 m.), and Momo-iwa[34] (249.5 m.) growing many wild species of alpine plant.

The main geography of this island is Accumulative Rock constructed by Agglomerates and Sandstone originating in Cretaceous Period of Mesozoic Era, and is Neogene Stratum of Tertiary Period covering the preceding, and it is plainly a continental island that was divided from Hokkaidô proper in the geological time.

C. Todo-jima Island

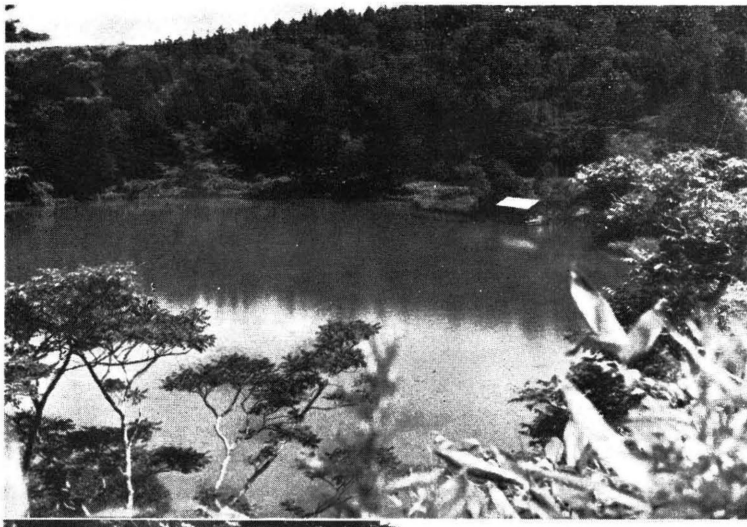
This islet is an accessory of Is. Rebun-tô, lies about 1.2 kilometres to the

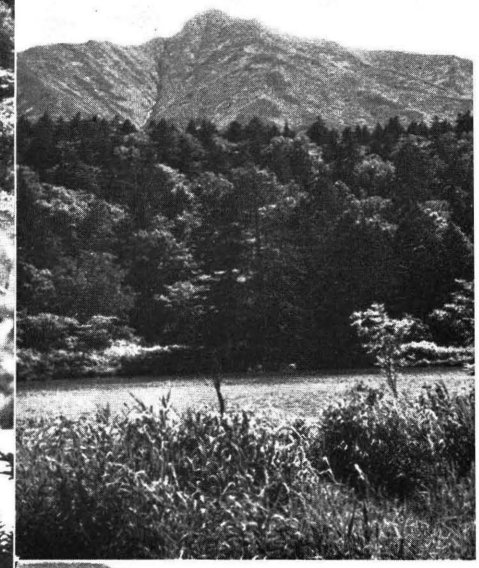
25) 野寒岬　26) 鴛　泊　27) 稚内市　28) 利尻山　29) 利尻富士　30) 礼文水道
31) 礼文岳　32) 二波山　33) 笹泊山　34) 桃　岩

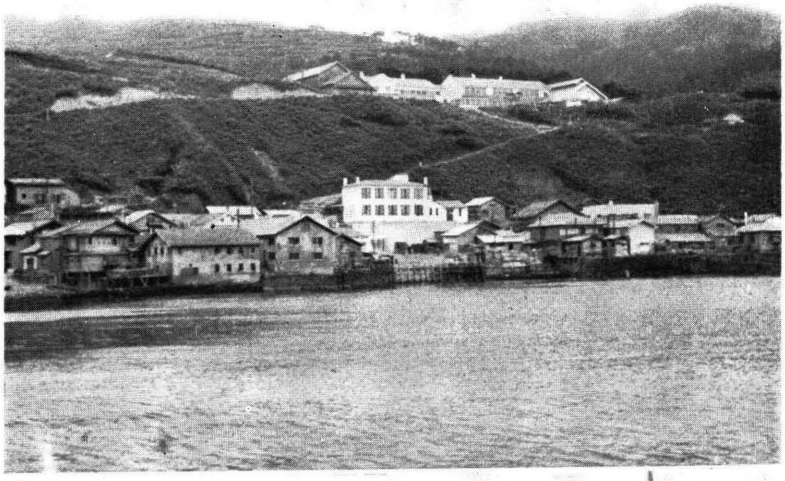


Mt. Rishiri (Rishiri-Fuji (alt. 1718.7 m), aspect fro Oniwaki, Is. Rishiri-tô.

Upper left : Hime-numa, views from Oshidomari-side, Is. Rishiri-tô.
Lower left : Primeval forest near Oniwaki, Is. Rishiri-tô.
Upper right : Numa-ura and Mt. Rishiri, aspect from southern side, Is. Rishiri-tô.
Lower right : Oshidomari port from the cape of Beshi (northmost point in this island), Is. Rishiri-tô.







Kafuka, aspect from east sea, Is. Rebun-tô.

Is. Todo-jima from Sukoton Cape, Is. Rebun-tô.

Southern side of Is. Todo-jima.

north off Sukoton Cape, which is northernmost one in Is. Rebun-tô, has the height of some 50 metres, covers about 0.3 square kilometres in area, and has nearly 2.6 kilometres circumference. (See photographies.)

III. The Samples Used

The greater part of the samples used in my present studying came to hand by a biological expedition that was carried out in 1958, through the kind courtesy of the Héian High School in Kyôto, by the members of its Biological Club and some accompanists from the 21st of July to the 14th of August in Iss. Rishiri, under the management of Mr. N. Tamu, teacher in charge of the Biological Laboratory of the school, and all the fellows constituted and the detail of the action were as follows.

1. Advance party
   a group : N. Tamu of leader, Hiroshi Nitta[35] of subleader, Yoshiyuki Gokijô[36] and Toshiaki Tanaka[37] of members.
   b group : The writer of leader, S. Inoué of subleader, Takeo Machida[38], Shûsuke Yoshida[39], Hiroshi Sawai[40] and Ichirô Sumisato[41] of members, and M. Sasakawa of accompanist.
2. Following party
   K. Tsukamoto of leader, S. Ichikawa of subleader, Y. Tsukamoto, Masami Aguchi[42], Tomomichi Honda[43], Shônan Nishimura[44], Masaya Uéda[45], Osamu Masaki[46], Yôji Yoshida[47], Tatsuki Nishigaki[48], Ken Fujiwara[49] and Shigeru Moriguchi[50] of members.
3. Normal party
   A group : N. Tamu of leader, M. Sasakawa of subleader, H. Nitta, S. Yoshida, Y. Gokijô and T. Honda of members.
   B group : The writer of leader, S. Nishimura of subleader, K. Fujiwara, Y. Yoshida, T. Tanaka and T. Nishigaki of members.
   C group : S. Inoué of leader, S. Ichikawa of subleader, M. Aguchi, I. Sumisato, H. Sawai and M. Uéda of members.
   D group : K. Tsukamoto of leader, Y. Tsukamoto of subleader, O. Masaki, S. Moriguchi and T. Machida of members.
4. Action detail (see map, Tab. I)
   Oshidomari (inclusive of Himenuma[51] and Beshi Cape), July 29～August 3, 8～10 ; Motodomari[52], August 1 ; Mt. Rishiri, August 2～7 ; Oniwaki[53], August

35) 新田　裕　36) 五鬼助義之　37) 田中俊明　38) 町田武雄　39) 吉田修介　40) 沢井　博
41) 住里一郎　42) 阿口昌己　43) 本多智道　44) 西村昭南　45) 上田征弥　46) 正木　修
47) 吉田洋児　48) 西垣達樹　49) 藤原　健　50) 森口　茂　51) 姫　沼　52) 元　泊
53) 鬼　脇

4～7 ; Kutsugata[54], August 8 and 9 ; Kafuka[55], August 11～14 ; Sukoton Cape, August 11～13 ; Mt. Rebun, August 13 ; Is. Todo-jima, August 12.

Fortunately, I had an opportunity to take part in this examination as showing above and to collect insects, specially beetles, and found totally 17 species of the elaterid-beetles which represented about 500 specimens and comprehended 2 new species, a new subspecies, 3 new aberrant forms and 13 species recorded newly from these islands (see Table II.).

Thereafter, in spring of 1959, according to the good will of Dr. K. Baba in Niigata, I had a chance to study and was requested to identify rather a large material of Elateridae brought from various places in Japan by himself up to 1958 since 1934. Among these elaterid samples 3 species consisting of 4 examples were labeled as the collection at Is. Rebun-tô in July 22, 1934. These three species are new members to the fauna of Iss. Rishiri as stating below.

In the end, in this researching, all the examples mentioned above are used for my studying, and these samples including the type specimens of new forms are deposited, with some exceptions having a plain preserving position in the following descriptions of this paper, in the Biological Laboratory of the Héian High School and in the collection of the author.

IV. On the Elaterid-Fauna of Islands Rishiri

With regard to the researches or reports of this family from Iss. Rishiri, till 1960 the only work was the reporting of two species : *Elater ainu* Lewis and *Athous* (*Crepidophorus*) *montanus* Miwa :——done by Dr. Yûshirô Miwa[56] in 1934, employing the collection of Dr. Kanyô Doi[57] in 1924, the one recently has belonged to *Ampedus* genus and the other was described as a new species with the samples from different localities, and moreover the genus, lately, is used as *Mucromorphus* (MS).

And more, in my paper titled "Elateridae of Is. Tsushima" which was my 2nd report in a series of the studying named "The Snappers of Island", and published in March 1961, I refered to the distribution of two species (*Procraerus helvolus* and *Silesis musculus*) among the samples carried by the expedition of Héian High School. Formerly in 1959, I made a prediction (Bulletin of Science Researchers' Association of Private Middle and High School in Kyôto Prefecture, No. 3, pp. 9～15, April 1959) on the present paper, but it was nothing but mimeograph copies and that it was dealt out only within narrow limits.

Now, after all when brings together all of the knowledge of the snapping-

54) 沓　形　55) 香　深　56) 三輪勇四郎　57) 土居寛陽

beetles from Iss. Rishiri stated above, namely Miwa's report and the examples by Dr. K. Baba and by the Biological Club of Héian High School, we find 8 subfamilies and 17 species in these islands, and among which, as drawn up a succeding list or table (see Table II), 4 species : *Hypolithus rivalis* Lewis, *Diacanthus impressus* Fabricius, *D. gloriosus* Kishii and *Negastrius rivalioides* Kishii : ——have been known from the summit of higher mountain only in Hokkaidô and northern Honshû, the typical subspecies or very closely affined species of some ones among them distribute from Siberia to northern Europe, 5 species or subspecies have been known from Hokkaidô only, and 9 species from Japan only.

Therefore, when we see the Elateridae distributing in these islands, we can perceive that the fauna has the close affinity to Japan, especially to Hokkaidô, as well as the northern Eurasian Continent.

Finally, all the new forms and revised species described in this paper are as follows.

A. New forms

Negastrius difficilis Lewis, ab. form. *infuscus* ab. nov.
Negastrius difficilis Lewis, ab. form. *pallidus* ab. nov.
Negastrius rivalioides sp. nov.
Yukara inornata Lewis, ab. form. *menoko* gen. *et* ab. nov.
Yukara inornata Lewis, ab. form. *gracilioides* ab. nov.
Mucromorphus montanus miwai subsp. nov.
Ampedus (Ampedus) yukoanus sp. nov.
Dalopius exilis ainu subsp. nov.

