Taxonomic study on the Tenebrionidae (Coleoptera) of the Ryukyu Islands

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Michitaka Chūjō

PREFACE

Up to the present, numerous species of the Tenebrionidae of the Ryukyu Islands have been reported fragmentarily, but in the lack of abundant materials, even an enumeration of the species has been virtually impossible.

Fortunately, however, the members of the Kyushu University Expeditions to the Yaeyama Group and the teams of entomologists sent to the Ryukyu Islands by the Japan-U. S. Binational Cooperative Science Program have made particular efforts during the summers and autumn of 1962, 1963 and 1964 to collect materials of the Tenebrionidae which have been of great assistance in the preparation of this paper. In addition, I was extremely fortunate in having at my disposal materials preserved in the collections of Kyushu University and B. P. Bishop Museum and in the private collection of Mr. T. Shibata.

This paper is the result of a taxonomic study on the Tenebrionidae of the Ryukyu Islands. The object of this work has been to compile and revise previous knowledge concerning the family of the islands and to present additional information made available by the present study.

Before going further I express my cordial thanks to Prof. K. Yasumatsu, Prof. S. Miyamoto, Prof. T. Shirōzu, Dr. K. Yano and Mr. T. Saigusa of Kyushu University for their continual kind guidance. I also express my sincere thanks to Dr. J. L. Gressitt of B. P. Bishop Museum and Mr. Shibata for the loan of specimens and for making facilities available to study some of the type specimens.

1 Contribution Ser. 2, No. 241, Entomological Laboratory, Kyushu University.
2 Entomological Laboratory, Faculty of Agriculture, Kyushu University.
HISTORICAL REVIEW OF THE STUDIES OF THE TENEBRIONIDAE OF THE RYUKYU ISLANDS

The outset of taxonomic and zoogeographic study on the tenebrionid beetles of the Ryukyu Islands was not so old. Actually the first record of the tenebrionid species was done in the last decade of the 18th century, and since then several studies had been intermittently reported. But in each report a few species were merely recorded with other beetles belonging to different families. The following is the historical account of the studies.

1. 1896. In his paper on the Coleopterous fauna of Japan, G. Lewis described on new species, *Plesiophthalmus brevipennis* from Amami-Oshima which was collected by R. P. Ferrié.
2. 1897. In his paper on the Coleopterous fauna of Ishigaki Is., L. Fairmaire reported *Amarygmus callichromus* sp. nov., *Eucyrus multicolor* Fairmaire and *Alphitobius nitidulus* Motschulsky which were presented to him by R. Oberthür.
3. 1897. L. Fairmaire described *Strongylium oshimanum* which was collected by R. P. Ferrié on Amami-Oshima.
4. 1898. L. Fairmaire described *Plesiophthalmus fuscoaenesens* from Ishigaki Is. which was collected by R. Oberthür.
5. 1927. In his list of Coleoptera of the Okinawa Prefecture, H. Yashiro reported *Tribolium ferrugineum* Fabricius.
6. 1931. Y. Miwa recorded *Plesiophthalmus fuscoaenesens* Fairmaire and *Amarygmus callichromus* Fairmaire from Ishigaki Is.

Before the World War II the descriptions of the Tenebrionidae of the Ryukyu Islands were exclusively found in the above mentioned eight papers and recorded tenebrionid beetles were only 13 species in number belonging to 12 genera. But since 1952, studies on the Tenebrionidae of this islands have started actively and until now, the following 16 papers have so far reported.

9. 1952. In his monograph of the genus Gonocephalum of India, Malay and eastern Asia, Z. Kaszab reported *G. coenosum* Kaszab (H. Sauter coll.) from Ishigaki Is. and *G. coriaceum* Motschulsky (T. Lenz coll.) from Amami-Oshima.
10. 1956. In his paper on the Coleopterous fauna of Japan, T.
Nakane described *Uloma tchoi* from Amami-Oshima and reported *Uloma excisa* Gebien from Nakanoshima of the Tokara Is.


12. 1961 (March). In his revisional work on the genus *Derispia*, Z. Kaszab described *Derispia japonica* (J. E. Lewis coll.) from Okinawa Is.

13. 1961 (August). In his revisional work on the tribe *Leiochrini*, M. Miyatake described *Derispia amamiana* and *D. shibatai* Chûjô et Miyatake from Amami-Oshima.

14. 1962. N. Ohhayashi recorded *Strongylus oshimanum* Fairmaire from Amami-Oshima which was collected by himself and showed the photo-figure of its dorsal view.

15. 1963 (May). In his paper on the Japanese Coleopterous fauna. T. Nakane described *Gonocephalum coriaceum takara* and *Cuedius maderi minor* from Takarajima of the Tokara Is.

16. 1963 (June, 20). In his revisional work on the Japanese *Gonocephalum*, M. T. Chûjô described *G. okinawanum* from Okinawa Is. and Takarajima and reported *G. coenosum* Kaszab from Iriomote Is. and *G. coriaceum* from Amami-Oshima.

17. 1963 (June, 30). In the iconography, T. Nakane illustrated 149 tenebrionid species. Among 30 species are from the Ryukyu Islands.

18. 1963 (June, 30). In this Coleopterous faunal work, S. Nomura reported *Strongylum* spp. (2 sp. nov., 4 subsp. nov. and 1 known subsp.) from the Ryukyu Islands.

19. 1963 (June, 30). In this paper, he described 7 spp. nov. and 1 subsp. nov. from the Ryukyu Islands.

20. 1963 (July). In his paper on the Coleopterous fauna of Iriomote Island, M. T. Chûjô recorded 8 tenebrionid species.

21. 1964 (April). Z. Kaszab reported the tenebrionid fauna of Tushima Is., the Tokara Is. and Amami-Oshima. His work was separated into two parts owing to the editorial reason. This paper was the first half. The outline of the tenebrionid fauna of these three islands, synonymies of several species, list of species on each island, original descriptions of 4 new species and the change of status of 1 known species were treated in this part.

22. 1964 (August). Z. Kaszab reported the second part. In this part, original descriptions of 4 new species, 1 new subspecies and 1 new combination of the known species were given.

23. 1964 (August). In his revisional work on the genus *Plesiophthal- linus*, H. Yamazaki reported *P. brevipennis* Lewis from Amami-Oshima and
P. fuscoacacneceus Fairmaire from Ishigaki Is., Iriomote Is. and Formosa.
24. 1964 (December). In his paper on the Coleopterous fauna of the
Ryukyu Islands and its adjacent regions, S. Nomura described
Strongylium uedai and Plesiophthalmus spectabilis okinawanum from
Okinawa Is. and recorded Strongylium marseul yuwanum Nomura from
Okinawa Is., Ishigaki Is. and Iriomote Is.

