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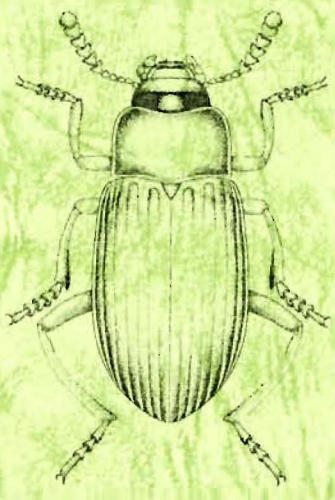

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A Revisional Study of the *Macroleptura* Genus-group (Coleoptera: Cerambycidae: Lepturinae)

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Abstract The *Macroleptura* genus-group is revised. Genera *Bellamira* LECONTE, 1873, *Macroleptura* NAKANE et OHBAYASHI, 1957, *Teratoleptura* gen. nov., and *Laoleptura* gen. nov. are included in this group. The genus *Noona* SAMA, 2006 is synonymized with *Macroleptura*. *Teratoleptura mirabilis yoshitomii* subsp. nov., *T. mirabilis shibatai*, subsp. nov., and *Laoleptura phupanensis* sp. nov., are newly described. *Strangalia magdelainei* PIC, 1937, is synonymized with *Macroleptura quadrizona* (FAIRMAIRE, 1902).

Introduction

Leptura thoracica CREUTZER, 1799 and *Strangalia regalis* BATES, 1884 are well known species of the largest sized lepturine group distributed in the Palearctic Region. These species have been placed under the genus *Macroleptura* since NAKANE and OHBAYASHI (1957), though there are several transitions of generic affiliation as mentioned below. In addition, some authors included *Strangalia quadrizona* FAIRMAIRE, 1902, *Strangalia magdelainei* PIC, 1937 and *Strangalia mirabilis* AURIVILLIUS, 1902 in this group.

Recently, SAMA (2002) newly erected the genus *Nona* for *Strangalia regalis*, but OHBAYASHI *et al.* (2005) synonymized it with the Nearctic genus *Bellamira*. Then SAMA (2007) revived his genus and proposed *Noona* for the replacement name of *Nona*. On the other hand, many specimens belonging to this group were brought from the mountainous areas of Laos and Vietnam by Japanese entomologists. On this occasion, I am going to revise all the known species of related genera including the Nearctic one based not only on the external structure but also on male genitalia. All the holotypes described are preserved in the collection of the Entomological Laboratory, Ehime University, Matsuyama, Japan (EUMJ).

Before going into details, I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO of the National Museum of Nature and Science, Tokyo, for his critical reading of the manuscript. Deep thanks are also due to Wen-I CHOU, Michail DANILEVSKY, Shu-nan JIANG, Takashi KURIHARA, Tatsuya NIISATO, Petr ŠVÁCHA, Yuki TAKEUCHI, Edward VIVIES, Hiroyuki WAKAHARA, Junsuke YAMASAKO and Hiroyuki YOSHITOMI for their useful advice or kind offer of valuable specimens. I appreciate Drs. Motomi ITO, Utsugi JINBO and Hiraku YOSHITAKE of the Japanese Barcode of Life Initiative (JBOLI: http://www.jboli.org/) at the University of Tokyo for providing a DNA barcode of a new species described in this paper.

Historical Review

In early days, the genera *Leptura* and *Strangalia* were confused for the reason of interpretation of the type species. Later on, *Leptura thoracica* CREUTZER, 1799 and *Strangalia regalis* BATES, 1884 were placed under the genus *Leptura* by many authors. In 1957, NAKANE and OHBAYASHI erected a new genus, *Macroleptura* for *Leptura thoracica* CREUTZER, 1799 and *Strangalia regalis* BATES, 1884, and designated the former as the type species.

In 1972, KUSAMA and HAYASHI synonymized *Macroleptura* with the Nearctic genus *Megaleptura* CASAY, 1913 (*Megaleptura* was once synonymized with *Stenura* by CHEMSAC, 1964, but *Stenura* was a preoccupied name and the replaced name for it is *Stenelytrana* GISTEL, 1848: see SAMA, 2002). NAKANE (1975) tentatively accepted the genus *Megaleptura* for "*thoracica*" and "*regalis*", but he pointed out that the structures of male genitalia and the last abdominal sternite differ from those of the type species of the genus *Megaleptura*. He also suggested that the *Megaleptura* should be replaced by *Stenelytrana*. Later on, HAYASHI and VILLIERS (1985) transferred *Strangalia quadrizona* FAIRMAIRE, 1902, *Strangalia magdelainei* PIC, 1937 and *Strangalia mirabilis* AURIVILLIUS, 1902 to the genus *Megaleptura*, and synonymized *Ocalemia carpo* PIC, 1903 with *Megaleptura mirabilis*.

ŠVÁCHA (in ŠVÁCHA & DANILEVSKY, 1989) revived *Macroleptura* as a subgenus of the genus *Leptura* based on different larval structures between *Leptura emarginata* (the type species of *Megaleptura*) and *Leptura thoracica*. N. OHBAYASHI *et al.* (1992) basically followed him but regarded it as an independent genus, and adopted *Macroleptura* for "*thoracica*" and "*regalis*". On the other hand, JIANG and CHEN (2001) transferred *Strangalia mirabilis* and *Strangalia quadrizona* to the genus *Macroleptura*. Also VIVIES (2001) redescribed *Macroleptura mirabilis* AURIVILLIUS from North Vietnam. In 2002, SAMA erected a new genus, *Nona* for *Strangalia regalis*. Then N. OHBAYASHI *et al.* (2005) synonymized *Nona* with the Nearctic genus *Bellamira*. SAMA (2007), however, disagreed with this treatment and reestablished a new genus, *Noona* instead of *Nona*, which had been preoccupied by a generic name of Mollusca by ADAMS, 1858.

Taxonomy

Genus ***Bellamira*** LeConte, 1873

Bellamira LeConte, 1873: 328 (Type species: *Leptura scalaris* Say, 1826). — Linsley & Chemsac, 1976: 23.
Strangalia (*Bellamira*): Aurivillius, 1912: 244.

Body rather robust, tapering posteriorly. Head short, as wide as pronotal base, obliquely prolonged in front; frons short; gena shorter than a half of eye diameter; tempora inflated and abruptly constricted at some distance behind eyes; apical palpomeres subparallel in apical half, apices truncate; eyes almost entire. Antennae inserted in front of margin of lower eye lobe, short and slender, slightly exceeding the middle of elytra in male, reaching basal two-fifths in female; third segment distinctly longer than first, fourth slightly shorter than first, fifth as long as third. Pronotum elongate, longer than basal width; sides arcuate, once inflated, then constricted near base; hind angles acute and partly covering elytral humeri; apex constricted and broadly impressed; base broadly and deeply impressed across disc. Mesonotum with stridulatory files symmetrically divided. Prosternal process expanded at apex, coxal cavities slightly open behind; mesosternal process arcuate; metepisternum broad, tapering posteriorly. Elytra cuneiform, narrowed toward apical third, then slightly broadened, with apices rounded. Legs slender; hind tarsi slender, first segment longer than two followings together, third segment cleft almost to the middle. Abdomen of male cylindrical with last sternite broadly and conspicuously hollowed, and its sides laminated and expanded downward.

Notes. This genus bears a very close relationship with the genus *Macroleptura*, and only separated from it by the shape of elytra and lateral lobes of male genitalia.

Bellamira scalaris (Say, 1826)

(Figs. 1, 5–6, 39)

Leptura scalaris Say, 1826: 278. (Type locality: Point Breeze, New Jersey.)
Strangalia scalaris: LeConte, 1850: 327.
Bellamira scalaris: LeConte, 1873: 328. — Linsley & Chemsac, 1976: 23, figs. 8, 9.
Strangalia (*Bellamira*) *scalaris*: Aurivillius, 1912: 244.
Toxotus coarctatus Haldeman, 1847: 59. (Type area: Pennsylvania.)
Strangalia coarctata: LeConte, 1850: 327.

Male. Length from the tips of mandibles to the apices of elytra 20.3 mm, 24.3 mm (20–26 mm) to the apex of abdominal tergite; width at humeri 4.4 mm (examined specimen). Body reddish brown. Head short and wide; tempora distinct. Elytra long, more than

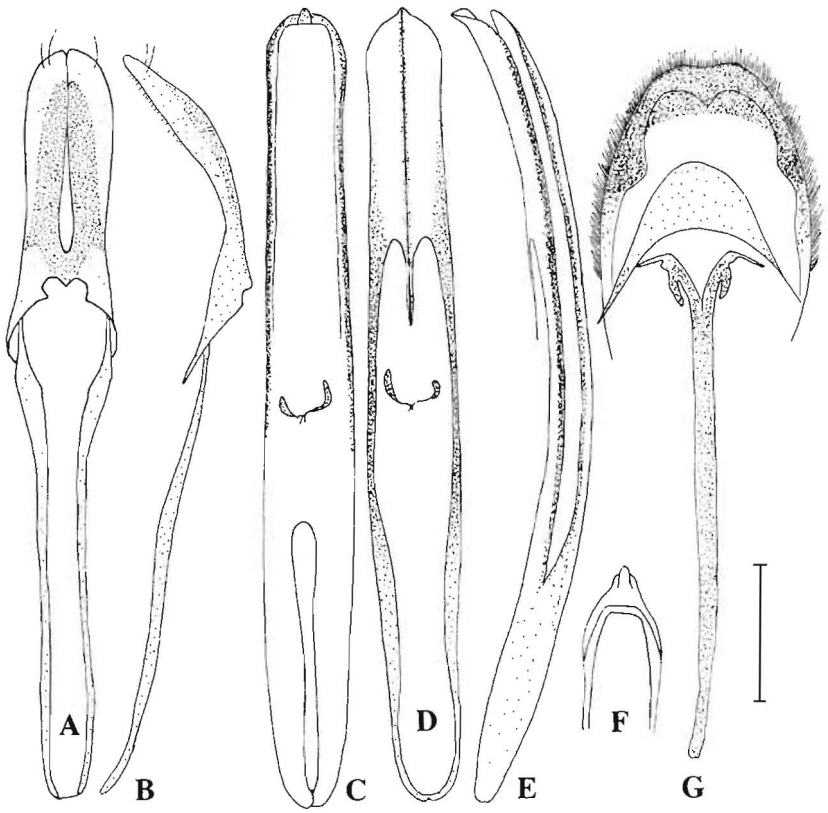


Fig. 1. Male genitalia of *Bellamira scalaris* (SAY, 1826). —— A, Tegmen, dorsal view; B, ditto, lateral view; C, median lobe, dorsal view; D, ditto, ventral view; E, ditto, lateral view; F, ditto, antero-dorsal view; G, 8th abdominal tergite with 8th and 9th sternites, ventral view. Scale: 1 mm.

three times as long as wide, gradually narrowed toward apical third, with apical fourth distinctly dehiscent, infuscate with markings of light pubescence. Abdomen with last tergite entirely visible from above; third to sixth sternites orange yellow, seventh brownish.

Male genitalia (Fig. 1). Tegmen 6.4 times as long as width, roof situated at apical two-sevenths; lateral lobe gradually widened toward obliquely truncate apex, of which the outer angle is rounded and the inner angle angulated in dorsal view, gradually thickened apicad in lateral view; apex of lateral lobe provided with one or two setae of moderate length; ringed part straightly convergent basad and connected at base. Median lobe 9.0 times as long as width, almost parallel-sided in dorsal view, rather thin and slightly curved throughout in lateral view; ventral plate in lateral view obtusely pointed and obliquely bent ventrad; apical area slightly constricted, then roundly produced and provided with a median

appendage on dorsum in antero-dorsal view; median foramen provided with elongate lingulate median process in ventral view; median struts 0.37 times as long as the total length of median lobe, fused at extreme base.