B. Revised species

Cryptohypnus rivalis Lewis to *Hypolithus (Hypnoidus) rivalis*
Elater impressus Fabricius to *Diacanthus impressus impressus*
Cryptohypnus difficilis Lewis to *Negastrius difficilis*
Athous inornatus Lewis to *Yukara inornata*
Elater ainu Lewis to *Ampedus (Ampedus) ainu*

V. Key to the Elaterid-Species from Islands Rishiri

1 (6) Body small, usually shorter than 10 mm. Mesepimeron small and not touching mesocoxae. Clypeus perfect, not bisected. Frontal carina also complete, well margined ahead enoughly.

2 (3) Body subcylindrical, about 7 mm. in length. Pronotal rear margin having a pair of distinct short sulci longitudinally. Scutellum cordate. Prosternum nearly as wide as each propleuron in median measurements, or a

Table II. The Distribution List of the Elaterid-Beetles from Iss. Rishiri

(○ : distributing sign
× : doubtfull sign on the distribution)

	1. Saghalien	2. Is. Kaihyô-tô (Is. Seal)	3. Iss. Kuriles (Iss. Chishima)	Hokkaidô: 4. Proper	Hokkaidô: 5. Is. Rishiri-tô	Hokkaidô: 6. Is. Rebun-tô	Hokkaidô: 7. Is. Todo-jima	Hon-shû: 8. Proper	Hon-shû: 9. Sado-ga-shima	10. Shikoku	Kyûshû: 11. Proper	Kyûshû: 12. Is. Tsushima	Kyûshû: 13. Is. Yakushima	Kyûshû: 14. Is. Amami-Oshima	15. Corea	16. Siberia	17. Europe	18. North America	Other Distribution and Remark
1. Hypolithus (Hypolithus) littoralis Eschscholtz		○	○	○	○											○		○	Kuriles : Iss. Etorup, Shimshu and Urrup.
2. H. (Hypnoidus) rivalis Lewis				○	○			○											Honshû : Mts. Hakkôda, Iwaki and Chôkai
3. Diacanthus impressus impressus Fabricius	○			○	○			○									○		Turkestan, Armenia
4. D. puncticollis Motschulsky	○		○	○	○	○	○	○											Kuriles : Is. Shikotan
5. D. gloriosus Kishii				○	○			○											Honshû : Mt. Chôkai
6. Negastrius difficilis Lewis				○	○	○													
ab. form. pallidus Kishii					○														
7. N. rivalioides Kishii				○	○			○											Honshû : Kamikôchi
8. Yukara inornata Lewis	○			○	○	○	○	×											
ab. form. menoko Kishii				○	○	○													
ab. form. gracilioides Kishii				○	○	○													
9. Mucromorphus montanus montanus Miwa				○	○														
10. Procraerus helvolus Candèze				○	○			○		○	○	○	○						
11. Ampedus(Ampedus)yukoanus Kishii				○	○														
12. A. (A.) ainu Lewis				○	○														
13. Dalopius exilis ainu Kishii				○	○														
14. Ectinus candezei candezei Lewis			○	○	○			○		○									Kuriles : Is. Shikotan
15. E. persimilis Lewis	○		○	○	○		○	○		○									Is. Kaiba-tô, Kuriles : Iss. Shikotan, Etorup and Kunashiri
16. Silesis musculus Candèze				○	○	○	○	○	○	○	○	○	○	○	○				
ab. form. flavipennis Lewis				○	○			○											
ab. form. crocatus Candèze				○	○	○	○	○			○								
17. Cardiophorus vulgaris Motschulsky				○	○	○		○								○			
Total (exception of ab. forms. and doubtful species on the distribution)	4	1	4	17	17	5	4	10	1	4	2	2	2	1	1	2	1	1	
				17				10			4								

little narrower than the latter, sutures straight or medianly incurved slightly, closed perfectly, single but having a fine suture along inner side of each propleuron, process very short, apex always truncate conspicuously. (**CARDIOPHORINAE**)

Body entirely black with the exception of each end of coxae, femorae, tibiae and tarsal joints brownish. Pronotal lateral margins imperfect, visibly only at posterior angles, but always having a fine suture on the outer side of each pleuron. Claws simple, not dentate. .... **17.** ***Cardiophorus vulgaris*** **Motschulsky** (p. 29, Pl. IV, fig. 9)

3 (2) Body more or less depressed, usually shorter than 4.5 mm. in length. Pronotal hind margin having no sulcus. Scutellum subsemicircular, never cordate. Prosternum very broad, about twice as wide as each propleuron in median breadth, sutures simple or double weakly, both outcurved medianly, process elongate and narrow. (**NEGASTRIINAE**)

Body covered distinctly with pubescence rather densely. Elytral punctate-striae visible. Scutellum simple, not excavated nor depressed strongly. Prosternal sutures not triple. Metasternum having no carina behind each mesocoxal cavity. Tarsal joints simple. (**Genus** ***Negastrius***)

4 (5) Body depressed clearly, 3.0~3.5 mm. in length, shiny. Pubescence fulvous. Brownish to yellow generally, in some individuales darker or rather blackish. Antennal 2nd joint shortest, rather bulbous, 3rd conspicuously longer than 2nd, nearly 1.5 times as long as preceding, triangular longitudinally, 4th to 10th rather feebly serrate. Pronotal punctation very fine, moderate in density. Prothorax well expanded outwards, widest at middle, having no median longitudinal suture. Elytral punctate striations weak, evanescent conspicuously on lateral half part. Generally found on the leaves of plant or ground at the plain. .... **6.** ***Negastrius difficilis*** **Lewis** (p. 18, Pl. I, figs. 11, 12)

Body more or less infuscate except of antennae, mouth parts, pronotal rear corners, propleural fore ends, prosternal anterior border, mucro, humeral part of each elytron, elytral margins, legs and posterior margins of the last abdominal segment more or less brownish to yellow. .... **ab. form.** ***typicus***

Body all the surface conspicuously yellow to a little brownish. .... **ab. form.** ***pallidus*** **Kishii,** ***nov.***

Body infuscate entirely with brownish tips of prothoracic rear corners and tarsi. ..... **ab. form.** ***infuscus*** **Kishii,** ***nov.***

5 (4) Body not depressed, rather swollen out but not cylindrical, 4 mm. in length, shiny. Pubescence griseous. Pitchy black having antennal joints

2nd and 3rd, end of basal one, trochanters, tibiae and tarsi yellowish brown clearly. Antennal joints 2nd and 3rd cylindrical, subequal in all the dimension, but the one a little larger than the other in length, 4th to 10th feebly serrate or triangular, basal joint largest. Pronotal punctation minute, but not so fine, dense in special at anterior surface, single. Pronotum a little wider than length in median measurements, well elevated medianly, having a medio-longitudinal smooth suture on anterior two-thirds only. Hind angles well-developing backwards sharply, a trifle divergent outwards, having an acute carination extending to near middle of prothorax along lateral sides parallelly. Elytral punctate striations very fine but distinct, not evanescent. Generally found under the stones at summit or the adjacent area of high mountain. ....**7. *Negastrius rivalioides* Kishii, *nov.*** (p. 19, Pl. I, figs. 7~10)

6 (1) Mesepimeron large, usually touching visibly mesocoxae. Prosternum subequal to each propleuron in width or a little narrower, sutures straight or incurved each other, process well developing backward, not truncate at apex. Pronotal lateral sides perfect. Scutellum moderate. Elytral punctate-striae complete.

7 (8) Tarsal claws pectinate distinctly. Clypeus bisected plainly, each one forming antennal scrobe. Frontal carina also bisected, being crests before eyes. (**SYNAPTINAE**)

Body medium, 6.5~8.5mm. in length, cylindrical. Frontal margin traverse, each crest before eyes not connected each other anteriorly. Antennae elongate, rather robust, scarcely exceeding tips of hind prothoracic angles by one apical joint of each one. .... **16. *Silesis musculus* Candèze**

Body black generally with antennae, legs, mouth parts and margins of pro-, meso- and metathorax and abdominal segments reddish brown. ... . **ab. form. *typicus***

Body black except elytra reddish yellow, legs and antennae ferruginous. ..... **ab. form. *flavipennis* Lewis**

Body black to brown, except pronotum and elytra reddish yellow, legs and antennae more or less reddish. .....**ab. form. *crocatus* Candèze**

8 (7) Tarsal claws simple.

9 (12) Two tarsal joints or three dilated, lamellate or expanded apically.

10 (11) Clypeus and frontal carina perfect usually. The 2nd and 3rd tarsal joints dilated or expanded apically, 4th generally small, 1st as long as next two combined together or a little longer. (**ATHOINAE**)

Body medium, 6.5~11.5 mm. in length, slender, a trifle depressed. Clypeus

very narrow at middle. Antennae rather elongate, exceeding clearly tips of rear angles by two apical joints in male, or nearly equal to length of prothorax and head combined together, 2nd joint smallest, a little longer than width, 3rd about 1.5 times as long as 2nd, obconic or rather triangular, 4th to 10th feebly serrated. Each pronotal hind angle having a brief carina. Each propleural posterior margin emarginate strongly. Prosternal sutures double imperfectly. Process bent suddenly inwards behind each procoxal cavity. (**Genus *Yukara nov.***)

Body brown to yellow, generally darker or infuscate at prothorax. Punctation on head and pronotum subocellate, rather dense. Elytral intervals among punctate-striae flat, punctures very fine. Punctation on under surface very minute, single, not so dense. ·····

·····**8. *Yukara inornata* Lewis** (p. 22, Pl. III, figs. 3~7)

Prothorax blackish brown. ·····**ab. form. *typica***

Prothorax entirely yellowish brown. ···**ab. form. *gracilioides* Kishii, *nov.***

Pronotum reddish brown except posterior border blackish traversely. ···

····· **ab. form. *menoko* Kishii, *nov.***

11 (10) Clypeus very narrow, not excavated at middle. Frontal margin feebly carinate, confluent medianly with clypeus. Head concave above strongly. The 2nd and 3rd tarsal joints weakly expanded apically, 4th dilated or lamellate rather plainly. Prosternal sutures double, closed entirely, straight. Mucro large, at near apex bent distinctly inwards. (**SENODONINAE**)

Body medium, 9~11 mm., slender, well depressed above as well as below. Very shiny with metallic lustre. Body black generally except mouth parts, basal two joints of antennae, pronotal posterior margin, elytral margin, prosternal sutures, propleural rear border, hind coxal plates, rear margin of last abdominal sternite and legs more or less brown to yellow, and elytra metallic greenish. Antennae serrated from 3rd joints, very elongate, distinctly exceeding tips of hind corners by 4 apical joints or more in male, 2nd smallest. Pronotal hind angles concave strongly, unicarination present briefly. Pronotal lateral sides narrowing straightly forewards. Pronotal punctures single, shallow, sparse rather. ·····

·····**9. *Mucromorphus montanus montanus* Miwa** (p. 23, Pl. III, figs. 8~12)

12 (9) Tarsal joints usually simple, 1st to 4th progressively diminishing apically in length.