TAXONOMIC ENUMERATION OF THE SPECIES FROM THE
Ryukyu Islands

Subfamily Pedininae Solsky, 1834

1. Diphyrrhinchus iriomotensis sp. nov. (Pl. I: 3a-3d; Pl. II: 1)

Oblong oval, subparallel, feebly convexed, shiny black, with dark brown legs.
Head comparatively flat, coarsely and strongly punctate; frontal suture very
shallow but visible; frontal widely and deeply sinuate; eyes oblique, weakly and
roundly projected. Antennae 11-segmented, not reaching to base of pronotum;1-2 longer than 3, 7-10 transverse, apical one rounded, 7-11 forming a very loose
club. Maxillary palpus moderate in length, 2 longer than 3, apical one visibly
securiformed. Pronotum very minutely and densely punctate, weakly convexed;
front margin shallowly but widely sinuate, lateral margins narrowly marginate,
base feebly trisinuate, with a very sharrow and oblique fovea on each side.
Scutellum widely triangular, very minutely and sparsely punctate. Elytra re-
gularly convexed, with nine punctate-striae. 1 mostly reduced, but the other
striae distinct and becoming deeper towards apex; interstices very minutely and
sparsely punctate, flat at the basal 2/3, slightly convexed towards apex; lateral
margin widest near apex. Beneath evenly and slightly pubescent. Gular concave,
with surface strongly punctate. Prosterna punctate, punctures on middle 1/3
more scarce than outer sides; prosternal process elongate elliptic, sharpened at
apex, scarcely punctured on the surface; mesosternum depressed between middle
coxae for receiving prosternal process; metasternum strongly convexed, scarcely
and strongly punctured, with the median and posterior marginal sutures visible;
abdominal sternites with punctures, longitudinally and finely rugose, 1-3 of same
length, penultimate shortest, last two segments movable. Front coxal cavity
elliptic, obscure; front femur comparatively thick, with fine pubescence; front
tibia strongly widened towards apex, roughly structured on surface, shortly setose
on outside, with two spurs at apical corner; front tarsus with golden fine hairs
on undersurface, 1 triangle, 2-4 widely bifurcate, 4 shortest, 5 a little shorter
than 1 to 4 put together; claws bifurcated, simple. Middle coxal cavity elliptic,
obscure, closed outwardly with mesepimera; middle femur with sparse punctures,
pubescent; middle tibia widened towards apex, roughly structured and setaceous
on surface, with two spurs at apical corner, one long, another short; middle
tarsus with golden fine hairs, 1 weakly widened towards apex, 2-4 bifurcated, 4
shortest, apical one nearly equal to 2-4 put together. Hind coxal cavity trans-
verse, closed with metepisternum; hind tibia dilated towards apex, with rough and
setaceous surface, inside of apex with two spurs, one long, another short; hind
tarsus dilated towards apex, 1 longest and nearly equal to 3 and 4 put together.
Metendosternite comparatively complex, with lateral parts of ventral process of furca. Wing venation well developed, with radial sector, r-m cross vein complete, 3rd media rather long, cubitus (1 & 2) and post cubitus well developed, 1st anal vein short but visible.

**Length:** 4.5-6.0 mm. **Width:** 2.0-3.0 mm.

**Distribution:** Ryukyu Is. (Iriomote Is.).


This species is related to *D. shibatai* Kaszab [1964, Ent. Rev. Japan, 16 (2): 43-44], but is easily distinguished from it in having the following characters: Body much larger and stouter than *D. shibatai* Kaszab; lateral margin of pronotum curved moderately, while in *D. shibatai* Kaszab it is curved more strongly near front corner; elytral suture shallower near base and deeper near apex; front tibiae more strongly widened towards apex; gular more deeply concaved; punctures of prosternal process shallower; radial cell on the hind wing is present in *D. shibatai* while it is lacking in the new species.

2. *Diphyrrhinchus shibatai* Kaszab


**Distr.:** Ryukyu Is. (Amami-Oshima & Iriomote Is.*).

**Note:** According to the original description the colour of this species is as follows: "Körper dunkel pechbraun, mit sehr schwachem Bronzeschimmer." But many shiny black coloured specimens are found in our collection.

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3 Committee of Foreign Scientific Research of Kyushu University.
4 Japan-U. S. Co-operative Science Program.
5 Entomological Laboratory of Kyushu University.
6 Mr. Taichi Shibata.
Subfamily Opatrinae Laporte, 1840

3. Mesomorphus villiger (Blanchard)

*Mesomorphus villiger* Blanchard, 1853, Voy. Pôle Sud, Zool. 4: 154, Pl. x. Fig. 15 (New Guinea: Triton Bay).


382 (Japan: Kobe).

—*Mesomorphus demestoides* Reitter, 1904, Best.-Tab. europäischen Col., 53 (3): 74 (Central China, Tientsin & Hongkong).


—*Mesomorphus mustelinus* Fairmaire, 1882, Notes Leyden Mus., 4: 221 (Tropical Africa).


*Distr.*: New Guinea, Samoa, Indonesia, Malaysia, Viet-Nam, Cambodia, Thailand, China, Formosa, Korea, Japan, Ryukyu Is. (Amami-Oshima & Okinawa Is.) and Micronesia.

4. Gonocephalum coenosum Kaszab


—*Gonocephalum recticolle* (nec Motschulsky, 1856) Kaszab, 1941, Stettiner Ent Zeit., 102: 51 (Formosan: Takao, Pilam, Lake Candidius, Tainan & Kagi).


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*Asterisk shows the species which has hitherto been unrecorded from the district.*
5. Gonocephalum coriaceum Motschulsky


Opattum (Gonocephalum?) coriaceum (Motschulsky), Heyden, 1879, Deutsche Ent. Zeitschr., 23 (2): 353 (Japan: Osaka & Kiushiu).


Gonocephalum (Gonocephalum) coriaceum (Motschulsky), Reitter, 1904, Best.-Tab. europäischen Col., 33 (3): 142-143 (Japan; Mongolia; Sze-tschuan).

Spec. exam.: None.

Distr.: Japan (Hokkaido, Honshu, Sado Is., Shikoku, Kyushu & Tsushima Is.), Ryukyu Is. (Amami Oshima), Korea, China and Manchuria.