Female. Length from the tips of mandibles to the apices of elytra 19.8 mm, 23.8 mm (22–26 mm) to the apex of abdominal tergite; width at humeri 4.7 mm in female (examined specimen). Similar to male, but robust; abdomen with last tergite exposed; third to seventh sternites orange yellow, third to sixth black basally.

Specimens examined. 1 ♂, Ste-Agathe, Lotobinière, P. Québec, Canada, 28. VII. 1990, P. BÉLANGER leg.; 1 ♀, same locality, 30. VII. 1990, P. BÉLANGER leg.

Distribution. Northeast North America to Florida and South Dakota.

Genus ***Macroleptura*** NAKANE et OHBAYASHI, 1957

Macroleptura NAKANE et OHBAYASHI, 1957: 47. (Type species: *Leptura thoracica* CREUTZER, 1799.)
Nona SAMA, 2002: 25. (Type species: *Strangalia regalis* BATES, 1884.)
Noona SAMA (replacement name for *Nona* SAMA, 2002), 2007: 102.
Megaleptura: KUSAMA & HAYASHI, 1971: 102. — NAKANE, 1975: 2. — HAYASHI, 1980: 21 (partim).
Leptura: CHEREPANOV, 1979: 330 (partim).
Bellamira: OHBAYASHI *et al.*, 2005: 293. — OHBAYASHI, 2007: 411 (partim).

Male. Body robust, tapering posteriorly. Head short to moderate in length, distinctly narrower than pronotal base, gena as long as, or longer than a half of eye diameter, tempora distinct and roundly constricted at some distance behind eyes; eyes large and slightly emarginate behind antennal insertions; apical palpomeres longer than wide, widest near the middle, apical margin obliquely truncate. Antennae short and stout, inserted in front of margin of lower eye lobe and reaching the middle to apical third of elytra; apical four or five segments usually provided with small poriferous areas, but indistinct in a case; fourth segment shorter than first, fifth longer than third.

Pronotum shorter than basal width, sides constricted near the anterior margin, once inflated and then more or less constricted near base; basal area deeply impressed across disc, forming a transverse chevron groove, with hind angles expanded and partly covering the elytral humeri. Mesonotum with stridulatory files symmetrically divided. Prosternal intercoxal process almost concealed between coxal cavities, then strongly dilated behind; acetabula of procoxae almost closed posteriorly; mesosternal process lightly arcuate in lateral view; metepisternum broad, tapering posteriorly. Scutellum triangular.

Elytra narrowed behind, dehiscent near the apices; each apex obliquely emarginate and at least outer angle distinctly pointed.

Legs slender; hind tibiae more or less curved with long tibial spurs, of which the outer one three-fourths as long as inner one, thickened apically, with or without latero-ventral carinae in male; hind tarsi slender, first segment longer than two followings together, third

segment cleft to almost middle of its length.

Abdominal segments in male sequentially narrowed from third to seventh; seventh sternite broadly and conspicuously excavated and its sides forming distinct board-like ridges or laminates expanding downward.

Male genitalia elongate; tegmen with lateral lobe almost straightly narrowed toward obtusely pointed apex with one to three short or long apical setae.

Female: Antenna reaching the middle to basal third of elytra. Seventh abdominal sternite straightly narrowed apicad, with disc not concave and the apex emarginate.

Macroleptura thoracica (CREUTZER, 1799)

(Figs. 2, 7–9, 40)

Leptura thoracica CREUTZER, 1799: 125, pl. 3, fig. 28. (Type locality: Karlsbad, Czechoslovakia.) – CHEREPANOV, 1979: 356, figs. 227–229.
Strangalia thoracica: MULSANT, 1863: 510.
Leptura (*Stenura*) *thoracica* var.: BATES, 1884: 220. (Type locality: Sapporo, Hokkaido, Japan.)
Strangalia (s. st.) *thoracica*: AURIVILLIUS, 1912: 239. — PLAVILSTSHIKOV, 1936: 418, fig. 209.
Leptura (s. str.) *thoracica*: GRESSITT, 1951: 102, pl. 5, fig. 4.
Macroleptura thoracica: NAKANE & OHBAYASHI, 1957: 47.
Leptura (*Megaleptura*) *thoracica*: KUSAMA, 1973: 33.
Megaleptura thoracica: HAYASHI, 1980: 21.
Leptura (*Strangalia*) *thoracica* var. *obscurissima* PIC, 1900: 17. (Type area: Japan.)

Diagnosis. Length 19–30 mm. Body usually black; pronotum black and sometimes partly reddish; elytra reddish brown or black; body beneath variable from reddish to black.

Head short; gena shorter than one-third of long axis of eye diameter; tempora short and roundly constricted to neck. Antenna rather short and slender with fifth segment not reaching the base of pronotum, provided with small poriferous area on 5th to 11th segments; relative lengths of segments as follows: male = 25 : 5 : 23 : 20 : 33 : 32 : 32 : 29 : 26 : 25 : 30; (Third segment 0.92 times as long as first, fifth 1.43 times as long as third.) Pronotum once expanded laterad near apical third; basal groove shallow. Elytral apex obliquely emarginate, with outer angle short-spinous and inner angle angulate. Hind tibiae almost straight, thickened apically, without carinae in male. Last abdominal sternite of male broadly and conspicuously excavated and apical half of its sides forming distinct board-like ridges.

Male genitalia (Fig. 2). Tegmen 7.9 times as long as basal width of lateral lobes; lateral lobes 0.27 times as long as the total length of tegmen, almost straightly tapered toward obtusely pointed apices with one to three short apical setae; ringed part straightly convergent toward connected base. Median lobe elongate, 8.3 times as long as wide, almost parallel-sided in basal half and gradually narrowed apicad in dorsal view; rather thick and

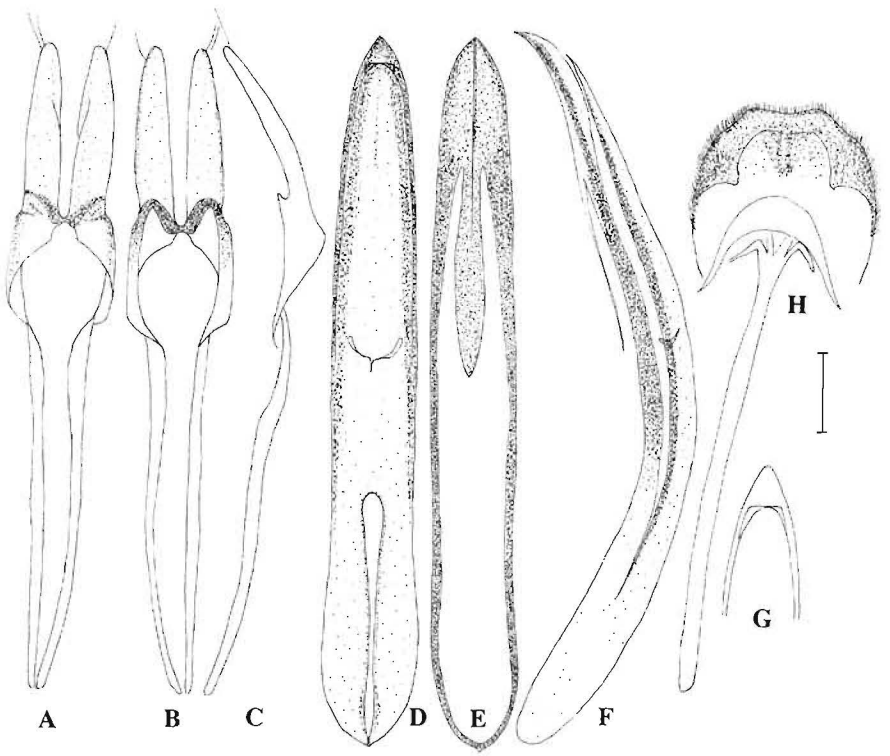


Fig. 2. Male genitalia of *Macroleptura thoracica* (CREUTZER, 1799). —— A, Tegmen, dorsal view; B, ditto, ventral view; C, ditto, lateral view; D, median lobe, dorsal view; E, ditto, ventral view; F, ditto, lateral view; G, ditto, antero-dorsal view; H, 8th abdominal tergite with 8th and 9th sternites, ventral view. Scale: 1 mm.

almost straight at apical five-sevenths, then bent ventrad in lateral view; ventral plate gradually thinned and curved ventrad toward apex in lateral view; apex in antero-dorsal view roundly tapered and pointed; median foramen provided with elongate lingulate median process in ventral view; median struts 0.36 times as long as the total length of median lobe, fused at extreme base.

Specimens examined (collecting data skipped). JAPAN (7♂♂, 16♀♀): [Hokkaido)] Esashi-chô, Hiyama; Ikutahara, Monbetsu; Tokachi-mitsumata, Tokachi; Butokamabetu, Shumarinai; Mt. Daisetsu. [Honshu] Towada, Aomori Pref.; Kuzukawa, Aomori Pref.; Oze, Gumma Pref.; Ohshirakawa, Gifu Pref. RUSSIA (5♂♂, 11♀♀) (Primor Territ.): Arsenjev; Chernigovka; Ussurijiskij Nat. Res. CHINA (2♀♀): Ile Askold, Mantschurie; Mt. Xiaoxinanling, Heilongjiang. KOREA (in the collection of Dr. H. OKAMOTO) (2♀♀): Koryo (Central Korea, no further data); Seiryori, Coria, 31. V. 1928, J. MURAYAMA leg.

Distribution. Europe, Caucasus, Kazakhstan, Siberia, Far East Russia, Sakhalin and Kunashir Islands, Mongolia, China, Korea, Japan.

Macroleptura regalis (BATES, 1884)

(Figs. 3, 10–14, 41)

Strangalia regalis BATES, 1884: 223. (Localities of syntypes: Sapporo, Hokkaido; Iga, Mie Pref.)
Strangalia (Strangalina) regalis: AURIVILLIUS, 1912: 241. — MATSUSHITA, 1933, 215.
Strangalia regalis: BOPPE, 1921: 102.
Macroleptura regalis: NAKANE & OHBAYASHI, 1957: 47.
Leptura (Megaleptura) regalis: KUSAMA, 1973: 33.
Leptura regalis: GRESSITT, 1951: 101. — CHEREPANOV, 1979: 353, figs. 224–226.
Megaleptura regalis: HAYASHI, 1980: 21.
Nona regalis: SAMA, 2002: 25.
Leptura (Strangalia) maindroni PIC, 1901: 61. (Type area: Central Japan.)
Bellamira regalis: OHBAYASHI, KURIHARA & NIISATO, 2005: 293. — OHBAYASHI, 2007: 411.

Diagnosis. Length 21–33 mm. Pronotum usually black, but partly or entirely reddish brown in northern populations; elytra black and provided with four transverse reddish brown bands, which are frequently reduced to small maculation or entirely black; body beneath usually black, but the metasternum and apical area of each abdominal sternite are reddish in northern populations.

Head obliquely prolonged in front; gena longer than a half of long axis of eye diameter. Antenna rather long and slender with fifth segment reaching the base of pronotum, provided with small poriferous area on 5th to 10th segments; relative lengths of segments as follows: male = 34 : 6 : 37 : 30 : 40 : 42 : 40 : 37 : 36 : 32 : 39 (Third segment 1. 06 times as long as first, fifth 1.08 times as long as third.).

Pronotum campanulate, once expanded laterally near basal third; basal transverse groove deep and distinct. Elytra with each apex roundly emarginate, with both outer and inner angles spinous. Hind tibiae slightly curved, thickened apically with latero-ventral carinae in male. Last abdominal sternite of male conspicuously excavated and apical two-thirds of its sides forming distinct ridges.