13 (18) Clypeus perfect. Frontal carina also completely margined roundly, not vanished medianly. Body medium or small, feebly depressed above. Head prolonged obliquely forewards, mouth parts also extending ahead. Antennae fili- or serriform. Prosternal sutures more or less double.

(**AMPEDINAE**)

14 (15) Body minute, 3.5~5.0 mm., slender, elongate, yellowish with the exception of head and prothoracic anterior margin narrowly blackish. Antennnae slender, exceeding plainly tip of each pronotal hind corner by two apical joints or more in male, or attaining hardly to the tip in female, 4th to 10th serrated, each joint of them having a smooth medio-longitudinal carina. Pubescence whitish. Pronotal punctation very dense, ocellate conspicuously. ·····**10. *Procraerus helvolus* Candèze**

15 (14) Body longer than 7 mm., stout not so elongate. Antennae rather robust, short, always attaining scarcely to tip of each rear prothoracic angle or failing in both sexes, each joint having no carina medio-longitudinally. Pubescence blackish. Pronotal punctation not so dense, single.

16 (17) Body small, 7 mm. in length, parallel-sided. Black except tarsi brownish, pubescent fulvously. Antennal 2nd joint bulbous, smallest, 3rd a little longer than 2nd, subtriangular, 4th to 10th elongately triangular, 4th nearly as long as 2nd and 3rd combined together in length. Prothorax a trifle longer than width in median measurements, feebly convex above, parallel-sided at posterior one-third, then slightly narrowing forewards, punctation single, rather sparse, fine. Elytral punctate-striae very fine, interstices among these striations flat completely, not elevated at any parts. ·····**11. *Ampedus* (s. str.) *yukoanus* Kishii, *nov.*** (p. 25, Pl. III, figs. 1, 2)

17 (16) Body medium, 10~11 mm., rather robust, parallel-sided conspicuously. Black except 2nd and 3rd antennal joints, elytra, trochanters and tarsi reddish to orange, pubescence black. Antennal 2nd joint bulbous, 3rd about 1.8 times as long as preceding in length, 4th surely a little shorter than 2nd and 3rd combined together. Prothorax subequal to width in median length, convex moderately above, punctation rather dense, single, each puncture very shallow distinctly. Elytral striae punctate by round punctures, interstices more or less elevated. ····· ····· **12. *Ampedus* (s. str.) *ainu* Lewis** (p. 26, Pl. IV, fig. 7)

18 (13) 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 ahead. Body medium or small.

19 (28) Body commonly depressed rather strongly or dilated. Each crest before eyes rather traverse, or a little inclined anteriorly, sometimes confluent medianly each other. Each antennal scrobe opening forewards, not margined completely. Mouth parts usually prominent anteriorly. Hind coxal plates narrowing uniformly outwards, or in some genera strongly

expanded rearwards at inner one third. (**CTENICERINAE**)

20 (23) Each crest before eyes traverse plainly, always confluent medianly each other, forming an imperfect frontal carination, but usually bisected at clypeus entirely. Hind coxal plates enlarging backwards conspicuously at inner half, narrowing strongly outwards at outer one. (**Genus *Hypolithus***)

21 (22) Body a little small, 9 mm. in length, rather well convex above as well as below, shining. Brownish black having antennae, mouth parts, pronotal margins broadly, elytra, propleura, prosternal anterior border, meso- and metathoracic under surface, abdomen, and legs more or less yellowish brown. Grieseously pubescent. Head broad, quadrilateral nearly, punctation irregular, rather dense. Pronotum well convex, widest at middle, a little wider than length, punctures more minute than that on head, shallower, sparser, short unicarina having on each rear corner conspicuously. Scutellum large, broader clearly than length, traversely pentagonal, a trifle convex above, punctured minutely. Elytral striae fine, not punctate, interstices among these striae flat entirely, punctated at only anterior parts, most parts of elytra granulate minutely but distinctly. Prosternal process bent strongly inwards behind each procoxal cavity. Metasternum traverse conspicuously. Each hind coxal plate not expanding posteriorly, gently narrowing outwards only. .... **1. *Hypolithus* (s. str.) *littoralis* Eschscholtz** (p. 16, Pl. I, figs. 1, 2)

22 (21) Body small, 4.5~6.0 mm. in length, shiny with aeneous tint, convex above moderately. Cupreous black having basal 2 or 3 joints of antennae, prothoracic rear angles, margins of under surface, and legs brown to yellow and elytra more or less brownish, pubescent fulvously. Head large, moderately punctulate a little densely. Pronotum nearly as wide as length in median measurements or a little wider, convex above rather moderately, with a vestige of medio-longitudinal canaliculation, punctation sparser than that on head. Scutellum as wide as length. Elytral punctation among punctate-striations very fine, sparse. Prosternal process extending backwards straightly. Metasternum moderate. Each metacoxal plate enlarging distinctly backwards at inner one third. .... **2. *Hypolithus* (*Hypnoidus*) *rivalis* Lewis** (p. 16, Pl. I, figs. 3~6)

23 (20) Each crest before eyes inclined anteriorly, but usually not confluent each other at middle, fore margin of clypeus and head having no any delimitation. Antennal 2nd joint smallest, 3rd longest, about twice as long as 2nd, 4th largest, subequal to 3rd in length but 1.5 times as wide as. Hind coxal plates narrowing gradually outwards. (**Genus *Diacanthus***)

24 (25) Body medium, 14 mm. in length, depressed clearly, rather slender. Body

black, shiny, but having no metallic greenish tint on elytra. Pubescence grieseous, rather dense. Elytral interstices among punctate-striae rather flat, very minutely punctulate. ····· 3. ***Diacanthus impressus impressus*** **Fabricius** (p. 17, Pl. II, figs. 1~6)

25 (24) Body black, shiny, having usually distinct metallic greenish tint on elytra. Pubescence scarce.

26 (27) Body medium, 14~16 mm. in length. Elytral punctate-striae punctate regularly, fine, not rugose, interstices among striations smooth perfectly, very finely punctulate rather sparsely, intervals among the punctures smooth completely. Pronotal disc slightly concave medio-longitudinally at near posterior surface only. Usually found on the plants at lower mountain or plain in cold region. ····· 4. ***Diacanthus puncticollis*** **Motschulsky** (p. 17, Pl. II, figs. 7~9)

27 (26) Elytral punctate-striations irregular as well as punctures which are rugose plainly, intervals among the striae having minute traverse creases and fine punctures irregularly. Pronotal disc having a smooth medio-longitudinal suture elevated feebly. Always found under the stone at summit of high mountain. ····· 5. ***Diacanthus gloriosus*** **Kishii** (p. 18, Pl. II, figs. 10~14)

28 (19) Body more or less cylindrical. Each crest before eyes extending obliquely downwards. Antennal scrobes limited entirely. Mouth parts opening below. Antennal joints 4th to 10th ill-serrated usually.

29 (32) Body medium, longer than 9 mm. Black with brownish red elytra. Pronotal lateral margin curved downwards in anterior part, reaching to lower margin of eyes. The 4th tarsal joint simple, elongate.

30 (31) Body length 9~10 mm., slender, subcylindrical. Elytra always brownish red, having no infuscate part at suture. Antennae usually pale in colour, 3rd joint smallest, 2nd distinctly longer than 3rd and a little shorter than 4th. ····· 14. ***Ectinus candezei candezei*** **Lewis**

31 (30) Body length 11~12 mm., robust, well cylindrical. Elytral suture more or less infuscate. Antennae also infuscate, 2nd and 3rd joints subequal in all the dimension or the one hardly smaller than the other, and each of them conspicuously shorter than 4th. ····· 15. ***Ectinus persimilis*** **Lewis** (p. 28, Pl. IV, fig. 8)

32 (29) Body rather small, 6~7 mm. in length. Black having most parts of antennae, mouth parts, margins of prothorax, elytral most parts except border near suture black plainly, and legs more or less dusky yellow. Pronotal lateral margin rather straight, not reaching lower margins of eyes. The 4th tarsal joint bulbous, a little expanded or dilate apically. ····· 13. ***Dalopius exilis ainu*** **Kishii, *subsp. nov.*** (p. 26, Pl. IV, figs. 3~5)

VI. List of the Elateridae from Islands Rishiri with Some Original Descriptions of New Forms, and Notes

I. Subfamily CTENICERINAE Fleutiaux "Hirata kometsuki a-ka"

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

Genus *Hypolithus* Eschscholtz "Hisago kometsuki zoku"

Hypolithus Eschscholtz, Thon. Arch., vol. 2, pt. 1, p. 34, (1829) (Type : *Hypolithus littoralis* Eschscholtz, 1829).

Till quite recently, this genus, by most researchers, have been treated under the subfamily *Hypolithinae* based on the present genus, with some other genera: *Negastrius*, *Quasimus*, *Ascoliocerus* etc. But the writer, in 1956, divided these beetles into two groups by the structures of their mesepimera, exactly speaking, into the group of *Negastrius* and *Quasimus* as a new subfamily *Negastriinae* and into another group consisting of the remnant genera belonging to the subfamily *Ctenicerinae* for reasons of having not any important differentiations of body characteristics between two the subfamilies.

Hitherto, for the species included to *Hypolithus*, diverse generic names have been used, namely *Hypolithus*, *Hypnoidus*, *Cryptohypnus* etc. originating in the confusion of the connection between the generic name and genotype. In this paper, I agree to Lane's dealing in 1948 (in Proc. Ent. Soc. Washington, Vol. 50, No. 8, p. 221), and the result is that Japanese *Hypolithus* are represented by next 4 species : *Hypolithus littoralis* Eschscholtz (1829), *Cryptohypnus rivalis* Lewis (1894), *Corymbites motschulskyi* Fleutiaux (1902) and *Hypnoidus brunneofuscus* Nakane (1954). But three of the latter among them are closely allied to the European species *Elater riparius* Fabricius (1775) being the genotype of the genus *Hypnoidus* having straight prosternal process, conspicuously enlarging hind coxal plates, simple punctation on elytra etc. Though, Lane considered between both the genera mentioned above to be found no important generic differences in body characters, and Ōhira, in 1954, also submited to his opinion, I think that these structural discrepancies stated above are available for the classification of genus. Therefore, in this paper I transact *Hypnoidus* as a subgenus of *Hypolithus*. In 1928, Dr. Y. Miwa established newly a genus *Yezodima* under the subfamily *Diminae*, and two new species *Y. convexum* (as the genotype of this genus) and *Y. aeneonigra* were included, but Fleutiaux in 1944 (in Rev. Francaise d'Ent., X, p. 41) reduced *Yezodima* into *Hypolithus* as a synonym and the one of these species stated above into *H. littoralis* Eschscholtz. More for my part, I

think that the other species is perhaps combined to the genus *Ascoliocerus*.

1. ***Hypolithus* (*Hypolithus*) *littoralis* Eschscholtz** (Pl. I, figs. 1, 2)

"Kiberi maru kometsuki"

Hypolithus littoralis Eschscholtz, in Thon., Ent. Arch., II (1), p. 34, (1829) (North America).
Yezodima convexum Miwa, Ins. Mats., III(1), p. 39, Pl. 1, fig. 2, (1928) (Hokkaidô and Kuriles).