6. Gonocephalum moluccanum (Blanchard)


= Gonocephalum coriaceum (nec Motschulsky, 1857), Miwa, 1931, Syst. Cat. Formosan Col.: 152 (Formosa: Kunkau, Tainan, Anping, Kosempo & Garambi).

= Gonocephalum aurifaceous Schaufuss, in litt.


7. Gonocephalum okinawanum M. T. Chûjî


Distr.: Ryukyu Is. (Tokara Is., Amami-Oshima, Okinawa Is. & Iriomote Is.*).

8. Gonocephalum pubens Marsuel


Distr.: Manchuria, China, Japan (Honshu & Kyushu), Ryukyu Is. (Iriomote Is.*), Korea, Formosa and India.

9. Gonocephalum takara Nakane


Distr.: Ryukyu Is. (Tokara Is. & Iriomote Is.*).

Notes: This species was at first described by T. Nakane (1963) as a subspecies of G. coriaceum Motschulsky (1857). But, later Z. Kaszab (1946) treated this species as an independent species in his paper "The Entomological Review of Japan, 16 (2): 40 & 44-45". I agree with Z. Kaszab's opinion

10. Caedius maderi Kaszab


Distr.: Japan (Honshu, Izu Is., Shikoku & Kyushu), Ryukyu Is. (Tokara Is.) and Cambodia.

Notes: T. Nakane (1963) recorded the specimens collected in the Tokara Islands as a subspecies of C. maderi, but Z. Kaszab (1964) expressed his opinion that Nakane's subspecies may be a synonym of C.
maderi. I examined many specimens of this species collected in Japan (Honshu, Shikoku & Kyushu), Ryukyu Is. (Tokara Is.), Cambodia, etc. and came to the conclusion that the subspecific characters enumerated by T. Nakane for the Tokara specimens are nothing but individual variations.

11. Caedius minimus sp. nov. (Pl. II: 2)

Body oval, convexed; whole surface densely granulated, with golden short hairs; general colour piceous to dark brown; antennae and legs reddish brown. Head roughly granulated, preocular area narrow and parallel, frontal suture invisible, frontal margin deeply sinuate; eyes obscurely and narrowly depressed, widely separated from each other. Antennae thick and short, 1 larger than 2, 3 very narrowed at base, 4-10 transverse, 6-10 forwardly projected, 3-10 gradually sideden, 10 widest and longest, apical one rounded; maxillary palpus with securiformed apical segment. Pronotum transverse, lateral margins very weakly rounded, front corner rounded, frontal margin widely and deeply sinuate, hind margin rounded. Scutellum smooth, very small triangle. Elytra widest at 1/3 from base, lateral margins forming an elliptic curve. Gular suture invisible. Pronotum with long hairs near margins; prosternal process elliptic, surface very rough, feebly depressed; mesosternum depressed between middle coxal cavities for receiving prosternal process; mesepimeron scarcely reaching to middle coxal cavity; metasternum short; 3rd visible abdominal sternite shortest, apical one 2.5 times as long as 3rd, last two movable. Front and middle coxae round, hind coxae transverse; femur very thick, with comparatively long hairs, roughly granulated; front tibia flat extremely dilated towards apex, inside margin feebly curved inwardly, outside margin with a thick and obtuse projection, apical side of projection deeply sinuated, surface generally smooth, with an oblique groove for receiving tarsus, a few granules on undersurface, large and sharp spurs at apex; hind tarsus a little slender, feebly curved outwardly, with scarce setae on outside and two spurs at apex; front tarsus very fine, 1-4 almost of equal length, apical one rather thick, nearly equal to 2-1 put together; middle tarsus with rather thick hairs at apex of each segment, each segment dilated towards apex, 1-2+3, 4 shortest, 2+3+4=5; hind tarsus rather long, each segment dilated towards apex, 1 longest, 2 larger than 3, apical one longer than 2+3. Hind wing completely reduced.

Length: 3.0-3.5 mm. Width: 1.5-1.8 mm.

Distribution: Ryukyu Is. (Iriomote Is.).


This species is related to C. maderi Kaszab, 1942, from Kyushu, Japan, but may easily be distinguished from it by the following characters. This species is much smaller in general size, Pronotal hind margin of C. maderi is bisinuate but in this species it is evenly rounded. Sinuated part of front tibia of this species is smooth but in C. maderi it has two obtuse small projections.
12. *Trachyscelis chinensis* Champion


*Spec. exam.*: None.

*Distr.*: China and Ryukyu Is. (Tokara Is.)

13. *Micropedinus pallidipennis* Lewis


*Distr.*: Japan (Hokkaido, Honshu, Shikoku & Kyushu) and Ryukyu Is. (Amami-Oshima & Iriomote Is.).

14. *Dicraeosis carinatus carinatus* Gebien


*B. P. Bishop Museum.
Okinawa Is., x. 1963, no collector's name; 1 sp. (J US), Ushikumori 350 m., Iri-
omote Is., 2. xi. 1963, G. A. Samuelson leg.; 1 sp. (J-US), Karayama, Ishigaki Is.,
11. iv. 1964, C. M. Yoshimoto & J. Harrell leg.; 1 sp. (J-US), Gogayama, Oki-
Distr.: Formosa and Ryukyu Is. (Iriomote Is., Ishigaki Is.* & Okinawa Is.*).

15. **Byrsax japonicus** Lewis


Spec. exam.: 1 sp. (S), Ikari, Amami-Oshima, 17. v. 1960, T. Shibata leg.
Distr.: Japan (Honshu & Shikoku) and Ryukyu Is. (Amami-Oshima).

Subfamily Diaperinae Redtenbacher, 1845

16. **Diaperis lewisi intersecta** Gebien

*Diaperis lewisi* Bates var. *intersecta* Gebien, 1913, Arch. f. Naturg., 79A (9): 15
(Formosa: Fuhosho; China: Hongkong).

*Diaperis lewisi intersecta* Gebien, 1939, Kat. Tenebr., 2: (525) (Formosa & Hong-
kong).—Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 223,
Pl. exii, Fig. 11b (Nansei Is. & Formosa).

Spec. exam.: 1 sp. (KU), Ishigaki Is., 3. ix. 1936, T. Iwasaki leg.; 4 spp. (KU),
(CFSRKU), Upper Urauchi Riv., Iriomote Is., 9. vii. 1963, Y. Miyatake leg.; 17
Distr.: Formosa, Ryukyu Is. (Amami-Oshima, Ishigaki Is. & Iriomote Is.),
Hongkong, Viet-Nam, Laos and Burma.