Male genitalia (Fig. 3). Tegmen 7.5 times as long as width of lateral lobes at base; lateral lobes 0.43 times as long as the total length of tegmen, tapered straight toward obtusely pointed apices, which are provided with two or three setae of moderate length; ringed part straightly convergent basad and connected at base. Median lobe 7.5 times as long as wide, almost parallel-sided in dorsal view; rather thick and slightly curved throughout with ventral plate strongly bent ventrad and obtusely pointed at the apex in lateral view; apex in antero-dorsal view abruptly constricted with short and small median projection; median foramen provided with spear-like median process in ventral view; median struts 0.33 times as long as total length of median lobe, fused at extreme base.

Specimens examined (collecting data skipped). JAPAN (29♂♂, 31♀♀): [Hokkaido] Jôzankei, Sapporo; Okushibetsu, Teshio; Shikaribetsu, Otofuku; Nukabira, Kamishihoro; Shirakaba, Shumarinai. [Honshu] Kimitsu, Chiba Pref.; Makido, Gifu Pref.; Suhara, Gifu

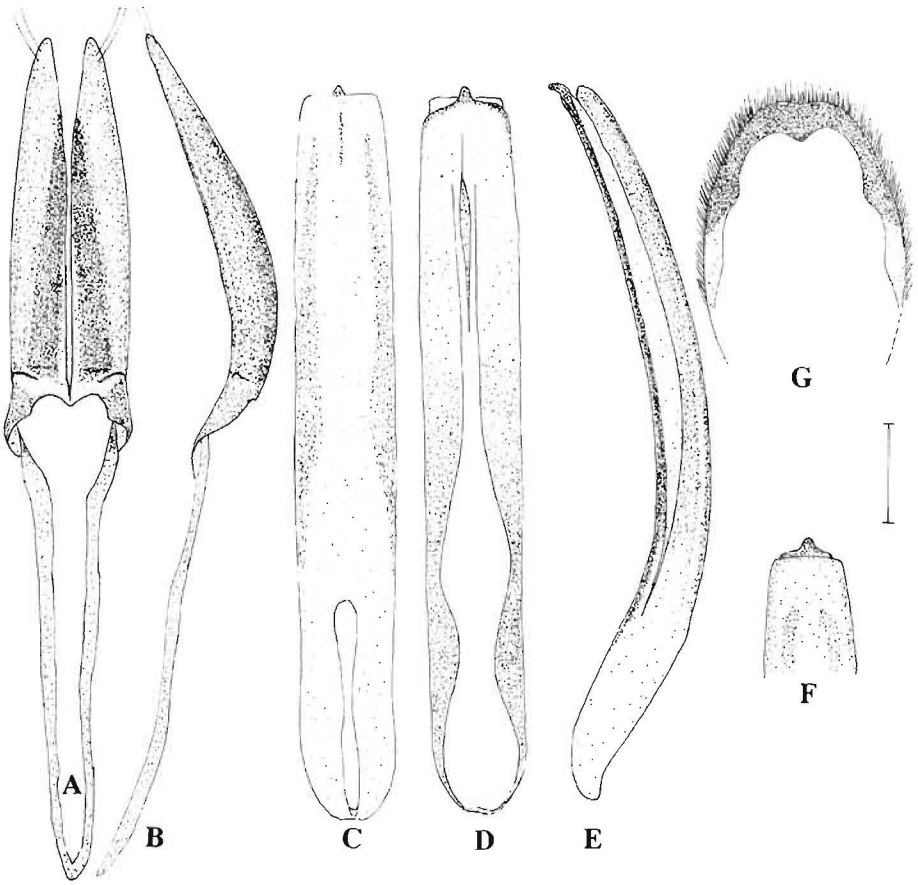


Fig. 3. Male genitalia of *Macroleptura regalis* (BATES, 1884). —— A, Tegmen, dorsal view; B, ditto, lateral view; C, median lobe, dorsal view; D, ditto, ventral view; E, ditto, lateral view; F, ditto, antero-dorsal view; G, 8th abdominal tergite, ventral view. Scale: 1 mm.

Pref.; Hongû, Aichi Pref.; Mt. Kôya, Wakayama Pref.; Mt. Daisen, Tottori Pref.; [Shikoku] Mt. Ishizuchi, Ehime Pref.; Matsuyama, Ehime Pref.; Mt. Narabara, Ehime Pref.; Ônogahara, Ehime Pref.; Odamiyama, Ehime Pref.; Kuroson, Kôchi Pref.; [Kyushu] Hayami, Ôita Pref.; Kyôgatake, Saga Pref.; Is. Yakushima, Kagoshima Pref.

Distribution. Japan (Hokkaido, Honshu, Shikoku, Kyushu, Is. Yakushima), Sakhalin, Kunashir Islands. (Record from Korea is doubtful.)

Notes. This species was first described by BATES in 1884 under the genus *Strangalia*. Since then, it has been regarded as a species of the genus *Leptura*, *Macroleptura* or *Megaleptura*. In 2002, SAMA erected a new genus, *Nona* for this species with a key to dis-

tinguish this new genus from the genus *Macroleptura*. Then OHBAYASHI *et al.* (2005) once synonymized this genus with the Nearctic genus *Bellamira*, but SAMA (2007) disputed about this opinion and revived the genus *Noona*, which was a replacement name of *Nona*. In this paper, I repeal the idea of adopting the genus *Bellamira* for this species, but do not agree with its inclusion in the genus *Noona*, and here I place this species in the genus *Macroleptura*. I will discuss details of the reason on later pages.

Macroleptura quadrizona (FAIRMAIRE, 1902)

(Figs. 4, 15–18, 42)

Strangalia quadrizona FAIRMAIRE, 1902: 244. (Type area: Yunnan, China.)
Strangalia (*Parastrangalis*) *regalis*: AURIVILLIUS, 1912: 242.
Strangalia quadrizona ab. *zaitzevi* PLAVILSTSHIKOV, 1931: 39. (Type area: Yunnan, China.)
Leptura (s. st.) *quadrizona*: GRESSITT, 1951: 101.
Leptura (*Macroleptura*) *quadrizona*: GRESSITT & RONDON, 1970: 35, fig. 8b.
Megaleptura quadrizona: HAYASHI & VILLIERS, 1985: 12.
Macroleptura quadrizona: JIANG & CHEN, 2001: 157.
Strangalia Magdelainei PIC, 1937: 6. (Type locality: Sem Neva, Annam.) **Syn. nov.**
Megaleptura magdelainei: HAYASHI & VILLIERS, 1985: 12.

Diagnosis. Length from the tip of mandibles to the apex of elytra 19.6–22.3 mm, 21.7–24.6 mm to the apex of abdominal tergite; width at humeri 5.2–6.1 mm.

Body reddish brown; basal lobe of pronotum, extreme apices of femur, tibiae and tarsi, and antennae with apical third or fourth of third to the last segments black; elytra reddish brown with three transverse black bands, of which the anterior one is zigzag, and the middle and hind ones widened laterad. Head moderately clothed with fine short erect brown hairs mainly on frons and tempora. Pronotum densely clothed with short suberect brown hairs, and elytra with recumbent ones.

Head short and rather strongly inclined downward; genae short, about a half as long as long axis of eye diameter; tempora inflated, roundly constricted at some distance from eyes. Antenna robust and fifth segment not reaching the base of pronotum, with poriferous area hardly recognized; first segment strongly thickened apicad; fifth to tenth segments more or less expanded ecto-apically; last segment distinctly appendiculate at apical fourth; relative lengths of segments as follows: 27 : 6 : 33 : 22 : 35 : 45 : 45 : 44 : 41 : 39 : 51.

Pronotum rather elongate, same as long as basal width, once slightly expanded laterad near middle; basal transverse groove deep and distinct. Elytral apex obliquely emarginate, with outer angle spinous and inner angle quadrate. Hind tibiae slightly curved, thickened apically, without carinae in male. Last abdominal sternite of male conspicuously excavated and its sides forming triangular laminates which are expanded downward.

Male genitalia (Fig. 4). Tegmen 6.6 times as long as width of lateral lobes at base; lat-

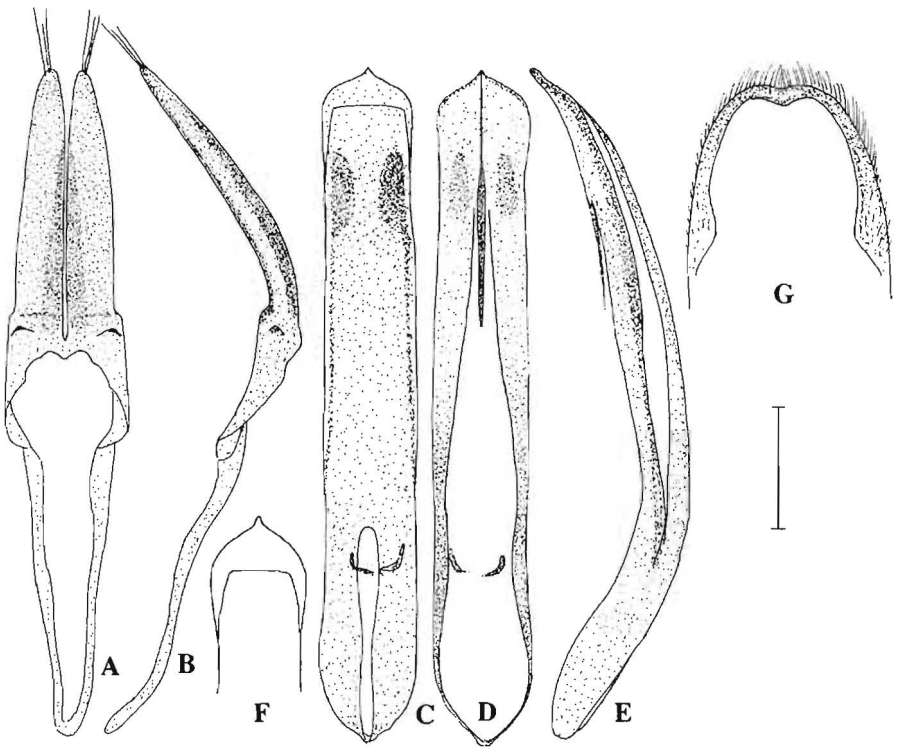
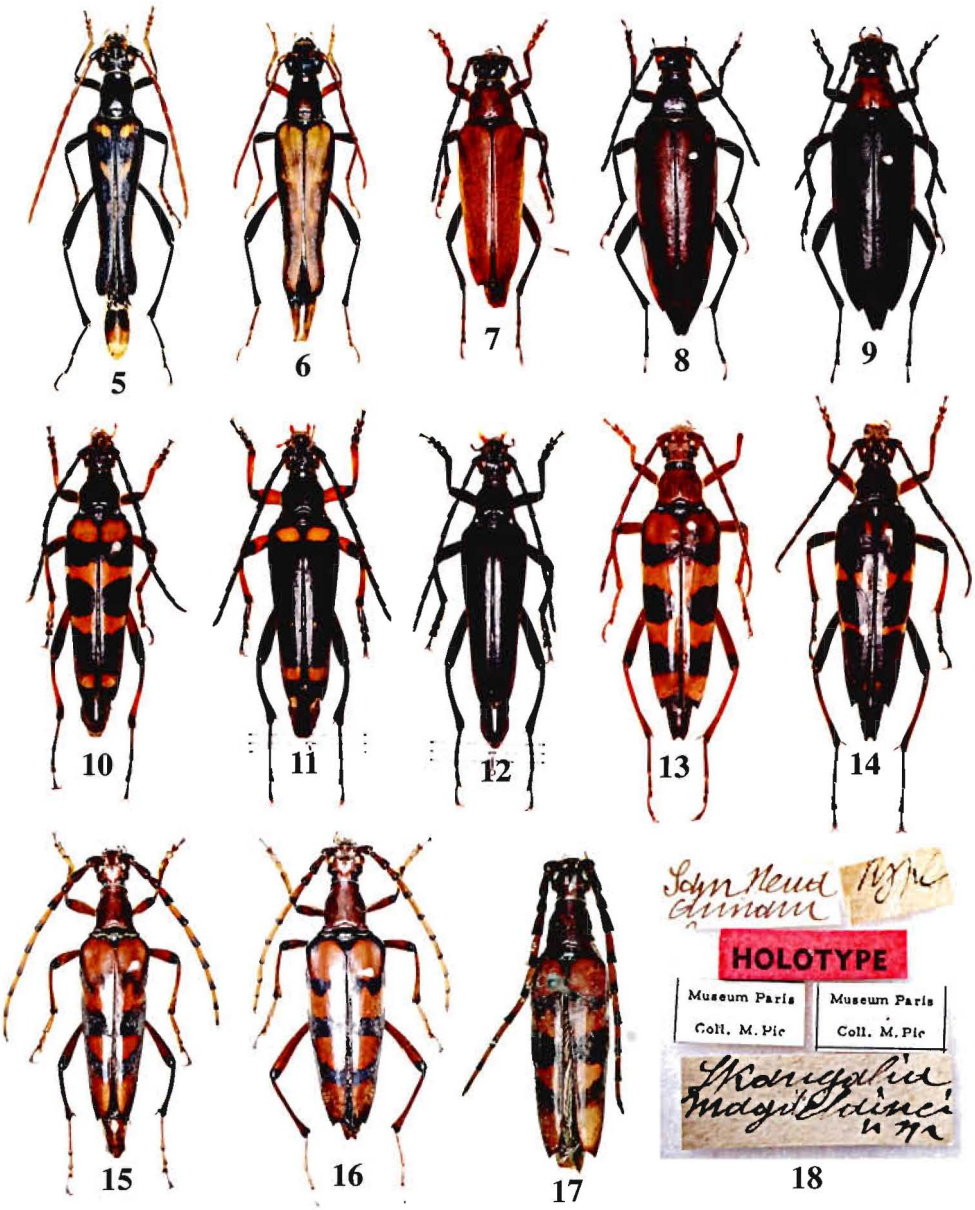