It is a new fellow to the fauna of this district. The sample used is only one dead body which was dug out of a sand down near sea coast, and has no legs nor antennae except basal joints. But it may be sure that the specimen is *Hypolithus littoralis* by reason of the conspicuous coloration and general outline of body.

Specimen examined : Is. Rishiri-tô, 1 example, Motodomari, August 1, 1958, T. Kishii leg.
Distribution : Japan (Hokkaidô and Is. Rishiri-tô), Iss. Kuriles (Is. Etrup, Is. Shimshu and Is. Urrup), Is. Kaihyô-tô (or Is. Seal), Kamtschatka, Arasuka and North America.

2. ***Hypolithus* (*Hypnoidus*) *rivalis* Lewis, *comb. nov.*** (Pl. I, figs. 3~6)

"Chibi hisago kometsuki"

Cryptohypnus rivalis Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 184, (1894) (Iwakisan).
Hypnoidus rivalis Miwa, Gov. Res. Inst. Formosa, Dep. Agr., Rep. 65, p. 88, Pl. III, fig. 7, (1934) (Mt. Daisetsu).
Hypolithus rivalis Ôhira, New Ent., III (2-3), p. 9, (1954).

The information of this minute elaterid-beetle from this district has not been given out entirely. This species is closely allied to European species *H. riparius* (Fabricius, 1775), but *rivalis* of Lewis has usually smaller body and degenerate hind wings, and up to date, this minute snappers have been reported only from the summit of Mt. Iwakisan (alt. ca. 1600 m.) in Aomori prefecture as the type locality and Mt. Daisetsu-zan (alt. ca. 2000 m.) at the centre of Hokkaidô, but in my collection, there are found some samples which are captured from other localities and the data are following : 1 male and 1 female, Mt. Ohdake (alt. ca. 1500 m.) in Mts. Hakkôda, Aomori, July 25, 1952, T. Kishii leg.; 2 males and 3 females, Mt. Chôkai-zan (alt. ca. 2200 m.) in Yamagata, July 21~22, 1957, T. Horio leg. In my view, between the examples from Mts. Chôkai, Hakkôda and Is. Rishiri belonging in Nasu Volcanic Zone, and those from Mt. Daisetsu-zan standing at the westmost area of Chishima Volcanic Zone, some trivial differences are found in the body characteristics of this apterous snapping beetles. For instance, the one has always a little smaller body, distinct brownish black coloration on elytra etc. in contrast to rather voluminous and dusky body of the other. However, I think, by the accord of other body structures, both of them cannot be enough differentiated so as to divide into two distinct subspecies. I am very much grateful for Mr. Teitarô Horio who sent me the last samples from Mt. Chôkai.

Specimens examined : Is. Rishiri-tô, 7 examples, Mt. Rishiri (alt. ca. 1700m.), August 2 to 7,

1958, N. Tamu, K. Tsukamoto and S. Inoué leg.
Distribution : Japan (Is. Rishiri-tô, Mt. Daisetsu in Hokkaidô, Mt. Iwakisan and Mt. Hakkôda in Aomori Pref., and Mt. Chôkai in Yamagata Pref.).

Genus *Diacanthus* Latreille "Kogane kometsuki zoku"

Diacanthus Latreille, Ann. Soc. Ent. France, ser. 1, III, p. 151, (1834) (Type : *Elater aeneus* Linnaeus, 1758).

Up to date, for all Japanese species of this genus, various generic names were used like the preceding genus on account of the insufficiency of plain structural differences or of the same reason to *Hypolithus*. And according to my researching, I regard that three following species at last are belonged under the genus.

Moreover, in Japan, the genus *Selatosomus* may be used only for *Corymbites onerosus* Lewis and *C. vagepictus* Lewis.

3. ***Diacanthus impressus impressus* Fabricius, *comb. nov.*** (Pl. II, figs. 1~6) "Miyama hirata kometsuki"

Elater impressus Fabricius, Ent. Syst., I (2), p. 223, (1792) (Europe).
Corymbites impressus Candèze, Mon., IV, p. 160, (1863).
Corymbites impressus impressus Szombáthy, Ann. Mus. Hung., VIII, p. 578, (1910).
Selatosomus (s. str.) *impressus* Reitter, Fauna Germ., III, p. 217, (1911).
Corymbites sachalinensis Miwa, Ins. Mats., II(3), pp. 141~142, Pl. V, fig. 17, (1928) (Ichinosawa and Kiminari in Saghalien).
Corymbites (*Selatosomus*) *impressus* Fabricius, var. *sachalinensis* Miwa, Gov. Res. Inst. Formosa, Dept. Agr., Rep. 65, p. 154, (1934).
Ctenicera (*Selatosomus*) *impressa* Ôhira, New Ent., III (4), p. 26 et 30, Pl. I, figs. 4~6, (1954) (Mt. Daisetsu, Kamikôchi, Mt. Yake, Mt. Tsubakuro and Mt. Yatsu-ga-dake).

On my studying the specimens from Japan have always more elongate 3rd and 4th antennal joints, rather rugose pronotal punctation on antero-lateral border, a little larger body and different formes of male genitalia as compared with European *impressus*, but there is not found more principal differences being worth special mention. It may happen that it is formed of a subspecies peculiar to Japan and the adjacent area (including Saghalien), and in that case, perhaps Miwa's name, viz. var. *sachalinensis* of this species is valid as the subspecific name. It is a new one to the fauna of this district.

Specimen examined : Is. Rishiri-tô, 1 male, Mt. Rishiri (alt. ca. 1100 m.), August 3, 1958, T. Kishii leg.
Distribution : North Europe, Turkestan, Armenia, Saghalien and Japan (Hokkaidô, Is. Rishiri-tô and Honshû—Alpine district).

4. ***Diacanthus puncticollis* Motschulsky** (Pl. II, figs. 7~9) "Kogane kometsuki"

Selatosomus puncticollis Motschulsky, Cat. Ins. Japon, (Bull. Soc. Nat. Mosc., XXXIX), p. 167, (1866) (Japan).
Corymbites (*Selatosomus*) *puncticollis* Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 260, (1894) (Chiuzenji and Sapporo).
Corymbites puncticollis Sakurai, Kontyû, XVI (1), p. 7, fig. 5, (1942).

Ctenicera (*Selatosomus*) *puncticollis* Ôhira, New Ent., III(4), p. 26&28, (1954) (Asama-kôgen).
Aphotistus puncticollis Nakane *et* Kishii, Coloured Illustr., Ins. Japan, (Col.) (pub. Hoikusha, Ôsaka), 1st ed., p. 12, (1955).
Diacanthus puncticollis Kishii *et* Ôhira, AKITU, V (3), p. 74, (1956) (Niigata).

The reporting of this snapper from the present region has been hitherto unknown entirely to me. Nakane and Kishii in 1960 (Col. Illustr. Ins. Japan, Coleoptera, 8th ed., p. 82) adopted *Selatosomus* for the genus name of this species and following one, but I, one of the authors, objected to this management.

Specimens examined : Is. Rishiri-tô, 2 examples, Oshidomari, July 29 to August 3, 1958, T. Kishii leg. ; Is. Rebun-tô, 1 example, July 22, 1934, K. Baba leg. ; Is. Todo-jima, 1 female, August 12, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô, Is. Rebun-tô, Is. Todo-jima and Honshû—Alpine region and the northern), Saghalien and Kuriles (Is. Shikotan).

5. *Diacanthus gloriosus* Kishii (Pl. II, figs. 10~14) "Ara-kogane kometsuki"

Corymbites rugosus Miwa (*nec.* Germar, 1817), Ins. Mats., II (3), p. 140, (1928) (Hokkaidô).
Corymbites (*Selatosomus*) *rugosus* Miwa, Gov. Res. Inst. Formosa, Dep. Agr., Rep. 65, p. 120, Pl. VI, fig. 5, (1934) (Mt. Daisetsu).
Aphotistus rugosus Nakane *et* Kishii, Coloured Illustr., Ins. Japan, (Col.) (pub. Hoikusha, Ôsaka), 1st ed., p. 12, Pl. 5, fig. 2, (1955) (Mt. Daisetsu).
Diacanthus gloriosus Kishii, AKITU, IV (3), p. 78, fig. 1, (1955) (Mt. Daisetsu).
Selatosomus gloriosus Nakane, Coloured Illustr., Ins. Japan, (Col.) (pub. Hoikusha, Ôsaka), 8th ed., p. 82, Pl. 25, fig. 542, (1960).

This beautiful elaterid-beetle has been hitherto unreported from this area.

Specimens examined : Is. Rishiri-tô, 4 examples, Mt. Rishiri (alt. ca. 1700m.), August 2 to 7, 1958, N. Tamu, K. Tsukamoto and S. Inoué leg.

Distribution : Japan (Is. Rishiri-tô, Mt. Daisetsu in Hokkaidô and Mt. Chôkai in Yamagata Pref.).

II. Subfamily NEGASTRIINAE Nakane et Kishii

"Mizu-giwa kometsuki a-ka"

Negastriinae Nakane *et* Kishii, Kontyû, XXIV (4), p. 202, (1956).

Genus *Negastrius* Thomson "Mizu-giwa kometsuki zoku"

Negastrius Thomson, Skand. Col., I, p. 106, (1859) (Type : *Elater pulchellus* Linnaeus, 1758).

6. *Negastrius difficilis* Lewis, *comb. nov.* (Pl. I, figs. 11, 12)
"Usu-cha mizu-giwa kometsuki"

Cryptohypnus difficilis Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 187, (1894) (Hakodate).
Hypnoidus difficilis Miwa, Gov. Res. Inst. Formosa, Dep. Agr., Rep. 65, p. 88, (1934).

New to this district. The present samples under my researching (about 50 specimens), in the general appearance, I after all determine as the same as Lewis, species given above, although it is also certain that there are some differences between the present individuales and the original description of *difficilis*, and the dissimilar points of my samples compared with the *difficilis*' description are as

follows.

1. Body rather shining plainly.
2. Coloration various, there are from entirely pale brownish examples to infuscate ones.
3. Basal three joints of antennae usually yellowish.

There is only one information about the report of this species, that is the original description of Lewis in 1894 from Hakodate by only one sample. Lately, I had an opportunity to study many examples from Hokkaidô with the specimens from Iss. Rishiri as following.

Moreover this species in my collection including the samples from Kamiotoineppu in Hokkaidô are divided into three aberrant forms as follows.

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

Specimens examined : 25 examples, Kamiotoineppu, July 26 to 27, 1958, T. Kishii leg.; 21 examples, Is. Rishiri-tô (Oshidomari, Mt. Rishiri, Kutsugata and Oniwaki), July 31 to August 9, 1958, T. Kishii leg.; 2 examples, Is. Rebun-tô (Kafuka and Sukoton Cape), August 11 to 12, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô and Is. Rebun-tô).

2) **ab. form. *infuscus nov.***

Body infuscate entirely except tips of pronotal hind angles, tibiae and tarsi brownish.

Specimens examined : 3 examples, Kamiotoineppu, July 26 to 27, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô).

3) **ab. form. *pallidus nov.***

Body all the surface conspicuously yellowish to a little brownish.

Specimens examined : 5 examples, Is. Rishiri-tô (Oshidomari), July 31 to August 3, 1958, T. Kishii leg.