17. **Diaperis sanguinipennis sinensis** Gebien

*Diaperis sanguinipennis sinensis* Gebien, 1925, Monogr. Tenebr.: 155 & 156 (China,
Nakanoshima & Takarajima).

Spec. exam.: 1 sp. (S), Takarajima, Tokara Is., 2. vii. 1960, Y. Hama leg.
Distr.: China and Ryukyu Is. (Tokara Is.).

18. **Scaphidema pictipenne** Lewis

*Scaphidema pictipenne* Lewis, 1894, Ann. Mag. Nat. Hist., (6), 13 (77): 397 (Japan:

Spec. exam.: 1 sp. (S), Ikari, Amami-Oshima, 22. vi. 1960, T. Shibata leg.
Distr.: Japan (Honshu) and Ryukyu Is. (Amami-Oshima).

19. **Platydema fumosum** Lewis

20. *Platydema marseuli* Lewis


= *Platydema nigroaeneum* (Motschulsky, 1960) Marseul, 1876, Ann. Soc. Ent. France, 6 (3): 105 (Japan: Kiusiu (Nagasaki)).


*Distr.:* Japan (Honshu, Shikoku & Kyushu), Ryukyu Is. (Amami-Oshima, Tokara Is., Ishigaki Is. & Iriomote Is.) and Sunda Is.

21. *Platydema pallidicolle* Lewis


*Distr.:* Japan (Honshu). Ryukyu Is. (Amami-Oshima*, Tokara Is. & Iriomote Is.*) and Formosa.

22. *Platydema subfascia* (Walker)


= *Platydema celebrense* Chevrolat, 1877, Pet. Mem. Ent., 2: 177 (Sunda Is.).


= *Platydema picicolle* (Motschulsky), Gebien, 1940, Kat. Tenebr., 2: (334) (Synonymized).

Distr.: Madagascar, India, Ceylon, Sunda Is., S. China, Formosa, Japan (Honshu, Shikoku, Kyushu & Tsushima Is.), Bonin Is. and Ryukyu Is. (Tokara Is., Ishigaki Is. & Iriomote Is.).

23. Busanus amamianus sp. nov. (Pl. I: la–ld; Pl. II: 3)

Body oblong oval; general colour black; two basal fascia and two apical spots on the elytra red; ventral surface and tarsi brown. Whole surface covered with very fine, golden pubescence. Head densely punctured; frons depressed; gena warped; eyes roundly projecting at each side. Antennae 1/3 of body length, with thick, short golden hairs, 11-segmented, 1 comparatively slender, 2 transverse, 1/3 of 1, 3=1+2, 4=6 of equal length, each of them thicker than 3, 7=10 of nearly equal length, each of 4–10 thickened towards apex, apical one oblong oval. Maxillary palpus 4 segmented, basal one short, oblique, 2 thickened towards apex, 3–1/2 of 2, rounded, apical one oblong oval, 2=3–apical one. Pronotum weakly convexed, roughly, irregularly punctured, front and lateral margins marginated, front margin widely sinuate. Scutellum smooth, parabolic. Elytra convexed, visibly marginated, shallowly striate- punctate, interstices irregularly punctured; subhumeral. Transverse fascia forwardly with three waves, middle tooth longest, backwardly with four waves; subapical spots small, oval. Ventral surface with even, very fine, golden pubescence. Pronotum without punctuation except pro-
sternal process, prosternal process projected backwardly, roughly punctured. Mesos sternum with strongly punctured triangular areas at both sides; mesepimeron and metasternum without punctation; metasternum strongly punctured. Visible abdominal sternites with even, fine punctation. Front and middle coxal cavity rounded; hind coxal cavity transverse. Femur flat; front femur with a shallow groove for the reception of tibia. Tibia slender, with short hairs, two spurs at apex. Front tarsus comparatively short; 1=2:3, 4 shortest, apical one nearly equal to 1-2 put together; hind tarsus long, slender, 1 longest, 3 shortest, 3 plus apical one nearly equal to 1. Wing with a reduced and shortened 3rd media, without 1st cubitus and anal vein; 2nd cubitus separated to two; r-s cross vein short but visible; without subcubital fleck. Metendosternite simple Y-shaped; stalk short and narrow.

Length: 6.0-7.5 mm. Width: 3.0-3.5 mm.

Distribution: Ryukyu Is. (Amami-Oshima).


This pretty species is very closely allied to *B. tsushimensis* M. T. Chûjô, 1963, from Tsushima Is., Japan and Mt. Kongo, Korea. The present species is generally smaller than *B. tsushimensis* M. T. Chûjô. In *B. tsushimensis* M. T. Chûjô, 3rd media and post cubitus of hind wings are clearly present while in the present species they are reduced and invisible. In addition, the male genitalia of the present species is shorter and the curvature is more weak in lateral view.

Z. Kaszab recorded *B. presuturalis* Pit [1964, Ent. Rev. Japan, 16 (2): 42] from Amami-Oshima. According to my present reexamination of the example from Amami-Oshima which was identified as *B. presuturalis* Pit and returned to the collector from Z. Kaszab, is identical with the present new species. *B. presuturalis* Pit is generally larger than both of the present species and *B. tsushimensis* M. T. Chûjô.

Note: The following is Pit's original description of *B. presuturalis*:

*Basanus presuturalis* n. sp. Elongatus, nitidus, niger, elytris antice luteo undulato-fasciatis et ante apicem ad suturam luteo notatis, his striato-punctatis, intervallis multi punctatis. Long. 8 mill. Laos (ex Vitalis).—Distinct, à première vue. de *javanus* Chev. par la position présuturale de la macule postérieure claire des élytres.

24. *Alphilophagus plagiatius* Marseul


Distr.: Japan & Ryukyu Is. (Ishiguki Is.)

25. *Ceropria induta induta* (Wiedemann)

*Helops induta* Wiedemann, 1819, Zool. Mag., 1 (3): 164 (Java).


Distr.: India, Ceylon, Andaman, Burma, Thailand, Viet-Nam, China, Hainan, Formosa, Philippines, Malacca, Singapore, Celebes, Sumatra, Nias, Java, Simalur, Dorneo, Palawan, Halmahera, Japan (Honshu, Shikoku, Kyushu & Tsushima Is.) and Ryukyu Is. (Tokara Is., Iriomote Is. & Ishigaki Is.*).