Fig. 4. Male genitalia of *Macroleptura quadrizona* (FAIRMAIRE, 1902). —— A, Tegmen, dorsal view; B, ditto, lateral view; C, median lobe, dorsal view; D, ditto, ventral view; E, ditto, lateral view; F, ditto, antero-dorsal view; G, 8th abdominal tergite, ventral view. Scale: 1 mm.

eral lobes 0.41 times as long as the total length of tegmen, straightly narrowed toward obtusely pointed apices, which are provided with three setae of moderate length; ringed part straightly convergent basad and connected at base. Median lobe 7.4 times as long as width, almost parallel-sided in dorsal view, rather thick and almost straight at apical five-sevenths, then bent ventro-basad in lateral view; ventral plate thinned and prolonged apicad in lateral view, apex in antero-dorsal view once inflated, then roundly narrowed toward pointed apex; median foramen provided with spear-like median process in ventral view; median struts 0.31 times as long as total length of median lobe, fused at extreme base.

Specimens examined. 1♂, Xieng Khouang, Laos, 20. IV. 1964, J. A. RONDON leg.; 1♂, 2♀, Mt. Phu Pan, alt. 1,500–1,800 m, Ban Saleui, Xam Neua, Houaphan Prov., 29. IV–4. V. 2002, N. OHBAYASHI leg.; 2♂, 2♀, same locality, 13. V. 2001, 25. V. 2002, 10. V. 2003 and 12. IV–11. V. 2005, native collector; 1♀, Mt. Dayao-shan-Lao-shan, Guangxi,



Figs. 5–18. Habitus of the genera *Bellamira and Macroleptura*. —— 5–6, *Bellamira scalaris* (SAY, 1826); 7–9, *Macroleptura thoracica* (CREUTZER, 1799); 10–14, *Macroleptura regalis* (BATES, 1884); 15–18, *Macroleptura quadrizona* (FAIRMAIRE, 1902). — 5, 7, 10–12, 15, 17, Male; 6, 8–9, 13–14, 16, female. — 17–18, Holotype of *Strangalia Magdelainei* PIC, 1937 (17) and its labels (18).

China, V–VI. 1996, native collector; 1 ♀, Mt. Ailao-shan, Xinping county, Yunnan, China, 1–11. V. 2006, native collector; 1 ♂, (Holotype of *Strangalia Magdelainei* in Paris National Museum: Figs. 17–18) Sam Neua Gunom.

Distribution. China, Laos, North Vietnam.

Notes. Strangalia Magdelainei described by PIC (1937) was distinguished from *S. quadrizona* in his original description as "de forme plus parallèle et élytres dépourvues de dessin noir aux épaules". However, the result of examination of the type specimen suggests that it is doubtlessly a synonym of *M. quadrizona*. The type locality of *S. Magdelainei* was written as "Annam: Sem Neva" in the original description, but judging from a label attached to the type specimen (Fig. 18), it can be read as "Sam Neua Gunam". I suppose that the locality of this species is not Annam (=Vietnam) but possibly be Xam Neua of Laos. I was able to examine several specimens from Xam Neua, Laos and they surely are the same as the specimen from Yunnan, China.

This seems to be the species closest to *M. regalis* because the male genitalia of this species closely resembles those of the latter especially in the shape and structure of tegmen.

Teratoleptura N. OHBAYASHI, gen. nov.

Type species. Strangalia mirabilis AURIVILLIUS, 1902

Male. Body slender, strongly tapered posteriad; elytra abbreviated and abdomen with apical half of fifth, sixth and seventh tergites exposed.

Head moderate in length, obliquely prolonged in front; width across eyes as wide as pronotal base; gena shorter than a half of long axis of eye diameter, tempora short and roundly constricted to the neck; eyes almost entire, large and strongly convex above; each apical palpomere dilated apicad with obliquely truncate apex. Antennae inserted in front of margin of eyes, short and stout, reaching apical fourth of elytra; small poriferous areas on apical segments indistinct, fourth segment longer than first, fifth longer than third.

Pronotum as long as, or longer than basal width, sides constricted near the anterior margin, once inflated and then more or less constricted near base; basal area impressed across disc with hind angles expanded but hardly covering the elytral humeri. Mesonotum with stridulatory files symmetrically divided. Prosternal intercoxal process very narrow between coxal cavities, then strongly dilated behind; acetabula of procoxae closed posteriorly; mesosternal process lightly arcuate in lateral view; metepisternum very broad, strongly tapering posteriorly. Scutellum elongate lingulate.

Elytra strongly narrowed behind and more or less constricted near apical third, dehiscent near the apices; each apex slightly emarginate with outer angle rounded.

Legs rather stout; fore and hind tibiae lacking inner spur; hind tibiae more or less curved, thickened apically with a fine carinae ventrally; hind tarsi slender, first segment longer than two followings together, third segment one-third as long as first and cleft to api-

cal third of its length.

Abdomen cylindrical, exposed dorsally from apical half of fifth tergite; sixth sternite emarginate at apex and its lateral sides briefly producing laterad; seventh sternite broadly and conspicuously excavated throughout and its sides forming distinct triangular lobes, which are expanded downward.

Tegmen with lateral lobe inflated laterally near apical third, then roundly narrowed toward angulated inner angle in dorsal view; ringed part straightly convergent and fused near middle like Y shape. Median lobe eight times as long as width, almost parallel-sided in dorsal view.

Female. Similar to male, but different as follows. Antennae reaching apical two-fifths of elytra. Pronotum shorter than basal width. Elytra narrowed straight behind. Abdomen tapered straight apicad with triangularly emarginate apices of seventh tergite and sternite. Legs with only fore tibia lacking inner spur. Hind tarsi with third segment one-fourth as long as first and cleft to the middle of its length.

Teratoleptura mirabilis mirabilis (AURIVILLIUS,1902), comb. nov.

(Figs. 19, 21, 22, 26–31, 43)

Strangalia mirabilis AURIVILLIUS, 1902: 207, fig. 18. (Type locality: Montes Mauson, Tonkin.)
Ocalemia carpo PIC, 1903: 28. (Type locality: Montes Mauson, Tonkin.)
Strangalia (*Pygostrangalia*) *gigantia* CHIANG, 1981: 78, pl. 1, fig. 2. (Type locality: Wu Ming, Guangxi.)
Strangalia gigantia CHIANG, PU & HUA, 1985: 35, pl. 3, fig. 29.
Megaleptura mirabilis: HAYASHI & VILLIERS, 1985: 12.
Macroleptura mirabilis: JIANG & CHEN, 2001: 156.

Male. Length from the tips of mandibles to the apices of elytra 17.8–21.0 mm, 25.3–32.9 mm to the apex of abdominal tergite; width at humeri 4.5–5.4 mm.

Body black; legs black except for fore femora which are ochraceous; antennal segments black and apical area of fifth to the last antennal segments densely clothed with very short fine grayish pubescence. Elytra provided with four pairs of yellowish brown markings, of which the first is slant triangular or semielliptical, the second is drop-shaped, the third is wedge-shaped, and the fourth is elongate oval but sometimes disappears. Head densely clothed with short erect black hairs with long erect yellowish hairs on the base of clypeus to frons. Pronotum densely covered with short recumbent black hairs and sparsely intermixed with long erect yellowish hairs, and provided with golden long recumbent hairs near both sides of basal third and middle of basal margin. Scutellum covered with dark brown hairs. Elytra clothed with black subrecumbent short hairs except on the yellowish brown markings, which are golden yellow. Hairs on the ventral surface black.

Relative lengths of antennal segments as follows: 30 : 5 : 39 : 31 : 40 : 31 : 31 : 28 : 27 : 26 : 32.

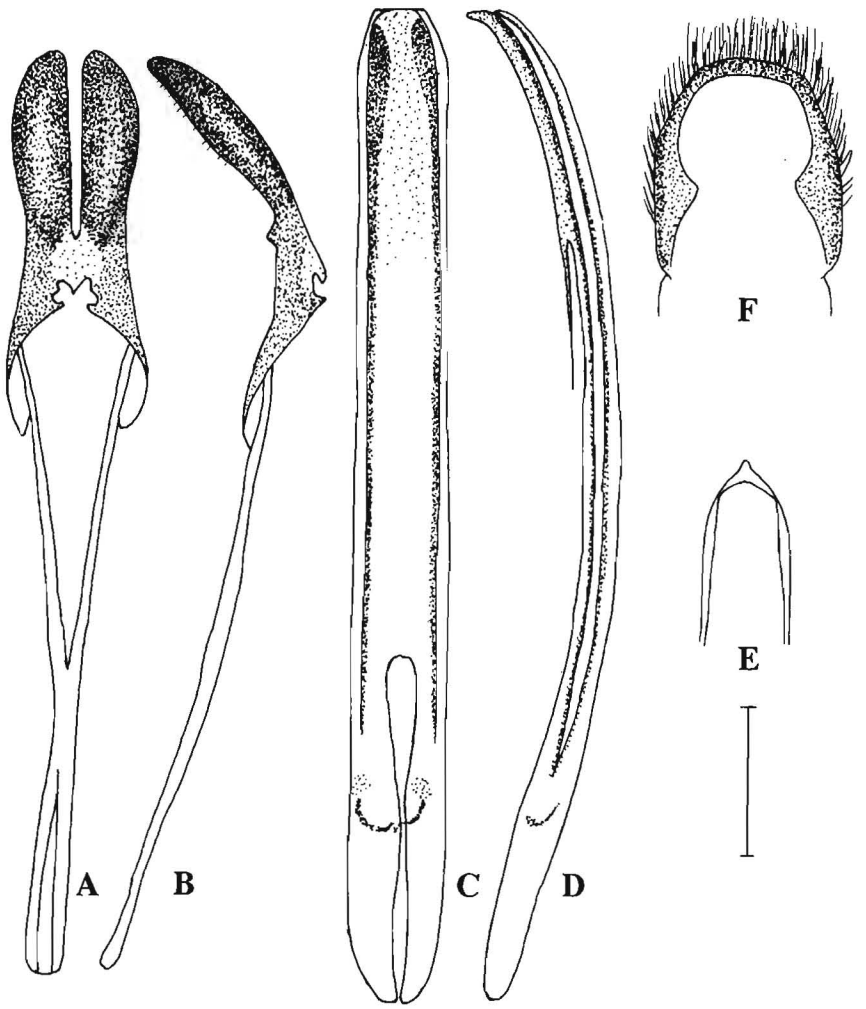


Fig. 19. Male genitalia of *Teratoleptura mirabilis mirabilis* (AURIVILLIUS, 1902). —— A, Tegmen, dorsal view; B, ditto, lateral view; C, median lobe, dorsal view; D, ditto, lateral view; E, ditto, antero-dorsal view; F, 8th abdominal tergite, ventral view. Scale: 1 mm.