Distribution : Japan (Is. Rishiri-tô).

7. ***Negastrius rivalioides sp. nov.*** (Pl. I, figs. 7～10)

"Miyama mizu-giwa kometsuki"

Male 3.8～4.0×1.8 mm, a little elongate-ovate, rather robust, not parallel-sided, well expanded, convex sufficiently above as well as beneath, shining. Wholly black except antennal 2nd and 3rd joints, mouth parts, tips of prosternal process, anterior parts of mesosternum, coxae and femorae brownish, trochanters, tibiae and tarsi more or less yellowish orange. Pubescence long, rather dense, grieseous to a trifle golden, recumbent distinctly.

Head broad, slightly convex above, having a feeble vestige of impression on median surface, a little declivous antero-downwards, punctation simple, dense, minute, regular in size generally, interspaces among the punctures smooth. Frontal margin well-defined, carinate strongly and very plainly, projecting roundly forewards, the carina upon each antennal scrobe especially conspicuous and

thick, ends of frontal margin before eyes divides incompletely as well as some species of genus *Yukoana*. Epistome narrowing medianly rather strongly, concave a little, sculptured scabrously by minute granules on whole surface, each antennal scrobe very broad, concave shallowly. Labrum elliptic, projecting ahead, weakly convex, scabrously punctate by rugose punctures. Eyes moderate.

Antennae short, not so slender, surely failing to attain to pronotal rear angles, joints 4th to 10th triangular, ill-serrated, becoming small and small progressively, more slender apically, joint 1st largest, robust, a little voluminous and cylindrical, 2nd and 3rd nearly similar in shape and measurements, subcylindrical, 4th subequal to the preceding or a trifle shorter, 11th about 1.5 times as long as 10th in length, subrhombic.

Pronotum feebly wider than length in median dimension, well convex simply, sides rounded, widest medianly, then narrowing slightly rearwards, a little strongly forewards, having a distinct medio-longitudinal smooth elevation, evanescent on posterior border. Punctation single, not so fine, a little sparser than that on head, becoming dense and dense anteriorly, sparse and minute progressively backwards. Each hind angle weakly divergent outwards, acute at apex, having long well-defined unicarina, extending forewards near middle along lateral side parallelly.

Scutellum rather triangular, but lateral sides subparallel anteriorly, rear apex not so pointed, roundly convex above, punctate very minutely.

Elytra at base wider clearly than across between tips of prothoracic hind corners, expanded conspicuously towards middle, then gently converging roundly, apex pointed obtusely. Suture elevated distinctly near middle. Striations fine, longitudinally punctate minutely, evanescent laterally as well as posteriorly, interspaces among the striations flattened perfectly. Punctation among the striae very minute, rather sparse, shallow, interstices among the punctures smooth.

Prosternum broader clearly than propleuron in median size, convex below moderately, having a pair of very deep traverse excavations near anterior rim, which is declivous obliquely downwards, well-definedly carinate roundly, lateral sides expanded outwards. Punctation single, a little dense, irregular in density, being dense and dense laterally, scabrously punctate at anterior border. Process extending backwards straightly, both sides elevated, tip pointed obtusely. Sutures semidouble, slender, between propleuron and prosternum concave broadly and deeply at anterior ends.

Propleuron elongate triangular, punctation single, more minute conspicuously and sparser than that on prosternal disc, intervals among the punctures smooth.

Mesosternal cavity expanded posteriorly, rear end rounded, subhorizontal. Mesosternum having a pair of rather traverse shallow depressions on both the

sides of anterior end of mesosternal cavity.

Metasternum moderate, punctate denser than that on prosternum by rather large sized punctures.

Hind coxal plates roundly expanded distinctly rearwards near middle, then suddenly narrowing laterally.

Legs not so slender.

Male genitalia as figured.

Female 4.0×1.8 mm., general outline similar to male, but body more voluminous. Pronotal punctation denser. Medio-longitudinal elevation on pronotal disc almost evanescent, having a vestige only. Carination on each rear corner short, extending hardly behind middle.

Described from a male holotype and a male isotype, Mt. Asahi-dake (alt. ca. 2200 m.) in the National Park of Mts. Daisetsu-zan, Central Hokkaidô, July 21, 1952, H. Ishida leg.; a female allotype, Mt. Rishiri(alt. ca. 1700m.), Is. Rishiri-tô, August 3, 1958, T. Kishii leg.; a male paratype, Kamikôchi, Nagano Prefecture, June 24, 1951, K. Tsukamoto leg. All the specimens are in my collection.

Distribution : Japan (Is. Rishiri-tô, Mt. Daisetsu in Hokkaidô and Kamikôchi in Honshû).

In the general features this new *Negastrius* is somewhat related with *Hypolithus* (*Hypnoidus*) *rivalis* Lewis, but, after all, they are separated into different subfamily by the structure of mesepimeron. More, according to the literature this species resembles Fleutiaux's species *Cryptohypnus nitidus* (1902), but in this present new species body is smaller than 5 mm. clearly, 2nd antennal joint is shorter distinctly than 3rd, yellowish joint is not 2nd only, pronotum has a medio-longitudinal suture, and hind angles diverge outwards slightly.

III. Subfamily ATHOINAE C. Schaufuss "Tsuya-hada kometsuki a-ka"

Athoinae C. Schaufuss, in Calwer, Käferb., ed. 6, p. 657, (1911).

Genus *Yukara gen. nov.* (Pl. III, figs. 3~7)

"Ezo tsuya-hada kometsuki zoku"

Body medium measurements, not parallel-sided, brownish, not fasciate nor maculate on upper surface, rather subcylindrical, not so depressed especially in female, a little densely pubescent. Frontal margin of head moderate, not so strongly extending forewards. Epistome narrowing medianly, not excavated, each antennal scrobe shallow. Head broad, a trifle concave. Eyes moderate, not so conspicuously prominent outwards. Antennae slender, elongate, exceeding clearly tip of each prothoracic rear corner by apical one joint or more in male, and reaching or failing to tip in female, joints 4th to 10th ill-serrated, 2nd a little

shorter than 3rd. Pronotal disc simple, subequal to width in length medianly, having a brief carination on each rear corner, which is scarcely divergent outwards, rather obtuse at apex. Scutellum moderate. Elytra also moderate, punctate-striae evanescent partly in some areas. Prosternal process bent suddenly inwards behind each procoxal cavity. Sutures straight, ill-double or rather single, closed perfectly. Propleural posterior margin emarginate near hind angles. Mesosternal cavity rhombic elongately. Hind coxal plates moderate. Tarsal joint 1st shorter clearly than three followings combined together, and nearly as long as next two together, 2nd and 3rd dilated apically and moderately, 4th smallest, simple. Each lateral lobe of male genitalia having a sharp projection at apical outer side.

Genotype : *Athous inornatus* Lewis, 1894.

In the general outline this genus should be placed near the genus *Harminathous* Kishii, but the characteristics of antennae, head, epistome and male genitalia are briefly separate each other. But and yet, this genus belongs to the group of genera *Harminathous*, *Harminius* etc. by means of having emarginate posterior edge of propleuron, and not to another group of *Hemicrepidius*, *Scutellathous*, *Stenagostus*, *Orthathous*, *Anathrathous* etc. having no emarginate propleural rear margin.

This new genus is represented by the only one species *Athous inornatus* designated above as genotype. New name is from the poem "Yûkara" by the Ainos and is feminine.

8. ***Yukara inornata* Lewis, *comb. nov.*** (Pl. III, figs. 3~7)

"Ezo tsuya-hada kometsuki"

Athous inornatus Lewis, Ann. Mag. Nat. Hist., (6)XIII, p. 225, (1894) (Junsai and Sapporo).
Athous fulvipennis Matsumura, Journ. Col. Agr., Tôhoku Imp. Univ., Sapporo, Jap., IV, p. 122, (1911) (Saghalien).
Athous (*Grypathous*) *inornatus* Miwa, Mushi, VI (1), p. 31, (1933) (Shikaribetsu and Kamiotoi-neppu).

Up to date, the reporting of this snapping-beetle from this region has not been quite given out. This species are very abundant in Iss. Rishiri, and they, in the result of my studying, are divided into three following aberrant forms, and the samples used include the individuals brought by Dr. K. Baba in 1936 from these islands and those of my collection from various localities in Hokkaidô.

Moreover, the present species has been hitherto treated by many researchers as a congeneric species with *Athous jactatus* Lewis (1894), but in my judgement, they are clearly heterogeneous by the discrepancies of the features of propleural hind margin.

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

Body dull brown. Prothorax blackish brown with a broad reddish area

behind the anterior angles. Elytra testaceous. Antennae brownish, base of each joint paler. Legs pale. Female darker.

Specimens examined : 175 examples, Is. Rishiri-tô, Is. Rebun-tô, Is. Todo-jima, Kamiotoineppu, Lake Shikaribetsu, Horomi Pass, Yamada Spa near Lake Shikaribetsu, Maruyama in Sapporo, Lake Kuccharo, Sôunkyô Gorge, Kushiro, Lake Akan, Ichinohashi near Nayoro, June to August, 1951 to 1958, N. Tamu, K. Tsukamoto, S. Inoué, A. Nobuchi and T. Kishii leg.

Distribution : Japan (Iss. Rishiri and Hokkaidô) and Saghalien.

Dr. Y. Miwa reported from Atago in Kyôto (1934), but it is very doubtful.

2) **ab. form.** ***menoko nov.***

Pronotum reddish brown with posterior border only blackish traversely.

Specimens examined : 42 examples, Is. Rishiri-tô, Is. Rebun-tô, Kamiotoineppu, Lake Shikaribetsu, Lake Kuccharo, Horomi Pass, July to August, 1951 to 1958, T. Kishii leg.

Distribution : Japan (Is. Rishiri-tô, Is. Rebun-tô and Hokkaidô).

3) **ab. form.** ***gracilioides nov.***

Body entirely yellowish brown except legs black.

Specimens examined : 63 examples, Is. Rishiri-tô, Is. Rebun-tô, Kamiotoineppu, Horomi Pass, Mt. Yôtei-zan, July to August, 1934 to 1958, K. Baba, Y. Uésumi and T. Kishii leg.

Distribution : Japan (Is. Rishiri-tô, Is. Rebun-tô and Hokkaidô).

IV. Subfamily SENODONINAE Schenkling "Tsuya kometsuki a-ka"

Senodoninae Schenkling, W. Junk's Cat. Col., 88, Elat., p. 417, (1927).

Senodoninae is a new subfamily to Japanese fauna of *Elateridae*.

Genus *Mucromorphus* Ôhira (MS)

"Midori tsuya-hada kometsuki zoku"

9. ***Mucromorphus montanus montanus*** **Miwa** (Pl. III, figs. 8, 9, 11, 12)

"Midori tsuya-hada kometsuki"

Athous (*Crepidophorus*) *montanus* Miwa, Gov. Res. Inst. Formosa, Dep. Agr., Rep. 65, p. 113, Pl. V, fig. 15, (1934) (Mt. Daisetsu, Kucchan, Rishiri, Mt. Nikkô, Mt. Nishikoma and Mt. Kurama).

Crepidophorus? montanus Nakane *et* Kishii, Colour. Illustr., Ins. Japan, (Col.) (pub. Hoikusha, Ôsaka), Enl. Rev. ed., p. 84, Pl. 25, fig. 559, (1955) (Oze-numa).