Notes: Castelnau and Brullé (1831) was seemed to place C. induta in the wrong section from the standpoint of the current knowledge of the taxonomy of the Tenebrionidae. When H. Gebien listed C. induta in his catalogue (1911 & 1940), he adopted Castelnau and Brullé's record with some doubt. In 1925, however, he criticized the above-mentioned Castelnau and Brullé's opinion as follows: = Castelnau et Brullé haben, wie schon Harold ausführt, unter induta Wiedemann möglichweise irgend eine andere Art verstanden. Aber ihre Beschreibung wiederspicht doch nicht geradzu der Deutung auf induta Wiedemann im Sinne Harold's."

26. Addia latior Nakane


Distr.: Ryukyu Is. (Amami-Oshima & Okinawa Is.*).
27. **Pentaphyllus philippinensis** Kaszab


*Spec. exam.:* 1 sp. (C), Nakanoshima, Tokara Is., 5. vii. 1960, M. Sato leg.

*Distr.:* Philippines and Ryukyu Is. (Tokara Is.).

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28. **Derispia japonica** Kaszab


*Distr.:* Ryukyu Is. (Amami-Oshima, Okinawa Is., Ishigaki Is.* & Iriomote Is.*).

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29. **Derispia klapperichi** Kaszab


*Distr.:* Ryukyu Is. (Amami-Oshima & Okinawa Is.*).

**Notes:**
a) So far as the coloration is concerned, *Derispia klapperichi* (described originally from Fukien Province in S. China) seems to be a variable species. Z. Kaszab (1961) published the following description on the coloration of this species: “Halsschild einfarbig schwarz. Flügeldecken rot mit grossen schwarzen Flecken: 1 Basalmakel in der Mitte, 1 gemeinsamer Schildchenfleck, 1 gemeinsamer Suturalfleck hinter der Mitte, ausserdem die Naht und der Seitenrand, sowie 1 Scheibenfleck in der Mitte schwarz (ab. *separata* ab. nov.), oder der Scheibenfleck und der mittlere Marginalfleck miteinander verbunden (forma *typica*), oder wie die vorige, aber der Scheibenfleck vorne mit dem Scutellarfleck, hinten mit dem Suturalfleck verbunden (ab. *con-
If the description and three figures shown in his paper are compared with *D. shibatai*, it is not difficult to consider that *D. klapperichi* and *D. shibatai* are the same species. I agree with Kaszab’s opinion (loc. cit. 1964).

b) Some specialists have the opinion that it is unsuitable to place this group (tribe *Leiochirini*) in the family Tenebrionidae. But I cannot agree with their opinion, because there is no reason to exclude this tribe from the present family from the structural characters of antennae, front coxal cavities, tarsus, metendosternite, wing venation and so on.

Subfamily *Phrenaphinae* Lacordaire, 1859

30. *Tagalus tokaranus* Nakane


*Distr.:* Ryukyu Is. (Tokara Is., Ishigaki Is.* & Iriomote Is.*).

Subfamily *Ulominae* LeConte, 1862

31. *Gnathocerus cornutus* Fabricius


*Spec. exam.:* 1 sp. (KU), Naze, Amami-Oshima, 12. vii. 1933, T. Esaki & K. Yasumatsu leg.

*Distr.:* Cosmopolitan & Ryukyu Is. (Amami-Oshima*).

32. *Tribolium* (*Tribolium*) *castaneum* (Herbst)

*Colydium castaneum* Herbst, 1797, Natursyst. Ins. Käfer, 7: 292, Pl. cxii, Fig. 13 (Europe).

*Tribolium castaneum* (Herbst), MacLeay, 1825, Annul. Javanica: 47 (Java).

*Tribolium* (*Tribolium*) *castaneum* (Herbst), Gebien, 1910, Kat. Tenebr., 2: (507) (Cosmopolitan).

*Tribolium ferrugineum* (Fabricius), Marseul, 1876, Ann. Soc. Ent. France, 6 (5): 112 (Japan: Kiu-Siu).

Distr.: Cosmopolitan; Japan (Hokkaido, Shikoku & Kyushu) and Ryukyu Is (Okinawa Is., Amami-Oshima & Iriomote Is.*).

33. Cneocnemis laminipes Gebien

Cneocnemis laminipes Gebien, 1913, Arch. f. Naturg., 79 A (9): 20, f. 27, t. 1, f. 6 (Formosa).—Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 227, Pl. cxiv, Fig. 7 (Japan: Kyushu, Yakushima & Formosa).


Distr.: Formosa, Japan (Kyushu) & Ryukyu Is. (Yakushima, Ishigaki Is.* & Iriomote Is.*).

34. Uloma excisa excisa Gebien


Ulomae excisa excisa Nakane, 1956, Sci. Rep. Saikyo Univ., 2 (3): A 167, Pl. ii. Fig. 25 (Tokara Is.: Nakanoshima); 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 227, Pl. cxiv, Fig. 9 (Nansei Is.).


Distr.: Formosa and Ryukyu Is. (Tokara Is., Iriomote Is. & Ishigaki Is.*).

35. Uloma ichoi Nakane


Distr.: Ryukyu Is. (Amami-Oshima & Iriomote Is.*).

36. *Alphitobius diaperinus* (Panzer)

*Tenebrio diaperinus* Panzer, 1797, Faunae Ins. Germaniae, 37: 16 (Germany).

*Alphitobius diaperinus* (Panzer), Marseul, 1876, Ann. Soc. Ent. France, 6 (5): 112 (Japan: Kiusiu).—Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 227, Pl. cxiv, Fig. 12 (Japan: Honshu, Shikoku & Kyushu; Nansei Is.).

Spec. exam.: None.

Distr.: Cosmopolitan; Japan (Honshu, Shikoku & Kyushu) and Ryukyu Is.

37. *Alphitobius laevigatus* (Fabricius)

*Opatrum laevigatum* Fabricius, 1781, Spec. Ins., 1: 90 (Neu-Seeland).

*Akis laevigata* Fabricius, 1801, Syst. Eleuth., 1: 137 (India orientali).

*Hyperops laevigatus* (Fabricius), Kraatz, 1865, Revis. Tenebr.: 235 (Vorder-Indien).


Distr.: Cosmopolitan; Japan (Honshu, Shikoku & Kyushu) and Ryukyu Is. (Tokara Is. & Iriomote Is.*).

38. *Alphitobius nitidulus* (Motschulsky)

*Heterophaga nitidula* Motschulsky, 1859, Études Ent., 8: 100-102 (Ceylon).