Pronotum campanulate, distinctly longer than basal width, moderately convex and more or less depressed on both sides near basal third. Elytra 2.7 times as long as basal width. Legs with each femur less stout and hind one moderately thickened apically; hind tarsus long, combined length of first to third segments 0.77 times as long as femur; relative lengths of hind leg as follows: femur : tibia : 1st tarsal segment : 2nd tarsal segment : 3rd tarsal segment = 100 : 85 : 41 : 23 : 13.

Triangular lobes of last abdominal sternite 0.54 times as wide as its length at the widest point.

Male genitalia. Tegmen 9.5 times as long as basal width of lateral lobes; lateral lobe 0.20 times as long as the total length of tegmen, with inner side straight and outer side inflated near middle, then roundly tapered toward blunt angle in dorsal view, and lacking apical setae; ringed part straightly convergent and fused near middle in a Y shape, then separated again toward base. Median lobe 11.2 times as long as width, almost parallel-sided in dorsal view, thin and slightly curved throughout in lateral view; ventral plate strongly bent ventrad and obtusely pointed in lateral view; apical area in antero-dorsal view roundly narrowed toward pointed apex; median foramen provided with elongate lingulate median process in ventral view; median struts 0.35 times as long as total length of median lobe, fused at extreme base.

Female. Length from the tips of mandibles to the apices of elytra 18.0–21.5 mm, 23.1–27.9 mm to the apex of abdominal tergite; width at humeri 4.6–5.6 mm. Pronotum as long as basal width. Elytral markings almost the same as in male, but more or less developed and usually provided with additional pair of small spot outside of the second markings.

Specimens examined. 1♀, Tonkin, Montes Mauson, April, Mai, 2–3000, H. FRUHSTORFER (Lectotype of *Ocalemia carpo*: Figs. 28–29); 1♂, same data as for the lectotype; 1♂, Diaoluoshan, Lingshui Lizu Zizhixian, Hainan Is., 29. III. 1999, W.-I CHOU leg.; 12♂♂, 4♀♀, Mt. Wuzhishan, Tongshi Shi, Hainan Is., 1,100 m, Castanopsis, 7–8. IV. 2000, W.-I CHOU leg.

Distribution. North Vietnam (Mt. Mauson near the border of Guangxi, China); South China (Wu Ming, Guangxi); Hainan Is., China.

Notes. This species seems to be distributed in rather a wide area from Indochina to South China. The photographs of the holotype male of *Strangalia mirabilis* AURIVILLIUS and its labels (Figs. 31–32) preserved in the Riksmuseum of Stockholm were kindly sent by Dr. Eduard VIVES. The collecting data of this specimen is the same as that of the female lectotype of *Ocalemia carpo* PIC (Figs. 33–34) in the Paris Museum. On the other hand, I have been unable to examine the holotype of *Strangalia* (*Pygostrangalia*) *gigantia* CHIANG, but judging from the original description and the specimens collected on Hainan Island which is one of the localities of the paratypes, it is identical with the holotype of *Strangalia mirabilis*. As the result, *Ocalemia carpo* and *Strangalia gigantia* are surely junior synonyms of *Teratoleptura mirabilis mirabilis*.

Teratoleptura mirabilis yoshitomii N. OHBAYASHI, subsp. nov.

(Figs. 20, 23, 32–33)

Male. Length from the tips of mandibles to the apices of elytra 17.4–22.0 mm, 25.6–32.7 mm to the apex of abdominal tergite; width at humeri 4.4–5.4 mm.

Body black; legs and antennal segments also black; from the apical area of fifth to the

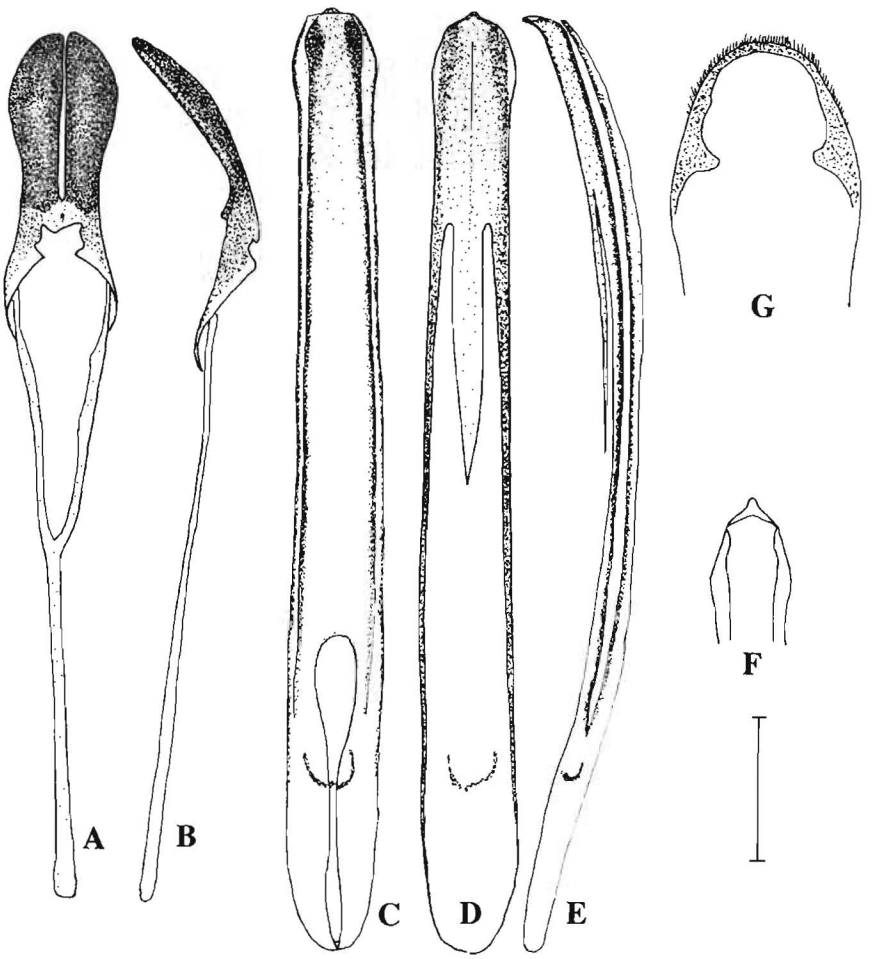
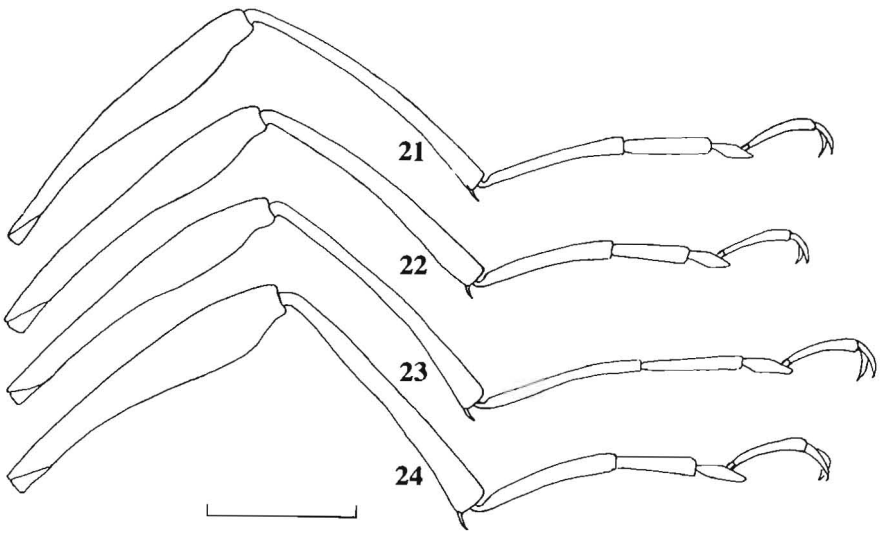


Fig. 20. Male genitalia of *Teratoleptura mirabilis yoshitomii* subsp nov. —— A, Tegmen, dorsal view; B, ditto, lateral view; C, median lobe, dorsal view; D, ditto, ventral view; E, ditto, lateral view; F, ditto, antero-dorsal view; G, 8th abdominal tergite, ventral view. Scale: 1 mm.

last antennal segments densely clothed with very short fine grey pubescence. Elytra provided with four pairs of pale yellow markings, of which the first is slant triangular, the second is drop-shaped, the third is wedge-shaped, and the fourth is elongate oval. Head densely clothed with short erect black hairs with long erect pale hairs on the base of clypeus to frons. Pronotum densely covered with short recumbent black hairs and sparsely intermixed with long erect pale hairs, and provided with silvery gray long recumbent hairs near both sides of basal third and middle of basal margin.

Relative lengths of antennal segments as follows: 30 : 5 : 41 : 32 : 39 : 34 : 31 : 30 :



Figs. 21–24. Male hind leg of *Teratoleptura* subspp. — 21, *T. mirabilis mirabilis* (holotype, Mt. Mauson); 22, ditto (Hainan Is.); 23, *T. mirabilis yoshitomii*; 24, *T. mirabilis shibatai*. Scale: 5 mm.

28 : 27 : 37.

Legs with hind tarsus very long and slender; combined length of first to third segments 1.02 times as long as femur; relative lengths of hind leg as follows: femur : tibia : 1st tarsal segment : 2nd tarsal segment : 3rd tarsal segment = 50 : 44 : 27 : 16 : 8 in male, and 100 : 89 : 47 : 21 : 12 in female.

Male genitalia. Tegmen 10.5 times as long as basal width of lateral lobes; lateral lobe 0.22 times as long as the total length of tegmen, with inner side straight and outer side inflated near apical third, then roundly tapered toward angulated angle in dorsal view, and lacking apical setae; ringed part straightly convergent and fused near middle in a Y shape. Median lobe 11.0 times as long as width, almost parallel-sided in dorsal view, thin and slightly curved throughout in lateral view; ventral plate strongly bent ventrad and obtusely pointed in lateral view; apical area in antero-dorsal view roundly narrowed toward pointed apex; median foramen provided with elongate lingulate median process in ventral view; median struts 0.34 times as long as total length of median lobe, fused at extreme base.