Mucromorphus montanus Nakane *et* Kishii, ibid., 2nd Enl. Rev. ed., p. 84, Pl. 25, fig. 559, (1957) (Oze-numa).

Originally, Miwa refered this species to the subfamily *Athoinae*, though the general structures of *montanus*, according to my researching, are conspicuously not those of *Athoinae*, in particular in the shapes of head and tarsal joints. Namely, its head appearances, that frontal margin is clearly confluent to epistome, crest before each eye is independent of frontal edge, and surface is excavated broadly and strongly, relate closely with the subfamily *Oxynopterinae*, but in having 2nd tarsal joint and 3rd surely expanding apically, and rather lamellar 4th, *montanus* also gets near the outline of the subfamily *Senodoninae*. In this paper, I put it in the subfamily *Senodoninae* taking a serious view of the latter chara-

cteristics mentioned above.

In the original description in 1934, Miwa appointed as the type locality of the present species many habitats in Hokkaidô and Honshû. However, in my judgement, between the samples from Hokkaidô and those from Honshû there are some distinct differences of body structures, and the original description of *montanus* conforms rather with the examples from Hokkaidô including Is. Rishiri-tô in dusky coloured antennae with them etc. Thereupon, this species, I think, should be divided into two different subspecies, viz. I designate the specimens from Hokkaidô district as the typical subspecies (holotype : the sample from Mt. Daisetsu in Miwa's original description), and as a new subspecies (ssp. *miwai nov.*) those from Honshû. They may be separated by the following differentiations.

1. Body rather robust, 10~16 mm., a little larger. Elytra having distinct metallic greenish tint. Antennae more or less dusky always at 3rd to 11th joints. ··· ····· **ssp. *montanus* Miwa**

1'. Body rather slender, 9~11 mm. Elytral tint greenish to a little brownish. Antennae usually pale, yellowish orange. ····· **ssp. *miwai nov.***

Described from a male holotype, a female allotopotype and 17 isotypes, Mt. Shiomi-dake (alt. ca. 3000 m.) in Nagano Prefecture, July 17 to 20, 1956, T. Horio leg.; 17 paratypes, Kamikôchi, Tokugô Pass, Mt. Ohtaki-yama, Meiji-yu Spa, Mt. Yokote-yama, Shibu-yu Spa, Mt. Yatsu-ga-dake, Mt. Senjô-ga-dake, Mt. Kiso-koma-ga-dake and Mt. Ontake in Nagano Prefecture, and Mt. Nôtori in Yamanashi Prefecture, July to August, 1949 to 1959, K. Kurata, S. Uéno, K. Tsukamoto, J. Akiyama and T. Kishii leg.

Although, in 1934, Miwa reported this species from Kyôto labeling "Mt. Kurama, 12 VIII, 1919, M. Suzuki leg.", it is a very question that the species had been found at such low hill in Kinki district.

Specimens examined : Is. Rishiri-tô, 6 males, Mt. Rishiri (alt. ca. 1700 m.), August 2 to 7, 1958, N. Tamu, K. Tsukamoto and S. Inoué leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô and Alpine district of Honshû).

V. Subfamily AMPEDINAE Fleutiaux "Kometsuki a-ka"

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

Genus *Procraerus* Reitter "Hoso-chibi kometsuki zoku"

Procraerus Reitter, Bestim. Tab., Heft. 56, p. 11, (1905) (Type : *Megapenthes tibialis* Lacordaire, 1835).

10. *Procraerus helvolus* Candèze "Chibi hoso-ki kometsuki"

Agriotes helvolus Candèze, Mém. Soc. Sc. Liége, (2) V, p. 30, (1873) (Nagasaki).
Megapenthes flavus Fleutiaux, Bull. Mus. Hist. Nat. Paris, VIII (1), p. 19, (1902) (Japan).
Procraerus helvolus Nakane *et* Kishii, Bull. Ôsaka Mun. Mus. Nat. Hist., No. 2, p. 5, (1955).

The reporting of this minute species from this district has been hitherto reported by the author (1961, Bull. Héian H. S., No. 5, p. 40), and it is the northernmost distribution of this species.

Specimens examined : Is. Rishiri-tô, 2 males and 7 females, Oshidomari and Kutsugata, August 1 to 9, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô, Honshû, Shikoku, Kyûshû, Is. Tsushima and Is. Yakushima).

Genus *Ampedus* Dejean "Kometsuki-mushi zoku"

Ampedus Dejean, Cat., ed. 3, p. 92, (1833) (Type : *Elater sanguineus* Fabricius, 1801).

11. *Ampedus* (*Ampedus*) *yukoanus sp. nov.* (Pl. III, figs. 1, 2)

"Ezo hoso-kuro kometsuki"

Male 6.8×1.8 mm, a little stout, depressed weakly above as well as below, elongate, subparallel-sided, shining moderately. Pitchy black, but antennae and legs partly brownish feebly. Pubescence fulvous, rather dense, long, recumbent slightly. Head moderate, convex roundly above, punctation simple but subocellate laterally, irregular in size, a little dense. Frontal carina well-defined, prominent triangularly downwards. Epistome very narrow medianly. Each antennal scrobe rather broad, triangular, shallow, sculptured scabrously.

Antennae exceeding tip of each prothoracic rear angle by one apical joint, basal joint not so robust, semiclavate, 2nd smallest, rather bulbous, 3rd triangular, longer slightly than the preceding, 4th to 10th serrated, 4th longest with exception of basal joint, subequal to 2nd and 3rd combined together in length.

Pronotum a trifle wider than length in median measurements, convex simply above, sides parallel at posterior one-third, then gently converging roundly ahead. Punctation simple, sparser weakly and more minute than that on head, interspaces among the punctures smooth entirely. Each rear corner hardly divergent outwards, apex blunt, unicarinate briefly.

Scutellum tongue-shaped, declivous anteriorly, convex above slightly, very sparsely punctulate by minute punctures.

Elytra at base subequal to distant between tips of pronotal hind angles, rather flat, parallel-sided, striae fine, punctate not so densely. Intervals among the striations flat completely, not convex at base, punctate by very minute punctures sparsely, interspaces among the punctures rather smooth.

Prosternum elevated longitudinally, punctation sparser than that on pronotal disc, being denser laterally, anterior rim bent downwards strongly. Process bent inwards behind procoxal cavities moderately. Sutures double, smooth, canaliculate plainly at anterior ends, slightly outcurved ahead. Each propleuron a little convex medianly, triangular, more densely punctulate by large sized punctures. Hind

coxal plates enlarged backwards distinctly, then narrowing straightly towards sides. Punctation on metasternum and abdominal sternites conspicuously minute and rather sparse compared with that on propleuron. Legs moderate.

Female 8.0×2.0 mm., similar in male, but body a little broad, legs somewhat dusky brownish.

Described from a male holotype, Mt. Rishiri (alt. ca. 900 m.), Is. Rishiri-tô, August 3, 1958, T. Kishii leg.; a female allotype, Yamada Spa, southern foot of Mt. Daisetsu and near Lake Shikaribetsu, August 1, 1951, T. Kishii leg.

Distribution : Japan (Hokkaidô and Is. Rishiri-tô).

This new *Ampedus* in general body appearances resembles perhaps *Ampedus pauxillus* and *A. parvulus* of Lewis in 1894, but *yukoanus* has usually a large body and entirely flattened intervals among elytral punctate-striae. Moreover, although, some European *Ampedus*-species, for instance *A. nigrinus* Herbst (1784) etc., also allied closely in body dimension, the present species may be easily separated from these species eventually by the ratio of antennal joints 2nd to 4th, feature on intervals among elytral punctate-striations, coloration of antennae and legs etc. New name is based on my daughter's name, Yûko, who celebrated her 3rd birthday at 17th December in 1961, in when time I was writing this manuscript.

12. ***Ampedus* (*Ampedus*) *ainu* Lewis, *comb. nov.*** (Pl. IV, fig. 7)

"Ainu aka kometsuki"

Elater ainu Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 35, (1894) (Ishikari river).

This *Ampedus* has been already reported from Is. Rishiri-tô by Dr. Y. Miwa (1934, Gov. Res. Inst. Formosa, Dept. Agr., Rep. 65, p. 78).

Specimens examined : Is. Rishiri-tô, 1 female, Oshidomari, July 30, 1958, T. Kishii leg.; 1 female, Kutsugata, August 9, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô and Is. Rishiri-tô).

VI. Subfamily AGRIOTINAE Fleutiaux "Muna-boso kometsuki a-ka"

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

Genus *Dalopius* Eschscholtz "Naka-guro kometsuki zoku"

Dalopius Eschscholtz, Thon. Arch., II (1), p. 4, (1829) (Type : *Elater marginatus* Fabricius, 1801).

13. ***Dalopius exilis ainu subsp. nov.*** (Pl. IV, figs. 3~5)

"Naka-guro kometsuki"

Commonly for the *Da'opius* individuales found in Hokkaidô, up to date since Dr. Y. Miwa in 1933, the European species *Da'opius marginatus* has been given as its latin name, or sometimes they have been treated as a different subspecies

of *marginatus*. However, in my recent studying, after all, I have a conviction that the samples from Hokkaidô are surely contained within the category of Japanese species *Da'opius exi'is* in the general body characteristics, specially in the form of male genitalia.

The present new subspecies from Hokkaidô, of which typical subspecies: *Da'opius exi'is* Kishii, AKITU, V (1), pp. 18, 20, figs. 1, 5, 8, (1959) (Honshû) : ——inhabits from Honshû to Kyûshû, at once, may be easily divided from the latter by the combination of following characteristics.

1. Body rather robust, subcylindrical in some views, not depressed, 6~7 mm., very shiny.
2. Coloration bright plainly, not dusky. Elytra always clear yellowish brown, having black narrow stripe along suture on intervals among the 1st to 2nd or 3rd punctate-striation. And delimitation between the yellowish part and black stripe very conspicuous, never obscure.
3. Pronotal margins usually yellowish, especially at hind corners broadly.
4. Antennae not slender.
5. Strial punctures on elytra rather minute and a little longitudinal at 1st and 2nd or 3rd striations, and clearly large and circular at 3rd to 9th.

Described from a male holotype, a female allotopotype and 47 isotypes, Is. Rishiri-tô, July 29 to August 9, 1958, T. Kishii leg. ; 1 paratype, Kamiotoineppu, northern Hokkaidô, July 26, 1958, T. Kishii leg.; 1 paratype, Lake Mashû, August 5, 1951, T. Kishii leg.

In the body coloration and the black stripe on elytra, this new *Da'opius* member is closely related with European species *D. marginatus* Fabricius, though the present subspecies of *exi'is* may be easily separable by the combination of following structures, viz. shape of male genitalia, which belongs plainly to that of *Da'opius exi'is* Kishii, a little small body, dark colored antennae and evanescent carination on each pronotal hind angle in general. Holo-, allotopo- and some paratypes are in my collection, and others are in the collection of the Biological Laboratory of the Héian High School.

Distribution : Japan (Hokkaidô and Is. Rishiri-tô).