Spec. exam.: None.

Distr.: Ceylon and Ryukyu Is. (Ishigaki Is.).

39. *Leptoscapha unifasciata* Kaszab


Dist.: Ryukyu Is. (Amami-Oshima & Iriomote Is.*).

40. Eutochia lateralis (Boheman)

*Alphiophagus lateralis* (nec Motschulsky, 1859) Boheman, 1858, Frag. Eugenio Kessa, Zool. 4: 94 (Hongkong).

*Eutochia lateralis* (Boheman), Fairmaire, 1893, Ann Soc. Ent. France, 12: 20 (Japan)

—Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 228, Pl. cxiv, Fig. 15 (Japan: Yakushima; Takaraïma & Nakanoshima).


Dist.: From India to Philippines; Formosa, Ryukyu Is. (Tokara Is. & Iriomote Is*), Japan (Yakushima), S. Mariana Is. and Hawaii Is.

41. Hypophloeus (Paraphloeus) amamiensis Kaszab


Dist.: Ryukyu Is. (Amami-Oshima, Ishigaki Is.* & Iriomote Is.*).

42. Hypophloeus (Paraphloeus) gentilis (Lewis)


*Hypophloeus gentilis* (Lewis), Gebien, 1911, Junk-Schenkling’s Col. Cat., 28: 414 (Japan).

*Hypophloeus (Paraphloeus) gentilis* (Lewis), Gebien, 1940, Kat. Tenebr., 2: (599) (Japan, Formosa, Tonkin & India).

=Hypophloeus rubristris Gebien, 1913, Arch. f. Naturg., 79, A (9): 29 (Formosa, Suisharyo).—Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 228, Pl. exxiv, Fig. 19 (Tokara Is.: Nakanoshima).

Spec. exam.: 1 sp. (CFSRKU), Shirahama, Iriomote Is., 21-23. viii. 1962, M. T. Chûjô leg.

Dist.: Japan (Honshu), Ryukyu Is. (Tokara Is. & Iriomote Is.*), Formosa, Tonkin and India.

Subfamily Tenebrioninae Redtenbacher, 1845

43. Setenis oshimanus Miwa

*Setenis oshimanus* Miwa, 1935, Trans. Kansai Ent. Soc., (6): 21-22, Pl. iii, Fig. 1
(Oshima: Gusuku).—Gebien, 1911, Kat. Tenebr., 2: (613) (Amami Oshima).
Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 229, Pl. cxv, Fig. 4 (Amami-Oshima).
Spec. exam.: 1 sp. (J-US), Mikyo 200 m., Tokunoshima, 27. vii. 1963, J. L. Gressitt leg.
Distr.: Ryukyu Is. Tokunoshima* & Amami-Oshima).

44. Menephilus arciscelis Marseul

Distr.: Ryukyu Is. (Amami-Oshima, Tokara Is.: Nakanoshima & Tokunoshima*) and Japan (Honshu, Shikoku & Kyushu).

45. Tenebrio obscurus Fabricius

*Tenebrio obscurus* Fabricius, 1792, Ent. Syst., 1: 111 (Germania).—Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 228, Pl. cxiv, Fig. 22 (Japan: Hokkaido, Honshu, Shikoku & Kyushu, Naisei Is.).

Distr.: Formosa; Japan (Honshu & Kyushu) and Ryukyu Is.

46. Toxicus funginum Lewis

Spec. exam.: 1 sp. (CFSRKU), Shirahama, Iriomote Is., 21-23. viii. 1962, M. T. Chūjō leg.
Distr.: Formosa; Japan (Honshu & Kyushu) and Ryukyu Is. (Iriomote Is.).

47. Cryphaeus punctulatus (Lewis)

*Cryphaeus punctulatus* (Lewis), Gebien, 1941. Kat. Tenebr., 2: (665) (Japan).—Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 229, Pl. cxv, Fig. 10 (Japan: Kyushu; Tokara Is.: Nakanoshima).
Spec. exam.: None.
Distr.: Japan (Kyushu) and Ryukyu Is. (Tokara Is.).

48. Cryphaeus satoi Kaszab

Distr.: Ryukyu Is. (Tokara Is., Amami-Oshima, Ishigaki Is.* & Iriomote Is.).

Subfamily *Cnodaloninae* Lacordaire, 1859

49. Tetraphyllus amamiensis Kaszab

Distr.: Ryukyu Is. (Amami-Oshima).

50. Hemicera alternata nodokai Nakane

*Hemicera nodokai* Nakane, 1963, Fragn. Col., (7): 28 (Amami-Oshima); 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 230, Pl. cxv, Fig. 11 (Amami-Oshima).
Spec. exam.: 1 sp. (S), Ikari, Amami-Oshima, 6. v. 1960, T. Shibata leg.
Distr.: Ryukyu Is. (Amami-Oshima).

Note: This subspecies was described by T. Nakane (1963) as an independent species, but later Z. Kaszab regarded this as a subspecies of *H. alternata* Gebien, 1913, Arch. f. Naturg., 79, A (9): 37 (Formosa). I agree with Kaszab’s opinion.

51. Hemicera fukiensis Kaszab

Distr.: China and Ryukyu Is. (Amami-Oshima).
52. Hemicera multicola (Fairmaire)


_Hemicera multicolar_ (Fairmaire), Gebien 1941, Kat. Tenebr., 2: (700) (Borneo; transferred from the genus _Eucyrus_ to the genus _Hemicera_).


**Distr.:** Borneo and Ryukyu Is. (Iriomote Is., Ishigaki Is.* & Okinawa Is.*).

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53. Phaedis (Phaedis) helopioides Pascoe


_Phaces (Phaedis) helopioides_ (Pascoe), Gebien, 1941, Kat. Tenebr., 2: (705) (Indo-china & Japan).

_Phaces helopioides_ Marseul, Nakane, 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 230, Pl. cxv, Fig. 17 (Japan: Honshu, Shikoku & Kyushu; Formosa).


**Distr.:** Indo-China, Manchuria, Japan (Honshu, Sado Is., Shikoku & Kyushu), Ryukyu Is. (Tokara Is., Amami-Oshima & Okinawa Is.*) and Formosa.