Female. Length from the tips of mandibles to the apices of elytra 14.5–22.3 mm, 24.1–28.6 mm to the apex of abdominal tergite; width at humeri 4.2–5.7 mm. Pronotum as long as basal width.

Type series. Holotype: ♂ (EUMJ), Mt. Phu Pan, alt. 1,500–1,900 m, Ban Saleui, Xam Neua, Houaphan Prov., Laos, 28. IV. 2002, H. YOSHITOMI leg.; allotype: ♀ (EUMJ), same locality, 27. IV–11. V. 2007, J. YAMASAKO leg.

Paratypes: 4♂♂, 1♀, same locality, 28. IV–6. V. 2002, H. YOSHITOMI leg.; 1♂, 1♀, same locality, 29. IV–2. V. 2002, N. OHBAYASHI leg.; 13♂♂, 6♀♀, same locality, 16. IV–15. V. 2004, native collector; 12♂♂, same locality, 2–10. IV. 2005, native collector; 3♂♂, same locality, 12. IV–11. V. 2005, native collector; 1♀, same locality, 27. IV–11. V. 2007, J. YAMASAKO leg.

Etymology. The subspecific epithet is dedicated to Dr. Hiroyuki YOSHITOMI, who first collected this subspecies.

Distribution. North Laos (Mt. Phu Pan, Xam Neua).

Notes. All the specimens of this new subspecies were collected from Mt. Phu Pan, northern Laos. This new subspecies is very close to the nominotypical subspecies and the following new subspecies, *T. m. shibatai*, but is easily distinguishable from them by entirely black fore femur, and distinctly long and slender hind tarsus. Male genitalia are also very close to those of the nominotypical subspecies, but the lateral lobes are more strongly constricted near base.

Teratoleptura mirabilis shibatai N. OHBAYASHI, subsp. nov.

(Figs. 24, 25, 34–35)

Macroleptura mirabilis: VIVES, 2001: 2, fig.

Male. Length from the tips of mandibles to the apices of elytra 18.1–21.1 mm, 24.3–31.7 mm to the apex of abdominal tergite; width at humeri 3.6–5.5 mm.

Body black; fore-leg with femur and ventral half of tibia reddish brown; from the apical area of sixth to the last antennal segments yellowish brown; elytra provided with four pairs of light yellowish brown markings, of which the first is horseshoe-shaped, the second is obliquely arranged semicircularly, the third is reverse triangular, and the fourth is small elliptical point. Head densely clothed with short erect black hairs and with long erect pale hairs from the base of clypeus to frons. Pronotum densely covered with short recumbent black hairs and sparsely intermixed with long erect pale hairs, and provided with golden recumbent long hairs near both sides of basal third and middle of basal margin. Scutellum entirely covered with golden hairs. Elytra clothed with black subrecumbent short hairs except on the yellowish brown markings, which are golden yellow. Ventral surface with meso- and metanota covered with recumbent long brilliant brown hairs; abdominal sternites clothed with recumbent brilliant brown hairs, of which the ones on the third sternite are moderate in length but those of fourth to seventh are very fine and sparse in the central area.

Relative lengths of antennal segments as follows: 32 : 5 : 42 : 32 : 40 : 33 : 32 : 30 : 29 : 28 : 37.

Pronotum nearly trapezoidal, as long as basal width, moderately convex and more or less depressed on both sides near basal third. Elytra 2.6 times as long as basal width. Legs

with each femur stout and hind one strongly thickened apically; hind tibiae slightly curved, more or less thickened apically with latero-ventral carinae. Triangular lobes of last abdominal sternite 0.60 times as wide as its length at the widest point.

Male genitalia. Tegmen 9.4 times as long as basal width of lateral lobes; lateral lobe 0.27 times as long as the total length of tegmen, with inner side straight and outer side inflated near apical third, then roundly tapered toward angulated angle in dorsal view with one or two short apical setae; ringed part straightly convergent and fused near middle in a Y-shape. Median lobe 9.4 times as long as width, almost parallel-sided in dorsal view, thin and gently curved throughout in lateral view; ventral plate moderately bent ventrad and obtusely pointed in lateral view; apex in antero-dorsal view roundly narrowed toward pointed apex; median foramen provided with elongate lingulate median process in ventral view; median struts 0.34 times as long as total length of median lobe, fused at extreme base.

Female. Length from the tips of mandibles to the apices of elytra 17.8–26.0 mm, 21.8–31.3 mm to the apex of abdominal tergite; width at humeri 4.6–6.8 mm. Pronotum distinctly wide and voluminous, shorter than pronotal base. Elytral markings more developed than in male; the second one frequently associated with a small lateral marking; the second and third ones sometimes connected along suture and provided with an extra small lateral marking between second and third.

Type series. Holotype: ♂(EUMJ), Mt. Tam Dao, 930 m, Vinh Phu Prov., North Vietnam, 1–7. V. 1996, Y. ARITA leg.; allotype: ♀ (EUMJ), same data as for the holotype.

Paratypes: 1♂, 14–17. V. 1992, M. KUBOTA leg.; 1♀, same locality, 2–6. VI. 1994, native collector; 29♂♂, 6♀♀, same locality, 20–23. V. 1995, M. SATÔ leg.; 50♂♂, 16♀♀, same locality, 1–7. V. 1996, Y. ARITA leg.; 21♂♂, 12♀♀(Taichi SHIBATA collection), same locality, 17–24. V. 1997, native collector; 1♂, 1♀, same locality, 15–16, V. 1997, T. NIISATO leg.

Etymology. The subspecific epithet is dedicated to the late Mr. Taichi SHIBATA, who was an excellent leader of Japanese young coleopterists and also made many contributions to the coleopterology.

Distribution. North Vietnam (Tam Dao).

Notes. This new subspecies can be distinguished from the nominotypical subspecies and *T. m. yoshitomii* by elytral markings larger and different in shape; six apical segments of antennae yellowish brown instead of black; pronotum wider; each femur more strongly thickened apically. Male genitalia very close to those of *T. mirabilis yoshitomii* but distinguishable by median lobe more or less strongly curved throughout in lateral view; apex of ventral plate in lateral view more or less sharp; lateral lobes more thickened in lateral view and relative length against the whole length of tegmen longer (0.27 instead of 0.22).

All the specimens of this new subspecies were collected from Mt. Tam Dao, North Vietnam. It has been identified as *Macroleptura* (= *Teratoleptura*) *mirabilis* by some authors because Mt. Tam Dao is situated only 140 km west-southwest from Mt. Mauson,

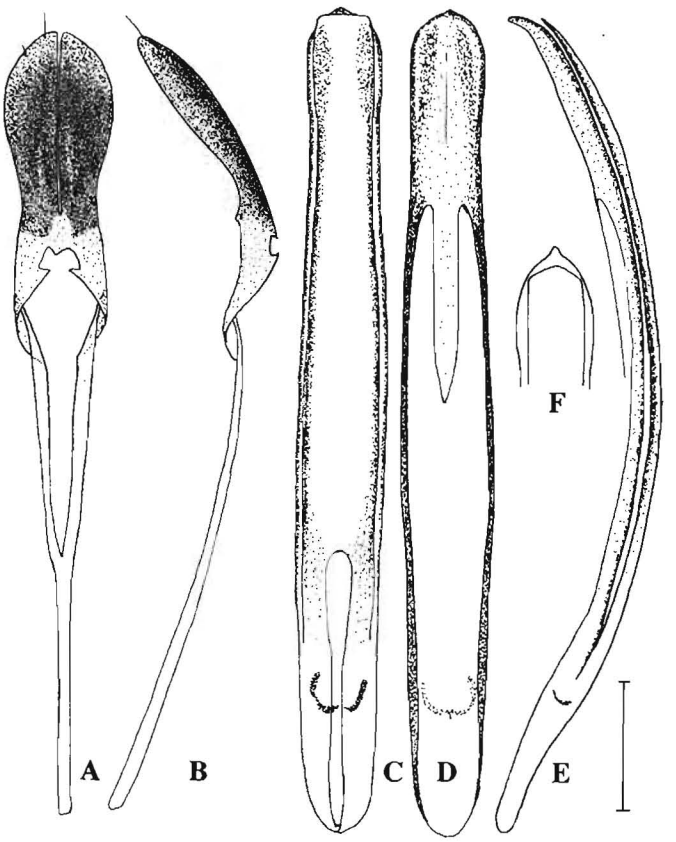


Fig. 25. Male genitalia of *Teratoleptura mirabilis shibatai* subsp. nov. —— A, Tegmen, dorsal view; B, ditto, lateral view; C, median lobe, dorsal view; D, ditto, ventral view; E, ditto, lateral view; F, ditto, antero-dorsal view. Scale: 1 mm.

which is the type locality of *T. mirabilis mirabilis*. The population of Mt. Tam Dao seems to have become differentiated into a subspecies for the reason that Mt. Tam Dao is an isolated mountain in the delta of the Red River.

Laoleptura N. OHBAYASHI, gen. nov.

Type species. Laoleptura phupanensis N. OHBAYASHI, sp. nov.

Male. Body slender, strongly tapered posteriorly.

Head moderate in length, obliquely prolonged in front; width across eyes as wide as pronotal base; gena shorter than a half of long axis of eye diameter, tempora short and

roundly constricted to the neck; eyes almost entire, large and moderately convex above; apical palpomeres longer than wide, widest near the middle, apical margin obliquely truncate. Antennae inserted in front of margin of eyes, rather stout, reaching the apex of elytra; small poriferous areas on apical segments indistinct, fourth segment longer than first, fifth longer than third.

Pronotum shorter than basal width, sides constricted near the anterior margin, once inflated and then more or less constricted near base; basal area impressed across disc with hind angles expanded but hardly covering the elytral humeri. Prosternal intercoxal process narrow between coxal cavities, then strongly dilated behind; acetabula of procoxae closed posteriorly; mesosternal process lightly arcuate in lateral view; metepisternum broad, tapering posteriorly. Scutellum nearly recto-triangle.

Elytra strongly narrowed behind and more or less constricted near apical third, dehiscent near the apices; each apex emarginate with both angles produced.

Legs rather stout; each tibia provided with a pair of spurs; mid tarsus with third segment deeply cleft to two-thirds of its length; hind tibiae almost straight, thickened apically without carina; hind tarsus slender, with first segment 1.5 times as long as the succeeding two segments combined, and third segment of male two-ninths as long as the first and cleft to near the middle of its length.

Male abdomen with sixth and seventh segments exposed dorsally, and fourth to sixth segments cylindrical; sixth sternite normal; seventh sternite broadly and conspicuously excavated throughout and its sides forming distinct triangular lobes expanded downward.

Male genitalia with lateral lobes not adjacent to each other and nearly parallel-sided with obliquely truncate apex, which is provided with a short apical seta.

Female. Width of head across eyes distinctly narrower than pronotal base. Antennae reaching apical third of elytra. Abdomen with sixth and seventh tergite exposed dorsally, straightly convergent apicad with triangularly emarginate apex.