Genus *Ectinus* Eschscholtz "Muna-boso kometsuki zoku"

Ectinus Eschscholtz, Thon. Arch., XI (1), p. 34, (1829) (Type : *Elater volhynensis* Fischer, 1823).

14. *Ectinus candezei candezei* Lewis "Kabairo kometsuki"

Agriotes ferrugineipennis Motschulsky, Bull. Soc. Nat. Mosc. XXXIX(1), p. 166, (1866) (Japan).
Agriotes candezei Lewis, Cat. Col. Japanese Arch., p. 16, (1877) (nom. nov.).
Agriotes sericeus Candèze, Elat. nouv., II, p. 49, (Ann. Soc. Ent. Belg., p. 193) (1878) (Awomori!).

Agriotes sericans Lewis, Ent. Monthl. Mag., XVI, p. 157, (1879).
Agriotes (Ectinus) sericeus Nakane, New Ent., I (1), p. 14, (1951) (Nojiri).
Ectinus candezei Kishii, AKITU, V(1), p. 19, (1956).
Ectinus candezei candezei Kishii, Bull. Héian H. S., No. 5, p. 47, (1961).

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

Specimens examined : Is. Rishiri-tô, 46 examples, Oshidomari, Oniwaki, Kutsugata, Mt. Rishiri and Numaura, July 29 to August 9, 1958, N. Tamu, K. Tsukamoto, S. Inoué and T. Kishii leg.; Is. Rebun-tô, 8 examples, Kafuka and Sukoton Cape, August 11 to 14, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô, Is. Rebun-tô, Honshû and Shikoku) and Kuriles (Is. Shikotan).

15. *Ectinus persimilis* Lewis (Pl. IV, fig. 8) "Oh-kabairo kometsuki"

Agriotes persimilis Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 312, (1894) (Junsai).
Ectinus persimilis Nakane *et* Kishii, Sci. Res., Oze Moor, p. 731, (1954) (Oze-numa).

Up to date, the reporting of this species from Iss. Rishiri has not been given out quite.

Specimens examined : Is. Rishiri-tô, 1 male and 1 female, Mt. Rishiri (alt. ca. 800m.), August 3, 1958, T. Machida et T. Kishii leg.; Is. Todo-jima, 1 female, August 12, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô, Is. Todo-jima, Honshû and Shikoku), Saghalien, Kuriles (Is. Shikotan, Is. Kunashiri and Is. Etorup) and Is. Kaiba-tô.

VII. Subfamily SYNAPTINAE Fleutiaux "Kuchibuto kometsuki a-ka"

Synaptinae Fleutiaux, Voy. Alluaud & Jeannel, Afr. or. Col., XIII, p. 100, (1919).

Since 1954, the author has wrongly used *Adrastinae* to the name of this subfamily by reason of having priority on my part, however this treatment had its origin in my misjudgement.

Genus *Silesis* Candèze "Kuchibuto kometsuki zoku"

Silesis Candèze, Monogr. Elat., IV, p. 458, (1863) (Type : *Silesis hilaris* Candèze, 1863).

16. *Silesis musculus* Candèze "Kuchibuto kometsuki"

Silesis musculus Candèze, Mém. Soc. Sc. Liège, (2) V, p. 31, (1873) (Japan).

It has been already known from this district by myself (1961, Bull. Héian H. S., No. 5, p. 48, from Iss. Rishiri). The samples from this region are separated into 3 aberrant forms as following.

1) ab. form. *typicus*

Specimens examined : Is. Rishiri-tô, 108 examples, July 29 to August 9, 1958, N. Tamu, K. Tsukamoto, S. Inoué and T. Kishii leg. ; Is. Rebun-tô, 1 example, July 22, 1934, K. Baba leg., 15 examples, August 11 to 14, 1958, T. Kishii leg. ; Is. Todo-jima, 3 examples, August 12, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô, Is. Rebun-tô, Is. Todo-jima, Honshû, Is. Sado-ga-shima, Shikoku, Kyûshû, Is. Tsushima, Is. Yakushima and Is. Amami-Ohshima) and Corea.

2) ab. form. *flavipennis* Lewis

Silesis musculus var. *flavipennis* Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 315, (1894)

(Nakasendo).

Specimens examined : Is. Rishiri-tô, 3 examples, Oniwaki, Kutsugata and Oshidomari, August 1 to 9, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô, Honshû, Kyûshû and Is. Tsushima).

3) **ab. form. *crocatus* Candèze**

Silesis crocatus Candèze, Elat. nouv., V, (Mém. Acad. Belg.), p. 68, (1893) (Yezo).
Silesis musculus var. *crocatus* Lewis, Ann. Mag. Nat. Hist., (6) XVII, p. 338, (1896).
Silesis musculus var. *flavicollis* Fleutiaux, Bull. Mus. Hist. Nat. Paris, VIII, p. 28, (1902) (Yezo).

Specimens examined : 37 examples ; Is. Rishiri-tô, July 29 to August 9, 1958, N. Tamu, K. Tsukamoto, S. Inoué and T. Kishii leg. ; Is. Rebun-tô, August 11 to 14, 1958, T. Kishii leg.; Is. Todo-jima, August 12, 1958, T. Kishii leg.

Distribution : Japan (Hokkaidô, Is. Rishiri-tô, Is. Rebun-tô, Is. Todo-jima, Honshû and Kyûshû).

VIII. Subfamily CARDIOPHORINAE Leng "Hana kometsuki a-ka"

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

Genus *Cardiophorus* Eschscholtz "Hana kometsuki zoku"

Cardiophorus Eschscholtz, Thon. Ent. Arch., II (1), p. 34, (1829) (Type : *Elater gramineus* Scopoli, 1763).

17. *Cardiophorus vulgaris* Motschulsky (Pl. IV, fig. 9)

"Kuro hana kometsuki"

Cardiophorus vulgaris Motschulsky, Schenck's Reisen Amurl., p. 111, t. 7, f. 21, (1860) (Siberia).
Cardiophorus pinguis Lewis, Ann. Mag. Nat. Hist., (6) XIII, p. 189, (1894) (Hakodate).

This species a new fellow to the fauna of this district.

Specimens examined : Is. Rishiri-tô, 9 examples, Oshidomari, Oniwaki and Kutsugata, July 29 to August 9, 1958, N. Tamu, K. Tsukamoto and T. Kishii leg. ; Is. Rebun-tô, 3 examples, Kafuka, August 11 to 14, 1958, T. Kishii leg.

Distribution : Siberia and Japan (Hokkaidô, Is. Rishiri-to, Is. Rebun-tô and Honshû).

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VIII. Summary

本研究は，丹　信実・塚本珪一・井上宗二及び筆者等の共同研究〝日本列島周辺の小島嶼の生物地理学的研究〟の一環をはなすものであり，北海道宗谷支庁利尻島・禮文島・海馬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，本地方の分布相について論述したものである。

用いられた標本は主として，平安学園生物クラブの調査行によるもので，これは1958年7月下旬から8月上旬に亘り，上記三島地方において行なわれた，生物調査行にて得られた資料である (Tab. I, p. 3参照)。時期的にやゝ遅かったが，本科甲虫は結局17種約500頭採集され，中に新種2，新亜種1，新異常型3及び本地方未記録種13が含まれた。更に新潟県黒川病院長馬場金太郎博士が，且って1934年夏禮文島にて採集された，3種4頭の資料を同博士の御好意により検し得た。この3種は何れも同島未記録種であった。

且って本地方からの叩頭虫類の報告は断片的なもの若干あるに過ぎず，これを総合すると，8亜科17種が分布することになる。この中には本地方特産と言うものは見当らぬが，分布的には種々興味深いものが見られる。例えば，*Diacanthus gloriosus*, *Negastrius rivalioides* 等は北海道本島では大雪山頂上部にのみ産し，又 *Hypolithus littoralis*, *Diacanthus impressus* 等が分布することは，本地方が前記2種によって北海道本島と強い関連性を持つと同時に，又後記2種により，大陸の影響をも強く受けていることを明確に示しているといえよう。猶，寒地帯における昆虫相の特徴として，種数の割に個体数が一般に極めて多いと云うことは，周知的事実だが，本科においても同様で，*Yukara inornata*, *Dalopius exilis ainu*, *Ectinus candezei*, *Silesis musculus* の4種が，吾々の採集せる叩頭虫の総個体数の80%を占めていた。

文末で極めて失礼だが，終りに臨み本研究を了するに当り資料の面，文献の点で種々お世話になった各方面の方々，調査旅行中に御援助をあたえられた関係方面の諸氏，更に平安学園校長先生，教頭先生始め諸先生，生物クラブ員及びOB諸君に対し満腔の謝意を捧げたく思います。

IX. Plates and Figures

Plate I

Hypolithus (*Hypolithus*) *littoralis* Eschscholtz : 1 (mucro in profile), 2 (left metasternum and metacoxal plate).

Hypolithus (*Hypnoidus*) *rivalis* Lewis : 3 (left metasternum and metacoxal plate), 4 (mucro in profile), 5 (male genitalia), 6 (right antenna in male).

Negastrius rivalioides Kishii : 7 (male genitalia), 8 (mucro in profile), 9 (left metacoxal plate), 10 (right antenna in male).

Negastrius difficilis Lewis : 11 (male genitalia), 12 (right antenna in male).