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54. Phaedis (Phaedis) magnipunctatus sp. nov. (Pl. II: 4)

Body convexed, stocky, metallic purple. Head rather transverse, irregularly and roughly punctate; frontal suture visible; frons weakly projecting at the sides. Antennae reaching front coxal cavity, 11 segmented, 1-10 loosely clubbed; 1 thick, 2 shortest, 3 = 4 5, 6 a little longer than 5, 5 a little longer than 6, 4-6 weakly dilated towards apex, 7 comparatively and strongly dilated towards apex, 8-10 transverse, apical one oblong oval. Maxillary palpus long; 1 very short, 2 longer than 3, 2 and 3 dilated towards apex, 4 typically accurved. Pronotum transverse, roughly punctate; front moderately curved forward; lateral margins weakly and evenly curved outwardly, narrowly margined; hind margin weakly bisinuate, narrowly margined with middle part projecting backwardly. Scutellum small, triangle. Elytra nearly fused, widest at middle part, narrowly margined, striate-punctures large and deep, 1st punctate-stria reduced at 1/5 from base, 2 reaching apex, 3 and 8 meeting together near apex, 4 first united with 5 at 2/3 from base and then with 7 at 1/5 from base, 6 reduced at 5/7 from base. underside of head with a deep suture between submentum and gular. Prosternum obliquely rugose on the sides; prosternal process very feebly narrowed posteriorly with apex rounded, sparsely punctate on the surface with a short central longitudinal groove. Mesosternum with a V-shaped protuberance to receive prosternal process, very sparsely punctate. Metasternum strongly and roughly punctate,
with four transverse sutures between middle coxal cavities; metepisternum densely punctate. 1-3 visible abdominal sternites roughly and strongly punctate, 4 and 5 movable, with very scarce punctures. Front coxal cavity rounded; front femur scarcely punctured, with a thick and stout tooth projecting forwardly at 2/3 from base; front tibia slender, weakly curved inwardly, with a tuft of fine golden hairs near apex; front tarsus thick, 1-4 dilated towards apex and cushioned beneath, 1 longer than 2, 2 nearly equal to 3, 4 smallest, 5 weakly dilated towards apex, with long hairs beneath; claw simple, bifurcated. Middle coxal cavity rather round; middle femur thickest at 3/5 from base, very sparsely punctate; the shape of middle tibia and tarsi nearly the same as front tibia and tarsus; hind coxal cavity transverse; hind femur with scarce punctures; hind tibia the same as middle tibia; hind tarsus with thick hairs, 1-3 strongly dilated towards apex, 1 thickest. 2 smaller than 1. 3 smallest. 2+3 nearly equal to 1 in length. Hind wing completely reduced.

Length: 7.0-8.5 mm. Width: 3.0-3.5 mm.

**Distribution:** Ryukyu Is. (Ishigaki Is., Iriomote Is. & Miyako Is.).


This species is related to *P. (P.) helopioides* (Pascoe), but easily distinguished from the latter by the following characters: elytral striate-punctures much larger and deeper, with interval more separated, tooth of front femur larger.

55. **Obriomaia palpalis palpaloides** Nakane

*Obriona palpaloides* Nakane, 1963, Fragm. Col., (7): 28 (Tokara Is.; Nakanoshima); 1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 230, Pl. cxv, Fig. 19 (Nansei Is.).


**Distr.:** Ryukyu Is. (Tokara Is., Amami-Oshima & Iriomote Is.).

**Notes:** This subspecies was described by T. Nakane as an independent species which is related to *O. palpalis* Kaszab, from Formosa, 1941. But, latter Z. Kaszab (1964) compared and reexamined *O. palpaloides* (collected in Tokara Is. and Amami-Oshima) with *O. palpalis*
described by himself and concluded that the former is a subspecies of the latter.

56. **Obriomaia rufiventris** Kaszab


**Distr.**: Ryukyu Is. (Amami-Oshima).

57. **Pseudonautes purpurivittatus** (Marseul)


**Distr.**: Japan (Honsyu & Kyushu), Ryukyu Is. (Tokunoshima*, Amami-Oshima & Okinawa) and Formosa.

58. **Campsiomorpha imperialis** (Fairmaire)


**Campsiomorpha imperialis** (Fairmaire), Miwa, 1933, *Trans. Nat. Hist. Soc. Formosa,*


Distr.: Tonkin and Ryukyu Is. (Iriomote Is. & Ishigaki Is.)*.

Subfamily Adeliinae Lacordaire, 1859

59. *Laena rotundicollis insularis* Kaszab


Distr.: Ryukyu Is. (Amami-Oshima).

Subfamily Misolampinae Lacordaire, 1859

60. *Eucrossoscelis broscosomoides* Nakane


Spec. exam.: 1 sp. (S), Santaro-toge, Amami-Oshima, 30. v. 1960, T. Shibata leg.; 1 sp. (S), Ikari Amami-Oshima, 4. vi. 1960, T. Shibata leg.

Distr.: Ryukyu Is. (Amami-Oshima).

61. *Misolampomorphus tokarensis* (Nakane)


Spec. exam.: None.

Distr.: Ryukyu Is. (Tokara Is.).
Subfamily *Helopinae* Lacordaire, 1862

62. *Tarpela amamiensis* Kaszab


*Distr.*: Ryukyu Is. (Amami-Oshima).

63. *Tarpela brunnea konoi* Nakane


*Spec. exam.*: None.

*Distr.*: Ryukyu Is. (Tokara Is.: Nakanoshima).

Subfamily *Amarygminae* Lacordaire, 1859

64. *Amarygmus callichromus* Fairmaire


*Spec. exam.*: None.

*Distr.*: Ryukyu Is. (Ishigaki Is. & Iriomote Is.) and Formosa.

65. *Plesiophthalmus brevipennis* Lewis


*Spec. exam.*: 1 sp. (S), Ikari, Amami-Oshima. 22. v. 1960, T. Shibata leg.; 1 sp. (S), Ikari, Amami-Oshima, 4. vi, 1960, T. Shibata leg.

*Distr.*: Ryukyu Is. (Amami-Oshima).

66. *Plesiophthalmus fuscoaenescens* Fairmaire


*Spec. exam.*: 1 sp. (KU), Bannadake, Ishigaki Is., 21. vi. 1934, T. Esaki leg.;

**Distr.**: Tonkin & Ryukyu Is. (Amami-Oshima* & Ishigaki Is.*).

### Subfamily Strongyliinae Lacordaire, 1859

#### 67. *Strongylium cultellatum* Mäklin

*Strongylium cultellatum* Mäklin, 1866, Monogr. Strongylium: 345 (453) (Hongkong).