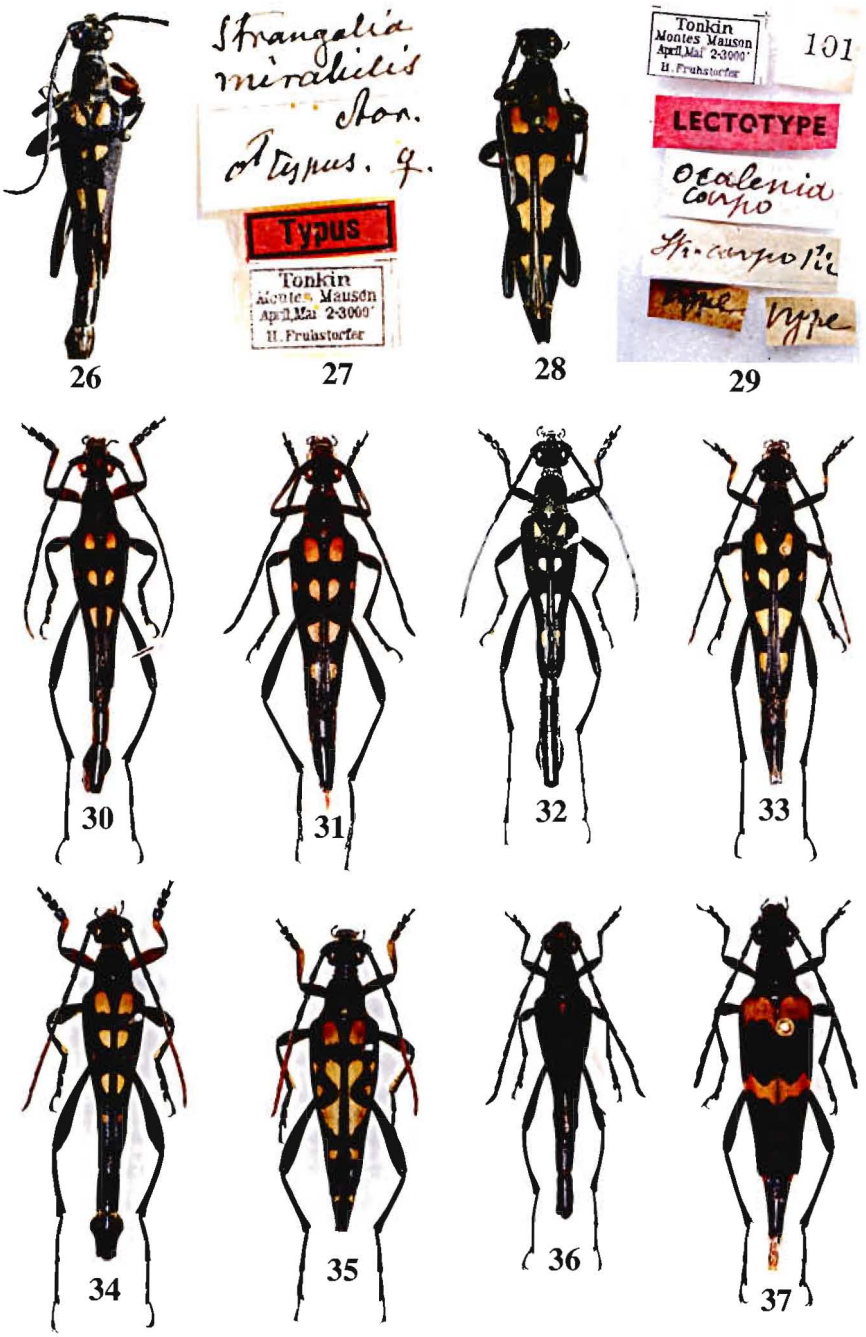
Diagnosis. It is doubtless that this new genus has close relationship with the former new genus *Teratoleptura*, but can be distinguished by the presence of paired tibial spurs, deeply cleft third segment of hind tarsus, normal structure of sixth abdominal sternite, and so on.

Laoleptura phupanensis N. OHBAYASHI, sp. nov.

(Figs. 36–37, 38, 44, 45)

Male. Length from the tips of mandibles to the apices of elytra 11.2–16.6 mm, 15.6–22.8 mm to the apex of abdominal tergite; width at humeri 3.0–4.6 mm.

Body entirely black. Head densely clothed with thick and short erect black hairs. Pronotum and elytra densely clothed with short subrecumbent black hairs. Head and pronotum sparsely intermixed with long feeble pale hairs mainly on frons, tempora and basal lateral sides of pronotum.



Figs. 26–37. Habitus of the genera *Teratoleptura* and *Laoleptura*. —— 26-31, *Teratoleptura mirabilis mirabilis* (AURIVILLIUS,1902); 32–33, *T. mirabilis yoshitomii* subsp. nov.; 34–35, *T. mirabilis shibatai* subsp. nov.; 36–37, *Laoleptura phupanensis* sp. nov. — 26, 30, 32, 34, 36, Male; 28, 31, 33, 35, female. — 26–27, Holotype of *Strangalia mirabilis* AURIVILLIUS,1902 (26) and its labels (27); 28–29, lectotype of *Ocalemia carpo*, PIC, 1903 (28) and its labels (29).

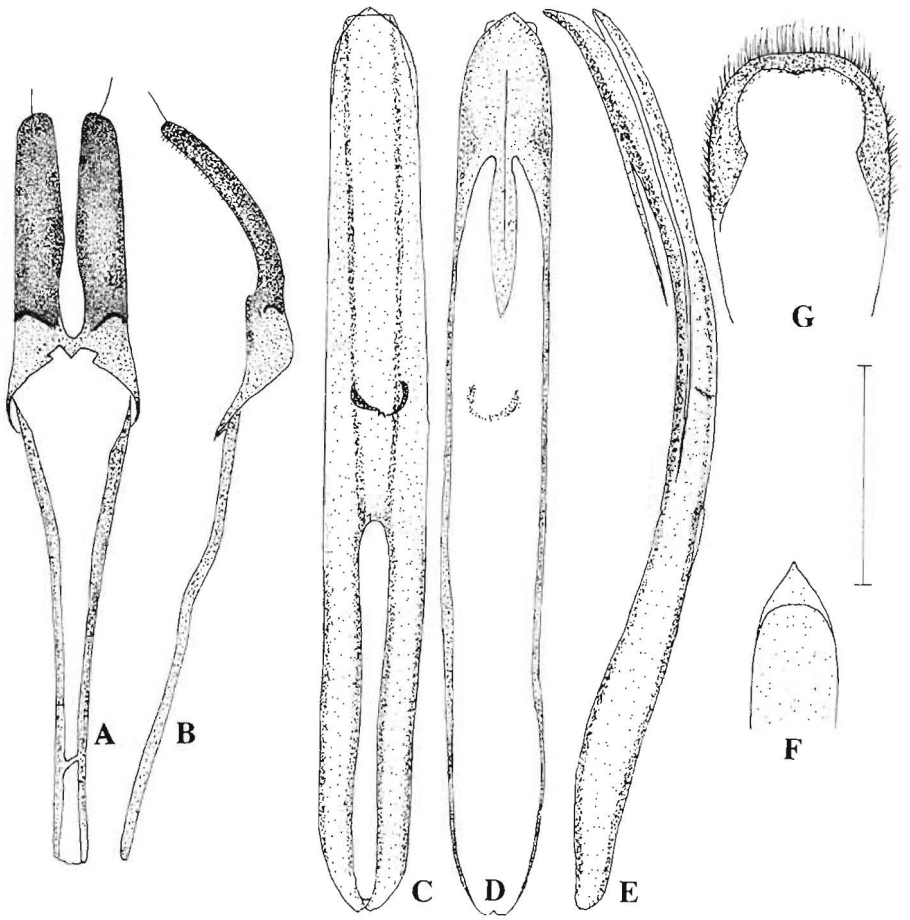


Fig. 38. Male genitalia of *Laoleptura phupanensis* sp. nov. —— A, Tegmen, dorsal view; B, ditto, lateral view; C, median lobe, dorsal view; D, ditto, ventral view; E, ditto, lateral view; F, ditto, antero-dorsal view; G, 8th abdominal tergite, ventral view. Scale: 1 mm.

Head finely and very closely punctured; width across eyes as wide as pronotal base; gena short, about half as long as long axis of eye diameter; tempora inflated, roundly constricted from some distance from eyes to neck; frons provided with carinae on lateral sides and a middle triangular smooth area; vertex strongly concave. Antenna slender, inserted in front of eyes, almost reaching elytral apex; first segment angulated ecto-apically; apical half of fifth segment to the last segment mat; fourth segment shorter than third and fifth ones, respectively; relative lengths of segments as follows: 25 : 5 : 28 : 24 : 30 : 28 : 28 : 27 : 26 : 24 : 33.

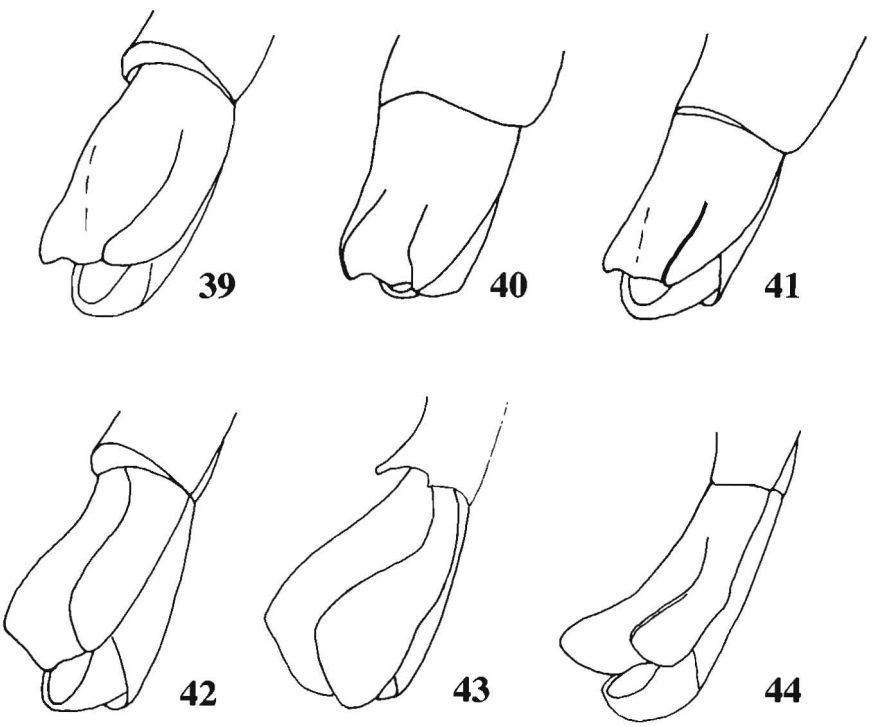
Pronotum closely punctured, moderately convex and more or less depressed on the

middle of apical half and both near sides of basal half, constricted at some distance from apical margin and deeply transversely depressed near base; apical and basal margin distinctly marginate; sides gently convergent toward apex and basal lateral angles acutely produced.

Elytra closely provided with deep and rugose punctures, short, 2.4–2.6 times as long as basal width; sides strongly convergent from basal third to apical third, then slightly divergent; suture dehiscent from apical fifth; apex nearly truncate with shallow emargination. Scutellum triangular.

Legs slender, each femur clavate; hind tibia slightly curved inward and reversely curved outward near apex, thickened apically from apical fourth; fore- and mid-tibiae rather thick and wide; hind tarsus slender, as long as hind tibia; first hind tarsal segment twice as long as second, and as long as the remaining segments combined.

Abdomen very slender and cylindrical, gradually narrowed from third to sixth sternites; seventh sternite deeply excavated and widened posteriad, sides downwardly prolonged



Figs. 39–44. Latero-ventral view of caudal apex of abdomen. —— 39, *Bellamira scalaris* (SAY, 1826); 40, *Macroleptura thoracica* (CREUTZER, 1799); 41, *Macroleptura regalis* (BATES, 1884); 42, *Macroleptura quadrizona* (FAIRMAIRE, 1902); 43, *Teratoleptura mirabilis mirabilis* (AURIVILLIUS, 1902); 44, *Laoleptura phupanensis* sp. nov.

and forming lobes; the lobe roundly depressed at sides like a spoon; each sternite finely punctured and the punctures becoming sparser toward apex; apical third of fifth to seventh tergites exposed and visible from above.