Plate I

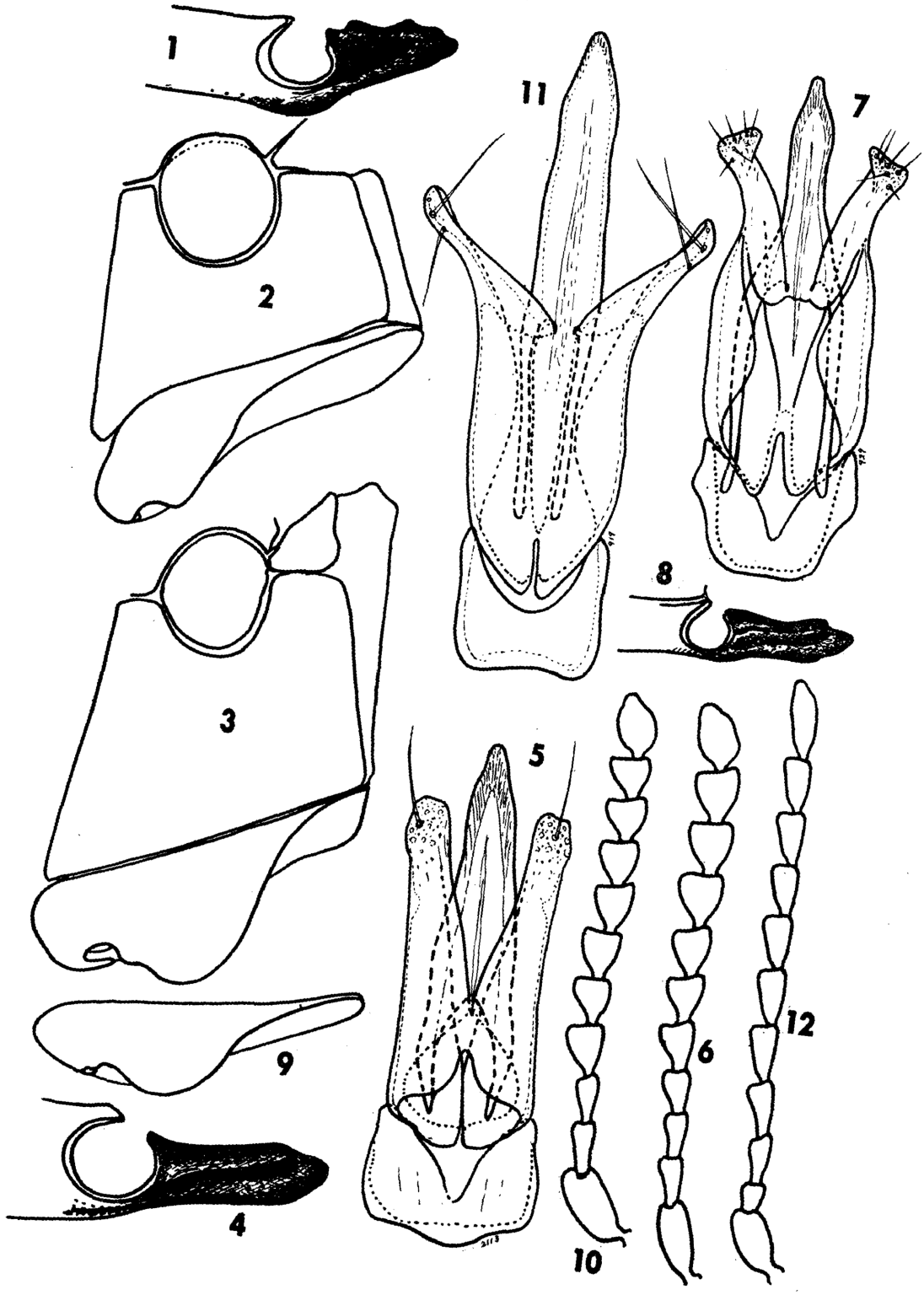

Plate II

Diacanthus impressus impressus Fabricius from Japan : 1 (mucro in profile), 2 (left metacoxal plate), 3 (right antenna in female), 4 (right antenna in male), 5 (male genitalia).

Diacanthus impressus impressus Fabricius from Europe : 6 (male genitalia).

Diacanthus puncticollis Motschulsky : 7 (mucro in profile), 8 (right antenna in male), 9 (male genitalia).

Diacanthus gloriosus Kishii : 10 (left metacoxal plate), 11 (right antenna in male), 12 (right antenna in female), 13 (male genitalia), 14 (mucro in profile).

Plate II

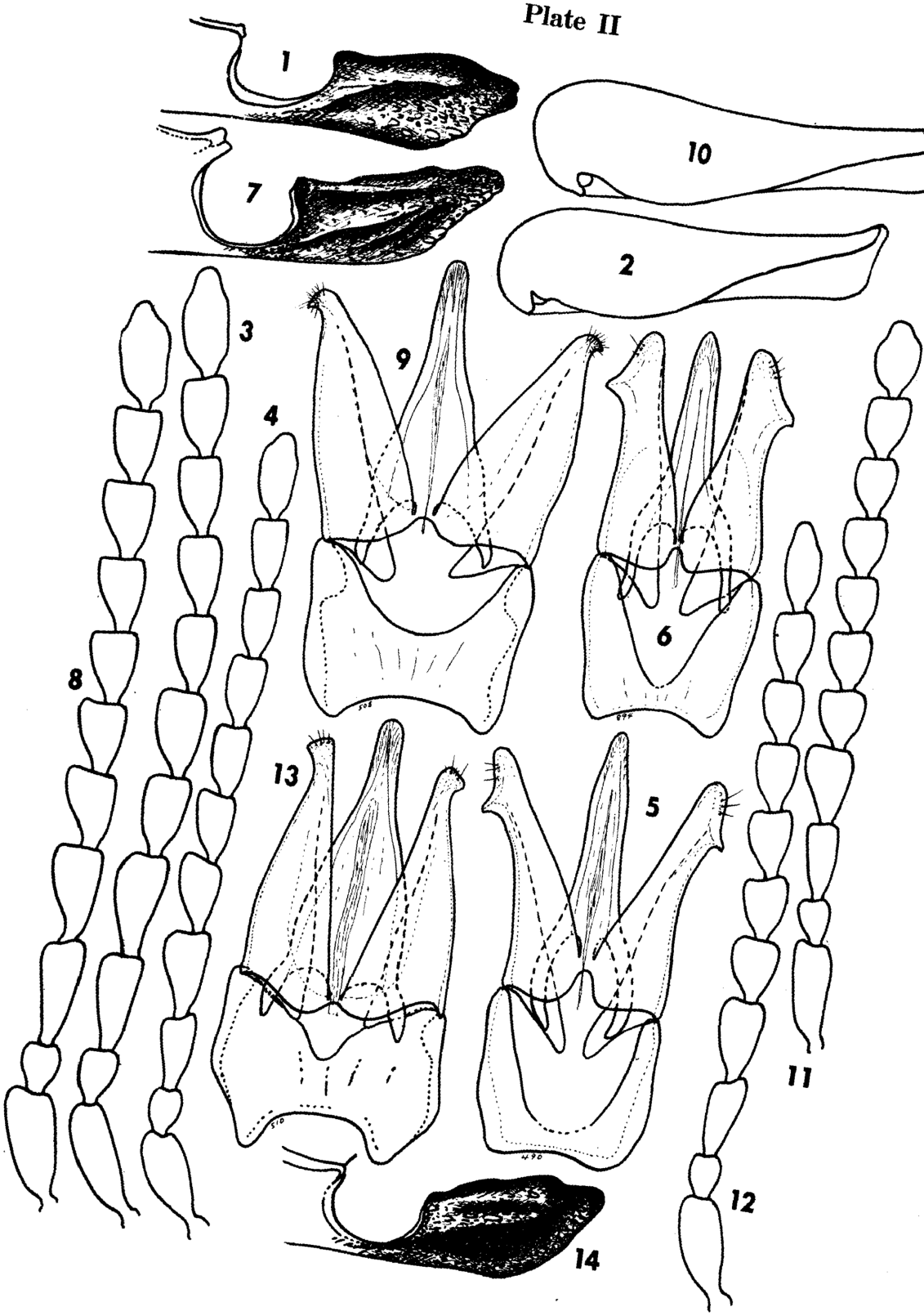

Plate III

Ampedus (*Ampedus*) *yukoanus* Kishii : 1 (male genitalia), 2 (right antenna in male).

Yukara inornata Lewis : 3 (male genitalia), 4 (rear part of left propleuron), 5 (right antenna in female), 6 (right antenna in male), 7 (mucro in profile).

Mucromorphus montanus montanus Miwa : 8 (mucro in profile), 9 (male genitalia), 11 (right antenna in female), 12 (right antenna in male).

Mucromorphus montanus miwai Kishii : 10 (right metatarsus).

Plate III

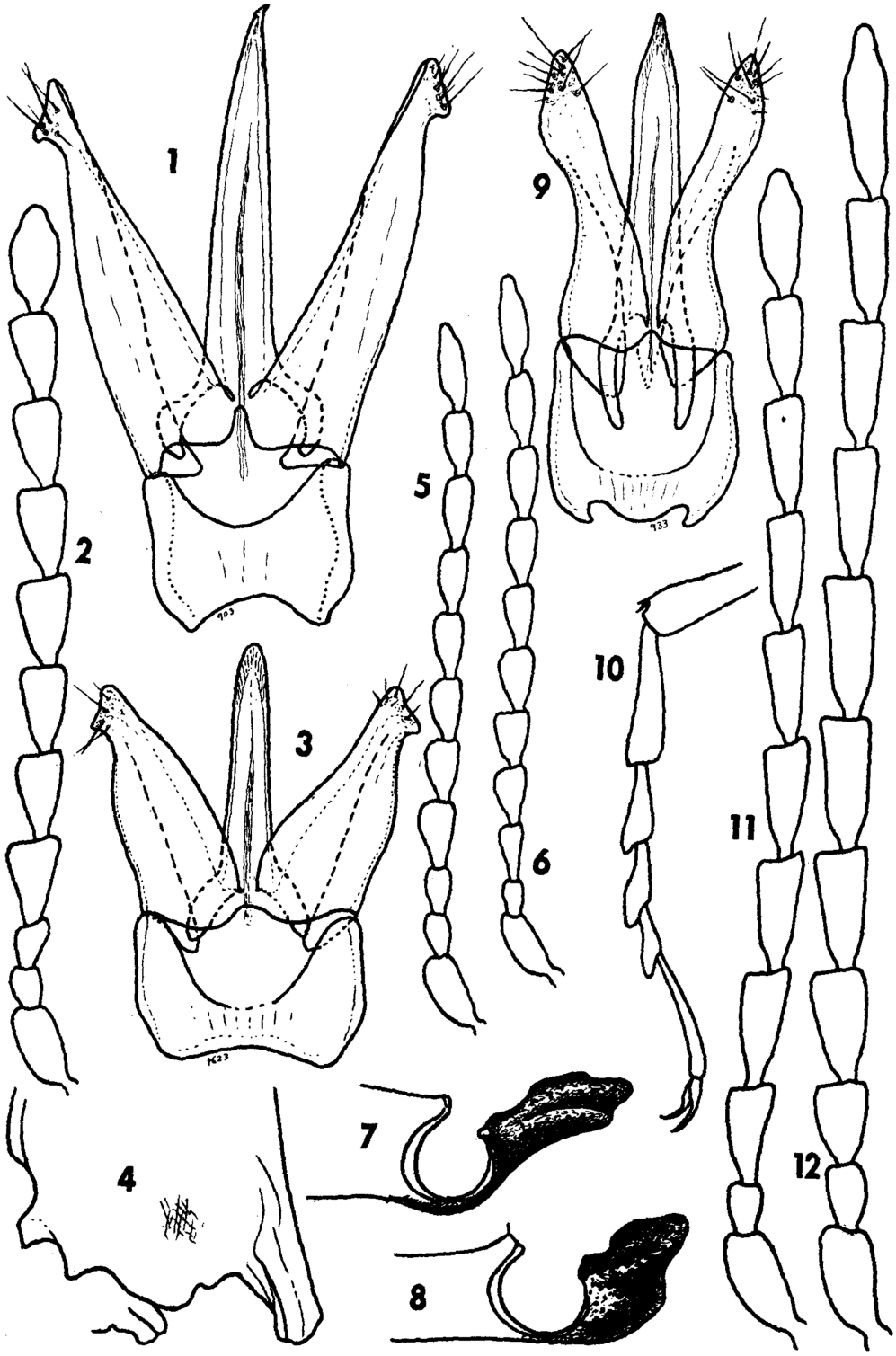

Plate IV

Dalopius exilis exilis Kishii : 1 (male genitalia), 2 (apical part of median lobe in male genitalia).

Dalopius exilis ainu Kishii : 3 (male genitalia), 4 (apical part of median lobe in male genitalia), 5 (right metatarsus).

Dalopius marginatus Linné : 6 (male genitalia).

Ampedus (*Ampedus*) *ainu* Miwa : 7 (male genitalia).

Ectinus persimilis Lewis : 8 (male genitalia).

Cardiophorus vulgaris Motschulsky ? : 9 (male genitalia).

Plate IV