**Distr.**: Hongkong and Ryukyu Is. (Tokara Is. : Takarajima & Nakano-shima).

#### 68. *Strongylium marseuli* Lewis


**Distr.**: Japan (Honshu, Shikoku & Kyushu) and Ryukyu Is. (Amami-Oshima* & Ishigaki Is.*).

#### 69. *Strongylium oshimanum* Fairmaire


**Distr.**: Ryukyu Is. (Amami Oshima).
ON THE SYSTEMATIC POSITION OF TWO KNOWN-SPECIES
AND ESTABLISHMENT OF A NEW FAMILY

A. *Luprops sinensis* (Marseul) ... (Tenebrionidae to Lagriidae)

(Pl. I: 4a-4c)


*Luprops sinensis* (Marseul), Nakane, 1963, Iconogr. Inc. Japonicorum, Colore nat. edit. 2 (Col.): 233, Pl. cxvii, Fig. 11 (Japan: Hokkaido, Honshu, Shikoku & Kyushu) (as a lagriid species).


Dist.: Japan (Hokkaido, Honshu, Shikoku, Kyushu & Tsushima Is.), Ryukyu Is. (Tokara Is., Amami-Oshima*, Ishigaki Is.* & Iriomote Is.*) Korea, Formosa and China.

Discussion: Some authorities exclude this species from the Tenebrionidae and transfer it into the Lagriidae, but the other specialists treat this species as a member of the present family. In order to make clear the systematic position of the genus and species in question, I examined many specimens of this species and three lagriid species, *Lagria rufipennis* Marseul, *Arthromacra viridissima* Lewis and *Nemostria rufomusca* Marseul. Their penultimate tarsal segments show completely the same structure, viz. the segments not simple but flabellate. On the other hand, a distinct differentiation is recognized in the wing venation. Generally the radial cell is not present in the Tenebrionidae, while this part can be seen in this species and the lagriid species. On the basis of these structural characters, *Luprops sinensis* (Marseul) may not be a member of the Tenebrionidae, but should be placed in the Lagriidae. At the same time this genus, *Luprops*, should be transferred to the Lagriidae.
B. *Heterotarsus crenulifer* Kaszab ... (Tenebrionidae to Heterotarsidae, fam. nov.) (Pl. I: 5a–5c)


*Distr.:* Formosa and Ryukyu Is. (Miyakojima* & Ishigaki Is.*).

*Discussion:* This genus has long been placed in the Tenebrionidae. But, recently some specialists have treated this group as a member of the Lagriidae. R. A. Crowson suggested in his remarkable paper, Nat. Classif. Fam. Col., 1955, p. 126, that *Heterotarsi* is intermediate between the present family and the Lagriidae. T. Nakane followed the opinion of R. A. Crowson and placed this genus in the Lagriidae in Iconograph [1963, Iconogr. Ins. Japonicorum, Colore nat. edit. 2 (Col.): 233 & 234, Pl. cxvii, Fig. 10–12]. But Z. Kaszab treated the subfamily *Heterotarsinae* as a member of the Tenebrionidae in his recent paper [1964, Ent. Rev. Japan, 16 (2): 39 & 40]. R. A. Crowson described in the same paper that *Heterotarsus* incidentally has 4-4-3 tarsi. But the penultimate tarsal segment is too short and cryptic in each leg to be recognized, because it is almost hidden by the pubescence growing on the underside of the flabellate subpenultimate tarsal segment. This fact might have caused the misinterpretation of Crowson on the number of tarsal segments. Apical and penultimate tarsal segments are simple and, beside these, each segment is covered by dense pubescence on the underside. Such special characters are not found in the Tenebrionidae. The radial cell and radial spur are observed in the wing venation of *Heterotarsus* but these special characters are generally not found in the Tenebrionidae (*Strongylium* has the same type as this genus).

I examined the present species and *H. carinula* Marseul and checked carefully the original descriptions on several species belonging to this genus. This is a type-genus of *Heterotarsinae*, but as stated above, it seems to be unsuitable to set this genus in the Tenebrionidae. On the other hand, there is no known-family to accept this genus.

Judging from the combined characteristics mentioned above, I would like to exclude the genus *Heterotarsus* from the Tenebrionidae and to erect a new family, Heterotasidae, for the reception of the genus *Heterotarsus* placing the new family between the Lagriidae and Zopheridae.
LITERATURE CITED


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Explanation of Plate 1

1a Hind wing of Basanus amamiensis sp. nov. (9.4 mm. in length)
1b Dorsal view of male genitalia of Basanus amamiensis sp. nov. (1.4 mm. in length)
1c Lateral view of male genitalia of Basanus amamiensis sp. nov.
1d Met-endosternite of Basanus amamiensis sp. nov. (1.6 mm. in length)
2a Hind wing of Basanus tsushimensis M. T. Chûjô (9.5 mm. in length)
2b Dorsal view of male genitalia of Basanus tsushimensis M. T. Chûjô (1.8 mm. in length)
2c Lateral view of male genitalia of Basanus tsushimensis M. T. Chûjô
2d Met-endosternite of Basanus tsushimensis M. T. Chûjô (1.8 mm. in length)
3a Hind wing of Diphyrhynchus iriomotensis sp. nov. (5.6 mm. in length)
3b Dorsal view of male genitalia of Diphyrhynchus iriomotensis sp. nov. (1.3 mm. in length)
3c Lateral view of male genitalia of Diphyrhynchus iriomotensis sp. nov.
3d Met-endosternite of Diphyrhynchus iriomotensis sp. nov. (1.0 mm. in length)
4a Hind wing of Luprops sinensis Marsucl (8.5 mm. in length)
4b Met-endosternite of Luprops sinensis Marsuel (1.3 mm. in length)
4c Hind tarsus of Luprops sinensis Marsule (1.5 mm. in length)
5a Hind wing of Heterotarsus crenulifer Kaszab (11.0 mm. in length)
5b Met-endosternite of Heterotarsus crenulifer Kaszab (1.9 mm. in length)
5c Hind tarsus of Heterotarsus crenulifer Kaszab (2.0 mm. in length)
Taxonomic study on the Tenebrionidae of the Ryukyu Islands.
Explanation of Plate 2

1 *Diphyrrhinus iriomotensis* sp. nov. (5.0 mm. in length)
2 *Caedius minimus* sp. nov. (3.0 mm. in length)
3 *Basanus amamiensis* sp. nov. (7.0 mm. in length)
4 *Phaedis (Phaedis) magnipunctatus* sp. nov. (7.5 mm. in length).
Taxonomic study on the Tenebrionidae of the Ryukyu Islands