Male genitalia. Tegmen 6.6 times as long as basal width of lateral lobes; lateral lobes 0.31 times as long as the total length of tegmen, each lobe almost parallel-sided though the inner side is slightly inflated near basal third, and the apex obliquely truncate with rounded angles and provided with a short seta; ringed part straightly convergent basad and fused at some distance from base. Median lobe 8.8 times as long as width, almost parallel-sided in dorsal view, rather thin and gently curved throughout in lateral view; ventral plate moderately bent ventrad and obtusely pointed in lateral view; apex in antero-dorsal view roundly narrowed toward pointed apex; median foramen provided with elongate lingulate median process in ventral view; median struts 0.43 times as long as total length of median lobe, fused at extreme base.

Female. Length from the tips of mandibles to the apices of elytra 15.8–23.0 mm, 18.8–26.6 mm to the apex of abdominal tergite; width at humeri 4.1–6.6 mm.

Body black; elytra provided with two bright orange-yellow transverse band near base and middle as illustrated; middle area of metasternum yellowish brown; third to sixth abdominal sternites and extreme base of seventh sternite yellowish brown with small black spots on both sides of the fourth, fifth and sixth.

Structure and sculpture of head, pronotum and legs quite similar to those of male; elytra 1.4 times as long as wide, sides almost parallel from base to medial band, then straightly convergent toward apex; suture dehiscent from apical fifth; apex nearly truncate with shallow emargination.

Abdomen thick, strongly narrowed from third to sixth sternites; seventh sternite narrowly prolonged, slightly depressed along median line and deeply emarginate at the apex; apical third of sixth (depend on the condition of abdomen, sometimes invisible from above) and seventh tergite exposed and visible from above; seventh tergite of the same shape as seventh sternite without median depressed line.

DNA barcode. A fragment of the COI gene from one of the paratypes was determined. The sequence data including the standard barcoding region for animal species (HEBERT *et al.*, 2003a, b) has been deposited as a DNA barcode of *L. phupanensis* in the DDBJ Nucleotide Sequence Database (http://www.ddbj.nig.ac.jp/) under accession number AB379832.

Type series. Holotype: ♂ (EUMJ), Phu Pan (Mt.), alt. 1,500–1,800 m, Houaphan Prov., Northeastern Laos, 29. IV. 2002, N. OHBAYASHI leg.; allotype: (EUMJ), same locality, 27. IV–11. V. 2007, J. YAMASAKO leg.

Paratypes: 2♀♀, same locality, 29. IV–1. V. 2002, N. OHBAYASHI leg.; 1♂, same locality, 27. V. 2002, native legit (EUMJ: Voucher No. 0000001 for AB379832); 1♂, 2♀♀, same locality, 11–13. IV. 2004, N. OHBAYASHI leg.; 11♂♂, 2♀♀, same locality, 16. IV–15. V. 2004, native legit.; 1♀, 28–30. III. 2005, N. OHBAYASHI leg.; 1♀, same locality,

Fig. 45. Adult female of *Laoleptura phupanensis* sp. nov.,
on the flower of *Castanopsis* sp. (Mt. Phu-pan, Laos: 12. IV. 2004)

28–30. III. 2005, J. YAMASAKO leg.

Diagnosis. Color pattern of this new species is quite different between the two sexes. The male is entirely black, but the female has orange yellow elytral markings and also ventral surface colored. Actually they belong to the same species because of quite identical other structures. This new species is easily distinguishable from other congeneric species by its unique coloration.

Etymology. The specific epithet is named after the type locality of the species.

Key to the Genera and Species

1. Legs with fore and hind tibiae in male and only fore tibia in female lacking inner spur; male hind tarsus with the first segment slightly longer than second and third combined, the third segment cleft in less than apical third of its length (Genus *Teratoleptura*) ····· 2
– Legs with each tibia provided with a pair of spurs; male hind tarsus with the first segment distinctly longer than second and third combined, the third segment cleft to almost middle of its length ····· 4
2. Apical four or five segments of antennae yellowish brown and clothed with minute pale yellow pubescence; pronotum voluminous, wider than long; legs rather stout with hind femur strongly clavate; fore-leg with femur and ventral half of tibia reddish brown ·····

..... *Teratoleptura mirabilis shibatai* subsp. nov.

– Apical four or five segments of antennae black and clothed with minute grayish pubescence; pronotum less voluminous, longer than wide; legs rather thin with hind femur lightly clavate; fore-leg with femur entirely black or partly reddish brown 3

3. Fore leg with apical two-thirds of femur reddish brown; hind tibia with the length of first to third combined 0. 77 times as long as hind femur .....
..... *Teratoleptura mirabilis mirabilis* AURIVILLIUS

– Fore leg entirely black; hind tibia with the length of first to third combined 1. 02 times as long as hind femur ..... *Teratoleptura mirabilis yoshitomii* subsp. nov.

4. Elytral apex rounded; lateral lobes of male genitalia widened toward obliquely truncate apex (Genus *Bellamira*) ..... *Bellamira scalaris* (SAY, 1826)

– Elytral apex emarginate 5

5. Fourth antennal segment longer than first; eyes almost entire; fourth to sixth abdominal segments in male cylindrical; lateral lobes of male genitalia not adjacent to each other and nearly parallel-sided with obliquely truncate apices (Genus *Laoleptura*) .....
..... *Laoleptura phupanensis* sp. nov.

– Fourth antennal segment shorter than first; eyes slightly emarginate behind antennal insertion; fourth to sixth abdominal segments in male sequentially narrowed; lateral lobes of male genitalia almost straightly tapered toward obtusely pointed apices (Genus *Macroleptura*) 6

6. Head obliquely prolonged in front; gena longer than a half of long axis of eye diameter
..... *Macroleptura regalis* (BATES, 1884)

– Head short; gena shorter than one-third of long axis of eye diameter. 7

7 Antenna robust, with poriferous area hardly recognized; first segment strongly thickened apicad; fifth to tenth segments more or less expanded ecto-apically .....
..... *Macroleptura quadrizona* (FAIRMAIRE, 1902)

– Antenna slender, with small poriferous area on 5th to 11th segments; first segment slightly thickened apicad; fifth to tenth segments not expanded ecto-apically .....
..... *Macroleptura thoracica* (CREUTZER, 1799)

Discussion

The genera dealt with in this revision should be included in the *Macroleptura* genus-group because they share the following features of male genitalia: median lobe distinctly elongate, ranged between ca. 7 to 11 times as long as wide, nearly parallel-sided throughout in dorsal view, and slightly curved in lateral view; ventral plate forming a median keel at median foramen and usually visible as a spine in lateral view. Lateral lobes of tegmen variable in shape, but ringed part elongate and straightly narrowed basally, and fused at base or near the middle. On the other hand, we excluded the Nearctic genus *Stenelytrana* which was formerly regarded as *Megaleptura* or *Leptura* (*Stenura*), because ŠVÁCHA (in ŠVÁCHA

and DANILEVSKY, 1989) already pointed out the differences of larval structure among them, and the structure of male genitalia does not show the peculiarity of the *Macroleptura* genus-group, though we are only able to examine *S. gigas*.

The genus *Nona* was established by SAMA (2002) based on a single species, *Strangalia regalis* BATES (*Nona* was replaced by *Noona* in 2007). He distinguished this genus from *Macroleptura* by the male with the seventh abdominal sternite deeply impressed along entire length, pronotum basally with broad transverse groove, and the metatibia flattened on the inner side and strongly carinate before the apex.

As mentioned in the description, *M. quadrizona* should belong to the same genus as *M. regalis* in view of the structure of male genitalia. However, it resembles closely *M. thoracica* than *M. regalis* in the head length and the structure of the male hind tibia. The latter feature depends on its varying degrees. The structural polymorphism of the male hind tibia is rather common in the Lepturini, *e.g.*, in the genus *Leptura*. As regards the structure of the seventh abdominal sternite, *M. quadrizona* shows an intermediate state between *M. thoracica* and *M. regalis*. Such peculiar structure of the male seventh abdominal sternite as deep medial impression with its sides expanded downward to form lobes is widely recognized in varying degrees among several genera of the Lepturini, for example, *Strangalia*, *Idiostrangalia*, *Pigostrangalia* and so on. The transverse groove of pronotum also varies in different degrees. Therefore, the differences between *M. thoracica* and *M. regalis* cannot be considered to have attained generic level, only specific.

OHBAYASHI *et al.* (2005) synonymized the genus *Nona* with the genus *Bellamira* for the reason that the generic features pointed out by SAMA (2002) well coincide with those of the Nearctic genus *Bellamira*. SAMA (2007) opposed to this act and argued that the genus *Noona* differs from *Bellamira* as follows: "front of head more elongate, with cheeks very long; tempora only with sparse hairs; antennae more elongate, without poriferous area (or indistinct), third segment 1.15x as long as first, fifth segment in average 1.7x as long as third, elytra parallel-sided, not or very slightly narrowed behind middle, totally covering the abdominal tergite, apices truncate, not dehiscent, outer and sutural angles spined; legs more robust, hind tibia, in male, not expanded toward the apex, apically flattened and evidently carinate on both sides on ventral surface". Some of his descriptions of *Noona* (it means *M. regalis)* are incorrect because the antenna is provided with distinct small poriferous areas on 5th to 10th segments (*Macroleptura thoracica* also bears it on the 5th to 11th segments, but hardly recognizable in *M. quadrizona*); the third antennal segment is 1.06 times as long as the first (not 1.15 times) and the fifth is 1.08 times as long as the third (not 1.7 times); elytra are not parallel-sided but are straightly narrowed apicad, and not truncate at apices but emarginate, and distinctly dehiscent at apical fourth; the last abdominal tergite is not wholly covered by elytra, but it is usually fully exposed in male, or half of it is exposed in female; the carina of male hind tibia is present though rudimentarily in *Bellamira scalaris* and it is quite similar to that of *M. quadrizona*. These were the reason why we had once synonymized *Nona* with *Bellamira*. In this study, however, I have syn-

onymized the genus *Noona* with *Macroleptura* for the reasons mentioned above, and have separated *Macroleptura* from *Bellamira* by the different structure of lateral lobes of male genitalia and the shape of elytral apex.

要　　約

大林 延夫：クロオオハナカミキリ属群の再検討．———— ハナカミキリ族 Lepturini に含まれる大型のクロオオハナカミキリ属 *Macroleptura* およびその近縁属を再検討し，新北区の*Bellamira* LECONTE, 1873と 旧北区～東洋区に分布する *Macroleptura* NAKANE et OHBAYASHI, 1957 に，今回創設した東洋区の2新属 を加えた4属をオオヨツスジハナカミキリ属群とした．これらは，その大型の体形に加え，雄交尾器のいくつかの特徴などを共有する．SAMA (2005) が日本のオオヨツスジハナカミキリを基準種として創設した *Nona* 属（= *Noona*, 2007）は，N. OHBAYASHI *et al.* (2005) が *Bellamira* 属のシノニムとしていたが，これを従来の扱いに戻してクロオオハナカミキリ属 *Macroleptura* に含めた．また，*Strangalia magdelainei* PIC, 1937 を *Macroleptura quadrizona* (FAIRMAIRE, 1902) のシノニムとしたほか，インドシナから中国にかけて分布し，従来 *Macroleptura* 属に含められていた *M. mirabilis* (AURIBILLIUS, 1902) に新属 *Teratoleptura* gen. nov. を創設し，タムダオ山（北ベトナム）の個体群を新亜種 *T. mirabilis shibatai* subsp. nov.，プーパン山（ラオス）の個体群を新亜種 *T. mirabilis yoshitomii* subsp. nov. として記載した．また，ラオスのプーパン山から得られた雌雄で異なる色彩を有する1種を新属新種 *Laoleptura phupanensis* gen. et sp. nov. として記載した．

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